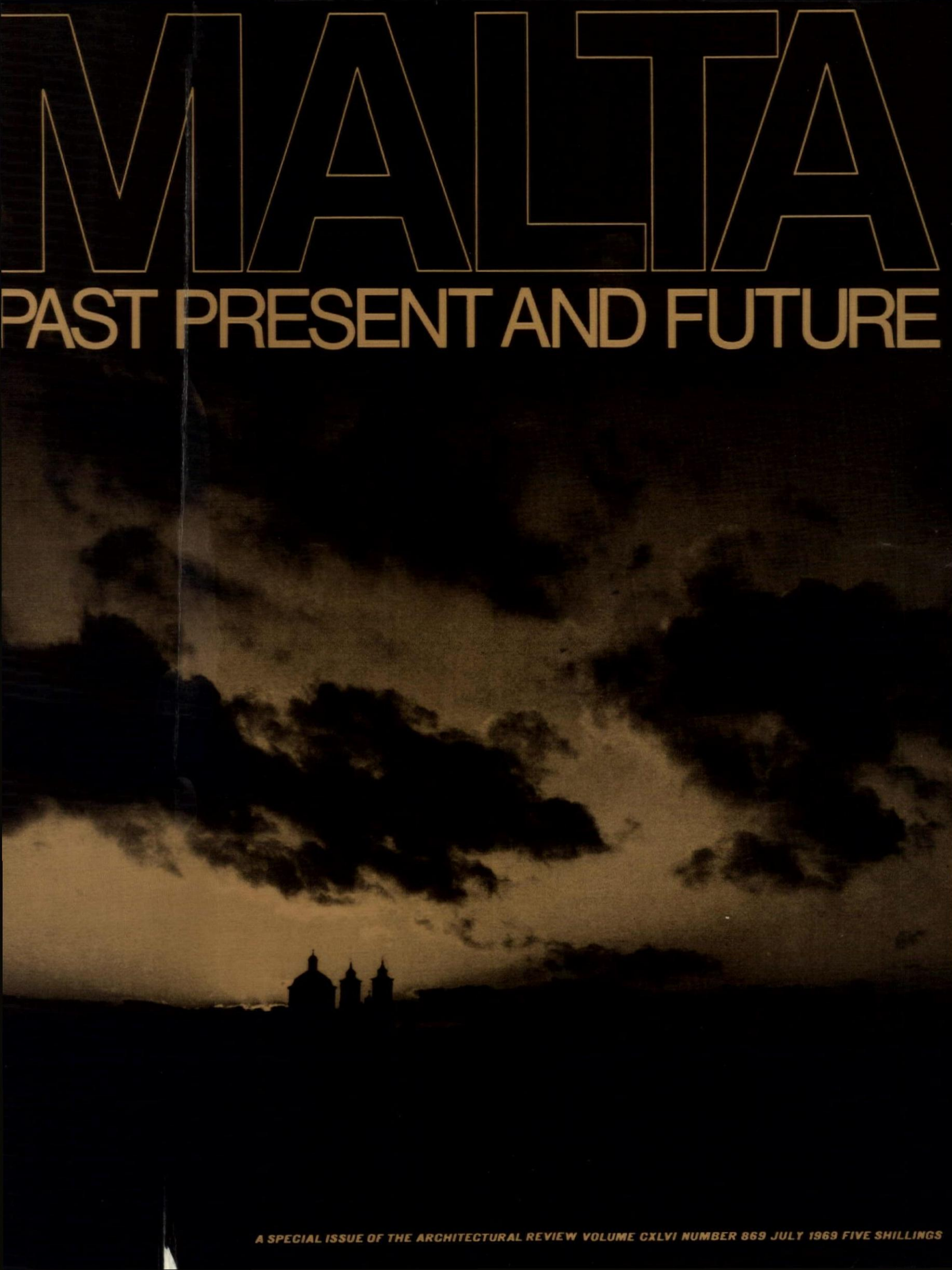
MALTA

PAST PRESENT AND FUTURE



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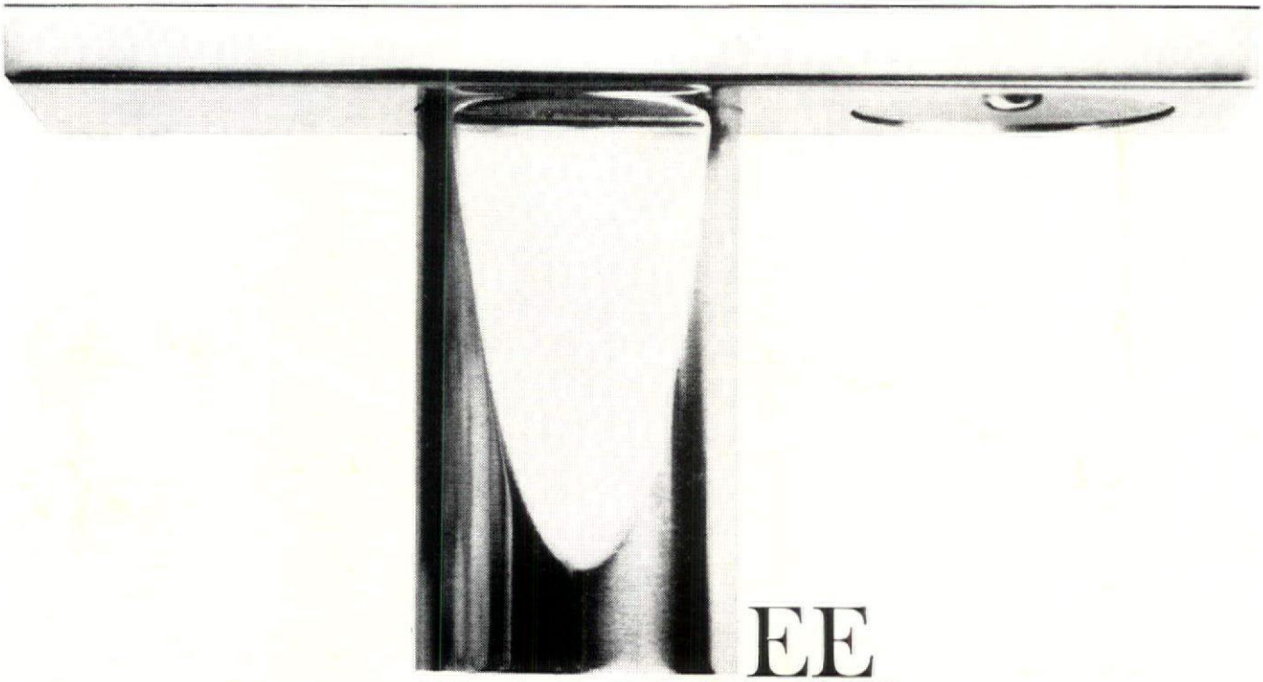

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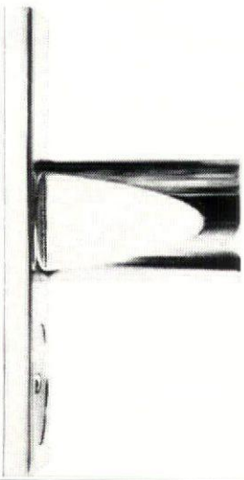

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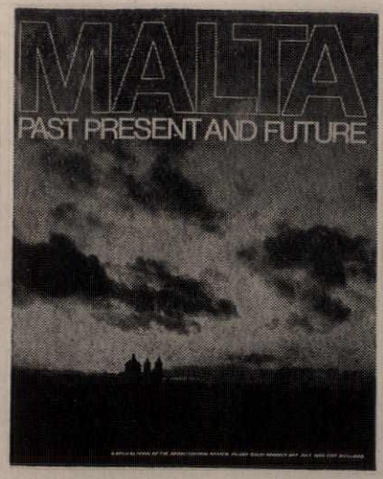

THE COVER *is based on a photograph by John Bethell: a sunset view over the Maltese landscape with the skyline characteristically broken by the dome and twin towers of a village church.*

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MALTA

ASSOCIATE EDITOR FOR THIS ISSUE:
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Malta is made of stone—the island itself, and its towns and villages and field walls and farm buildings. This etching by Julian Trevelyan (opposite page), entitled 'Quarries', sums up its whole essence: in the foreground the raw material; in the background the characteristic silhouette of the rural villages, with the church rising above the close-packed cubic stone houses. It is one of a series of large coloured etchings, called Malta Suite, done after Trevelyan visited the island in 1959.

Foreword by The Editors

MALTA

Since Malta achieved independence many changes have come to the island and even greater changes are likely, largely owing to the growth of tourism. Since the run-down of the British naval base and dockyards, it has been increasingly evident, in spite of some success in developing light industries, that the future economy of the island must largely depend on tourism and on the climatic and other attractions it offers to retired people and suchlike.

This means a vast amount of building—of villas, hotels and pleasure facilities of all kinds—and the main problem facing Malta at the moment, a problem much of the building that has already taken place alarmingly illustrates, is how to prevent all these developments in aid of tourism* from destroying the very attractions the tourists come to enjoy.

This is a growing threat in many parts of Europe, but in Malta it is being experienced in a particularly concentrated form. Nearly all the problems that worry planners and conservationists when dealing with an established, largely man-made, environment are represented in Malta, in a small compass but with an intensity that demands urgent action: problems of the coastline and the landscape—both threatened by unwise or selfish building—of providing for people who like lonely places as well as for those who like crowds, of relating architecture to its background by adapting vernacular building methods to modern uses, of preserving historic monuments, of controlling motor-traffic and preventing it either from rendering narrow medieval streets uninhabitable or, worse still, from demanding their destruction in order to facilitate its passage.

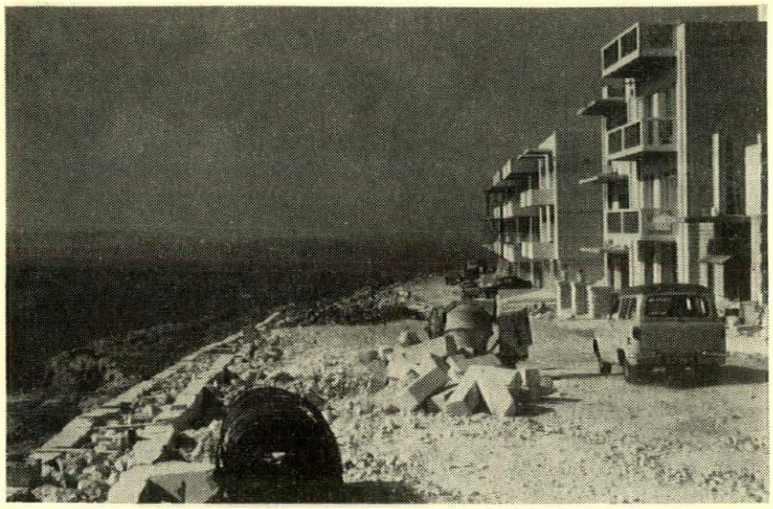
All these are problems that have often occupied the pages of THE ARCHITECTURAL REVIEW, which is a reason for this month devoting a whole issue of the REVIEW to this one small island. Malta is a test case of whether our generation, with its increasing leisure, mobility and taste for foreign travel, is capable of dealing sensitively and intelligently with an environment it takes over as a playground, or whether it only knows how to exploit such an environment commercially until its charm and character have gone, and then move on to do the same elsewhere.

There is still time to save Malta, though only just; and the first step towards saving it must be to value what

* Visitors to Malta in the month of June have grown from about 12,500 in 1959 to 120,000 in 1968; 40 per cent. more came in 1968 than in 1967. Plans are in hand to multiply the hotel accommodation by 1972 to four times what it was in 1966.

there is to be saved. If the various authorities on the island, the developers who hope to profit from its new role and the visitors who come to it from abroad, were fully aware what a unique and wonderful place it is, public opinion would begin to build up in favour of intelligent conservation and control and against short-sighted exploitation; for a strong public opinion is the basis of all successful official action.

That is why this issue, though it has to begin as an alarm call, is equally concerned with drawing attention to



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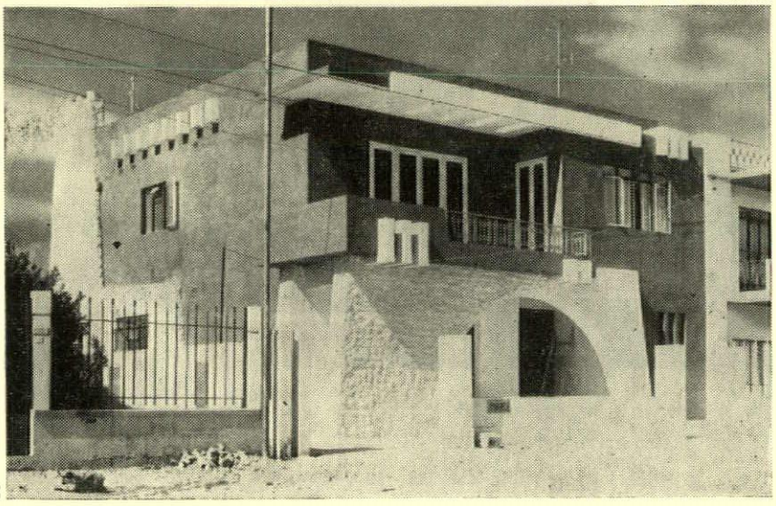
The damage that is being done to Malta by poorly designed or badly sited building: 1, flats on high ground at Mellieha Heights (see also page 56); 2, house near Attard, typical of the type of villa architecture that sprawls into the countryside.



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Malta's architectural riches and traditions and the way her remarkable history is written on her face. In illustrating these the Editors are greatly indebted to Professor J. Quentin Hughes, the recently appointed head of the Department of Architecture at the Royal University of Malta, an authority on the island's architecture and the author of a recent book* about it. Besides himself contributing a summary of the island's history and a scholarly article on the little-known sixteenth-century architect Laparelli, Professor Hughes has acted as expert adviser to the Editors and helped them to compile the issue as a whole.

Rich though it is in ancient buildings, Malta cannot be looked on as a museum. These very buildings, crowded together in narrow town streets or in the form of traditionally planned rural villages, provide the fabric in which modern life has to be lived. There the most difficult problem lies—enough to daunt any planning authority, yet making an overall development plan for the island a vital necessity. As this issue goes to press a plan for the smaller island of Gozo has at last been produced, and it is a matter for concern that a development plan for Malta itself has been in the making for six years and is still not complete.

In the narrower architectural field the rich and varied historic background presents a challenge to the modern designer: he must respect the old without imitating it, and strive to create a modern equivalent of the long established island tradition in terms of colour, material and scale. One of the articles in this issue selects and illustrates the examples of good modern architecture to be found there but, as the author of the article, Mr. Richard England—himself one of the leading architects on the island—observes, these few good modern buildings stand among many deplorable ones.

Private houses are the worst. The fashion for separate villas, strung out along the roadside each in its own plot of land, can only serve to consume and devour the landscape (a visit to Bugibba or the new developments at Mellieha confirms this only too well), and too many of the houses are over-designed, pretentious and gaudy, standing erect and conspicuous like little boxes, contending with each other for attention. One has only to pass along the main Valletta–Rabat road, through the new development at Attard, to see to what depths the standard has sunk, to see one specimen after another of the thin, cliché-ridden constructions Mr. England describes. They are made worse by the practice of leaving both buildings and complete developments, and the ground surrounding them, in an everlasting unfinished state, which stems no doubt from the rush of speculation.

The fault, it is clear, is not primarily that of the architects, though Malta, like other countries, has its good architects and its less good—both native and foreign.† The fault lies also with the clients, who need to be far more discriminating in their choice of architects and to exercise more judgement themselves. The great majority of the people coming from outside to settle on the island seem to possess the most outrageous taste and to be reluctant to take advice from responsible local architects as to what is best suited to the island, aesthetically and climatically. Hence the scattering of poorly designed villas which, as Mr. England justly complains, increasingly mars Malta's beautiful coastline. A saddening picture of some of these unsightly developments is given by Mr. Ian Masser in his article, 'The Perils of Non-Planning' in this issue.

But in the final result the fault lies with the authorities, since they have to approve everything that is built. There is even an Aesthetics Board with the duty of considering new designs from the visual point of view; but it tends to look at them as isolated buildings rather than in relation to their surroundings. Malta, it is clear, needs a strong and far-sighted planning authority, independent of politics, that will not only take decisions but adhere to them—which is not easy to achieve in a tightly knit community where everyone is known to everyone else, where the speculators have easy access to the politicians and the selfish and short-sighted can threaten them with loss of votes.

Mr. Brian Blouet describes the position candidly in his recent admirable book‡ on Malta. There are, he says, 'powerful local interests that have been completely

* *Fortress.* By J. Quentin Hughes. London: Lund Humphries, 1969. 63s.

† It is unfortunate in attracting the worst of foreign architecture: the two most deplorable recent buildings of any prominence are the Hilton Hotel at St. Julians, by an American architect, and King's Gate, Valletta, by an Italian.

‡ *The Story of Malta.* By Brian Blouet. London: Faber and Faber, 1967. 30s.

opposed to restrictions being placed upon property development. Most people in Malta with savings have some of their money invested in property and thus efficient land-use planning would be seen as a measure which, in the short term, was potentially liable to make certain investments less profitable. This group of people has always been politically significant. In the long term, of course, unless development within the islands is carefully planned Malta will lose its charm and thus its attractiveness to tourists. Then everyone in the islands will be poorer.'

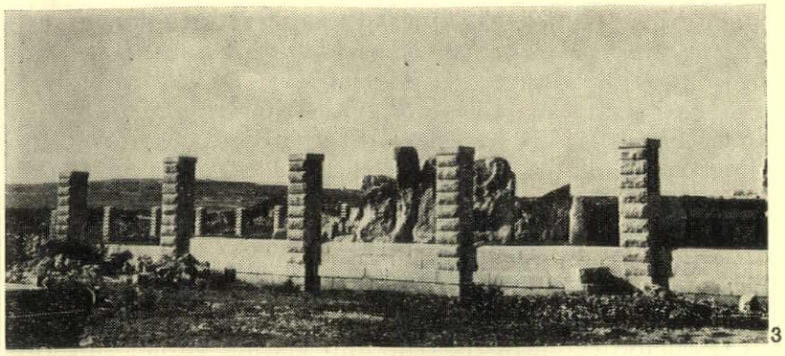
It must, however, not be suggested that none of the islanders are aware of the dangers, however alarming the evidence of failure to implement control may appear. There exists, for example, an active amenity society: *Din L-Art Helwa*, the National Association for the Safeguarding of the Historic, Artistic and Natural Heritage of Malta. This society's public relations officer, Mr. Walter R. Zahra (who is obviously a realist rather than a sentimentalist) when asked by the Editors about conservation efforts summed up the situation as follows: 'The people want modern habitations with the most up-to-date household equipment and sanitary amenities; the car-owners—and there are 40,000 of these—clamour for wide streets, the pulling down of blind corners and the construction of open parking areas; while the materialistic commercial element of the community is out for spacious and modern shops, high blocks of flats and developments that will ensure a high percentage of income on the capital invested.'

That is the problem in a nutshell—a problem with which we are already familiar at home. We are familiar likewise with the procedure that Mr. Zahra describes as follows: 'Valletta has been lately invaded by neon advertisement in uncultured and garish styles that in no way do credit to the dignified lines of Maltese Mannerism and Baroque. Business premises are competing amongst themselves with shop-fronts of coloured marble and plastic.

'Occasionally a beautiful example of Maltese architecture from earlier centuries is pulled down to make way for a modern structure, and the destruction takes place in too short a time to allow our preservation society, or similar bodies, to lodge a protest. Similar damage, more frequent and more difficult to detect, is taking place in our villages. Village voluntary and advisory civic committees, usually composed of people with no artistic qualifications, and much less with any respect for the old and the historic, request the Public Works Department to open wide streets right into the heart of the village itself, destroying much of its picturesque and well-protected streets and alleys and its irregular squares, and damaging fine examples of old Maltese architecture.'

This threat to the villages is one of the key issues that Malta has to face. In spite of the greater publicity accorded to the historic monuments of Valletta and Mdina, the architectural uniqueness of Malta lies in her villages—or what are called villages to distinguish them from the two historic urban centres; they are really small country towns, centres of agricultural regions, based on the ancient parish centres, with populations of between five and eleven thousand.

These villages are traditionally composed—and most of them are still almost wholly composed—of small, cubic, close-packed houses built for protection on high ground and therefore seen from the countryside rising in tiers one above the other, crowned in almost every case by the dome and twin towers of a Baroque parish-church. They

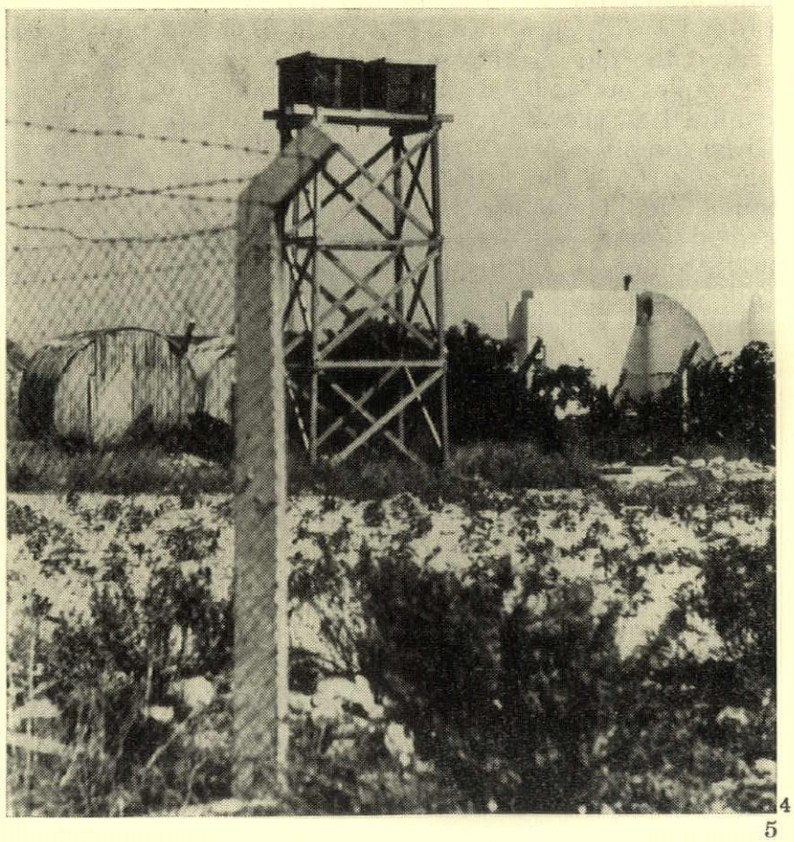


3, *official misjudgement at its worst: the recently constructed stone piers—carrying an iron fence—which surrounds and destructively dominates the megalithic temple at Hagar Qim.*

are the colour of the landscape because they are built of the stone of which the land itself is made, and they provide an ideal basis from which a modern vernacular style could be evolved.

Seen from outside they are beautiful and inevitable; inside they are fascinating and inimitable, but are on the point of being sacrificed to the demands of the motor-car—not, as in other countries, by road building to facilitate through traffic, because most of them are easily by-passed; they are threatened by the inhabitants themselves, who have difficulty in reaching their houses by car through the narrow winding streets and little squares, and of parking them when they get there, and who are apparently unwilling to walk even the short distance to the village centre which leaving their cars on the outskirts would entail—though once they must have done so. They are moreover influenced by the free-standing villas their richer neighbours have built elsewhere, which have acquired a snobbish superior appeal, and by the notion that driving wide roads into the village is a sign of progress and a matter for pride. In one of the articles in this issue, Peter Richardson, who is now teaching in

4, *a deserted military camp near Siggiewi—one of many on the island that the British forces have abandoned in this dilapidated state, creating unnecessary eyesores.*



Malta University's school of architecture, takes one village that has already been sadly damaged by this process—the village of Zurrieq—as an example and analyses both the cause of the destruction and its effect. It will be a disaster for Malta if the process continues, and the inhabitants of the village discover too late how aptly in their present form they are planned to give shade in the summer and protection from the incessant wind. When an environment created by a particular way of life has become unfashionable, for reasons however illogical, among the people who occupy it, it is particularly difficult to persuade them of its true and lasting value. But this must somehow be done before these unique villages—Malta's greatest possessions because they are living organisms as well as records of her adventurous past—will be destroyed.

To safeguard them is one of *Din L-Art Helwa's* most important tasks, in which they should get full support from the town-planning and other authorities. In other directions the society already has notable achievements. The threat of a cement factory commandng the channel between Malta and Gozo has been averted, the fjord-like scenery of the fishermen's cove at Wied Zurrieq has been preserved from the intrusion of a modern hotel and the Government is expected to refuse permission for the picturesque approaches to Marsaxlokk from the Fort St. Lucien side to be used for dumping old marine craft and harbour-dredging material. It is depressing, however, that some of the battles of the same kind that still remain to be fought are against the activities not of outsiders, but of Maltese officials, who ought to know better. A flagrant example of official vandalism is the monumentally hideous fence that has just been erected round one of Malta's most precious possessions, the megalithic temple at Hagar Qim, a complex of standing stones in a lonely landscape, whose atmosphere has lately been destroyed and its whole visual integrity affronted by enclosing it in a square of high stone piers (higher than the prehistoric stones themselves) linked by iron fences. The temple had stood unmolested for 4,500 years and if it was felt that some protection was now needed, a ditch or ha-ha could have served the purpose instead of this monstrous cage.

Examples of official insensitivity are not, however, confined to the Maltese. Still another battle that needs to be fought concerns the disused army camps in many parts of the island, which result in ugly blemishes on the landscape. These are the responsibility of the British armed forces, who have simply abandoned them, with no attempt to clean up the mess of wire, huts and concrete. The land on which they stand has reverted to agriculture, but the farmers cannot maintain the decaying buildings even if they are suitable for their own use, nor can they afford to tidy them away, and they become increasingly unsightly. Seeing what the British armed forces have owed to Malta in the past, the least they could do is to clear away their unwanted camps and, if the huts that form part of them might be useful to the farmers, to leave them in good condition when they go. But it is not enough to go on listing individual errors of omission and of commission that threaten the future of this beautiful island. As Mr. Justice Caruana-Curran, the Maltese delegate to Europa Nostra and president of *Din L-Art Helwa*, said when he addressed the Royal Society of Arts in London last year: 'The problem is clearly one of concept. It is not one of preserving any individual element, however important it may be on its own, but of saving a unique environment, and of saving it *as a whole*. This is necessary for aesthetic and economic reasons, but it is also important *morally*, since the protected environment reflects Man's victory in the creation of a home, out of natural surroundings that were not always generous.'

This emphasis on the whole picture, and on the fact of Malta being as much man's as nature's achievement, is the basis of the REVIEW'S own account of Malta and its problems—an account which, in order to make the picture as whole as possible in the space available, embraces not only past, present and future, but all the antitheses a total world is made up of: tradition and experiment, conservation and rebuilding, use and abuse, freedom for all or control for the greater enjoyment of others. Above all it tries to show how much, in spite of the dangers it is bound to point out, Malta still offers for the enjoyment of those who value landscape and architecture and the harmonious integration of the two.

Because of its superb architectural possessions, the world is watching Malta's attitude to them. The Council of Europe, which is sponsoring a complete card-indexed inventory on scientific lines to the European cultural heritage, has chosen Malta, because of its small size and its wealth of historic buildings and sites, as the subject of its pilot inventory, to serve as a model for the inventories of other countries. And, as it happens, the next in the series of Council of Europe exhibitions, which deal with the arts of different epochs and take place biennially in different European centres, is to take place in 1970 in Malta, its subject being the arts promoted, from the sixteenth century to the end of the eighteenth, by the Knights of St. John.

Malta is increasingly therefore the focus of cultural attention, and the next few years will tell whether this attention takes the form of admiration for the way the island has adapted itself and its inheritance to changing times, or despair at the way it has allowed the values illustrated by its treasures of the past to be disregarded in the present.

MALTA PAST

J Quentin Hughes

Malta is a veritable museum of architectural history. From Prehistoric times Man has been busy gouging out the soft limestone rock and piling it, square block upon block, to form temples and houses. The megalithic remains at Hagar Qim and Mnaidra and the rock-cut temple at Tarxien still stand in a remarkable state of preservation—linked ovular structures with stones of a vast size, some ornamented with geometrical and spiral patterns.

For generations Malta has been a pawn to invading forces, lying in the central passage of the trade routes of the Mediterranean approximately midway between Phoenicia and the Pillars of Hercules. Phoenicians, Carthaginians, Greeks and Romans have all been and left their mark. The remains of Roman villas with elaborate mosaic floors are still extant in Gozo and outside the walls of the old capital at Mdina. The ground below Rabat is honeycombed with Early Christian catacombs. Then came the Arabs who in turn were driven from the islands by the army of Count Roger of Normandy, and from the time of his arrival in 1090 Malta was a Christian bulwark against the north-western advance of Turk and Arab into southern Europe. Roger began the cathedral at Mdina, much of which was shattered in the 1693 earthquake. In the years that followed Angevins, Aragonese and Castilians occupied Malta, and Mdina, a small walled city, was the only town of any importance. The old palaces of Sicolo-Norman style are evidence of this period of domination, though most have been altered and added to in succeeding centuries.

Malta was a constant prey to the raids of Islamic corsairs and life in the countryside was precarious. In 1530 the situation changed. The Knights of St. John of Jerusalem, having fought a rearguard action from the Holy Land and been driven from their stronghold in Rhodes, were bequeathed the islands of Malta and Gozo together with the fortress of Tripoli in return for a peppercorn rent by the Emperor Charles V of Spain. Their arrival changed the fortune of Malta, bringing trade and prosperity and eventual security to a land which for generations had known only the disastrous incursions of raiders.

The Knights settled on two peninsulas which jut out into the Grand Harbour, modernising the castle of St. Angelo and converting and extending the hamlet of Il Borgo, now called Vittoriosa. In the middle years of the sixteenth century their style of architecture was naive—a brotherhood steeped in the rigours of war had little time for cultural pursuits. Strange, fat, bulbous mouldings decorate their doors and windows. In 1565 the Turks, having driven the Knights from Rhodes, assaulted the island of Malta with a great armada. After months of bloody warfare and privation, the Turkish armies, depleted by disease and dispirited, withdrew before the advance-guard of relieving force from Sicily. Malta was saved for the Knights and for Christianity. Christian princes, disburdened of the embarrassment of a Turkish assault into Italy, poured money into the coffers of Malta, and soon a new capital city, Valletta, rose on Mount Sceberras, the rocky peninsula which separates the two deep water havens of the Grand Harbour and Marsamxett.*

Most of Malta's historic buildings date from the period of the Knights of St. John, but the constructional techniques predate their arrival. In the fifteenth century there had been a few scattered villages, mainly in the south and centre of Malta. As a result of the reorganisation of the parishes, a number of small chapels was built to serve these villages. Trees are sparse in Malta—certainly insufficient to provide basic building materials—so a system of construction had to be devised which utilized the soft building limestone. Roofs and floors had to be constructed of stone slabs supported on stone arched ribs thrown across from wall to wall, and spaced about four feet apart. The roof slabs were about three inches thick, their edges bevelled and a triangular shaped groove left to be filled with small soaked pebbles. The joint was then grouted with an equal part of lime and small chippings mixed into a mortar. About three inches of dry

1, the traditional method of Maltese roof-construction, illustrated by the interior of the ruined chapel of St. Cecilia on the smaller island of Gozo.



1

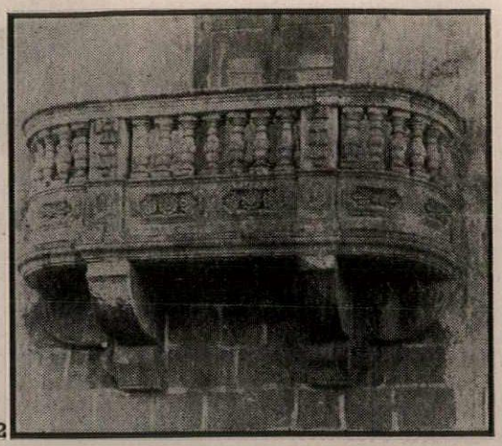
* See City of the Knights, page 69.

chippings were laid over the slab to distribute the load, and another layer of fine chippings mixed with lime mortar covered these. This top layer, laid to a slight fall, was thoroughly beaten with wooden rammers to exude the excess water. After intermediate processes the surface was finally glazed with trowels*. The chapels are single cell units usually lit by a circular window over the door. In front there stood a small open atrium which formed part of the protected consecrated area of the church. At Gudja, the little chapel of St. Mary 'Tar Bir Miftuh' (1436) is a good early example, and so is the church of St. Gregory near Zejtun, where transepts, a choir and a saucer dome were added after the arrival of the Knights. These delightful little chapels, which abound in Malta, continued to be built up to the beginning of the seventeenth century until they were superseded by more elaborate Baroque buildings.

The Turks having been driven from Malta, the Knights set about strengthening their defences. In addition to the great fortified walls of Valletta, they constructed castles and outposts to give warning of an impending attack. The rugged foursquare forts at Comino, St Thomas on the headland of Marsascala bay and St. Lucian, overlooking the large dangerous bay of Marsaxlokk, date from the early years of the seventeenth century. These are large structures capable of withstanding considerable assault. Then there were intermediate-sized forts like the gaunt Red Tower which stands on the apex of the Marfa ridge, and the Wignacourt Tower (1610) at the entrance to St. Paul's Bay. A series of watchtowers studded the headlands, spaced so as to be able to pass signals by fire and flag to the main garrisons at Valletta and the Three Cities.

With an increased feeling of security, the island's population exploded—a fivefold increase in three-quarters of a century. The villages grew. Huddled flat-roofed houses clung to the winding streets and cul-de-sacs, but behind the plain anonymous facades there opened out spacious courtyards and walled gardens. The main decoration of the houses consisted of elaborately carved stone balconies which later supported a superstructure of slender timber bay-windows. On the tall houses of Valletta these climb storey upon storey, giving the city a strange eastern flavour.

The little chapels were soon quite inadequate and large parish churches had to be built to serve the enlarged villages. Each village is now crowned by a large domed church, so that it is possible, when one glances across the countryside, to distinguish and identify each village by the shape of its domed church. The first phase of parish-church building began with the construction of the twin-towered church at Qormi (1584), its façade copied from the pages of Serlio. Twin western towers, used earlier on the Knights' church at Vittoriosa and the Co-Cathedral at Valletta, became a feature of Maltese ecclesiastical architecture. Tumas Dingli's



2

2, a carved stone balcony. These are found in all parts of Malta, often supporting a tier of subsequently constructed timber bay-windows.

rapid rise to fame was dependant upon this first building boom, when he had the opportunity to design numerous parish churches including those at Birkirkara, Attard, Naxxar and Zabbar. Then the money began to run out. The Knights had overreached themselves in the building of their immensely expensive fortifications and in the construction of their new capital city. The coffers by mid-century were empty. Malta had abandoned her gold standard and was minting leather coins with the hopeful inscription *Non aes sed fides*.

Gradually, however, the economy recovered, and the end of the seventeenth century saw a second building boom which gave to the Maltese architect, Lorenzo Gafà, his great opportunity. Roman trained under the aura of Bernini and Borromini, he returned to Malta to construct the great Baroque cathedrals at Mdina (1697–1702) and Victoria in Gozo. Numerous other buildings, including parish churches at Vittoriosa, Zejtun and Siggiewi, were designed by him.

The Knights now pushed ahead their defensive plans, extending the Valletta front with

3, the Maltese love of flamboyance and festivity celebrated in another of Julian Trevelyan's 'Malta Suite' series of etchings—see pages 2 and 3. This one is called 'Carnival'.



3

the intricate enciente of Floriana and engirdling the Three Cities with the extravagant and monumental lines of Santa Margherita and Cottonera. Palaces and churches rose as the Knights lavished their wealth on the decoration of the islands. The late flowering of the Baroque culminates in Cachia's church of St. Helen at Birkirkara (1735) and his magnificent *Auberge de Castile et Leon* (1744) which stands on the highpoint of the Valletta land front. Cross fertilization between Sicily and the southern coast of Italy can now be seen, and there are close resemblances to buildings in Noto and Lecce.

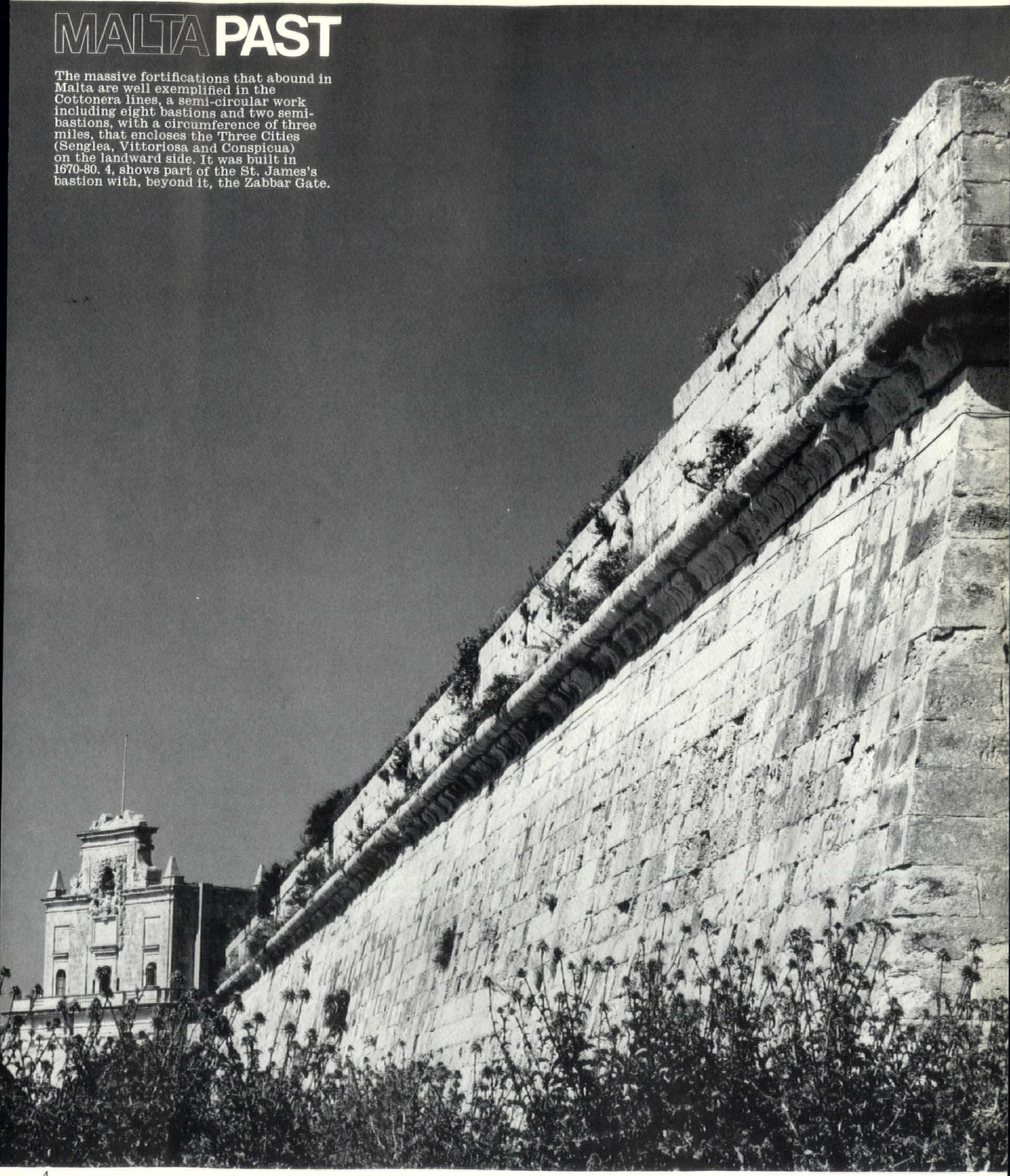
But once more money was running short. There was little love lost between the aristocratic Knights of St. John and the leaders of the French Revolution. As the armies of Napoleon swept through Europe, confiscating the priories of the Knights, the revenue of Malta dropped disastrously. So when, in 1798, Bonaparte's armada hove to off the Grand Harbour, the hollow nut of the Maltese defences cracked and the Knights were ignominiously bundled out. Except for defacing the escutcheons and re-naming the streets, the French made little architectural impact on Malta, for soon their besieging army was itself besieged. Infuriated by the French action, the Maltese rose in insurrection, locking General Vaubois and his garrison within the fortress walls of Valletta and the Three Cities. Nelson was invited to come to the aid of the insurgents and his fleet blockaded the ports.

Over the Main Gate in the square, in front of what was once the palace of the Grand Master of the Knights, there stands the inscription: 'The possession of these islands by Great Britain was confirmed by the affection of the Maltese and the voice of Europe'. The transfer of power was confirmed by the Treaty of Paris. At first the British were embarrassed by the miles of fortifications and the innumerable palaces. There was no need for new building—only to move into property built by others. Except for the provision of minor structures in the Neo-Grec style, the vacated architecture of the Knights of St. John sufficed. Exceptions were the Anglican Cathedral, designed by William Scamp in 1842, the unmistakably Victorian structure of Edward Middleton Barry's Opera House, now destroyed, and the sprawling suburbs of Sliema and Hamrun. Even the British forts, sunk low into the ground, are hardly discernible. Isolated incidents of the Gothic Revival stand out like a sore thumb—the Addolorata cemetery, the Methodist church at Floriana and that incongruous little Gothic house in that most classical of civic squares in front of Gafà's cathedral at Mdina. Although the Baroque has passed, its spirit lives on in the flamboyant chromium carcasses of the richly painted buses, in the strong contrasted colours of the traditional Maltese boats, and in the floral decorations and interweaving gilded lines with which each driver ornaments his lorry. It is as though the bright sun, which in summer bleaches the landscape, causes the Maltese to exude their pent-up love of rich colour and flowing line in the production of this very characteristic folk art.

* For further detail of the construction of Maltese buildings see my book *The Building of Malta*—1530–1795, Tiranti, paperback edition 1967, p. 197.

MALTA PAST

The massive fortifications that abound in Malta are well exemplified in the Cottonera lines, a semi-circular work including eight bastions and two semi-bastions, with a circumference of three miles, that encloses the Three Cities (Senglea, Vittoriosa and Conspicua) on the landward side. It was built in 1670-80. 4, shows part of the St. James's bastion with, beyond it, the Zabbar Gate.





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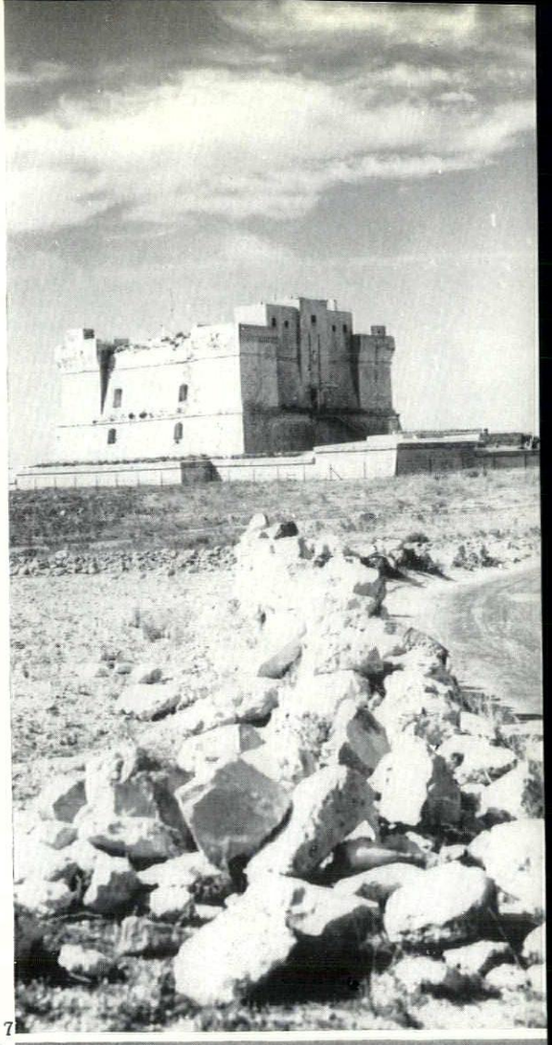

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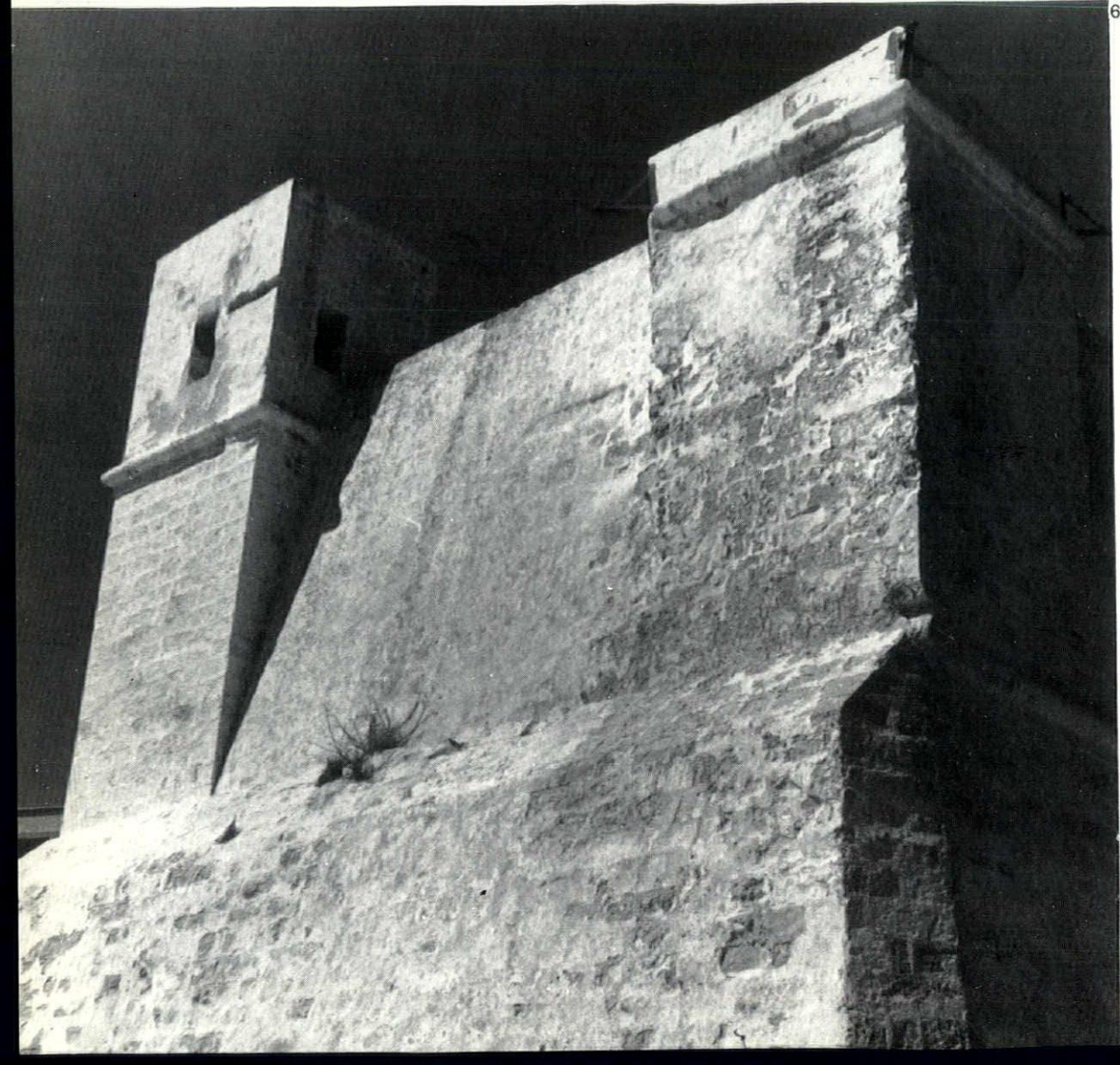

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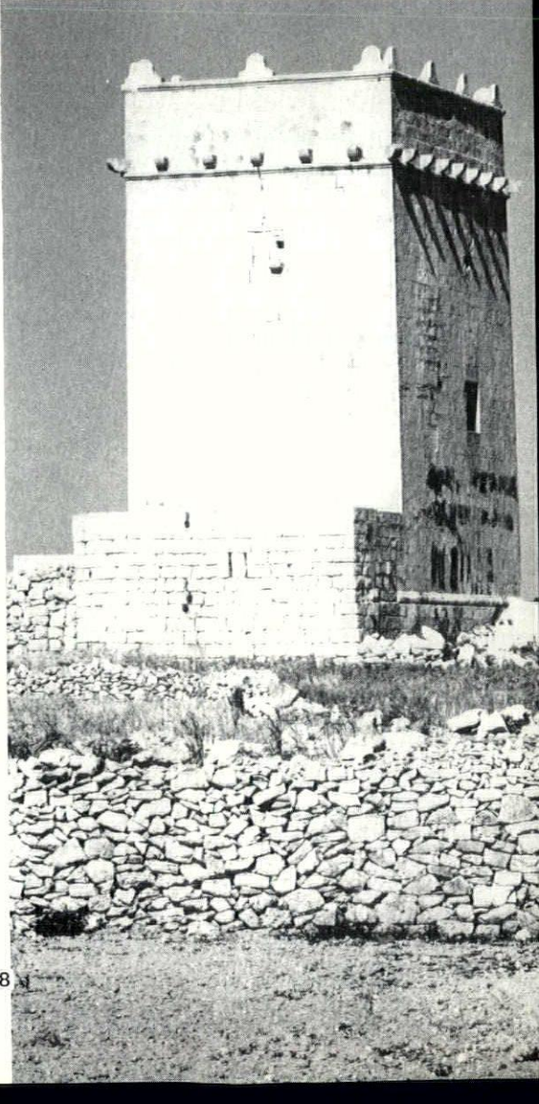

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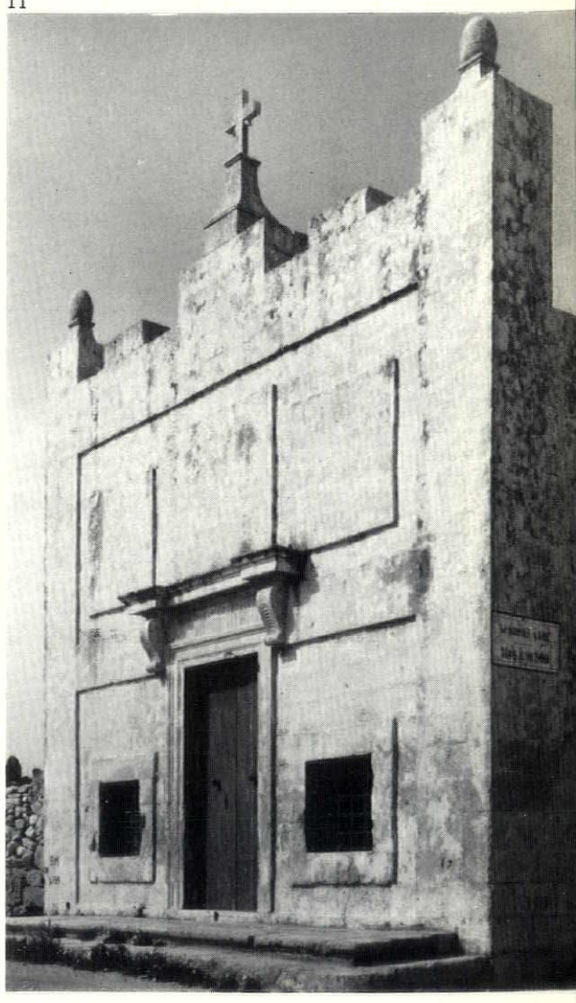
9

Malta's architecture goes back to pre-history: 5 (facing page), the remains of a megalithic temple (about 2,500 BC) at Mnaidra near the south-west coast. The majority of the island's monuments however date from after the Great Siege of 1565. They include, all round the coasts, small fortresses and watch-towers situated so that they could give warning of Turkish attacks. 6, the Wignacourt tower, looking out over St. Paul's Bay in the north. 7, Fort St. Lucian, guarding the vulnerable Marsaxlokk Bay—both these date from 1610. 8, the St. Cecilia tower at Ghajnsielm on Gozo.

MALTA PAST

11





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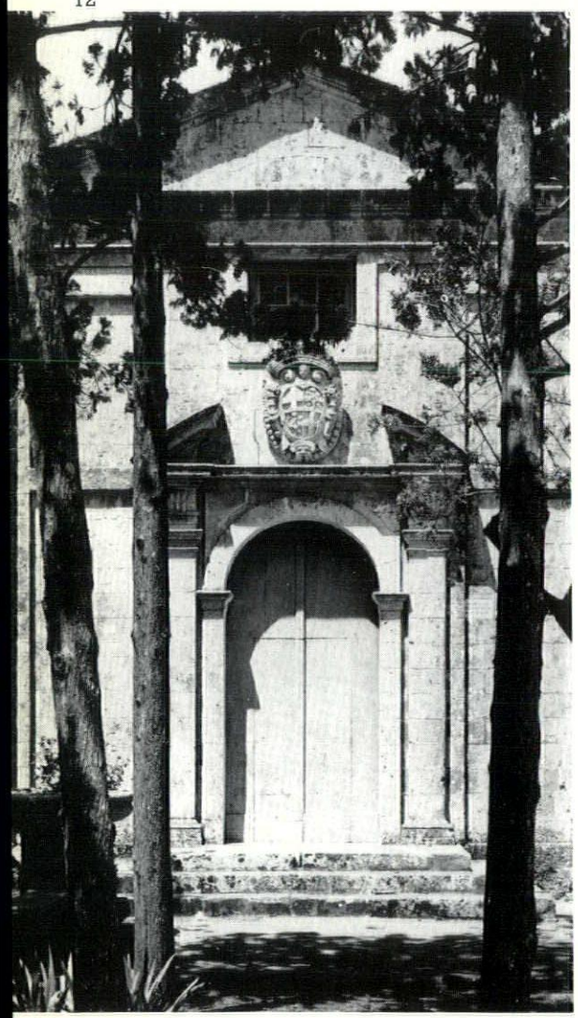
Also scattered over the island are many roadside chapels, some dating from the fifteenth century. 9, at Tal Ingrau, near Zejtun (1597). 11, a rather later one near Qrendi. That the same religious tradition continues is shown by 10, a much more recent wayside shrine, also near Qrendi.

A more sophisticated chapel than those shown on the preceding page is the sixteenth-century example below, 12, which stands in the grounds of the Verdala Palace, a semi-fortified country mansion built for Grand Master Hughes de Verdale not far from Mdina. Its architect was Gerolamo Cassar.

MALTA PAST

12



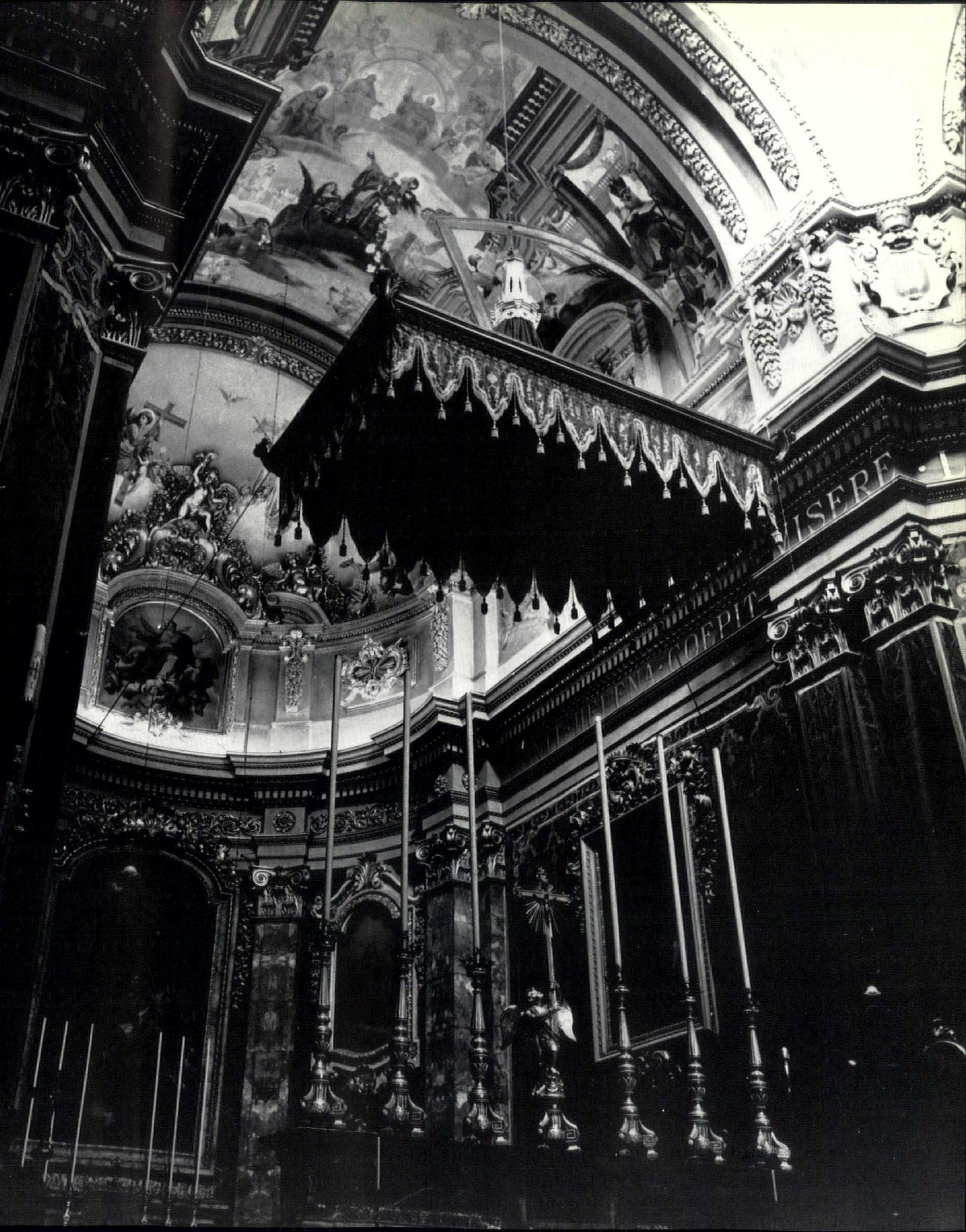


13



14

The towns and villages of Malta are enriched by noble Baroque churches. Two of them are shown on the right, both by Lorenzo Gafa. 13, the interior of the cathedral of Gozo (1697-1711). 14, the parish church at Zejtun (1692). 15 (facing page), chancel and baldachino of the new parish church at Birkirkara, by Domenico Cachia (1735-45).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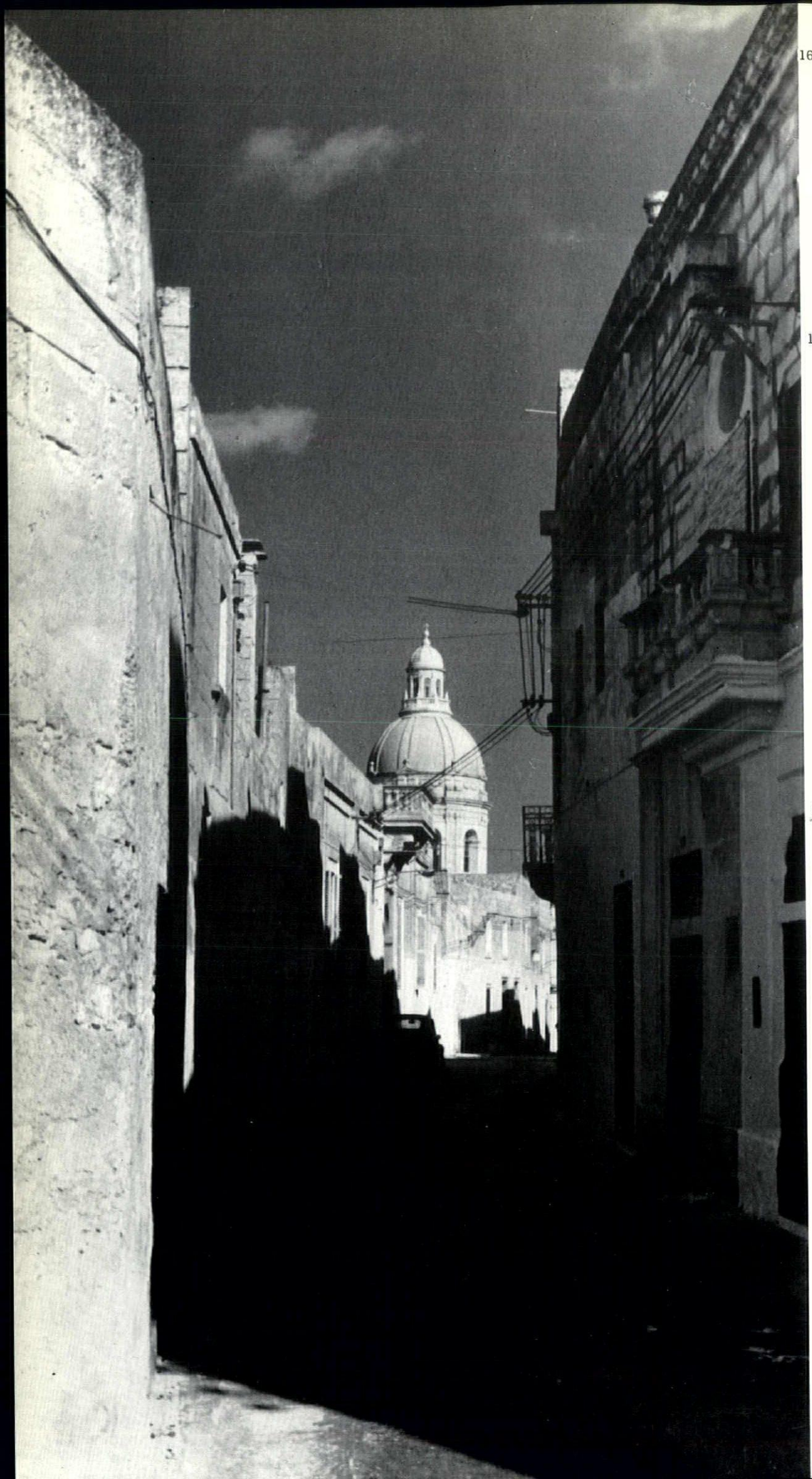



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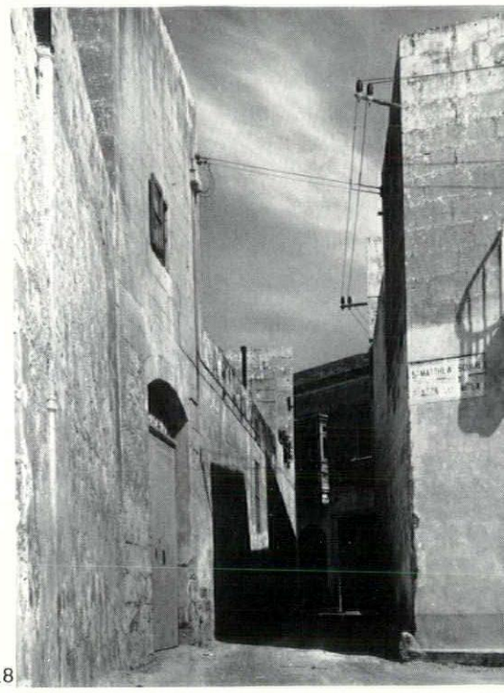

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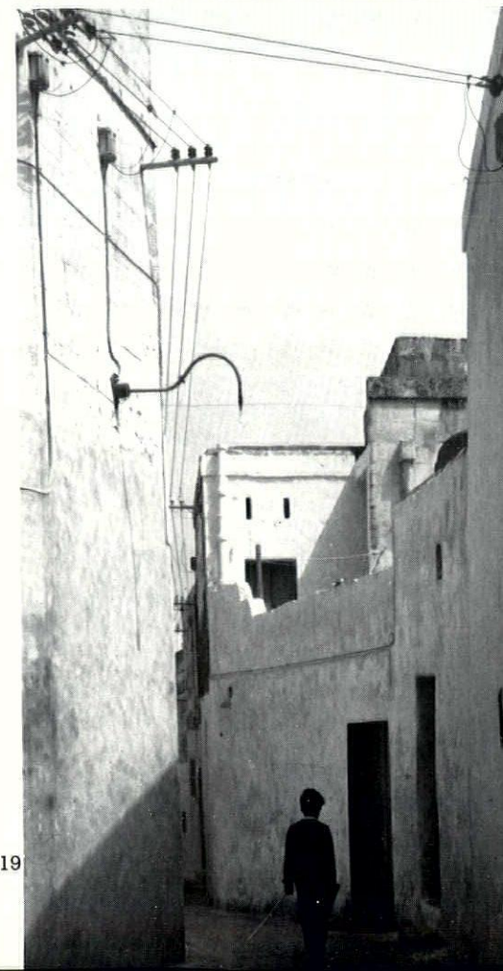

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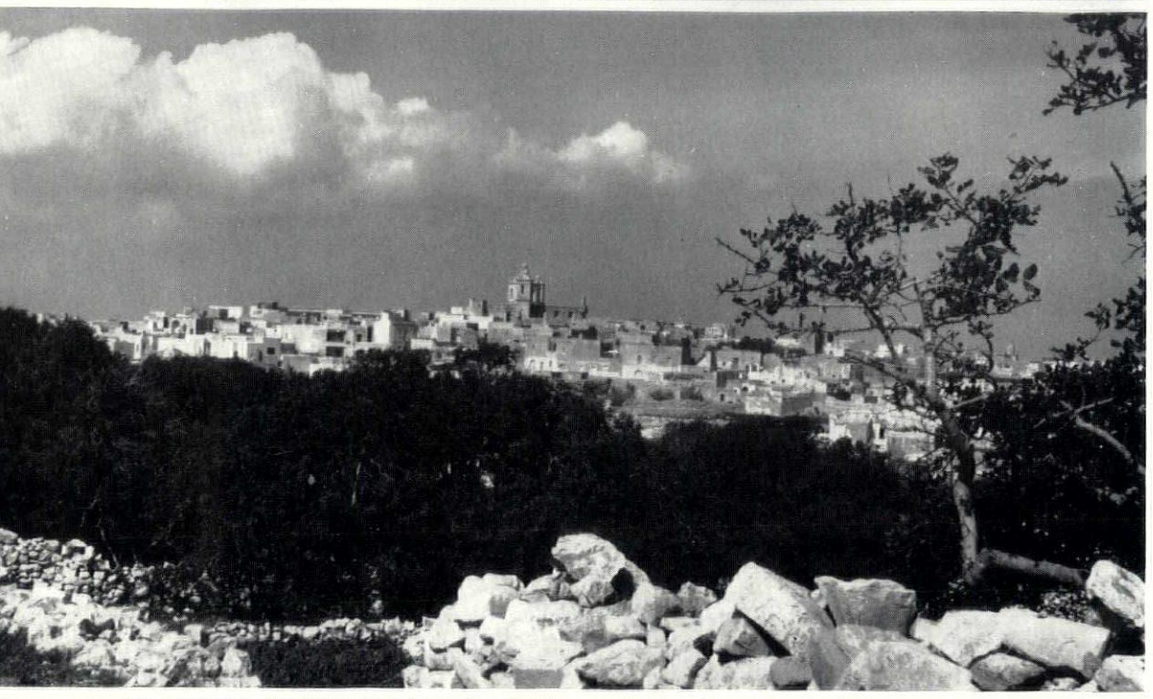




MALTA PAST

On the facing page: typical views up and down some of the narrow labyrinthine streets of which the Maltese villages are composed—opening up into small enclosed squares in front of the church which dominates the centre of each village. 16, at Siggiewi, looking towards the church which is another work of Lorenzo Gafà. 17, at Gudja; shrines like that mounted high up on the wall on the right are found all over the island. 18, at Qrendi. 19, at Gharghur.

From the outside the villages are seen as close-packed conglomerations of small stone houses dominated in almost every case by a domed parish church. 20, Siggiewi from across the fields. 21, Qrendi from a country road. The coastal towns have the same compact character: 22, St. Julians, north-west of Valletta, looking towards Spinola Point.



James Morris

THE BRITISH IN MALTA

Grand Harbour was the focal point of the British presence in Malta. It is bounded on one side by Valletta and on the other by a series of peninsulas, the two most important of which are Senglea and Vittoriosa. These, with Conspicua at their base, constitute the so-called Three Cities. 1 (facing page) is an air view of Vittoriosa. Here was the headquarters of the Knights of St. John at the time of the Great Siege, the town then being called Birgu. Their strong point was Fort St. Angelo, on the tip of the peninsula, which subsequently served for many years as British naval headquarters.

Photographs exist of St. Mark's Square in Venice after the campanile had fallen down in 1902, looking forlornly but at first glance inexplicably deprived. I am reminded of them now by the Grand Harbour at Valletta, which really is the grandest of harbours, and is engraved on all our imaginations. Something is missing there too—not a building, but a Fleet. The British battleships lie there no longer, grey and towering at their caissons, broad in the beam but delicate of upperwork, one behind the other beneath the fortress walls. The gay *dghajsas* no longer flit about cushioned deep with sailors, and the admiral's pinnace does not often chug its haughty way towards a pink gin with His Excellency. For a whole generation of Europeans Malta without the Royal Navy is St. Mark's without the bell-tower: not for any ideological reason, or even necessarily with regret, but simply because those ships seemed as essential to the scene as the ramparts of the Knights themselves. They were part of the architecture.

Now they are gone. Malta, for so many years the headquarters of the British Mediterranean Fleet, has little to show of the British naval presence beyond a flag or two, some mostly Maltese sailors and a portly leading rating I saw one day chugging gloriously up French Creek in an inflatable dinghy. Even the brass on the boats of the Grand Harbour Ferry Service, lying in the lee of Fort St. Angelo, is a little tarnished these days: the United Services Sports Club at Marsa, not so long ago one of the jolliest places in the Mediterranean, still indeed has parking space reserved for the Captain of Golf, but has sadly lost paint and panache.

There are still British air bases and battalions in Malta, but it was the Navy that really counted, historically and aesthetically. It is true that Nelson originally failed to grasp the strategic meaning of Malta, and at first the British showed no insatiable appetite to possess it, but in the end its connection with the British Empire was essentially a naval affair. The British themselves saw it in terms of firepower, fuel and convoy routes; the Maltese thought of the Empire primarily as an employment exchange. Both attitudes were justified by history. For the Empire Malta proved its worth at the very end, when its possession altered the course of the second world war. For the Maltese the end of Empire was signalled all too clearly by the closure of the Naval dockyard and the threat of destitution.

For Malta the Raj *was* those battleships. The morganatic comradeships of Empire, with India, or Canada, or the tribes of Zululand, must have meant very little to ordinary citizens of this island. The denouement of Empire is symbolized now for the Maltese not by any lowering of ensigns or departure of pro-consuls, but simply by those empty moorings in the Grand Harbour, where *Nelson* and *Valiant*, *Barham* and *Iron Duke* once majestically lay.

None of the cant phrases of British imperialism applied to Malta. Here there were no hinterlands to be united, no spheres of influence to be established. No civilizing mission was required and the heathen had been redeemed, in a Papist manner of speaking, for centuries. Malta was a fortress, no more, no less. Of course the British adopted an imperial stance upon the island, as they did in Quebec and the Cape, two other imperial provinces with European cultures of their own. It was psychologically necessary, it seems, for the imperial race to feel itself a separate and self-sufficient elite. In Quebec the British habitually affected to understand no French. In Malta they erected a kind of imaginary colour-bar (the Maltese being not much swarthier than Welshmen), excluding Maltese from all the best clubs, and seldom inviting them to dinner-parties. Perhaps they found the pretensions of the Maltese aristocracy, which is rich in sonorous titles of inconceivable antiquity, a trifle comic: they certainly viewed from an eminence of Protestant condescension the struggles between spiritual and temporal influence in this controversially Catholic island.

At the same time this was the one place in the Empire where the British seem to have been over-awed by their environment, and by their predecessors in office. No feathered chieftain, shogun or sultan much daunted these imperialists, whose greatest strength was their conviction of utter superiority. 'Tyrannical, drunken, debauched, cheating, intriguing, contemptible Amirs' is how Sir Charles Napier defined the bejewelled Princes of Sind. Malta's previous incumbents, however, were in a class apart. One could not sneer at the Knights of the Order of St. John of Jerusalem. In so many ways they behaved just as the British did themselves, and honoured similar values. Fighting spirit, a taste for splendour, the team spirit and the family tradition—all these characteristics of the Order exactly matched the British imperial ethos, and made the Knights in retrospect sound like a very decent lot. 'A magnificent and munificent body of men', is how they were described by Sir Harry Luke, one of the last (and one of the best) British administrators of the island. Socially they were beyond cavil, too, being aristocrats not of any trumpery provincial creation, but from the great houses of European chivalry. This undoubtedly impressed the men of Empire, whose days of consequence so often ended, as Kipling cruelly wrote, when

> . . . . *the Middle Classes take them back,*
> *One of ten millions plus a CSI* . . . .

There was nothing ludicrous about the great floor of St. John's Co.-Cathedral, laid wall to wall with the slabbed escutcheons of the Knights, ornate with helmets, scrolls and patronymics, and marvellously suggestive of inherited privilege. These were rulers worth succeeding; they were not merely grand and white (some of them indeed actually British), but soldiers and sailors too—and dead.

So for the most part, one feels, the British hardly ventured to tamper with the heritage of the Knights. Generally they adapted respectfully to it. The house of the Commander of Galleys became the house of the Dockyard Captain. The Fort of St. Angelo became

HMS *St. Angelo*. Where the galleys had careened the ironclads refitted, and in the *auberge* of the Knights of Provence, who had seldom pandered to Maltese social pretensions, the committee of the Union Club scrupulously blackballed Maltese applications for membership. A British Governor sat in the Palace of the Grand Masters, where generations of soldier-priests had ruled before him, distributing the pomp of Empire in a very similar manner, and surrounding himself with the more or less sacred effigies of Kings and Queens of England. There was once a suggestion, wisely rejected, that one of the Knights' churches should be requisitioned for Anglican use; the narrow alley-way called Strait Street, notorious among the Knights for pleasures and skull-duggery, was lustily adopted by the bravos of the Royal Navy too, and known throughout the Fleet as 'The Gut'.

Today the British, in their turn, have handed over power. The Gut looks, to my innocent eye, quite respectable. The Union Club is the National Museum of Malta. The house of the Commander of Galleys was bombed by Britain's enemies during the last war. Only a wan rearguard keeps those flags flying over HMS *St. Angelo*, and the slave quarters in the fort below, once bomb-proof stores for the Navy, are now little more than shuddery tourist attractions. This particular layer of the Maltese palimpsest—the British, that is, upon the Knightly—can best be seen now, paradoxically enough, right at the top: for the Palace of the Grand Masters remains the headquarters of a British Governor-General, and is a lively last reminder of Malta's place in the structure of Empire.

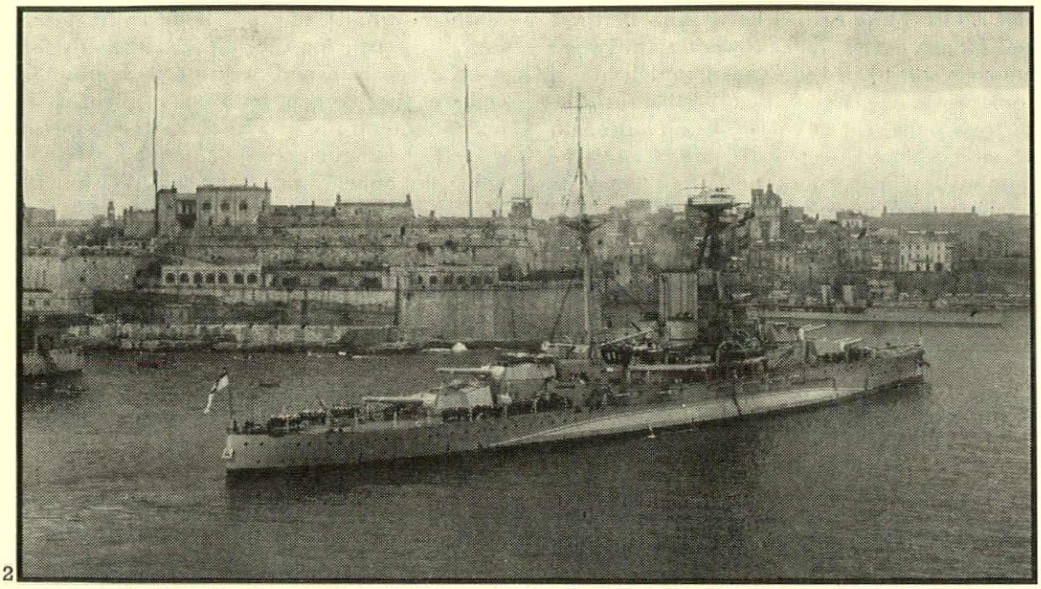
A radio mast stands upon the roof, and inside, above the arcades and hibiscus courtyards, above the clamour of the market in the Fuq il-Monti, His Excellency still presides among those royal portraits—copies, mostly, of Lawrence or of Winterhalter, but sumptuously evocative nevertheless of the old imperial order. The Legislative Council meets within the Palace, too, hung about by the superb Gobelin tapestries woven for the Knights, but seated at rows of very Victorian desks. Among the heraldics of the Grand Masters are displayed the successful bids for Government tenders—ballcocks for a technical school, steam-hammers for the docks, or a hundred thousand brass-plated door-hinges, classified still with all the dignity of the imperial bureaucracy. In the Armoury, beyond the peasecods, pauldrons and tassets of the Order, stand the skeletonic remains of *Faith*, one of the three Gloster Gladiator fighters which created a Maltese legend in 1940.*

On the stately oval staircase of the Palace two lists of names are inscribed. At the bottom are listed the 28 Grand Masters of the Order of St. John in Malta—Philippe Villiers de L'Isle Adam, Jean Parisot de la Valette, Ramón Perellos y Roccaful, Ferdinand von Hompesch. At the top are listed the 38 British Commissioners and Governors—Sir Hildebrand Oakes, Sir Henry Storks, General Sir John du Cane, or Field Marshal the Right Honourable Viscount Gort, VC, GCB, CBE, DSO, MVO, MC, ADC to His Majesty the King-Emperor.

Architecturally the British did not leave much behind. Here there are none of those glorious halls of Government, topped with pagoda or Saracenic dome, which gave an eccentrically Gothic flourish to the Raj elsewhere. There was no call in Malta for symbolic expressions of democracy, like the great Parliament buildings on the hill at Ottawa, and no need for the cool verandah'd villas, phlox in the flower-beds and banyans over the lawn, that sheltered the British Governors and Admirals of the tropics. The purposes of the British in Malta were essentially those of the Knights: what was good enough for a Grand Master was good enough for a Governor, and the harbours of Valletta and the Three Cities could hardly be more nobly fortified than they were already. Here and there, though, one may see physical traces of the imperial taste, varying in style down the generations as the ideology of Empire shifted. The most prominent imperial building is the Anglican Cathedral of St. Paul, splendidly situated on the shores of the Grand Harbour, downhill from The Gut, and built at the order and expense of Queen Adelaide—who, visiting the colony in 1838, was shocked to discover no Anglican place of worship. The tower and spire of this fine church, so Dr. Quentin Hughes assures us, honour an old Maltese tradition, but the spirit of the building is quintessentially English. Serenely it stands there above the warship moorings, placing its faith in the Established Church and the Queen's Navy, and its simple cool interior speaks of self-control and certainty. It is built for the devotions of clean-limbed, blue-eyed administrators of Macaulayan mould, governing their subject peoples by the rules of a classical education.

The Royal Naval Hospital on Bighi, though a Maltese architect built it, looks similarly composed, standing there in such symmetrical contrast to the warlike flamboyance all around: and beside the entrance to Grand Harbour an entrancing little Grecian temple, set among the flowers of the Lower Barracca Gardens, preserves the memory of Alexander Ball, the first British Governor of Malta. As Victoria's century passed, such gentle memorials of Empire became outmoded, and the British were concerned to build bigger, grander, more showy. Now the monumental Victoria Gate was cut in the flank of Valletta, a fortress-gate fit for admirals and empresses, leading direct from the waterfront beneath a gigantic royal crest, skew-whiff into the heart of the stronghold. Now Barry's famous Opera House (bombed in the second world war) arose beside Kingsgate to remind the Maltese of their masters' sumptuous wealth and lofty culture; and the Methodist Church in Floriana proclaimed in its bosomy Gothic elaboration all the evangelical fervour of the Victorian Empire in its heyday.

It was a militant age, the age of Salvation Armies and Boys Brigades, Jingo and G. A. Henty, and encrusted though the island already was with works of war, still the British could not deny themselves a few more. Rank beyond rank the barracks appeared, high above the sea at St. George, or crowned with a clock-tower on a hill beside the ancient capital of Mdina, as if to provide a virile riposte to its medieval reticence. From shore almost to shore in the northern part of the island, following a geological fault, the British erected a defensive system called the Victoria Lines—in commemoration of the Queen's Diamond Jubilee, that apotheosis of the imperial idea. This remains unmistakably a prodigy of Empire. Its glowering forts, sunk beneath grassy mounds, are linked by positively Khyberian walls, and were designed to keep at bay those hereditary enemies of the British Empire, the French. Some of the bastions are now used by the Malta defence



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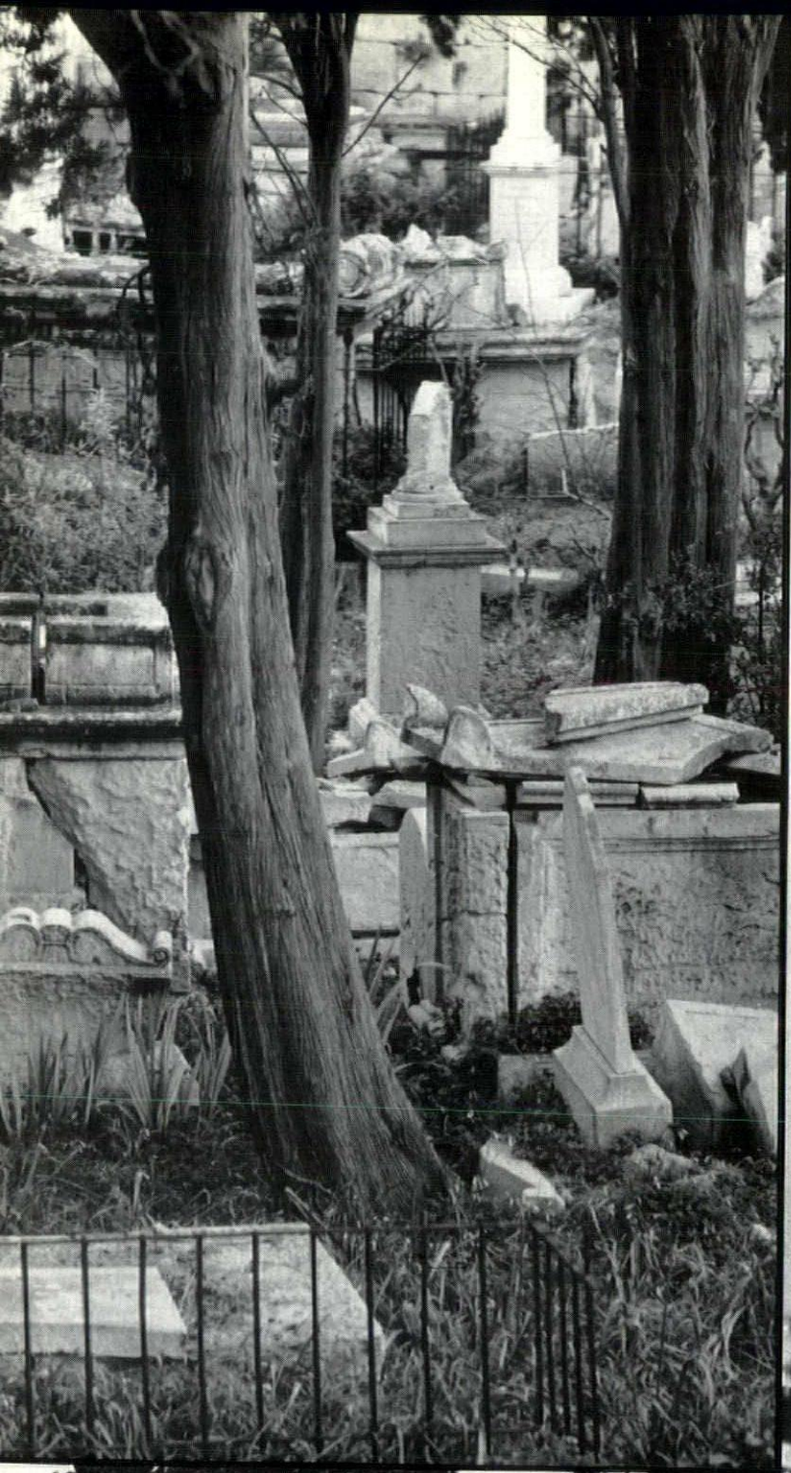
2, HMS Ramillies at anchor in Grand Harbour: a pre-war photograph. 3 (facing page, bottom), the Hostel of the Knights of Provence in Valletta, used during the British regime as the Union Club. 4 (facing page, top), a British contribution to Maltese architecture: the Victorian Gothic methodist church at Floriana.

* Recently removed for redisplay in the proposed military museum at Fort Manoel.





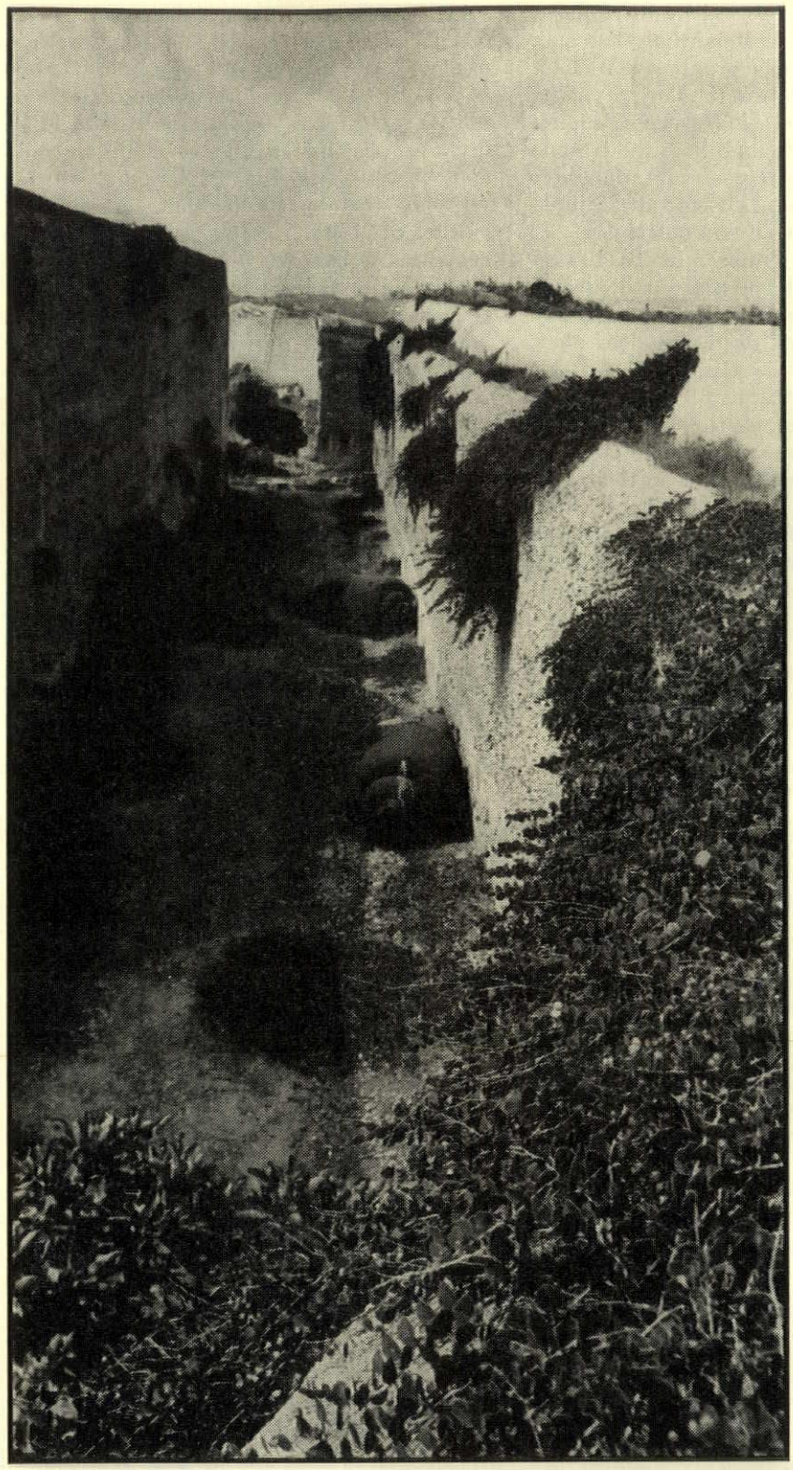

SACRED
TO THE MEMORY OF
CAPTN GEORGE WICKENS WILLES
WHO AFTER A SHORT ILLNESS
CLOSED A BRILLIANT
AND ACTIVE NAVAL CAREER
ON BOARD AND IN COMMAND OF
H.M.S. VANGUARD
IN THIS HARBOUR
ON 26th OCTOBER 1847
AGED 61 YEARS
"GO AND DO THOU LIKEWISE"

forces, but for me they are peopled still by the Lockharts, Yeatman-Biggses and Prendergasts of the imperial myth: up there in the tingling stony air of the island, spiced with herbs and soil-smells, I can still fancy the topees of the sentries at their watch, and catch the flash of the Maxim guns.

Malta had its moments of imperial significance in the nineteenth century, notably when Disraeli posted Indian troops there in 1878, and was accused of selling out the Empire to the barbarians. It was, though, in the period after the first world war that the island reached its imperial apogee. Politically this was a shaky time, as successive island constitutions were devised and withdrawn, and the endemic tensions of the place repeatedly erupted. Imperially it was a time of splendour. In those days the British Mediterranean Fleet was the most powerful single naval formation in the world, and when the second world war broke out, and Malta stood defiant beneath the Union Jack in the middle of *Mare Nostrum*, then for a year or two the island became the most honoured and heroic of all the imperial possessions. It was the only colony to which the British ever gave a communal award, as the Spaniards used to honour their cities and fortresses with high-sounding honorifics.

Of all this there is little to show—only scars, pill-boxes, memorials to the dead. Lordly though they looked at anchor, by the 1920s and 1930s the British had lost their imperial assurance, and were more likely to be restoring pre-Baroque village churches than building uncompromising cathedrals of their own. There was no successor style to the unmistakably imperial High Victorian manner, the late Empire-builders generally preferring mock-Georgian: Bauhaus left no mark on the Raj. Even the war memorials, once so florid or maudlin, became in the decline of Empire a little diffident; no epic monument commemorates Malta's great days of the 1940s, and their most telling memorial is a plaque affixed to the outside of Government House—'*To Honour her brave People I award the George Cross to the Island Fortress of Malta to bear witness to a Heroism and Devotion that will long be famous in History.* GEORGE R.I.'

So if historically the Empire reached its Maltese conclusion with a marvellous bang, architecturally it went out with a whimper, suitably expressed I think by the concrete pill-boxes one sometimes sees in the purlieus of holiday hotels on the island, prettied up with drystone walling to look like megalithic gazebos. All in all, for the best evocation of the whole imperial story, for a proper taste of its pathos, splendour and guts, one must not visit a fort or a rampart at all, nor even a cathedral, but rather potter for half an hour through the Protestant cemetery of Ta Braxia, outside the walls of Valletta, where the imperialists were buried. It is a gentle, weedy place, knocked about in air raids and supervised by pines, and in it you will find all the classic phrases of the imperial epitaph, as it is inscribed on slabs and obelisks across the world—'Fell from Aloft' . . . 'Died at Sea About 70 Miles from this Island' . . . 'Expired on his Way Home from India' . . . 'Died of the



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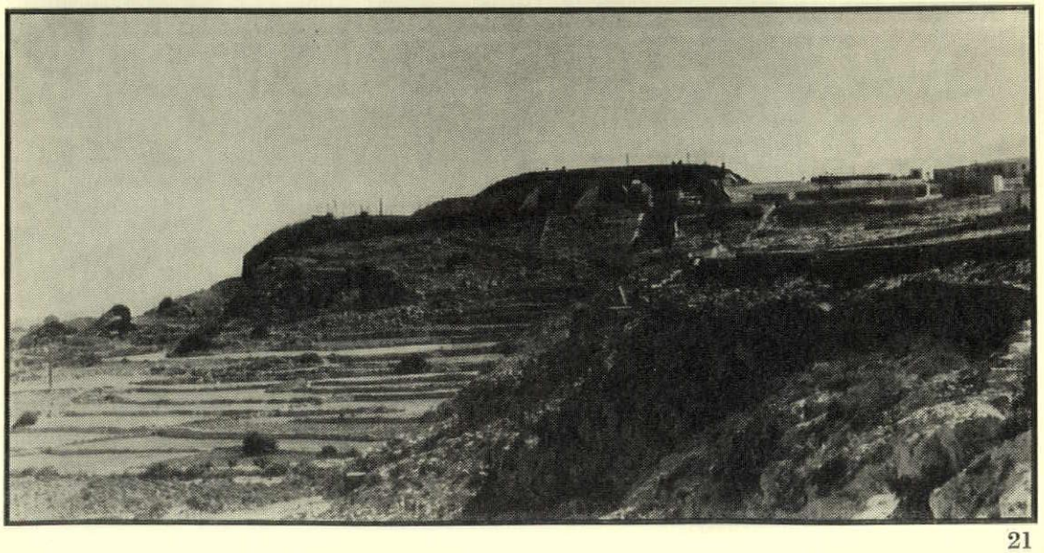


9

5, 6 and 7 (facing page), tombs and memorials—mostly to men of the armed services—in the English cemetery outside the walls of Valletta. 8, muzzle-loading guns in the ditch of Fort Leonardo, part of the line of fortifications constructed by the British after 1873 along the ridge of high ground that crosses the island north of Mdina—afterwards known as the Victoria Lines. 9, Fort Mosta on the Victoria Lines.

Cholera Fever' . . . 'Erected by his Fellow-Officers in token of their Melancholy Esteem'. Here lie in incongruous proximity William Paynter of St. Ives, Mate of the Barque *Adam*, and Thomas Acland Fortescue Esquire, Captain of HMS *Phoebe*; and here too is little Minnie, four and a half years old, daughter of an evangelical Battery Sergeant-Major—'I'M GONE TO JESUS! WILL YOU COME! !'

This is the stuff of Empire. In Ta Braxia cemetery the British presence still seems alive, and touches us more closely than any plume or gonfalon of dead grandee, aloof upon the floor of the Co.-Cathedral.

Architecturally, it seems, the British made few converts in Malta. The able Maltese practitioners continued to work in their own style, and one of the more unexpected triumphs of British imperialism is the Addolorata Cemetery at Paola, which looks from a distance magnificently High Anglican, but turns out to be uncompromisingly Catholic.

In manners and mores the imperial influence was more telling. At home the Maltese are said to eat glorious vegetable stews, cuttle-fish stewed in wine with nuts and raisins, eggs wrapped in slices of beef with olives and bacon. In public they stick almost universally to *la cuisine Anglaise* as it was in its dreariest post-war depression. Football pools, *News of the World*, Bingo, *Coronation Street*—all play their parts in the contemporary culture of Malta. Everywhere military ways survive. 'As from 2000 hours', says a notice in the Malta Hilton, 'jacket and tie will be required'. Lady Bayley and the Misses MacDonald still do the flowers at the Anglican Cathedral, Instructor Captain Malkin and Squadron Leader Fiddaman are among the sidesmen. Shiny as ever is the heavy brass name plate of the Malta Gas Office: empty but still in business are the bars the Navy used, The Happy Return, The Lucky Star, even the Cricketers' Arms on the shore of Marsaxlokk Bay.

Most poignantly of all the British have left behind a legacy of loyalty. The Maltese are probably not so sentimentally Anglophile as the British like to think, but they do retain a nostalgic affection for the lost Empire and its values. Many of those bars are called The Friend To All, a eponym for the grand old Sir William Dobbie, Governor of the island from 1940 to 1942. Most Maltese still appear to think that British was, on the whole, best, and when the superb warships of the United States Sixth Fleet sail into the Grand Harbour, bristling with rocketry and electronics, they are disparagingly compared to the *real* battleships of the old days. It is to Australia, at the other end of Empire, that most of the Maltese emigrants go, often coming home again talking a vividly Mediterranean variant of Strine.

The Maltese are of mixed ethnic origins, part Arab, part Phoenician perhaps, but a century and a half of British rule has given the island an oddly northern ambience, steady and self-controlled. The traffic flows politely in Malta. The change is sure to be correct. The policemen still look remarkably like bobbies. Though the law is derived from the Roman code, and is handed down in Valletta from a vast and brand-new Classical palace, still the manner of its administration remains imperially familiar. The Englishman in Malta still does not feel altogether abroad.

The Maltese also retain from the Imperial connection an aura of glory. The most splendid episode in Malta's history was the second great siege, of 1940, which was also the island's chief contribution to the epic of Empire. The first Great Siege, in 1565, was hardly more than a battle between alien feudalisms. The second was Malta's own, and there was scarcely a Maltese who did not play his part in it. In the whole story of the British Empire there was no more creditable episode—this small and distant subject people making its own heroic sacrifices in the last and most worth-while of the imperial wars.

It is easy nowadays to smile at the spit and polish of the old Fleet, the ritual splendour of Admiralty and the heirarchal pomp of Government: but never did pageantry pay off so well, or leave more brave an after-glow.

It is over. The destroyers have gone like the galleys before them, and the Maltese remain Maltese. Their language is reviving, their own island shapes and textures are coming into fashion, and year by year the island returns into the comity of Europe. Soon, as the Germans, the Italians and the Scandinavians flock in, to make of this another Majorca, or a cheaper Sardinia, the British will be no more than foreigners in Malta, as detached from the monuments of their imperial past as Italian tourists in Bath. Already they are beginning to lose their proprietary air, as the imperial instincts and memories fade, and only the more elderly and Guildfordian of them pause for long before the lists of Admirals Commanding, in order to demonstrate their familiarity with the Culme-Seymours or the Fortescues.

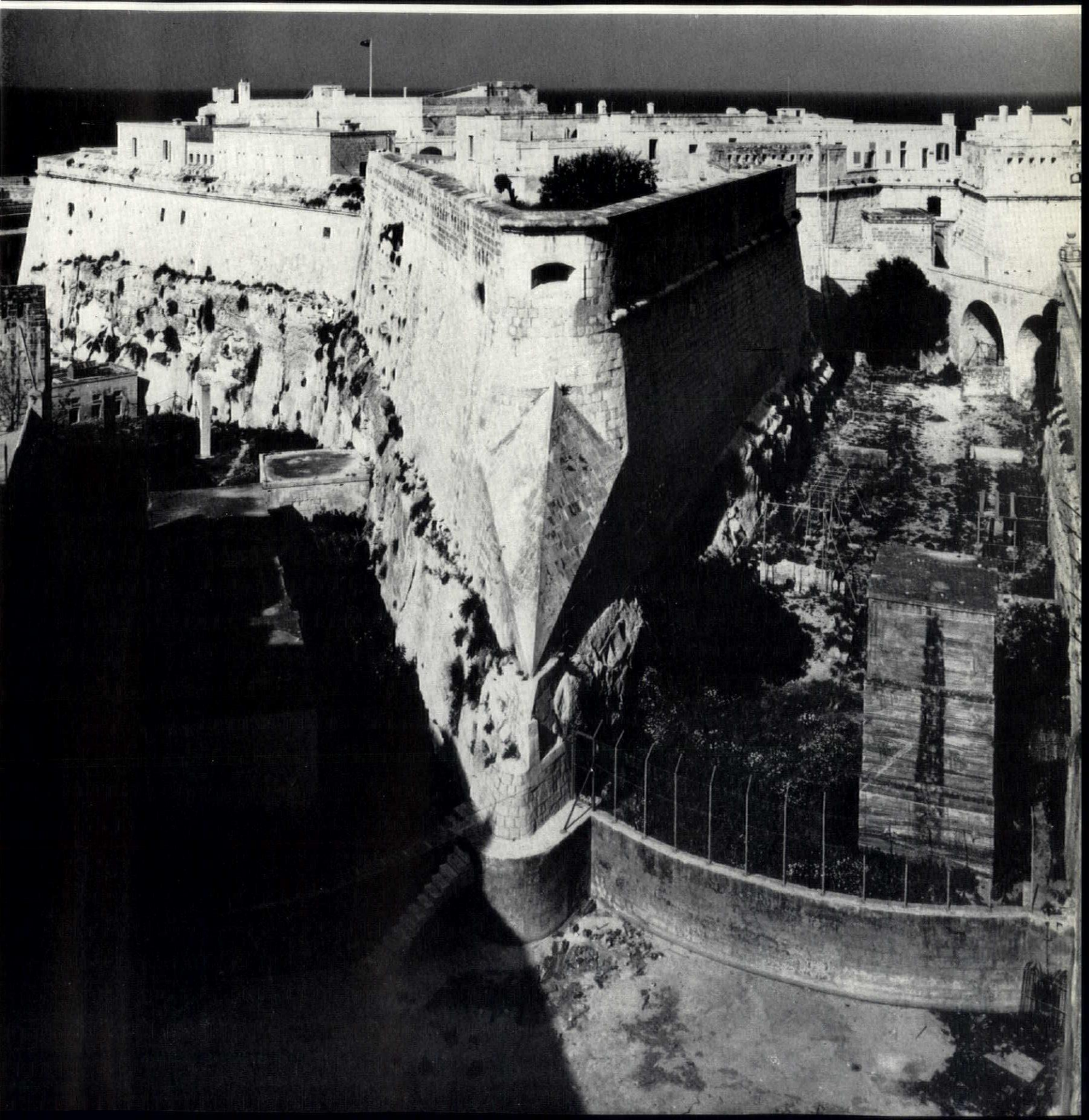
In the end, no doubt, we shall even forget those battleships. When I was last in Malta the only British warship in Grand Harbour, tucked away in Dockyard Creek beside the Steam Bakery, was the coastal minesweeper *Stubbington*, 360 tons.

'Stubbers', I assumed, for short.

10, a typical example of the small bars, opening straight off the street, to be found in great numbers in Maltese towns and once frequented by British servicemen.



VALLETTA





After the foundation of the city of Valletta in 1566, buildings rose rapidly on the rectangular plots. Town planning regulations controlled their elevations, required their construction up to the line of the street, and insisted on elaborate decoration of the corners of those houses which occupied the junctions of the streets. The most characteristic early buildings are by the Maltese architect Gerolamo Cassar and can be distinguished by their Mannerist detailing. Cassar designed the Grand Master's Palace, the co-cathedral of St. John, its vast barrel-vaulted nave decorated with the frescoes of Mattia Preti, and a number of the auberges, or hostels of the Knights of St. John. The auberges of Aragon, Provence and Italy, still standing, are attributable to Cassar. The hospital of the Order, now being restored after bomb damage, is another important building of the sixteenth century. Late in the following century, and during the first half of the eighteenth century, Valletta was embellished with Baroque churches and palaces. They still abound in the steep-stepped streets. Merchants Street is particularly rich, with the Church of St. James (1710), the Parisio Palace, the Municipal Palace and the Castellania. The period culminates in the splendid Auberge de Castile et Leon, designed by the Maltese architect Domenico Cachia in 1744. A city of fortifications and palaces, Valletta still stands as the great monument to the rich culture of the Knights of St. John.

J.Q.H.

5 (facing page, left), the Municipal Palace in Merchants' Street, a typical late building of the Knights. 6 (facing page, right), the escutcheon of Grand Master Vilhena above the doorway of the auberge of Italy. 7, a typical Valletta street scene, with tiers of overhanging balconies. 8, the auberge of Castille and Leon, designed by Domenico Cachia in 1744 and occupying a commanding position near the landward entrance to the city.





MDINA

Mdina, the old capital, lies on the tableland of Malta, a walled silent city cut off from the pulsating life of the plains by a hundred-foot escarpment, a ditch and a circuit of fortifications. It is a city of old palaces and quiet houses, where it is possible to live for years without seeing or meeting one's neighbours. Some of the palaces, built in the so-called Sicolo-Norman style, date back to the suzerainty of the Aragonese and the Castilians. Over all hangs the impressive bulk of Lorenzo Gafà's seventeenth-century cathedral. Mdina is steeped in history and miraculously preserved. J.Q.H.





2





5

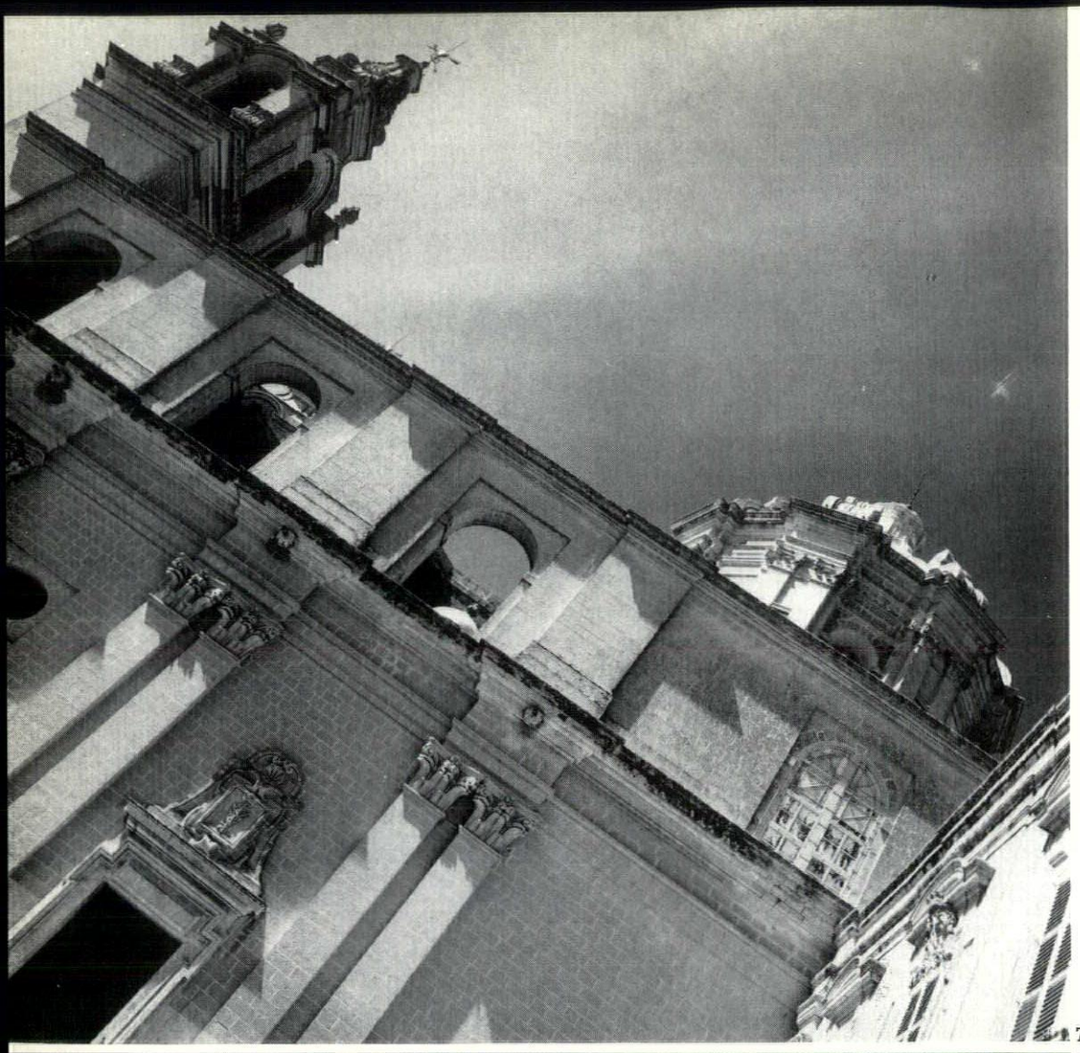
1 (facing page), Mdina, crowned by its cathedral, on its commanding site overlooking a landscape of stone-walled fields. Within the walls of the city are narrow streets connecting quiet stone-paved squares, 2. The main gateway. 3, pierces the walls on the south side. It was built in 1724 and bears the arms of Manoel de Vilhena. Just inside the gateway, 4, is the Magisterial Palace, built for Vilhena by Giovanni Barbara. 5, St. Paul's Square, of which the cathedral (on the right of the picture) occupies the east side. 6, Villegaignon Street, which crosses the city from the gateway shown in 3, passing along the west side of St. Paul's Square.





6

MDINA



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8

The cathedral of St. Paul at Mdina, 7 and 8, was built by Lorenzo Gafà in 1697-1702 after its Norman predecessor had been destroyed by an earthquake. The dome, which can be seen from nearly all over the island, is Gafà's finest. 8 shows the drum of the dome and part of the rich Baroque interior.

MALTA PRESENT

STREET SCENE

The drawings on this and the following pages, made on a recent visit to Malta by Richard Demarco, the Edinburgh artist and gallery owner, illustrate for the most part the narrow streets and tall, close-packed houses typical of the towns—Valletta, Senglea, Vittoriosa and Conspicua—surrounding the Grand Harbour.

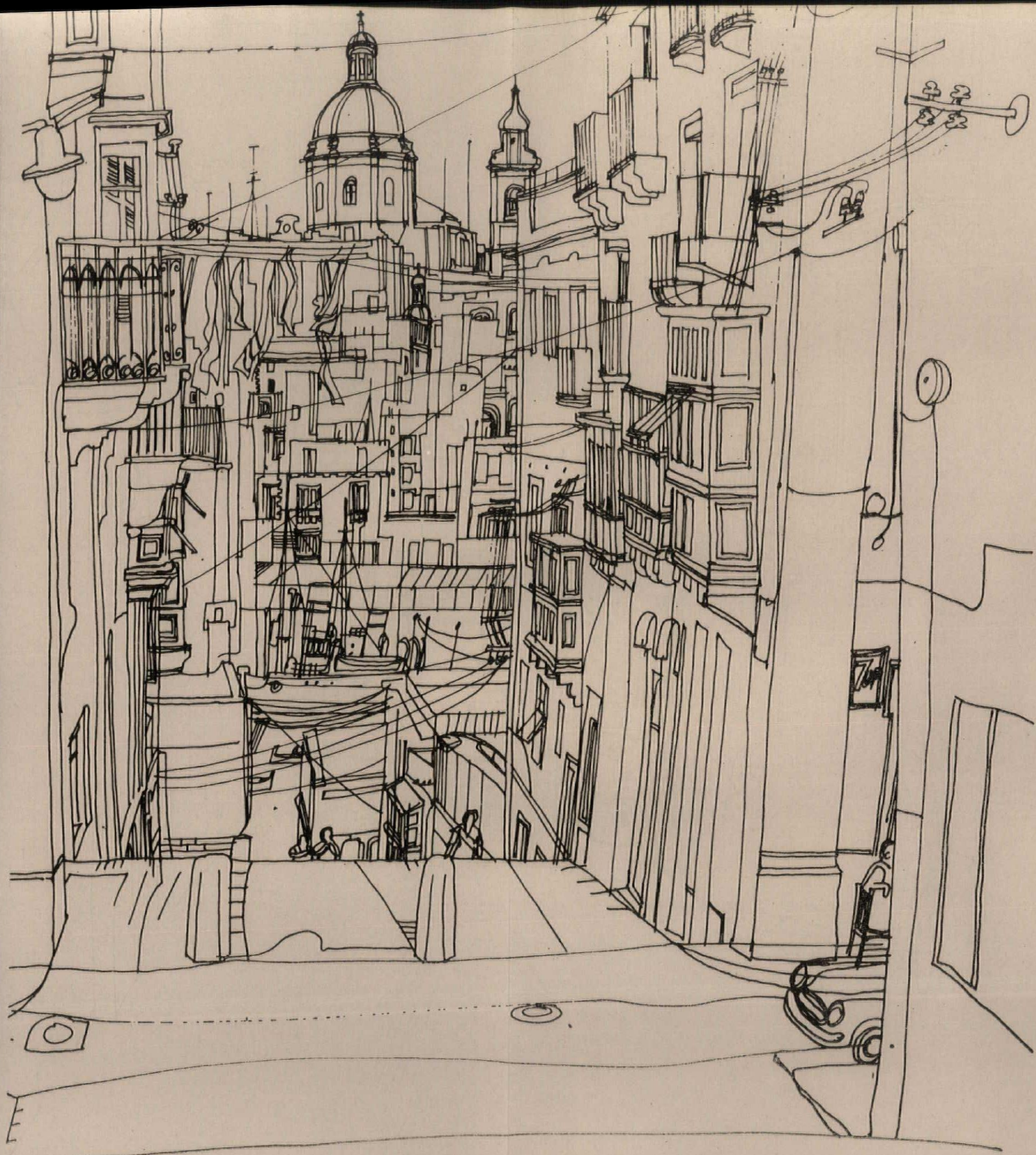



ST. Joseph STREET
(TRIQ SAN GUZEPP)
Senglea
Malta
Richard Demarec
1968


FREZZ 7
FIERA
L'IMMAKULATA
21-7-68
F'PIAZZA
TONQUX
128
ORATORY STREET
TRIQ L'ORATORJU
COSPICUA
MALTA.
Richard Dem


MAIN GATE
VITTORIOSA.
Richard Demarec

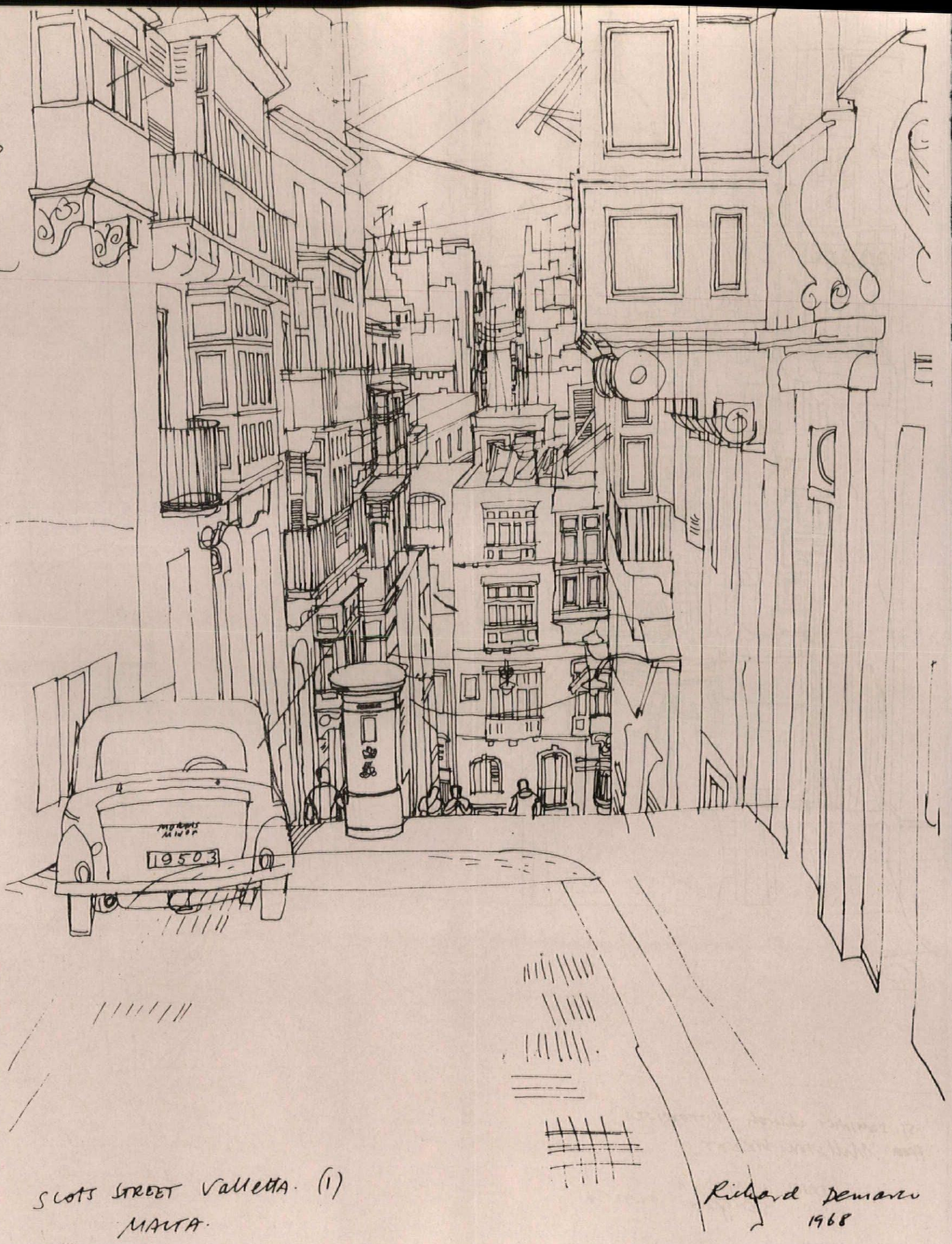

RNELLA STREET
TRIQ IR-RNELLA
Richard Dema



ST. DOMINICI church . VITTORIOSA.
FROM Millstone STREET

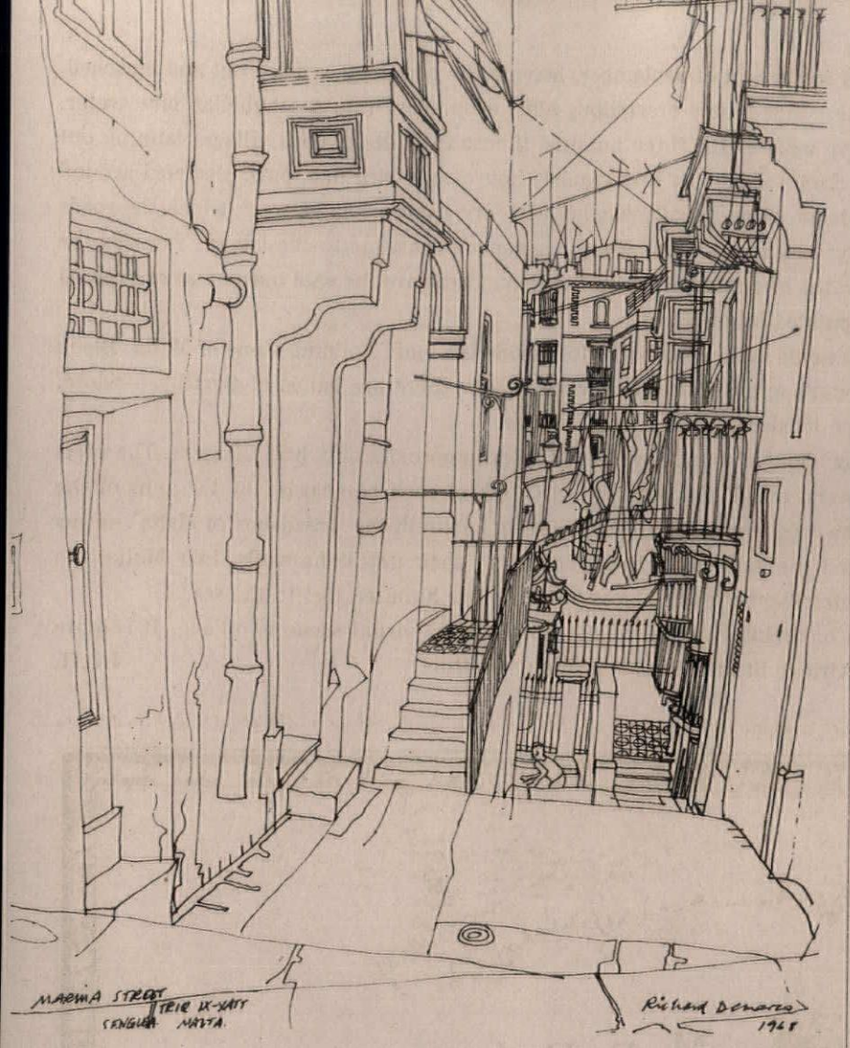
TRIQ IL-MACINA
SENGLEA . MALTA.

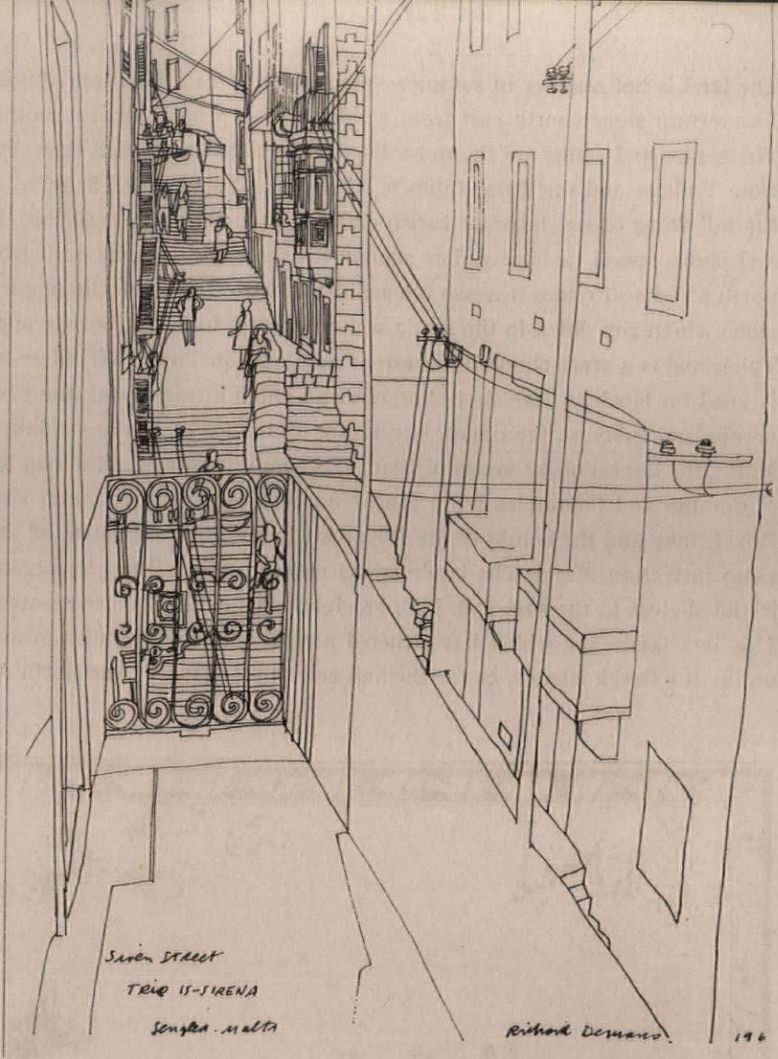
Richard Demarco
1968



SLOTS STREET VALLETTA. (1)
MALTA.

Richard Demarco
1968


MARSIA STREET TRIQ IX-XATT
SENGLEA MALTA
Richard Demarco
1985


Siren STREET
TRIQ IS-SIRENA
Senglea . Malta
Richard Demarco
196


Richard Demarco

LEA. MALTA.

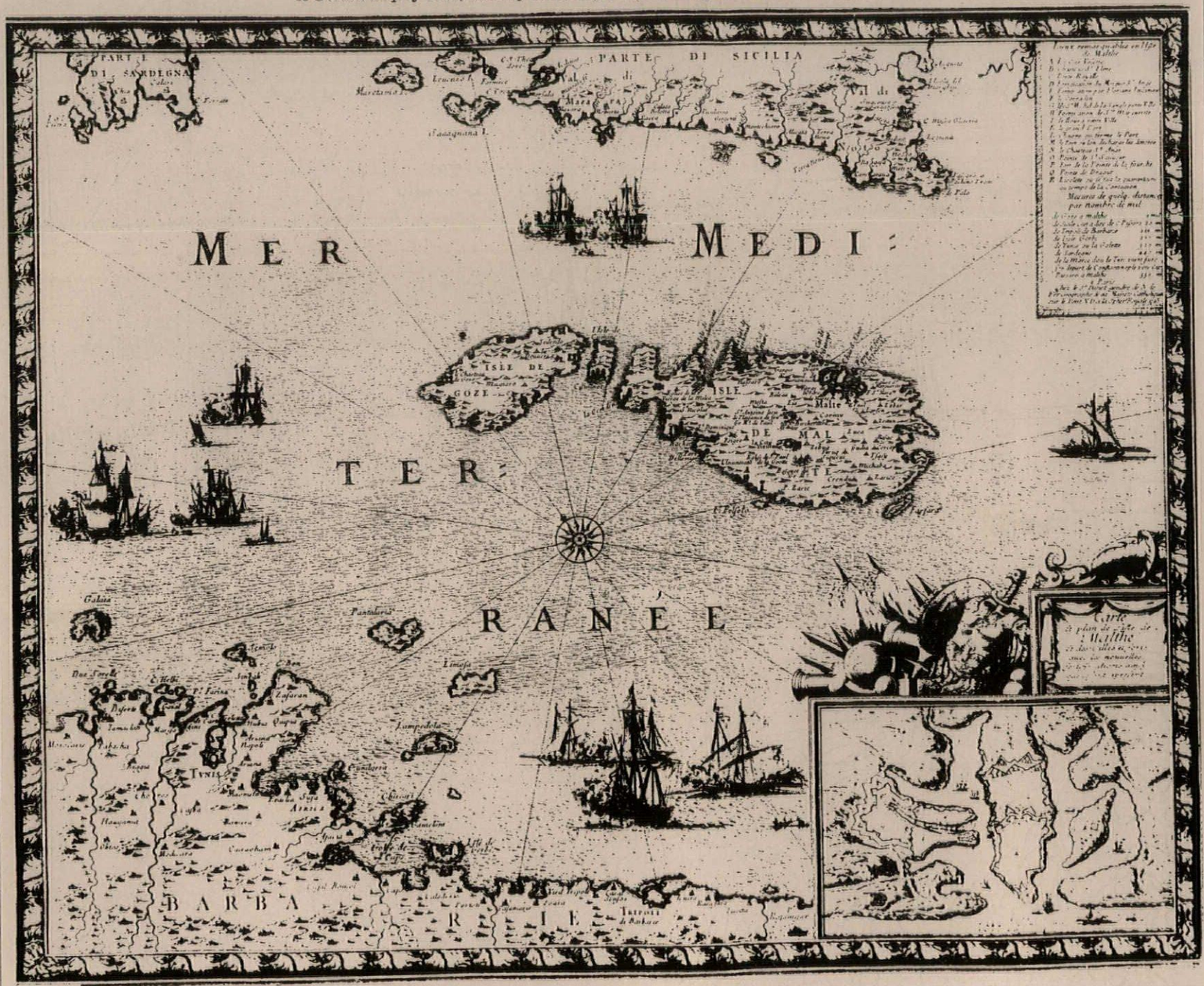
The land is hot and dry in summer—practically no rain falls from April to the end of September, leaving the countryside dried out and bleached. The terrain slopes north-east from a ridge which runs across its southern side where precipitous cliffs drop sheer into the bubbling blue water. The centre and south are the most densely populated areas, and there live most of the three hundred thousand Maltese, with villages fanning out from Valletta and the Three Cities of Vittoriosa, Cospicua and Senglea. Each village has close-packed houses, all with flat roofs, clustered around the tall dome of its elaborate parish church. Then the fields splay out, terraced and neatly banded with dry stone walls between which the roads and paths thread their way. The shallower coasts are indented with bays and coves which give an extended coastline to the island. Towards the north a series of ridges traverse the peninsula, with tiny scrub clinging to the bleached surface of the rock. These are the wild open areas of exposed stone which run down to the sea, a welcome relief from the densely populated urban areas.

The island is a great chunk of limestone and looks it. The soft Globigerina cuts into cubic blocks to provide the main building stone of Malta. Block is piled on block to give that characteristic cubic formation of the island's architecture. Above and below there are bands of Coralline—white, porous and rubly on the ridges, but harder on the lower strata, yielding a local variety of psuedo-marble.

Malta, the largest of the group of islands, is some seventeen miles long by about nine miles wide, with Gozo approximately half that size. The islets of Comino and Cominotto lie in the sound between their two larger sisters, and Filfla, that jagged chunk of rock bombarded by the guns of the Royal Navy and the bombs of the Royal Air Force, stands desolate off the southern coast. Gozo, called by Laparelli the 'bread-box of Malta', seems more lush than Malta. The landscape is rolling, with hill-top towns, and the fields seem less obscured by their dry stone walls. Like Malta, the island shelves to the east with high precipitous cliffs along its south-western seaboard, in places dropping five hundred feet to the sea.

This is a landscape which has fathered a particular and peculiar form of architectural expression so that the visual scene is unique. It is quite unlike the Greek islands, or the Sicilian coastline, or indeed the North African littoral. This is a singular setting. **J.Q.H.**

A French map of 1723, showing the strategic importance of Malta and Gozo, lying between Sicily and the coast of North Africa.



LANDSCAPE

1, cultivation below Dingli cliffs, on the western side of the island. The pattern of stone field-walls goes right to the sea's edge.



LANDSCAPE

2, the terraced landscape near the western coast of the islands: Mtahleb church on the skyline, with its village—partly of cave-dwellings—under the hill.
3, typical landscape, divided by stone field-walls, near Gharghur. The fields step up towards the Victoria lines.
4, (facing page), the close-packed buildings of Qrendi village in the south of the island, topped by Baroque church-towers: in the fore-ground, a typical stone-walled country road.
5, cubic village architecture crowned by the domed church: Zebbug on Gozo.



2



3



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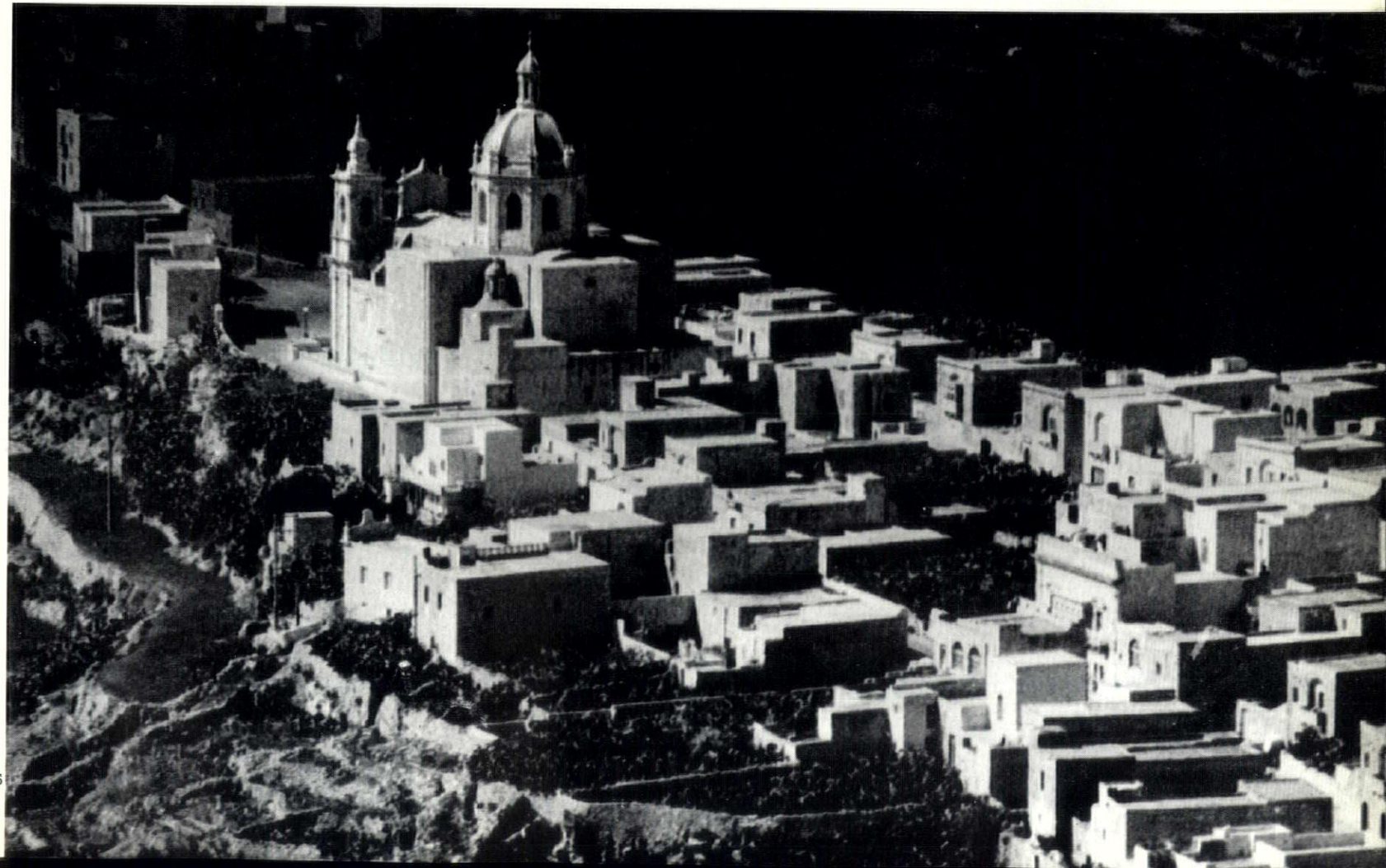


5

LANDSCAPE

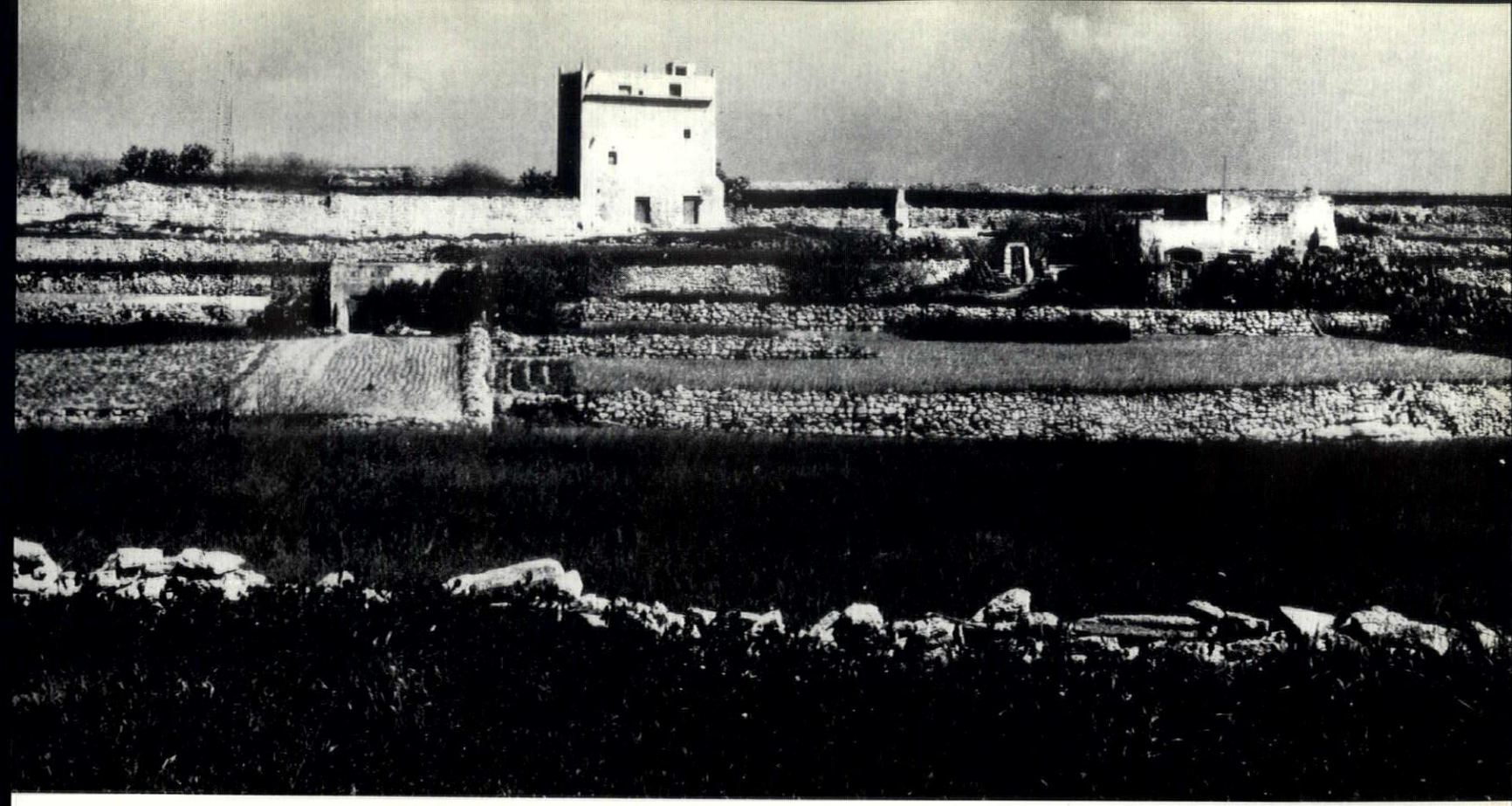
The winding roads that cover the island are bounded by stone walls punctuated by rectangular stone blocks which are small farm houses. 6, near Naxxar. 7, near Siggiewi with, at the turn of the road, one of the chapels found by the roadside in all parts of the island.
8 and 9 (facing page), fields and farms near Siggiewi and near Gharghur.



6 8



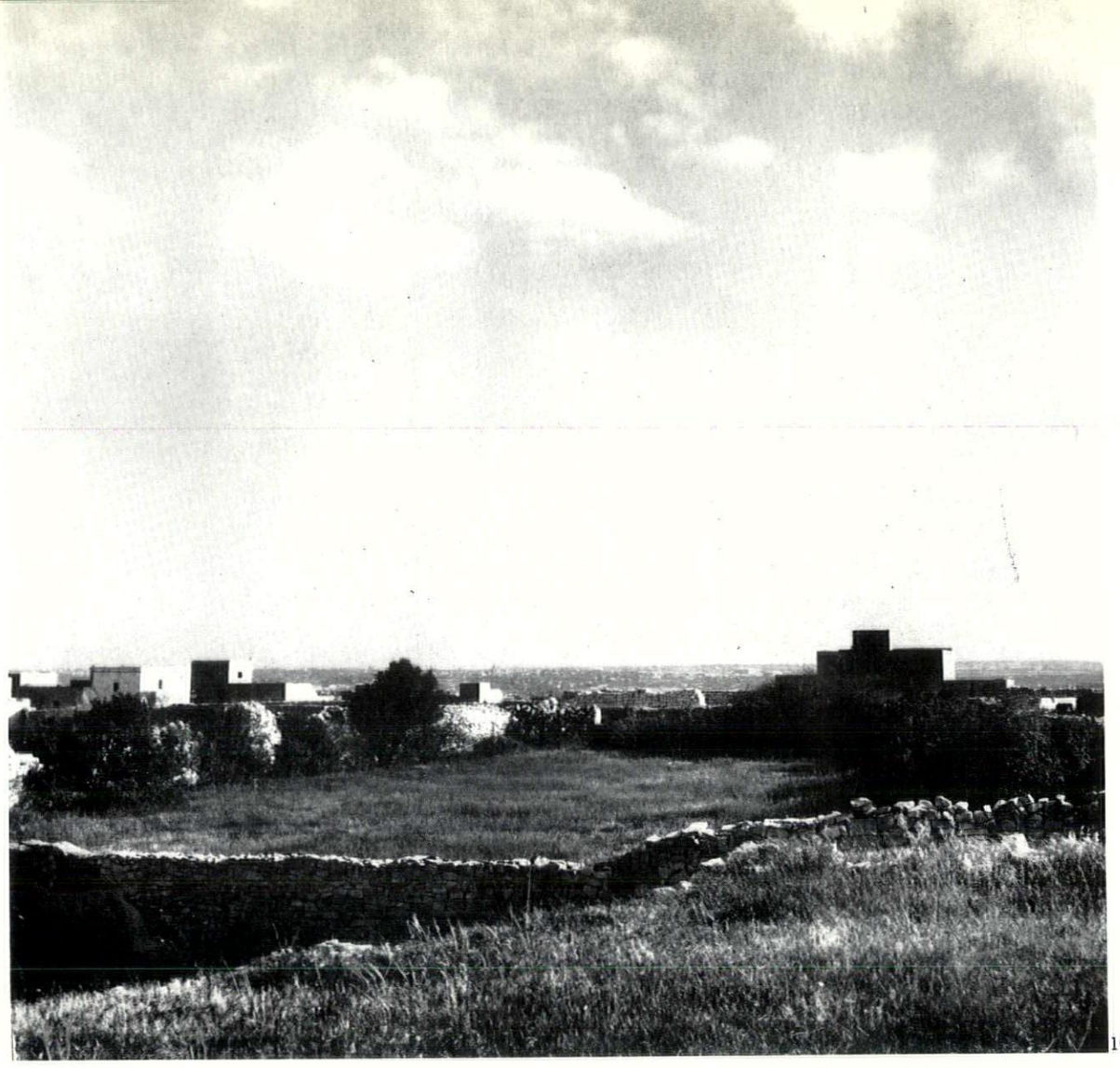
7 9





LANDSCAPE

Inland and coastal landscapes. 10, farms and fields near Naxxar, 11, a typical stone-built roadside farm in the south-west of the island, between Siggiewi and Qrendi. 12 (facing page), coastal scenery with, on the cliff-top, one of the lookout towers that Malta's vulnerability to attack caused to be erected on every promontory. 13, a closer view of a redoubt at Marsalforn on Gozo, where a tiny harbour provides shelter from the northerly gales; in the fore-ground, some of the salt-pans found in many places round the coast of Malta and Gozo.



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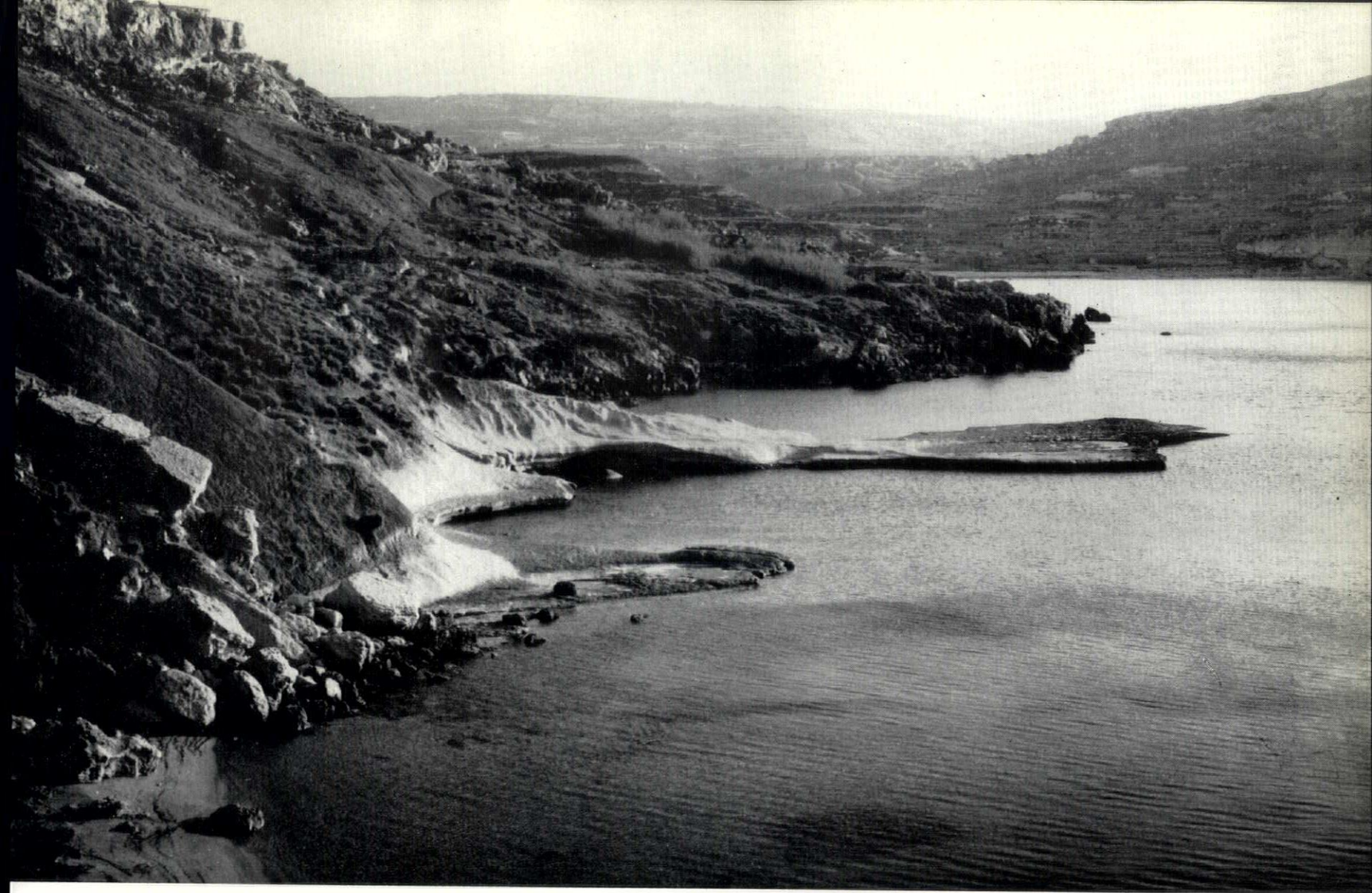


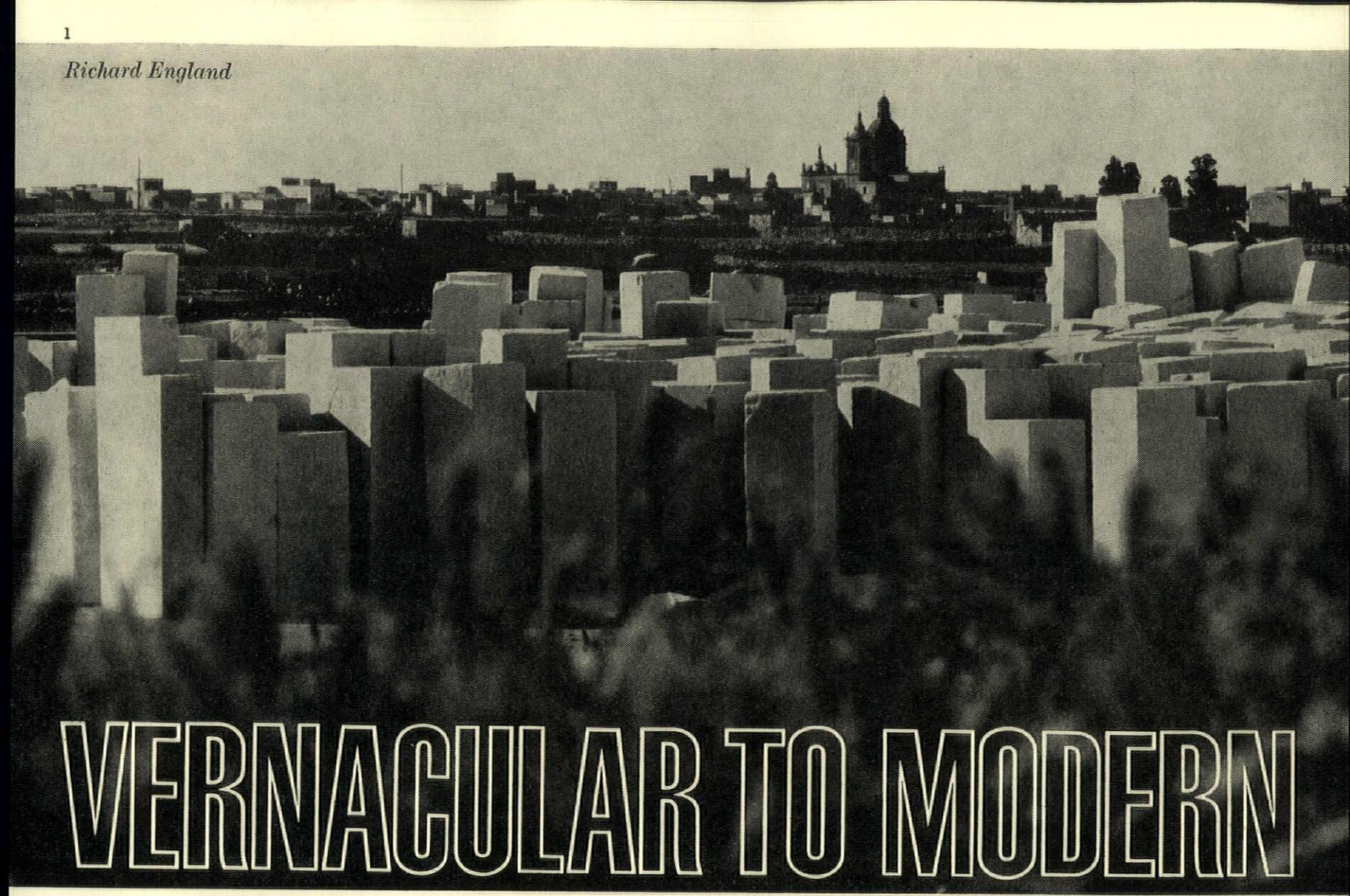




A typical coastal view: the Tač-Cawl rocks on the Island of Gozo, 14, facing south towards Malta with the little island of Comino between. The village in the distance is Mgarr, with the eighteenth-century Fort Chambray just visible on the headland.

1

Richard England



VERNACULAR TO MODERN

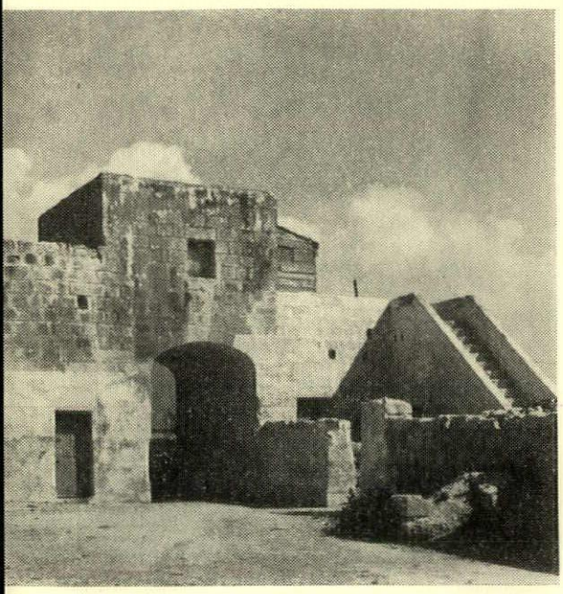
The character and coherence of Maltese vernacular —qualities which the modern architecture, as Richard England emphasizes on the following pages, would do well to follow more closely— derive from the building material being also the material from which the island is made. This is symbolized in 1, above: blocks of stone, cut from the quarry, stacked in the fields ready for use; beyond the fields, a stone-built village built up of the same cubic forms.

The visual beauty of the Maltese islands lies in its being almost entirely man-made. Its character is one of stone, stone and still more stone: an imposed masonry order, but in strong adhesion with nature. The rich variety of uses of the sole available building material, a Globigerina limestone, ranging from its untouched natural state to the snaking dry rubble field walls, from the isolated farm-house groupings to the dense village and town complexes, gives the whole environment an intense and vigorous unity.

Far removed from the tutored magnificence of Mdina and Valletta is the primitive vernacular, which displays at the same time an amazing technique and clarity of thought. Its principal expression is the farm-houses and simple village dwellings, which appear to the eye as a rich play of basic cubic shapes. The rugged relationship of their three-dimensional forms, the at times violent combinations and contrasts, the rhythm offered by the strong sense of articulation of masses, create an architecture that offers a remarkably straightforward solution to the problems of shelter and survival. Spaces are carefully articulated, construction difficulties are overcome with remarkable ingenuity, climatic conditions are dealt with with incredible clarity.

The individual pattern of life of the Maltese farmer is directly responsible for the moulding of the forms and shapes which characterize this vernacular. An almost complete separation takes place between spaces intended for animals and those intended for human occupation, and there is an equivalent difference in the sizes of openings: spaces for human occupancy have small apertures, due to the need in Malta to exclude the strong Mediterranean sun (a look at some schools built five or six years ago, with large expanses of glass now either painted over or covered with cardboard, convinces one of the greater common sense of our forefathers), while the spaces reserved for the farmers' beasts of burden have mostly large openings to allow the passage of carts. The exposed walls are of a thickness which, though also a structural necessity, serves to keep the buildings warm in winter and cool in summer. Central courtyards provide shade from the scorching sun and shelter from the winds. The flat roofs are used for collecting water—which is vitally important since survival itself depends on it—and as a fruit and vegetable drying area. Many architectural details which at first may appear superfluous can be seen on further examination to be functionally justified: corbels, gargoyles, tie-blocks and small dove-cote apertures, all offering solutions to particular problems.

The most remarkable fact about these structures is the way the primitive builder managed to overcome, with ingenuity and clarity, the limitations that a single building



2

The simple geometry of the rural vernacular: 2, courtyard in a farming hamlet near Mdina; 3 (below), the stone walls of the village houses at Zebbug rising straight from the stone-walled fields.

material must have given rise to. Straightforward load-bearing walls, floors paved with slabs, fascinating staircases of all shapes and sizes and ingenious roofing techniques, combine to illustrate the inexhaustable potential of stone.

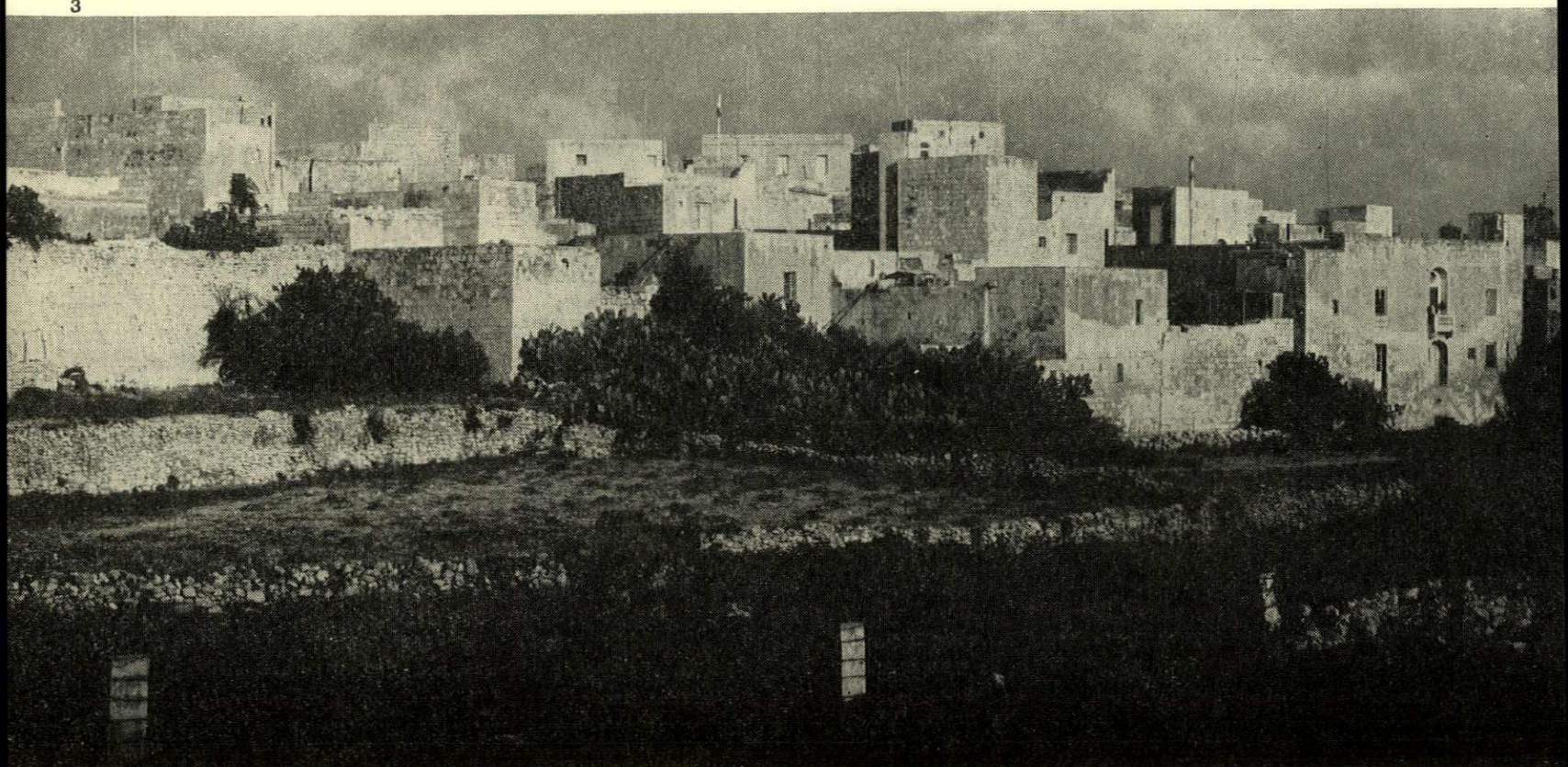
These characteristics apply equally to the isolated farmhouses and to the compactly grouped houses of town and village, and with a heritage so unique, and so perfectly related to the quality of light and to the landscape, one would expect that evolution from a traditional to a modern vernacular would be relatively easy; the more so since the traditional vernacular shapes are in themselves so basic and uncluttered that they already resemble those of modern architecture. What is actually happening however, in the midst of the largest explosion of building that the island will ever see, is disheartening; it is often precariously close to architectural catastrophy.

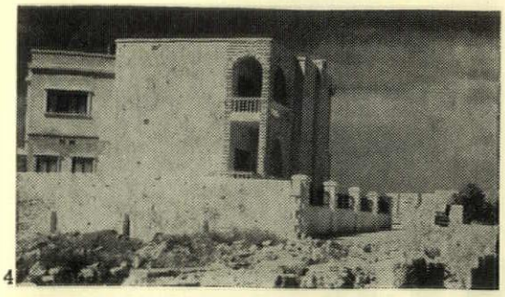
The main offending item is the individual dwelling house. Thin paper-like constructions, imported clichés, low-pitched roofs and the so-called art of chiselling the local stone in such a way as to make the natural material appear like a cheap imitation, combine to mar the present architectural scene. Why import these fragile, brittle and insubstantial forms when the whole character of the islands lies in the traditional chunky, basic appearance? Multi-coloured facades in almost unbelievable combinations prevail, and more unfortunate still are finding their way into the characteristic traditional environments; thin wrought-iron and round arches flung all over the place, obviously inspired by 'Homes in the Sun' brochures selling Spanish properties, and box-like concoctions with each facade speaking a different language. One fervently hopes that, with experience and education, the prospective purchaser will get more fastidious and that there will eventually be an overall rise in standard and quality. Even original farmhouses are being swallowed up and converted into lush pretentious mansions, which is doubly sad because their spontaneity and simplicity could be preserved, and if the conversion were done with this in mind the glorious Maltese vernacular would be found to apply aptly to present-day needs.

Other categories of new building do not fare so badly as dwelling-houses, and one is glad to be able to point to more than a few examples of buildings of relative merit. A number of neatly designed factories have appeared during the last few years, the Mriehel Industrial Area being particularly noteworthy, as is the vast Phoenix factory in the vicinity of Mosta. The same applies to some tourist developments. Of about twenty new hotel projects, most are of good quality, and of the projects still under construction, or at drawing-board stage, a number promise well.

The new Excelsior Hotel at Floriana, though on an unfortunately chosen site which allows it to intrude overpoweringly on to the historic fortifications, presents from a distance an interesting composition and is a successful attempt at integration. However, on close inspection one is alarmed at the quality of the detailing; from the overdone stone treatment to the unfortunate ironwork. The Mellieha Bay Hotel (by Raglan Squire and Partners) fails to maintain its initial promise, the central five-storey block proving too high, and disturbing the relationship of the building to its site; also the junction between the high and low wings leaves much to be desired. Another new hotel, the Verdala Palace near Mdina, must surely be taken as a warning.

3





4



5

The disastrous results of departing from vernacular traditions—examples of the miscellaneously styled villas, 'fragile, brittle and insubstantial', that are beginning to sprawl into the countryside. These examples, 4 and 5, in their typical settings of unfinished site-work, are both outside Attard.

A new building that fits well into its setting: 6, the Excelsior Hotel at Floriana seen from across the harbour. Whether it should have been allowed to intrude into the old fortifications is another question.

It is not yet complete but its size and height is going to injure the unique silhouette of Rabat and Mdina. It is of essential importance that the whole environment in this part of the island is preserved, not just the buildings of Mdina itself.

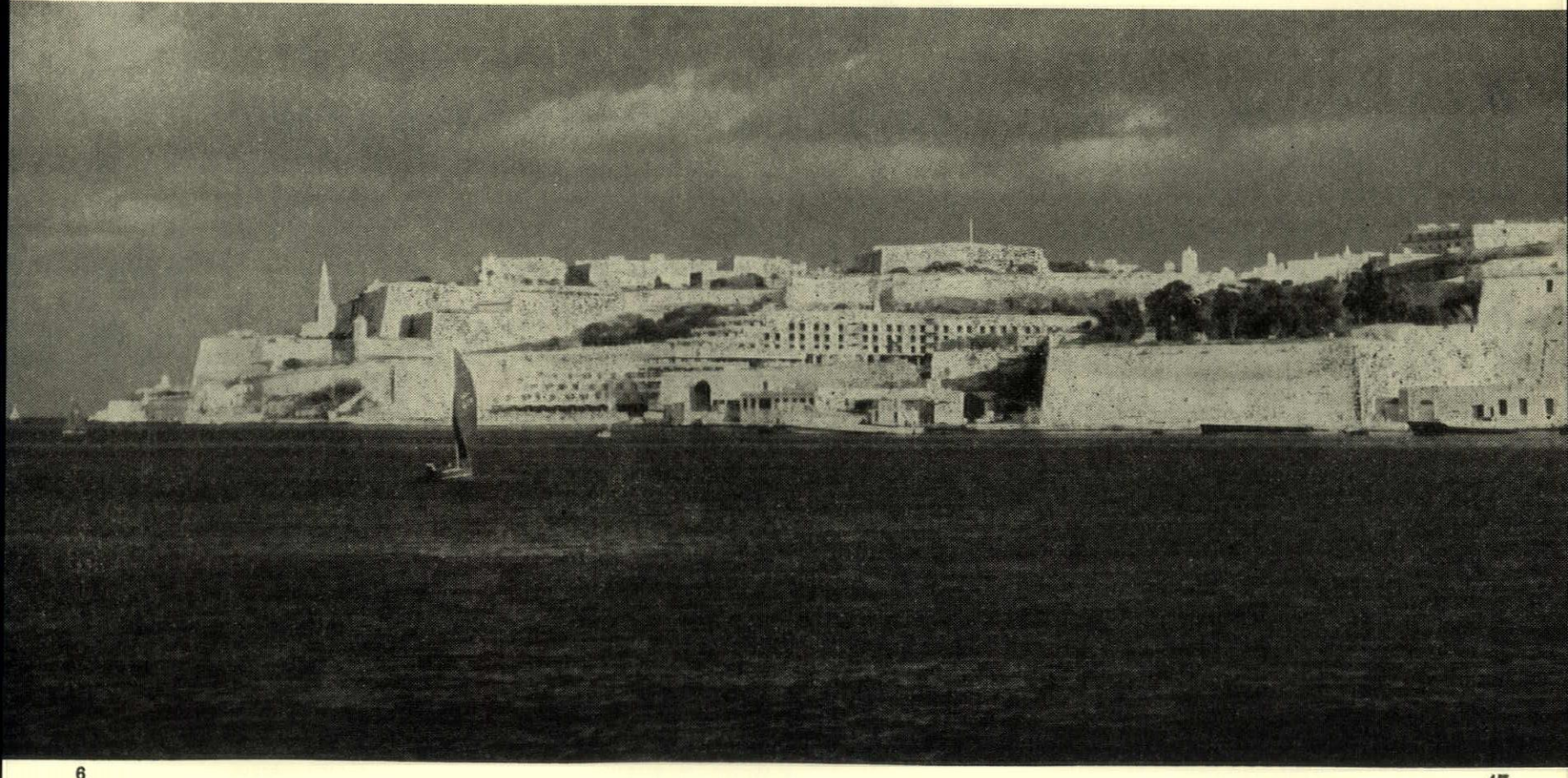
The large 'Ta' Cenc' project in Gozo seems to have lost the most interesting feature of the original scheme; the cliff-hanging hotel by Julio Lafuente (shown in THE ARCHITECTURAL REVIEW in February 1968) is now left with an over-designed selection of villa types by some six different architects from the four corners of the Mediterranean. More basic and less flamboyant designs, with a closer relationship to the Maltese tradition, would have been preferable. A word of praise however, must be given to the architects responsible for the excellent restoration of the old house which marks the entrance to the estate.

The Bahar ic Cahaq army married quarters (by the Austin-Smith, Salmon, Lord Partnership), built just before the islands attained independence, have a simple dignity which makes them stand out, not only among other military buildings, as a group that pays careful attention to the landscape. Especially when looked at from the seaward side, this is a project of taste and quality.

The New University buildings at Msierah (Norman and Dawborn) seem to have started off on the wrong foot, with an arts block and library designed by a team apparently incapable of assimilating the true essence of Malta. But changes took place when the second subsequent stages were reached, and there has emerged a solid, locally rooted work of modern architecture. One looks forward confidently to the completion of this project.

As to the general principles that building in Malta should follow, buildings of strong basic form, which anywhere else might not be successful, are brought to vivid life under the blazing play of light and shade. Scale however is of the utmost importance, especially in the siting of large isolated and solitary buildings. A lesson can be learnt from the way the old traditional village complexes are inserted into the landscape, using long horizontal masses with small vertical component features. This helps the absorption of the building into its surroundings. Tall buildings in isolation, or next to characteristic traditional complexes, should be avoided. Only in Sliema, a relatively new town of high density, and of no particular architectural merit, could tall buildings (with a maximum, say, of ten or twelve floors) be inserted without tragic consequences.

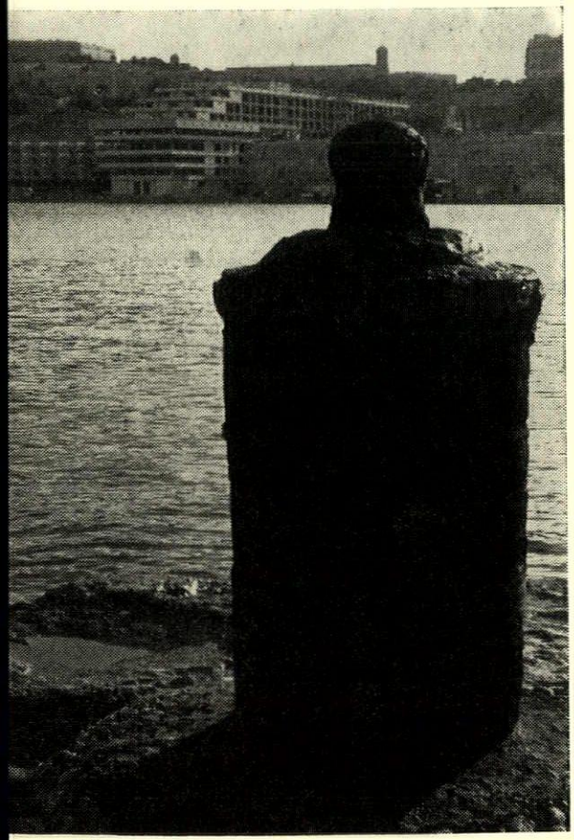
Constructional methods are bound to change, and the introduction of the pre-cast concrete block has already started to overtake the traditional local stone as the prevalent building material. This, no doubt, is due to the faster construction achieved with this lighter material. In a way it is a great loss, since the thinly plastered surfaces do not belong to the bold traditional aesthetic; and, while building costs are still relatively low, a reasonable compromise might be to use concrete block for internal walls and stone for the exterior. It is unfortunate however, that the local stone weathers badly next to the sea, another reason why it has given way to concrete block in many places. Perhaps a research department of university standard could help, studying the weathering problem and even producing successful preservatives. The fact that Malta lacks any form of indigenous timber, and imported timber is extremely expensive, accounts for the rare and almost complete absence of rough-



shuttered concrete. This is a pity, since its boldly textured surface is very much in keeping with the coarse earthy weathering of the local stone, and exposed concrete would be a more welcome substitute for stone than the prevailing fragile plastered surfaces.

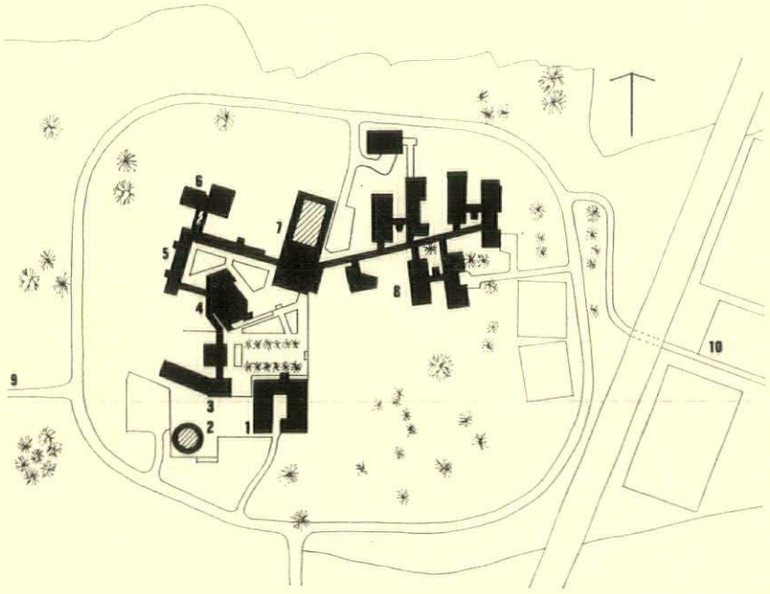
Standards of finish, both internal and (unless natural stone is adhered to) external, are still relatively low, but in a way this is understandable since skill in using many materials and techniques are new to the islands. There is little doubt however that time, training and further experience will yield improvements, because the local workmen are naturally good craftsmen and quick to learn. Moreover, as the building boom surges forward, companies with strong reputations behind them are investing in the islands, and they will obviously be interested in maintaining their good name. In the design of the many hotels, apartments and other types of building that the immediate future will see constructed, the architecture of the Maltese islands has just time to recover from its rather unstable beginning, and to eradicate its initial mistakes, which have largely been due to inexperience. The search must continue for a valid architecture of today properly related to the existing vernacular, which will meet without disaster the enormous, indeed explosive, building programme necessary for Malta's future economy.

7, a closer view of the Excelsior Hotel at Floriana, taken during construction and showing how it breaks forward from the old fortifications. Skilful massing, however, enables it to fit well into the site and such a large building is better positioned at water level than on the skyline. The finished hotel is marred by poor detail.

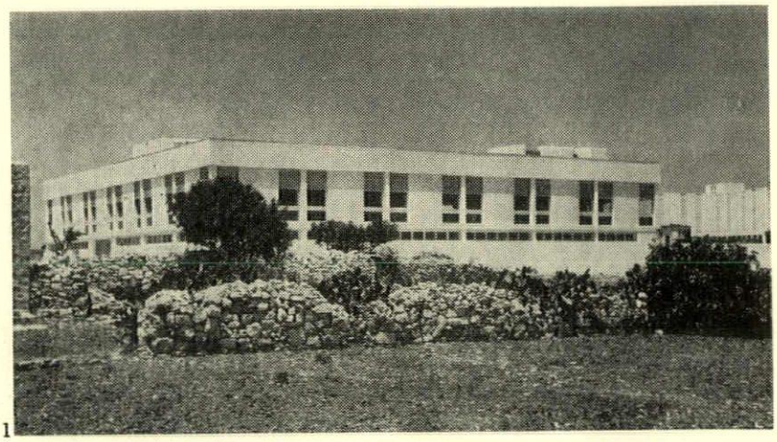


7

A CHOICE OF RECENT BUILDINGS



site plan: key
1, University House
2, chapel
3, administration
4, assembly hall
5, arts
6, lecture theatre
7, library
8, sciencel aculty
9, to future halls o residence
10, playing fields



1

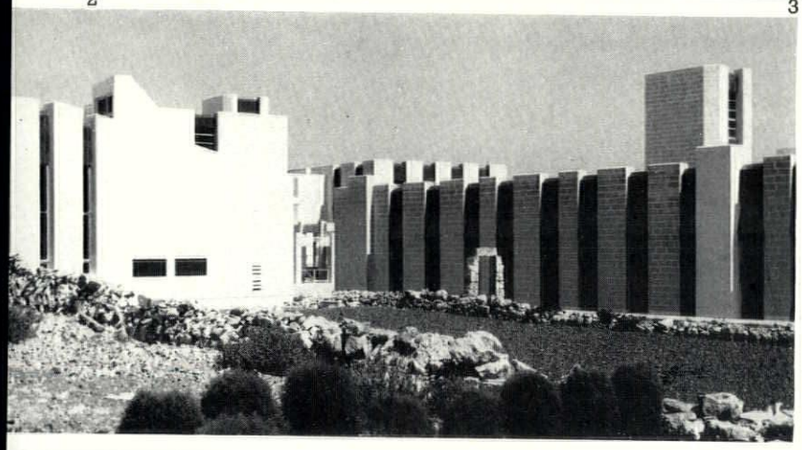
ROYAL UNIVERSITY OF MALTA, MSIERAH

Architects: Norman & Dawbarn (architects in charge, J. D. Delisle Burns & Alastair Smith); executive architects, Mortimer & Degiorgio.

The university began as a Jesuit College instituted in 1592 by Pope Clement VIII, with authority to confer degrees in philosophy and theology. The Faculty of Medicine originated in a School of Anatomy founded in 1674 by Grandmaster Nicholas Cottoner, and in 1769 Grandmaster Fra. Emmanuel Pinto de Fonceca, with authority from Pope Clement XIV, raised the college to full university status. It is the oldest university in the Commonwealth outside the United Kingdom. It originally stood in the older part of Valletta, but the site became too cramped, and it was decided to find a new site which would give it the space needed for all its activities and for future expansion. A hilltop site with views over Sliema creek and Valletta was found and a master plan prepared by Norman & Dawbarn in 1961. Building work started in 1963 and still continues. So far the Faculties of Arts, Science (including pre-clinical medical training), the Library, administrative offices and Senior and Junior Common Rooms have been completed and work is about to start on a multi-purpose Assembly and Conference Hall to seat 1,000. At present the university is non-residential, but future development will add living accommodation for students and staff, as well as extending the existing Faculties. Construction follows traditional Maltese methods, using stone load-bearing walls and short-span reinforced concrete floor and roof slabs. The site was originally farmed by small-holders working small irregular terraced fields; as far as possible these terraces have been preserved, and farming around the new buildings is being encouraged. 1 shows University House and 2 (facing page) is a general view from the north-east, with the terraces in the foreground. 3 and 4 show Faculty buildings grouped round paved courts. 5 is the library, which has a precast brise-soleil screen covering the facade and therefore presents a marked contrast in style with the other buildings.



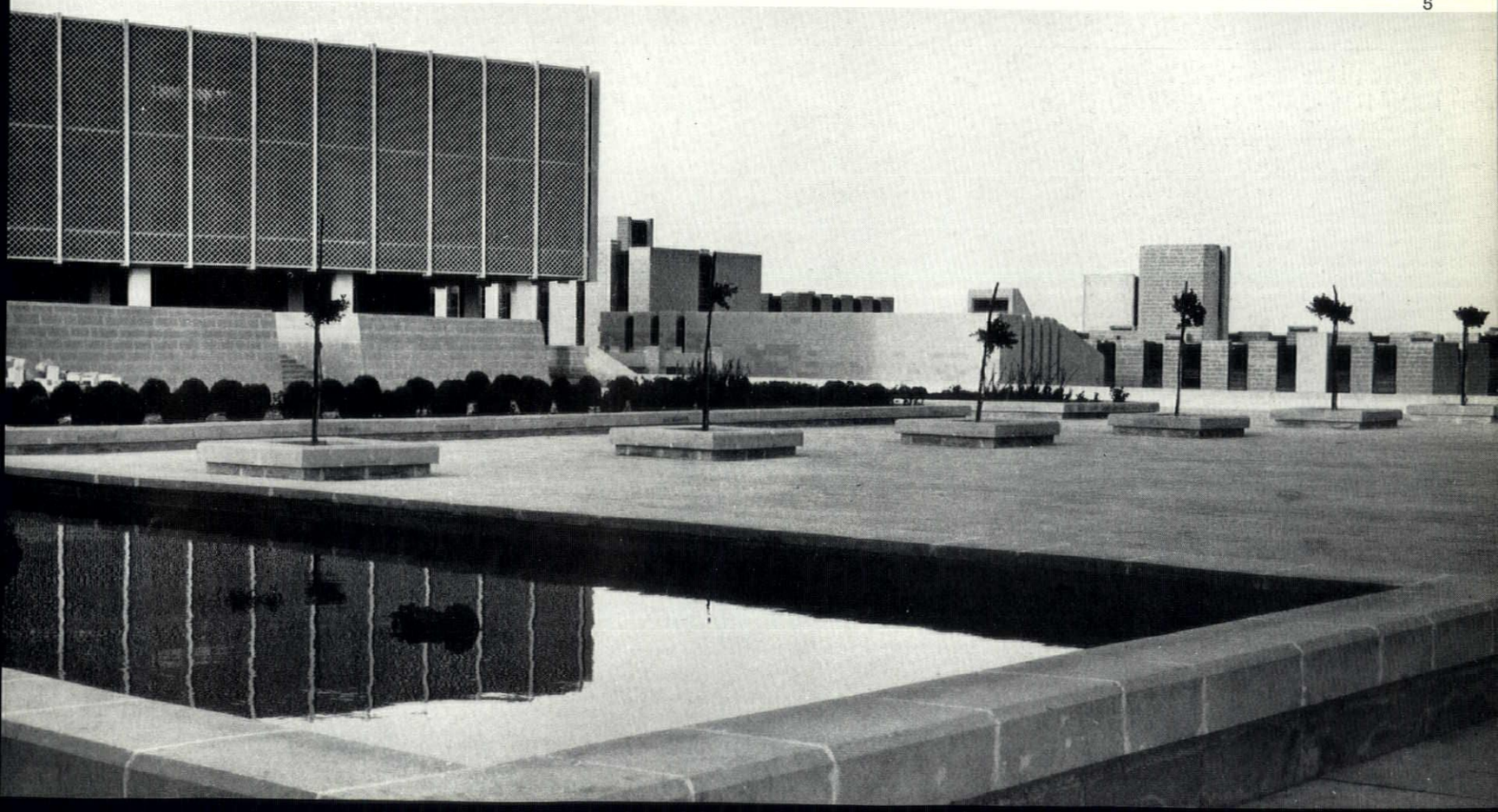
2



3 4



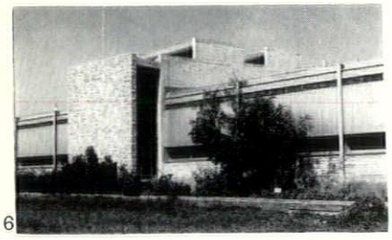
5



FACTORY, MOSTA

Architect: Hector Corfiato

One of the few recent industrial buildings designed by an outside architect (in conjunction with the Public Works Department) the Phoenix factory, at Mosta has an aluminium façade, 7, with terminal and intermediate blocks and basement walling faced with local stone, 6.



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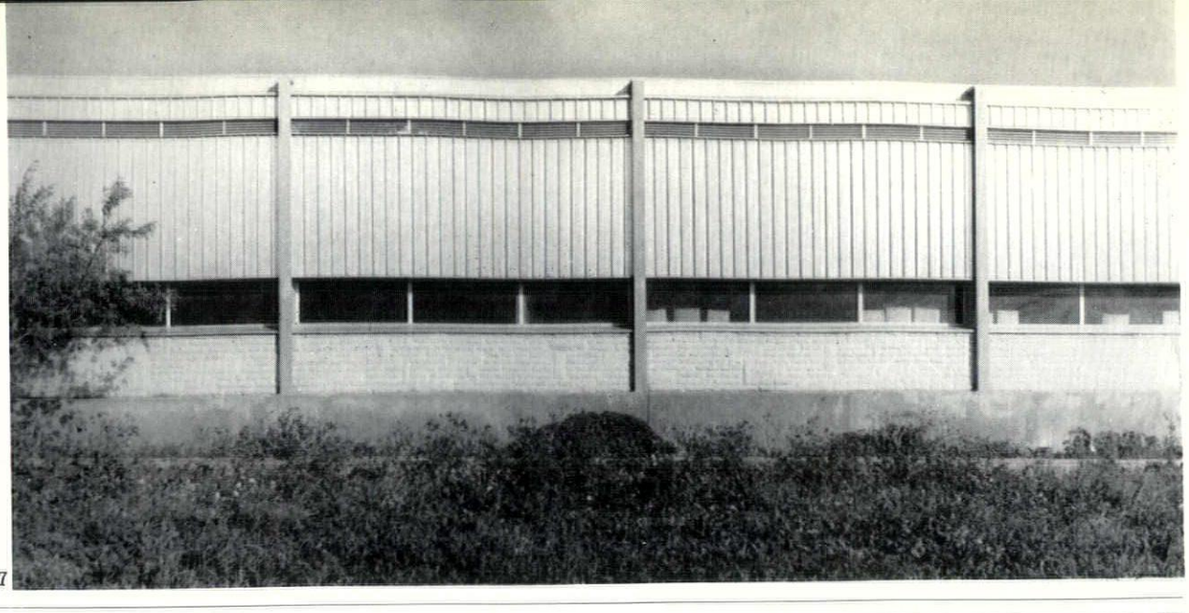
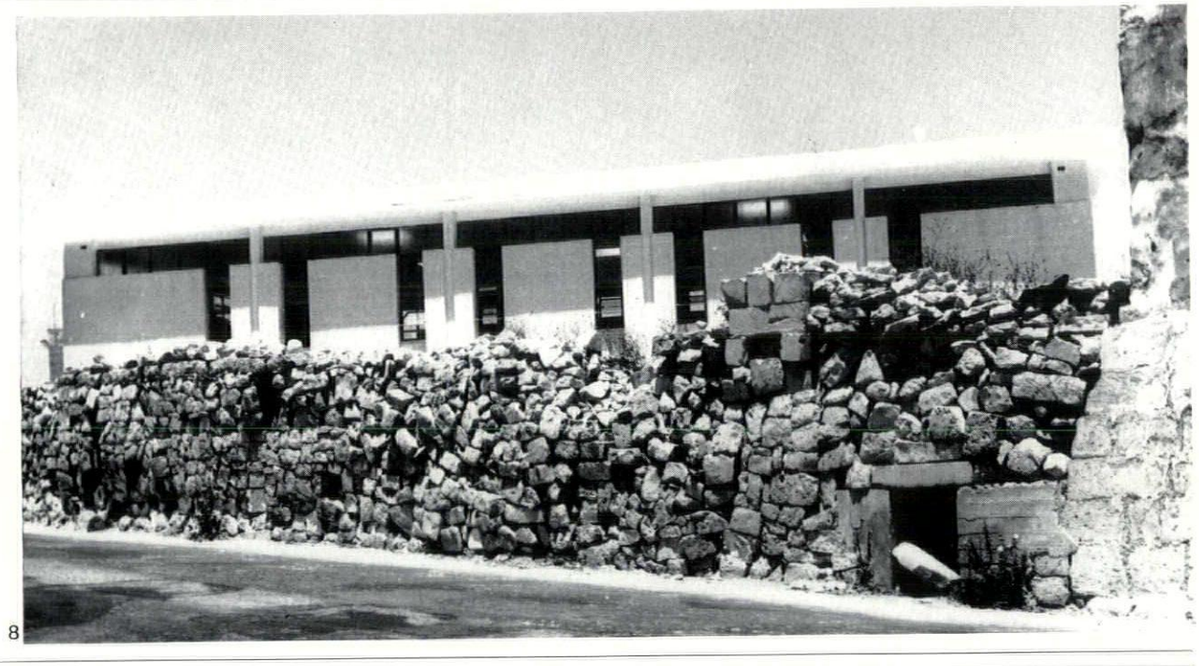


7

FACTORY, MRIEHEL

Architect: J. Gambina (of the Maltese Public Works Department)

The Merit-Werk factory at Mriehel, between Valletta and Attard, again uses local stone for walling, with continuous clerestory windows for good interior light, 8.

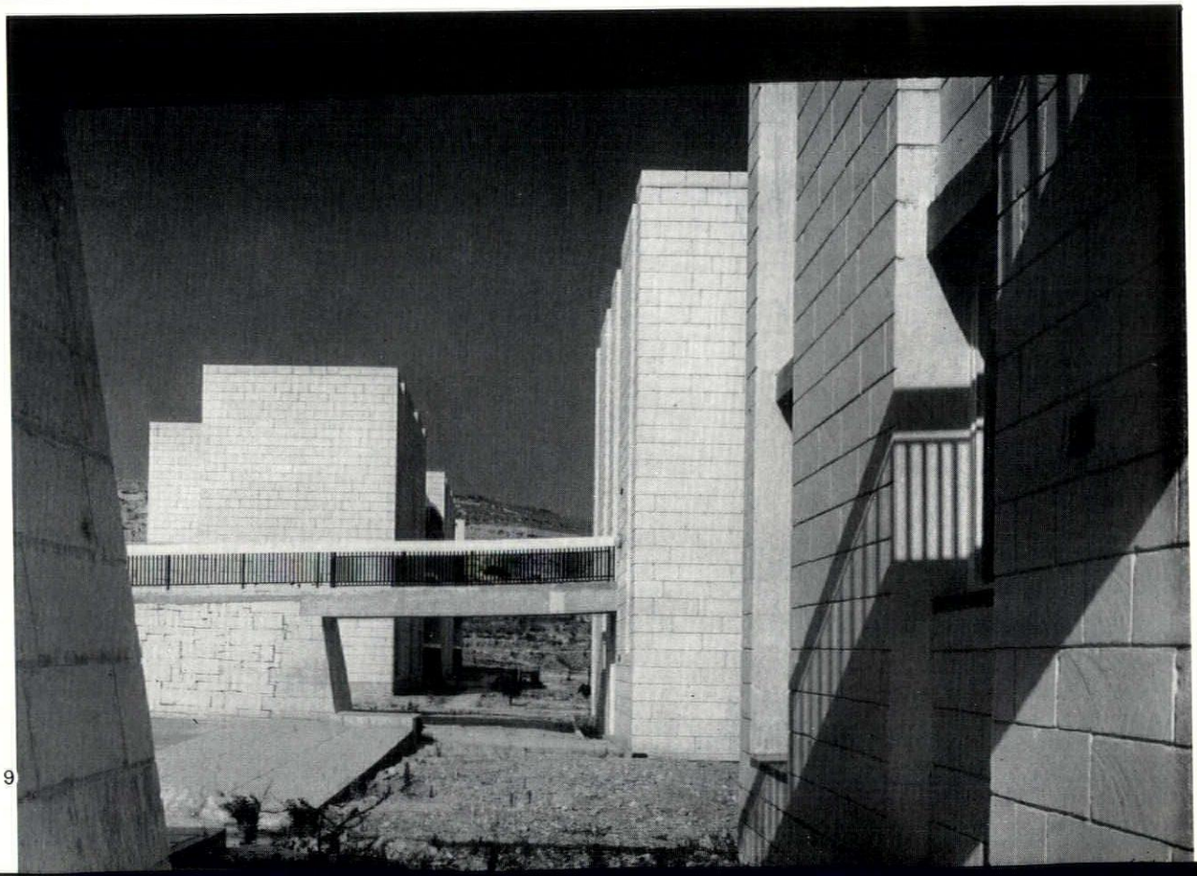


8

ARMY MARRIED QUARTERS, BAHAR IC-CAHAQ

Architects: Austin-Smith, Salmon, Lord Partnership

9 and 10-12 (facing page): one of the last projects of the British War Office, built in 1964 alongside the earlier St. Patrick's Barracks, four miles north-west of Valletta. The rocky site just above the foreshore accommodates 59 officers and their families in three-storey flats and one- and two-storey houses, compactly grouped. They are built of Maltese lime-stone, with floors and flat roofs of locally made hollow concrete slabs.



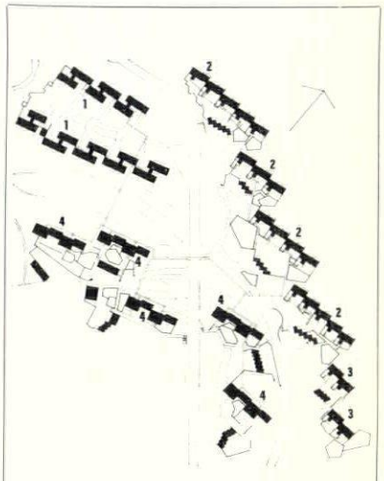
9



10



11



site plan : key
1, single-storey houses
2, 3, two-storey houses
4, three-storey flats

ARMY MARRIED QUARTERS, BAHAR IC-CAHAQ

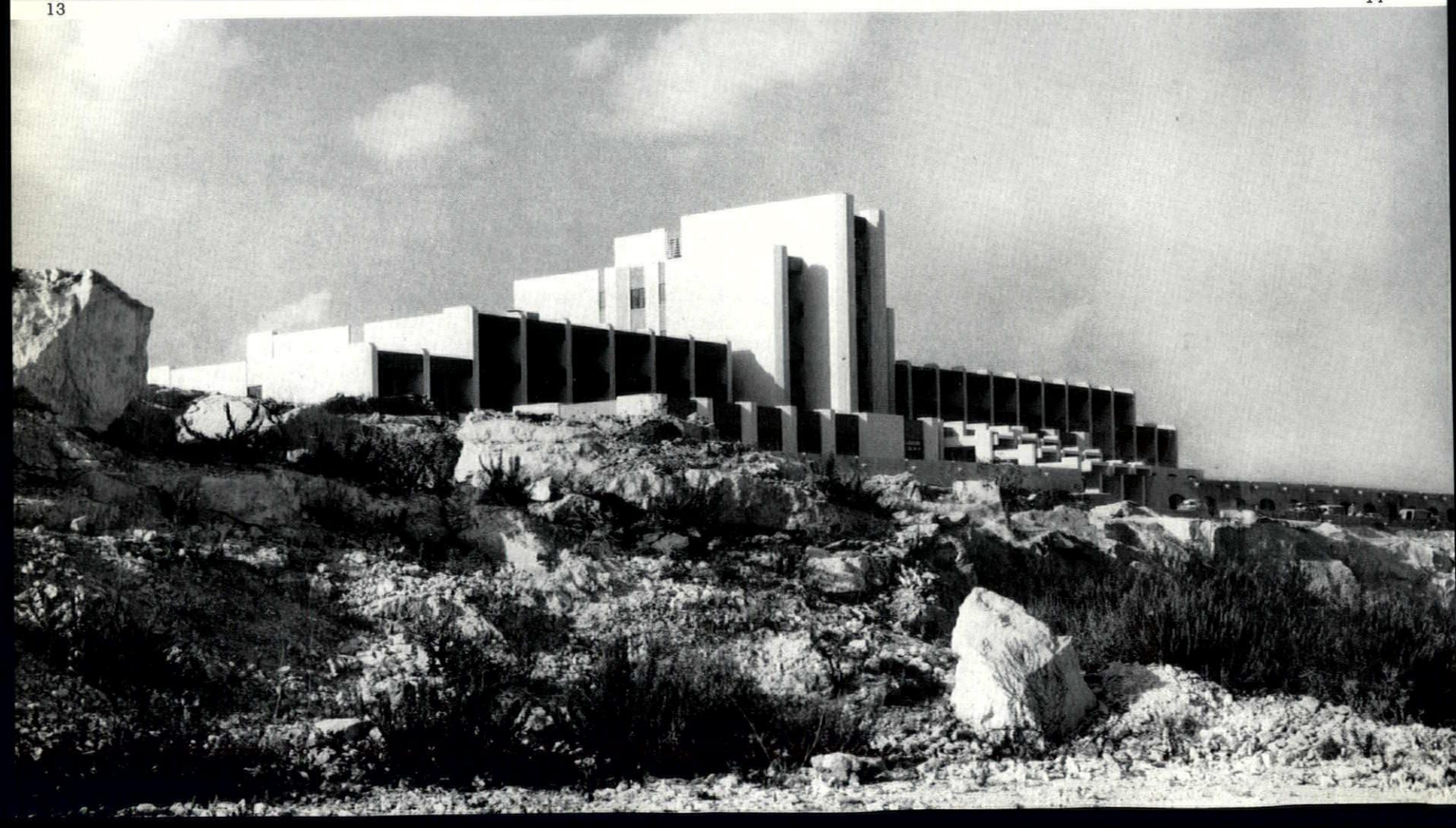
↓12

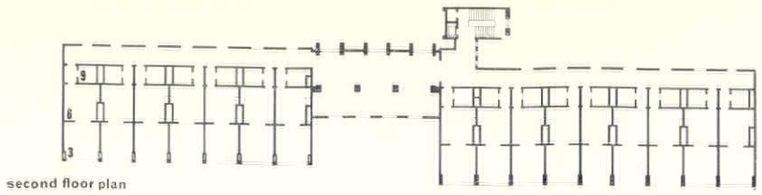




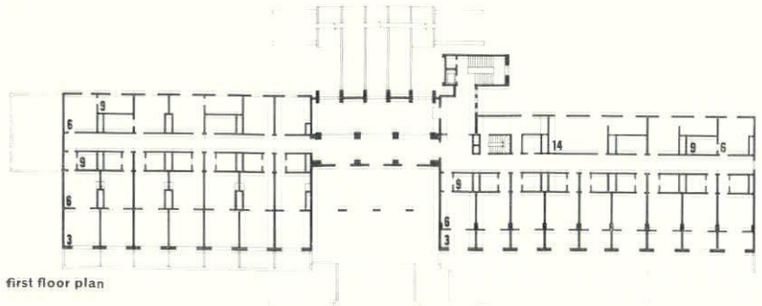
13

14

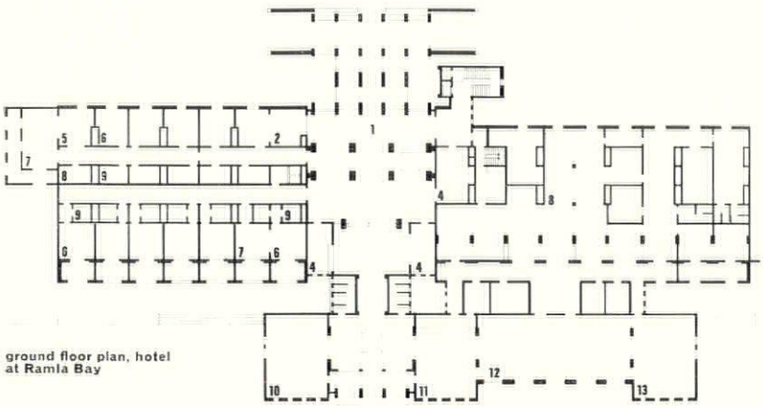




second floor plan

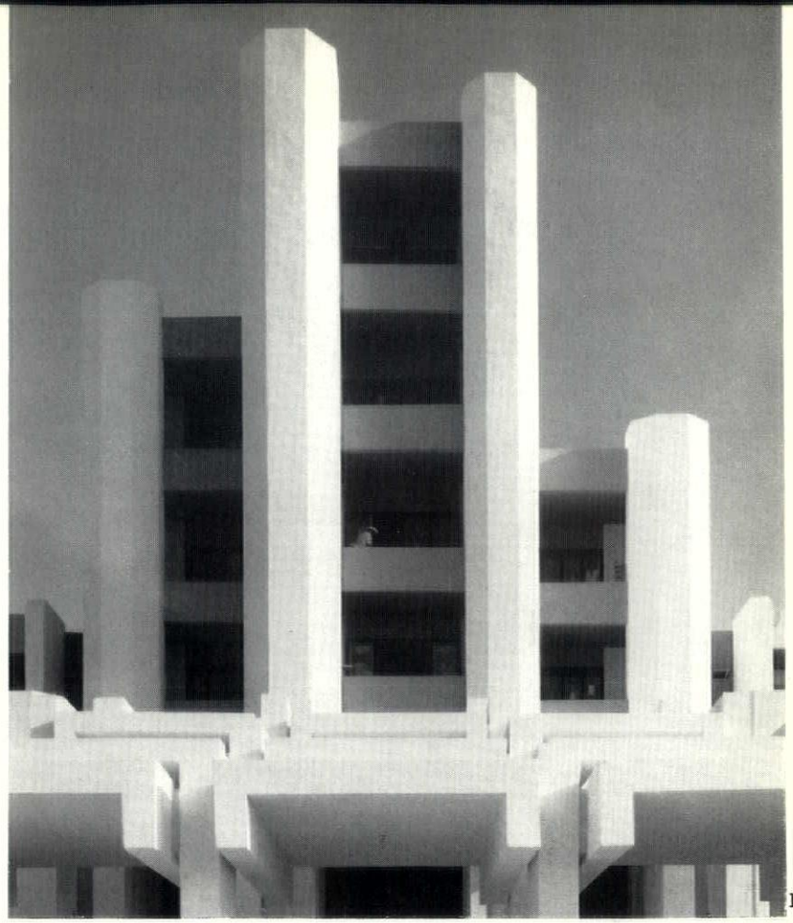


first floor plan



ground floor plan, hotel at Ramla Bay

key
1, entrance hall
2, reception
3, terrace
4, shop
5, dining room
6, bedroom
7, living room
8, kitchen
9, bathroom
10, lounge
11, bar
12, restaurant
13, non-residents dining room
14, female staff

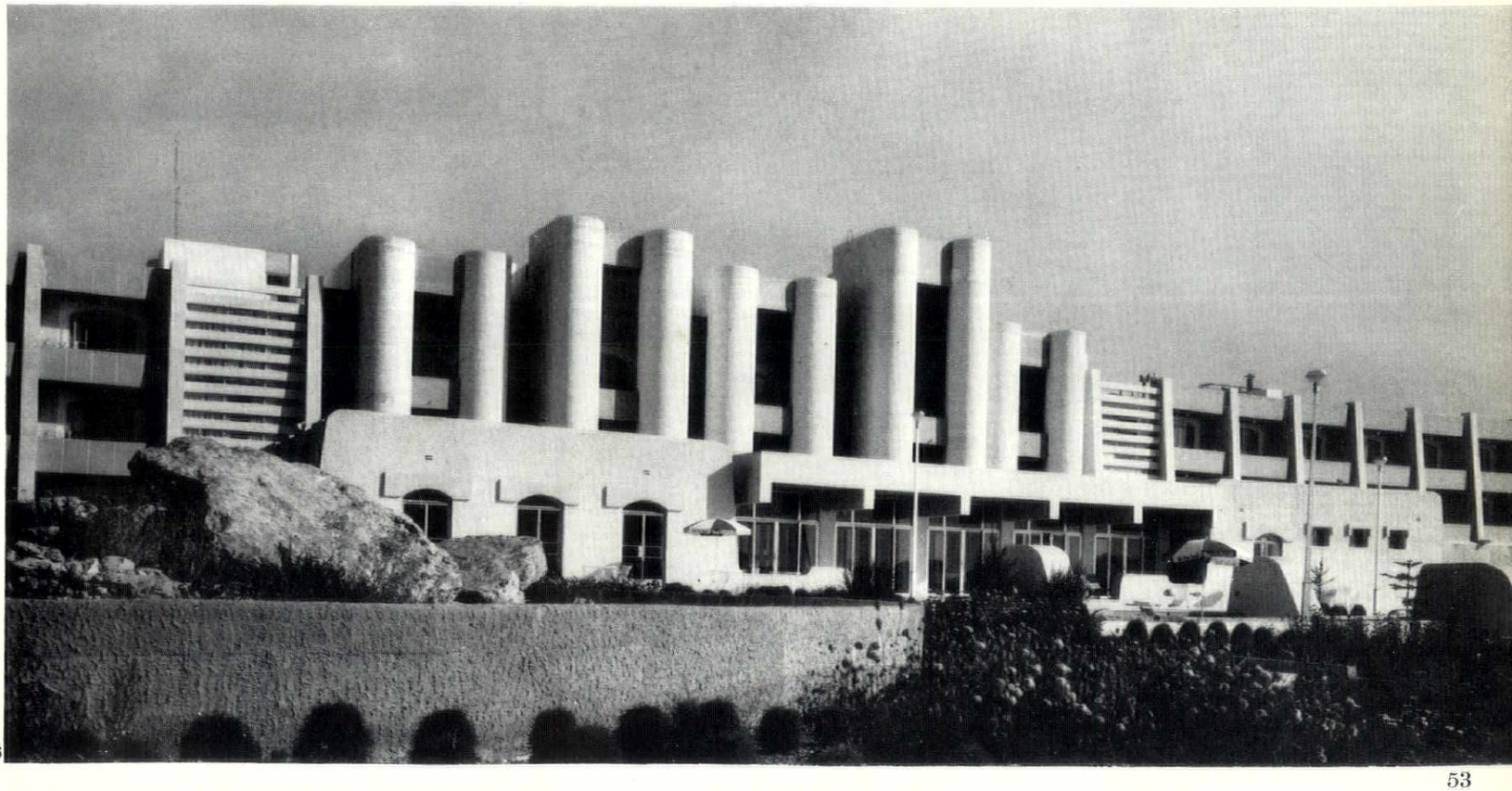


15

FOUR TOURIST HOTELS

Architects: England & England

Four examples of the numerous seaside hotels designed by Richard England to cater for Malta's fast-growing tourist trade. That at Ramla Bay, 13 (facing page), near the northern tip of the island, was completed in 1967. It has the upper floors stepped back to provide broad terraces in front of the bedrooms (see plans). The external walls are precast concrete blocks. Colours are white, grey and terra-cotta. The Salina Bay Hotel, 14 and 15, occupies a similar situation overlooking the foreshore on the northern coast, north-west of Sliema and Valletta, and the Dolmen Hotel, 16 (so called after some megalithic remains on the site) is at St. Ignatius Bay.



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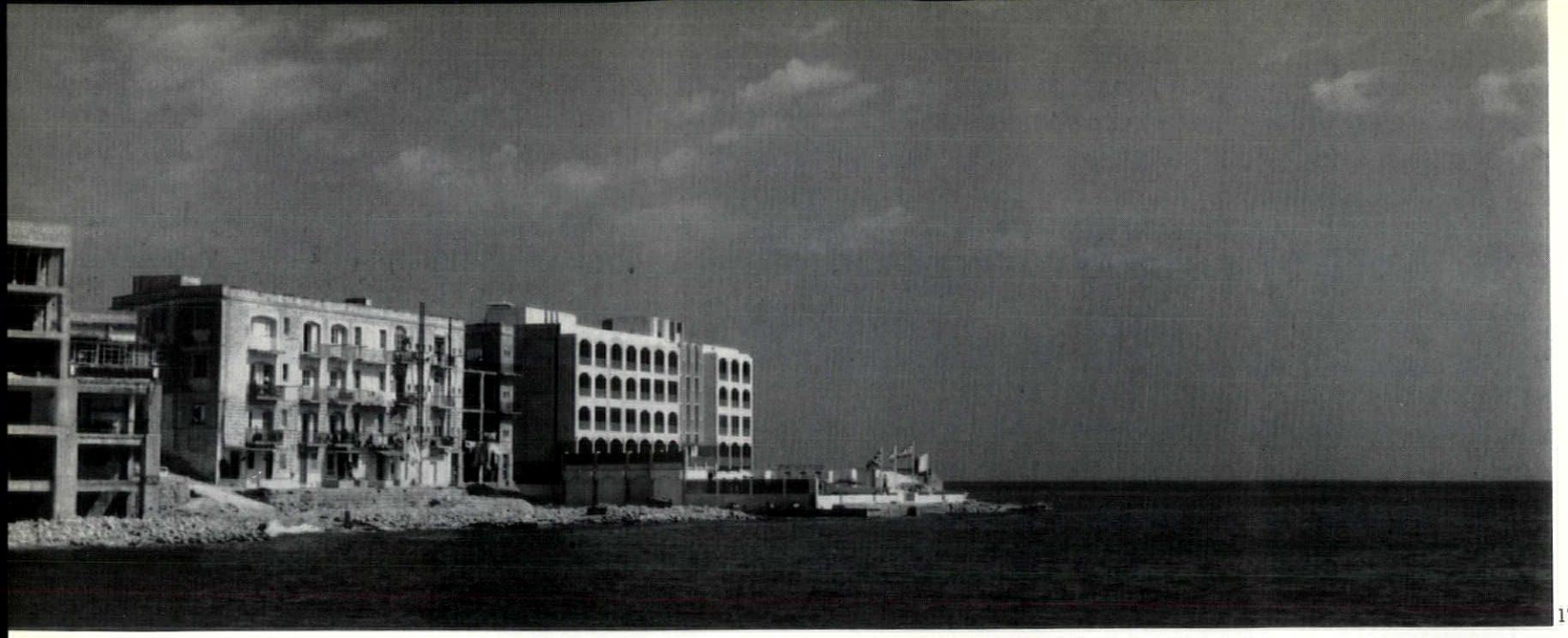
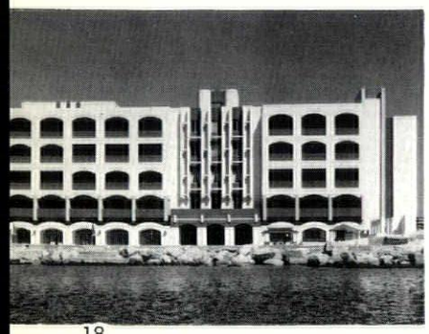


17

FOUR TOURIST HOTELS

The Hotel Cavalieri, 17, 18 and 19, completed in 1968, is the most recent and the most simply designed of the hotels by Richard England, illustrated here. It is at Spinola Point, which encloses St. Julian's Bay on the north-west so that the hotel looks across the bay towards Sliema. As can be seen in 17, its roof-line continues the level of the older buildings fronting the bay. The segmental arches echo a frequently found vernacular form. The colours are stone colour and brown. This, like several other of these hotels, is entered from the landward side at an upper level, with the main public rooms at beach or terrace level two storeys lower.



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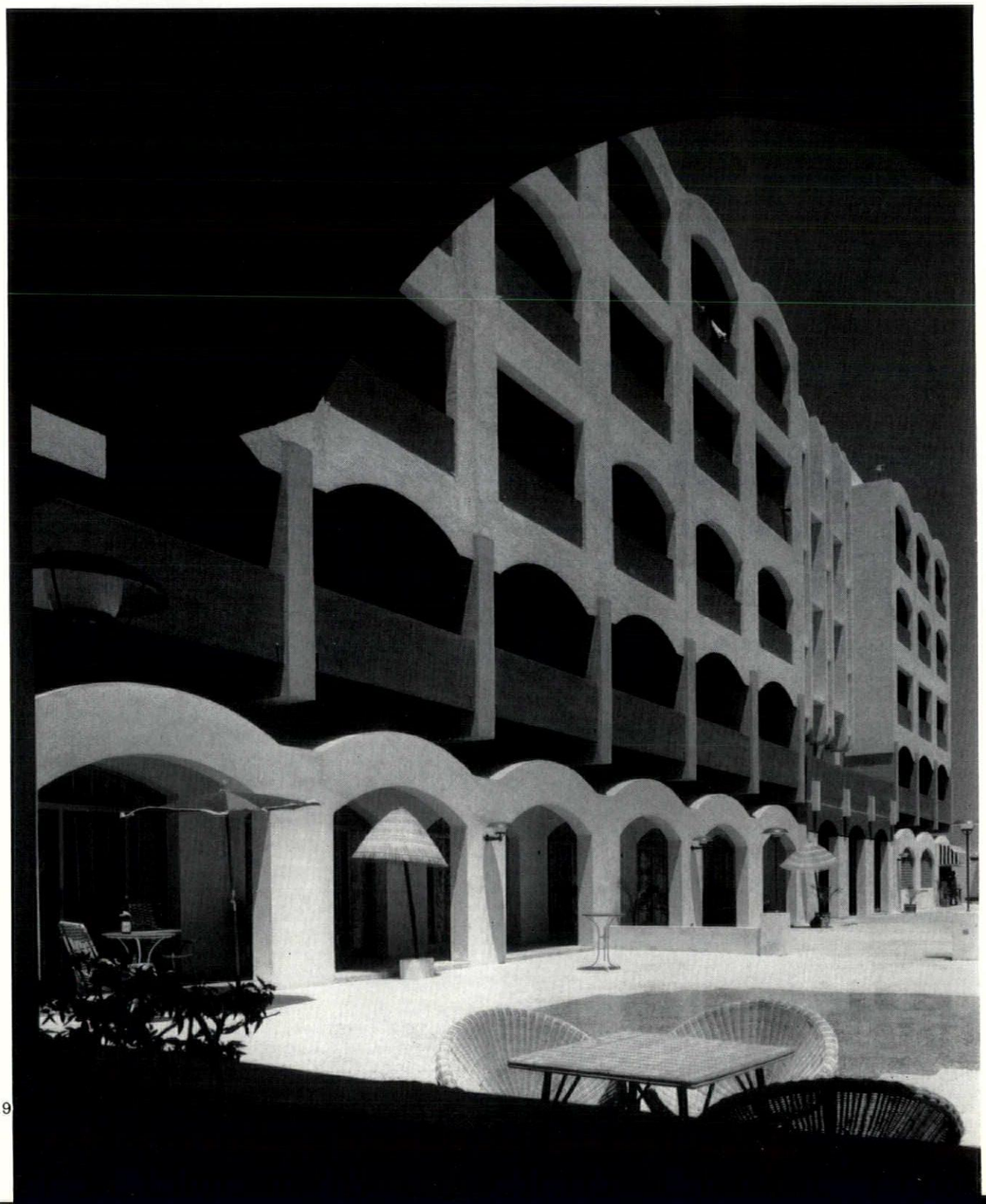

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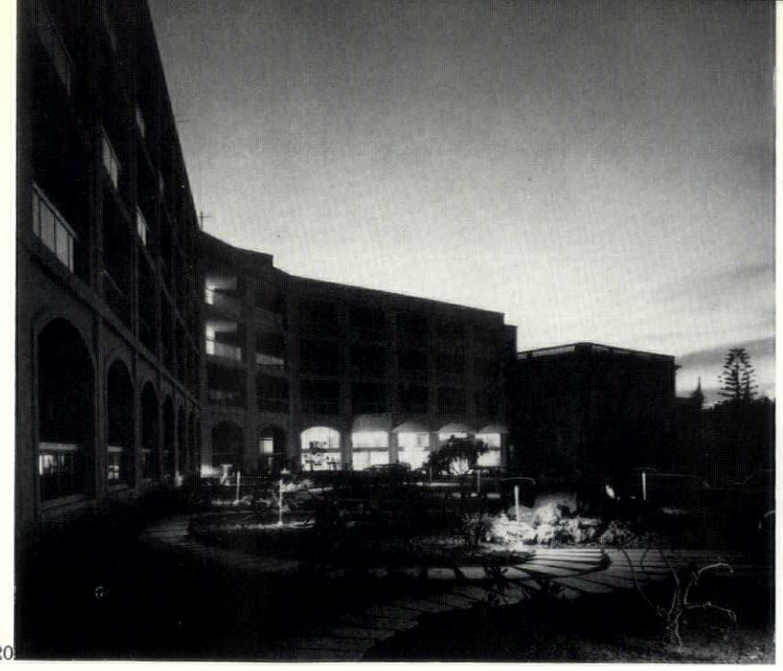


20

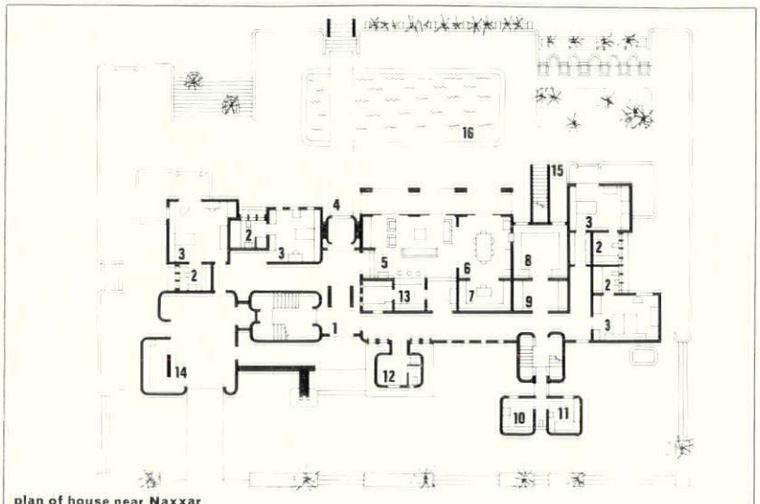


21

CORINTHIA PALACE HOTEL, SAN ANTON

Architect for the structure: Don Mintoff; consulting architects: Cassidy, Farrington & Dennys

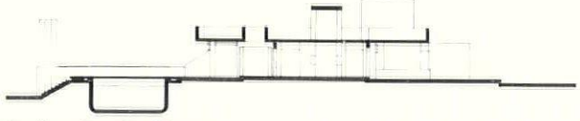
This is one of the few large hotels to be built inland, 20. 21. It is near the village of Attard, and also near the principal residence of the Governor-General. It was opened in 1968, and has 156 double bedrooms plus six special suites. Construction is load-bearing Maltese stone.



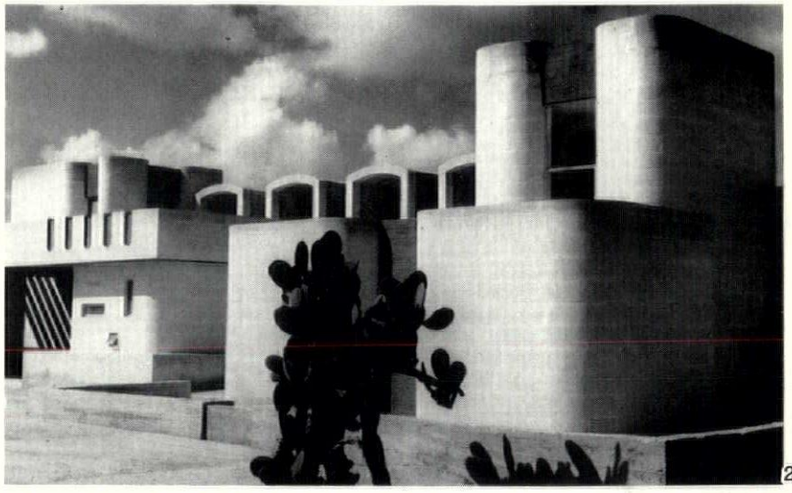
plan of house near Naxxar

key

1, main entrance
2, bathroom
3, bedroom
4, bridge
5, living room
6, dining room
7, library
8, kitchen
9, pantry
10, maid
11, wash room
12, cloak room
13, bar
14, garage and workshop
15, stairs to roof
16, swimming pool



cross section through pool and house

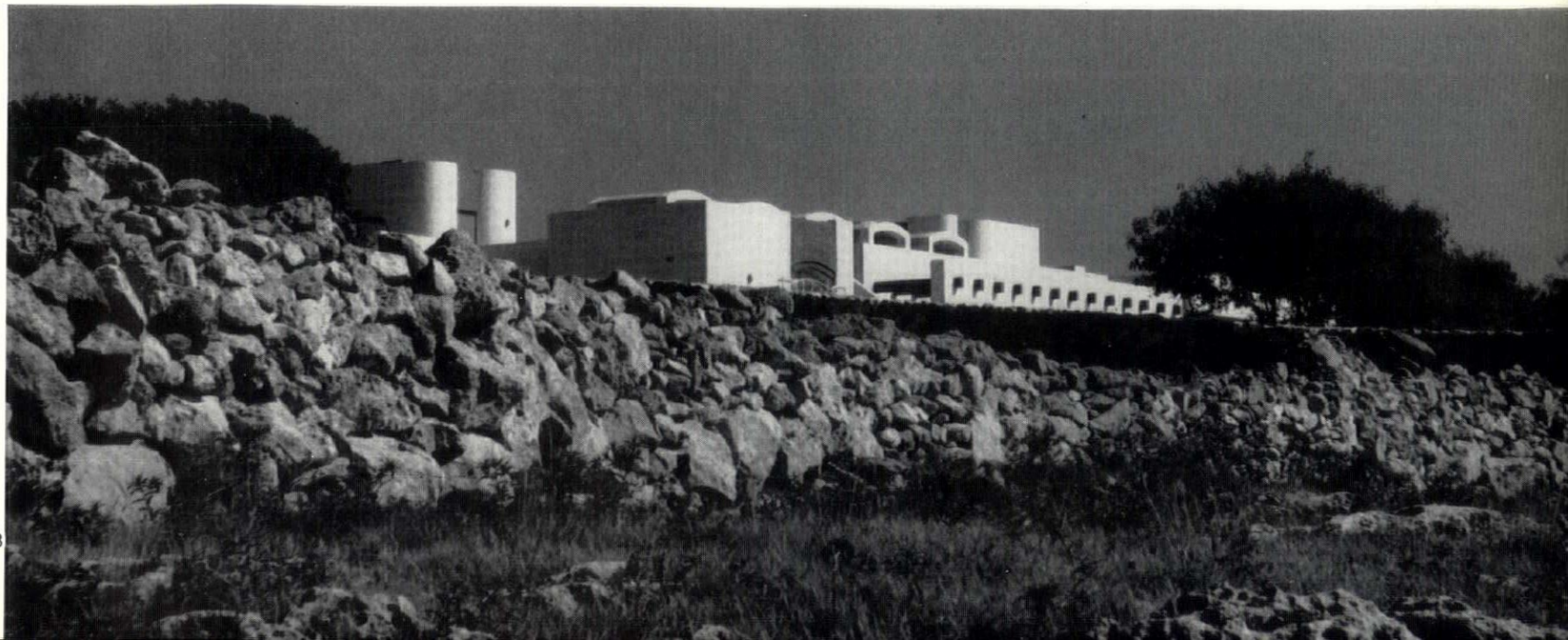


22

HOUSE NEAR NAXXAR

Architect: Richard England (of England & England)

'La Maltija', 22, is a luxury villa in the central part of the island, built on high ground from which it commands a magnificent view, 23. It was completed in 1966. Separate wings contain the private apartments (bedroom, guestroom and bathrooms) of the two owners, with shared entertainment area in the centre. Outdoor living spaces for summer use are connected to the roof-terrace by a staircase tower. Construction is local stone with concrete lintols left rough from the shuttering and painted terra-cotta. External woodwork and wrought iron are painted dark grey.



23

FURNITURE SHOWROOMS, SLIEMA

Architects: England & England

Completed in 1967, this is one of the few new commercial buildings in Malta of any distinction, 24. It is in Sliema's shopping area, near the old Ferry landing stage where the harbour-side road (the Strand) broadens to form a busy centre. The external walls are faced with travertine and the two upper floors have steel louvres.

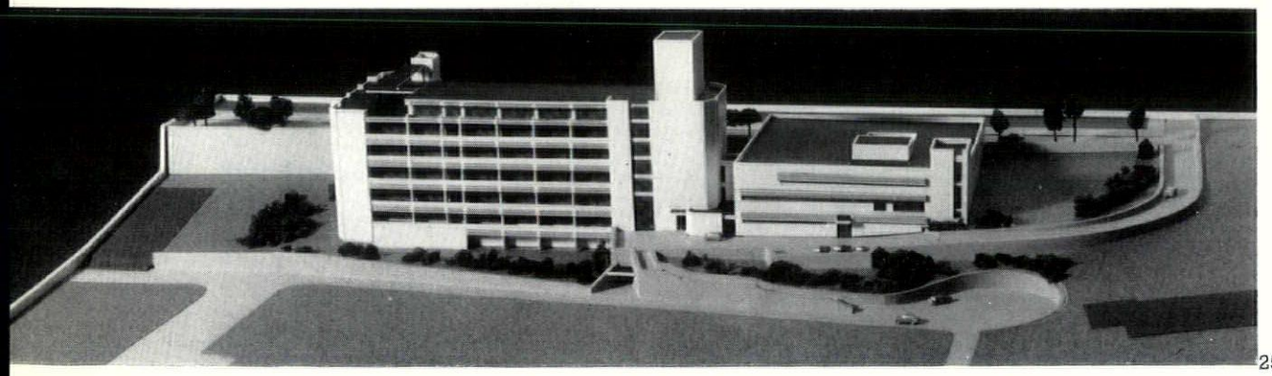


24

CHILDREN'S HOSPITAL, G'MANGIA

Architects: Mortimer & Degiorgio (in association with Norman & Dawbarn)

25, the model of a forthcoming extension to the island's principal General Hospital (St. Lukes) at G'Mangia near Valletta. It will be physically independent and will provide a full range of in and out-patient, diagnostic, and treatment services. Building is due to begin in 1970. The site slopes steeply away from St. Lukes and is approached by the main hospital ring road. A ward block of six floors provides 140 beds and a premature baby unit of 20 cots. A services building contains the Out-Patients Department, Accident and

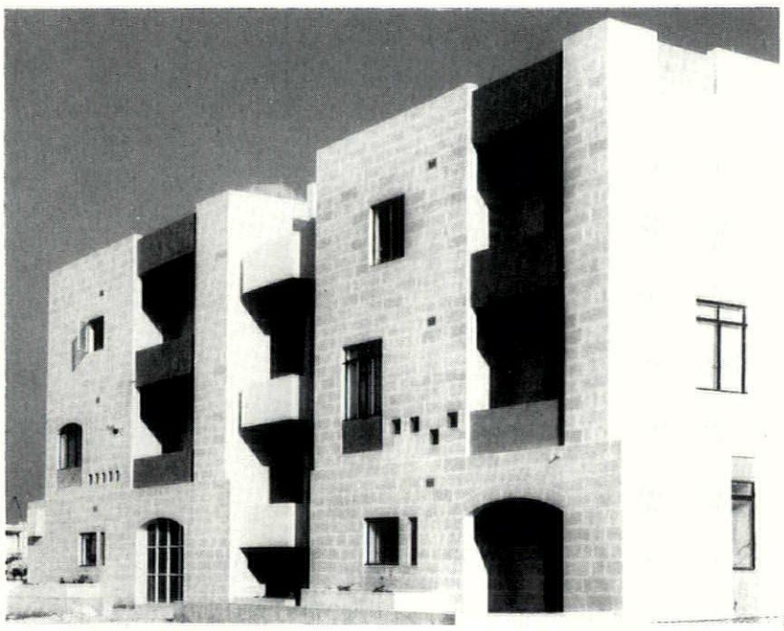

25

Emergency services, three major theatres, diagnostic facilities, etc. The wards have balconies facing the sea. Construction is stone load-bearing external walls with reinforced concrete floor and roof slabs.

FLATS, ST PAUL'S BAY

Architects: England & England

A three-storey block with walls of local stone completed in 1967. 26 shows the landward side. The other side, which has stepped-back balconies, faces into St. Paul's Bay which is on the north-eastern coast.


26

Ian Masser

THE PERILS OF NON-PLANNING

In this article Ian Masser, lecturer in the Department of Civic Design at Liverpool University, examines three areas where new development is taking place, and discusses the destructive effect that unplanned and ill-sited new housing is having on Malta's coastline. In the map below the location of these three areas—Bugibba Mellieha and Marsaskala—is shown shaded. The darker shading shows the main built-up area round Grand Harbour. The drawings are by John Harrison.



Below: panorama of Mellieha, showing the effect of piecemeal development at the top of the plateau behind the compact existing village.

Planning should have a very high priority in Malta at the present time, not merely because more than 300,000 people live on five small islands whose overall area broadly corresponds with that of the Isle of Wight, but also because a combination of circumstances has given rise to a building boom which has greatly intensified the pressures on land in recent years. One of these circumstances is the rise of Malta as a tourist centre*, the consequences of which can already be seen in the rash of new building that is scattered along Malta's coastline. Hotels form only a small part of this piecemeal development. The majority consists of holiday flats and villas, together with low density housing estates to meet the needs of an estimated 8 to 10,000 people who have chosen to settle in Malta during the last ten years.

The growing numbers of tourists and settlers are responsible however for only part of the building boom. It is also the product of rising living standards among the local population. This is reflected in improvements in housing conditions between 1957 and 1967. During this period the population of the Maltese islands declined by nearly 2 per cent. At the same time the number of households increased by nearly 3 per cent and the number of dwellings rose by more than 18 per cent. The increase in dwellings has had the immediate effect of reducing the proportion of households sharing accommodation from 14 to 6 per cent. It also reflects two changes in the pattern of living. In the first place there is the rapid development of new suburban districts on the edges of the urban concentration that accounts for two thirds of the islands' population as people move out of the congested inner core around the Grand Harbour. Secondly there is the growth of second homes along the coast.

As few places on the island are more than a few miles from the coast, the increase in the number of second homes gives some indication of the role played by the villeggiatura in Maltese life. This is the term used to describe the process whereby families leave their homes in the towns during the summer to live a simple life by the sea. The scale of the increase in second homes and holiday accommodation in general can be seen by comparing the numbers of households and dwellings in 1957 and 1967. In 1957 it was estimated that 74,563 households occupied 73,619 dwellings, but by 1967 some 76,579 households had 87,060 dwellings at their disposal, an excess of dwellings over households of 10,500.

As there is every sign that the building boom will continue for some time to come, it seems worthwhile to review Malta's experience so far to see the general planning lessons which should be borne in mind. This article examines the effects of recent development on three settlements outside the main urban concentration (see map). Both Bugibba and Marsaskala are coastal settlements which have grown rapidly during the last few years. In the sense that it is used here, Bugibba refers to the north-easterly extension of the small resort of St. Paul's Bay on to the Qawra headline. Between 1957 and 1967 the number of dwellings in St. Paul's Bay as a whole increased by 93 per cent. Virtually all this increase was in Bugibba. Marsaskala, on the east coast, was originally a fishing village; it is now a small coastal resort whose stock of dwellings increased by 55 per cent between 1957 and 1967. In some ways Mellieha is more like the traditional Maltese village than either Bugibba or Marsaskala. Yet because of its site on a plateau overlooking the sea, and its position somewhat apart from the main urban concentration, it has attracted much more development than most of the traditional villages.

BUGIBBA

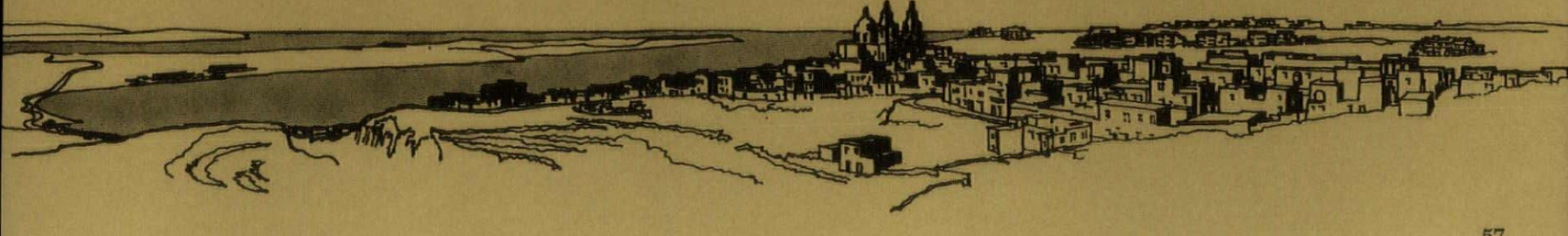
Until recently Bugibba was little more than a name on the map. It was a small suburb of St. Paul's Bay situated on a gently sloping headland which gives extensive views of the sea. Now, because of the building boom, Bugibba is beginning to outgrow its neighbour and become one of the main areas of urban growth in Malta.

Most of this development has been aimed at the British market and four large and fairly compact groups of villas and flats have been built on the headland in the last few years, somewhat apart from the old centre. The old centre, 1 (page 61), has expanded at the same time, as an increasing number of Maltese families have sought summer accommodation by the sea. As a result a small promontory has been covered with holiday flats and ribbon development has been permitted on the higher ground to the rear.

At the present time Bugibba gives the impression of a settlement bursting at the seams in all directions. The whole area resembles an enormous building site. Even alongside flats and villas that are already occupied foundations are still being laid, and heaps of stone can be seen on vacant sites that are awaiting development while road works are proceeding haphazardly, with frequent interruptions to make provision for underground services, 3.

A large empty square marks the transition from Maltese Bugibba to the British quarter. On one side are the stone-built two and three storey terraces of traditional Maltese villeggiatura; on the other a large scheme of four-storey flats with prominent balconies.

* See editorial foreward, page 3.



In front of the new blocks is an extensive area of land which is still awaiting development.

Some distance along the new promenade a battered and rusty sign indicates that street J leads inland. This street has all the signs associated with over-hasty development. Heaps of building stone lie scattered around the uneven and unsurfaced road. Water-pipes lie across the road while sad-looking remnants of dust-covered vegetation are to be seen on an adjacent site which also contains the remains of an uprooted tree stump. Around this are rows of blue and grey colour-washed flats whose names—Dorchester House, Balmoral House, Edinburgh House, Northumbria House—are in themselves an indication of their tenants' origins. Two new hotels form essentially self-contained units within this area. Both consist of a large main block, serviced from the rear, set back in the grounds which contain terraces, gardens and swimming pools on the side overlooking the sea.

The housing in the J street area, 2, is fairly typical of the other quarters of British Bugibba. The partly finished promenade is lined with villas whose carefully tended gardens already provide a relief to the barrenness of the area as a whole. Behind the villas are flats of all kinds in long blocks with strong horizontal lines, squat and square blocks, and, at the end of the headland, a seven-storey point block. From a distance this is a welcome feature which breaks up the monotony of development. Between the clusters of buildings are large voids of land which have mainly passed out of cultivation but not yet reached the construction phase. Field walls and terraces have been broken down in many places and the stones and earth have spilled out on to the lower levels. There is an air of dereliction which is confirmed in at least one instance by the presence of an abandoned van.

The new parts of Maltese Bugibba have many of the features of the British quarters, but if anything they are accentuated by the haphazard way in which building has been allowed to take place. Between the main road and the sea-front changes in level have created a large hollow which is surrounded by partially built up streets and individual building projects. In addition to builders' rubble and heaps of building stone, an old oil tanker and the remains of several rusty vehicles have been dumped here, 4.

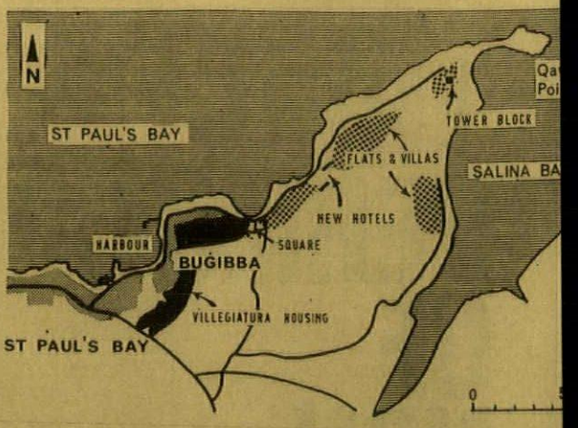
However, the streets themselves have a unity of building form and a liveliness that is conspicuously absent from British Bugibba. Everywhere people are to be seen chatting on their doorsteps while lorries and vans peddle their wares. Although there is no single focus for all this acitvity, every few yards there is a shop or a bar which provides a place for socialising that is completely lacking in the British quarters. Even vacant sites have been given some purpose in this area. With the help of the inhabitants some have become makeshift playgrounds while others have been made into improvised sports pitches.

What are the lessons to be learnt from Bugibba? The most obvious lesson concerns the scale of the sprawl that has been permitted on the headland. In general terms there is little to be said against the whole of the headland being built up, since the area has now little to offer in comparison with other parts of Malta, either from the point of view of its landscape or its agricultural potential. Having got so far continuous development may in fact be the best thing for Bugibba. But how long will it be before building on this scale can be justified? And will demands ever expand to such an extent that the less favourable sites will be built on once the best ones with the sea views have been occupied? In the meantime what is going to happen to the large expanse of back land and to all the odd bits and pieces left over, like the area adjoining the square?

Even in the backland extensive cultivation is unlikely. Apart from the gradual erosion of field walls and terraces, pilfering is likely to make farming a hazardous occupation. Unless action is taken to prevent the air of dereliction increasing, there is a serious danger of new building being inhibited by all the ugliness.

In the short term, sprawl of this kind creates grave difficulties for the departments responsible for providing basic services. If the number of bumpy and undefined roads is anything to go by, the pace of development at the present time has outstripped the capacity to provide them. Similarly the primitive forms of sewage now in use are rapidly becoming unsuited to development on this scale, and there are growing fears about the health risks involved. Sprawl moreover has brought a large area of new coastline into use. The creation of promenades and the improvement of the shore-line is a costly job which will take years to complete. In the meantime the continued existence of rubbish tips and disused block-houses, as in one instance in Bugibba, does nothing to enhance its attractiveness to either residents or potential developers.

It is obvious that a great deal of hard thought must be given to Bugibba in the next few years. Already the basic decision to expand



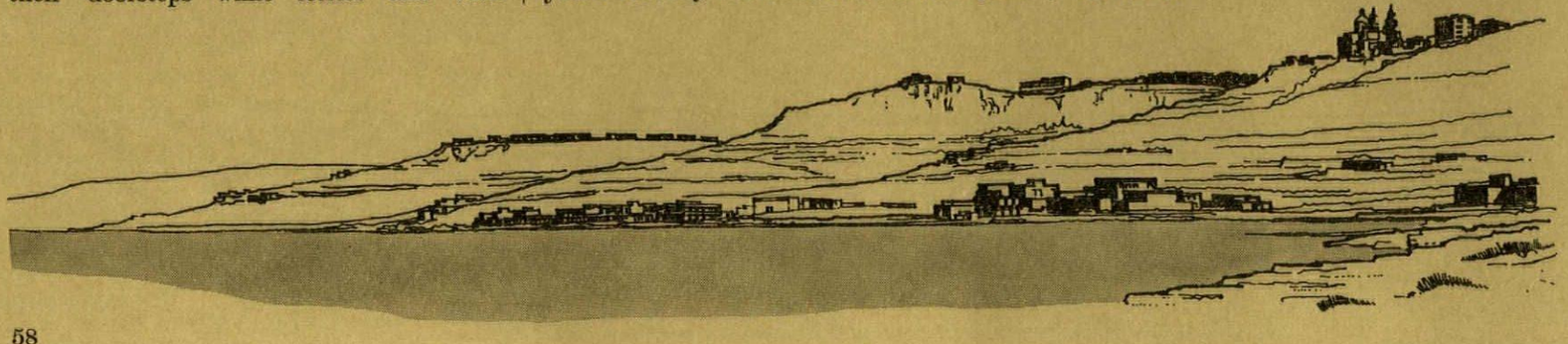
Bugibba and surroundings, showing the original village (dark) and the location of new development.

the settlement has been taken, and the implications of this decision are now becoming apparent to those concerned. If the same mistakes are to be avoided in the future, a much stricter control of the sequence in which new building is permitted to take place is necessary. Considerable improvements could be made in existing areas by greater attention to detail. Tree planting could break up the square forms of the new flats and give some shade. Controls over dumping might be taken to prevent the further destruction of field walls and terraces until building takes place. It must be recognised, however, that problems of this kind exist in all parts of Malta and action is not likely unless the local residents as a group take active steps.

MELLIEHA

Although it contains few buildings of outstanding architectural interest, Mellieha is a charming village situated on a ridge which commands some of the best views in Malta. From a distance it forms a compact cluster of buildings in natural stone, 5, dominated by the church. Its subtle complexities of building height and form blend in superbly with the bare landscape of limestone terrace and exposed rock, giving the impression that the settlement has grown out of the steep face. From within, the village is full of surprising contrasts in spite of its essential unity of form. There is an easy transition from the noisy main road to the quiet residential

The impact of new development on the skyline of Mellieha. A new hotel (on the right) competes with the village church and a broken line of buildings of assorted shapes and colours appears along the cliff top, left.



streets at the rear. Changes in level necessitate attractive flights of steps in many side streets, 6, and give the cross streets greater diversity than might be expected from a gridiron street plan, while the long rectangular square in front of the church, with its superb panoramas of land and sea, makes a pleasing contrast to the narrow streets of the rest of the village.

Below the village lies Mellieha Bay, one of the most popular beaches on Malta. In spite of its rural setting it has an essentially urban air, and thrives on congestion to such an extent that its unattractive grey sand is crowded with tents and shelters which occupy any space that is left over between the bathers and the main road. The general location of



Mellieha and surroundings, showing location of new development.

Mellieha, somewhat apart from the main urban areas and with its panoramic potential, has proved particularly attractive to developers. Recently the village has become a major focus of new building; although not as intensely developed as Bugibba, it involves a broadly similar land area. This consists of three main groups of development to the east of the village. Two of these hug the edges of the plateau-tops above the steep scarp faces to get the best views (see page 4), while a large estate of low density housing is being built in the Ghajn Zejtuna valley.

Mellieha Heights is typical of the cliff-top development. It is situated above a ravine which separates it from the old village. Reached by crossing a rather ugly concrete bridge and ascending a stupendously long and broad flight of 118 steps, it consists at the present time of a broken line of mainly three-storey semi-detached flats built on the bare rock, 7. Some distance away along an unmade up road are three isolated blocks, on the far side of the plateau-top which overlooks the sea. Behind the terraces and around these blocks is a large area of windswept and barren land.

Several hundred yards away across this desolate plateau another row of flats overlooks the Ghajn Zejtuna valley and the Santa Marija estate. This must be one of the largest pieces of private development on the island and certainly one of the most self confident. Ultimately most of this fertile valley will be filled by low-density villa development, but at the present time it consists of a relatively small number of expensively finished villas of local stone, scattered along the valley sides and connected by sinuously curving private roads. Possibly as little as one tenth of the site is occupied by houses. The remainder consists of fertile agricultural land and lush clumps of trees and shrubs. Behind this valley on the Kortin ridge can be seen another cluster of colour-washed flats and houses, which form an uneven ribbon of development along the cliff-top overlooking both the valley and the sea.

Neither of the plateau-top developments is a very successful piece of planning, and from two separate viewpoints they are close to disaster. From the main road the dramatic qualities of the upland landscape have been largely destroyed by scattered and uncoordinated building, while from Mellieha bay and the Marfa ridge the skyline has been ruined by a broken line of small buildings of assorted shapes and colours perched on the edge of the scarp face. These do not blend into the natural landscape in the same way as the village, but form an obtrusive and alien element. Even the old village has not escaped this kind of development, as the stark form of a new hotel now competes with the church for the dominant position on the skyline.

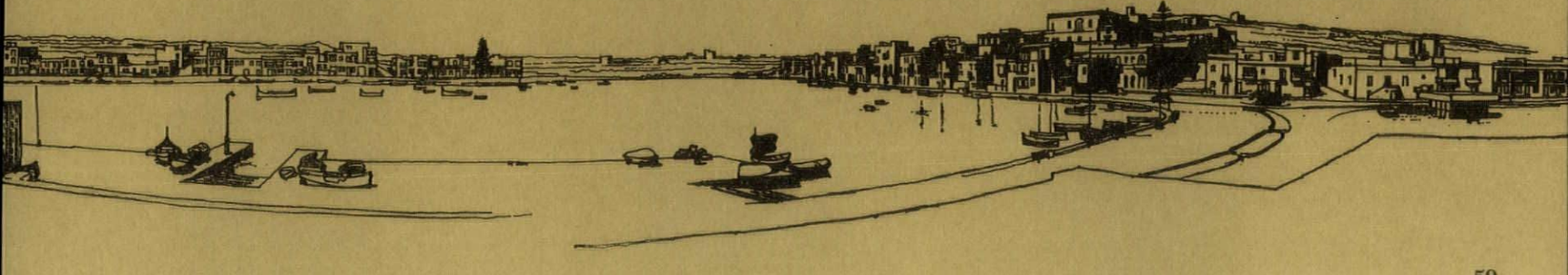
There is no inherent reason why either landscape or skyline need be ruined by new development in this area. Compact groups of buildings carefully sited on the plateau-tops would probably add to the character of the area as a whole without spoiling its essential qualities. Similarly, different materials and a stricter control over precise location, including a set-back from the cliff edge, might have prevented the total destruction of the skyline. Examples of what might have been done in this way can be seen in the same area. At one point below the cliff-top there is a row of traditional houses. These have been built in such a way as to blend into the rock-front without affecting the skyline. They have almost the same view as a building on the cliff-top without its obtrusiveness. This can also be achieved in a modern building by a design which takes account of the special features of the site, as can be seen in the case of the new hotel that is being built on the northern side of Mellieha bay. Its two blocks with their strong forms set halfway down the slope enhance the landscape while respecting the skyline and still command a good view of the bay.

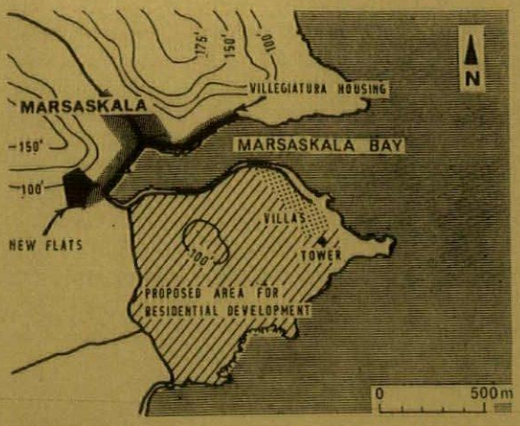
Like Bugibba, the Mellieha area is probably a good choice for large-scale development by comparison with other parts of Malta, but the rash of new building that has taken place is largely unrelated to the old village. It has, as yet, no real character of its own. Each estate tends to be seen as a separate unit rather than in terms of its place in the new town that is emerging. Even the road network seems designed to keep people apart by providing separate access to each area. Nor is there any obvious focus of activity apart from the main road. Local road links and attempts to ensure greater co-ordination in future development could improve this situation as the Santa Marija estate gradually fills up with villas. Control over building on the plateau-top could produce more compact clusters which would lessen the effect of sprawl, and, of course, weathering will help to reduce the contrast between the man-made and the natural landscapes. But for a long time to come the message of the Mellieha area will be essentially negative, pointing to features that should be avoided in new building elsewhere.

MARSASKALA

A long winding road leads down from Zabbar to Marsaskala. The first sign of the settlement is an unprepossessing ribbon of fairly recent development stretching several hundred yards along the road. But this gives little indication of what follows. Suddenly there it a sharp turn in the road, and from here there is a wonderful panorama of an old fishing village, 8, situated at the head of a long curving bay surrounded by low hills. Everything in this settlement seems to be on a small scale. It consists of only two parallel streets of

Marsaskala seen from across the bay, showing the small scale of the existing village in its setting of low hills. Some development has already begun on the hills behind the main settlement (right), and the headland on the left has been zoned for housing.





Marsaskala at the head of its bay, showing also the location of new development and the area proposed for housing on the promontory to the south of the village.

terraced houses running alongside the bay. It looks entirely towards the sea, and even from the inner street frequent gaps between the buildings give attractive glimpses of the harbour and its boats.

Some way from the fishing village along both shores of the bay there are terraces of traditional Maltese villegiatura housing, 9. These, like the old village, are on a small scale by comparison with similar development in other parts of Malta. Only on the north shore has building extended beyond a single ribbon of houses, and here some simple beach improvement, including steps cut in the rock and some concreting to make the surface more even, have made this place into a miniature holiday resort.

So far the modern development has been relatively unobtrusive. It consists largely of a small estate of mainly two-storey housing on the hillside behind the southern end of the old village, and an area of low-density single-storey villas close to Saint Thomas's tower some distance away from the other buildings, 10. The new estate consists of a row of staggered houses extending up the hillside, with side streets of semi-detached houses running along the contours. It has splendid inland views towards Zejtun as well as a magnificent prospect of Marsaskala bay and its southern shores. At present it helps to reinforce the impression from the Saint Thomas's Bay road that the old village forms a U-shaped cluster around the rounded hilltop which lies to its rear.

The villa development forms a fairly compact cluster, consisting of long low villas in local stone which have mainly been constructed on stone-faced decks to create private terraces with views of the sea. Few of the villas overlook the road, and the profusion of blank stone walls bears some resemblance to the traditional Maltese field walls. At the southern end of the site building operations have already encroached upon the fine square fort that was built in 1614 to protect the entrance of the bay, which now lies unused, isolated from casual sightseers by its overgrown moat and a heavily barred door.

As yet modern development has been on a scale which is in sympathy with the old settlement, but there are signs of much larger quantities of building in the near future. More building on the hillside behind the village seems inevitable and in some cases foundations have already been laid. Some infilling and new construction is taking place on the northern shore, while on the southern shore of the bay the entire headland between Marsaskala bay and Saint Thomas's Bay has been zoned for housing in a Government planning scheme. It is obvious that development on this scale will completely transform the existing settlement and destroy its scale. In particular the headland between the two bays is an unfortunate choice for large-scale building. Because of the way the bay curves, it occupies a position of special prominence in the local scene, and its low height is likely to make this kind of sprawl especially obtrusive. From Saint Thomas's Bay its effect could be little short of disastrous, as at present this bay contains only a small group of buildings on the valley bottom.

Because of its scale Marsaskala seems to be a much less obvious choice as a major focus of new building than either Bugibba or Mellieha, and the crucial question is what parts of the island will be preserved from major building operations by the sacrifice of this area? If this can be answered satisfactorily, then the question becomes one of the capacity that should be given to this area to absorb development, and the way in which this can be achieved with a minimum of disruption to the natural setting of the bay. After this has been decided new building should be phased in such a way that particularly exposed areas on the headland are left to the final stages of the scheme if they have to be built up at all, and infilling should be completed before new sites are developed. In addition, in order to cater for the increased population of the area, the present road system will need rethinking; a large volume of traffic moving along the water front should be avoided at all costs. The integration of the new estates on the hillside behind the old village will need a great deal of care as there is no possibility that there will be a visual gap between the old and the new, as at Bugibba or Mellieha.

The question of the tower also needs consideration. There seems to be little point in leaving it in its present semi-derelict state, and to bring it into use for some purpose such as a restaurant could bring life into the area without destroying the qualities of this fine building.

So far the new developments at Marsaskala have been relatively successful, but the prospect of large-scale building raises fundamental questions which should be answered satisfactorily before it is allowed to proceed any further. Marsaskala could operate at several different levels. It could remain substantially a small-scale settlement which is in close harmony with its natural setting. It could become a medium-sized resort through the development of the hillside behind the old village and limited schemes for building along both shores of the bay. Or it could be transformed into a major focus for new building activity on Malta. In this last case it should be shown, beyond all possible doubt, that this is necessary in the interests of the island as a whole. In Bugibba and at Mellieha decisions have already been taken which make the latter choice inevitable, but at Marsaskala there is still time to rethink both its possibilities and its implications. Marsaskala offers an opportunity to show that the lessons of recent development have been learnt.

To the outsider from Britain, Maltese planning has many strange and disquieting features. Much of the apparent anarchy, exemplified by the sprawl of piecemeal and haphazard development, must be attributed to a lack of technical resources. By comparison with Britain the resources devoted to planning are negligible. The Maltese Government has at its disposal only a handful of technical staff within the Public Works Department and the services of the occasional United Nations or Ministry of Overseas Development consultant. In recent years the technical staff have been overwhelmed by the mass of administrative detail caused by the building boom, and have had little time to review the situation as a a whole. As a result, in the middle of 1968 there was still no overall master plan for the islands which would provide a framework for day to day decisions.

In the absence of an approved master plan general guidelines for policy have been laid down for many parts of the islands through local planning schemes. This system has, however, a number of limitations when viewed as an instrument of policy in the context of a building boom. It suffers from a basic lack of flexibility in that land is allocated in planning schemes on a once-and-for-all basis, and the layout of streets is shown in relative detail even where completely new areas are envisaged for development. The absence of a time-scale in these schemes tends to mean that the amount of land allocated for residential development is often far greater than is justified by immediate needs. In the context of a building boom this can act as a positive incentive to sprawl. It is also apparent that the detail demanded in these schemes is not only time-consuming in terms of the resources that are available, but could in some cases actually inhibit good development where large-scale projects are involved which contain their own cirulation networks.

Despite the lack of technical resources and the limitations of the planning-scheme system, there can be little doubt that, given the will to plan, Malta can ensure that its towns and its countryside are enhanced for the pleasure of future generations. But examples like Bugibba, Mellieha and Marsaskala show that public opinion has so far been slow to appreciate the full implications of the building boom. No matter what the authorities themselves may wish, the final decision rests with the public, which must choose whether or not building should continue in the present destructive manner.

Acknowledgment is made to the Sunday Times of Malta, *in which some of the above material has previously appeared.*

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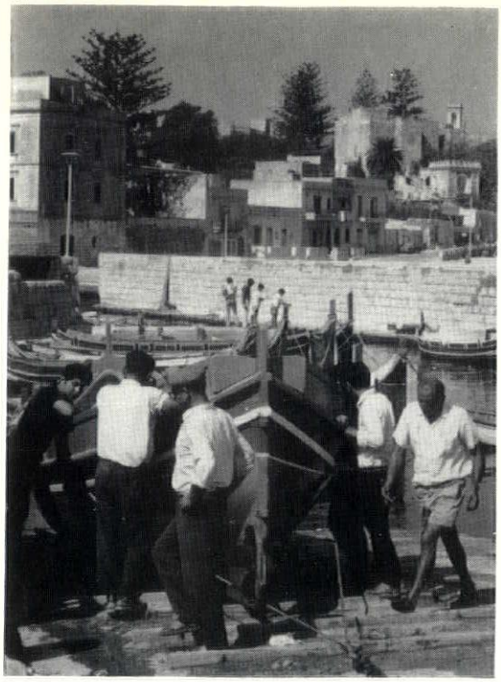

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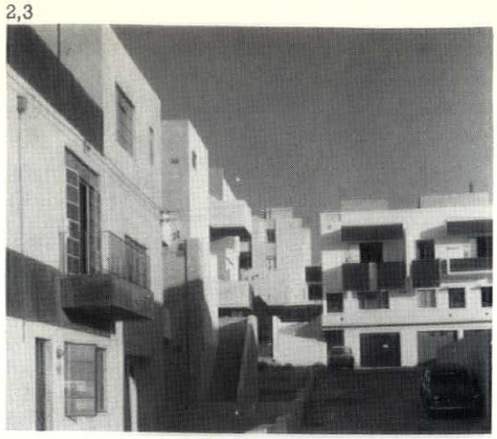

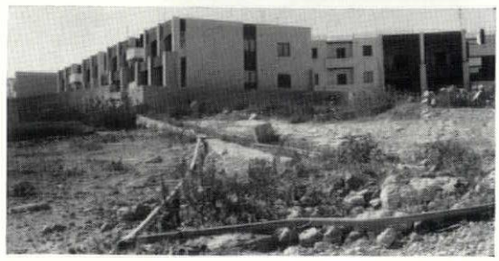

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BUGIBBA: 1, *the old village centre.* 2, *new housing for British settlers in the J Street area.* 3, *waste land between the flats which will eventually become J Street.* 4, *uncontrolled tipping in the new development area.*

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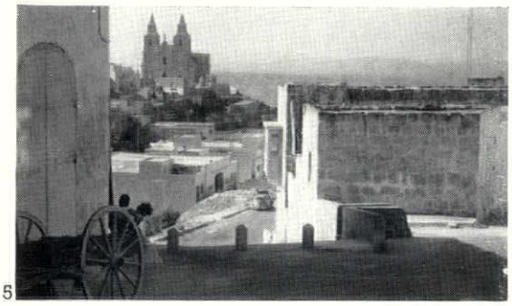

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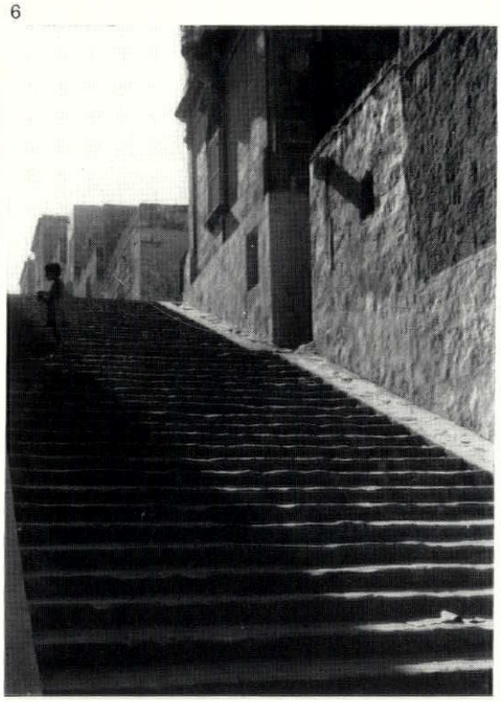

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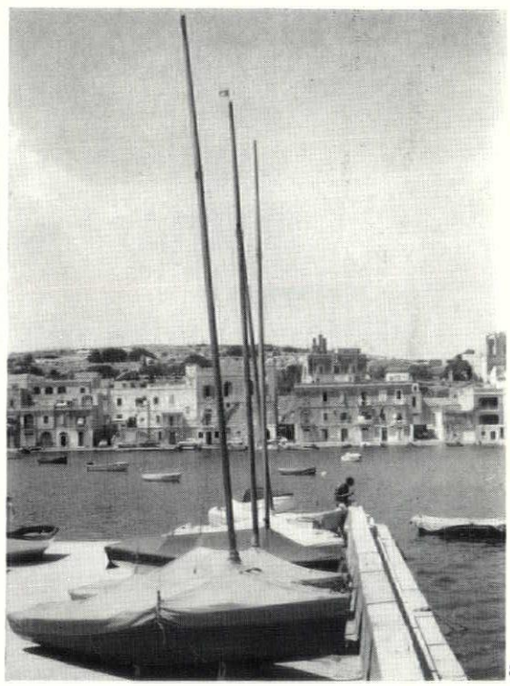

MELLIEHA: 5, *the old village with church in background.* 6, *steps and characteristic building forms in the old village.* 7, *cliff-top development at Mellieha Heights: a townscape contrast.* *See also page 4.*

MARSASKALA: 8, *looking across the bay towards the main settlement.* 9, *villa development on the headland.* 10, *St. Thomas's Tower, with building operations encroaching on its site.*

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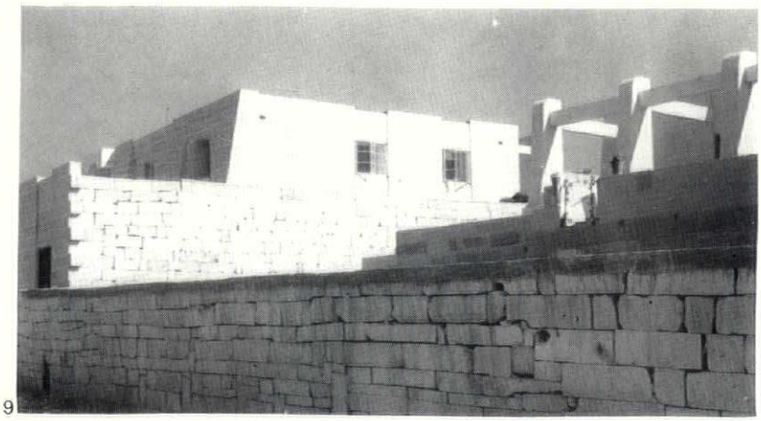

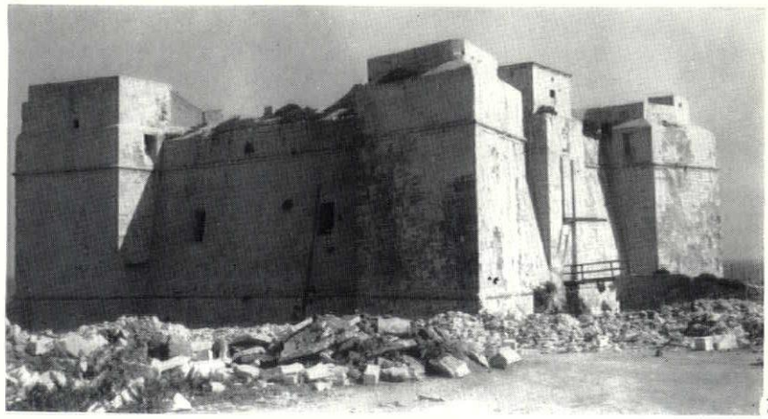

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RAPE OF A VILLAGE

1, Zurrieq from the outside, with its close-knit street-plan still apparently intact. 2, the centre of the village, recently broken open by new road construction so that it no longer has the enclosure needed by a social gathering place. The inhabitants rush across it to the shelter of the surviving narrow streets (right).





Peter Richardson

RAPE OF A VILLAGE

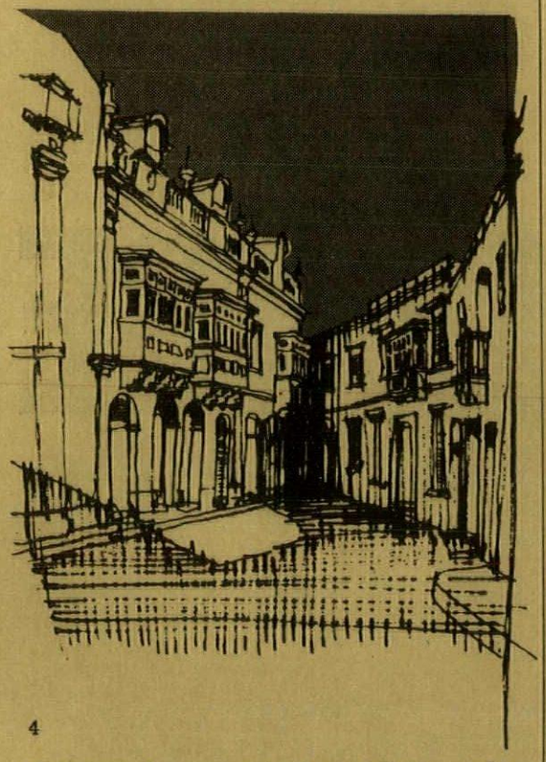
The unique quality of the Maltese villages, with their compact planning so well suited to the climate, will disappear if they are broken open for the convenience of motorists or on behalf of some misguided idea of improvement. This has already happened in more than one village and is threatened in others. In this article Peter Richardson, who is teaching at the school of architecture in the Royal University of Malta, illustrates the problem by the sad example of Zurrieq. He also made the drawings.

It is to be expected that half-a-dozen small towns or villages scattered over a restricted geographical area of only ninety-five square miles would exhibit certain similarities. But the consistency of the rural villages of Malta—Attard, Mgabba, Qormi, Qrendi, Tarxien, Siggiewi, Zabbar, Zejtun, Zebbug and Zurrieq—can confuse even the trained architectural observer. They all have similar form. The enormous parish church dominates the housing huddled around it, clustered in a haphazard maze of twisting narrow streets. Until very recently, the architecture of individual buildings maintained the consistency: simple, cubic houses with cream-washed walls pierced only by small openings, classical palaces and villa retreats providing modelling and relief by finely carved stonework and timber balconies punctuating the street facades, 4.

All these characteristics can be seen at Zurrieq, a village of 6,760 population, situated half a mile from the south coast. But recently a failure to appreciate the essence of the

3, *air view of Zurrieq with the main (but still narrow) streets and the many small squares darkened. A is the line of the new bypass. B is the wide new street into the centre.*





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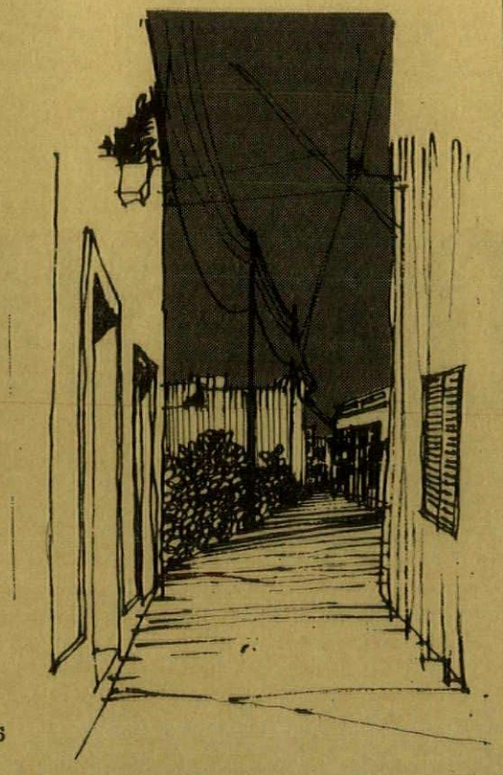

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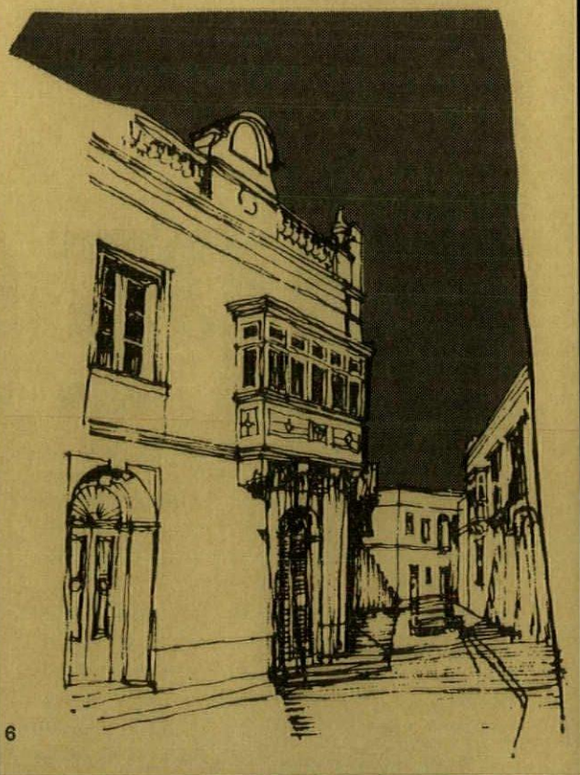

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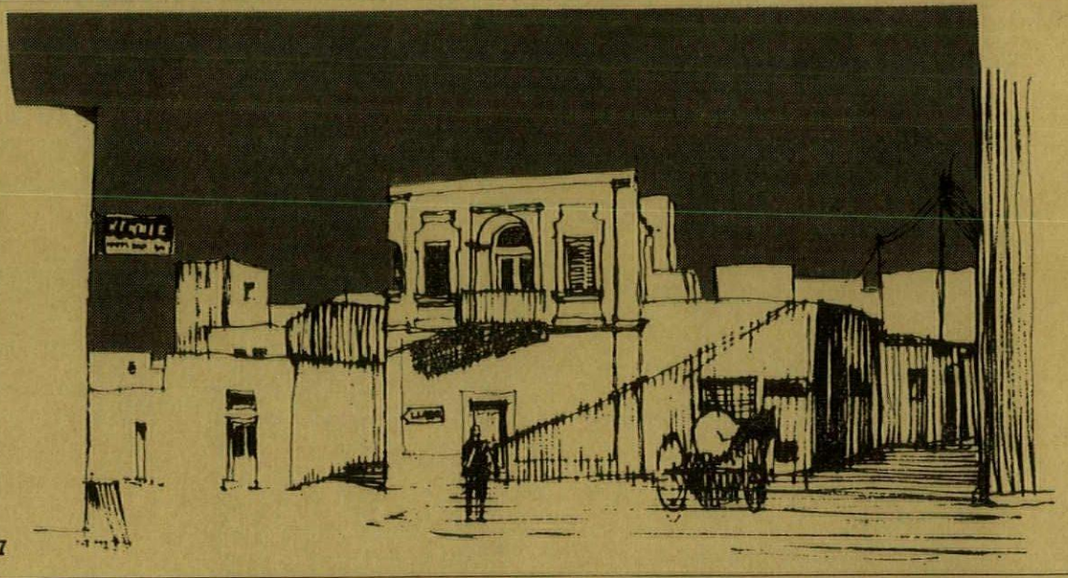

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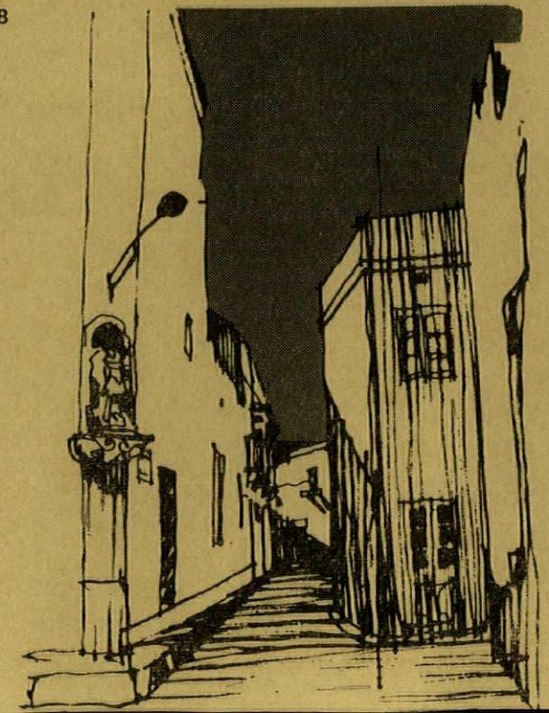

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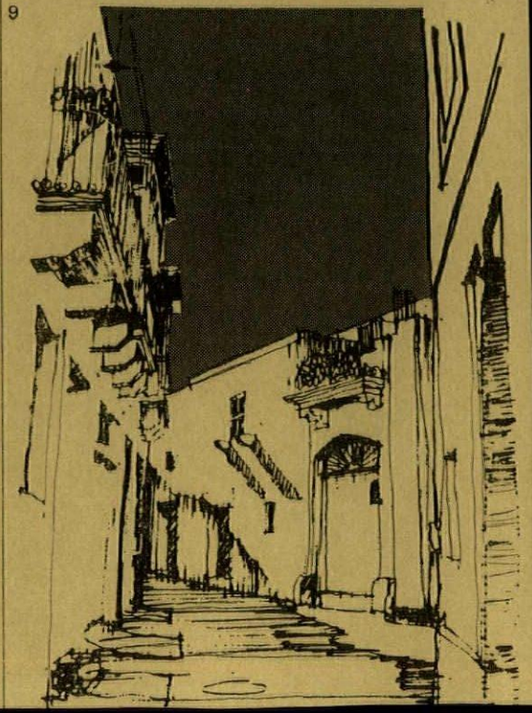


9

structure has caused the spoliation of a carefully balanced urban ecology; one that has grown up organically through the ages as a direct response to the severity of the elements. As Richard England has said, Malta is too small to be able to tolerate even one architectural mistake. The spoliation of a town or village is an infinitely greater loss.

The tortuous, twisting streets of the traditional village show fossilized the ancient field boundaries. Land in Malta is precious; land and soil for agriculture even more so. Every square foot of available land surface is put to cultivation. The undulating nature of the topography dictates that fields be terraced. The terraced fields have a free-form nature, the boundaries being determined by contouring. Cart tracks meander between the wall terraces. It was along these field tracks that the villages developed, their structure evolving within the intricate boundaries of land ownership. The street pattern at Zurrieq traces the field terracing, long lost under the rising structure of the town. The streets wander aimlessly, 5 and 6, convoluting between high cliffs of buildings, and this confusing lack of direction was undoubtedly a great help in defending the village against the Turks.

Defence has always been an essential criterion for the development of Maltese communities. The fortified wall of Mdina and the bastions of Valletta provide obvious barriers to the aggressor. The street mechanism of the undefended Maltese village provided a more subtle system. The enemy here was the marauding Turkish corsairs, who pillaged the island for slaves and booty. The bands of corsairs were few in number and could strike with little warning. From afar it is possible to identify the heart of the village by the typically dominant church dome which rises over the central square, 1. But on penetrating the perimeter, the direction of approach to that centre becomes confused. Approaching

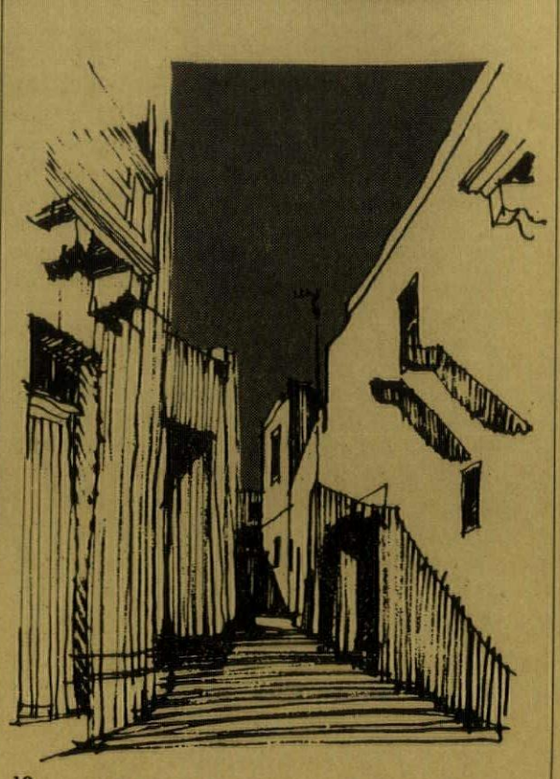
Zurrieq from Wied-iz-Zurrieq, the nearest and often-used landing place on the cliff-edged southern coast, the street bifurcates, each newly formed limb subsequently splitting down again and again, as the view from the air, 3, reveals. At every junction there is a fifty-fifty chance of reaching the centre. Hence the constant direction indicators to modern tourist traffic, 7. Once in the neck of the junction 'funnels', visual return is impossible. The narrow twisting street seals off any evidence of escape behind, or any indication of destination in front. Side roads off the streets can lead nowhere. Even the light conspires to attract the view to the next turn, 8. And beyond another turn, 9, and a split in the alley, is another blind lead; then another turn, 10. And beyond is a dead end, 11, into which the Turk could be lured and then pelted from the rooftops by the villagers, safe atop the unscaleable smooth walls of their dwellings.

The Turkish corsairs ceased raiding the island in the eighteenth century. But this pattern of development seems to have been carried on in the subconscious mind of the Maltese, and fairly recent examples of blind alleys can be found, exhibiting all the characteristics of a defensive maze. The narrow streets in any case are functionally valid not only for outdated reasons of security but for continuing climatic reasons. They provide shade from the glare of the sun and protection from the incessant wind.

Traditionally Maltese life has been centred around the church, and this social function is expressed architecturally in all the towns and villages. At Zurrieq the dome of St. Catherine's parish church dominates the whole, 1. The church square, 12, was in the past a gathering place for the village people, where the many fiestas were celebrated; the daily selling of fresh vegetables from carts was an accepted feature of early morning life. Spatially, the 'square' is an important central release—tortuous narrow streets suddenly explode into a dignified surrounding to the church, perfectly in scale with the urban fabric, 13 and 14. The relationships of the tight spaces around the church heighten the sense of grandeur and occasion on arrival at the central square.

From all the surrounding approaches the mass of the church is exaggerated by the close nature and reduced scale of its surroundings. The smallness of the buffer spaces between village and church provide moreover an important environmental control. Just as the narrow streets provide welcome shade from the overpowering summer sun, so the church square provides shade and shelter from the hot strong winds which blow across the island. The essential elements of an urban fabric—sense of place, occasion, scale and convenience—are happily balanced.

But insensitive development is destroying this balance. A great mall has been carved into the centre of the village to provide a ceremonial approach to the front of the church, 15 and 16. The effect on the mass of the church is disastrous. Far from giving it greater visual importance its scale is lost because of the vast spaces and great distances



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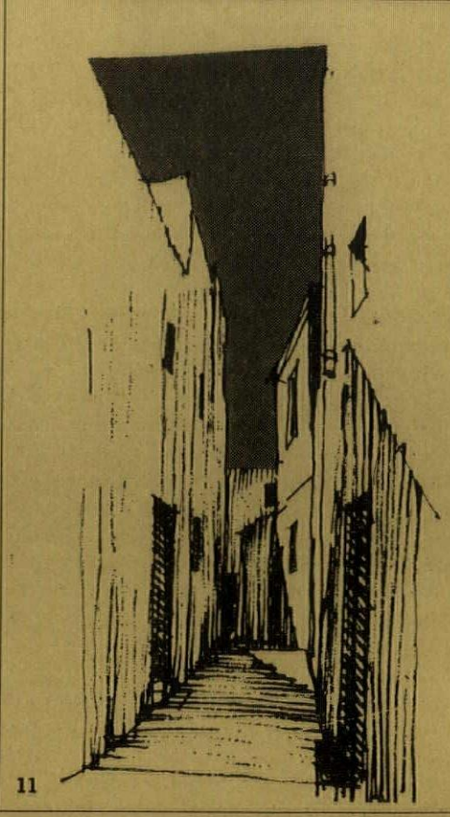

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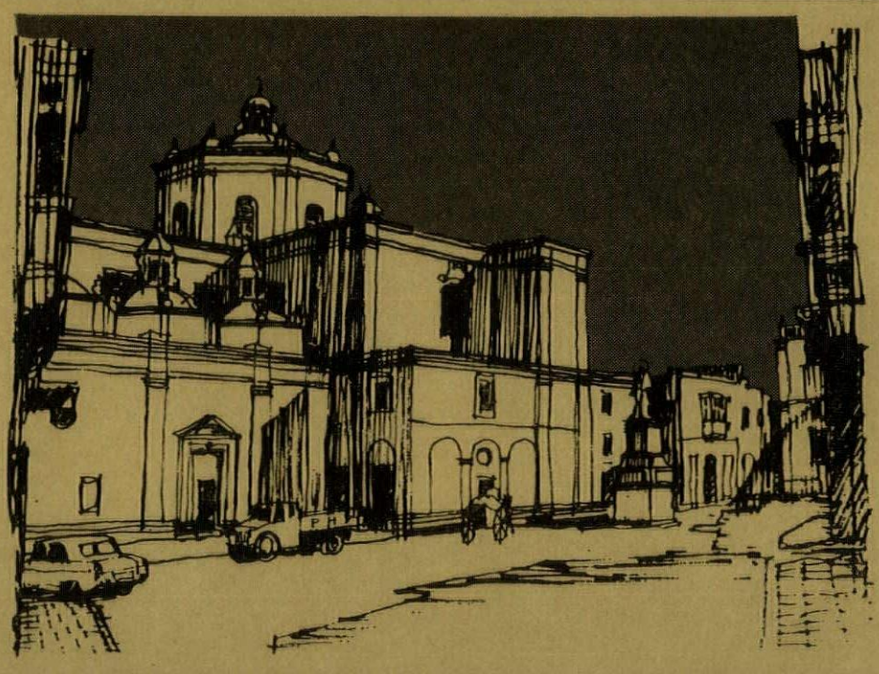


12



13

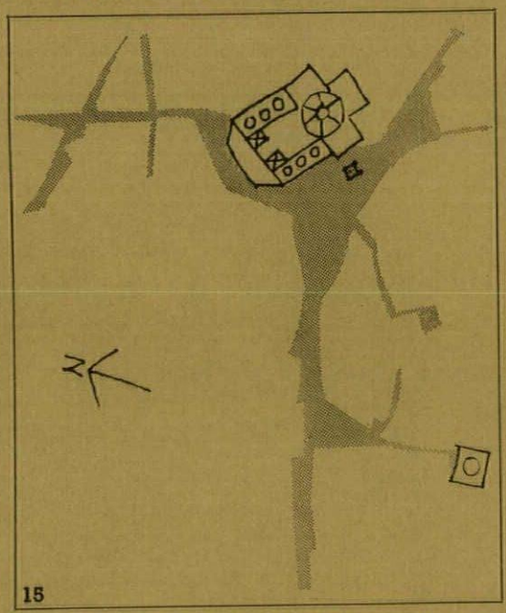


14

from which it can now be seen. Even worse, the quality of the development of property on this mall is inexcusable. The dignified unpretentiousness and control found in the old buildings have been replaced by tasteless extravagance. But the greatest loss to Zurrieq has been the movement of central space from the side of St. Catherine's to the end of this mall. A newly created desert, a turning circle for buses, now provides the space nucleus, its vastness ensuring, however, that it is not used as a gathering place. The village people rush across it towards the sanctuary of the narrow streets on either side—2 on page 62. Beyond this desert, a further extension of the mall lays bare the heart of the village. The intimate central place is exposed by a great gash running through the urban structure. What was the excuse for this crass insensitivity? So that the local band can parade up and down the mall three times a year.

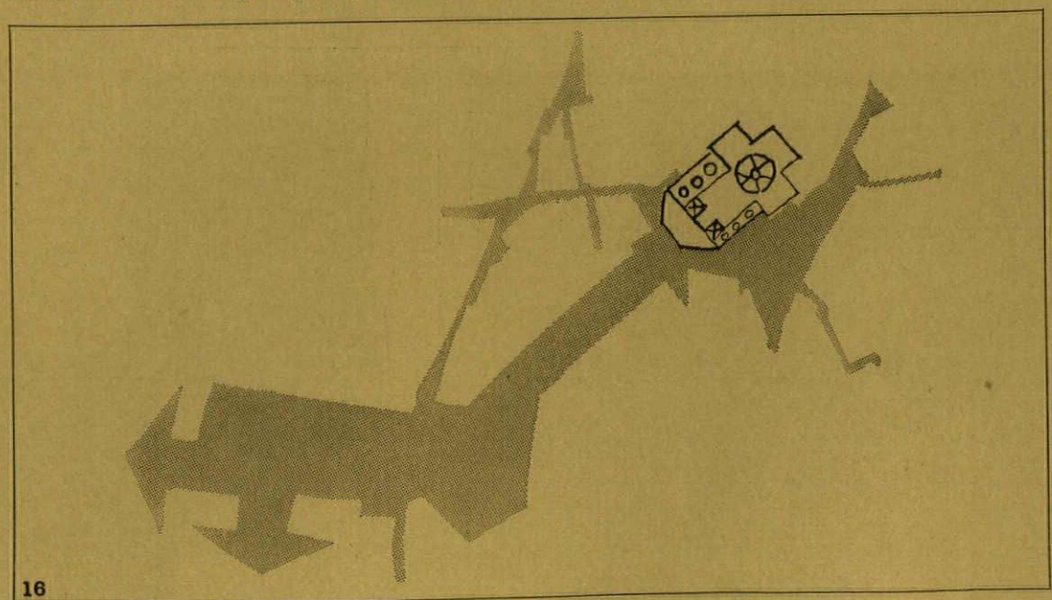
Yet Zurrieq could have survived. Like all Maltese villages it suffers under the onslaught of a rapid increase in motor traffic, speeding through a street system designed for the quiet movement of the pedestrian and the donkey-cart. Zurrieq was a barrier to the tourists rushing from the smart Sliema hotels to the Blue Grotto. But a recently completed road effectively bypasses the body of the village, and next season a new thirty-foot super highway will whisk them from Luqa to the coast. Zurrieq could therefore have survived, protected by these new roads from the motor-car which in ten years has done more damage in Malta than the enemies of Christendom did in four hundred—which makes the breaking open of the village structure described above even less excusable. Zurrieq is only one village to have been spoiled in this manner. There are proposals for similar malls exposing the guts of other tightly knit village centres. The mall, however, is only the most glaring manifestation of the spoliation of Maltese urban forms. Lesser in scale, but cumulatively as disturbing by their number, are the results of a changing attitude of the village people to the details of their dwellings. The simple unifying cream limewash is giving way to imported emulsion paints. Where browns, fawns and greys predominated, pale greens, pinks, sky blues now interrupt the scale of unified terraced façades. Now the 'one up on the Jones's' is the terrazzo render, carefully applied in a nut-filled multicoloured chocolate layer of prissy panelling. The exuberance of 'better homes' magazines is taking over from the corporate village repaint for the annual Saint's days.

The structure of the Maltese villages is so tightly interlocked that *any* deviation from their pattern of development is bound to cause their destruction as marvellous examples of townscape developed as a direct response to simple functional and climatic problems—a place where people can live together in simple harmony, facing the fierceness of their environment. If Malta wishes to retain these visual qualities, it must apply the most rigid controls to ensure their preservation. If, from the spoliation of Zurrieq, the planning authority can see the mistakes, then its loss will be of some use in preserving the villages that remain.



15

15, *the church in the centre of Zurrieq and the surrounding streets as they used to be.* 16, *as they are now, with wide new spaces destroying the sequence of enclosures.*



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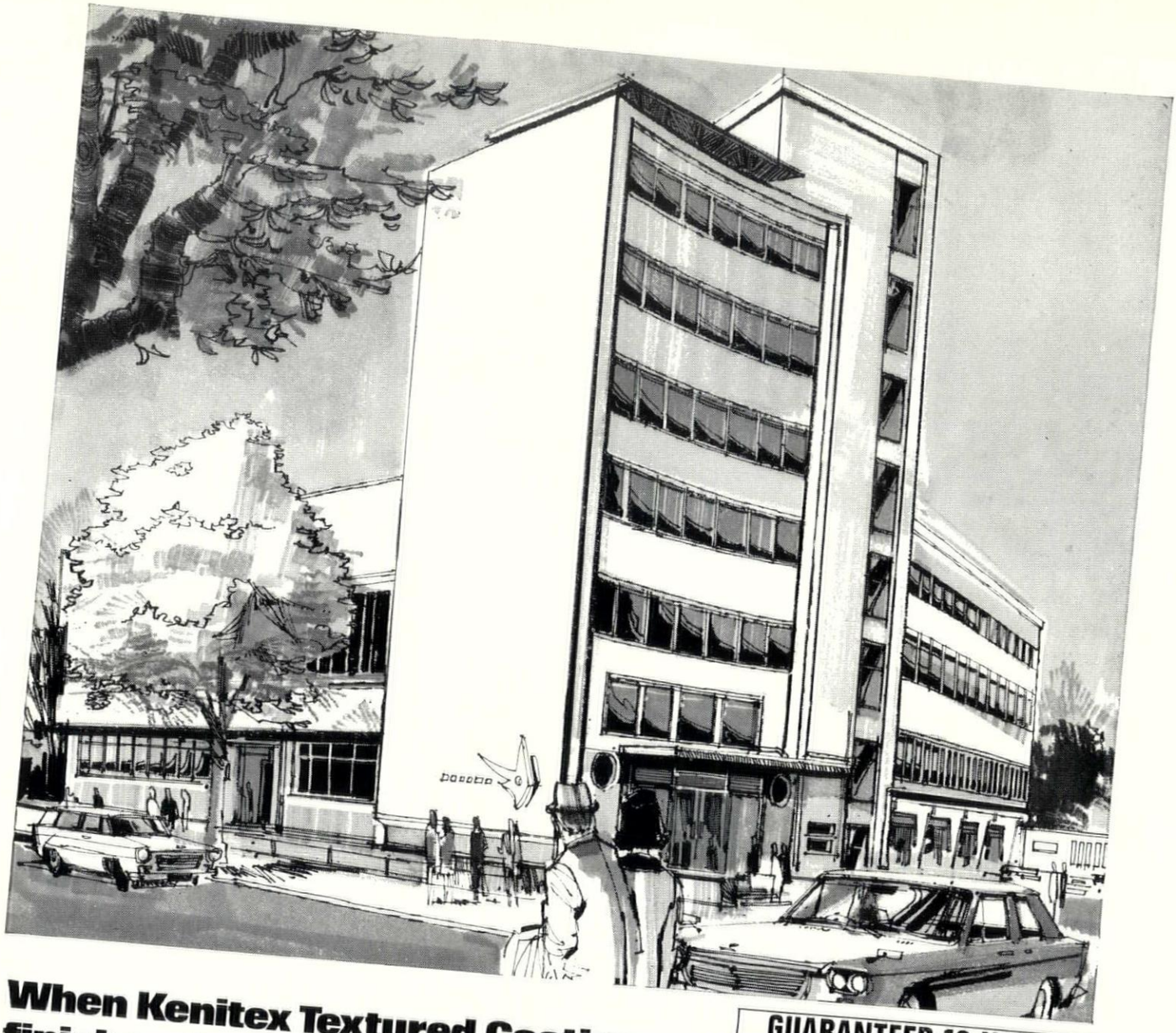

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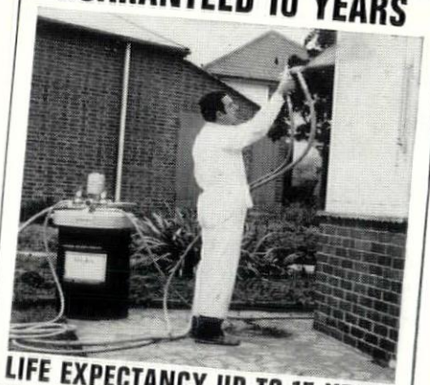

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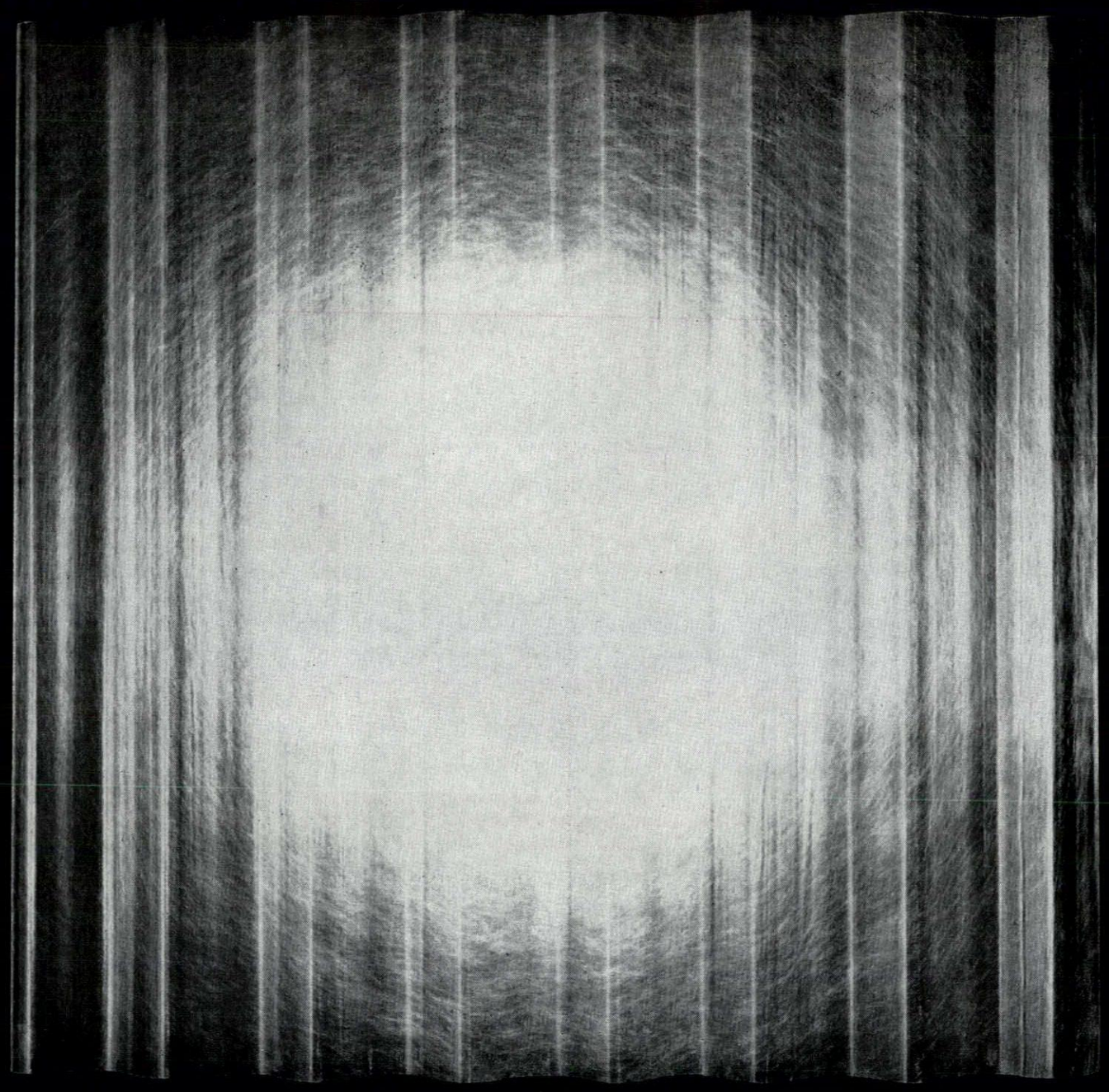

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MALTA FUTURE

The greatest problem the Maltese have to face concerns how their island—a mere speck in the Mediterranean sea—is going to accommodate all the activities that authorities have suggested should be undertaken on it. It seems inconceivable that a mere 120 square miles, and a population of 320,000 people (equivalent to a city the size of Leeds) can possibly encompass all the proposed developments in the way of tourism, of free-port trade and capital intake by attracting expatriates, without a drastic change in the appearance of the Malta which we know.

Inevitably these will involve a modification of Malta's natural qualities—of her uniqueness as a place which, over the centuries, has developed in a particular way to fight the sheer inhospitability of the terrain. In 1529 the Commissioners to Grand Master De L'Isle Adam, reporting on the suitability of Malta as a base for the Knights of St. John, wrote 'Residence appears extremely disagreeable on an island, merely a rock six or seven leagues long, three or four broad, the surface of which is barely covered with earth unfit to grow corn or other grain'.

What are the island's resources now? What can she offer? She has one of the finest climates in Europe. Where else in Europe can you find seven months with no rain guaranteed? An unrivalled native hospitality, a unique and completely man-made landscape and an historical treasure house: two thousand five hundred years of European and North African culture crystallized and condensed on one small limestone rock.

She now has a special place in the European scene: a country with one of the lowest costs of living, particularly when judged in relation to that indefinable thing, the standard of living. But Malta is falling prey to industrialization, that contentious edict of modern economics, and in doing so is surely destroying her most valuable asset; a unique architectural landscape. That dismal drive from the airport through the industrial estates! As far as tourism is concerned, they could not have chosen a worse place to site factories, even though some of the factories are well designed.

Because of the small home market, there is a limit in any case to industrial development, and it looks as though the basic industry of the future must be tourism. But if Malta tries to ape the Mediterranean Rivieras she can only end up by being second-rate. The island is not a Côte d'Azur or a Costa Brava, but she has her own individuality to assert—and assert profitably. Her smallness and centralization are her most valuable assets. Within the light of world experience, and with adequate forethought, it should be possible to put Malta into a position where, instead of being a socio-economically retarded country, as she was fifteen years ago, she stands in the forefront of European development. Take for instance the problem of the private motorcar. At present car ownership in Malta is growing at something like one thousand vehicles a month. Already the car situation strangles Valletta and is threatening the whole island. This process could be slowed down by palliative traffic engineering, but such measures would surely destroy much of Malta; indeed so-called road improvement works are already destroying her unique villages. The inhabitants of these villages, so the authorities say, make complaints about their narrow streets (the *Times of Malta* reported recently that the villages were not planned with adequate access to the centre). Access for what? Obviously not for the motorcar, but they are certainly quite adequate for pedestrians.

Malta has extremely low traffic-accident figures, and undoubtedly the accident rate is kept at a low level by the sheer difficulties of driving on little more than surfaced cart-tracks. Most of the major accidents occur on the newly widened high speed roads, despite a 40 m.p.h. speed limit for rural areas and 25 m.p.h. for urban areas. While the construction of miles of new roads is bound to destroy the close-knit quality of the Maltese townscape and lead, through road-widening, to the demolition of the random stone walls that are such a unique feature of the landscape, the injection of more and more vehicles into the urban areas will create a parking nightmare.

Malta will then find herself in the position that the larger countries are already trying to escape from. She has the unique opportunity to take the necessary measures now, before the cars destroy the landscape and the whole environment of the island. And Malta is in a strong position to be able to do this. She is a small island. She has a system of public transport which is not only extensive in its cover and cheap in its fares, but, more important, seems to be socially acceptable. This reflects the social attitudes of the Maltese; despite vast differences in wealth there is a sensitive social intercourse between all classes of the population. Another advantage that Malta has over the rest of Europe is her non-dependence, at least at this stage, on a car-production economy. This in spite of the recent introduction of car-assembly on the island. Vested interest is probably more heavily weighed in favour of public transport systems than private car production.

Nevertheless the car has a strong social hold over the Maltese; witness the Luqa 'parade', where on Sunday afternoons the newly shined go-faster boys be-sport their cars like Ascot hats. And the car, as in other countries, is a status symbol to certain sectors of the population—a glittering bead, like the transistor radio. The most difficult problem, in phasing out the private motorcar, will be changing its status, particularly in the developing social context. There is also the problem of employment in garages and petrol stations. Driving round Malta, one is amazed by the number of establishments which aim to satisfy the insatiable needs of the car.

To make the phasing out of the private car practicable, the present excellent bus routes would have to be

extended to provide for journeys between the villages, as well as the radial routes to Valletta. The short route journey, the personal door-to-door service, which the private car is supposed to fulfill so well, could be provided by taxis which could be cheaper than car ownership if accommodated within an effective transportation policy. If a transportation policy could be formulated along these lines, it would open up favourable possibilities for urban development. A transportation system based on public vehicles would necessitate the development of nucleated communities, whose form would be sympathetic to the traditional Maltese village although the motives for growth would be different. In the past people grouped themselves together in villages in order to defend themselves against outside attacks: strength in numbers. Nucleation around the bus stop would be for the opposite reason, to allow easy escape from the community.

The smallness of Malta calls for tight clusters of population. The quarter-acre suburban sprawl of recent developments cannot, and should not, be tolerated. High density would, however, dictate a new attitude to building. At present building is restricted to five storeys, but is this justified for dense urban areas? For apartments and hotels, at least, vertical expansion should be allowed, given proper control of siting. Multi-storey growth in areas where development is already saturated, along the Gzira—St Julian belt and the Sliema waterfront, would be far better than an unlimited horizontal sprawl.

Another vital problem is the pressures of exploitation and industrial expansion on the very limited land reserves that are left. What has already gone is irretrievable. What happens in the future will depend upon land allocation within the development plan for Malta. But what is going to be the architectural pattern in the areas designated for development? If we get the same sort of development as we have had in the past few years, then the prospect is dismal.

Building regulations are needed that would be more flexible than the present controls in some ways and more rigid in others. Take the policy of insisting on stone as the external walling material. This would be effective if new buildings used stone in the traditional manner; massive wall areas punctuated with minute window openings. But when stone becomes a thin eclectic pier between 'panorama' windows, or the vehicle for rusticated exuberance, the policy fails. Yet there is an Aesthetics Board in Malta which, with adequate professional and informed opinion, could prevent this very un-Maltese way of using stone, or alternatively could accept new building materials which exploit the advances in technology and new forms which spring from it.

The proper way of using stone produces buildings well suited to the climate, whereas the large glazed openings, usually south facing, which every English resident seems to think are necessary, produce huge solar gains in summer. And the current practice of using thin masonary walling, whilst allowing rapid cool-off in the summer nights, means that for a third of the year, when buildings are underheated, the inhabitants of new buildings live in refrigerators. Winter conditions are one of the problems in Malta. Although the air temperature very rarely drops below 50 deg. F the factors of high humidity and strong northerly wind conspire to make conditions subjectively much colder. Mechanical services like air conditioning should be exploited, and their effect on building technique should be realized. Buildings which are transparent and pristine would be aesthetically more acceptable in contact with a rugged stone landscape than adulterated masonry.

Because Malta is a completely built environment, her uniqueness relies heavily on architecture. If we accept the requirements of tourism as the criterion for development, Malta is going to need a whole spectrum of new buildings: hotels, summer housing, large mass-participation centres—centres for the fine arts, concert halls, stadia and an opera house. New buildings which enclose large areas of space will inevitably raise problems. If they were put up in existing urban areas, their size and bulk might just be accommodated, but where is the room for them and the traffic they would generate? In the rural areas their large bulk would be disastrous. Look at Mosta dome and the new church at Xewkija in Gozo to see the impact of large space-enclosures on the landscape.

A possibility for integrating large meeting places within the landscape would be to put them largely below ground level. This could be done fairly simply by utilizing some of the stone quarries. There is a quarry at Mqabba, for instance, that would make a magnificent auditorium for about three thousand people. The mechanics of using such a space—roofing, waterproofing, acoustics—could, with sufficient thought, be easily solved. The visual returns of providing a large building which did not intrude into the minute amounts of landscape in Malta would be priceless.

Troglodyte development for the rural areas would help solve the considerable problem of the growth of the country villa. A few well designed villas may be acceptable in the landscape, but cumulatively they are ruining tracts of very precious land. There is a long tradition of troglodyte buildings in Malta—the *hypogeum* at Tarxien, the caves at Ghar Lapsi and Mellieha—which can show advantages beyond the purely visual. An equable temperature can be naturally maintained. Visit Hasan's Cave in summer to be aware of this. The architect Edwin England had a summer house at Mellieha, built into the rock above the town, which was amazingly equable in summer. It is instructive to compare its micro-climate with the glazed solar-gain villas newly built on the ridge above.

Like the car, one of the problems of the villa is its status role. It would be difficult to persuade some of the richer Maltese or expatriates that anything but the Spanish ranch-house is acceptable—they want to live in a country villa and not a cave. This is where planning has to be authoritarian. If we are to preserve areas of natural beauty, controls are essential, and troglodyte development could well be given priority. Who knows—if troglodyte becomes exclusive through legislation, then it might become socially acceptable. Of course, troglodyte need not mean holes in the ground; in most cases it would be excavations in the cliff faces.

This survey is concerned with ways in which Malta can be preserved, because what it has now is its greatest value and quite unrepeatable. The unthinkable alternative is that Malta should choose to neglect her heritage and join the development rat-race. Yet she is already trying to do this. If Malta accepts laissez-faire development, the whole island will be obliterated by buildings. And this will take very little time. It will happen unless the planners, architects and the legislators take action very soon. Malta could lead Europe into a new era of environmental and cultural re-evaluation, or it could become, through a laissez-faire attitude, just another blighted area of exploitation.

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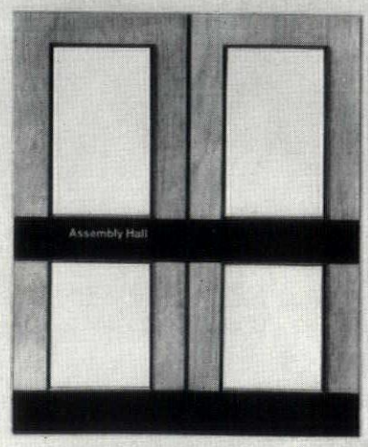

some are more special than others

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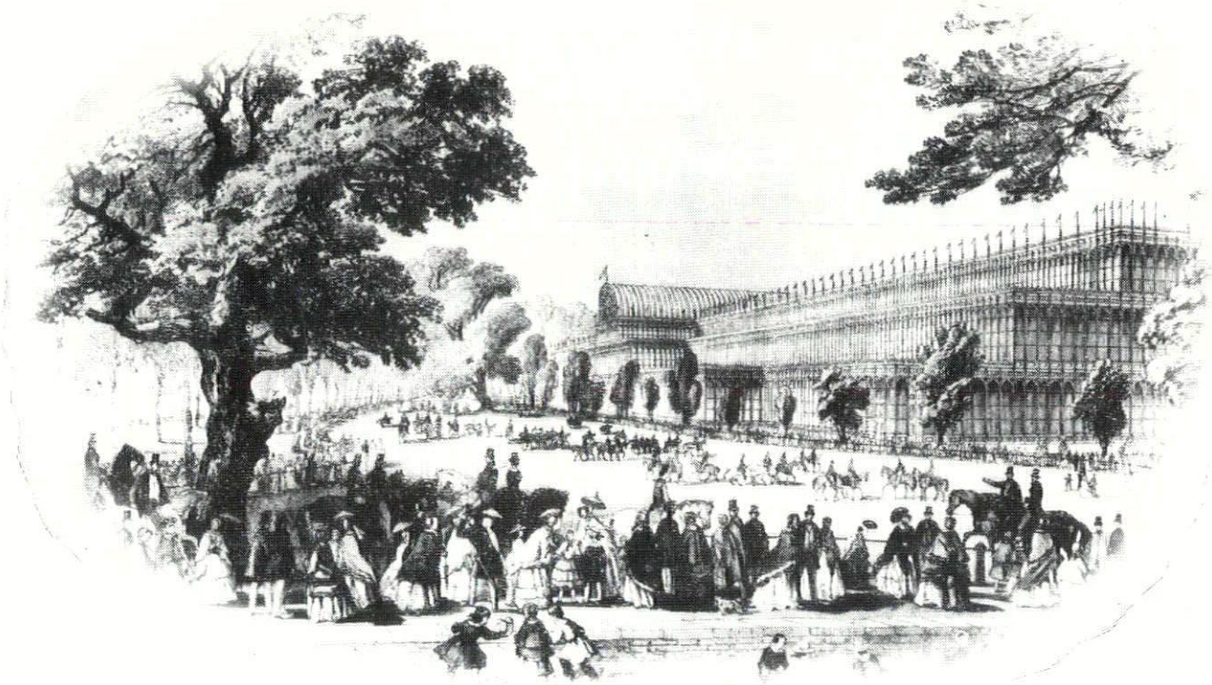

people who live in glass houses,

our grandads used to say, shouldn't throw stones. As they made an exhibition of themselves building a whacking big one in the middle of Hyde Park and then shifting it to a hill top in Sydenham, they undoubtedly knew what they were talking about. But it wasn't stones that did it in the end, it was fire. Which just goes to show that our grandads were not as bright as they thought they were. If they had asked us to co-ordinate and install some ancillary services we would also have included our sprinkler system along with the Heating, Lighting, Ventilation, Air Conditioning etc., then, like all the other buildings we've done this to, it would still have been standing.

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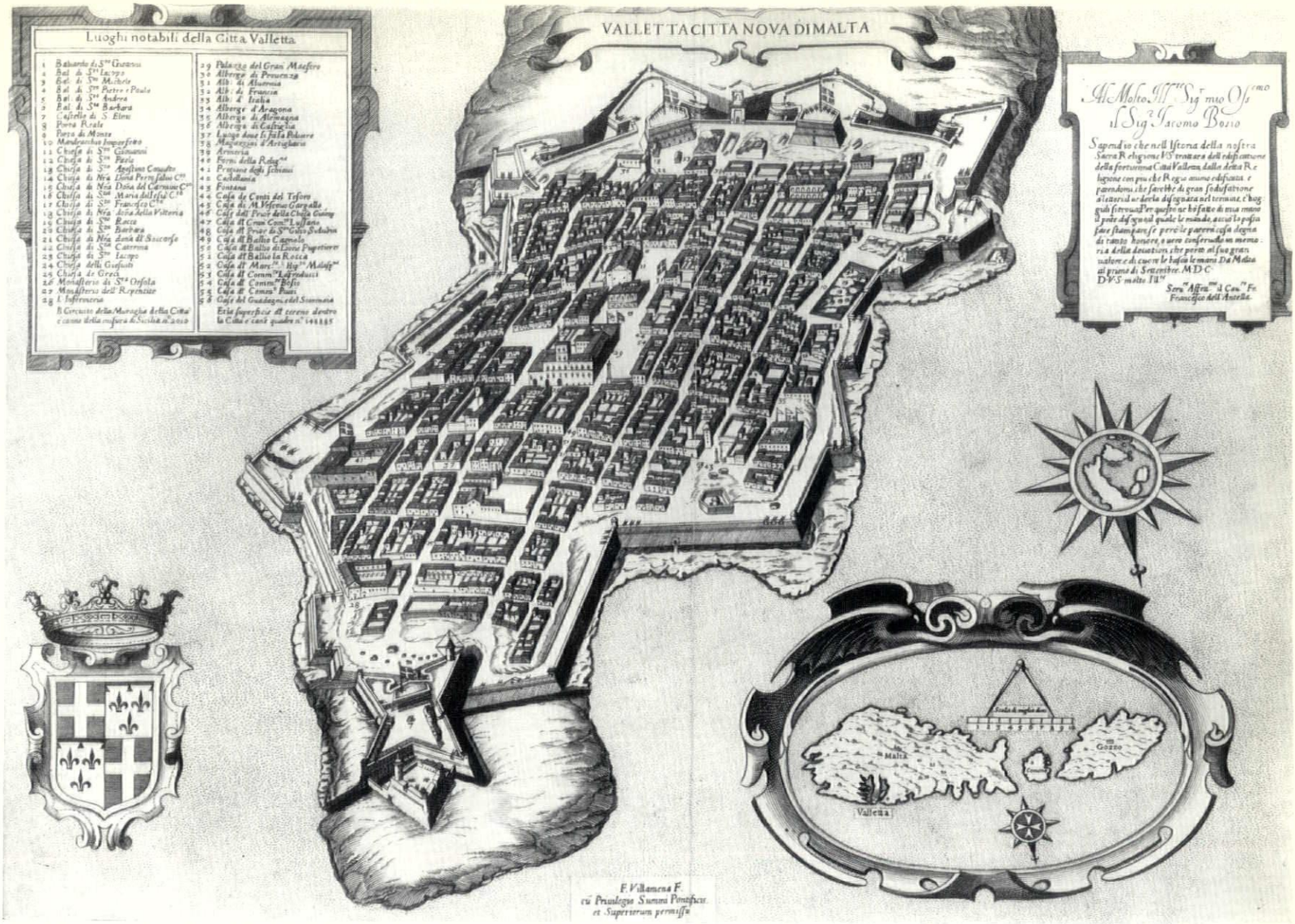


1

With its history built up of layer upon layer of cultures, races and religions and its wealth of remarkable monuments, Malta offers varied scope for architectural scholarship. Here, following the general conspectus of the island and its problems given on the preceding pages, are two examples of the kind of original research into Maltese architectural history that is increasingly being undertaken—one throwing light at the same time on to early renaissance town-planning, the other on to seventeenth-century stylistic developments.

The first article, by J. Quentin Hughes, Professor of Architecture at the Royal University of Malta, deals with the design of the new capital city that the Knights of St. John decided to build for themselves after the Great Siege of 1565. They commissioned the Italian town-planner Francesco Laparelli to design it, and Laparelli's thoughts, recommendations and frustrations are all recorded in a day-to-day account which is still preserved by his descendants in their home at Cortona. This 'Codex' includes a description of Laparelli's revolutionary concept of a renaissance city which follows neither of the patterns usual at that time—a quadrangular grid or a radial-concentric plan—but recommends the introduction of a sinuous pattern of streets.

The second article is by Joseph A. Tonna, architect and designer, who is employed in the Maltese Public Works Department and lectures at the Royal University of Malta. He investigates in some depth the stylistic logic and inventiveness of the seventeenth-century Maltese architect Tumas Dingli who, at the early age of 22, began a series of churches that constitute a reversion from the current mannerism to renaissance rationalism and that still furnish several of Malta's villages with their distinguished architectural climax.

1, the city of Valletta as built. The serpentine streets proposed by Laparelli were abandoned and a grid-iron plan was imposed but the irregularity of Laparelli's concept has left its imprint.

J Quentin Hughes

CITY OF THE KNIGHTS

In 1530 the military order of the Knights of St. John of Jerusalem arrived in Malta. They found there an island sparsely cultivated, rugged and rocky, with a group of hamlets to the south and a protected citadel encircled by Arab and Spanish walls on the high ground in the centre of the island. The eastern seaboard was deeply indented forming fine natural harbours, 2, but was practically undefended. Settling in the little port of Il Borgo, their immediate task was to requisition and build living accommodation and provide some sort of defended position to safeguard their fleet of galleys and galleons which rode at anchor in the deep waters of the Grand Harbour. A long finger of land, called Mount Sceberras, stretched between two deep-water bays and its tip, upon which stood the little chapel of St. Elmo, dominated the narrow entrances from the Mediterranean. The more northerly bay is called Marsamxett, which contains a small island. The southerly inlet, now called the Grand Harbour, has five creeks running into it, breaking up the land on its south-eastern shore. The central peninsula, which narrows from the mainland to a point where it is only 300 feet across and then widens to form a bulb of land at its extremity, seemed to provide



2

2. Jean Quentin's map of Malta and Gozo, drawn one year after the arrival of the Knights, showing the old capital in the centre of Malta, the garden at the Marsa where there was an abundant supply of fresh water, and the hamlet of Il Borgo. This is protected by a wall on the land front, and a fort on the end of the promontory from which flies a banner. The Sceberras peninsula, which lies between the two large harbours, is barren except for a small chapel built near its tip.

an ideal site for the citadel. There was already a small fort mounting two cannons on the promontory and this formed the nucleus for the fortress of St. Angelo constructed by the Knights. With its high sheer walls, Castle St. Angelo seems retrograde in comparison to contemporary work in Italy, but height here was necessary so that its guns could at least challenge, if not dominate, the high ground on Mount Sceberras and the hills at Corradino to the south-east.

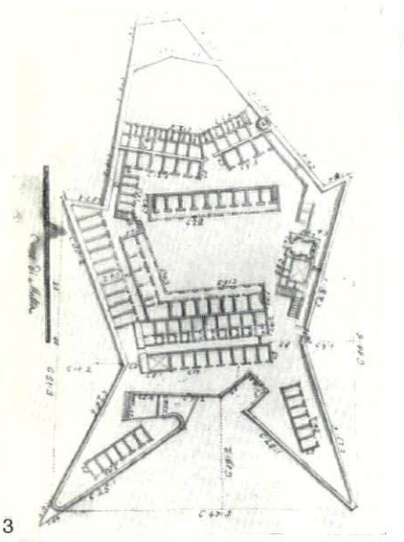
Work on the fortifications was urgently pushed ahead. It was clear that the Turks would sooner or later assault the island of Malta just as they had previously attacked the Knights' stronghold at Rhodes. Technical advice was sought and attempts made to recruit the services of the best Italian military engineers, but this was difficult as the Knights had to compete with demands from the rest of Europe who well appreciated the work of the Italians. For a generation the French army had used Italian engineers on important fortifications.

The idea of a new city

There remained the problem of the long barren peninsula called Mount Sceberras. It lay opposite Fort St. Angelo, too high to be effectively covered by its guns. On its tip stood the little Fort St. Elmo, 3, which could bar entrance to the two harbours, but the ground was too low lying for its guns to cover the high ridge of the peninsula. The Knights therefore first proposed a powerful fortress on the ridge, and then a new fortified town on this peninsula. The new Grand Master Jean de la Vallette was keen on building a new capital city on this site and began discussions with Antonio Quinsani di Montalcino in 1557. In the following year the Italian architect Bartolomeo Genga was invited to Malta, where he made a model for the new city, but the project was abandoned because of the expense and the imminent threat of Turkish invasion.

In the year 1563, a plan entitled *Melita nunc Malta* was published in Rome, probably by the cartographer Nicolo Beatrizet, 4. It shows the 'harbours of Malta with the new city where those who now live in the Borgo will live', a city whose land front occupies the neck of the Sceberras peninsula approximately on the line of the present Floriana defences. The other end of the city is terminated considerably short of St. Elmo, leaving a strip of unfortified land between the two. This drawing might show the design of Quinsani, but it is much more likely to have been copied from Gengas's model for the new city. The Maltese historian Bosio, writing later, says that Genga's city was larger than the city which was built and its guns could have fired on to Corradino Hill, marked "R" on the drawing. It is unfortunate that this map gives no indication of the layout of streets and buildings—it only shows the circuit of the fortified walls.

3. plan of Fort St. Elmo made in 1552 (thirteen years before the Great Siege), showing the acute angle of the bastions, the outer faces of which could not be covered by enfilade fire from the fort. 4. Nicolo Beatrizet's drawing 'Melita nunc Malta', made about 1563, probably shows the city walls proposed by the Italian engineer Bartolomeo Genga. The front line of the city is pushed further up the peninsula from the line finally chosen by Laparelli, and lies on the site of the present-day suburb of Floriana.



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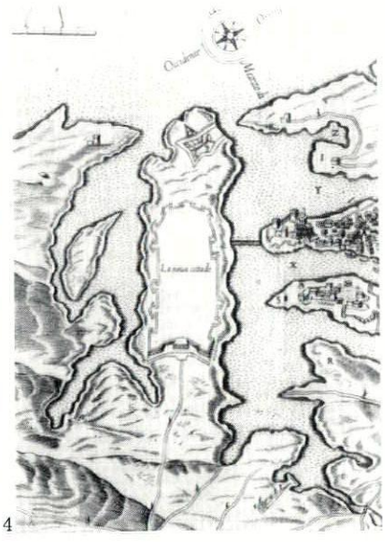

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The war of 1565

Soon the danger closed in and the threat of invasion hung over the island. By the autumn of 1564 the Knights knew that an attack was imminent. Their secret agents working in Constantinople reported that a vast invasion fleet was being fitted out. This would be the last winter of peace for, with the coming of spring and the calm seas of the Mediterranean, the Turkish ships would sail carrying the army which was to smoke out this hornet's nest. On 18 May 1565 the enemy fleet was sighted. It soon put ashore a vast army for the investment of the Knights' stronghold. This is not the occasion to describe the events of the battle. The fight was long and bloody and the Turkish tactics ill-conceived and inadequate. The initial assault on Fort St. Elmo proved a failure and the fort, which should have fallen within four or five days, withstood a murderous pounding for 31 days until, a mass of rubble, it finally succumbed. This heroic stand was only made possible because of the Turkish failure to prevent the evacuation of wounded and the reinforcement of the garrison across the Grand Harbour. The defence of St. Elmo was made in spite of the deficiencies in its design.

With the capture of St. Elmo, the big guns on Sceberras swung round to menace St. Angelo, and the Turkish-Arab army began, too late, the serious assault on the Knights' stronghold. Their intelligence was at fault and through error they attacked the front of Castille, the most strongly held position. Again misinformed the Turks broke off an assault on Isola when victory seemed in their hands, in order to repel what they thought was an attack by a relieving force on their rear position. As it turned out it was no more than a cavalry skirmish against their baggage train. Eventually, when relief arrived from Sicily, the Turkish fleet, more numerous and powerful than that of the Christians, failed to attack, and made no attempt to impede the landing of the expeditionary force on the beaches. Finally the enemy High Command appears to have panicked and, instead of turning to face this comparatively meagre force, hastily withdrew to the beaches and evacuated the island. This is not to underestimate the heroism of the soldiers on both sides. The battle was fought in appalling conditions of intense heat, and sickness was rife in the enemy camp. When the Turks sailed, they left an island devastated, its habitations and defences shattered and useless. Hardly had the smoke of battle lifted when the Grand Master, la Vallette, sent to Italy for expert advice. Around him there was frustration, disillusion and fear. Many of the Knights wished to leave Malta and settle in a safer place, less isolated from help, for everyone believed that the Turks would return to renew the siege. For the Knights there were three alternatives and a bold decision was needed. Complete evacuation of Malta would entail the demolition of the remaining fortifications so that they could not be turned to use by the Turks. Secondly there was the possibility of re-building on the existing site, but its shortcomings would still be there and the Turks would be unlikely to repeat their mistakes. Thirdly, there was the opportunity of realising la Vallette's dream of building a new city for the Order on the peninsula of Mount Sceberras. Although immensely costly, the position could be impregnable, and what better opportunity to touch the purse-strings of Europe now that the reputation of the Order stood so high in the eyes of her rulers. News of the victory of Malta had resounded through the capitals of Christendom.

Design of the new city

Francesco Laparelli from Cortona and Baldassare Lanci from Urbino were summoned to give their opinion on the last alternative, the building of a new town. Laparelli's contribution and eventual building of the new city which was to be called Valletta is well known and fully documented in the *Codex* which he himself wrote on the island.

The scope of Lanci's work is more problematic—the main evidence of his design being contained in a memorandum written by Laparelli in his *Codex*. Lanci was probably the greatest practising military engineer of his time. He was born about 1510 and visited Malta in March 1562, three years before the Great Siege. His practice was extensive and he designed fortresses in many parts of Italy. In the year of the siege of Malta he was engaged on the design and construction of Terra del Sole, a town laid out in quadrangular form. There are no details of his return to Malta after the siege, but it is my opinion that he did return at an early date. From the memorandum in Laparelli's *Codex* it is clear that Lanci made a thorough survey of the peninsula and constructed both a model for his new city and a sample length of fortified wall for all to examine, an amount of work he certainly could not have carried out in the three months visit before the war. Lanci's memo also refers to the great destruction which had been wrought on the fortifications of Malta, which makes it clear that his recommendations date from a period after the siege.

Lanci's new city was to be very much in line with current theory and practice. Not only would his new city be impregnable—Lanci maintained it would also be more healthy than Il Borgo as it was situated on higher ground and would attract cooler breezes. The city would be guarded on three sides by deep water and the fourth side, the land front, was comparatively short. Big enough in an emergency to hold the whole population of the island, it could nevertheless be guarded by comparatively few troops. His model, now lost, must have been detailed, for it showed the trace of the fortifications, the roads and squares, the divisions of the houses, though not their detailed design which would be left to others, and the disposition of palaces, churches, hospital and all the other main buildings. He pointed out that the new city would be attractive and that more Knights would flock to the colours in order to live there. 'The position is now so unsafe', he wrote, 'that many gentlemen prefer to keep their sons at home away from danger.'

He described the fortifications in some detail. There was to be a 70-ft. parapet behind them and a further wide space containing a circuit road before any houses could be constructed. From the Place of Arms, behind the main gate on the land front, a main road 45 ft. wide was to go over the spine of the city to a big central square, approximately 70 yards square, around which would be disposed the palace of the Grand Master, the church and the other main public buildings. The minor roads were to be 20 ft. wide. We do not know why Lanci's plan was not accepted, nor have we details of his comings and goings. All that is known is that he died in Florence in 1571 when the plan of his compatriot, Francesco Laparelli, was well on its way to completion.

A drawing of a part of Malta made by Braun and Hohenberg and published in *Civitates Orbis Terrarum*, 1572+, shows a project for a new city on the Sceberras peninsula, 5. Could this be Lanci's design?

5, *'Civitas Orbis Terrarum'*, 1572, *by Braun & Hogenberg, probably shows the post-siege design by Baldassare Lanci. Streets are shown radiating from a central square around which are desposed a church and a palace. The plan takes no cognisance of the uneven nature of the site.*



5

Although the inaccuracy of the coastline makes it difficult to judge the precise position of the front line, this would appear to lie on a line just behind the elongation of a promontory called Isola and a few yards back from the fortified land front of Valletta. This accords with the historian Bosio, who noted that Lanci's plan was more practical than Genga's, for the city proposed was far smaller. The drawing also shows, in accordance with Lanci's ideas, a large central square around which are disposed a church and what looks like a palace. Six straight roads are shown radiating from the central square; one, immediately opposite the palace, running to a bastion in the middle of the land front. However the sketch is rough and it would be dangerous to read into it too much about the proposed layout of the city.

Laparelli's design

At the request of the Grand Master, Laparelli was chosen by the Pope as a man of determination and ability. He arrived in Malta in the last days of the year 1565 when the dust of war had barely settled. He was a practical man with long experience in the art of fortification. Laparelli's fortifications are pragmatic, practical and in line with the best accepted tradition.

But his town planning projects are a very different matter. In his proposals for Valletta he breaks new ground and his *Codex* on that new city is an enlivening combination of ideological ideas and practical experience.

When he arrived at Malta he was 44. An engraving shows a lean, hard man of action. He combined practical knowledge and book-learning, seeming to have read the books of his contemporaries on town planning and fortification. He certainly knew the treatise of Vitruvius well, for he was able to draw from it to impress the Grand Master and Council of the Order.

Laparelli's proposals for Valletta cover four main aspects—the extent of the city; the design of the fortifications; the layout of the streets and buildings, and the utilisation of labour and material.

The extent of the city

The problem of the site was where to draw the line across the peninsula. Laparelli maintained there were three possible places. One at 700 yards from Fort St. Elmo on the point. This was on the site of the main Turkish batteries which bombarded Fort St. Elmo and Fort St. Angelo. However, a city behind the line would be too small to be of much value and it would be overlooked by ground some 35 ft. higher in front. As Laparelli pointed out, the city would only occupy half the peninsula and the Turks could occupy the other half.

The second recommendation was for a front line at approximately 1,200 yards from St. Elmo. This placed it just beyond the highest point on the peninsula, the Castille Heights, and on the line of the fortification that was eventually built. And the third possibility was the head of the peninsula at about 1,900 yards from Fort St. Elmo. Guns there would cover the waterhole at the Marsa and the high ground at Corradino on the other side of the bay, but the city would be too large to defend easily and the distance between the land front and Fort St. Elmo too great. There would also be the danger of an attack from the sea on either of the long flanks of the peninsula. Laparelli favoured the intermediate solution at 1,200 yards from St. Elmo and his proposal was accepted.

All the time the Knights feared that the Turks would return, and Laparelli recommended that, if there were not time to build the complete circuit of the walls of the new town, the strong land front should be built and this could form the outer perimeter of a powerful fort, the guns of which, combined with those of Fort St. Elmo, could cover the whole of the intervening land on the peninsula.

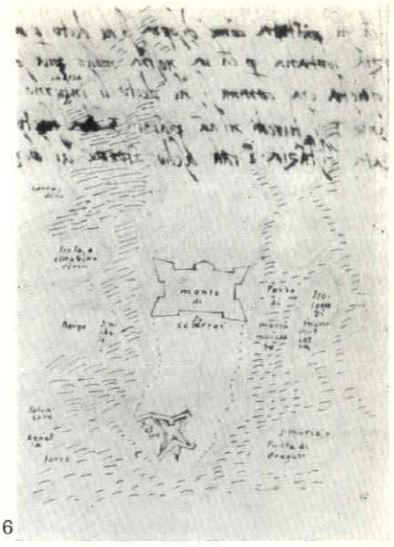
In the *Codex* Laparelli included a sketch of this fort with the outline of the remainder of the city indicated by a dotted line. Incidentally, the sketch shows that Laparelli was not a very competent freehand draughtsman.

The fortifications

The first priority was to build fortifications. Many people thought that the Turks would return to the attack within three months, although Laparelli himself doubted this, believing that the Turks were rebuilding their armada in order to save face and to frighten the Knights. But the situation was desperate and speed was essential. Within six days of his arrival, on 3 January, 1566, Laparelli submitted his first report. In it he pleaded for the Knights to leave their old towns and move to a new city on Mount Sceberras. In the report he admitted that in three or four days there was no time to survey the peninsula and to draw out the form of a new city and the layout of its streets. The fortifications must come first, 6. It was better, he said, to live in the countryside than die in a comfortable bed.

Ten days later Laparelli submitted his second report. He was impatient about delay and indecision. Some Knights still wished to evacuate the island and others preferred to refortify Il Borgo and Isola. Laparelli pointed out that, if the defences were not quickly built, a far larger army would be needed to hold the Island.

Laparelli's solution to the problem was to provide a strong land front with two powerful bastions protected by dry ditches and supporting a central curtain wall which contained the main gate of the city. Two large cavaliers, stout polygonal forts constructed to support artillery, were set behind the bastions so that their guns could dominate the open ground beyond the front line. There were two corner bastions where the neck of land joins the water of the two harbours. Then, if there was time before an attack, the Knights should build bastions and curtain walls along the flanks above the harbour, and these would be designed to suit the terrain. Finally the circuit of walls would close to



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6, *Laparelli's proposal for a fort to be built on the high ground of Mount Sceberras if there were not sufficient time to build the new city. The harbour of Marsamuxett is on the right and the Grand Harbour and Il Borgo on the left of the peninsula. This is obviously a quick sketch for an expedient solution and Laparelli seems to have lifted the plan of the front of his fortress straight from Bartolomeo Genga's design for the front of his new city. Later Laparelli was to modify considerably his design of the land front.*

the fort at St. Elmo on the tip of the promontory.

In the recent war the Turks had only succeeded in destroying 10–12ft. of defensive walling. There was therefore no need for the new walls to be built high. 16 ft. to the string course would be adequate. There were to be nine cavaliers in all, built as time allowed, but space was to be left for them and no other buildings put on their sites.

Where practicable the defences would be cut from the solid rock, but in places which might be dominated by the enemy, it would be better to build good earth bastions than to build up new stone walls which could easily be shattered. When time allowed the earth bastions need not be removed, but could be improved to form permanent fortifications.

So much for the *fortifications*: they provide only a brief introduction to the major part of the *Codex* and to one of the most important contributions to town design in seventeenth-century Europe.

The unique town plan

Although it would appear that the entries in Laparelli's *Codex* are arranged in chronological order, this is by no means certain. The subject matter appears to jump about from page to page, but this is what one might expect to find when an architect assembles notes and reports made on the job. After the initial reports on the siting of the city, the labour requirements and the availability of building materials, Laparelli includes a copy of the memo left by Baldassare Lanci on the building of a new city. There follows a short treatise on the history of the development of building, which may have been an attempt by Laparelli to convince his clients of his erudition and capabilities, for the next section is headed 'It remains to speak about the form of the city.' If the material is in order, this would appear to

date from some time between the 30 January, 1566, and the description of the founding of the new city on 28 March.

What did Laparelli propose? His own statement suggests something quite unusual. 'I will arrange the streets', he wrote, 'differently from what many are thinking.'

The Renaissance concept of a city plan was geometrical and regular. Throughout Italy many architects had been preoccupied with the design of ideal cities and most had regarded them as exercises in three-dimensional space, laid out in a geometrical pattern, usually with strict symmetry. The architectural literature of fifteenth- and sixteenth-century Italy is filled with proposals for ideal planned cities. Much of Alberti's treatise on building is concerned with town-planning, from the choice of a suitable site to the detailed designs of house elevations, and there can be little doubt that Laparelli knew Alberti's work.

From the time of Filarete many of the proosals put forward by Italian military engineers consisted of a centrally planned city enclosed within a fortified wall of bastions, whose extremities were designed to fall upon the circumference of a circle. Within this fortified embrace the road pattern was either radial or gridiron, so that the whole city became symmetrical about its central square. Many projects died on the drawing board, but some survived.

In the opening remarks in his report on the layout of the city, Laparelli says that many writers praise the radial plan, but he has found from experience that it is a good thing to follow the contours of the ground and not to force a plan into regular lines when this runs contrary to the nature of the ground. 'So we shall make a town,' he writes, 'which is suggested by the site itself, and it seems to me that this should be done everywhere.'

After allowing for a large 'place of arms', behind the front line, which is to contain four cavaliers on the highest ground of the site, Laparelli proposes one main street in the centre of the city which is to go straight from the gate in the middle of the land front over the ridge to the gate of Fort St. Elmo. This will occupy the full length of the site, some twelve hundred yards, and will be 32 ft. 6 in. wide.

Then the startling innovation: the other streets are to be narrow with a *pleasant* and *sweet serpentine way*. This proposal is quite counter to normal Renaissance practice and the origin of the idea needs to be examined. A free translation of Laparelli's report reads as follows: 'I shall make for beauty only one large street in the middle of the city, the others being narrow and with a pleasant and sweet serpentine way, and this I shall do because a city in a dry, hot place must have narrow streets, whereas cities in humid climates should have wide streets so that the wind and the sun can take away the humidity. Narrow streets are cooler because they are not dominated by the sun. For windy places like Malta, it is necessary to find a way to break the wind with trees or high walls, but this cannot happen here because all the Island and especially this place is bare and without trees, so it will help to make the streets serpentine with sweetness like Pisa, which is fine to see and certainly was made in this way to break the strength of the winds. People should plant trees around the walls which will be useful in peace-time and, in wartime, as wood is one of the most important munitions. Trees which grow quickly should be planted.'

The origin of the twisting serpentine roads is certainly Alberti. 'If the city is noble and powerful', he wrote, 'the streets should be straight and broad, which carries an air of greatness and majesty; but if it is only a small town or a fortification, it will be better and as safe not for the streets to run straight to the gates, but to have them wind about, sometimes to the right, sometimes to the left, near the wall and especially under the towers upon the wall, and within the heart of the town it will be handsomer not to have them straight, but winding about several ways backwards and forwards like the course of a river, for this, besides that by appearing so much the longer they will add to the idea of the greatness of the town, they will likewise conduce very much to beauty and convenience and be a greater security against all accidents and emergencies.'

Undoubtedly Alberti was borrowing from Aristotle's statement in the *Politics* that winding streets are better for defence but straight streets are more beautiful. But Alberti changes ground and suggests that on occasions winding streets are more *handsome* than straight ones.

From the mass of radial, geometric and grid-iron plans which poured from the pens of Renaissance architects and military engineers, the work of two other men suggests an interest in the development of a sinuous street pattern. In the sixteenth century Francesco di Giorgio Martini produced his *Trattato* which contains a number of drawings showing ideal cities consisting of spiral and interlocking diagonal street patterns. But the most important suggestion in this context was made by Francesco de Marchi. He was a Bolognese military engineer who, at the age of forty, produced his *Dell'architettura militari libri tre*. The original publication contained 28 plates, increased in later editions to 161, but the book became very rare because, according to the Italians, foreign engineers destroyed copies to conceal their own plagiarism. In the book de Marchi produced the startling drawing of a city, 7, traversed by a sinuous river, the streets of the city being designed to follow, not the contours of the ground but the meandering course of the river. It is not impossible that Laparelli and de Marchi knew each other and discussed ideal cities.

However, it would seem that, apart from Alberti's reference to the beauty of winding streets in small towns and their value from a defence point of view in fortified cities, and de Marchi's drawing of a sinuous street plan, Laparelli's proposal for a serpentine, picturesque layout, following the contours of the ground for both practical and aesthetic reasons, is unique in the Italian Renaissance. Laparelli's knowledge of history and contemporary theory rules out the possibility that it was a naive proposal suggested through ignorance of sixteenth-century practice; it was a bold innovation which, had it been carried out, might materially have affected the progress of town-planning, deflecting it from the arid course it was to take in the centuries to come.

Unfortunately we can trace no drawings of Laparelli's proposals for a serpentine city. He did however leave an estimate in his manuscript of the sizes of the units in the new city, and from this we can get a reasonably clear indication of his recommendations. The main square, for the assembly of troops and a refuge in time of war, was to measure approximately 90 yards by 60. Laparelli uses the proportion of two to three for this and all his squares, as recommended by Vitruvius and Filarete. Alberti preferred the proportion of one to two. In addition to a street which would circuit the inside of the fortified walls, and the main street, which would run from the square and the main gate to the gate of Fort St. Elmo, there were to be four serpentine roads, each about 23 ft. wide running the full length of the peninsula, and eight serpentine roads, each approximately 20 ft. wide, crossing the promontory.

In addition to the main square, or place of arms, Laparelli provided three intermediate sized squares each approximately 40 by 60 yards, to be placed in front of public buildings like churches, hospitals, etc., and eight small squares, measuring 32 by 48 yards each, one for each of the hostels of the various languages of the Order. The English Knights had been disbanded some years earlier by Henry VIII, but it was still hoped that conditions would improve so as to allow the English Langue to be re-established. The plots for the main buildings were all the same size; for the main church plus the priests' houses, for the hospital and other useful buildings, and for the palace of the Grand Master, each was approximately 4,200 square ft. in area. 'That is', says Laparelli, 'about the size of the Palazzo Farnese in Rome.' He recommended that there would be room for 125 houses, similar in size to the one then occupied by the General of the Galleys. Valletta was to be a city three and a half times the size of the old town of Il Borgo.

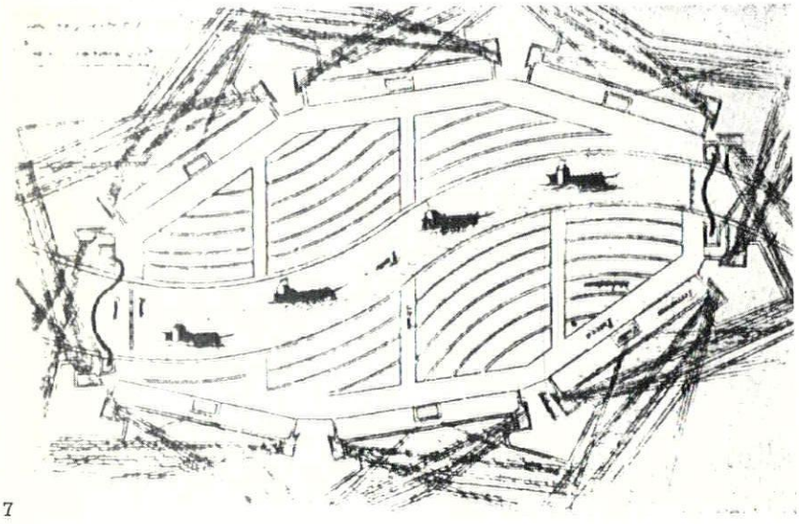
The City as Built

What happened to Laparelli's dramatic proposal for the new city of Valletta—for it was not built? There is no indication in the *Codex* of it having been rejected, nor are there written proposals which coincide with the executed plan. After a short digression on the difference between ditches with and without water, the next main entry in the *Codex* deals with the foundation of Valletta, and mentions that the Grand Master gave Laparelli a chain of gold.

On 18 June 1566, four months after he had made his proposal for a serpentine city, Laparelli presented four plans to the Grand Master. For convenience I have numbered them A, B, C, and D, for they seem to show him changing, or being forced to change, his ideas, which culminate in the present grid-iron plan of Valletta.

Plan A, 8, shows the circuit of the fortifications upon which work was then proceeding, the position of the nine cavaliers, two of which had been begun, and the site of Fort St. Elmo. The possible route of the main street of the city has been lightly sketched in, running from the gate in the middle of the land front to the gate of Fort St. Elmo. On plan B, 9, the streets of the grid-iron plan have been dotted in, but the main street no longer runs from the gate in the middle of the land front, but from the cavalier of St. James to the tip of the most forward bastion of Fort St. Elmo. The city has been divided into twenty-five rectangular plots with four longitudinal streets and six crossing streets. An oval has been lightly sketched at the top of the drawing, indicating the position of the galley

7, de Marchi's plan for an ideal city, in which the streets follow the line of the river.



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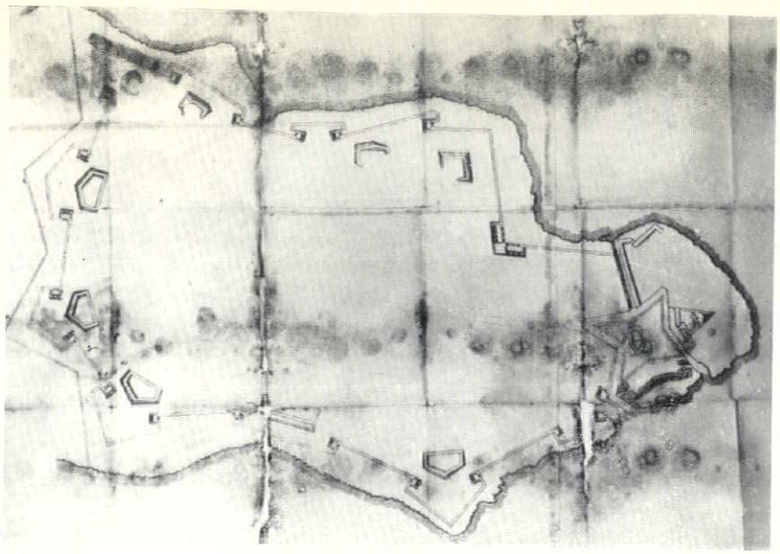

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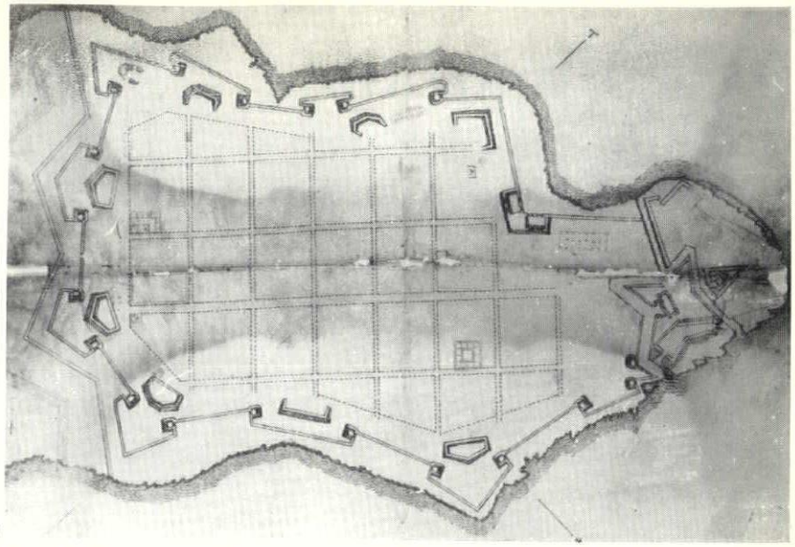

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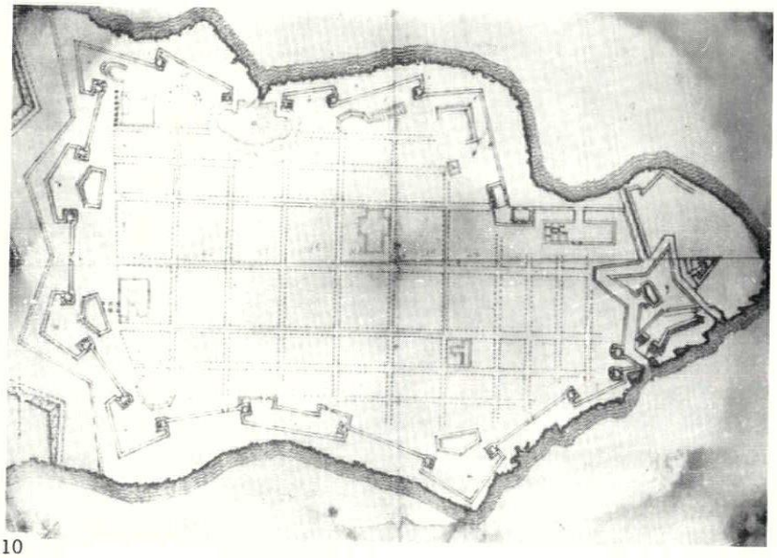
The four plans from the Codex of Francesco Laparelli, submitted to the Grand Master on 18 June, 1566: 8, plan A. It shows the line of fortifications, the position of the nine cavaliers, and, in faint pencil, the line of the main street running diagonally across the site from the gate in the middle of the land front to the gate of the Fort St. Elmo. 9, plan B. The line of the longitudinal streets has now been swung more to the north-east with the result that there is no main street running from the land-front gate to Fort St. Elmo. 10, plan C. Laparelli is developing his ideas. He has returned, more or less, to the street line he drew on plan A, and the main street runs from the gate on the land front to the tip of the north-western bastion of St. Elmo. The street pattern and the city plots are now fixed as they exist today (only a few minor streets were added later), with seven longitudinal streets and ten streets crossing them at right angles. The galley port, big enough, he said, for ten galleys, is designed in an impossible clover-leaf shape. The area reserved exclusively for the Knights is marked by a line running down the middle of the city streets. 11, plan D. This is Laparelli's final recommendation and is similar to the layout carried out. The galley port has been changed to a more sensible shape and the area allocated for use by the Knights has been reduced in size by two blocks.



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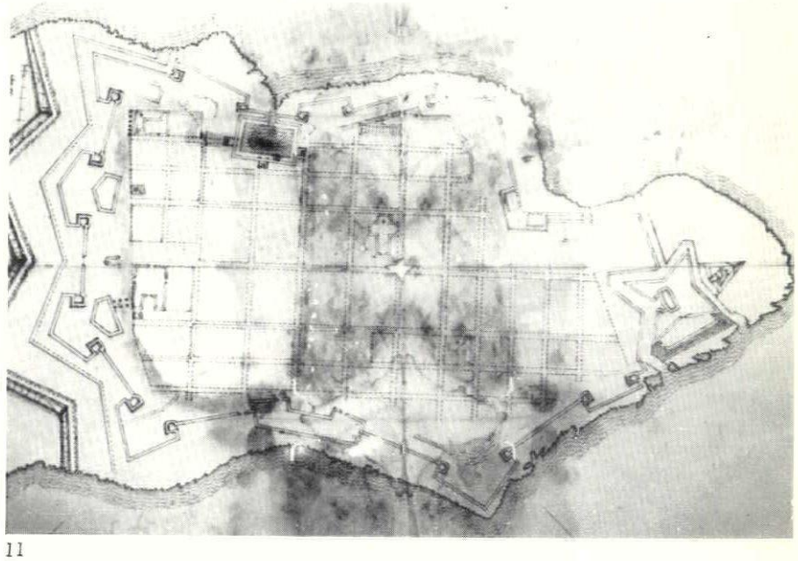
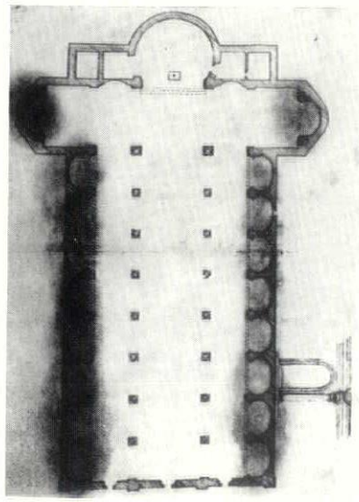


11

port, or Manderaggio, which was to be excavated from the solid rock. Some buildings are indicated—the church of Our Lady of Victory, which was soon to be begun behind the cavalier of St. James, and a courtyard palace which, because of its position, would have sterilized most of the city block upon which it stood. There are two long halls, placed outside the street pattern, possibly for the hospital. Two other buildings are indicated tentatively. One gets the impression from this drawing that Francesco Laparelli, although a brilliant military engineer, had no more than a rudimentary knowledge of the art of architecture. This supposition is born out by a study of the plan of a church, 12, which is also contained in the *Codex*. The church is somewhat reminiscent of Brunelleschi's church of Santo Spirito, built over a century earlier. The site of the newly discovered fresh-water fountain is marked by a small rectangle at the northern end of the city. Although he is now committed to a grid-iron plan, Laparelli indicates some of the contours to show the effect of the uneven site upon his new proposal.

In plan C, 10, Laparelli is developing his ideas further, having returned to the approximate line of the main street in plan A and subdivided the site into more building plots. This is the final layout of the city street plan with the exception of a later introduction of a narrow street, Strada Stretta,

12, *plan of a church from the* Codex *Laparelli.*



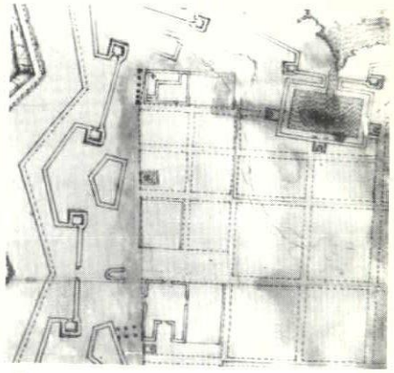
12

running parallel to the main street on its north-western side, and another narrow street on the other side of the main street which is interrupted by the Co-Cathedral of St. John and the Magisterial Palace, each of which occupy a complete city plot. The galley port, capable of holding ten men-of-war, is designed in a clover-leaf form. This may be a nostalgic reference to his earlier serpentine street plan, but it would have made a extremely awkward port. More buildings are sketched in, including a large church laid out in the form of a latin cross.

In Rhodes the Knights had been segregated from the rest of the population behind a high wall. They lived in an exclusive area called the *Collachio*. In Il Borgo there was no wall separating the two parts of the city, but a *collachio* area was designated in which the Knights had the option to purchase or commandeer property for their own use. Laparelli has shown a similar area in his new city of Valletta. It embraces fifteen of the city plots, covers much of the centre of the city and extends laterally behind the land front of fortifications.

Plan D is the final solution, 11. The galley port, or Manderaggio, has been made into a more sensible shape, 13. Work began on excavating it to this shape but was never completed because the cost was high and the excavated stone was soon found to be useless for building purposes. The *collachio* area has been reduced in size by depriving it of its two north-easterly

13, *a detail of the top left-hand corner of plan D, showing the galley port, four buildings and the cavaliers of St. James and St. John, shallower in shape than those actually built. The little church of Our Lady of Victory, probably begun in* 1566, *is shown at the bottom of the drawing.*



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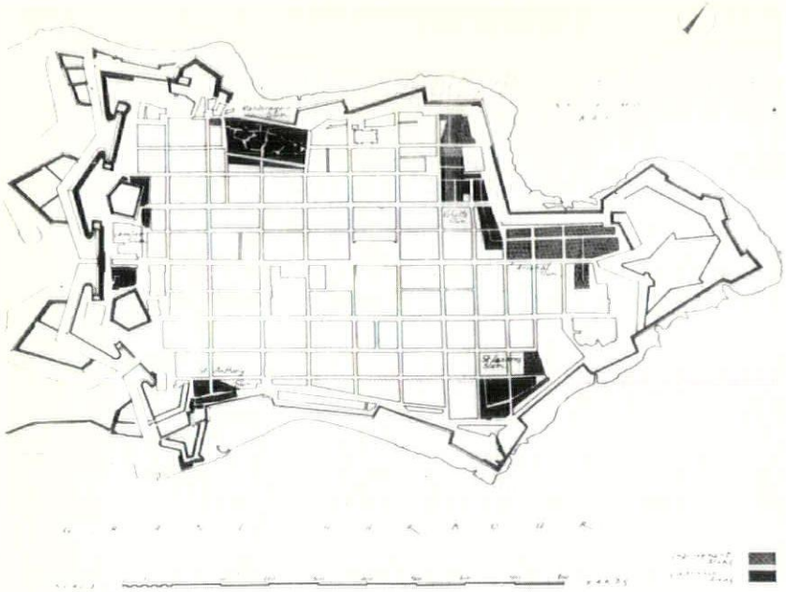


14, plan showing the disposition of slum property, prepared by town-planning consultants Harrison and Hubbard in 1945. The galley port was never finished and it became the Manderaggio slum. The other slums are all confined to the peripheral areas where Laparelli had seemed at a loss to know how to finish off the junctions between grid-plan and the irregular outline of the site.

city plots. The buildings sketched in on plan C have been redrawn with some minor modifications. Two are particularly strange. The church with a columnal portico, shown in the top left hand corner of the city, has a peculiar plan which would have made the building almost unuseable. The 'T' shaped palace near the bottom of the plan is equally unsuitable and wastes a whole city plot. There is some indication of the disposition of the city's squares, shown either by a single continuous line or by the omission of the dotted street lines. With the exception of the square upon which the nineteenth-century market was built, shown near the bottom of the plan, the squares bear no relationship to those finally built.

The survey drawing, 14, prepared by Harrison and Hubbard in 1945, shows how close the present pattern of Valletta is to Laparelli's proposals in plan D. The two remaining cavaliers have been deepened so that the rear wall of the cavalier of St. James now abuts the Victory Church. It can be seen that slum property later grew up on the site of the abandoned Manderaggio, and on the periphery of the street pattern where Laparelli seemed at a loss to know how to terminate his city plots where they lay adjacent to the irregular perimeter of the city's fortifications.

In August 1566 he offered to go to Italy to recruit labour, and two years later he applied for leave. In the following year he volunteered for service with the Papal Fleet and sailed from Malta, never to return; for at Candia in Crete he was struck by the plague and died at the age of forty-nine.

Gerolamo Cassar, the Maltese architect who had assisted Laparelli and took control on his departure, was commissioned to carry out most of the later public buildings of the Order in Valletta, and at least as early as 1571 he was working on buildings in the city; buildings which conformed with the present layout of the streets.

In what way does the executed design, 1, differ from the written proposal made by Laparelli? The serpentine roads have been omitted, and a rigid grid-iron plan imposed over the whole city. The main road runs from the gate in the middle of the land front, to the angle of one of St. Elmo's bastions and not to the gate. There are eight longitudinal streets instead of the four serpentine ones originally proposed, and eleven cross streets compared to the eight originally recommended. The eleven public squares seem also to have been abandoned.

Now the interesting point is that, although the layout has been changed to a grid-pattern, the open spaces are not disposed in the regular and symmetrical pattern favoured by Renaissance designers, and the plots upon which the buildings were constructed are not themselves regular or equal in size. In spite of the irregularity of the ground and the outline of the site, it would have been possible to create some symmetrical pattern if the town planner had so wished. It may be that the Knights chose to dispose their hostels in a haphazard manner about the city, in some cases relating them to the bastions and curtain walls which the various langues were required to defend. This would pre-condition Laparelli's solution, leading him to an irregular solution for at least the eight small squares.

It is now clear that between March and June 1566, the serpentine streets were straightened out, for reasons undisclosed, but the irregularity of Laparelli's original concept has left its imprint.

Laparelli's knowledge of materials

A considerable part of the *Codex* is devoted to a study of the particular problems of building in a hot dry climate like Malta—the need to find suitable building materials and to use them to their best advantage. Everything had to be brought over to the site and workmen imported from Italy. Laparelli made it clear that inducements would be necessary to compete in what was already a difficult labour market. It would be necessary to pay considerabley more than was paid to labourers working in Rome. He makes recommendations for transportation, pay with bonuses, feeding and sickness benefits.

As Laparelli pointed out, it was a great undertaking to build a new city, and more so to erect it in a situation where it was difficult to bring in materials and labour. It would take many years to complete and to provide the comforts and delights which were necessary for urban life. But Laparelli's enthusiasm must have been a constant inspiration to both client and employees. 'Give me time,' he wrote, 'and I will give you life.'

By June 1567 he was able to report that 'The fortifications will now resist attack, but they should be completed so that they can do their work better, with fewer men.' Four months later he wrote that the land front of Valletta was well advanced, and the ramparts stood up like cavalrymen, dominating all the surrounding countryside. The bastions and curtains were half way up and by May they would reach the string course. Work on the flanks of Valletta was less urgent, as these could only be attacked from boats.

His main task was nearly done and he could afford to prepare for action elsewhere. He left with both a caution and a praise for the men he had served so well. 'No fortification is an end in itself—when there is a siege it is always necessary to get help from outside. It is important that the fortification should resist long enough for the allies to be able to prepare a good relieving army. Everyone knows that Malta is important to Christianity. The Island has been called many things, including "a thorn in the eye of the Infidel". The Order must always spend much money to defend the Island when others have easier tasks. Christendom would be frightened if it had had to spend half as much money as the Order has had to spend on Malta—building a new city with all the inconveniences caused, hoping that if you build it well others will come and settle here.'

I am deeply indebted to Signora Costanza Laparelli-Pitti for her help and for a photographic copy of the Codex, *to Signor Nino Pranzo-Zaccaria of Milan and Father Mario Zerafa of Malta for their great assistance in translating the* Codex. *I am also grateful to Professor Marconi of Rome for showing me and allowing me to reproduce the four drawings of the city of Valletta made by Laparelli. Although these form part of the* Codex, *they did not come to light when the original manuscript was being photographed for me some years ago. The material for this article was originally produced for the* XV Congresso Internazionale di Storia dell' Architettura (*of the* Centro Studi per la Storia dell' Architettura di Roma.) *After I had given my paper, Professor Marconi read a paper in which he introduced the four drawings by Laparelli.*

Joseph Tonna

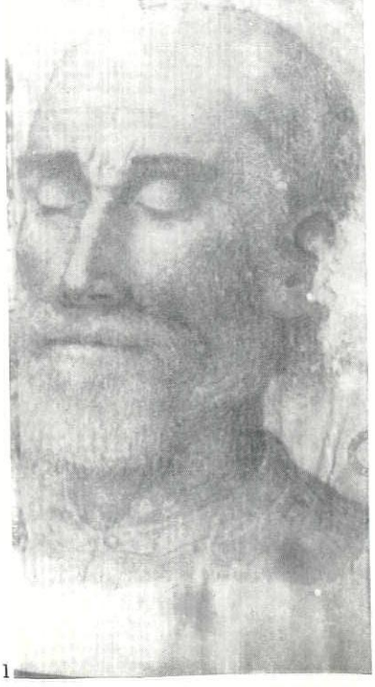
TUMAS DINGLI

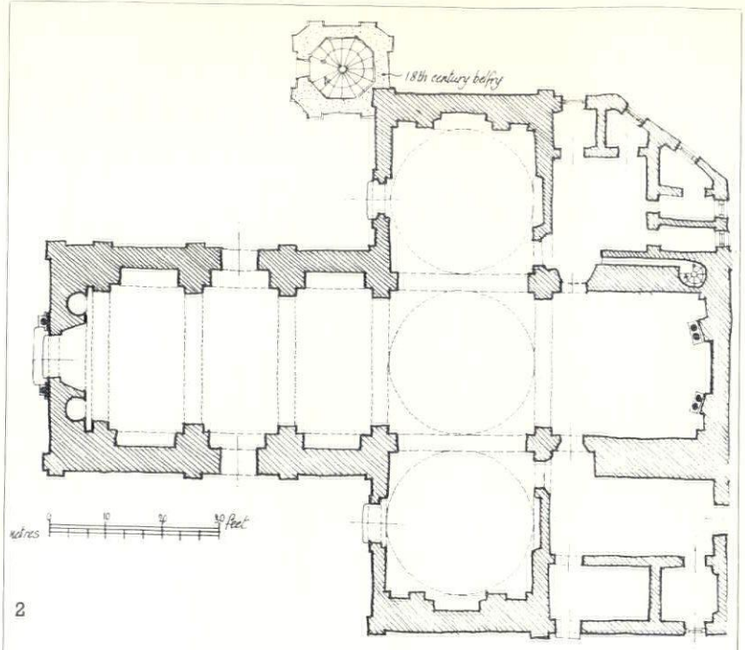
Child prodigies being such a rarity in the history of architecture, Tumas Dingli would have been remarkable enough for designing four major churches between the ages of 22 and 25. But the parish churches of Attard, Birkirkara, Naxxar and Mosta (the last now destroyed) are more than competent exercises in church architecture. They represent a significant development in Maltese architecture, which before Dingli's appearance had been dominated by mannerist trends introduced to Malta from Rome by Girolamo Cassar, the man charged by the Knights of St. John to shape the buildings of their new capital of Valletta.

Unlike Cassar, Dingli worked almost exclusively for his compatriots. He was launched on his career when the Maltese, for the first time in centuries, were in a position to patronise the arts. With the villages secured against pirate incursions by the military power of the Knights, increased prosperity made it possible for the villages to express their newly-discovered civic pride by building great new parish churches.

Against this background, young Dingli displayed remarkable inventiveness. Manipulating elements originally introduced by Cassar and absorbed into the vernacular—the finely coffered barrel vaults, panelled pilasters, circular and elliptical windows—he produced a logically ordered architecture which turned

1. *Tumas Dingli—a contemporary portrait.*





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4

Tumas Dingli's church at Attard: 2, plan, 3, front elevation, 4, interior, 5, as it is today, with the eighteenth-century belfry on the left.

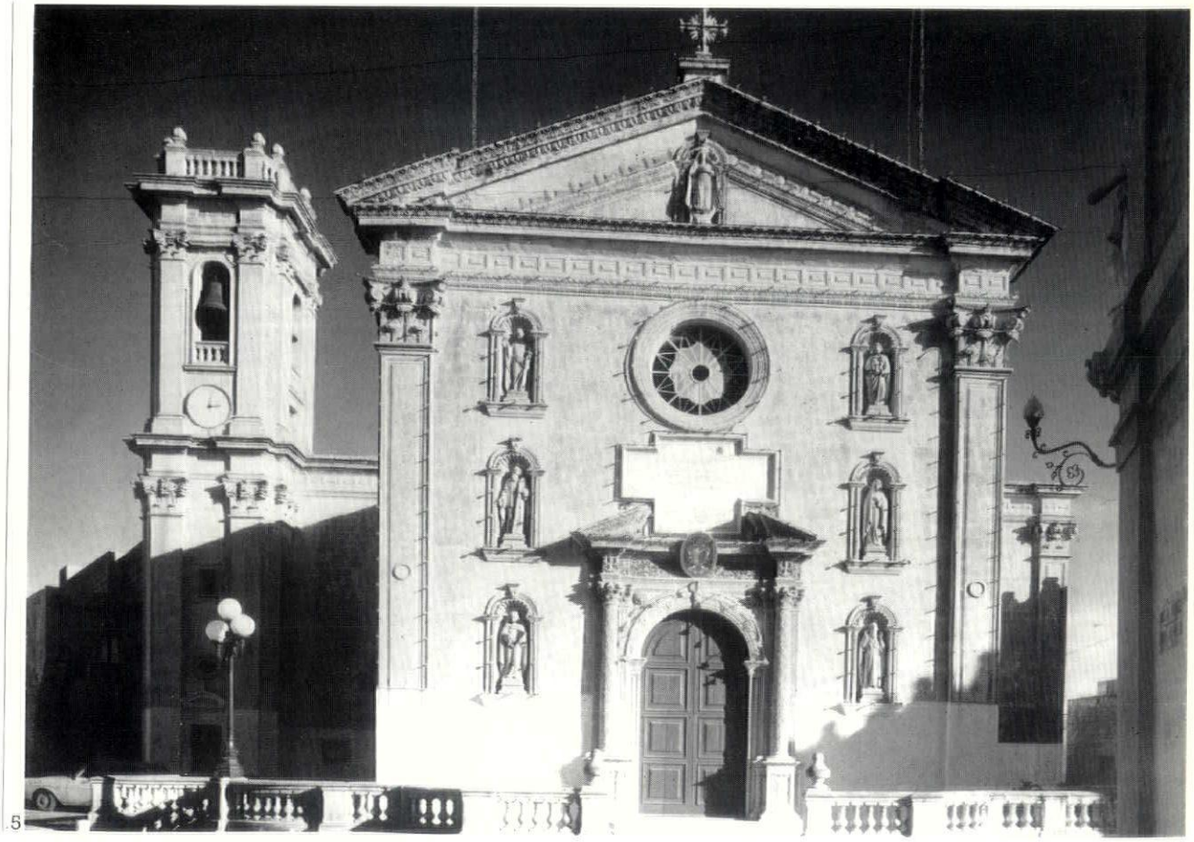
in Cassar's conventual church of St. John. A subtle spatial balance is obtained at the crossing by the interplay of the barrel vault of the nave and choir, the saucer domes of the transepts, and the higher dome that crowns the crossing itself.

The exterior, like those of Alberti's Mantovan churches, takes up the theme of the Roman temple front. Unlike the architects who preceded him in Malta, Dingli attached great importance to the expression of the internal space on the external form of his buildings. Moreover he wanted to make this statement in the purely classical manner, introducing temple sides as well as a temple front. Grappling with one of the central problems of Renaissance church building—how to find a satisfactory classical form for a building that internally combines a lofty nave with low side chapels—he boldly decided to design the problem away, by removing the side chapels and placing the altars in shallow niches opening from the nave.

With all Dingli's insistence on a return to fundamentals, he was no doctrinaire purist. He was too sensitive not to respond to the cross-

its back on the idea of Mannerism and returned to the first principles of the Renaissance. He thus gave the development of the Renaissance in Malta a unique twist which, not illogically, inverted the sequence of its phases further north. The point of Mannerism had been lost in Malta, where there was no High Renaissance work to rebel against, no established principles of design to challenge.

Not surprisingly, Dingli's work has an affinity with the early Re aissance that may baffle and confuse the student who is not forewarned that in marginal territories such as Malta one must always be on the watch for archaisms. One can feel it in the cri-p detailing; but it is more than skin deep. An analysis of the plan and section of Attard parish church would reveal an underlying system of proportion, based on the circle, the square and the double square, such as the early Renaissance theorists favoured. Though the traditional Latin Cross plan is used, there is here no overpowering drive towards the altar, as there is



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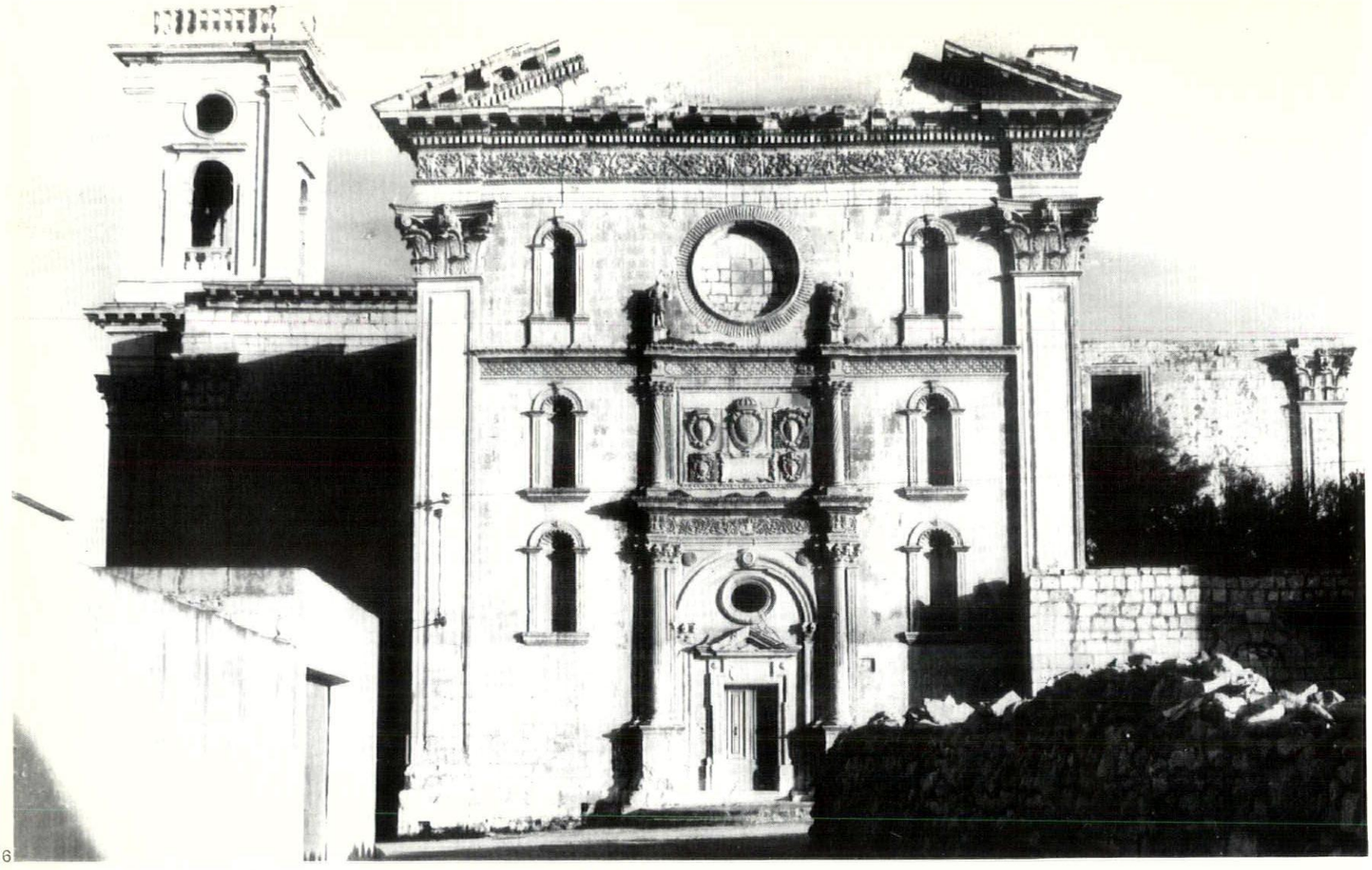
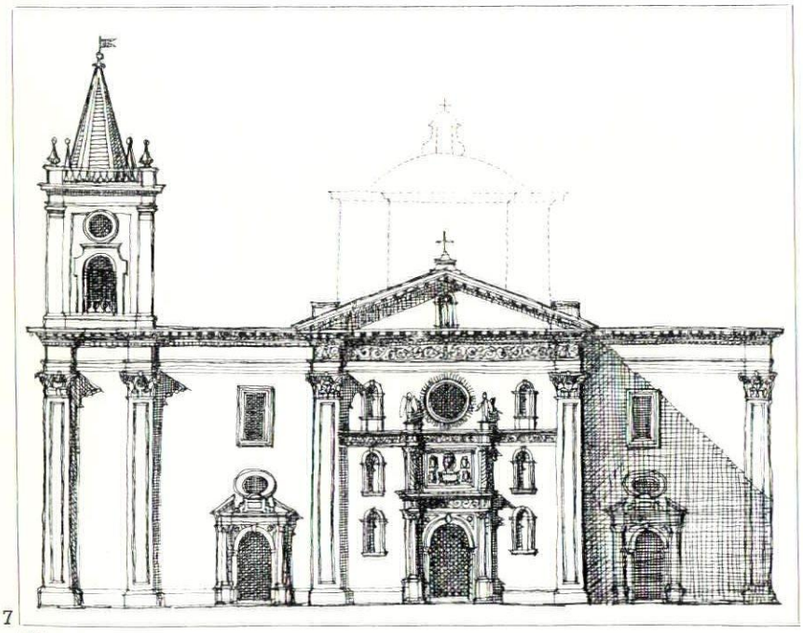


6, *Tumas Dingli's church at Birkirkara and, 7, reconstruction, 8, reconstruction of the church at Naxxar.*

currents of national styles which the Knights of the various langues brought in their wake. Of these, none could be expected to find the Maltese more receptive to their fashions and ideas than the Knights of Spain. Malta had been a Spanish fief before its handover to the Knights, and before that it had, like Spain, endured a long period of Islamic domination. On top of this, the Maltese were perhaps closer to the Spanish in temperament than to any other European people.

Dingli's architecture reflects these ties and affinities with Spain, somewhat subtly at Attard, but more explicitly in his next two churches. At Attard, his altar pieces are as dynamic, complex and intricately detailed as the famed Spanish *retablos*; they gain added impact by their juxtaposition with the sober framework which contains them. Externally he makes free use of Spanish motifs to soften the classical severity of his façades. Giant Corinthian pilasters are panelled to make them look lighter; coffers appear on the frieze; and the carving round the doorway is as intricate and filigree-like as that which earned Spanish work the appellation of Plateresque. Unlike most Plateresque work, however, the decoration at Attard is carefully controlled and closely related to the structural form.

In his later church at Birkirkara, the distinction between ornament and structure is not so clearly stated. Internally, the giant Tuscan pilasters are here replaced by smaller Corinthian columns, coupled and superimposed in two storeys. The effect is undeniably richer, and considering that Dingli was here working for one of the island's most important parishes, this is what he must have been aiming at.





But the articulation of the wall is blurred and the scale is meaner. The wall as a structural entitity here loses its primacy; it is almost completely hidden behind the continuous band of ornament which flows from one altarpiece to the next. The demotion of the wall is underlined by one unusual detail: behind the uppermost columns, it is hollowed out to make them free-standing.

Externally, too, Dingli's preoccupation with Spanish-inspired motifs is more insistent than it is at Attard. The main door is treated merely as an incident in a centrepiece of rich decoration that climbs in stages to embrace the rose window at the top. This idea of carrying decoration round a door, up to the wall clear to the top, was a device which the Spaniards had inherited from the Moors; so was the play of contrasts between masses of plain wall and lavishly decorated notes at doors and windows, which Dingli also exploits. The quality of the decoration is itself more assertively Spanish than it is at Attard; all the familiar motifs are there, from the grouping of heraldic crests above the door to the chimeric grotesques which punctuate the *rinceau* flowing along the frieze.

With this magnificent centrepiece, Dingli has moved the *retablo* outside; but he somehow balks at expressing externally the internal division into two storeys. He does make a half-hearted attempt to do so, by running the entablature of the upper order across the main façade; but it is stopped somewhat abruptly by the giant Corinthian pilasters on the ends and it does not reappear on the other façades. Dingli's reluctance at Birkirkara to abandon the giant order is understandable. He was here thinking in terms of Corinthian, the richest and slenderest of all the classical orders. To use it externally in the same way and on the same scale that he used it internally would have made the façades finicky and over-elaborate; the small pilasters would have looked puny against the large expanses of plain masonry.

At Naxxar, which was started soon after Birkirkara, he uses the same internal treatment of superimposed Corinthian columns, but externally he abandons the Corinthian order for the Tuscan. This simpler, sturdier order made it possible for Dingli to project the horizontal division of the interior on the external elevations without disrupting the unity of the architecture. In order to insert as tall a pilaster as possible within the limited space available, with a proportional increase in width, Dingli resorts to Cassar's device of omitting the entablature and running the capitals as a continuous moulding across the façade. To get a correct balance between vertical and horizontal on the two-storeyed façade at Naxxar, Dingli abandoned the straightforward temple front, dividing it instead into three vertical bays, with two narrow end-bays flanking a broad central one, in the classic *aba* motif. Within this more complex framework, he disposes all the elements of his earlier façades in an entirely novel composition. The main portal is almost identical with that of Attard; so are the niches and the rose window. But the portal and the rose window are now clearly separated from each other, and the former has acquired a new significance: it is now the dominant element in the upper storey. Instead of being superimposed vertically, the niches are strung out horizontally; two of them flank the rose window in the central bay and the other two fill the end bays. But the pediment could now embrace the whole façade, and the absence of an entablature called for some sort of termination for the end bays which stood outside it.

To provide this, Dingli had to fall back on another of Cassar's devices which he had earlier rejected: the idea of twin towers, here needed not to mask the side chapels but to terminate the end bays. At first glance Dingli appears to be repeating the scheme of St. John's western front; but there are subtle differences which say much about the contrasting personalities of Cassar and himself.

Dingli's composition is ordered, simple and well defined: each part is clearly separated from the next and there is none of the mannered ambiguity that marks the western front of St. John's. At Naxxar there are no projecting bays, no interpenetration of elements from one storey to the next, no abrupt changes of rhythm. Both architects introduce an entablature at only one point of the façade, omitting it elsewere; Cassar arbitrarily places it at the second stage of the end bays where its only function is to underline the weakness of the pediment

Tumas Dingli: 9, *interior of the parish church of Zabbar* (1641), *later altered and embellished.*





Tumas Dingli: 10, church at Gharghur in its present form.

springing directly from the pilasters, without an intervening entablature. Dingli uses it with more logic to crown the final stage of the towers, where it effectively stops the vertical climb of the superimposed pilasters.

Cassar, the Mannerist, delighted in breaking the classical canons, then deliberately exploited the dissonance so caused for its shock effect. Dingli did not hesitate to break the rules when he had a sound reason for doing so—in the case of Naxxar, to get well proportioned pilasters, and a good balance between vertical and horizontal. But he never tampered with fundamental principles of design; his prime objectives were clarity and order, and these he never sacrificed.

Having pushed the Birkirkara experiment to its logical conclusion at Naxxar, Dingli paused for a long breathing space, which he seems to have used for a reassessment of architectural values that led to a complete reversal of the direction in which his architecture had developed, at such an incredibly fast rate, from Attard to Birkirkara and Naxxar.

His next parish church, that of Gharghur, was even more direct and uncluttered than that of Attard. The giant Doric order is here used both inside and out. Externally, the entablature is omitted, as at Naxxar, and the detailing around the doorways is much simpler than in Dingli's earlier work. All this was part of a deliberate attempt to play down the importance of ornament. Dingli makes sparing use of it but he does not skimp on its quality. Internally, the *retablos* are as rich and intricate as ever. Externally, the carving on the metopes of the original Doric doorway, now embedded in the back of the eighteenth-century façade, are as spontaneous and finely-worked as the best work at Attard and Birkirkara.

If Gharghur reflects an almost fanatical fervour for purification, Dingli's last parish church, that of Zabbar, represents a calmer reappraisal of trends which he had explored in his earlier churches. The giant Doric order is retained externally, but here it has the prescribed entablature, and the skyline is punctuated by vase-shaped finials and centrepieces. Internally, it is the Corinthian order which is employed, again in the form of giant pilasters, retaining the scale of Attard but inverting the relationship between interior and exterior. For the first time in Dingli's work, two separate orders appear side by side; the aisle arches are carried by Doric pilasters, which flank the Corinthian pilasters supporting the nave vault. The separate functions of the two sets of pilasters are thus succinctly defined.

While retaining the external severity of Gharghur, Zabbar is significant for Dingli's renewed search for a sumptuous internal effect. This is obtained through well chosen details like the fluting of the pilasters, elaborately carved dentils and modillions on the entablature, and the intricate star pattern of the coffering inlaid with alternating stars and rosettes. With all this exuberant detail, the scale is not sacrificed, nor is the clarity of the articulation. Zabbar has some of the richness of Naxxar and Birkirkara but retains the grandeur and clarity of Attard and the restraint of Gharghur.

If Zabbar may be described as a final summing up of the best traits of Dingli's work, it has one quality which characterises the basic concept of Maltese church architecture, that of a sumptuous interior within a sober exterior. In this sense, the Maltese churches are closer in spirit to the early Christian basilicas and Byzantine churches than to their Renaissance counterparts. Nowhere, of course, is this idea more forcefully stated than at St. John's. Its exterior is severe to the point of bleakness; but the magnificence of its interior has few rivals in the Western world.

While Tumas Dingli's reputation rests primarily on his churches, his other buildings—his Porta San Giorgio at Valletta and his palace for Bishop Cagliares—testify to his flair for isolating the architectural problems involved and solving them in a logical and coherent manner.

Like Dingli's churches, they reveal a feeling for order and cohesion in all the elements that make a work of architecture from the broad layout down to the smallest detail. Here lies Dingli's great contribution to the development of Maltese architecture. Girolamo Cassar was the bold pioneer, undeterred by the sheer bulk of his work, daring to be contemporary. But partly because of inadequate training, partly because of the great number of projects with which he had to cope at the same time, his work is characterised by a certain looseness and a lot of naiveté which was inevitably passed on to the later generation of architects who could only look to his work for inspiration.

Dingli's task was to purge Maltese architecture of Cassar's looseness of manner, and in this he admirably succeeded, paving the way for the self-assured and vital Baroque of Gafà, Barbara and Cachia which was the next, and perhaps the greatest, phase of the renaissance in Malta.

The future well-being of Malta is closely bound up with the island's economic situation and with the planning legislation by which the physical side of development is controlled. Both are in a state of rapid change, the economy because of the decline of British naval and military expenditure, and town planning because of the new planning Bill now before the Maltese parliament. This issue therefore concludes with articles on these two subjects by the island's leading experts. Salvino Busuttil, Professor of Economics and Dean of the Faculty of Arts at the Royal University of Malta, discusses the present economic situation, and J. G. Huntingford, chief planning officer for Malta, gives a survey of town-planning law covering four hundred years, with emphasis on the situation today.

Salvino Busuttil

THE ECONOMY TODAY

What architectural structures can best be built on a tripod is not for the layman to suggest. The new economy of Malta has, however, produced a not insignificant structure built on the tripod of manufacturing industry, tourism and horticulture.

For more than a century and a half, Malta pursued an economic system characterized mainly by the fact that it was not so much a system as a loose relationship between economic factors; her economic life followed no well-defined cycle except a chain of events determined by the vicissitudes of the struggle for power in the Middle Sea.

Indeed, the economy of Malta till 1959 fell into no classical pattern, defying, as it were, economic orthodoxy. For it was an economy wholly controlled by external influences, especially Britain's need to maintain supremacy on the seas and, latterly, by the Allied cause in southern Europe and North Africa. Malta's unorthodoxy has lain in her prosperity in times of war and her poverty in times of peace. She has been a valiant warship at the height of battle, and a convenient museum-piece in the calm of peace.

With Britain discovering, in the middle nineteen-fifties, that economic necessities required her to curtail her role as a major Mediterranean Power, Malta realized, perhaps for the first time in her history, that she had to erect an economic system whose resilience would rest, not on the ephemeral strength of military might, but on lasting foundations of productive capacity. Malta started her path towards this goal with rather poor credentials. She lacked raw materials and an industrial base; she had no tourist infrastructure. Her agriculture was primitive. Her assets were, in addition to a glorious climate and over sixty miles of coast, the assets of her people; strong-willed but adaptable, eager and quick to learn new crafts, anxious and ready to embark on building a new economy.

The first development plan, covering the 1959-67 quinquennium, laid the infrastructure of development carried on by the second five-year development plan, which now comes to an end. On the eve of the publication of the third, and perhaps most crucial, development plan, it is apposite to take stock of Malta's economic position.

Several economic indicators confirm that the Maltese nation has shown itself, in the course of the last ten years of planned development, equal to the task of diversifying the economy. The elected representatives of the people, entrepreneurs, trade unions, workers and investors, have demonstrated that the island can shoulder the new responsibilities arising from economic and, since 1964, constitutional independence, of forging a new economic structure on the anvil of courage and hard work.

Perhaps the real growth of the gross national product since 1959 is the best testimony to this progress.

YEAR	GNP (£M.)	AS % OF PREVIOUS YEAR
1959	43.5	–
1960	46.8	107.7
1961	47.7	101.9
1962	47.0	98.5
1963	46.6	99.1
1964	47.7	102.3
1965	50.9	106.7
1966	55.9	109.8
1967	60.2	107.7
1968	67.0 (est.)	111.3

These figures indicate a not inconsequential growth in the gross national product since 1959. The years 1961–3 showed reversals due to the first major impact of the run-down of the naval base. But as the 1959–64 development plan started to bear fruit, the economic situation improved. Investment in manufacturing industry and tourism began to react to the stimulus provided by Government's aids. Included under Government assistance were grants and loans up to a maximum of 50 per cent of the initial capital investment, exemption from company income tax for ten years and from customs duties on equipment and materials, the lease of a Government factory at a subsidized rent and a training grant.

As a result of the above investment there has taken place not only an overall increase in the gross domestic product, but also important structural changes within the components making up the total. The contribution of the manufacturing sector to GDP was 16 per cent. in 1962, and was second to that of the wholesale and retail trade sector. Its share grew to 16.6 per cent in 1963, to 18 per cent in 1964 and to 19.3 per cent in 1965. By 1966 the manufacturing sector had reached first place in the composition of GDP by industrial origin, as its share had risen to 22.1 per cent.

The share of the defence Services sector in the GDP has been declining. In 1962 the defence Services contributed £6.59 million, thus becoming the third most important

sector in terms of the domestic generation of output. The comparable figure for 1966 had contracted to £5.16 million, representing only 10 per cent of the GDP. By the end of 1968, it is estimated that it had dwindled to less than 6 per cent.

Meanwhile the economy has been feeling the beneficial effects of the boom in property, ushered in largely through the demand created by overseas persons, notably foreign residents, and persons investing in Maltese property on a speculative basis. Private direct investment received from abroad, which totalled £2.5 million in 1959, rose to double that figure in 1968. It is estimated that over 75 per cent of these amounts were payments for property in Malta.

The balance of payments has shown a surplus in the 1959–68 decade with the exception of 1964 when a slight deficit on current account was registered.

BALANCE OF PAYMENTS 1959–67 (THOUSAND)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
A & B. Balance of current transactions	+4.4	+4.8	+4.8	+2.7	+1.7	−0.3	+2.2	+5.8	+2.0	0.4
A. Goods and services	−1.3	−2.0	−0.7	−1.8	−3.0	−5.8	−4.8	−3.9	−7.5	NA
B. Grants and remittances	+5.7	+6.9	+5.4	+4.2	+4.7	+5.6	+7.0	+9.8	+9.5	NA

The capital account of the balance of payments has shown, in the last few years, a higher accumulation of foreign reserves and greater flows of private funds. At the same time, however, there has been a slight increase in financial investments abroad by Maltese. Over the last twenty years, in fact, Maltese persons have invested annually an average of £5 million overseas, mostly in British funds.

The present position of the balance of payments must not, however, be interpreted as being so strong as to present no difficulty for the future. Malta has been able to achieve surpluses largely through invisible exports earned from Services' expenditure (which decreased from £19.6 million in 1959 to £11.7 million in 1967). The Maltese economy is attempting to offset reductions from this latter source by invisible earnings through tourism and by exports of manufactured goods and agricultural and horticultural products.

The philosophy behind Malta's economic planning is to allow the island to earn enough foreign income from the new sources so as not to aggravate the balance of payments. It would appear, however, that the synchronization of these two activities—the reduction of invisible earnings through the Services and the increase in receipts from tourists and from overseas importers—is not entirely taking place. There is in fact the likelihood of further contractions in the net balance on current account. Such a situation is rather ominous in view of the fact that Malta has to import raw materials and machinery to render possible an accelerated diversification into industry and tourism. She also has to import considerable quantities of food as well as a wide variety of finished goods.

Moreover Britain provides, at the moment, under the 1964 Financial Agreement, funds averaging £5 million annually for capital investment in Malta. After 1974 it is likely that Malta will have to find most of these funds herself. She must therefore be in a position whereby her balance of payments must not be so strained as to limit industrial and tourist expansion.

Consequently, there must be an accelerated rate of growth in Malta's exports, visible and invisible. Malta must seek new markets and must attract additional tourists and investors to her shores.

So far her markets, her tourists and her investors have been mainly British. The island is, however, currently seeking a form of association with the European Economic Community, and is striving hard to introduce her exports to North Africa. She is attempting to attract tourists from Northern Europe and is welcoming investment from entrepreneurs in industrialized countries other than Britain.

The next quinquennium is going to be crucial for the Maltese economy —one during which the island must solve her unemployment problems and elevate the standard of living of her people. To accomplish these targets Malta must increase her capital investment. On the other hand, assuming that public investment finance will be at a premium by 1974, it might appear that Malta should be parsimonious in her capital expenditure.

The dilemma inherent in this position needs no highlighting. It is a dilemma aggravated by the fact that the social climate of the moment, affected in no small way by the impact of high-income settlers and by tourists, as well as by the substantial increase in the income of certain segments of the local population, favours rises in social benefits and in social investment generally. But this dilemma knows of no lukewarm solution. It requires, essentially, a bold step, so to increase Malta's productive capacity as to reach the targets alluded to above. Consequently, the island's investment programme should not be tied down to a conservative absorptive capacity but should rather ensure that the capacity is elastic enough to contain that economic progress desirable for the well-being of the island.

For while there is, of course, an absolute physical—geographical, economic and human—limit which circumscribes Maltese economic development generally, yet it is felt that Malta still has several years before she is anywhere near that limit except in the sphere of manpower; an eventuality this, that, given the fact that the first two development plans had the creation of new employment as their principal targets, may well constitute the consummate irony of Malta's future development.

The growth of industry and tourism should not be held up due to the absence of sufficient factories and hotels. One is aware that in time the supply of factories and hotels themselves may become a function of the supply of manpower. But this long-term problem may to some extent be solved by the re-organization of the building industry which, with the introduction of new techniques of construction and under the supervision of qualified site management, could cope with the erection of factories and hotels that may be required in the next quinquennium and thereafter.

Malta possesses today the productive forces necessary to make the island move forward to a new quinquennium of development. But the 1969–74 era will be a watershed. Lethargy and nonchalance in implementing sound policy could make the island an economic backwater. Courage and drive in forging bold measures could make it, if not the Island Paradise of tourist literature, a pleasant, prosperous country in that sun-caressed sea which is her history and her heritage.

J G Huntingford

TOWN PLANNING LAW

Malta can boast of a very long tradition of planning legislation. When the Knights of the Order of St. John came to Malta over four hundred years ago, they were at first reluctant to enact new legislation for fear of displeasing the Maltese governing class,[1] yet Grand Master L'Isle Adam had no option but to legislate quickly, barely a year after his arrival, because of the enormous difficulties he encountered.[2]

A tribunal, the *Officium Commissariorum Domorum* was the first to be set up by the Order. To begin with it was meant only for the regulation of the rents of houses and shops, but later it was given the power to suppress designs of buildings if they were found unsuitable. This was indicative of the changes taking place round the Grand Harbour, where the bulk of the population was about to concentrate. Previous to the Order's arrival the islanders were concentrated on the ancient inland capital of Notabile (Mdina), but after 1530 there was a drift towards Il Borgo, Senglea, Cospicua and Valletta, with considerable repercussions on the housing problem. Many ordinances were enacted to cope with the housing problem, and that of 1562, three years before the Great Siege, was a model of legal draftsmanship —a high standard not found in previous ordinances.[3]

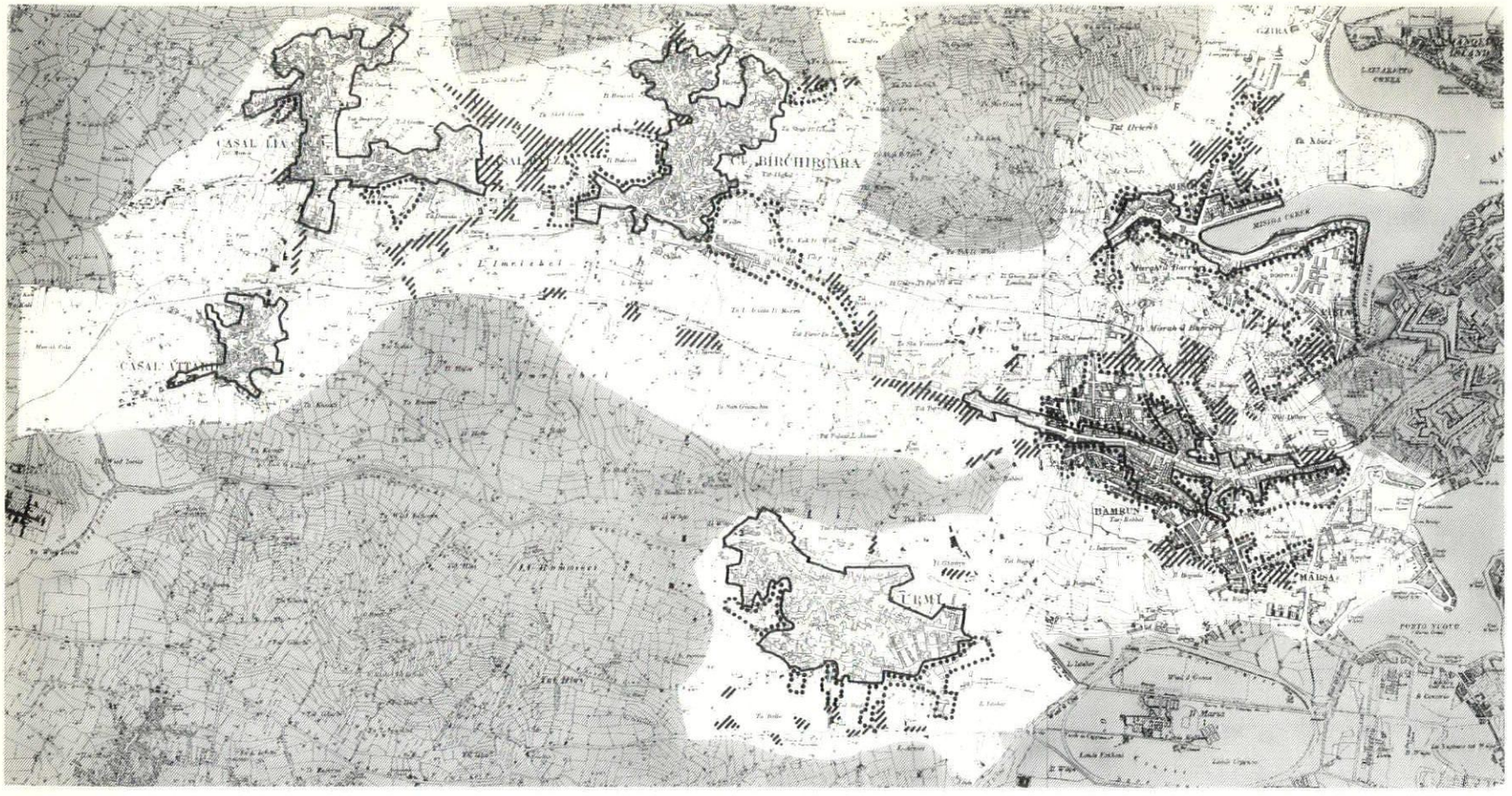
It was not until La Valette's death that, the enceinte of Valletta being in an advanced state of construction, the planners paid attention to the building of houses within the city. A most important legislative event, under the Grandmastership of Del Monte, was the creation of the *Commissione della Fabbrica*, a commission specially instituted to regulate the building of the houses, in contrast with the fortifications of the new city of Valletta. An Ordinance[5] was promulgated appointing Commissioners whose duty was the assigning (by means of a notarial deed) of sites inside the new city. The Commissioners, in whose deliberations Francesco Laparelli of Cortona was to take part, had to design the building sites according to the social importance of the recipients, and a year after their *Capitoli circa la divisione ed assignatore del sito della nuova Citta' di Valletta* were approved by the Grand Master and his Council.

According to these *Capitoli* the new city was to be divided into two districts, one reserved for the collacchio and the other open to the public.[6] The building stone to be used was to be cut from the Manderaggio,[7] so as to speed up the excavation of this galley pen. Stone which was not hewn from this place or from the well with which, for purposes of defence and sanitation, each house was to be provided, would be confiscated. No gardens or porticoes were to be allowed abutting on the streets; the external walls of houses had to be built under the direction of a *capo mastro* specially appointed by the Commission. Similar aesthetic reasons compelled the owners of corner houses to decorate them with a *bello ornamento*. Health reasons caused each house to be provided with a cesspit connected to a conduit leading to the main conduit. The sites were to be sold at a price which would satisfy the former owners. Another provision prohibited the resale of a purchased site without the permission of the Commission.

The Commission was also careful to ensure rapid building of the new city. Thus, on acquiring a site, the new owner had to bind himself, by means of a notarial deed, to spend a certain sum. Within six months of acquiring the site he was to commence building operations; within one year the building was to be sufficiently advanced to be habitable, and within three years the sum contracted had to be spent.

Without these sixteenth-century regulations the Renaissance town-plan drawn up by leading designers of the day could not have produced the beautiful city, with its palaces and open spaces, which we now enjoy.

There was no significant new planning legislation until the nineteenth century, by which time the relevant laws were Chapter 13 of the Code of Police Laws, originally enacted in 1854 but subsequently amended, dealing with building regulations and streets, the Aesthetic Buildings Ordinance of 1935, 'to make provision for ensuring symmetry in buildings and preserving the amenity of surrounding areas', the Fertile Soil (Preservation) Ordi-



Map showing a typical development area, stretching from Marsa Creek—part of Grand Harbour—through Hamrun to Attard near the middle of the island. Bold outline indicates development up to 1900; dotted outline up to 1940 and bold hatching up to 1957.

nance of 1935, the Antiquities (Protection) Act of 1925 and the Land Acquisition (Public Purposes) Ordinance.[8]

The Aesthetics Ordinance made little contribution to the attainment of consistency of good civic design. The Aesthetics Board appointed for the purpose frequently ignored the overall street picture and considered the façade as an entity by itself. Unfortunately it had no control over the indiscriminate use of bright colours in façades which became popular in the post-war period. Chapter 13 of the Police Laws was however very significant, and was in fact the governing factor in town planning.

Part I dealt with the appointment of a town-planning commission, the preparation of planning schemes and questions of compensation and penalties; also with the declaration of planning areas. Part II established a minimum width of 25 ft. for new streets, and laid down that before the erection of buildings along new streets a contribution to the cost of the formation of the street was to be paid to Government by developers. This section was important because developers kept to a minimum frontage, and developed in depth, to avoid paying too great a contribution. Another significant factor was that no contribution was leviable in widths over 60 ft.; hence Government planners were reluctant to design larger open spaces.

The Fertile Soil (Preservation) Ordinance, also of 1935, required the preservation of all fertile soil, which is one of the most important minerals on the island; no owner could now erect a building without first removing the fertile soil and tracts of rocky land were sometimes covered with soil through this Ordinance. The Antiquities (Protection) Act of 1925 is a most valuable one, and Malta can well be proud of it. It did much to preserve the cultural heritage of the island and was promulgated seven years before the British 1932 Town and Country Planning Act, which contained the first provisions in that country for listing and preserving ancient monuments. The Malta Antiquities Act was a comprehensive law, requiring among other things that 'no person shall demolish or make any alteration to any building or site which is of importance, or demolish or make any alteration to the remains of a monument existing in any tenement, whether privately owned or otherwise.' It also stipulates that within six months of the announcement of the Act, a list of the buildings, sites or remains was to be published, and that rules be made providing that any similar buildings, sites or remains which might eventually be discovered should fall under the provisions of this law. The Land Acquisition Ordinance of 1935 regulated 'the acquisition of land for public purposes and to establish the procedure to be followed in relation thereto.' The planner was thus armed with a very powerful tool.

The second world war was not yet over when it was thought that some stricter form of control was necessary to cope with the post-war rush of building.[10] Accordingly the Governor issued regulations cited as the Building Control Regulations, 1945. This was another landmark in the history of town planning law in Malta. It made it unlawful to start work on any building without a licence (the equivalent to the English planning permission) which had to be obtained from a Building Control Board appointed for the purpose. The decisions of this Board, appointed under the Emergency Powers (Defence) Acts, were *ultra vires*. Indeed it was specifically laid down that 'the Board may at their absolute discretion refuse the issue of a licence without giving the reason for the refusal.' These were sweeping powers, considered necessary in those exceptional times. There were few planning schemes available (then called key-plans) and power had to be absolute. Although a clumsy planning tool, the BCB was effective in being a deterrent to sprawl and other bad forms of development.

The Building Control Board continued to operate until, in 1960, the Government of Malta invited Mr. Switzer to the island to help the Public Works Department to prepare planning schemes. As a result of the Switzer recommendations, an Ordinance was enacted in 1962—only a few days before the first General Elections after the restoration of self-government—which had one very important effect on town planning in Malta: the whole of Malta and Gozo was declared a planning area, and as a result the published key plans, schemes, etc. were no longer legal instruments. These latter had been hurriedly prepared by people never trained in town and country planning, since the Public Works Department did not then boast of a single town planning officer.

The idea was to start afresh, and a period of three years was set for the preparation of the master plan, during which period steps were to be taken for the drafting of a proper town planning law to control town planning once and for all in a more effective way than was being done. Other innovations made by Switzer included the introduction for the first time of control of 'use of land and buildings', whereas only new and reconstructed buildings

were previously regulated. Provisions were also made for the proper drawing up of planning schemes with zoning, density, etc. indicated thereon. Very serious however, was Switzer's deletion of the sections of the Police Laws which had given the Courts power to punish offenders against the scheme by ordering all work done in contravention to be removed or destroyed at the expense of the owner. Was this a deliberate omission? Or was it a lapse on the part of the legislator? Whatever the answer the Courts were left with no power of dealing with offenders.

Switzer also touched on the financial aspects which have bedevilled town planning in Malta, but the new regulations only complicated matters and made it difficult to obtain compensation for any land which had been set aside for a public purpose. This was unfortunate, considering that the right of compensation had always been upheld in the Malta Courts and that this Ordinance was being enacted on the eve of a general election. Finally a Planning Area Permits Board was set up, and this is the instrument still in force for issuing planning permissions.

These legal notices represented a very important step forward. Previously the BCB could refuse a planning permission at its absolute discretion, without any right of appeal, but now, through the Planning Area Permits (Delegation of Powers) Regulations, 1962, an applicant for a permit who considered himself aggrieved by the decisions of the PAPB could appeal to the Minister.

The PAPB met frequently and did its best in spite of the flood of requests that came with the building boom; various town and village schemes were revised and extended to meet changing needs. But this had little effect on the existing pattern. The Switzer amendments were never intended to do more than provide interim legislation to control development by rapidly prepared advisory planning schemes. As we have seen, they also contained a very serious deficiency, the deletion of power to impose penalties on developers who contravened the code. In 1966 however, a very capable UN adviser, Mr. W. P. Paterson, came to the island to report on the planning situation. As a result of his mission it was proposed to send immediately to Malta a UN consultant on town planning law with a view to drafting a comprehensive town and country planning law for the island. Mr. Desmond Heap, the City of London Solicitor, was entrusted with the job. The drafting of this law became absolutely imperative especially when the national physical plan for Malta was being undertaken.

Heap quickly came to the conclusion that, as a beginning, a new town planning law for Malta should be as simple as possible. Any further enactment of greater complexity could be added in the future as circumstance required. The Bill he devised was a very simplified form of the 1947 UK Act, without any of its complicated financial provisions. It advised that a Minister be appointed responsible for securing consistency and continuity in the framing and execution of a comprehensive policy for the use and development of land in Malta. A National Development Plan was to be drawn up for covering all land in Malta. It established a Town Planning Commission to deal with the day-to-day control of land development. It established a Town Planning Appeals Tribunal to hear appeals. It provided machinery for enforcing town planning control over all development. It contained provisions allowing regulations to be issued to deal with the preservation of trees and woodlands, the control of advertisements, the maintenance of waste land and the listing and preservation of buildings of architectural or historic importance.

Heap gave special importance to the new Town Planning Commission, which was to act as one single body empowered to grant all permissions and approvals in connection with land development. One comprehensive form granting permission would be issued, and this streamlining will eventually be of great benefit to architects in private practice who at the moment have to submit several different forms[11] for the same building.

On the enactment of this new Town Planning Act for Malta, all existing laws relating to town planning will be repealed and the Aesthetics Board will be dissolved. The compensation and betterment question is not touched upon. Acting on experience gained in England over the years,[12] Heap argued that the compensation-betterment problem had better be left alone, at least for the present. He concluded, after the American system, that if a developer is refused planning permission he will still retain his land until circumstances change for the better. The Bill therefore provides that no betterment charge will be levied and no compensation will be paid out. As regards compulsory acquisition, land will be compulsorily purchased only when needed for public purposes. Such a bill could not fail to provoke many reactions, both in the local press and at a conference held in 1968 under Mr. Heap's chairmanship, at which various submissions were made by representatives of the Chamber of Architects and Civil Engineers and of *Din L-Art Helwa*.[13]

Among the objections to the Bill then brought forward were:

1. That it gave too much power to the responsible Minister, who could even call in certain planning applications and give his decision without reference to the Commission. But as Heap pointed out at the conference, town planning is an artistic and administrative process, not a judicial one. Hence the elected government must be ultimately responsible for all planning control. The Minister, the very person on whom a heavy town planning obligation is laid by the first clause of the Bill, must have the last word if he wants it.

2. That the two-year period, or an extended period after the appointed day, for the preparation of the Planning Survey and Plan, is too long. *Din L-Art Helwa* was of the opinion that the new law would not serve any purpose if the Development Plan was not to be published for two years after the Act came into force.

While two years may seem long, the legislator had in mind the adverse conditions under which the planning section of the Public Works Department has to battle. It has only two qualified town-planners who are hopelessly occupied with day-to-day control work and are helped by a small but competent band of draughtsmen. It was only in April 1967 that a UN Consultant, Mr. T. Sieczkowski, arrived in Malta to help with the drawing up of the Malta National Development Plan. On the other hand, the present social and economic forces asserting themselves on the island made it imperative that the plan should be finalised in the two year period and that the 'extended period' should not be involved.

3. The proposed abolition of the Aesthetics Board. If this Board were retained after the enactment of the Bill, it would result in a duplication of work, as the Town Planning Commission would also consider aesthetics, which is an essential part of town and country planning. One of the aims of the new law is to streamline the system of approving applications, and avoid the need of dealing with several independent bodies. The Commission will be in a position, as fortified by the new law, to consider the external aspect of any proposed building as part of the surroundings and environment.

4. The inclusion of a twelve-and-a-half year period, during which the designation of land for acquisition in connection with planning purposes may remain valid, and the fact that no compensation is payable in the event of revocation or modification of a planning decision by the Minister. Twelve and a half years might indeed prove to be an excessive period to freeze land. But as regards revocation or modification of a planning decision by the Minister, while it is true that no compensation will be paid for loss or damage resulting from depreciation in value, yet compensation will be fully paid for expenses which have been rendered abortive

5. The four-year period allowed to the Government after completion of a building to detect and demand correction of cases of non-compliance. This four year period need not have the sinister effect of slowing down the building boom; on the contrary it could be argued that it will in effect protect the rights of property owners. The fines prescribed are the maximum ones that can be imposed by the Court, which can use its discretion.

Again these fines can be held to protect the property owners.

The Bill is now being passed through Parliament. When it finally becomes law, the supporting Orders and Regulations (the new Act will be nothing more than a statutory skeleton of town planning law, the bare bones of the Act, to use Heap's words, remaining to be clothed for its fuller operation by means of Ministerial rules, Regulations, Orders and Directions by the Minister), must be promulgated. The Town Planning Commission and the Appeals Tribunal must also be properly appointed and constituted. The new Town Planning Department and the Town Planning Commission's Secretariat should also be ready to operate the new machinery.

Another step that will have to be taken (not an easy one in congested Valleta) is the finding of suitable office accommodation for the new Department and Commission. The fixing of the 'appointed day' by the Minister depends therefore on the length of time needed for the completion of all these preliminary but important steps. It might very well turn out that the 'appointed day' will be fixed for much later than the three months after the approval of the Bill by Parliament requested by *Din L-Art Helwa*.

What will be the result of the new planning Act? No law, however competently drafted, will be able to deal with the tremendous problems of town and country planning in Malta unless the people, through its elected Government and its new machinery, are really convinced of the need of it, and determined to make constructive use of both it and the proposed National Plan. Not even the Government's good intentions will suffice[14] unless the proposed new Ministry drives urgently towards the main goal—the improvement of the landscape and the built environment of Malta.

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[1] For a detailed account of the earlier laws relating to housing and planning in the time of the Knights, see an article by Stephen Borg Cardona, entitled 'The *Officio della Case* and the Housing Laws of the earlier Grand Masters 1531–1569' in the *Law Journal*, Vo. III, No. 1, May, 1951.

[2] *Liber Bullarum*, An. 1531. (Archives of the Order, housed in the Royal Malta Library, Valletta. These contain a wealth of information on the various Ordinances issued by the Order).

[3] Archives of the Order, MS. 91, f. LXVI.

[4] A very interesting study of town planning under the Knights is contained in B. W. Blouet's 'Town Planning in Malta, 1530–1798', published in *Town Planning Review*, Vol. XXXV. 1964.

[5] Archives of the Order, MS. 92, f. CXVII .

[6] The *collachio* idea was dropped and the new city built without any attempt at segregation.

[7] This was a little landlocked harbour, to be constructed on the Marsamxett side of Sceberras peninsula. This project too was eventually abandoned.

All these acts were published by the Govt. Printing Press in the *Government of Malta Gazette*.

[9] Published as a supplement to the *Government of Malta Gazette*, No. 12,115, 16 February, 1968.

[10] This was also the recommendation submitted in a report prepared by a committee appointed by Government in 1963, for the purpose of considering what laws of other countries should be adopted as a model for the new town planning law, with special reference to the financial aspects.

[11] These consist of forms for: Planning Area Permits Board, Medical & Health Department for approval of plans, Aesthetics Board for approval of elevations, Building Notice for indication of alignment in terms of section 20 (1) of Chapter 13, Dept. of Agriculture for removal of soil, the Antiquities Committee (if a listed building is involved) and Public Works Dept. for removal of sand under the Sand Preservation Act, 1949.

[12] The UK Town and Country Planning Act provides for compensation for loss of development rights which is offset by imposing a betterment levy on the increased value of the land resulting from planning provisions. The Land Commission Act, 1967, tries in the United Kingdom to collect 40 per cent (rising to 50 per cent) of all development value in land realised by the landowner. This compensation and betterment system, although it may appear just, has, however, proved after 21 years of experience in Britain to be impracticable.

[13] The Maltese preservationist society, the local counterpart of the Civic Trust of Britain—see page 5.

[14] The safeguarding of landscape and historical and artistic patrimony was expressly embodied in section 9 of the Independence Act 1964 and Constitution of Malta.

VIEWS AND REVIEWS

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A MALTA BIBLIOGRAPHY

For readers who would like to follow further the inevitably very general conspectus of Malta's past, present and future given on the preceding pages, the following is a list of the most useful books available, mostly of a historical nature.

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SICILIAN PROBLEMS

Sicilia Archeologica, a quarterly review devoted to news and documentation on archaeology in western Sicily, edited by Gaspare Giannitrapani for the Ente Provinciale di Turismo, Trapani, has just come to the Editors' notice. It deserves attention as a fairly new publication of unusual quality and interest, and the following review of it has been written, at the Editors' invitation, by Georgina Masson, the AR's Italian correspondent.

Sicilia Archeologica, which has just completed its first year of life, aims not only at making archaeological discoveries and unfamiliar aspects of early Sicilian architecture known to a wider public, but also at providing a platform for the discussion of contemporary problems associated with these subjects. Although many aspects of western Sicily are still little known even to Italians, in few places of comparable size does history lie so thick upon the ground in such naturally beautiful settings. Since prehistoric times Sicily has been the cross-roads of the Mediterranean, where Carthaginians, Greeks, Romans, Byzantines, Arabs and Normans have traded, settled and conquered. Contributions to the review therefore cover a wide and varied field and the subject-matter of articles published in the first four numbers ranges from neolithic commerce in ochre and obsidian with the Aeolian Islands to the influence of near-eastern architecture upon coenobite churches in the Trapani area.

To the layman, however, it is the discussion of problems affecting archaeological activities and the conservation of monuments and sites today, that is perhaps of the greatest interest. For instance the problems raised by the collecting boom, which has resulted in extensive clandestine excavation and illicit trade in ancient artefacts, both genuine and faked; also outright theft. The activities of clandestine excavators and fakers are dealt with in an illuminating article by Carmelo Trasseill, which should serve as a warning to amateur collectors. Prospective thieves of famous works of art will, on the other hand, find little encouragement in the lively editorial describing the recovery of the Ephebe of Selinunte. This half life-size bronze of the fifth century B.C. (which an American museum had offered to buy from the town of Castelvetrano for 800 million Lire) was stolen in 1962 and recovered in 1968, during a gun battle between the thieves and the police, by the Minister Plenipotentiary of the Italian Foreign Office in charge of the department for the recuperation of works of art. Three of the thieves were arrested. As a result the Ephebe is unlikely to be visible to the public for some time, as it constitutes the *corpus delicti* of what promise to be long-drawn-out judicial proceedings.

The fate of the Ephebe is exceptional, but it is unfortunately also true that, owing to bureaucratic processes, artefacts discovered in excavations are often not seen by the general public for many years. During this time they lie awaiting classification in packing cases in the cellars of great museums. *Sicilia Archeologica* is campaigning vigorously to remedy this state of affairs, insisting that where possible finds should be exhibited in small museums on the sites, thus greatly increasing their interest.

A remarkable example of local enterprise of this kind is described in Piero Orlandin's article on the Archaeological Museum of Caltanissetta. Here a fine collection of Greek vases, arms, bronzes and jewels, mostly of the sixth and fifth centuries B.C., has been built up during the last ten years. This is largely a result of excavations carried out by the local archaeological society on sites threatened by clandestine activities or by building and commercial expansion.

Building and commercial development in fact threaten to become a far graver menace to Sicily's archaeological treasures than any clandestine activity. In its first number *Sicilia Archeologica* published an appeal by Professor Vincenzo Tusa, Soprintendente alle Antichità of western Sicily, to prevent the acropolis and temples of Selinunte from being submerged by the flood of speculative building of villas and blocks of flats rising round the nearby village of Marinella, now, owing to the temples' fame, rapidly developing into a popular bathing resort. Happily the appeal was answered by the Cassa per il Mezzogiorno's grant of 300 million Lire for the purchase of the surrounding land and its systemization as an archaeological park.

While no-one could fail to applaud this generous and far-sighted gesture, the word 'systemization' calls for some reserve, as it is all too often associated with subtopian urbanization. Surely the minimum interference with the existing landscape would produce the most felicitous results. Some planting will certainly be necessary to conceal such unsightly buildings as have already invaded the area—and it is a commonplace that in ancient times Sicily was far more thickly wooded than it is today. Fast-growing trees could provide a stop-gap, to be felled later when ilex and other indigenous slow-growers have reached sufficient height. But, above all, the existing *maquis* should be left undisturbed, both for ecological reasons and for its classical associations—as a reminder of scenes such as Theocritus's description of the goats browsing on the lentiscus by the Sicilian shore (in the fifth Idyll) and that Selinunte owes its very name to *selinon*, the Greek word for the wild parsley, which was represented upon the coinage, and still grows plentifully in the region.

correspondence

LOOS'S VILLA KARMA

To the Editors.

SIRS: I read the article on the Villa Karma by Adolf Loos and Hugo Ehrlich in your March issue with great interest. As Ehrlich came from Zagreb and lived most of his life there, and as I have for many years taught architecture at Zagreb University, may I provide your readers with a little more information on him and Kovačić, who was also mentioned in your paper. As for Ehrlich he was professor at Zagreb from 1925–1936 in which year he died. He had been friendly with Loos in Vienna and Loos recommended him to Theodor Baer to continue the villa. The sketches shown here give a good idea of Ehrlich's style. Victor Kovačić (1874–1924) took his diploma under Otto Wagner in Vienna in 1899 after having worked for a while at Zagreb. He was made professor of architecture at Zagreb University in 1921. When he died Ehrlich became his successor.

Ehrlich tended to be generous and take things easily. Kovačić was full of tragic complexes and always dissatisfied with everything, including himself. The two tried to collaborate, but saw after a short time that this would not work. At Zagreb, however, they were the two representatives of a progressive style and they stimulated all those among the young who wanted contemporary architecture. They were surrounded by hostility from the older architects, and they could only get confirmation of what they stood for in competitions. Kovačić won the competition for the chapter house of the cathedral (assessor Cornelius Gurlitt) and the Exchange (assessor Muthesius). The Exchange remains Kovačić's masterpiece. Neither Ehrlich's nor Loos's design for the Esplanade Hotel was premiated.

Yours, etc.,
ALFRED ALBINI
(Professor of Architecture, Zagreb University)

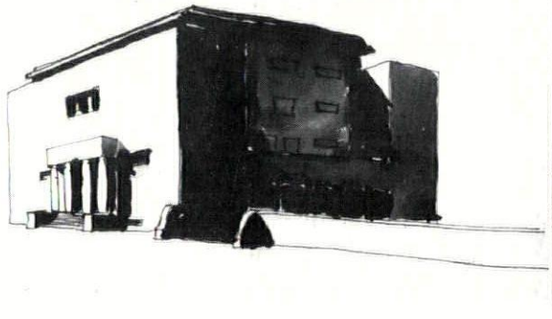
DADA AND ARCHITECTURE

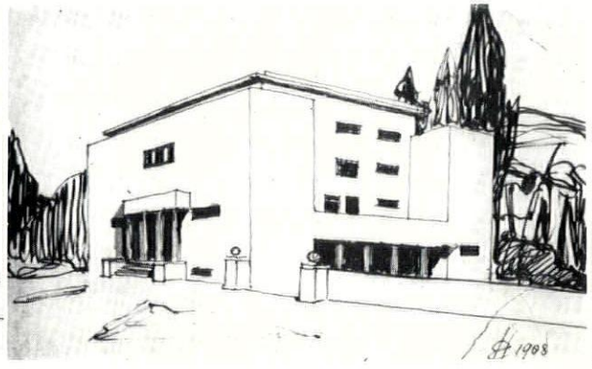
To the Editors.

SIRS: Might I add some comments to those of Felix Haas on Dada and Architecture (your April 1969 issue)? Mr Haas does right to concentrate on Dada the spirit, rather than Dadaism the movement, since the Dadaist groups, being social dissenters, produced little enough that can be called architecture. I would quibble with his comment on Schwitters's *Merzbauten*: 'as they served no purpose they cannot be considered as real architecture'. So, then, the whole concept of the cathedral from which Schwitters drew his inspiration? Moreover, though the Hannover *Merzbau* did evolve 'accidentally and spontaneously', there was nevertheless a certain calculated growth—Schwitters compared his work in this respect with city planning.

However, if we are concerned with

1, 2, *two sketches by Hugo Ehrlich of the villa Karma, see first letter.*





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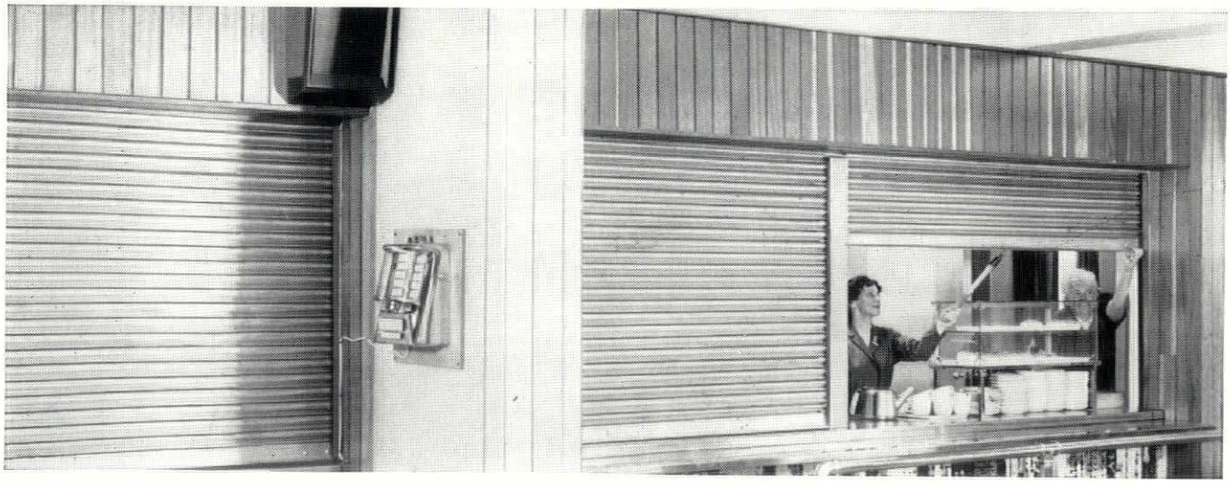

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continued from page 82]

Dada the spirit, a definition of Dada must be found. Mr Haas mentions 'anti-aestheticism', 'randomness', 'spontaneity', the *'objet trouvé'*, 'parody and satire'. But the problem is really to give a name to a feeling that was in the air during the period towards the close of, and immediately following, the Great War, of which Dada was the most extreme manifestation but not the only one. Anti-aestheticism, which in this context really means 'anti-past art', was part of any new style of the period. The Russian Constructivist artists and designers also 'declare art and its bosses to be outside the law'; and similarly *De Stijl* was based 'on the absolute devaluation of tradition'. It was surprising in fact not to see the name of van Doesburg mentioned in this context. As a member of both Dada and De Stijl he saw their relationship: 'Out of the chaos of the old, shattered world Dadaism created a new imaginary world . . . It is no accident that the two diametrically opposed tendencies, neo-plasticism and dadaism (now surrealism) formed a parallel: the creative art of the world' (*Neue Schweizer Rundschau*, May 1929).

In one important sense, therefore, the International Style did explore anti-aesthetic possibilities. It was founded on them. The activities of the *Arbeitsrat für Kunst* are rightly mentioned; but more important in relation to Dada than their actual works is their philosophy. It is essentially a state of mind rather than monuments we must study here. Friedrich Paulsen succintly stated the *Arbeitsrat* position in a comment on the members' replies to a questionnaire of 1919: 'If one tries to extract some common element, it is perhaps the universal condemnation of art as it has existed until now, at least in its significance for the future. Furthermore, it is suggested that creative art should enter in closer relationship with the crafts and should direct itself to the people' (quoted in Conrads and Sperlich, *Fantastic Architecture*, 1963). Here, then, were the beacons for the future, which parallel Dada: anti-aestheticism itself, the *Gesamtkunstwerk* (of which Schwitters's Cathedral of Erotic Misery is as much a symbolical representation as is Feininger's Bauhaus *Zukunftskathedrale*), and the democratic style (that is, theoretical anti-bourgeoisism, as evidenced by the *Arbeitsrat's* 'shows for proletarians').

What I am suggesting is that the real significance of Dada for modern architecture is not so much in the styles that Dadaism adopted, as in its extreme reaction to the art and society of pre-First-War Europe. It finally replaced simplistic naturalism with an art whose logic is entirely its own (the Dada collage is closer in principle to the International Style than an *Arbeitsrat* sketch: it uses real materials whose symbolic and structural coincidence paves the way for what Niels Luning Prak calls the age of the credible symbol). But more important was the *content* revolution. Dada revealed symptoms of social distress which demanded a real *modern* art (Huelsenbeck's 'new man' is really part of the same figure as van Doesburg's 'modern artist'). Dada and 'formal' art and architecture are but different sides of the same consciousness. In the final analysis both wanted the same thing: a new world, even more than a new art; and were that time to come, 'we shall be able to dispense with all forms of art as are known today' (Mondrian).

Dada was the most extreme representation of a non-conformism, which later metamorphosised into reformism (witness the certain Dada influence on the germinal stages of the Bauhaus; and later Moholy-Nagy's theory of materials owed a considerable debt to his friendship with Schwitters). For this reason Dada is important to the architecture of the 'twenties and 'thirties. Dr Banham has mentioned such features as Le Corbusier's Villa Savoye and the Kolbe statue in Mies's Barcelona pavilion as evidence of a kind of Dadaist quality. But the real importance seems to have been in indicating the possibility of a new kind of logic for a new world, what Mr Haas has designated 'spontaneity'. In its fullest sense this could never entirely find its way into architecture designed for people, but I would suggest that it was an integral part of the process of freeing architecture from earlier dogma. And perhaps, had International Style theory absorbed some of Dada's cynicism too, it would have trodden more warily and assumed less about the permanency of the symbols it created (marvellous though they are) in its whitened wonderland.

Is there, then, any real Dada architecture? Only, I think, where social preoccupations can be pushed into the background: Duchamp's exhibition designs, some contemporary 'environments', and, as Harold Rosenberg insists, the tomb of Lenin, 'the world's greatest collage; it incorporates a non-art object, the body, into a traditional aesthetic structure'.

Yours, etc.

JOHN ELDERFIELD

Winchester.

CLEVEDON PIER

To the Editors.

SIRS: In connection with the excellent article on the above in your May issue, your readers may like to be aware of a paper read before the Institution of Civil Engineers in London, on 21 March, 1871, entitled 'Description of a Wrought Iron Pier at Clevedon, Somerset', by John William Grover, M.I.C.E., (the designer of the pier).

P. & A. Campbell's *Guide* of 1895 notes that 'Until 1892 it (Clevedon pier) was the property of the Clevedon Pier Company, who, in consequence of its unstable condition handed it over to the town for a payment of £700 (!) on condition that a new head and landing stage should be erected. A sum of £10,000 was borrowed by the town for that purpose, and the improved structure was opened with great ceremony on April 3, 1893'.

Yours, etc.,

ALAN M. ROME

Bristol.

DRU BIRTHDAY

To the Editors.

SIRS: The reference in your May issue to the twenty-fifth anniversary of Design Research Unit omits the name of the late Cecil Notley, a distinguished advertising man who recognized that one of the functions of an advertising agency was to persuade its clients to improve standards of design in the goods they produced. I recall a lunch given at Brown's Hotel, when DRU was founded, to which Notley, with characteristic generosity, invited me, although I was one of his competitors in the advertising agency business. The considerable part he played in launching DRU should not be forgotten. Twenty-five years ago, enlightened and courageous advertising men like Notley and Marcus Brumwell were all too scarce.

Yours, etc.,

JOHN GLOAG

London SW14.

book reviews

SICILIAN SEASIDE

COSTE D'ITALIA; LA SICILIA. *By Enrico Ascione, Italo Insolera and others.*

Just like its predecessor (reviewed here May, 1968) this is a marvellous book, and one is distressed to see it appear in so unorthodox a fashion. All it says about it bibliographically is that it is *'presentato dall'ENI'*. Can one buy it then? Anyway, it is composed like the other volume—topographically with ample, if mostly small pictures of stretch after stretch of coast, the text including history, geography, geology, plant-life and every so often brief remarks on landscape and townscape values. The photography, including the colour work, is outstanding, and writing is sensitive yet, throughout, informative. If only we had something like this for Britain! N.P.

FINN AND DANE

NEW FINNISH ARCHITECTURE. *By Egon Tempel.* NEW DANISH ARCHITECTURE. *By Tobias Faber. Architectural Press. 90s. each.*

To anyone unfamiliar with modern Finnish and Danish architecture—if such a person can possibly exist—these two admirably illustrated surveys would of course come as a revelation. But to those who already know something of the subject they may prove a little disappointing through containing so much material that has repeatedly been shown before. The Danish volume in particular illustrates as many buildings of the 1950s as of the 1960s. The Finnish volume appears fresher, with three-quarters of its buildings belonging to the 1960s, yet the total impression of both is a somewhat static one, as though the architecture of the two countries was, for all its delightful qualities, resting on its laurels of fifteen years ago rather than meeting the challenge of present-day needs and opportunities.

Finland and Denmark are right to be proud of their architectural standards; of their craftsmanship and sympathetic landscaping and the quality of their detail. If the best architecture of some other countries can compete with Finland and Denmark's best, they have far more bad building of a kind Finland and Denmark have succeeded in avoiding. The buildings shown here are therefore the peak of a far more broadly based pyramid. That should not create an air of complacency, but somehow—at least in the Danish case—it does, and Mr. Faber in his thoughtful introduction seems to accept that it may, seems to acknowledge that a search for greater flexibility, for a more immediate response to modern technical developments, are what Denmark has to pursue with special energy.

In Finland there is already more liveliness and experiment, and the chief need here is to find ways of applying these qualities to mass housing, neighbourhood planning, town expansion and the like. Finnish architecture still concentrates too much, in spite of Tapiola, on the single building seen in isolation. The author's long historical introduction, which does not appear to be written from first-hand knowledge, has the same fault. It portray's Finnish architecture conventionally in terms of a succession of styles.

Both volumes are admirably produced, each illustrating about 60 modern buildings with good photographs and clear plans and descriptions. J.M.R.



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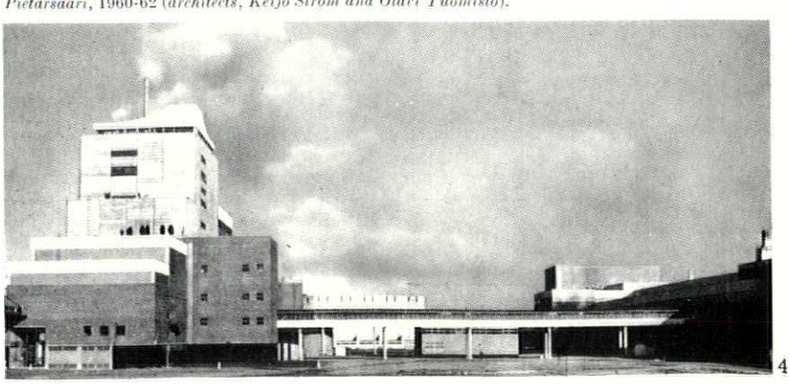

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Two illustrations from New Finnish Architecture, *reviewed above:* 3, *shopping centre at Helsinki—Puotinharju, 1964-65 (architect, Erkki Karvinen).* 4, *Schaumann paper and cellulose factory at Pietarsaari, 1960-62 (architects, Keijo Ström and Olavi Tuomisto).*



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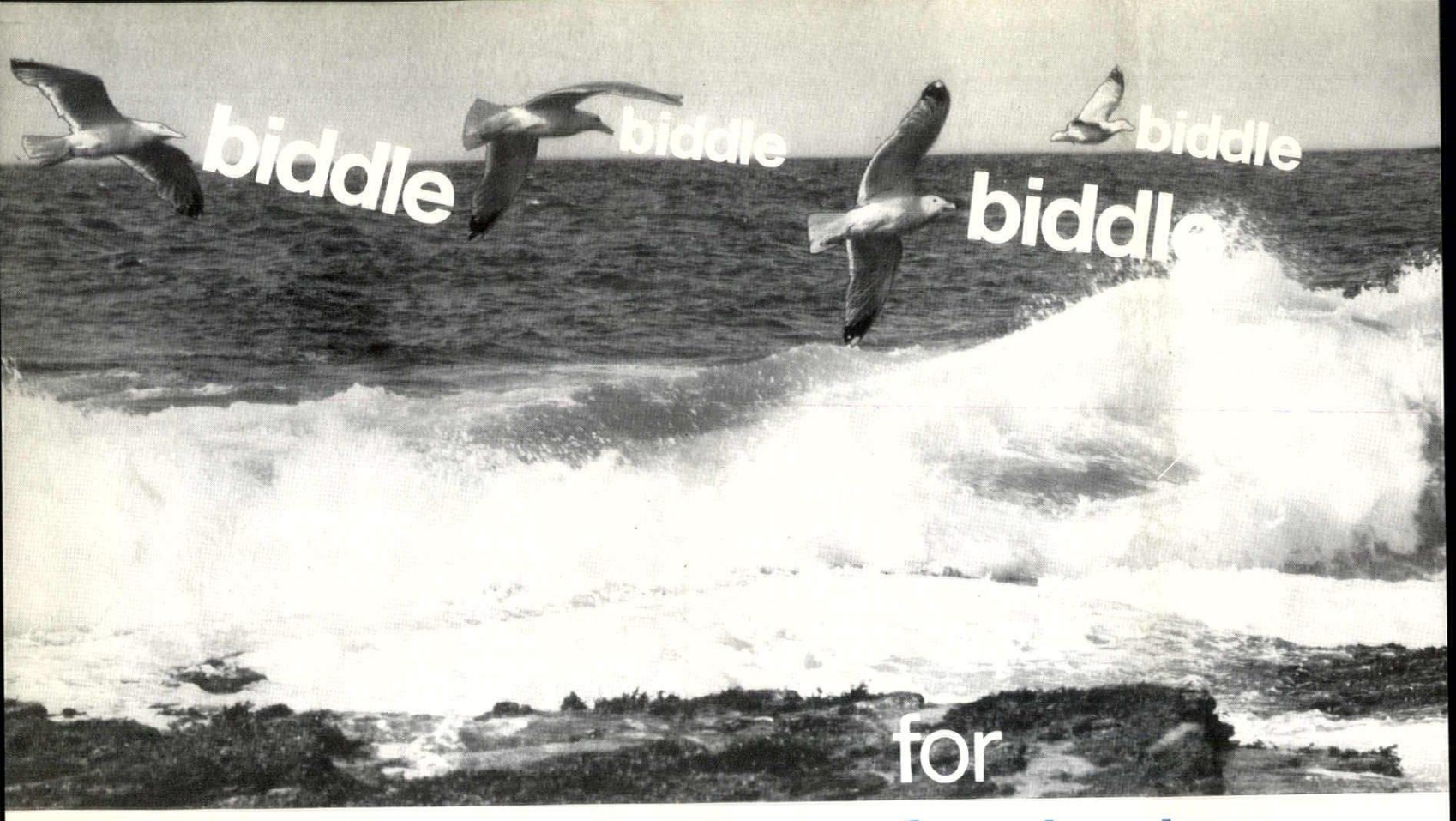

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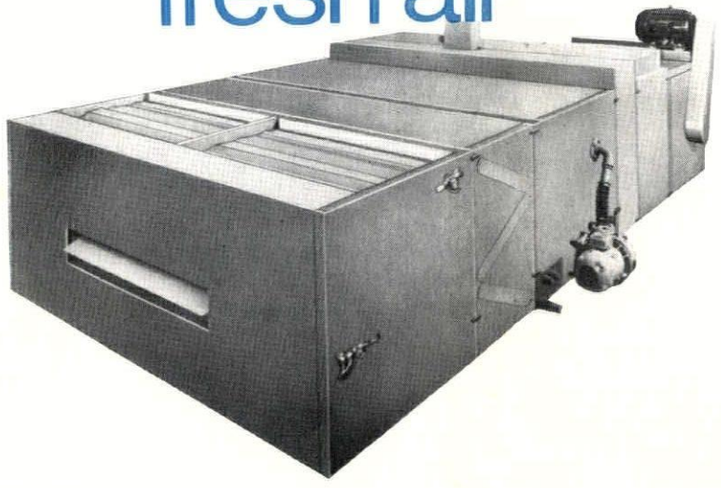

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COVER
Part of one of the winch huts used to haul the fishing boats up the beach at Hastings, photographed by Philip Thompson. See also pages 96–97.

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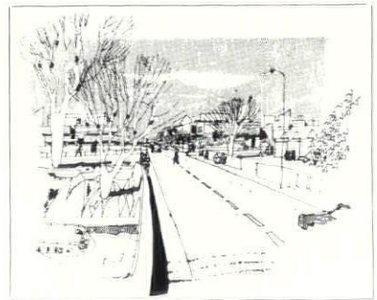
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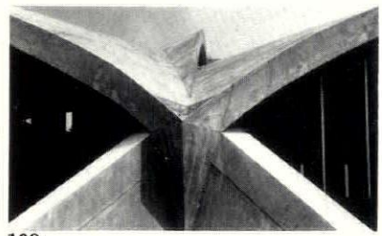
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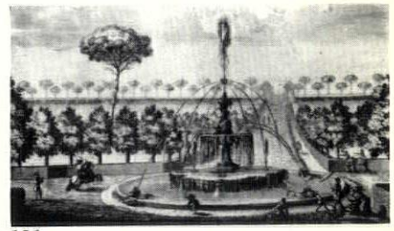
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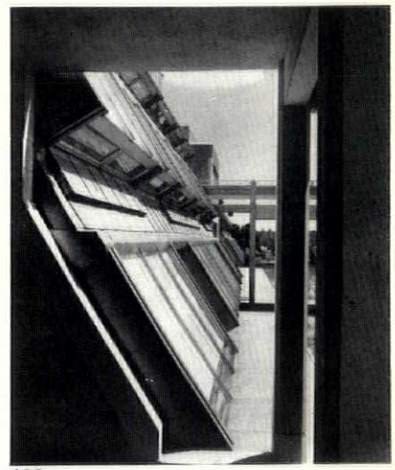
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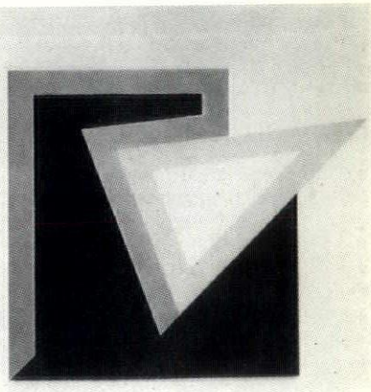
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The publishers announce with regret that rising costs compel them to increase the selling price of 'The Architectural Review' for the first time in 18 years. From next month the price per copy will be 7s. 6d.



In the '70s they will be students, in the '80s workforce, in the '90s managers, in the twenty-hundreds bosses. Still suffering the frustrations of the '60s? Being British, almost certainly, unless they or their parents decide that the time has come to contract out of the English sickness: Waiting for something to turn up. The Micawber syndrome. Manplan would like to contract out now.

'If the spirit in which the British are approaching the 1970s can be summed up in a single phrase, it is intellectual timidity. It isn't that they don't want to know what the next ten years hold in store for them. They are perfectly willing to speculate, in a rather abstract way, about the changes that have already begun to occur in their national life in the 1960s and which are moving towards some kind of climax in the 1970s. The trouble is that they don't want to admit that these changes confront them with a choice, or rather a series of choices. They don't want to have to decide. At home they hanker after two incompatible things: the fruits of economic efficiency, and relief from the tensions that accompany the pursuit of efficiency in an industrial society. Abroad, they can see that there is a contradiction between the European role they have chosen for themselves in the 1960s and their more than European range of interest (the last time England was a purely European country was when Europe more or less constituted the known world): and they dimly hope that the contradiction will be resolved for them by the other Europeans getting interested in the outside world too. It is a curiously passive attitude. The British are not deciding what they want to do in the 1970s. They are waiting for the 1970s to happen to them.'
Brian Beedham in THE LISTENER, 20 June 1968.

MANPLAN

AN OBJECTIVE FOR THE 1970s

Britain and West Germany are, in size, population, industrial development and exporting industries, identical twins. Twenty-five years ago Britain was on top of the world, the only Great Power left in Europe; Germany defeated, destitute, hungry, bombed flat, with a population out for the count and eight million refugees. Today one German produces half as much again as an Englishman. As against our national rate of economic growth of 3½ per cent, his is 13 per cent. He has the highest standard of living in Europe and the Mark is now the world's hardest currency. What's more he is free to take that Mark out of the country—he has not only more money to jingle than we, but freedom to spend it how he likes.

The German is not the only gamesman since the war to have overbid the British; by most of the so-called first-class powers we have been kindly but firmly elbowed out, while smaller nations like those of the Colonial Empire have engineered the push in a more literal way. Result: collapse of an image. Dean Acheson, an American whose public life was inconclusive, enters history on the strength of a throw-away remark about the British losing an empire and finding—as yet—no new role for themselves in the modern world. A snide aside that angered the defendants deeply when they sat down to work it out and found how many current areas of action they had been eased out of—solvency, automation, fission, space-travel, the air, Europe, India, Africa, the Common Market, Suez, East of Suez, to name a few.

Found in fact that the hard words of Dean Acheson were true, so that it became desirable to chase after one quickly: a role, or, in its absence, exports: the classic British solution for every devilry of fate, as the politic-

ians have been happy to affirm and, the economists quick to prescribe. Alastair Burnet for one, with his burning ambition, as relayed by television, to rouse an insatiable British passion for a payments surplus. Their diagnosis: a malaise, which only hard work, a tightening of belts, and a determined effort of will—the will to come out on top in competitive markets—can put right. If everyone would work harder our evil times would vanish, so the story goes. True enough within its own frame of reference, but isn't there something painfully Smilesian about this recipe for success? And extremely superficial?

The fact is, every nation this century, some in peace, some in war, after a sequence of successes which bred first confidence, then over-confidence, and with over-confidence, pride, and with pride a fall, has had to face the moment of truth. In Germany, total disaster; in France, total humiliation; in Japan the end of a culture; in Russia the death of an ideal; in the US a series of body-blows—below the belt it seems to most Americans—that have shattered her own self-esteem and given her cause to re-think her priorities. The new cry of disillusion comes from across the Atlantic : 'Technology is looting the universe'.

With Britain the process has been slower but more sure, as bauble by bauble she has been shorn of her folies de grandeur, to be left at last with very little on. Even a role, one feels, would cover some bare place on the beloved body supposing a role, or come to that a fig-leaf, could be found; though self-pity can be tempered by the thought that beside the real grief of others in the underprivileged sectors of the world a hard-luck story is out of place. Or would be but for the need, shared by both the privileged and the underprivileged, for a form of Westernisation founded on something more meaningful than the American way of life and standard of living.

Why does every nation suffer these reverses? Why are so many naked when they should be swathed in mink? Because while all battle together for 'progress', no one knows what progress means. More accurately, what it will mean tomorrow. Yesterday—and this shows the speed at which the yeast is working—it meant victory in arms. Progress is, in short, a variable; and there are straws in the wind which suggest that it may be changing direction in the next decade towards a point on the compass indicated by one self-confessed militant who recently wrote from Hull University to THE TIMES: 'What many of us are beginning to question is the dehumanising and insane logic of efficiency and "cost effectiveness" as ends which transcend individual freedom'. Studentpower has echoed these sentiments; so have other post-graduate voices, a surprising number, as was shown in a series of broadcast discussions on the '70s organised by the BBC, in which the Burnet dream of arousing an insatiable British passion for industrial competition, social mobility and a payments surplus ('I would like us to get the American rate of growth in gross national product before we get obsessed with the worries of

affluence') was opposed on the grounds that the monomaniac pursuit of efficiency creates more tensions than it relieves. Don't, the opposition argued, sacrifice all humane considerations to the dead duck of hustle. In other words, live and enjoy living.

Dangerous of course, but this is typical of an anti-rat race approach currently to be found amongst—besides students—technicians, specialists, architects, writers, even managers. Even economists. To create a more effective and therefore more efficient community by self-fulfilment; i.e. through pleasure in work, through the creative (and therefore the productive) impulse rather than the profit motive; which means working, if not harder, more constructively, and using developments like computerisation to humanise rather than mechanise the job. No one questions that there is work to be done; or that, if our limited resources are not to be frittered away on irrelevant projects, a choice has to be made. We can't in the '70s expect to accomplish what we failed to achieve in the '60s unless we are prepared to use our resources more productively, but this surely is exactly the limitation which makes a new look at old targets crucial. For however role-less or goal-less Britain may be in the field of foreign affairs, on the home front we face a demand for change, or, if you like, a change in demand so revolutionary that it has been called (by Alan Little) the replacement problem of the 1970s. But replacement of what? The backlog of outdated buildings, though important, is only half the problem. The other half—far more formidable—is the fact that 'values', like 'progress', are variables, so that doctrines that passed for inconoclasm at the beginning of the decade, by the middle look more like orthodoxy, and by the end, like reaction—cliché anyway.

Thus hard on the heels of one replacement comes another: the need to make new appreciations, re-think a whole range of problems, and re-think them in detail right down to the humblest moments of life-by-the-kitchen-sink. 'How many of the kitchens we designed even five years ago', Alan Little asks again, 'can take a refrigerator, a washing machine, a dish-washer?' He might have added a deep freeze, now no less a must on the housing estates (meat at wholesale prices) than a garage, the subject of quite a recent official survey designed to discover how many families use a car. The question today is less how many families than how many cars—one or two ('together they bought a mini each')?

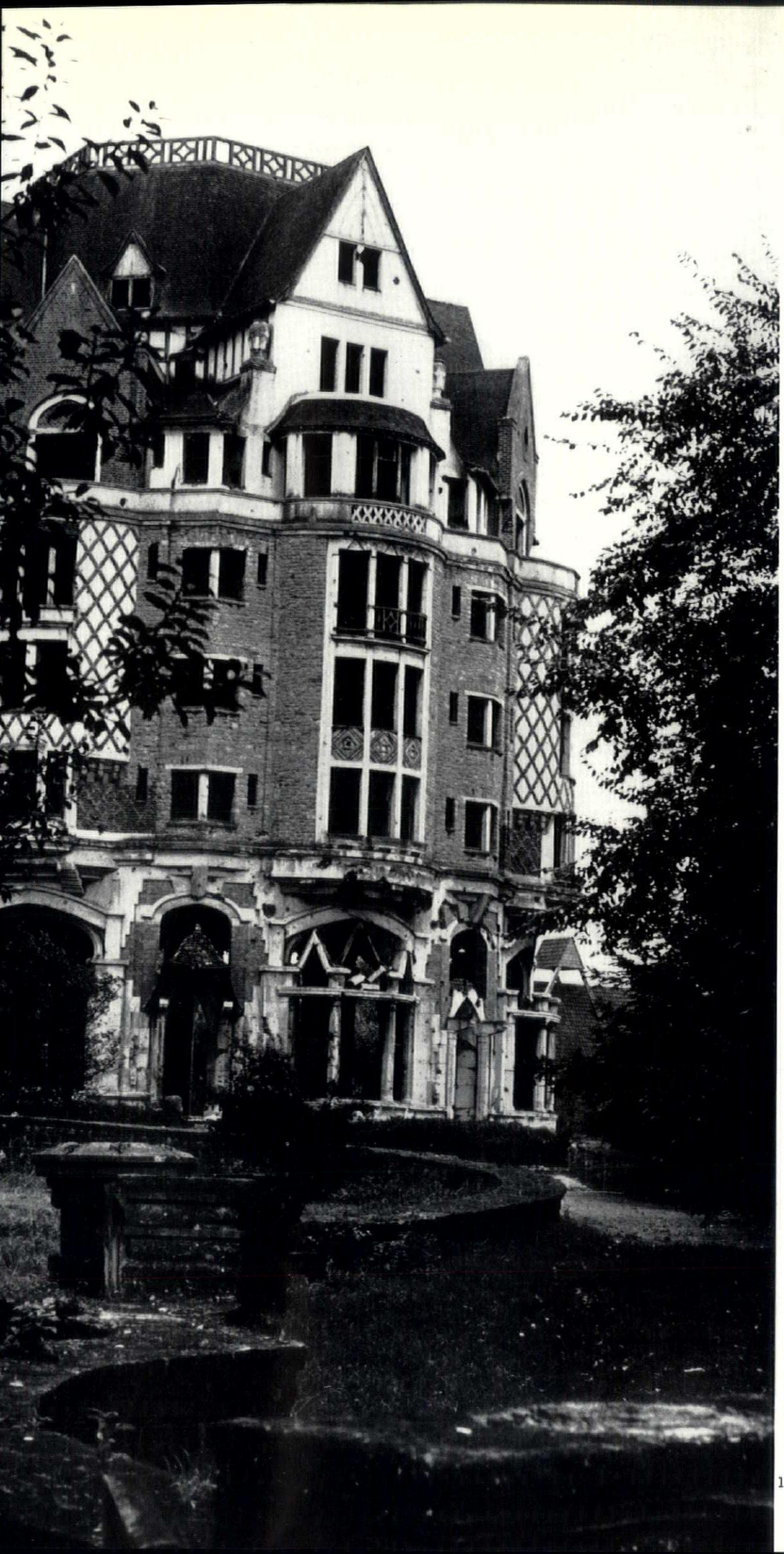
Soon there will be three. These are flip-the-switch themes but they illustrate the rate at which even servicing requirements are changing, and if the larger problems are in need of an equivalent evaluation—as we know they are—the time to determine objectives is surely before not after the social capital of the whole nation—housing, schools, roads, hospitals and the rest—has to be renewed and the back-log made up.

This issue concerns every architect whoever and wherever he is, indeed the whole building force, not to mention planners and politicians, and

happens to be one for which architectural journalism can provide a platform. The REVIEW has therefore determined by way of preparation for the '70s to re-examine the categories—health, welfare, education, housing, communications, industry, religion—and ask itself and its readers what images spring to mind at each signal, and of those that do, which apply to the next decade. Or to the last, and are really dead but won't lie down, victims of that enemy to man, the creeping cliché. One after another will be subjected to scrutiny in the hope of releasing the idea itself from the overtones that have collected round the word. Leisure, for instance, as a new generation will see it. The aim being—hardly analysis—re-definition. We try to re-define leisure. In the same way we try to re-define housing, once redefined as shelter without much advantage to a subject in which revolution is due to occur before the end of the century. So the REVIEW believes. Hence the general title of the coming special issues—MANPLAN—to remind ourselves as well as the reader that this enquiry is angled at achieving within the resources available what our society needs most rather than what will pay best.

The series begins in September with a cautionary guide about which nothing else will be said here. In October it examines the meaning and implications of 'communications'. In November it investigates the inadequacy and inflexibility of the £500 million worth of industrial building which casually 'happen' each year. In the New Year it will discuss the educational crisis and seek to re-define the role of schools, universities, studentpower. The series of issues offers no magic solution, and avoids the language of political tracts. Instead it surveys in pictorial form the art of the possible by looking at what we have—or haven't but easily could have—in an unprejudiced way. It is not against technology but sees it as a means of supplying what we want. It represents neither novelty nor innovation, but the crystallisation of the priorities the REVIEW has been establishing over a long period of time.

For by the restoration of what might be reasonably called the humanities the '70s could—and indeed may—provide a fresh vocation for Europeans in a more realistic kind of Common Market, wedded no longer only to thoughts of steel production. The real job of statesmanship is to release energy, not redeem debts or boost exports, fringe benefits that will do their own redeeming and boosting when the right kind of effervescence is generated, dispersing malaise. What is wanted now is a new image for the twentieth century in its third phase, which will unearth from beneath the lumber of war, napalm, famine, genocide, concentration camps, conveyor belts, population explosions, sonic booms and silent Springs, a mission—and a determination—to swing the new potential of technology, as revealed in the moonprobes, behind the real objectives of human society. The British are bad technocrats, good humanisers. Or were once. It could be a role.



HIGH LIFE IN RUINS

Photographs by Pattrick Uden

Demolition of one of the most fantastic piles in a resort rich in architectural fantasy has lately been completed: the Royal Picardy Hotel at Le Touquet. During the years in which it stood empty, after it had finally closed in 1952, it had become progressively more ruinous and at the same time more picturesque. The accompanying photographs were taken by Pattrick Uden just before the hotel was demolished. They are stills from a film entitled *The Most Beautiful Hotel in the World*, directed and written by Richard Loncraine when he was a student at the Royal College of Art, and produced by Brian Clifford.

The Royal Picardy, which served as a German military headquarters during the war, had a short but eventful career. It was built in 1928, when Le Touquet was in its heyday as a resort, was made fashionable by cosmopolitan crowds of visitors—including the Prince of Wales (now the Duke of Windsor)—and when its casino was the most profitable in France and the smartest in Europe.

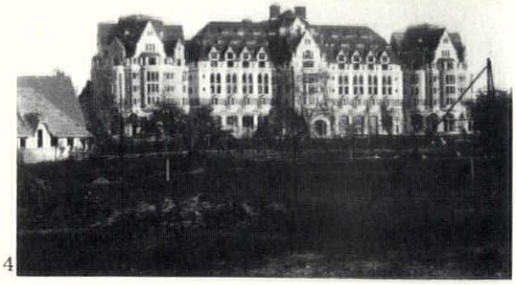
The hotel was built on a five-acre plot opposite the casino, in the villa-studded forest that fringes Le Touquet, and was designed by Debrouwer and Drobecq, the former of whom—the senior partner of the two—was one of the leading architects in northern France. They used a strange and sumptuous mixture of imported Tudor and medieval motifs, along with reminiscences of the traditional local vernacular. The nine-storey building, with a plan in the shape of a St. Andrew's cross, had 400 bedrooms, each with its own bathroom. Many were large sunken baths in Roman style—in effect, miniature swimming pools. The front of the hotel was occupied by identical luxury suites on

1





HIGH LIFE IN RUINS



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the first, second and third floors, one of which became known as the 'Prince of Wales's suite' after he had stayed there soon after the hotel was opened. At one end of the building was a circular bar—designed in Byzantine style—in a circular well rising through the whole nine storeys. At the other end, reached by way of a vaulted hall, was the vast restaurant. At the centre of the cross was an oval hall containing a ceremonial staircase. The furnishings, fabrics and 2,000 yards of specially designed carpeting, were imported from England.

This whole elaborate building was constructed in between eight and nine months, including a month of severe frosts during which no building work could be done and a strike lasting a fortnight. When the first guests arrived on 12 August, 1929, only 125 rooms were ready; lights were hung in the windows of all the others to give the impression at night that the building was fully in use. A month later the season ended and the hotel closed. Work continued through the winter and was completed in time for a full season in 1930.

2

At first the hotel suffered from serious financial troubles, but after Mr. Joseph Wibbels had been appointed manager in 1931, with Mme Louise Mainardi as his assistant, it became a success and—with a succession of banquets, galas and balls—the centre of Le Touquet high life. The depression however soon affected tourism and the Munich crisis more so—in September, 1938, 200 guests departed within two days and the hotel closed for the season early.

The war of course brought the whole life it had catered for to an end. The day before war began, in September 1939, M. Wibbels made off—leaving the hotel without money to pay the staff or tradesmen—on the pretext of seeing his wife on to a ship for Norway. Mme Mainardi gave chase in the hotel car, but when the sirens sounded, indicating that war had been declared, the chauffeur refused to go further as he had to report to his regiment. The Royal Picardy was requisitioned as a hospital. When the Germans arrived in the following May, the wounded French soldiers in the hospital became prisoners. Mme Mainardi helped to look after them, but as they recovered they were taken off to prison camps in Germany and the hotel became the military headquarters for the projected German invasion of England. Huge plaster models of the English coast were laid out in the public rooms.

Later, German troops were billeted in the hotel and its contents were looted, though Mme Mainardi saved some of it; sending much of the valuable furniture into storage by circuitous routes, having the carpet taken up on the pretext that it must go to the cleaners and getting twenty-four chandeliers removed by the use of similar excuses. In 1943 defence works

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were installed in the hotel. It was heavily



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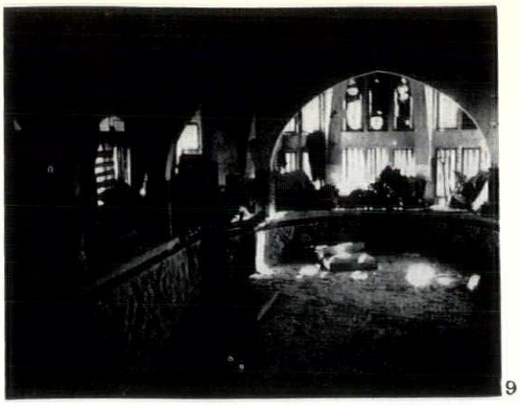

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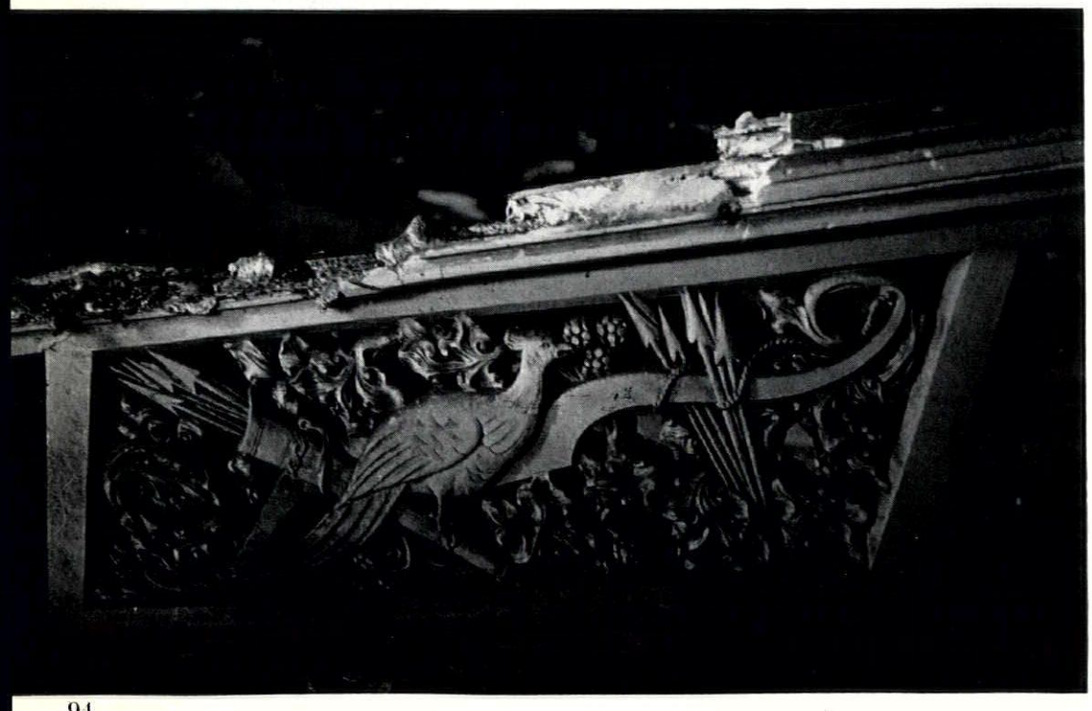
HIGH LIFE IN RUINS

bombed by the Allies before the Normandy landings of June 1944 and was eventually liberated by Canadian troops in September 1944. Meanwhile Mme Mainardi had continued her patriotic activities; for example she managed to pass on to the townspeople of Le Touquet vast amounts of food intended for the occupying Germans for which she was later given the freedom of the town. And to everyone's surprise M. Wibbels reappeared in 1943. He had been sent to organize champagne and food for the German high command but in fact he used the money given him for this purpose to pay off the debts to local tradesmen outstanding since 1939. After the war Mme Mainardi, working from a dossier she had diligently kept during the looting of fittings and furniture, began the task of reassembling as much of it as possible, and in 1949 the hotel reopened under her management—with 90 staff (instead of the original 300) and with 86 rooms in use; all that could be managed in the undamaged parts of the building. At a gala dinner to celebrate the re-opening, champagne was served among the ruins and an orchestra played to 420 guests who had flown in for the evening from England. For Mme Mainardi, this was a moving occasion, but as an economic proposition the hotel was no longer viable and in 1952 it closed for good. Mme Mainardi, aged 75, now manages the Club de Golfe at nearby Hardelot.



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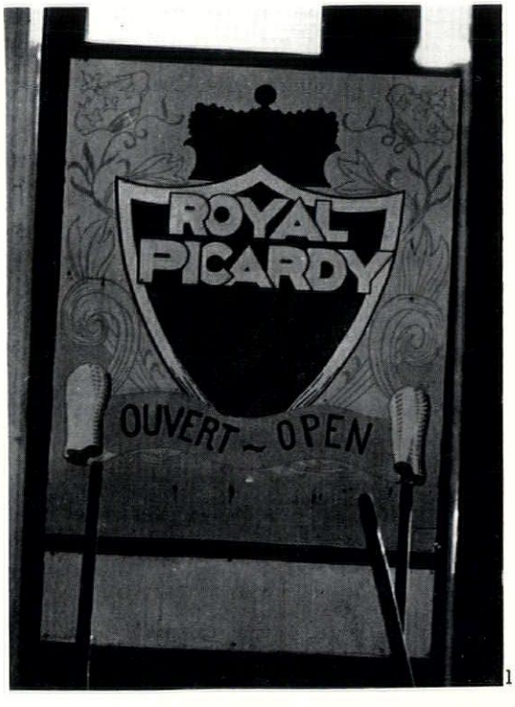

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Photographs by David Hicks

BRIXHAM'S DEAD CENTRE

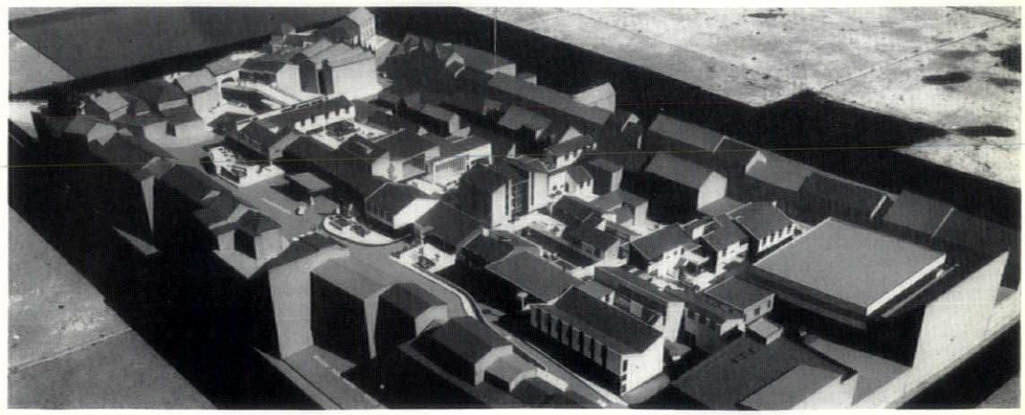
The old fishing port of Brixham, on the South Devon coast, is about to fall victim to yet another offspring of what seems to be a lasting union between bad planning and the motor-car; a three-story prefabricated car park is proposed precisely in the centre of the town.

Nothing could detract more from Brixham's character. Traditionally the town's life has centred around the fishing industry; thus the heart of the town is beside the harbour, enclosed by a valley whose steep contours, 1, are lined by rows of close-knit terrace houses. Where the new car park is to stand there is at present a dead space, a large expanse of asphalt used for parking. But the deadness of this space is nothing compared to the effect an extremely large (especially by Brixham's standards) monolithic car park will create. Not only will such a structure be completely out of scale; it will provide a large blank area for much of the town to look down upon, in jarring contrast to the intricate patterns formed by the roof-lines of the existing buildings on the hills and in the narrow valley. Also, it would draw even more cars into an area where movement on a summer day is already near-impossible. And what would Brixham gain? Parking for 100-odd additional cars, at a cost of £80,000. The car park is supposed to be temporary; but the cost of its erection ensures that, once built, it will remain. The heart of Brixham is to be given over to the storage of cars instead of the use of people.

The fact is appreciated that the new Torbay Borough Council (replacing the separate councils of Torquay, Paignton and Brixham) is spending large sums on Brixham; but such sums must be carefully spent or they will destroy Brixham's special character—which is, after all, the source of much of its revenue, through the tourists it attracts. A few years ago there was considerable public discussion about the use to which the empty area at the centre of Brixham should be put. Amenity societies and hoteliers objected strongly to any plan that would turn Brixham into 'a second-rate Plymouth or Birmingham.' But such groups have been silent about this latest plan for the town centre, even though—or perhaps because—the public has not been consulted, except with regard to when work starts.

Brixham does need parking space. And it could easily be provided with the multi-tiered garage it needs at little cost to the environment, by placing it in Freshwater Quarry, half a mile from the harbour, or at any of several other sites a short distance away. The centre would then be free for a development more sympathetic to the traditional townscape as well as to human needs. One such scheme has been proposed by Mervin Seale, a local architect, and Anthony Stock and John Struckett, surveyors. Their development, 2, would include shops, flats, and cafes, planned for people rather than cars and in harmony with the scale and character of the town; it has interesting roof lines, for example, echoing the irregular roof patterns of Brixham. Pedestrians would be segregated from traffic and, at a lower level, parking space would be provided for more cars—over 400—than the council's proposed car park; but in conjunction with a traffic plan to relieve congestion in the downtown area.

CAROL AGEE



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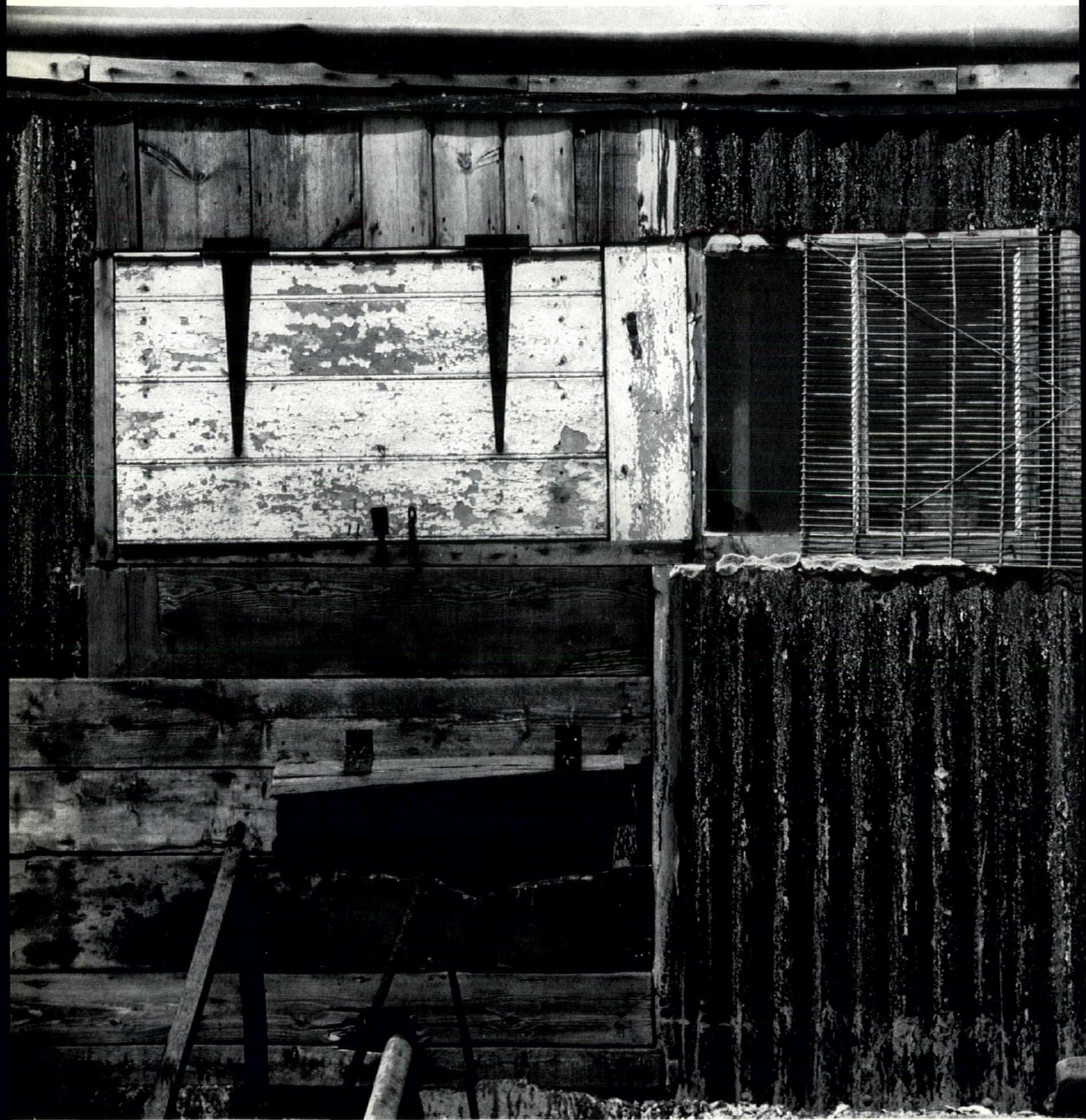
WINCH HUTS

Photographs and text by Philip Thompson

Hastings's luggers, having no harbour, head straight for the shore. As do the bogs (or three-quarter boats—smaller than luggers) and punts (open-deck boats of under four tons). Then they are hauled up the shingle beach above high water.

Before 1939, real horses powered the capstans, which provided the characteristic repeating pattern of the Hastings foreshore. Then, as



now, the boats were drawn up on wooden blocks or 'trows' under the keel.

Unassisted manpower is still popular, but power-operated winches have replaced the capstans. They make no concessions to the picturesque, being housed in squat tarred shacks—a fisherman's equivalent of the garden shed—examples of which are illustrated here. Their dominant colour is the intense black of pitch, relieved occasionally by patches of unbelievable lilac door (not for walking through) violent tin tray and flying bomb. The style is 'action do-it-yourself', the manner unself-concious. The motivation is function, maintenance and repair.

They have fantastic vertical and horizontal emphasis which happily accomodates the bits of 'random'. They're a working surface, an open-air office desk and pinboard; also a communications system. They're home from home. They're a refuge from the wife. They're a shelter to calculate the weather from (take out tin tray, put in pane of glass). They are not a fit subject for art. A continually changing 'assemblage', you're lucky to catch them looking the same morning and afternoon. They're probably on somebody's unsightly list. Lacking the obvious charm of the wooden capstans they replaced and not yet on the official tourist list like their neighbours, the tall net huts*, they yet have a human scale and are a focal point in the working life of the beach.

*See AR March 1962, and J. M. Richards's *The Functional Tradition* (Architectural Press 1958), P.171.

WINCH HUTS



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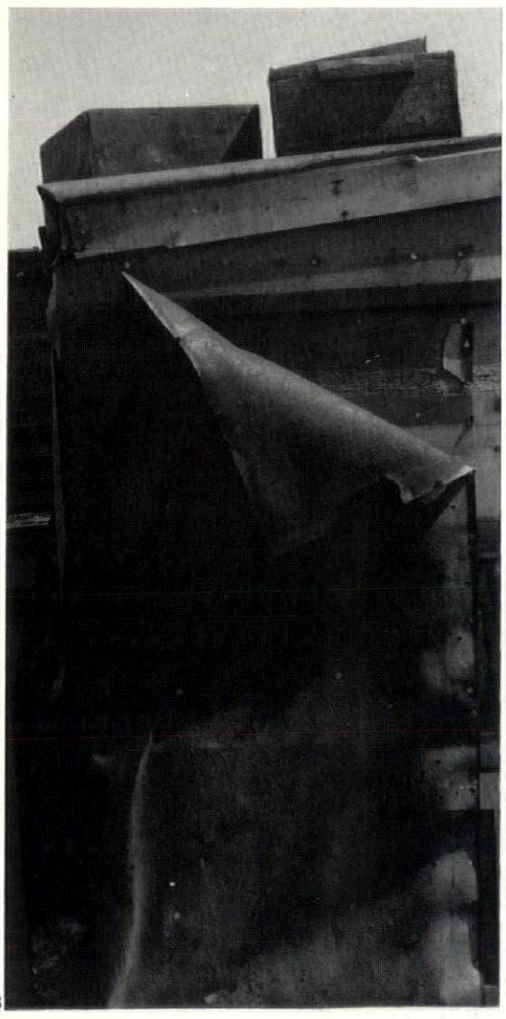

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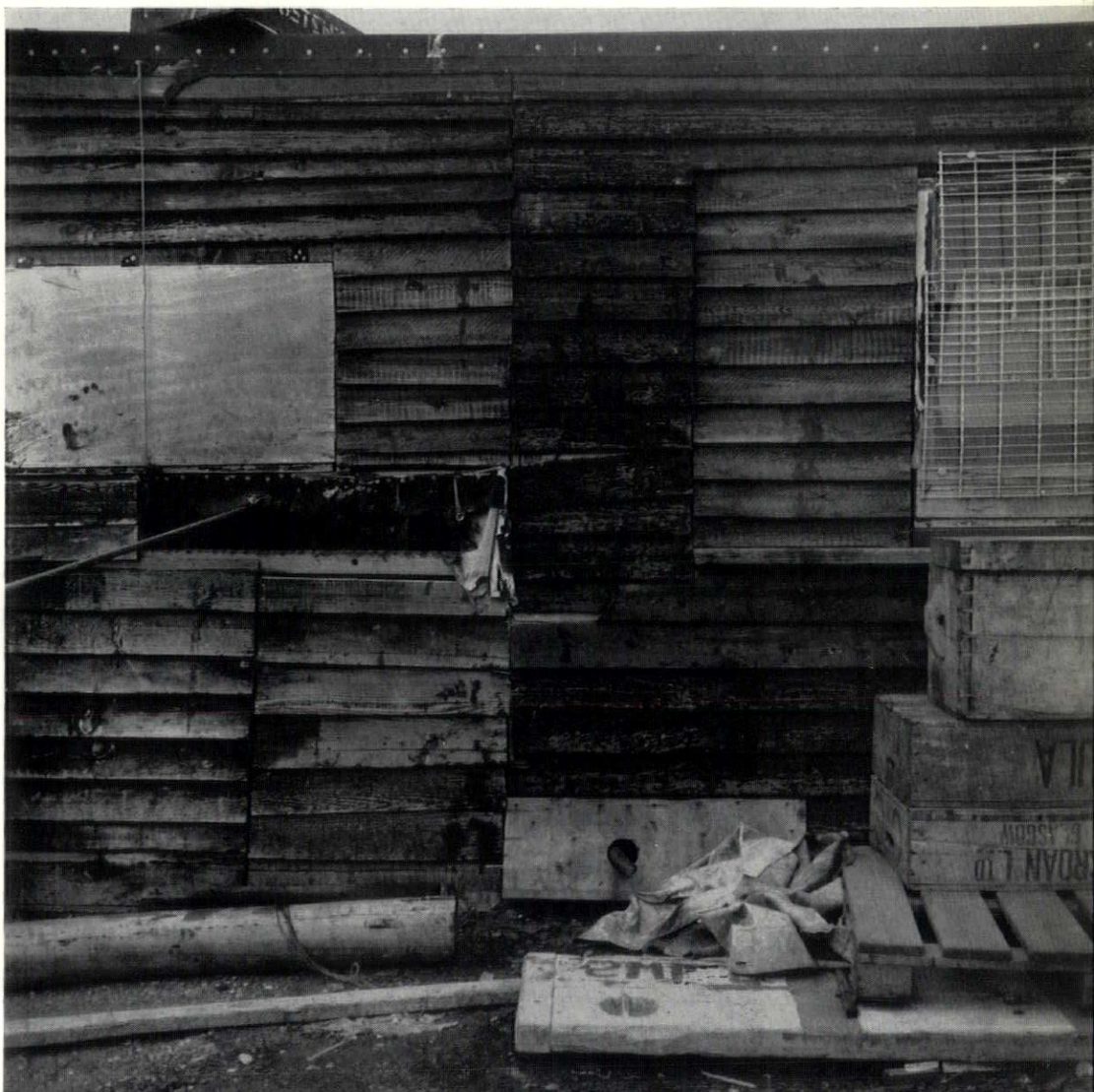
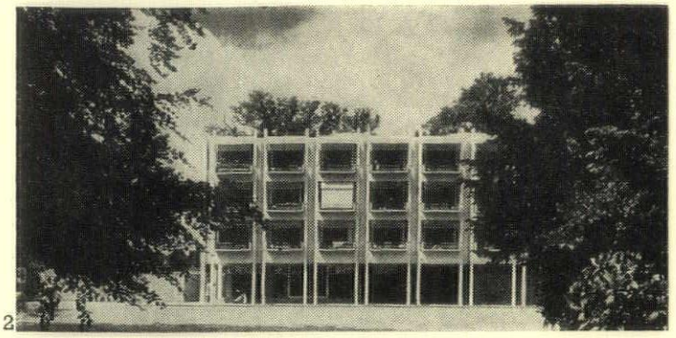


4

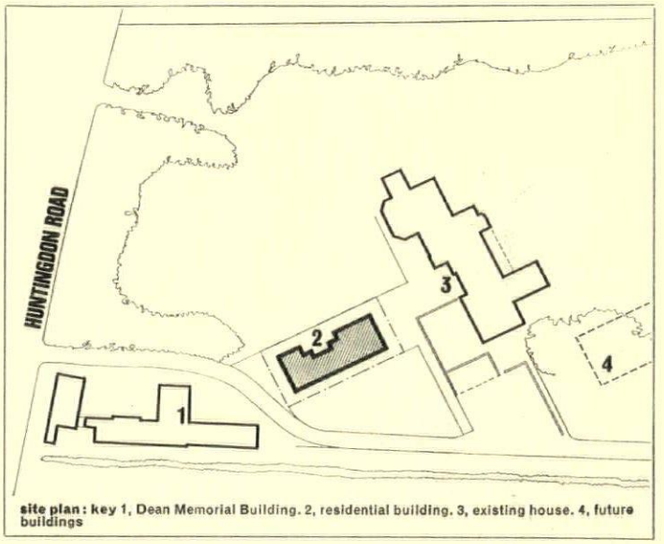


RESIDENTIAL BUILDING TRINITY HALL CAMBRIDGE

ARCHITECTS: ARUP ASSOCIATES



Boulton House is the fifth of a series of small residential college buildings which Arup Associates have designed (as architects and engineers) over the last ten years in Oxford and Cambridge. It is sited between an Edwardian house and its original stable buildings, which have been enlarged, both being in red brick, partly tile hung with tile roofs. The new building helps both to define the garden space in front of the house and to clarify the circulation between the buildings, the ground floor being set back to provide a covered walkway. All these buildings are used for college residential purposes, and socially they work together. Car parking, garages



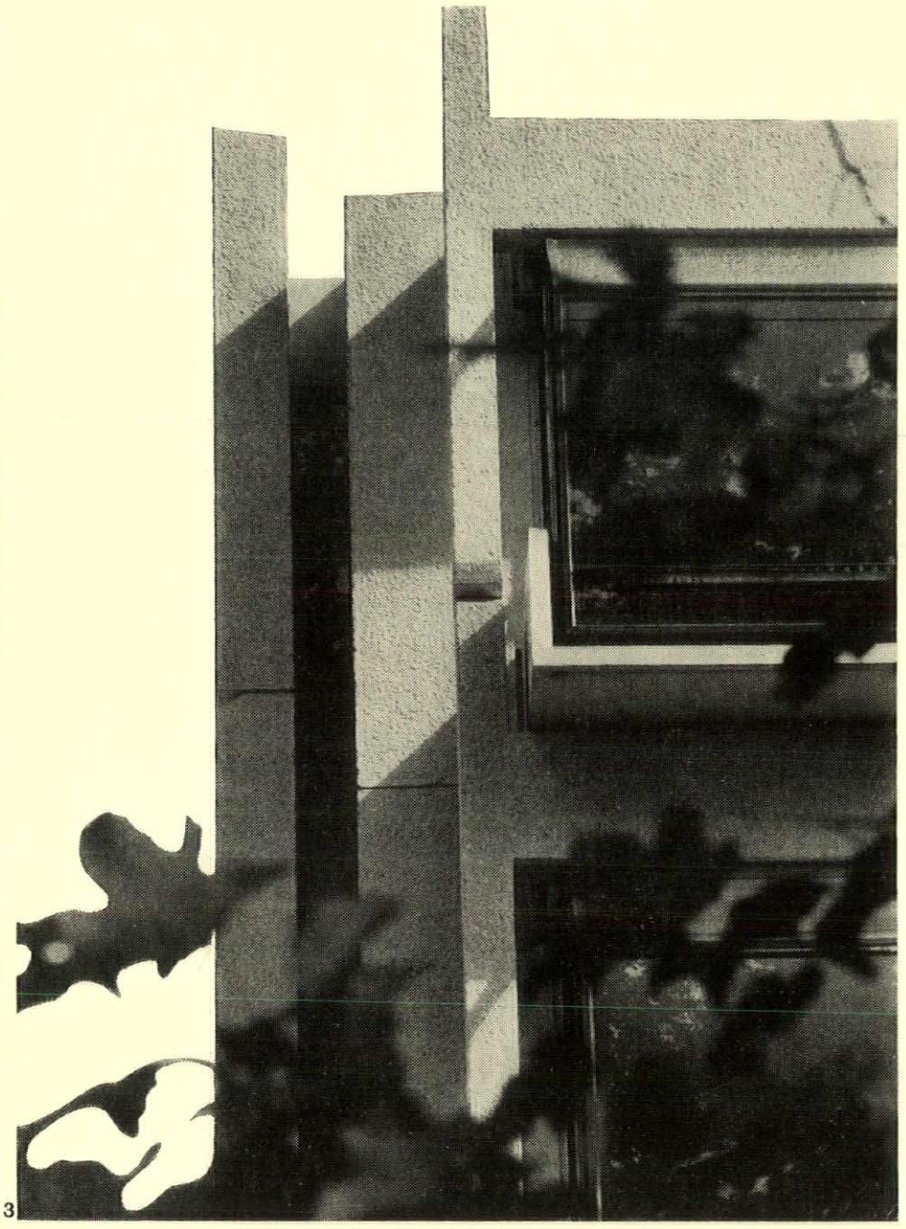
site plan: key 1, Dean Memorial Building. 2, residential building. 3, existing house. 4, future buildings

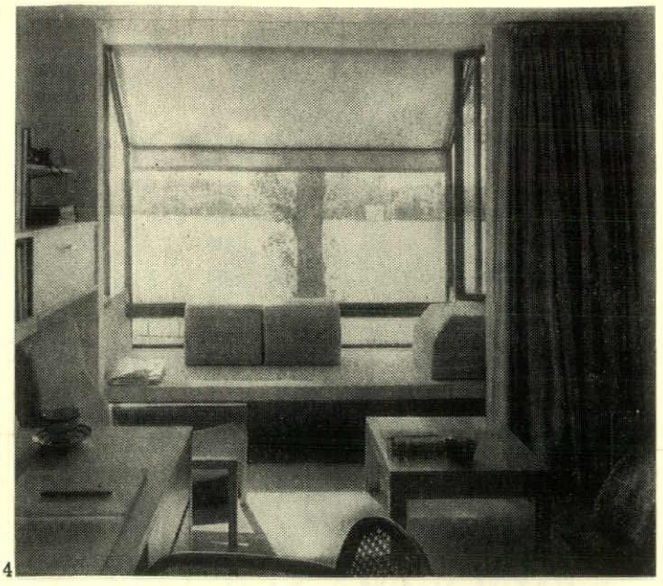
and a bicycle park have been built as part of the scheme, using red facing brick walls to extend the building at ground level into the landscape.

The accommodation in the new building consists of thirty-two undergraduate study bedrooms and two bachelor flats for Fellows on the upper three floors, two bays of which are devoted to sanitary accommodation. On the ground floor there is a common-room with kitchen, laundry, boiler room, and other service rooms. The upper three floors are repeats.

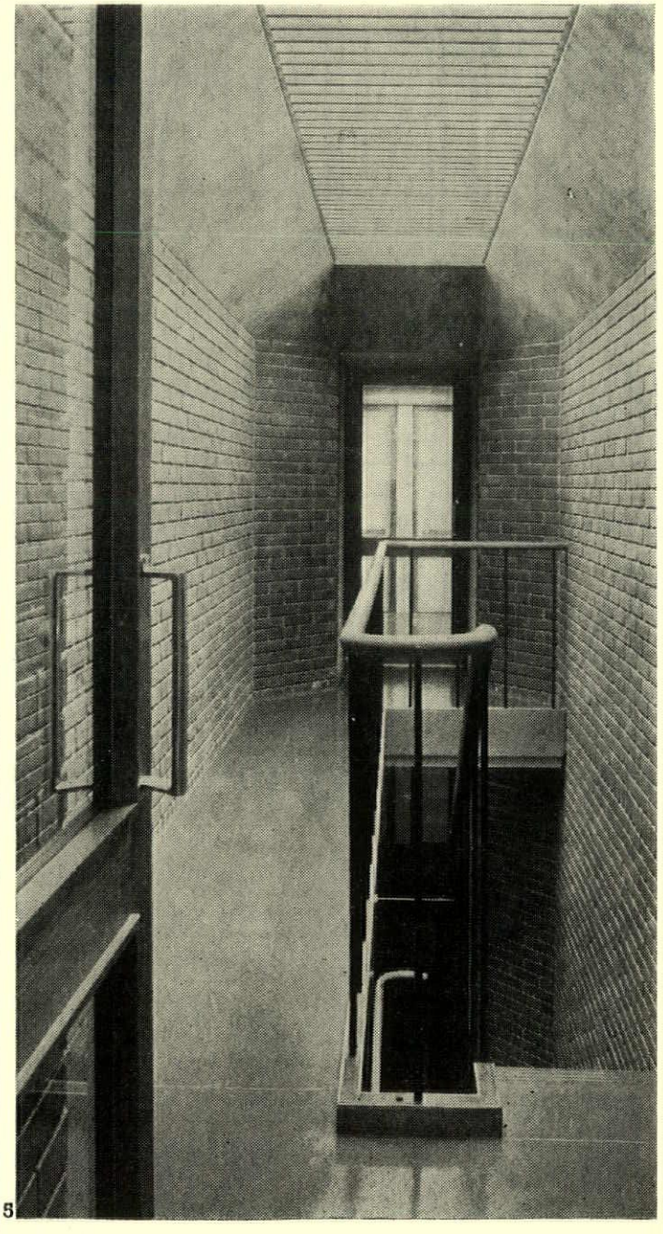
Construction is a precast concrete frame, with in situ concrete floor slabs. The precast frame has a Derbyshire limestone aggregate in white cement, lightly bush hammered. The external wall consists of precast concrete panels, finished like the frame, or precast concrete window seat units of the same concrete but acid-etched. Fitted between these precast elements is the bay window of made-up steel sections, painted a dark brown. The ground floor walls and pavings are in a red brick, similar to that of the existing buildings. Internally, on the ground floor and in the central stair, the red brick is left exposed. Other rooms are plastered. Floor finishes in study bedrooms are cork tiles, and in circulation areas are rubber, both selected to cut down noise. The building is heated by an oil-fired boiler, with fan convectors in each room, controlled by the students. There is a void above the suspended ceiling over the ground floor to allow for lateral runs to service the study bedrooms above. The main vertical service duct rises from the boiler room, through the washing areas above, to the roof tanks.

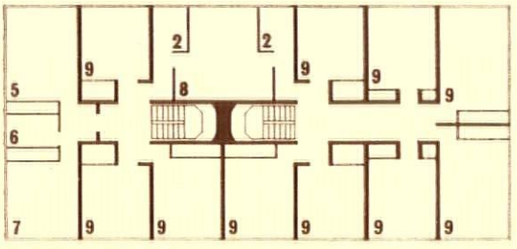
1 (opposite page), part of the rear elevation. 2, the front elevation.





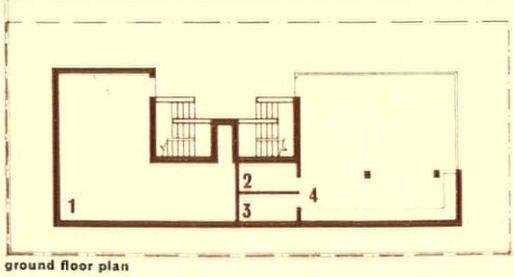
3, corner detail showing the precast frame of Derbyshire limestone in white cement, with a lightly bush-hammered finish. 4, one of the study bedrooms. 5, the top-floor corridor. The walls are red brick and the flooring is rubber.
6 (opposite page), looking along the front elevation, with the glazed common-room on the ground floor.





typical upper floor plan

key
1, utility, trunks, boiler, w.c.
2, pantry
3, chair store
4, common room
5, fellow's set: sitting room
6, bathroom
7, bedroom
8, service: 2 baths, 2 w.c.s, 1 shower, 2 basins
9, study bed-room



ground floor plan

RESIDENTIAL BUILDING TRINITY HALL CAMBRIDGE



Milton Keynes will be built on softly rolling farmland of average quality bounded to the north-west by the London to Yorkshire motorway (2, opposite page bottom). Today it is an idyllic part of rural England (1, top, is the existing village of Milton Keynes), but it is intended to increase the present population of 44,000 to 250,000 by the end of the century. The consultant planners are Llewelyn-Davies, Weeks, Forestier-Walker and Bor.

criticism

Terence Bendixson

MILTON KEYNES: THE NEWEST NEW TOWN

'Freedom of choice for the individual in his daily life and for the city collectively to mould its future—is very difficult to plan for. Many pressures in planning tend towards rigid, deterministic prescriptions for the good life, as seen by experts and professionals today. But current ideas of the good urban environment are inevitably coloured by present life patterns, and by past and present cities. We should not foist these onto future generations without very careful thought.'
MILTON KEYNES: INTERIM REPORT. Llewelyn-Davies, Weeks, Forestier-Walker and Bor.

Planning is 'less and less a matter of precise propositions committed to paper and more and more a matter of ideas and policies loosely assembled, under constant review, within which, every now and then, some project is seen to be as ready for execution as human judgement can pronounce.'
SOUTH HAMPSHIRE STUDY: Colin Buchanan and Partners.

'. . . it is important to make a distinction between the post urban patterns that develop out of circumstance, such as Nassau County (New York State)—and those which are created whole, like Reston, Virginia, which sprang from the forehead of Robert E Simon . . . The latter, while also a private rather than a public venture (Gulf Oil money) is based upon a plan, a principle, a theory of a multi-based community, and therefore does not always fit the exact facts of the surrounding situation and must to some degree fight them. Nassau County develops in response to the specific conditions around it; Reston is laid out and built according to a plan—social, economic, physical—conceived in advance and necessarily more rigid than the totally flexible organism which, like a plant, grows as the soil and the sun demand.'
SEQUEL TO CITIES: Eugene Raskin; Rebel Press.

'. . . there is nothing more practical than a good theory . . .
KURT LEWIN.

The reason for starting a discussion of the new city of Milton Keynes with this bevy of extracts is to show the sort of intellectual climate in which city planners are working. It is a climate in which the traditional convictions of British town planning are under heavy assault. The new ideas are coming from a variety of sources. The quotation from the South Hampshire Study shows the influence of management theory within the planning profession. In addition to this sociologists such as Maurice Broady have been whittling away at the notion that buildings and places play a dominant role in shaping the way people behave and have been stressing the cardinal importance of social institutions such as marriage and schools.

Lastly there is the ever present influence of America with its dream of freedom as tantalizing as the pot of gold at the end of the rainbow. The proposal in *New Society* earlier this year that several experiments in 'non-plan' or *laissez faire* land management should be tried out in Britain was an extreme illustration of the influence and the pitfalls of the American dream.

The suggestion was that several Nassau Counties or 'totally flexible organisms' should be allowed to happen in Britain. So flushed with excitement were the authors of the proposal that they failed to acknowledge that the continuation of normal town planning elsewhere, which they seemed to accept, would lead to happenings in the non-plan corridors radically different from what happens in the US where non-plan is the general rule.

Somehow they failed to forsee that the main effect of the experiments would be a disproportionate rush of development comparable to the rush of customers who would turn up at a High Street shop if the owner decided to opt out of the prevailing commercial regime and give his goods away. Certainly there is a need to stand British town planning conventions on their head but something more than slogans need to be put in their place.

The naivety of the *New Society* authors is shared by Raskin, a former professor of architecture at Columbia. He seems to forget that Nassau County is a reflection of a frontier philosophy—a belief in individual freedom at any cost to the community—a dogma quite as rigid and pre-conceived as the principles underpinning Reston.

The planners of Milton Keynes have thought about these things and have attempted to steer a middle path between a *laissez faire* approach in matters of land use and the traditional know-it-all authoritarianism of the master planner.

'The general conclusion was that Milton Keynes must be planned to give people what they want and that no committee of experts should try to dictate the future pattern of life in the city. This is not a new idea, but it is new to take it seriously . . .' the consultants say.

Later on they add: 'In contrast with earlier new towns, Milton Keynes will be strongly influenced by market forces. This follows inevitably from the decision that private enterprise should share in its development and particularly from the proposal that 50 per cent of the houses will be for sale. Houses for sale on the open market will only sell if they offer what people want at a price they can afford. This will force Milton Keynes to adjust its plans and policies to meet people's wishes and judgements as expressed through the market, and planning must provide freedom to enable these adjustments to be made.'

Some readers of the interim report have seen this as a confession that the shaping of the town is out of public control. It could be that this explains the unease that the document seems to have inspired. On the other hand it is possible to read into those same words a recognition that individuals, private

companies, sectional interests and community groups will pour vitality into, and indeed modify, the concept of the planners. In other words the consultants seem to appreciate that the development of Milton Keynes is not just a technical exercise but an opportunity for social and political evolution.

Hitherto we have not had much discussion of issues of this kind in new town making in Britain. Tom Hancock's Draft Basic Plan for Greater Peterborough, for instance, has this to say about the prospects for that community. 'We must build these new places for future generations who may be more leisured and affluent than we are. Certainly they will be better educated. People will lead a new kind of life; easy and delightful journeys within the city region to the new and old centres of education, culture and recreation; homes in great variety clustered among woodlands and rivers; great parklands within the fabric of the city.'

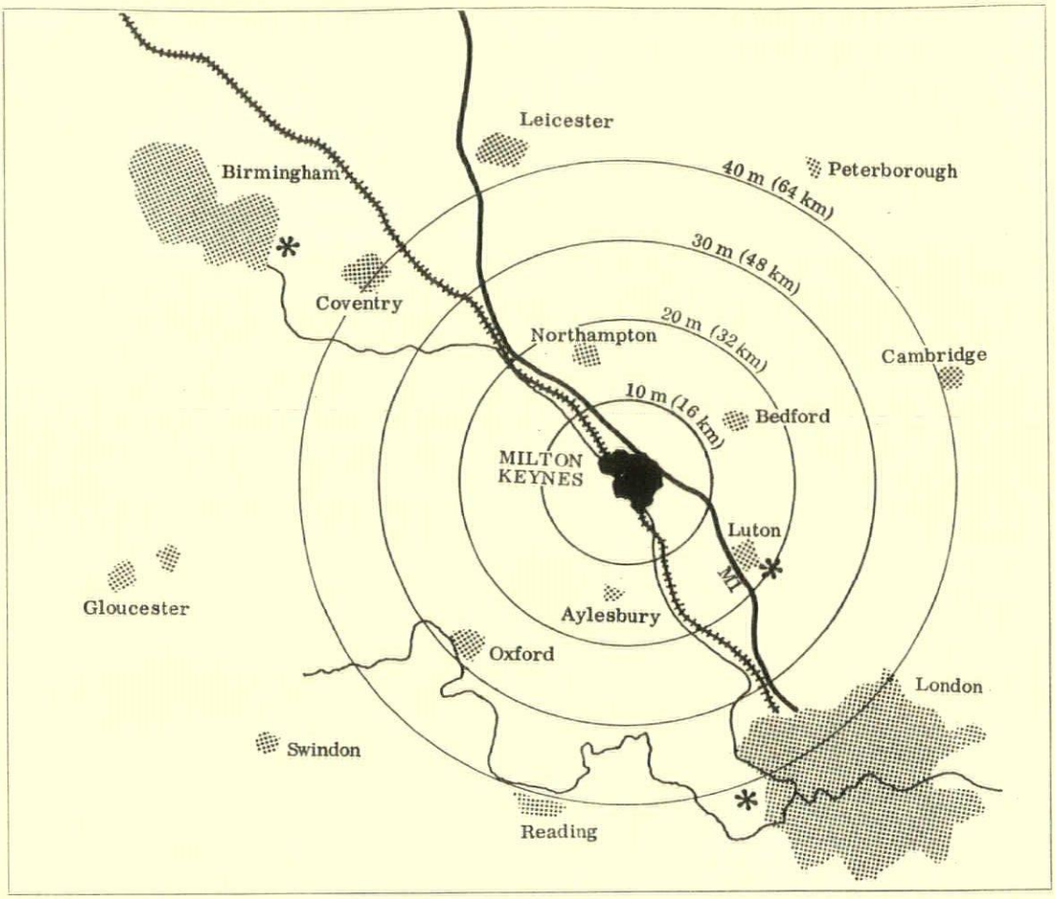
It all sounds grand, except that there is no reference to the part that those more leisured and affluent people will play in shaping their surroundings.

Similarly the Greater London Council's first brochure on Thamesmead—*Woolwich-Erith: A riverside project*—has this to say about environs and physical features: 'The site is flat and low-lying with few trees or other natural features, and much of the eastern part is marshy with a high water table. However, with imaginative landscape treatment the whole aspect of the site can be transformed into an acceptable environment for living.' Nowhere that I can see in the document is there any reference to that far more influential shaper of acceptability—the social environment.

Surprisingly this lack of any definition of social objectives never seems to have upset the makers of Britain's new towns. The development corporations, with characteristic practicality and the tradition of paternalistic local government behind them, have got on with digging drains and putting up houses as they saw fit. Perhaps this is why the new towns differ so much as communities. If no great effort is made at first to establish philosophical goals, as is being done at Milton Keynes, then they may or may not emerge along the way from the men appointed to manage the town's development. According to Maurice Broady something does seem to have emerged at Harlow, which he considers to have had the most successful record of social and cultural development.

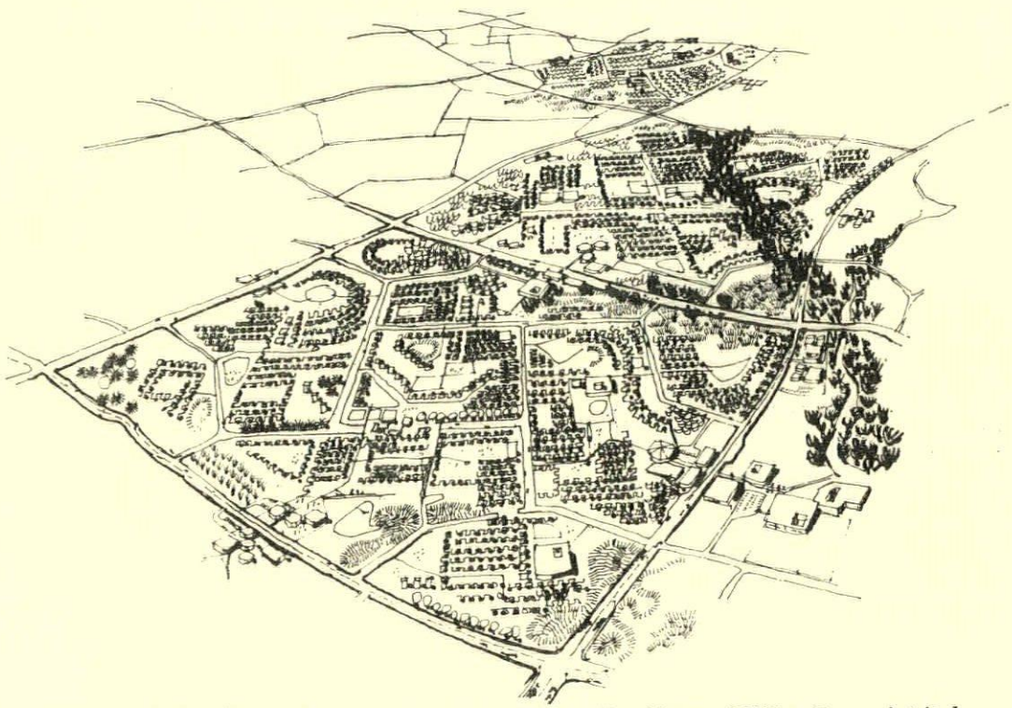
He says in *Planning for People* (National Council of Social Service): 'The factors which I think we shall find to have been particularly relevant are: the sizeable and socially active middle class in Harlow; the significant role played by teachers in activating this class . . . a local council sufficiently in tune with the life of the town and sympathetic towards its voluntary agencies to be willing to engage their efforts in its development.'

The Milton Keynes interim report goes further in that it sows seeds that should enable the future immigrants to help in the



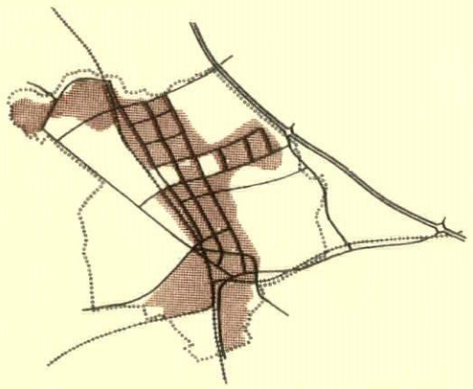
Regional location map (above): Milton Keynes is on the main high-speed railway and on the main motorway from London to Birmingham and the North of England. Fast electric trains take 42 minutes to reach central London. The new city is also on an older route, the Grand Union Canal, which is likely to become increasingly important as a cruise-way for holidaymakers. The good linkages of the site have already led to a considerable growth of population at Bletchley, at the southern end of the designated area, under a scheme for decanting families from London. Milton Keynes is not the only big urban development in its area. Northampton, Wellingborough, Corby new town, Kettering and Bedford are all growing fast and a study is currently under way in Whitehall to plot their interaction. Asterisks indicate airports.

Plan of Milton Keynes (facing page): The general arrangement of the new city is based on the linked ideas of dispersal and ease of movement. Places of work and recreation, houses and shops are all scattered. Threaded amongst them at kilometre intervals are main roads. Only at the city centre is there a notable concentration of goings on, although these will include neither the university campus nor the main hospital. Both are located elsewhere in order to spread the load of traffic on the roads.

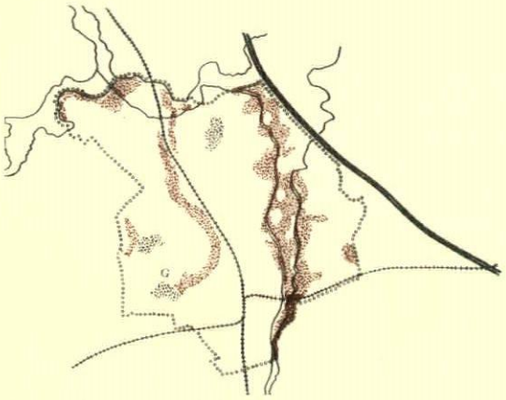


Bird's-eye views of towns always give them a terrifying blandness like, this one of Milton Keynes, but it shows the local roads weaving across the main network and the local centres sited where adjoining housing areas touch.

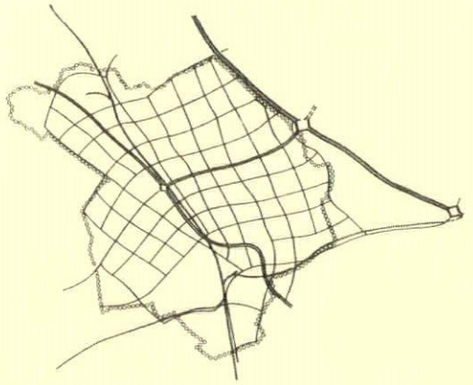

River Ouse
NEW BRADWELL
WOLVERTON
STONY STRATFORD
Grand Union Canal
River Ouse
M1
A5
WOBURN SANDS
Loughton Brook
BLETCHLEY
R
E
H
existing towns and villages
residential area
industry
parks
woods
new city centre
centres
local activity centres
secondary school group
reserve sites
higher education campus
health campus
primary road
expressway/ motorway
railway
0 1 2 3 4 M
0 1 2 3 4 5 6 Km



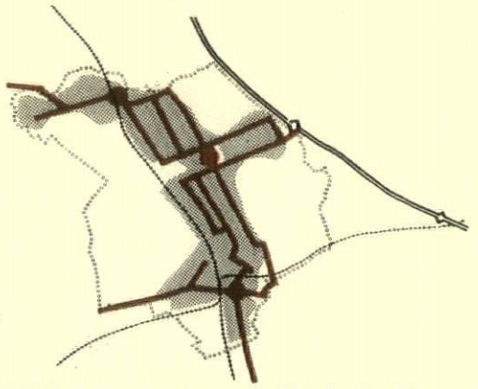
Extent of development in 1980: *the first parts of the city to be built will be arranged in linear fashion to link the existing towns of Bletchley in the south to the three small places of Stony Stratford, Wolverton and New Bradwell to the north. At right angles to this corridor of development will be a spur running eastward through the proposed city centre to an industrial park close to the M1 motorway. The 'holes' in the hatching on the diagram indicate space for the centre to expand into as the city's population builds up towards* 250,000. *As in the completed city the road network at the interim stage will be used by both cars and buses.*



Parkland: *two mainbelts of parkland will weave across the city, one of them along the line of the picturesque Grand Union Canal and the meandering River Ouzel. Footways and cycle tracks will thread through the parks. There will also be a network of footways criss-crossing the rest of the city and diving under the main roads.*



Road pattern: *a grid of dual two-lane roads will be built up as the city evolves and to start with the crossings will be controlled by linked traffic signals. Space will be left so that free-flowing intersections can be provided if demand calls for it. Superimposed on the town roads are two routeways wide enough to accomodate motorways and railways or monorails linking Milton Keynes to other towns in its region.*



Initial mini-bus routes: *several kinds of public transport were considered for Milton Keynes but mini-buses seemed to the consultants to make best sense. Further studies into them are going on but the interim report says that the greatest number of people travelling along any one corridor in an hour will be about* 7,000. *It is calculated that* 25*-seater buses running at an average frequency of* 3.4 *seconds would carry a basic* 20 *per cent of these travellers plus* 5 *per cent who should be persuaded by the good service to leave their cars at home. Ultimately* 243 *buses would be needed and the total annual running costs are estimated at* £12 *million. A dial-a-bus service is also being investigated.*

making of their town. 'The Corporation,' says the interim report, 'and we ourselves have taken every opportunity of meeting public and private bodies at Milton Keynes in order to hear their hopes, fears and suggestions. As planning goes on and construction begins, the participation by people at every level should increase and become more influential through vigorous debate and action. Ideally, the final form of the city should be an expression of its people's wishes, hopes, tastes, and it is a first principle of our planning to make this possible.'

What will a city based on this sort of approach look like? There is a terrifying bird's-eye view of the place in the brochure the consultants prepared for general circulation earlier this year. I am sure it was an effort to help people to visualize the town, but it succeeds only in conveying a picture of suburban monotony. The report itself says: 'A city with room for change will look more open; homes that can grow will have more space around them; trees and landscape will establish the visual character of much of the city including the primary roads which could be built as parkways; locating important activities in different places and encouraging a mixed character of development throughout the city will give variety to all parts of Milton Keynes—as the mixing of uses does in older cities.' It is John Weeks's idea of 'duffle coat' architecture expanded to the scale of a town.

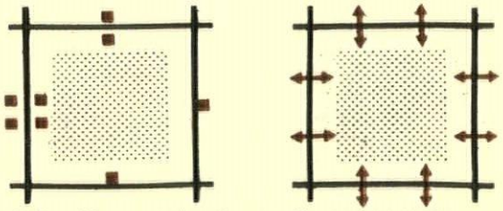
Elsewhere the report says: 'Open space, particularly where it offers opportunities for large-scale earth-moulding and tree-planting can buffer main roads, delineate areas in different use and screen those industrial structures which will for some time to come continue to be unsightly. Such use of open space could add form to a city where lower densities make it more difficult to create a memorable architectural order.'

So there we have it. Milton Keynes is Garden City writ large. There may be pile-ups of buildings here and there—at the town centre, the hospital complex and to a lesser extent at the neighbourhood high streets—but the abounding character will be two and three storey buildings interspersed with trees and separated off into distinct places by greenways and boulevards. It will be left to time to intensify the built-upness of the town if that is what is wanted. The decision to go for this kind of development is reinforced by a study Oliver Cox recently did on three south London housing estates for Wates Limited. 'When people said a scheme was good, their reasons nearly always included the landscaping, mature trees and grass.' And later on: 'Appearance' to most people meant landscape and layout first and architecture second.' (*Private Housing In London;* Shankland Cox and Associates.)

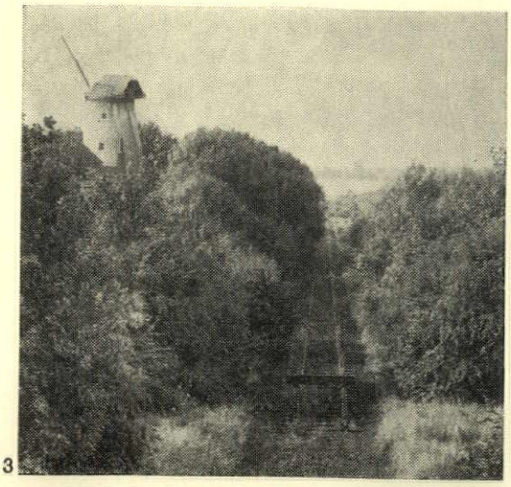
Not that this means that everyone will have to live in a Garden City layout. (Milton Keynes will end up with about as many people to the acre as live in Cambridge today—hardly the visual stereotype for a low-density town.) People seeking a more old fashioned kind of townyness will be able to live in Victorian Wolverton or eighteenth-century Stony Stratford. Furthermore there will be nothing to prevent the building of tightly-knit nests of houses of the kind Michael Neylan did at Bishopsfield, Harlow. Developers might build something of this kind if they think it would sell. Alternatively it may be that the public authorities will be the experimenters and innovaters in architecture and layout and the setters of new domestic standards. This was one theme in the RIBA's evidence to the House of Commons Estimates Committee concerned with housing subsidies.

The 'picture that emerges is of a place that could hardly be more different from, say, Thamesmead, which will be under construction over much the same period. One reason for the contrast was explained by Hubert Bennett, architect to the Greater London Council. 'We decided that the only way to go about designing the town was to model it on four sheets of wallboard, 8ft by 4ft. It is the first time we have designed a job as a model instead of on paper, but it was the only way of ensuring that everybody working on it knew what the others were doing. What we were able to do was to achieve a visual picture of a town because we got well above it' he said.

That two such utterly different approaches



Milton Keynes differs from earlier new towns in that no attempt has been made to define neighbourhoods. Every area enclosed within the lattice of main roads will be treated as a place and efforts made to give them as much individuality as possible. Different architects will be employed for each one but there is no suggestion that any one of these places will be self-sufficient. To help people mingle corner shops, schools and local high streets will be placed next to the main roads where adjacent places touch, and to help people get about local roads and footways will cross the main roads at regular intervals and continue through the town.



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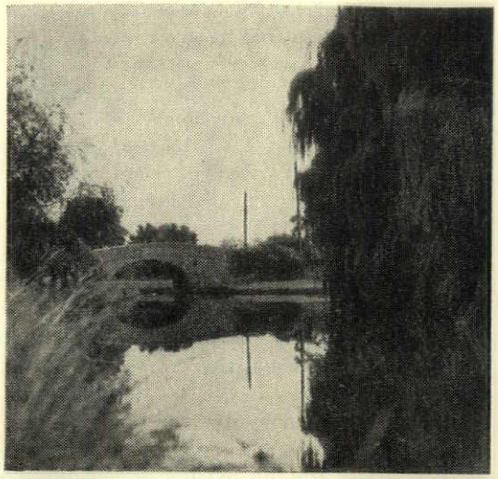

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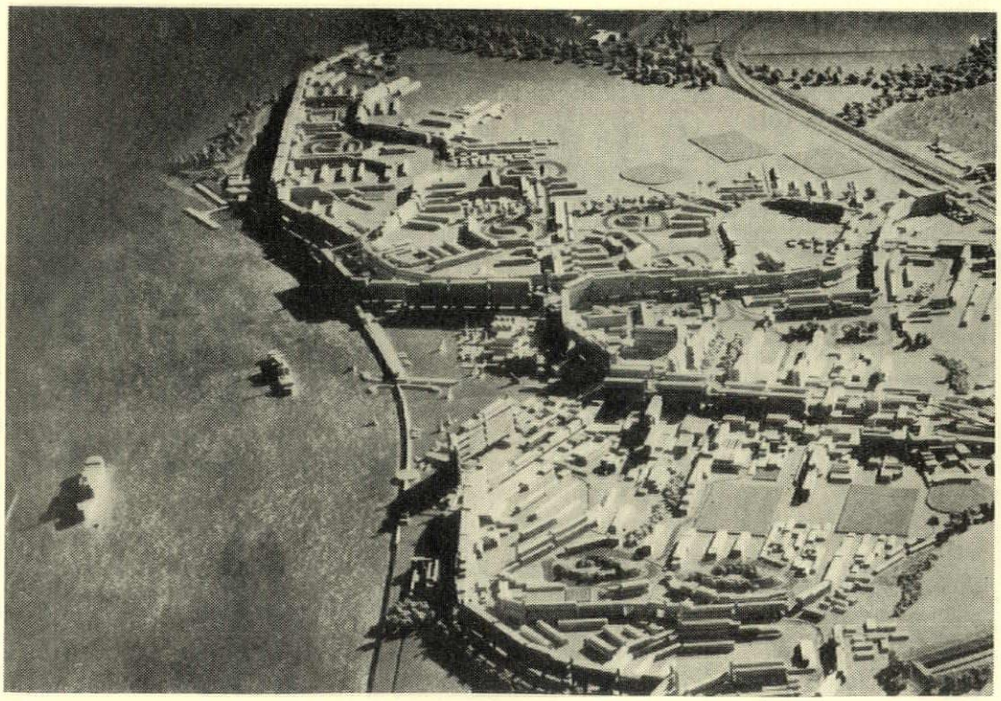
Only by exercising the greatest skill will it be possible to avoid visual dullness at Milton Keynes if accomodation for 200,000 *people is to be built in the short space of* 20 *years. One way to ensure variety is to hang on to all the existing features of the place both natural and man-made. The conservation of the numerous villages as well as the canals, churches, country mansions and* 19*th century railway cottages is therefore strongly recommended by the consultants.* (3 *is an abandoned windmill and railway near Bradwell;* 4 *is a canal near Simpson;* 5 *is Stony Stratford and* 6 *is the Victoria Inn at Bradwell.*)

to a similar problem as those adopted by the Milton Keynes planning consultants and the GLC Thamesmead architects are possible in Britain will be considered perverse by those who strongly favour one approach or the other. Such contrasts also say something about the immense gulfs that yawn between the different professions involved in town making. But if Milton Keynes is not going to be an architectural tour de force of the kind under construction at Thamesmead, will it resemble Stevenage or East Kilbride? It will be easier to answer this question later in the year when the consultants get out their final report. This will describe in much greater detail what is to be built in the first ten years.

Nevertheless some aspects of the new city have already emerged. One is the changing shape of Milton Keynes at its various phases. Eventually it will be like a huge tartan picnic blanket thrown down across the soft Buckinghamshire landscape. But at an earlier stage—the consultants estimate 1976-79—it will have a linear form joining Bletchley in the south to Wolverton and Stony Stratford in the north. The object of this exercise is mainly to help the constituent towns of the new city to grow towards a unity; but the period will also be a testing one for the proposed high-frequency mini-bus system. If it proves successful it could be that the system will be taken up by the incomers and given an impetus that the planners at present do not foresee. This in turn might affect the design of later stages of the town.

The other interesting innovation in the physique of Milton Keynes is the treatment of the neighbourhoods. These exist physically as townships of about 5,000 people, each within the criss-cross of the main highways. But strenuous efforts have been made to avoid any suggestion that the neighbourhoods are self-sufficient. This has been done by gathering the shops, schools libraries and other local attractions together beside the main highways, at places where footways will dive under them. In other words the Buchanan Report idea of the environmental area with highways at its fringes and goings-on at the centre has been quietly bundled out of the



Thamesmead

A different approach to town making is apparent in this model of Thamesmead, sculptured in balsa wood by Greater London Council architects. It is a development of new town size inside London. Hubert Bennet, architect to the GLC, says he foresees a 15*-year struggle to maintain the basic tenets of the design. At Milton Keynes the approach has been to leave as much as possible about physical arrangements undecided so that decisions can be made when more is known about what is needed and so that people living in the place can have a say in them.*

window. High Street goings-on have been put back where they used to be—on the highway—but without having people on foot and in cars sharing the same spaces.

In an interview, Richard Llewelyn-Davies explained it this way: at Milton Keynes as opposed to earlier new towns, 'we believe that people will have much more multifarious patterns of activity and will move outwards to activity centres at a number of ranges from the home. And therefore activity centres in the proposals are located at edges and meeting points of groups of houses (and not in the centre) and on communications nodes of various kinds. So that in some respects the rather characteristic quality of a new town which makes it rather unlike a "naturally developed" town will not be present in Milton Keynes . . .

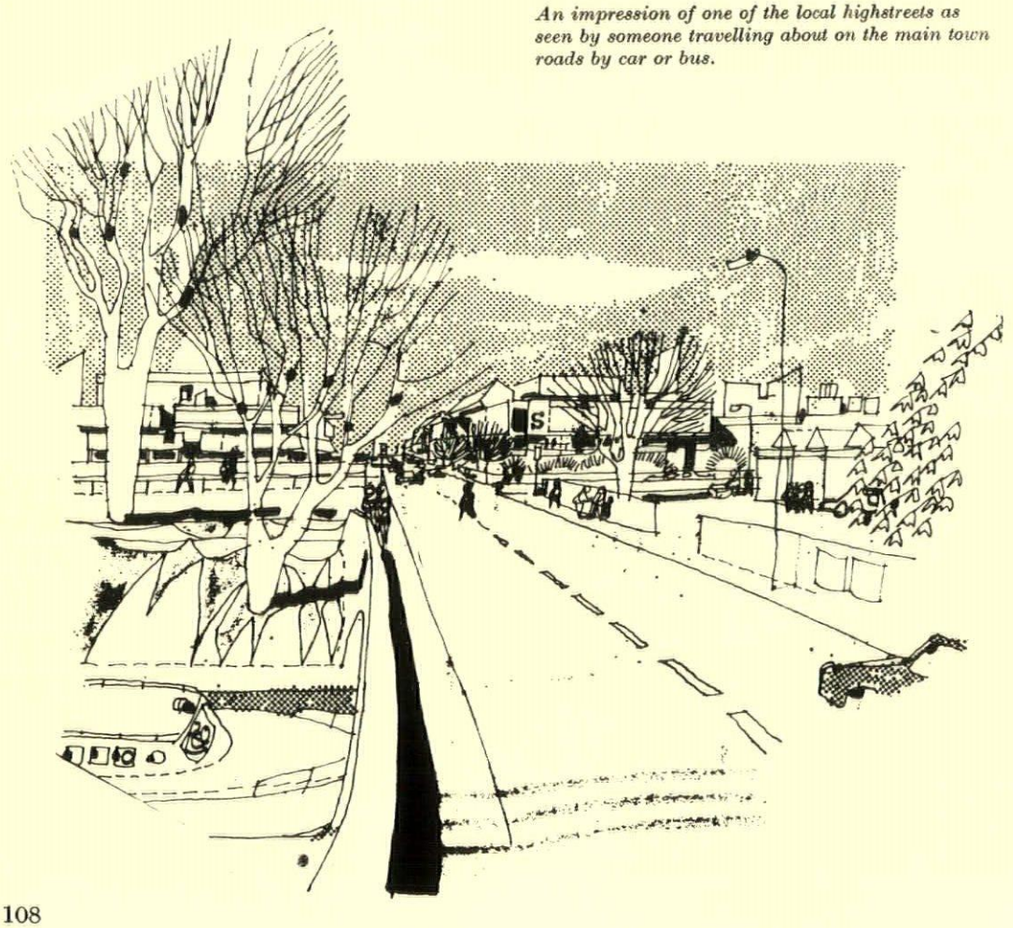
'This will have quite an substantial effect on the total architecture. It means for instance that as you travel about it on the primary roads you will tend to see the activity centres. Whereas if you travel about a traditional new town you tend only to see the backs of the houses which are facing away from you towards their enclosed centre . . . I think there is a fundamental difference about this and that it will give a fundamentally different aesthetic character to the town.'

The prospect is exciting. People travelling about the town by bus or car will be able to drop off at the High Streets if something catches their eye. This is where shops, cinecentas, restaurants and dance places should be glittering with neon at night and contrasting with the tree-lined parts of the highways elsewhere during the day. There will be dozens of these places all over the town, each one with the potential to be different from the others from the point of view of activity, architecture and advertising display.

The appearance of the houses is likely to differ from earlier new towns too, since they will be built by private developers as well as by individuals, the corporation and housing associations. The consultants stress the need for architectural variety since the town will be growing fast and sameness could become a problem. To start with however it is likely that the majority of the houses will be built by the corporation for renting. There will be a big opportunity for encouraging the tenants to form co-operatives to manage them. In the same way there will be a need to encourage the formation of community councils in the townships to deal with everything from grass-mowing and flower planting to the managing of schools and meals on wheels. If social institutions of this sort can be helped to flourish at Milton Keynes they will go a long way towards ensuring that the new city will be a success to live in. What they would produce in the way of architecture it is impossible to predict.

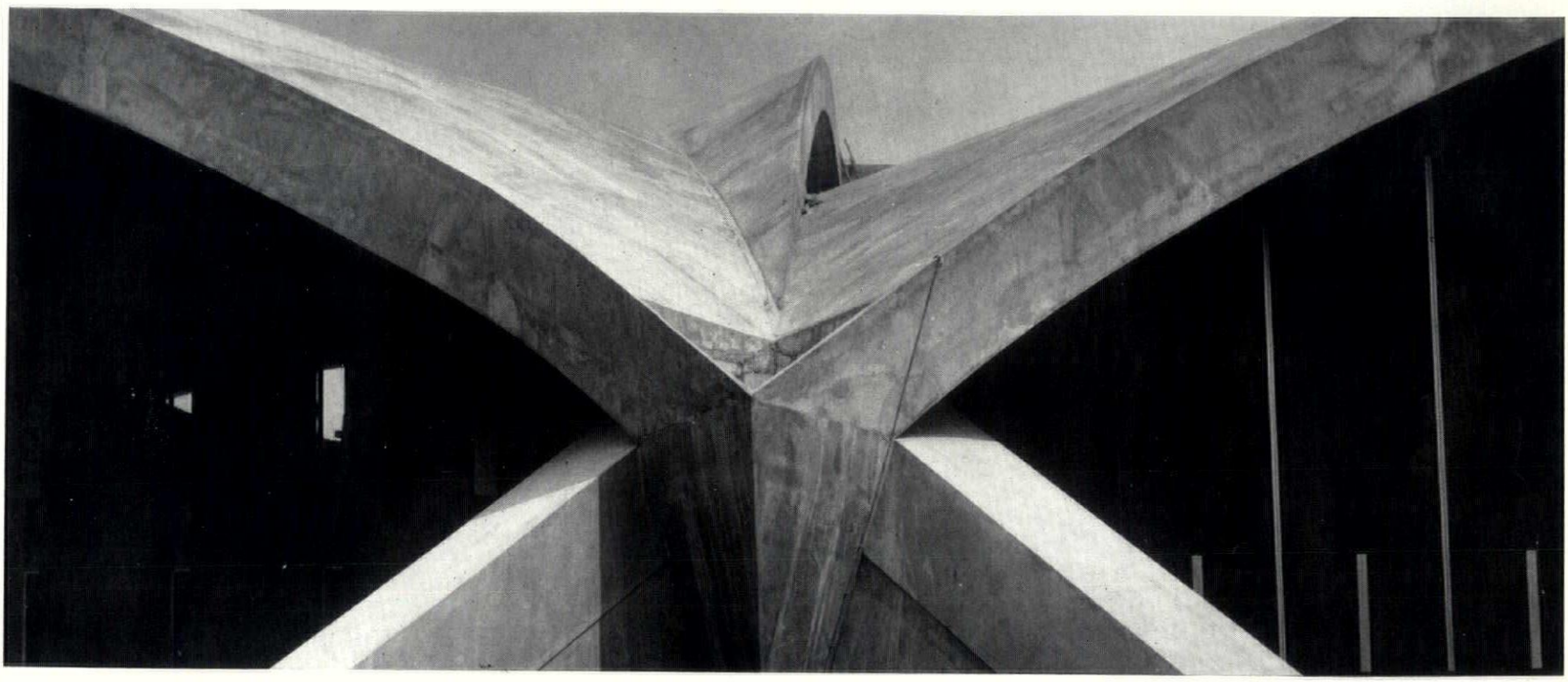
'Ideally, the final form of the city should be an expression of its people's wishes, hopes, tastes . . .' That is an unusual and a humble objective for the master planners of a new city. To have linked it with firm decisions about such things as town layout, high quality public transport and housing quality, instead of getting bogged down in the morass of non-plan, is doubly creditable. The chances are that Milton Keynes will be one of the most interesting social experiments since Letchworth or New Lanark.

An impression of one of the local highstreets as seen by someone travelling about on the main town roads by car or bus.



THE NEW GRENOBLE

For the best part of a decade now Grenoble has been the centre of a major reconstruction programme, only some of which, like Wogenscky's 'Maison de la Culture' and Novarina's Olympic village, form part of Henry Bernard's town plan for the southern part of the city. The needs of an expanding university town, the Olympic Winter Games of 1968 and an energetic mayor have combined to give the city not only impressive public buildings but an unusual number of public sculptures and other works of art. To Englishmen it will come as a surprise that a park in the middle of the city has provided the principal site.



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The Parc Mistral is gradually being filled, 2, with one monumental building after another; an older stadium is on the right, the new city hall on the left and in the foreground Martini's much criticised ice rink, holding 12,000 spectators and constructed of concrete vaults spanning 350 feet. Ingeniously overlapping to provide clerestory lighting in the middle of the building, the vaults are supported at four points only, as in 1.
Unique in France is another ice rink, designed exclusively for fast skating, with a track a quarter of a mile long. The associated buildings, 3,

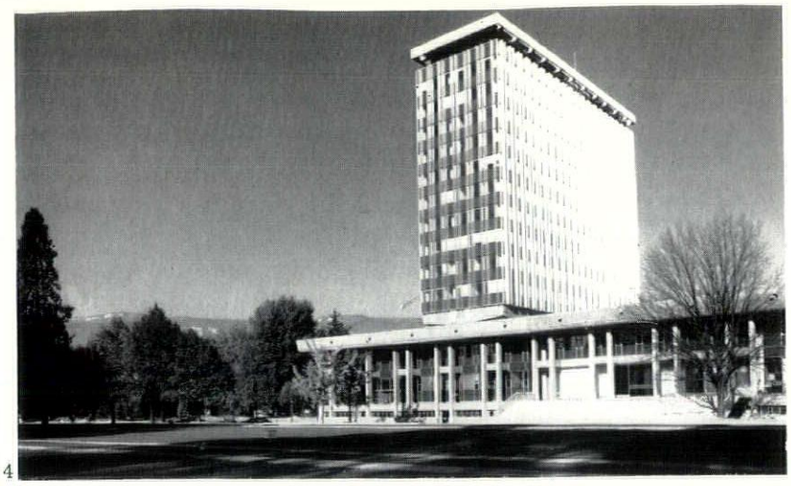


2



3

deserve a mention only because of the Vasarely designs which animate an otherwise regrettable piece of architecture.
Maurice Novarina was the architect for the city hall, 4, a building which consists of a three-storey horizontal block of ceremonial rooms, and a tower-block of offices. The entrance, up a flight of steps and between the giant order of coupled concrete columns, 5, leads to a central court with a sculpture by Hadju, 6, and a floor mosaic by Charles Gianferrari, which is particularly effective when seen from the tower-block, 7. Surrounding the court are large public halls and a reception room with a tapestry by Ubac, 8, which shows a fine feeling for the scale and character of the space it is in. Pierre Sabatier's screens in the marriage registry, 9, are both technically interesting (they are made of tin) and visually intriguing with their organic tendril-like forms.
Most of the sculpture in Grenoble is the result of an international symposium of sculptors which was held there in 1967. Novarina's Olympic village, where pedestrians have been segregated from vehicles by means of elevated walkways, has a thoroughly cosmopolitan character with, amongst the many pieces, a large fountain by Patkai for the 'Maison des Jeunes,' 10, and a 250-ft.-long relief by Mizui, 11. The most monumental is Morice Lipsi's Noguchi-inspired Olympic column in blue granite, 12, which stands symbolically at the entrance to the city on the motorway from Lyons.
The two most distinguished new buildings in Grenoble, if we omit Wogenscky's now well-known 'Maison de la Culture,' are Jean Prouvé's exhibition hall, 13, and Anger, Pucinelli and Loyer's housing in the shape of three 325-ft.-high tower blocks, 14. Designed for the annual sports fair, the exhibition hall houses displays, allows circulation for buses during games and provides space for temporary sports installations. An annexe contains a large restaurant, a conference hall and offices. To provide as much column-free space as possible, Prouvé placed his composite columns of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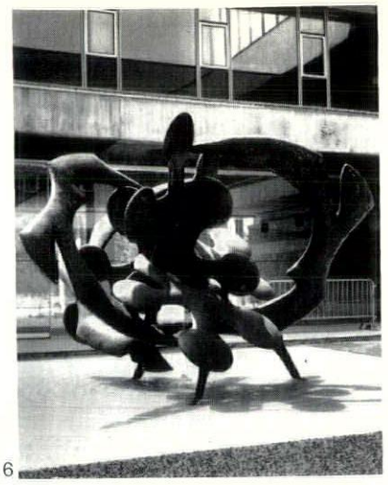
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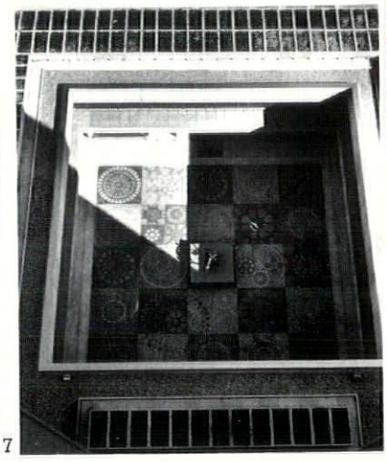
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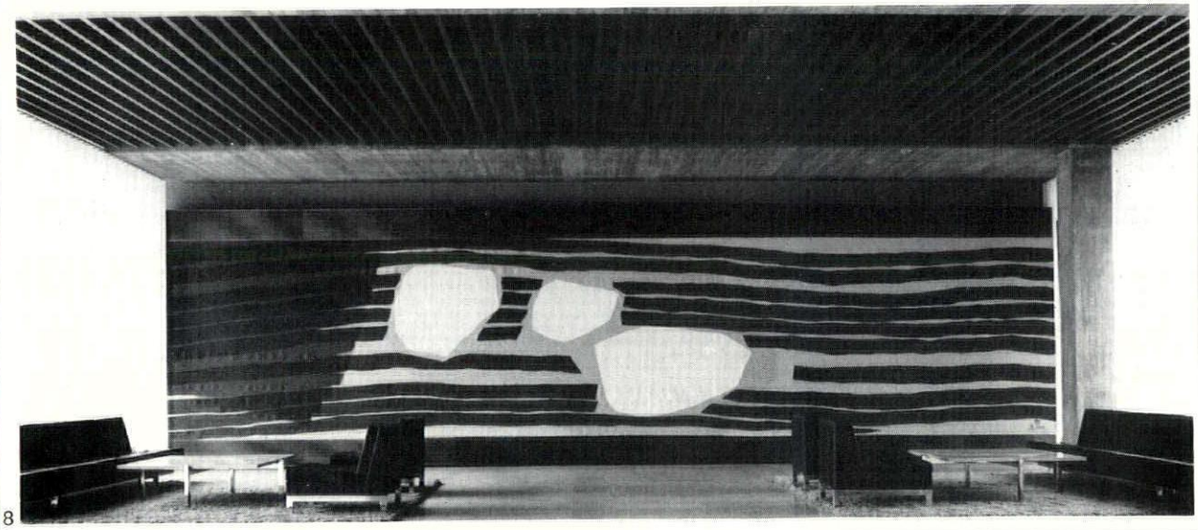
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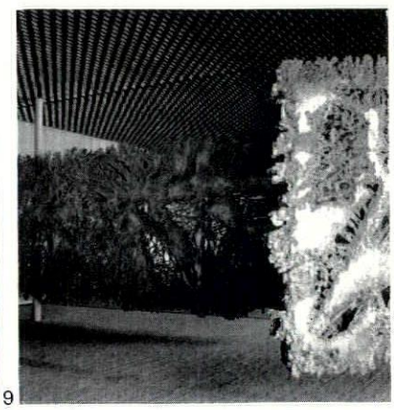
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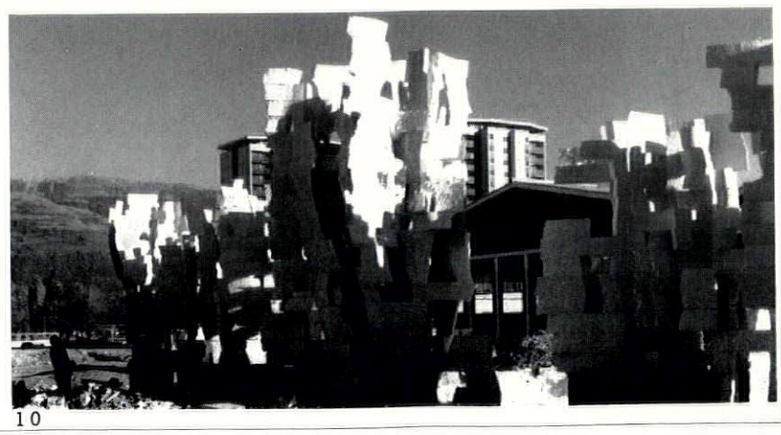
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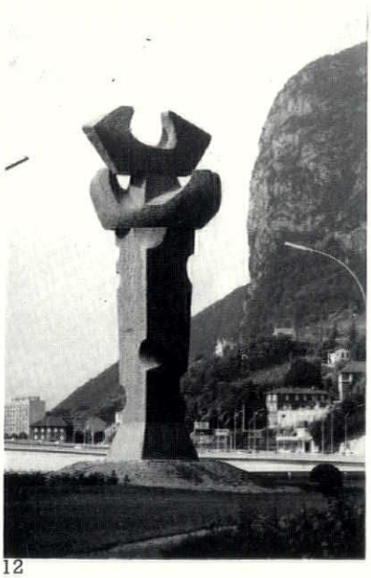
extruded tubes on a grid 120-ft. square, 15. The curtain-wall façades are hung from the cantilevered roof structure, and their light construction—glass and enamelled steel panels fixed to steel framing—is easily demountable for future extensions.
The tower blocks in the Ile Verte are remarkable for their exceptionally lively façades, the result of a stepped plan, 16, combined with an elevation where the pattern of balconies and windows is always staggered. Here, too, mosaics by the Groupe de l'Oeuf, 17, provide a welcome touch of extravagance.


11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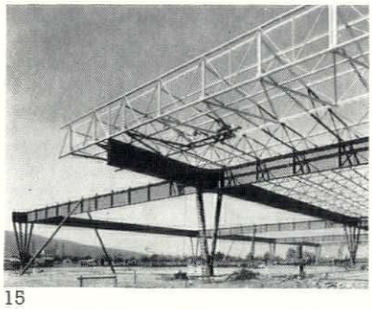
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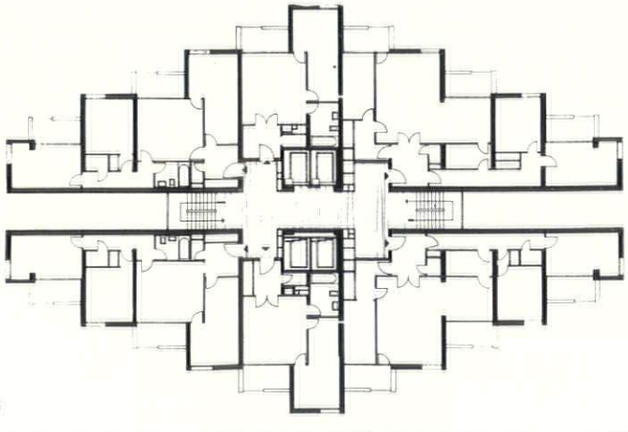
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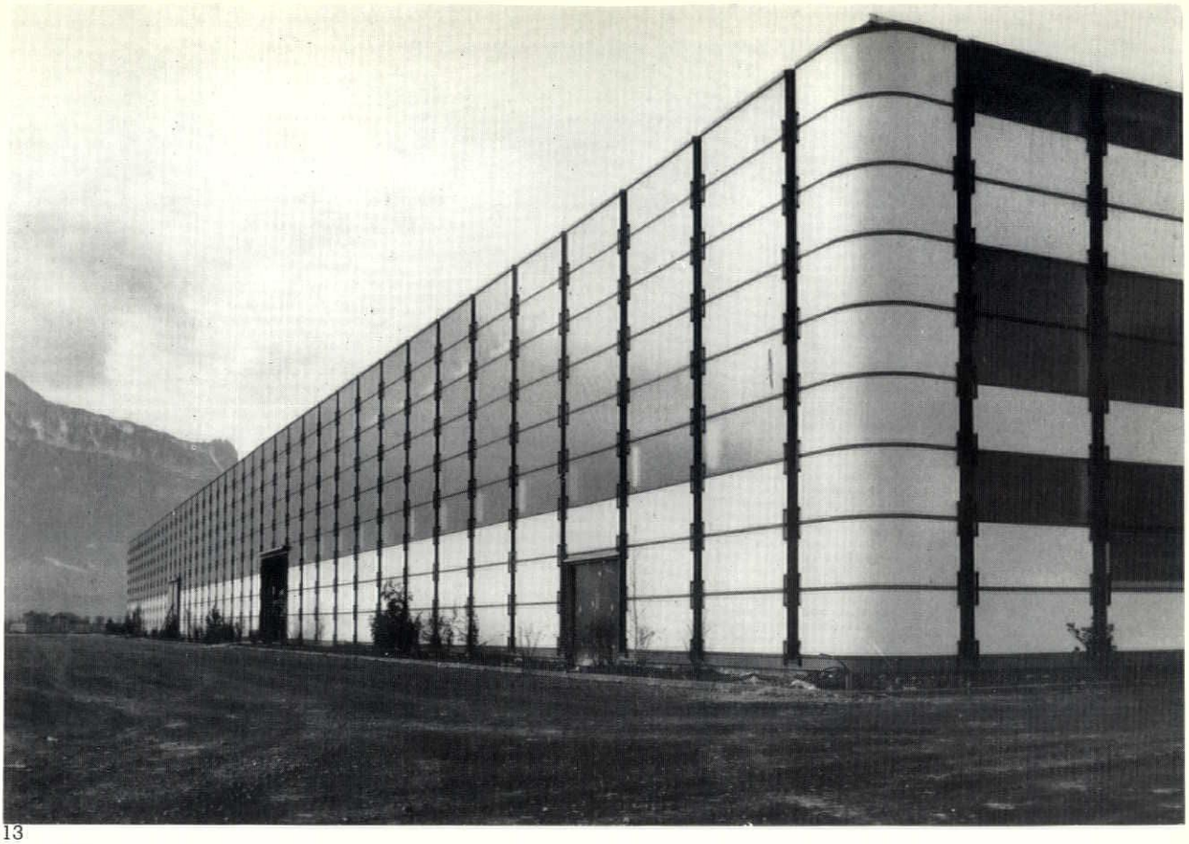
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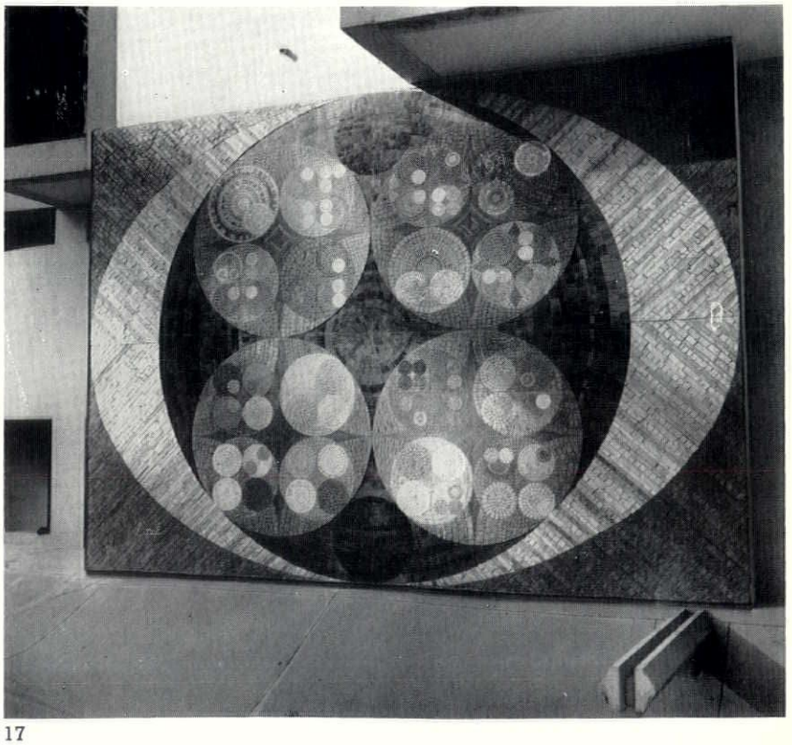

17



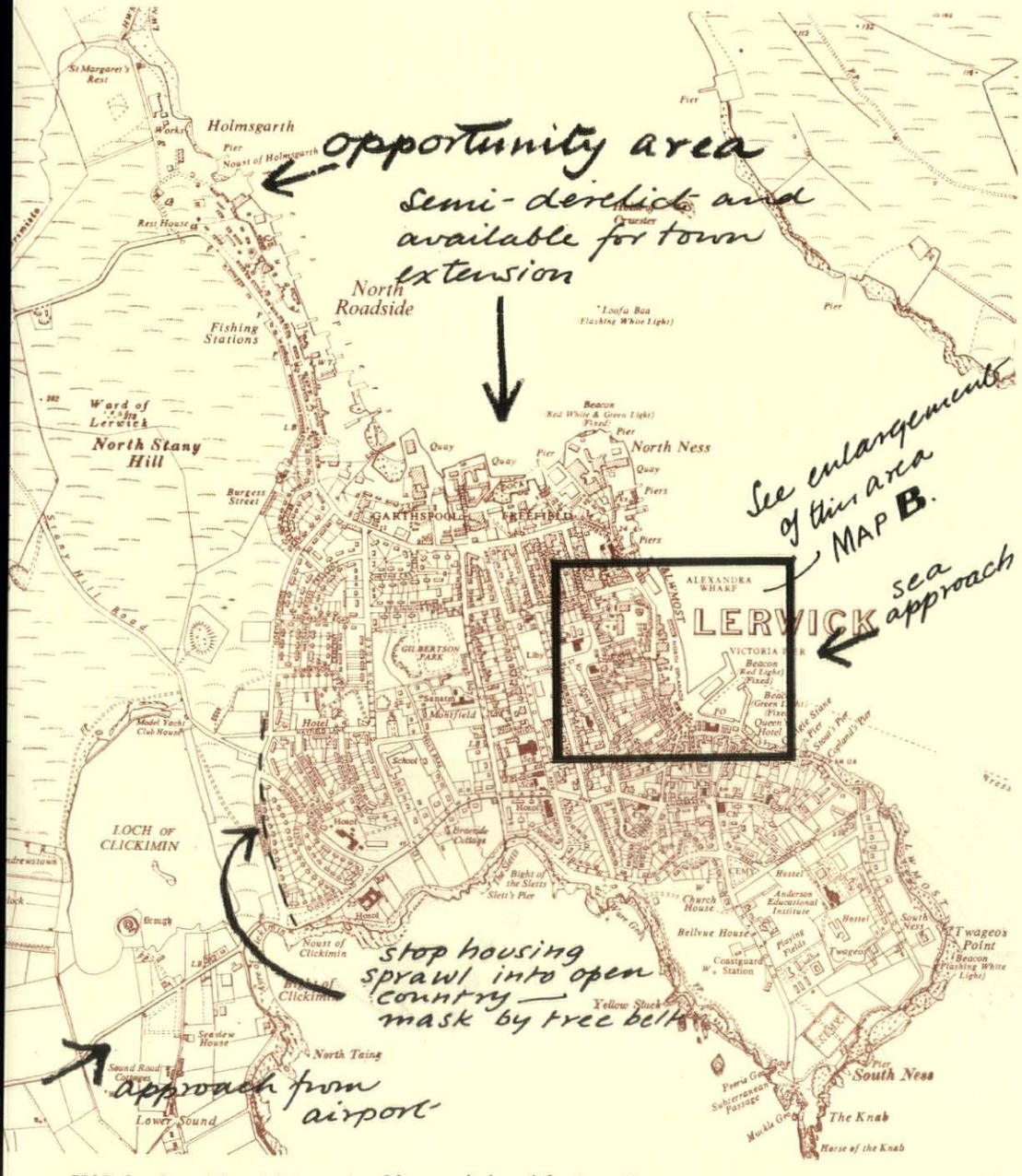

L. LEISK & CO
CHEMIST A. L. LAING DRUGGIST
PETER BARCLAY & CO
T.J.ANDERSON.
SHETLAND

Kenneth Browne

LERWICK



SEA AND STONE AT LERWICK: 1 (*facing page, top*), *the harbour—dramatic introduction to the town.* 2 (*bottom*), *Commercial Street—stone-flagged from wall to wall.*



MAP A: *plan of Lerwick* (*reproduced by permission of the Controller of HM Stationery Office; crown copyright*).

To most people Shetland is a group of mist shrouded, sheep filled islands somewhere off the map; literally so in most atlases which show them relegated to a small square just off the Moray Firth. In fact they are 100 miles NNE of John O'Groat's, 60 miles beyond the Orkneys.[1]

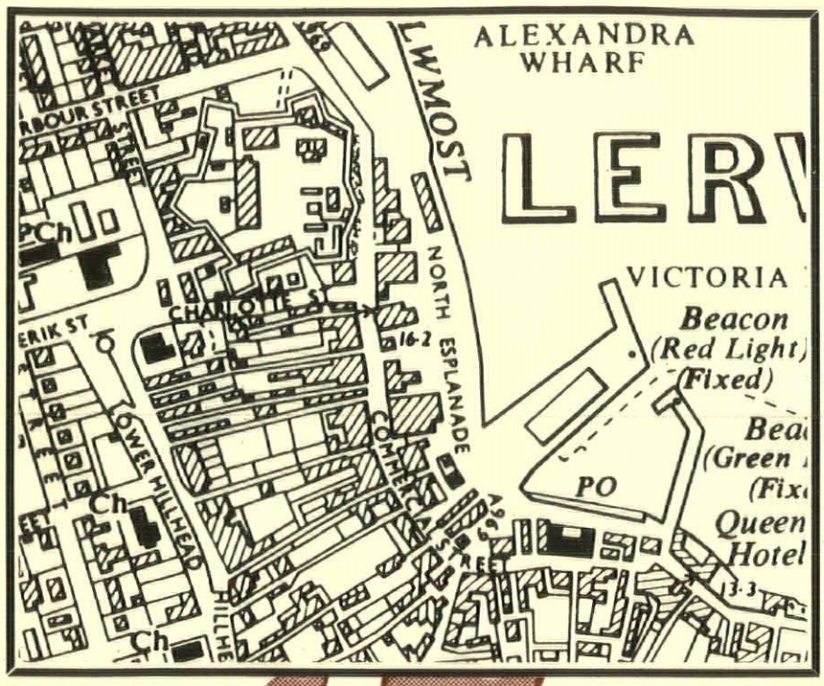
Unspoilt then you would think; a marvellous place to get away from it all. And so it still is in many ways—but tourists are on the increase, aided by a regular service by BEA, and so are the cars. The picture is not quite so idyllic as you might hope. Lerwick, the capital and the only place of any size (population 6,000), is showing signs, all too familiar further south, of a decaying centre and spreading and chaotic outskirts.

If you arrive by boat, the right way since this is a seaport, the old town builds up splendidly from the waterfront, 1, its grey stone ruggedness clamped limpet-like to the steep slopes. The harbour is deep enough for quite large ships to come right up to the town and this, coupled with the way many of the waterside buildings jut out into the water, gives a fine sense of immediacy. Everything is close packed in direct sympathy with the site and aimed at giving maximum protection from the arctic winds. Dour, not pretty, its colour is provided by the brightly painted fishing boats which are kept in spanking condition. At its highest point the chunky mass of the town culminates in the castellated tower of the town hall.

This you feel is what a town should be like. Come by air however, and the story is different. From Sumburgh airfield, 25 miles south, the road runs through the most unspoilt landscape imaginable; heather covered hills, estuaries, lakes—with only the odd crofter's cottage as sign of human occupation. Suddenly you get your first sight of the town, from the back. It looks like Hounslow. Row upon row of identical council semi-dets march in formation across the landscape with not a single tree to relieve the stark monotony.[2]

In the same eyeful, and emphasizing the visual enormity, is one of the finest archaeological sites in the north, The Broch of Clickimin (a Pictish round tower) superbly sited on the edge of a loch with the cloud-dappled hills behind. The view from the Broch is sheer bathos, 23. On the other side of the lake, at the foot of the moorland slopes, private bungalows are beginning to spring up like unwelcome toadstools. From here, the approach road leads on through suburbia, the air criss-crossed by a profusion of wire, taking you past the new hospital, 21, the ugly brashness of which sends

[1] Though it is often said that the nearest railway station is Bergen, Norway, this is not strictly true; it is Wick, Scotland.
[2] The council rubbish dump is here too, in close proximity to the houses.



MAP B: *the harbour area.*

your spirits to zero.[3] They don't rise again until you reach the old town.

Enquire how this sad introduction to the town could have happened and you find that there is no planning control[4]; you can build pretty well where and what you like. And since it is less trouble to use vacant, flat ground on the outskirts, this is where new building takes place. Even so it could have been much better done. Furthermore, exposed to the strong prevailing winds no protection is given by this sort of open layout.

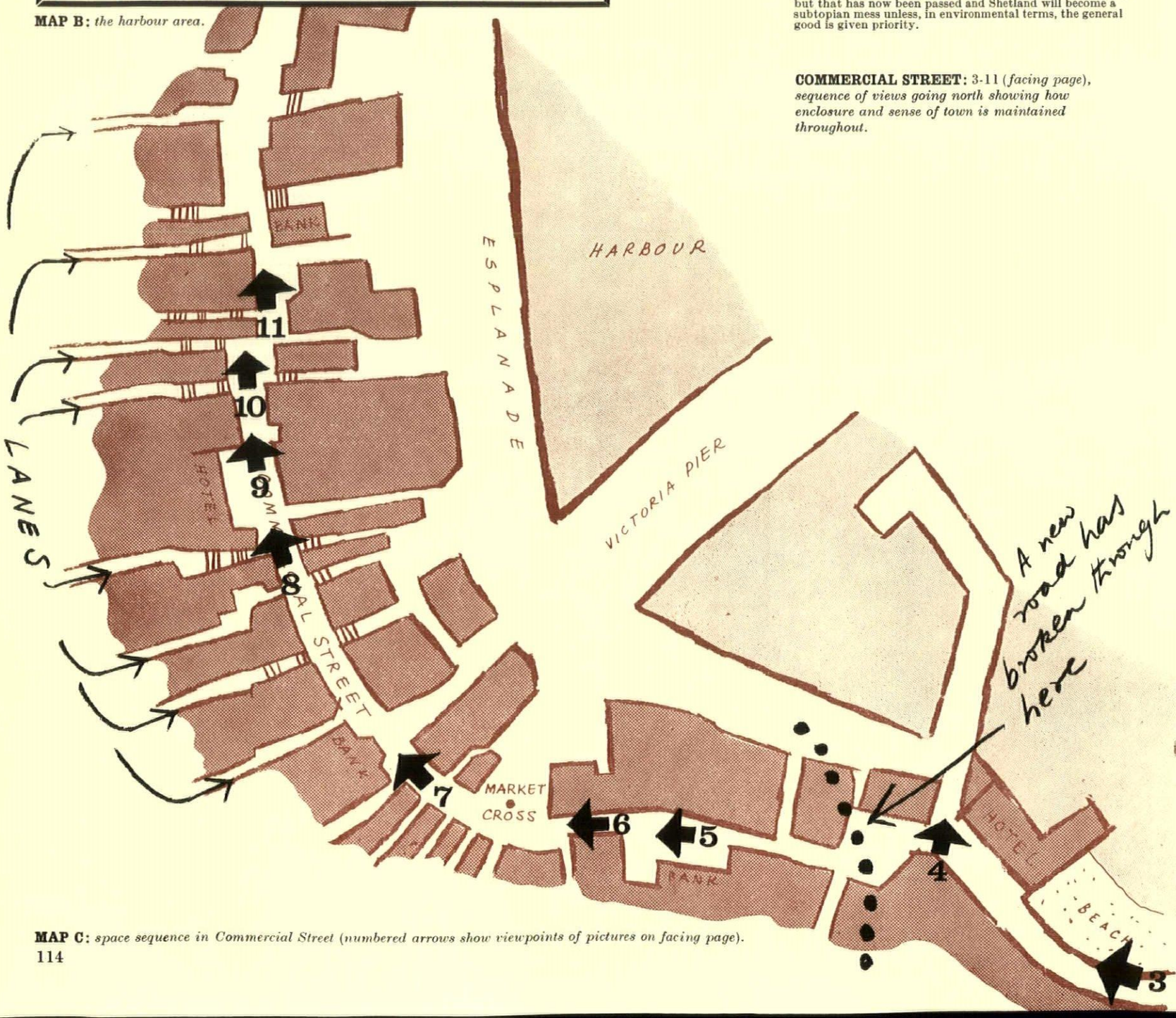
Another reason surely must be that what is special about Lerwick is insufficiently appreciated by its inhabitants. Even taken at the level of tourist appeal this is shortsighted, for who wants to come such a long way just to see subtopia?

What then are the special qualities of the town, apart from its fine massing from the sea? First of all perhaps its unity, which is given by the combination of an overall use of local stone, its compactness of form and its sequences of man-size spaces which, while straightforward and easy to grasp, contain at the same time many subtleties. The building forms are mainly limited to hipped

[3] This and the Mission to Deep Sea Fishermen, 22, at the corner of Harbour Street are particularly deplorable. Unremarkable on the Great North Road, they are real eyesores here.

[4] In Shetland the individual is still of prime importance and compulsory powers are never used. This is fine up to a point but that has now been passed and Shetland will become a subtopian mess unless, in environmental terms, the general good is given priority.

COMMERCIAL STREET: 3-11 (*facing page*), *sequence of views going north showing how enclosure and sense of town is maintained throughout.*



MAP C: *space sequence in Commercial Street (numbered arrows show viewpoints of pictures on facing page).*



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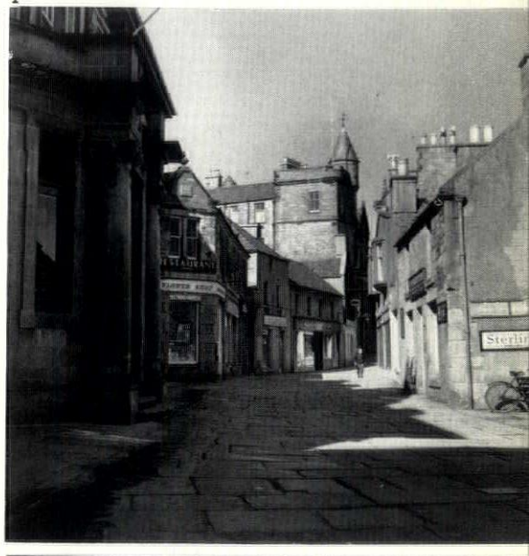
GIFFORD & SMITH

7

6


A. L. LAING
PETER BARCLAY & CO
T.J.ANDERSON.
FOOTWEAR SPECIALISTS





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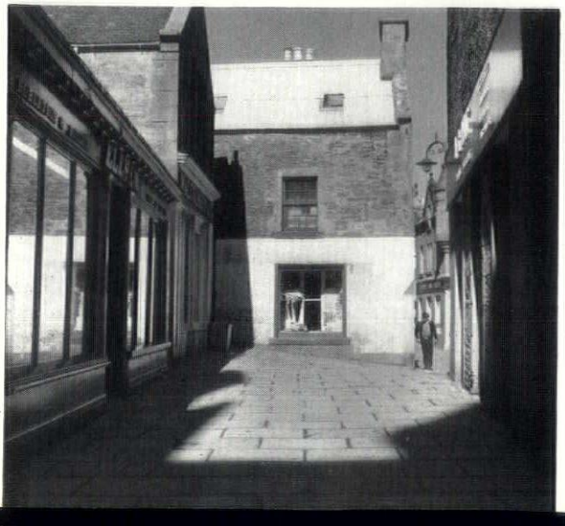

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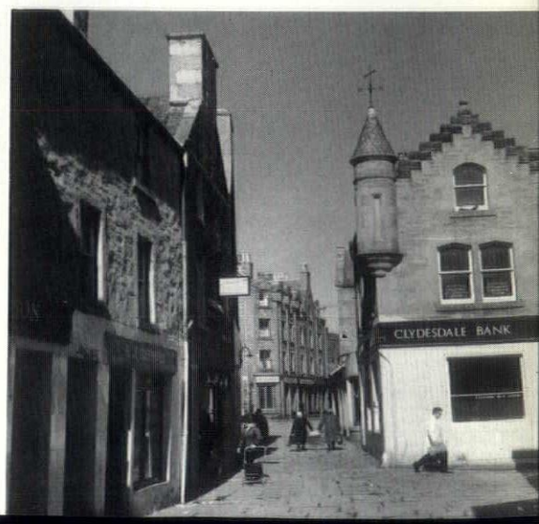
CLYDESDALE BANK



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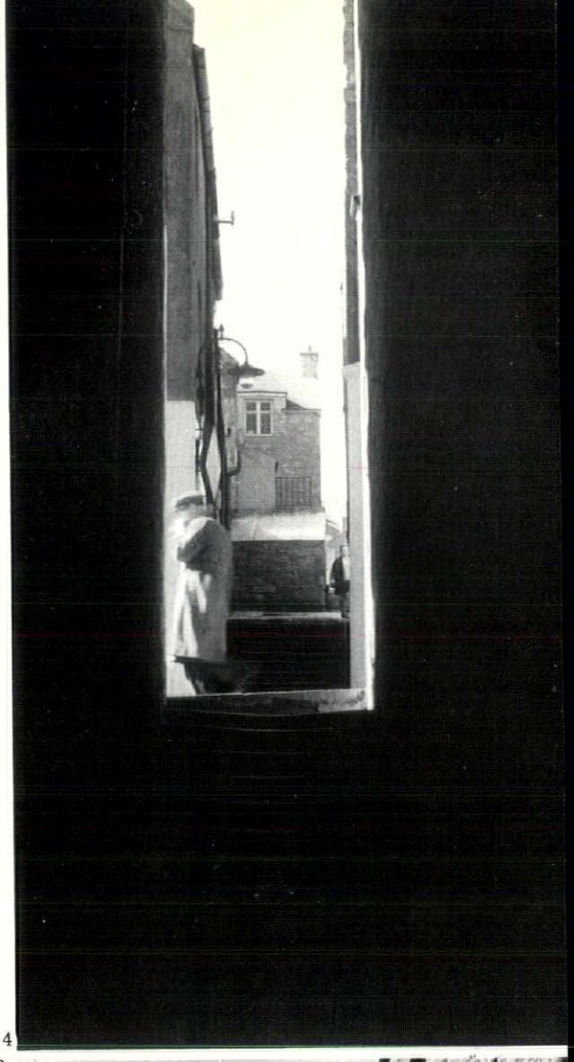

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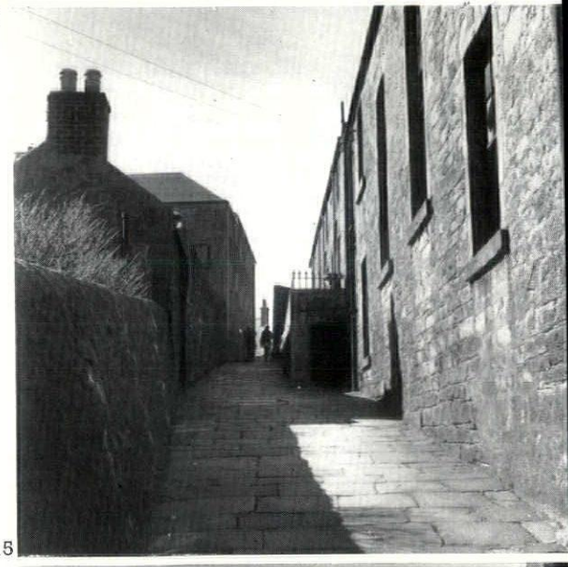

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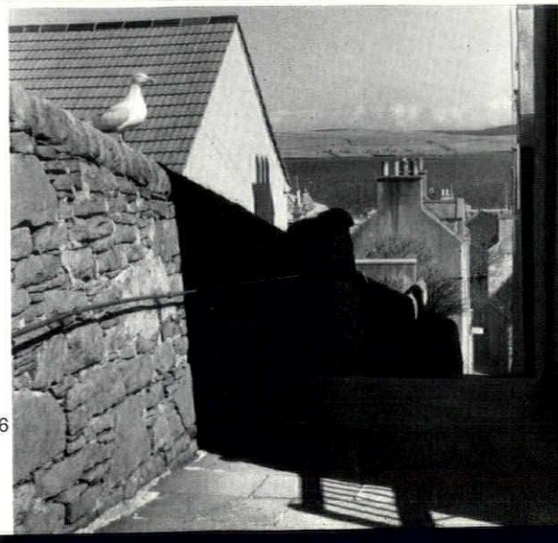
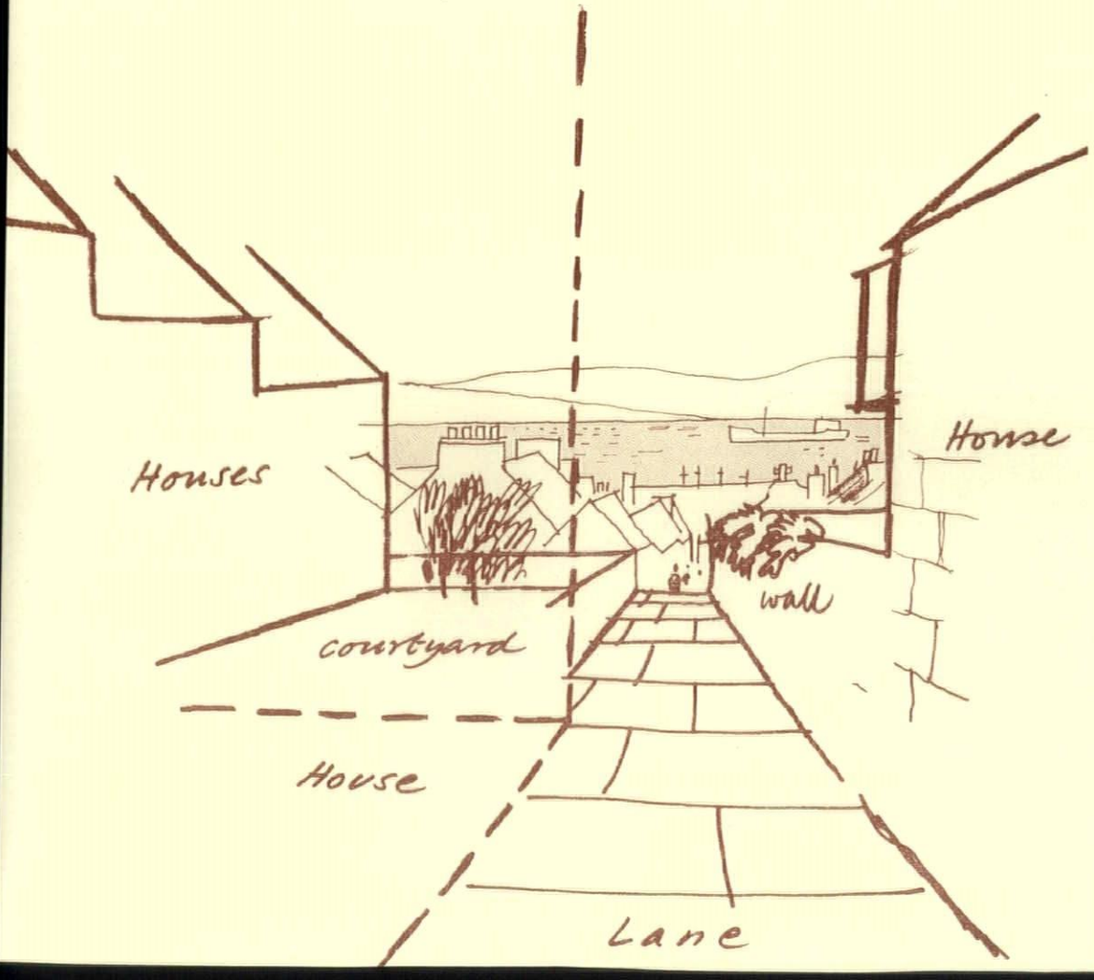


16



17

THE LANES: 12-16 (*facing page*), *typical views of the Lanes which lead off at right angles from Commercial Street, climbing the steep slope between tightly-built houses.* 17, *a partly-demolished Lane draughtily indicates the likely fate of its neighbours unless the value of this way of building is recognised. The tightly-built quality should be retained in new building, as* 18.



roof and strong gable (often crow-stepped) ending in a broad chimney—this shape, appearing in an infinite variety of relationships, gives at one and the same time variety and unity. On the sea's edge long stone sheds (lodberries or storehouses for fishing gear) reach out into the sea, anchoring the foreshore. At one time this occurred along the whole of the waterfront but, since The Esplanade was built in 1886, it is limited to the south end. The shopping street, Commercial Street (or just 'The Street' as it is generally called) runs parallel to the waterfront, floored from wall to wall by stone paving slabs and with no separate pavement. This gives a marvellous unity, 2. Any traffic must move at walking pace and the intricate plan of the street enforces this.[5]

Cascading down to Commercial Street from the higher ground run numerous narrow ways, The Lanes, 12 to 16, which are a particular feature of the town. Lined by rugged stone houses with small secret gardens behind high walls and with terraces looking out over the roof tops to Bressay Sound, they create a homogeneous environment. And tightly built together in this way they are protected from the prevailing winds.[6]

Returning to the main street, map C shows how the spaces evolve—spaces people can comfortably use and formed by a repetition of partial closure: the street is never straight but curves and also side steps and expands into little squares at intervals along the route. 3 to 11 show how this is experienced. The sky is fretted by the stunning silhouette of turrets and crowstepped gables crowned with stone thistles and spikes, while good lettering, 6, and slit views up The Lanes which run off it at right angles, or surprise glimpses down to the harbour, are added attractions.

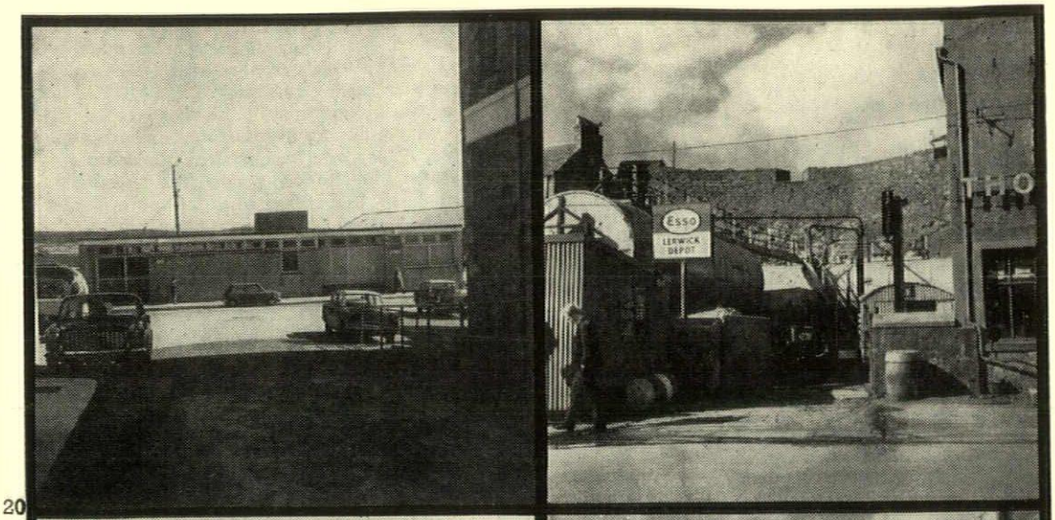
THREATS

However, look more closely at The Lanes and you find that they are being allowed to decay, 12, 17. Roofless walls, sightless windows and gardens overgrown with rank grass tell the depressing story; and this while the semis proliferate in the open country. True some attempt has been made in the south part of the town to rehabilitate some of the old buildings and even to recapture their spirit in new ones. This infill gained a Saltire Society award and in some cases works very well. Elsewhere it is less successful, with too much opening out of spaces and the introduction of over-large blocks, also the use of unsuitable colours—pastel blue, pink, Indian red etc. combined with artily contrived paving of alternating squares of cobbles and coloured slabs. All these are at odds with the masculine severity of the old town. By the town hall, at the crest of the town, lanes are being demolished to make way for, of all things on this sloping site, a covered swimming pool, complete with extensive car park. Surely this is as crazy a piece of siting as you could imagine. Why not keep the existing character here and put the pool on flat ground near the waterside at the north end of the town?

TRAFFIC

Cars are a destructive force here as elsewhere, and to ease their way the council recently smashed a hole through the side of Commercial Street, breaking its continuity and leaving a lot of anonymous space, quickly filled by parked cars, in this previously tight-packed vicinity. Finished in a smooth black asphalt and with a wide curve banked for speed, the road is completely blind both to parked cars and pedestrians crossing from Commercial Street. This is inviting the accidents which will inevitably happen and in consequence of which the scene is likely to deteriorate yet further with existing buildings trimmed back and a clutter of traffic signs. Instead, the traffic should be compelled to slow down and the flagged surface of Commercial Street should be carried across the new road. In addition a relief road has been mooted to run

[5] There have been suggestions that the corners should be trimmed back: an idea to resist emphatically.
[6] The Old Town relies on buildings interlocking. By contrast new building seems to be thought of in terms of pavilions in gardens (e.g. semi-det. housing, the museum etc.) and is thus right out of character.



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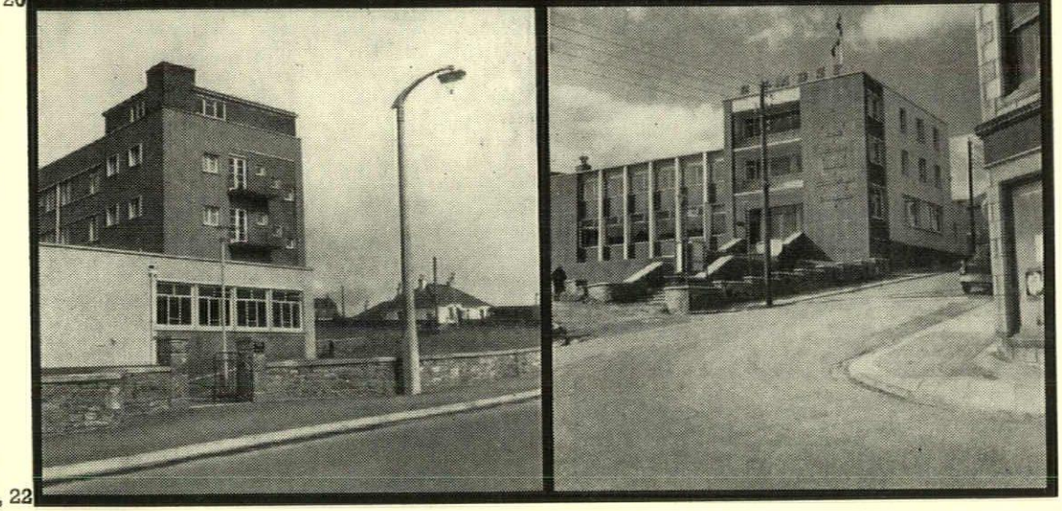


21, 22

EYESORES: 19, *the massive new public lavatory on The Esplanade which hides a view of the harbour.* 20, *scruffy foreground to Fort Charlotte.* 21, 22, *heavy-handed new buildings completely out of character with the town.* 23 (*below*), *the setting of one of the finest archaeological sites in the North: The Broch of Clickimin, ruined by a rash of semi-dets on the loch side. Tree planting as a screen is essential.*

just on the landward side parallel with Commercial Street to service the shops. This would have the disastrous effect of cutting through all The Lanes at one fell swoop and wrecking the present unique continuity. This must not happen.

BLURRING THE IMAGE

Apart from these main threats there are numerous lesser ones which are eroding the town's character.[7] For instance the tendency to pebble-dash the existing stone façades,[8] to 'modernize' the shops signs which means replacing bold lettering by gutless or clumsy substitutes; also the replacement of stone street slabs by asphalt and concrete. Another retrograde step is the couldn't-care-less way in which views of the harbour are needlessly blocked, for instance by the massive new public lavatory, 19.

ACTION

To stop the rot the following measures should be taken before it is too late:

***Safeguard the old town*—record and jealously guard its qualities, including its turrets and chimneys which are something special and could easily be sniped away one by one.**

***Make traffic take second place*, particularly resisting the temptation to cut off the corners. When necessary close Commercial Street to vehicles altogether except perhaps for servicing at special hours, otherwise serving the shops by trolley from The Esplanade.**

***Stop the decay of The Lanes* and build them up again; reconditioning more old buildings and infilling in a modern idiom, but using the local materials.[9] And don't prettify.**

***Mask the semi-det outskirts* by thickly planted tree belts—this is possible given the will, as existing tree clumps show. Though obviously more difficult than elsewhere it is essential here. Also control the overhead wires.**

***Halt expansion west* and instead build up along the waterside on the north end of the town—at present under-used and often completely wasted. Here the shrinkage of the herring fishing industry has resulted in many disused buildings backed by wasteland. There is almost unlimited building land here which properly used could be the logical modern extension of the town tightly built up to the waterside.**

***Tighten up the spaces* around the town hall. New building intended here must be in scale and effect enclosure.**

***Clear up* accretions, for instance those masking the front of Fort Charlotte. This, instead of being respected as an historic landmark and put to good use, is now dimly seen through a festoon of Emett-like garage clutter, 20;[10] while the space inside is wasted, the walls largely hidden by an accumulation of huts. True the Territorial HQ is there but it adds little. This is an active place, much used as a short cut through the town, and should therefore be put to better use. Surely the museum should have been here rather than in a separate chunk of building (albeit a well designed one). This is a fine place for another museum, perhaps devoted to the sea and ships with a display of figureheads in a garden setting, the whole enclosed by a light glass roof—a place for cafes and concerts with marvellous views over the sound.**

[7] In anticipation of a visit by the Queen, all the cobbles along the Esplanade were replaced by asphalt to avoid risk to the royal ankles.

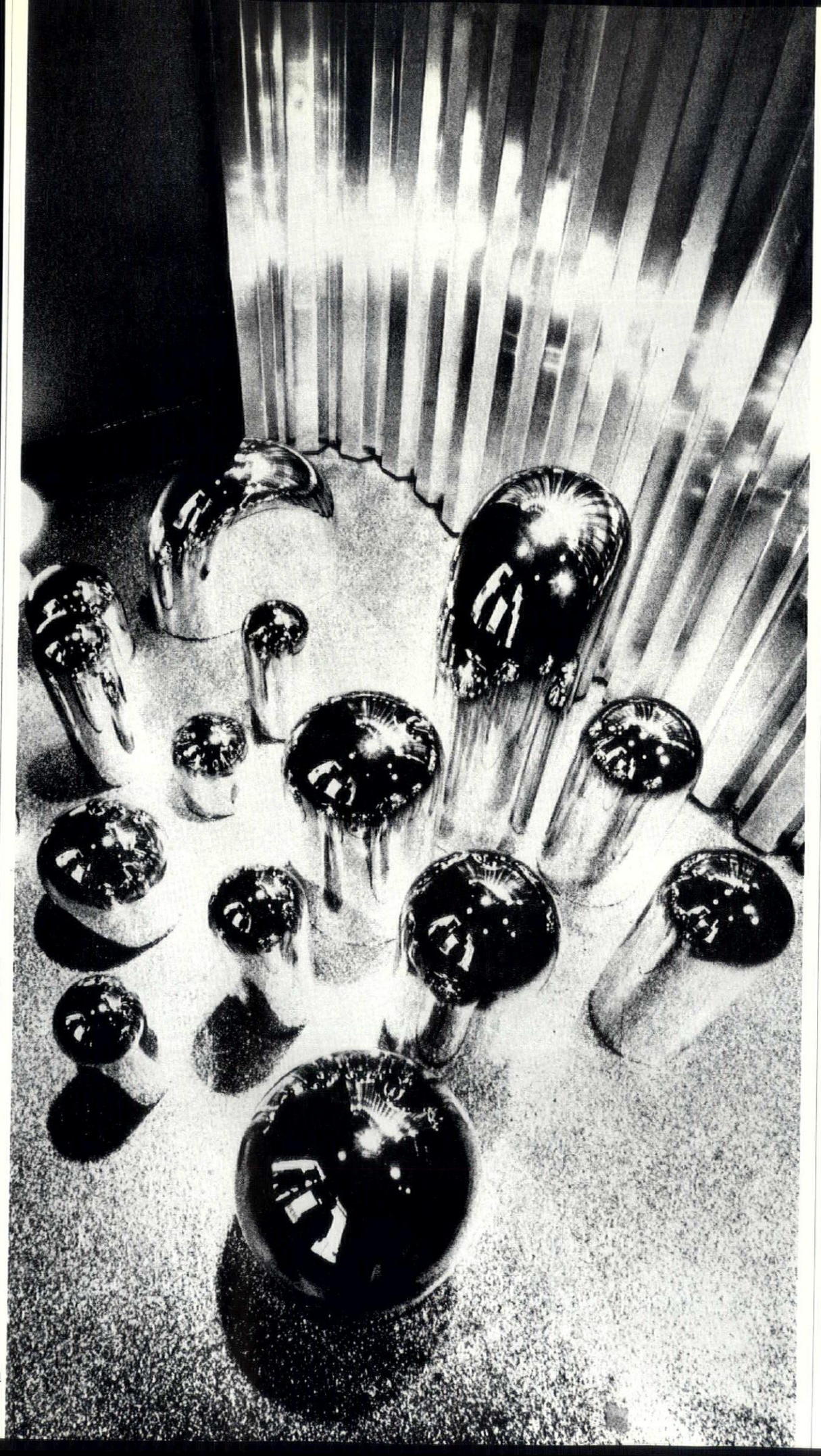
[8] Research is needed into a viable economic alternative to stonework, possibly locally manufactured concrete blocks which could provide the same masculine scale as the original stone.

[9] In fact, a policy of infill is badly needed throughout the islands. As it is, new land is always taken for development while the centres of villages and towns decay.

[10] The Town Plan showed an area around the fort as open space, an intention scuppered by the council when they allowed the Fishermen's Mission to be built on the north side



23



1

ID
INTERIOR DESIGN

119 Designer's showroom, Kensington, London
Designer: Barney Broadbent

121 Airways office and showroom, Westminster, London
Architect: K Awni

123 Sheet and panel shop fronts

125 A choice of chairs

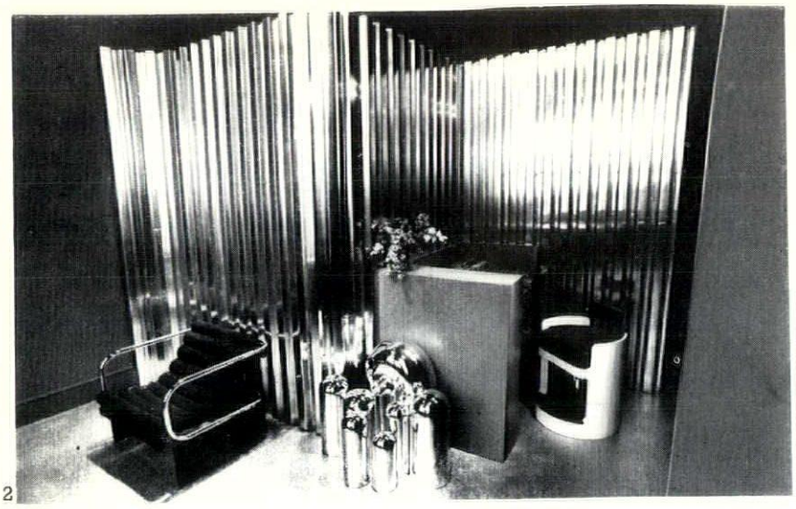
129 Furniture in the Management Centre, Oxford
Designer: John Makepeace

Designer's showroom Kensington, London

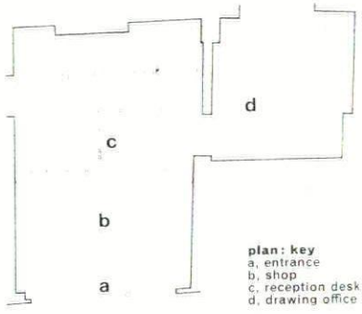
Designer: Barney Broadbent

1, the floor—aluminium chippings in clear polyurethane—provides an effective surface for the display of objects such as these silvered Victorian glass domes. The corrugated aluminium screen behind is made from standard ICI external cladding.

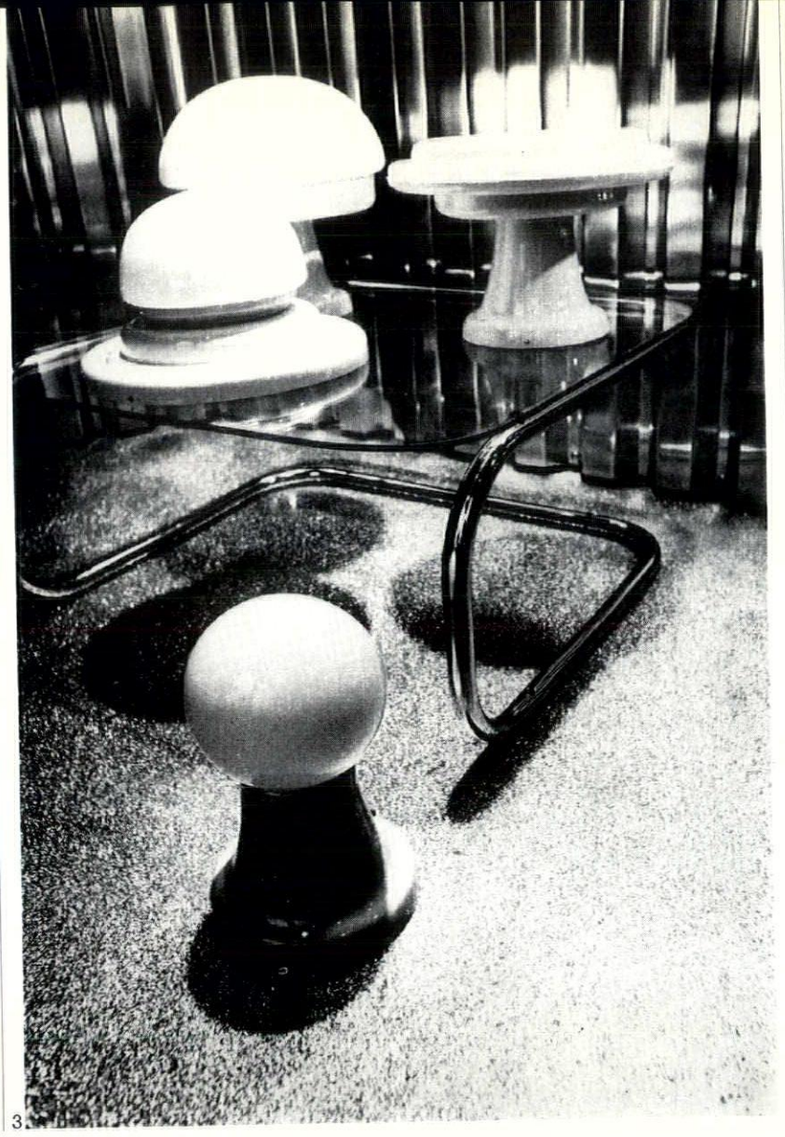
Photographs by Tim Street-Porter

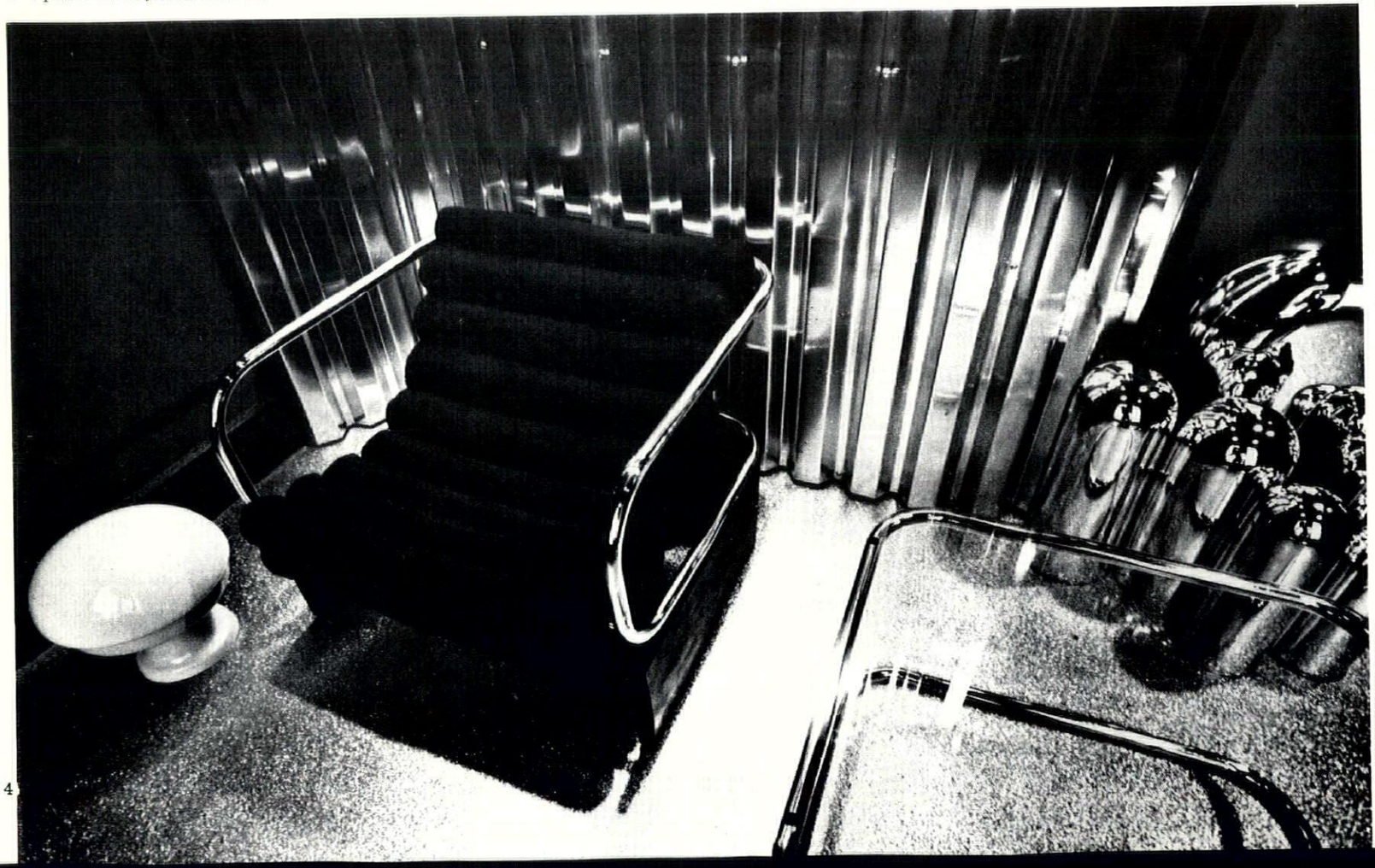


This small showroom for contract and domestic design depends almost entirely for its effect on exhibits. These may include at any one time chairs, tables, light fittings and attractive gimmicks like the silvered Victorian glass domes illustrated here. A ground-floor room has been divided by a curving corrugated aluminium screen which conceals the staircase at the back and leads the eye towards the adjacent drawing office. The sparkling floor, which appears to be wearing well, consists of silver nitro-cellulose flake set in clear polyurethane on plywood. The bright floor and screen reflect the coloured filters of the adjustable spotlights on the ceiling and provide a sharp contrast to the matt-painted slate-colour wall and ceiling surfaces (the wall to the drawing office is painted mauve). One cause for regret is the bulky reception desk fitted into the angle of the screen and so detracting from its free-standing character.



2. The aluminium screen in the Kensington showroom, with the reception desk in the angle.
3, 4, tubular furniture by Tim Whitmore and plastic lamps by Charles Merediths are among the designs exhibited.







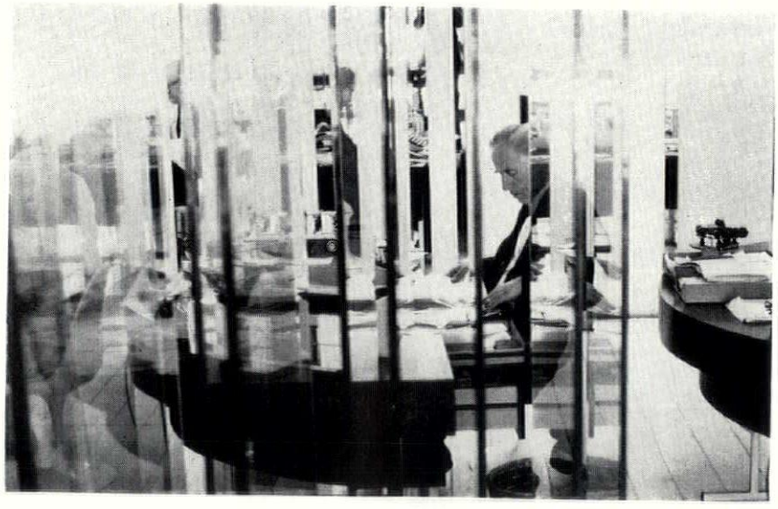
1

Airways office and showrooms, Westminster, London

Architect: K Awni

In contrast to the designer's showroom on the preceeding pages, the new offices for Iraqi Airways in Lower Regent Street display only a handful of ceramics in the window, and the real exhibit is the space itself. Formerly the offices of John Laing and a maze of non-structural partitions, the whole area has been thrown into one and opened up to the street with a front made entirely of plate glass. What structure there was—four free-standing piers—has been faced with mirror, and disappears against an illusory background of mirror-faced walls and storage cupboards.

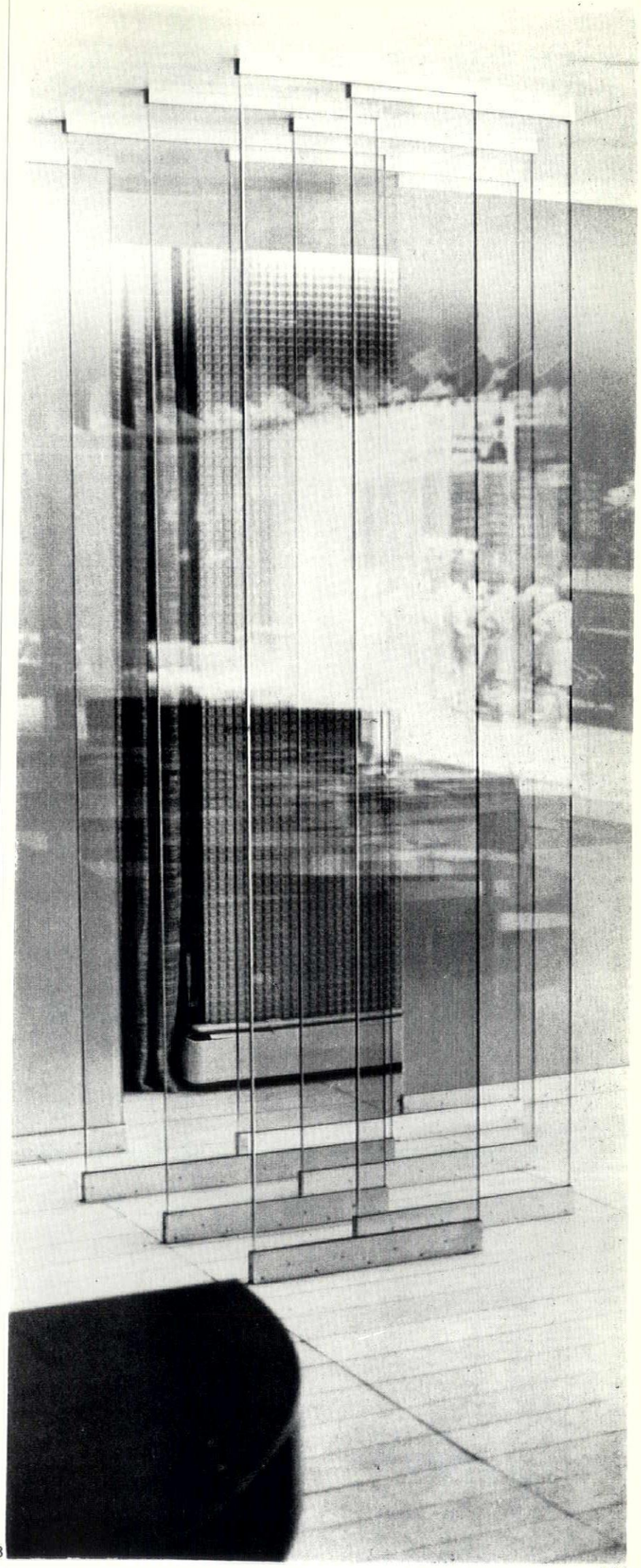
The space has been subdivided into separate areas serving different functions—desks for the Iraqi Airways Company and Iraqi Date Company, display units around the staircase leading to the basement, and seating for waiting customers. The screens between these areas, which make a spectacular contribution to the overall effect of transparency, consist of plate-glass fins. The metal shoe-fixings at top and bottom of these, however, inevitably detract from their poetic quality, and disappointing too, are the derivative ceiling domes of fibreglass which march on endlessly in the reflecting mirrors. One resaon why the ceiling fails to make its contribution is because the silver finish of the cellulose inside the domes (surprisingly of the lustrous car-body type), and the satin-etched aluminium of the flat ceiling, look heavy and dull against the other glittering surfaces, even against the white crystalline marble floor. Other finishes are a silver vinyl wallpaper with a three-dimensional design, and formica laminate imitating rosewood combined with a black vinyl cloth for the purpose-made furniture. There is a basement which contains a small theatre, a room for telexes and space for storage.



2

Photographs by Tim Street-Porter

1. the plate-glass front in Lower Regent Street with the first of a series of fibreglass domes suspended over the entrance.
2. looking through one of the screens of plate-glass fins.
3. one of the glass screens showing the metal shoe fixings. The silver vinyl wallpaper with a three-dimensional design can be seen through the screen. The floor is white crystalline marble from Naxos.



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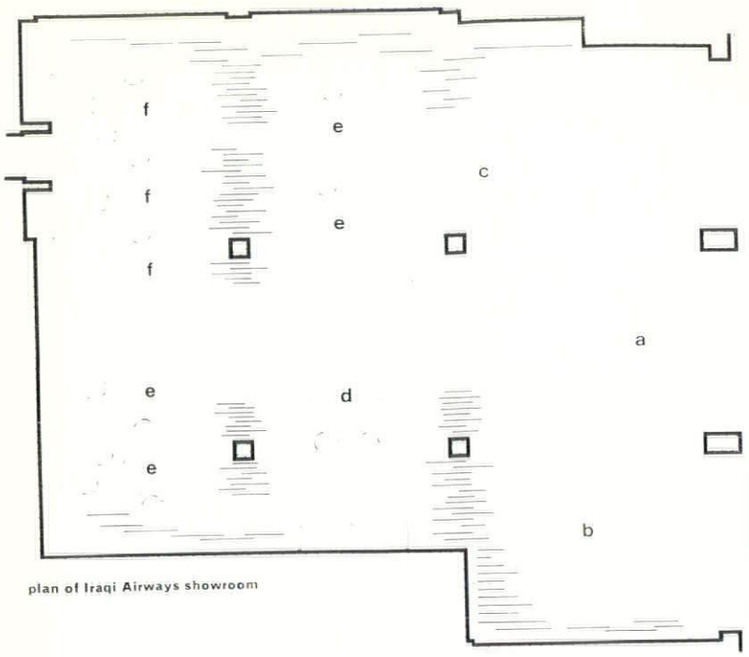


plan of Iraqi Airways showroom

key
a. entrance
b. waiting
c. display unit
d. reception desk
e. Iraqi Airways
f. Iraq Date Co.

4. the display unit around the staircase to the basement in the airways showroom, looking towards the waiting area. The furniture is finished in formica laminate imitating rosewood, and black vinyl cloth.

5. The satin-etched aluminium ceiling of crenellated section is cut to modular dimensions which coincide with the joints in the marble floor. The silver fibreglass domes, which reflect in the mirror walls, incorporate small lights and are cellulose-finished to a car body standard.



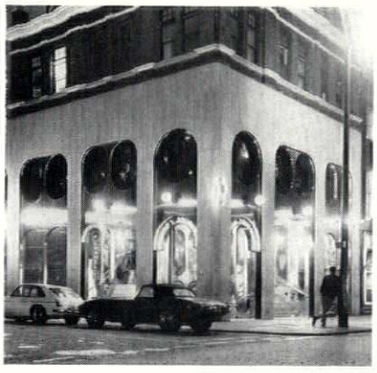
4



5

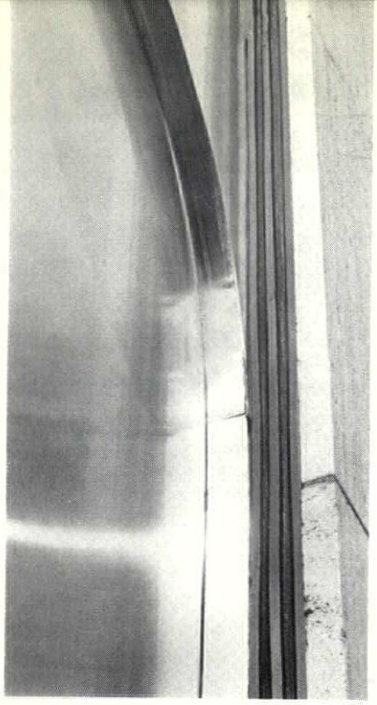
Sheet and panel shop fronts

The use of sheet or panel facing materials on shop fronts, requiring precision detailing, has been common practice for some years. The three examples shown here, in London, New York and Vienna, explore a common design language but different methods of application.
Garnett, Cloughley and Blakemore's front to the Chelsea Drug Store is conceived on three planes, travertine, stainless steel and stainless steel or glass. The facing material is consistently thought of in two-dimensional terms, the gap between each plane being designed to take a grooved fibrous-plaster section, easily adaptable to the varying depth of the recess and painted black to accentuate the different planes. In construction, though, the recess between the middle and back plane was lined in stainless steel—a less logical but probably better-looking solution. The three-dimensional problem of bending the sheet over a right-angle on a curve is avoided by the use of separate sheets for the facing and recess, the two sheets coming together at the corner and producing some unsatisfactory effects. For the same reason, it has been possible to cut the material to a sharp point where it dies out between the curves and the travertine. On each arched unit of the façade there is a vertical butt-joint



1-4, the Chelsea Drug Store by Garnett, Cloughley and Blakemore. 2 and 4 show the three planes, travertine, stainless steel, and stainless steel or glass, and 4 also shows the vertical butt joint between two steel sheets. 3 shows the adaptability of the fibrous-plaster section between planes, and two steel sheets coming together at right-angles.

between two sheets. This creates no problem because the sheets are invisibly secured with lugs from behind and firmly pressed on to the timber backing with epoxy-resin glue. The 10-*gauge* (3*mm.*) *FMB quality stainless steel sheet has a* ¾*in. blockboard base material fixed to a softwood frame. Around each arch the sheet is screwed to the backing, the screws being concealed by the fibrous plaster section. Alan Buchsbaum's Paper Poppy shop in East* 13 *Street, New York* (*see also World, AR February* 1969) *consists of two square windows at different levels joined by a flat design of porcelain-enamelled steel panels*



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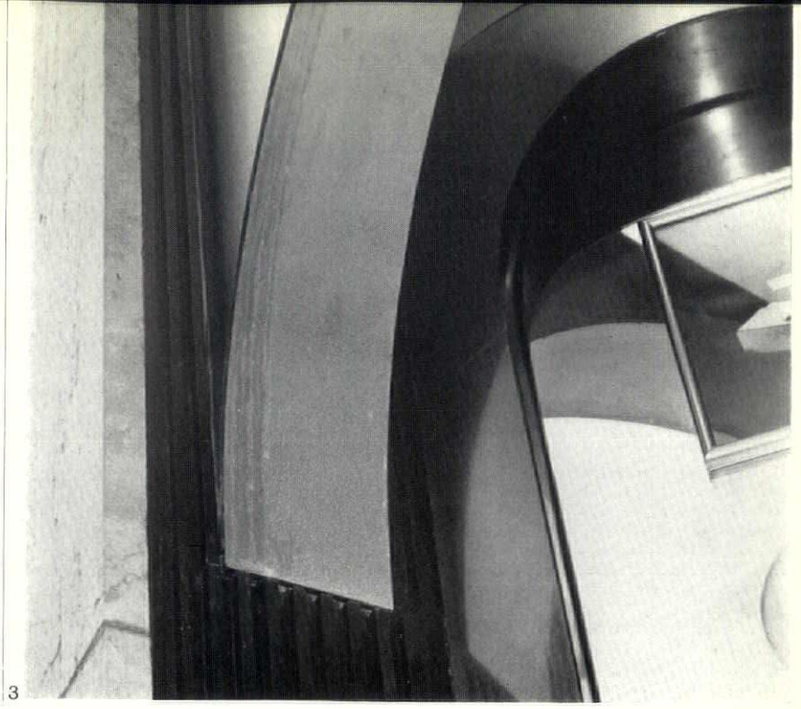

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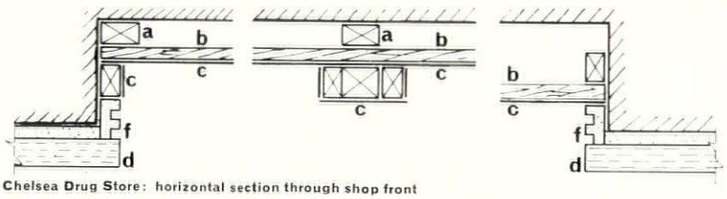
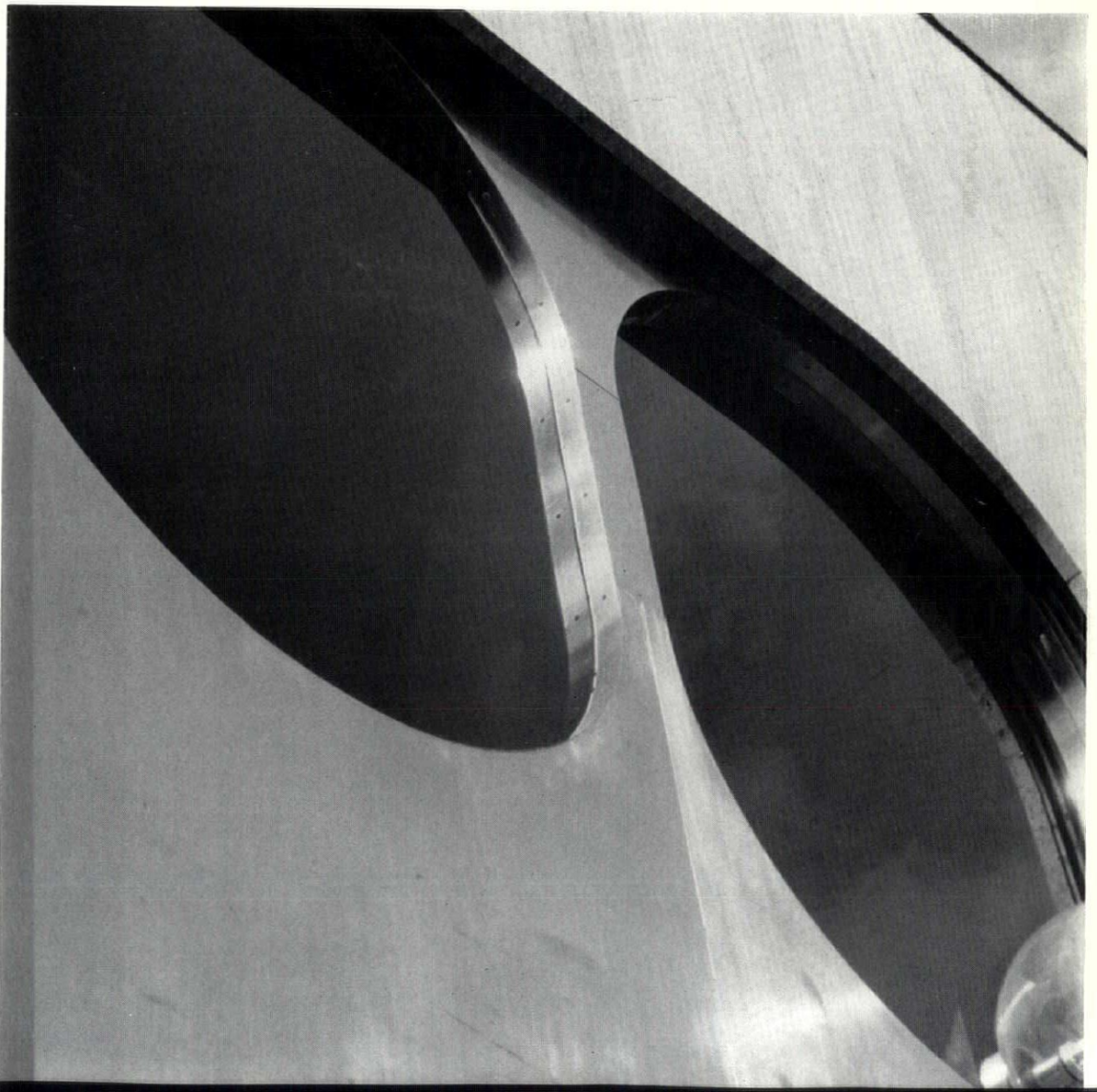


Chelsea Drug Store: horizontal section through shop front

key
a, s.w. framing
b, ¾in blockboard
c, stainless steel facing
d, 1½in travertine
e, glass
f, fibrous plaster section
g, window frame



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that wraps around an arched door-opening. The panels are in two colours, red and black, and no two panels are alike. As the effect depends largely on a linear pattern, the joint between panels is emphasised by the use of aluminium cover-beads, both where two panels butt and where they meet at right-angles. What is not clear is why the corner detail around window openings could not have been made in a single panel (i.e. without a joint, which must always remain vulnerable), considering that each panel was purpose-made. But the real problem of the joint comes with the curved panels, where a hand-operated crimping machine had to be used to cut triangular pieces out of the cover-bead to make it bend to the desired curve. The base material consists of plywood on a timber frame, the plywood being used to get over the problem of providing fixing for the elaborate panel shapes rather than as a backing for panels which are stable in themselves.

Hans Hollein's Retti candle shop in Vienna has a front clad entirely in 2mm. aluminium sheet which has been carefully polished (there is a special drawing to indicate the direction the polishing must take on each surface) and then anodised. Admittedly costing more than the other jobs, the detailing here is impeccable and in a different class. As before, the sheets are butt-joined on the face, but are bent round corners even on the curve, so that there are no exposed edges. This produces a wrapped-up effect, and gives the deeply penetrating 'key-hole' a strong three-dimensional form accentuated by the design of the display windows on either side. There is no continuous backing panel. Sometimes, when on a curve, the sheets are self-bearing; more often there is a steel or aluminium sub-structure and a system of fasteners for those parts, like the outside, which are most likely to expand and contract. Surprisingly enough no special provision was made at the Chelsea Drug Store for movement; and there has been none. But at the same architects' Albrizzi shop the perspex panel had to be shaved down after buckling. At the Retti shop the sheet was stuck to the subframe or fasteners with epoxy-resin glue, though screws were used where accessibility was needed or where they were visually acceptable, as on the entrance door.

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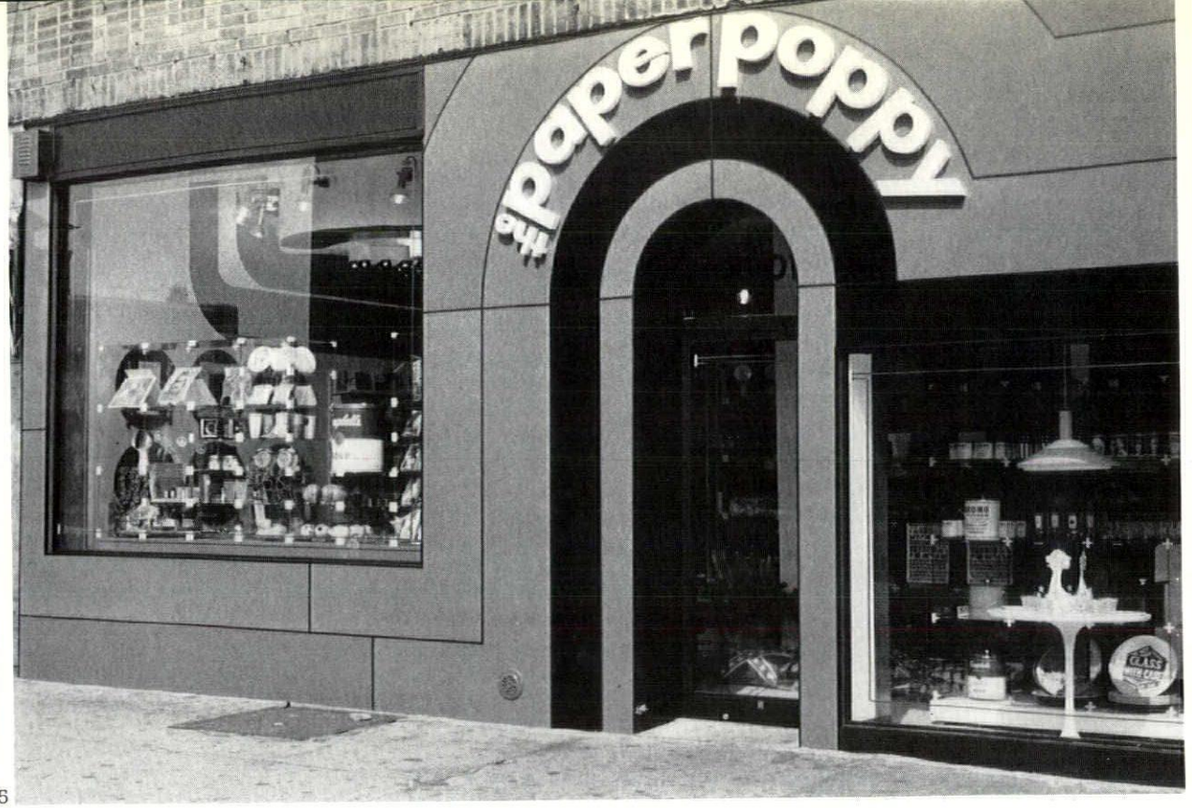

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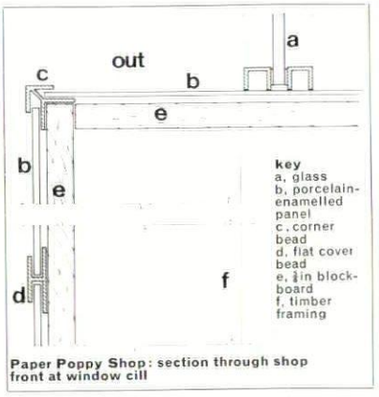
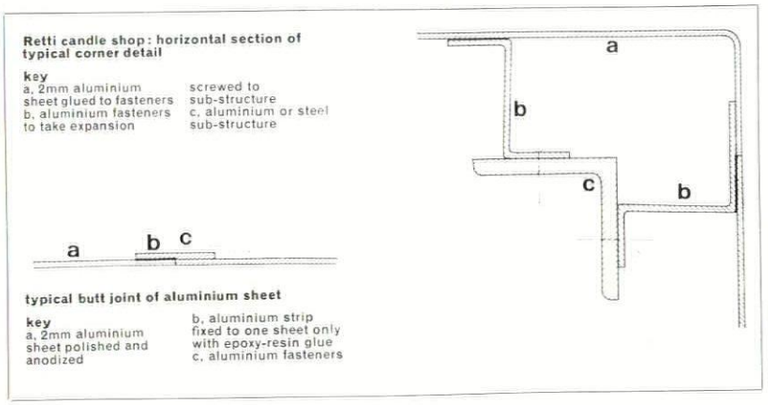
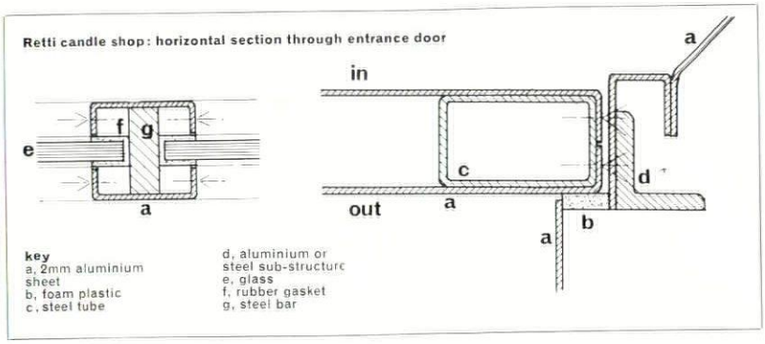


Paper Poppy Shop: section through shop front at window cill

5, Alan Buchsbaum's Paper Poppy shop in New York. The facing material is black and red porcelain-enamelled steel panels with aluminium cover-beads over the joints.

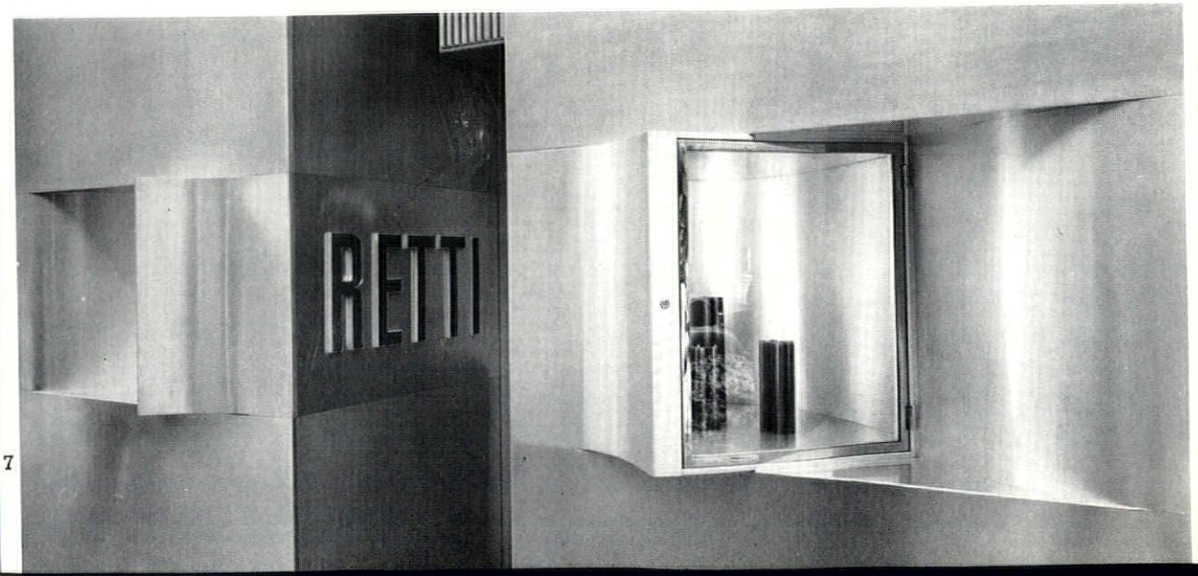




6, 7, Hans Hollein's Retti candle shop in Vienna. The aluminium sheet is bent round corners to produce a wrapped-up effect.



6



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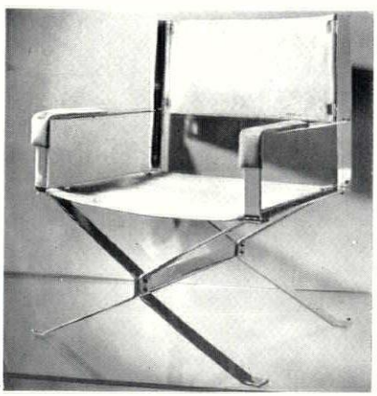
A choice of chairs

Every year new chair designs are put into production, yet few of these can claim to be more than a reinterpretation of one of the classic models. Even the tubular steel chair of the 'twenties owes a great deal to earlier developments in bentwood on the one hand, and to campaign furniture like the folding camp-chair on the other. What was new, at least with Mies's 1926 *MR chairs, was the cantilever, which made full use of both the strength and the resilience characteristic of the material. Both Breuer's* 1925 *lounge chair and Le Corbusier's* 1929 siège à dossier basculant *have a strong safari look with their slung canvas and leather seats, backs and arms. Some of the joints of Breuer's chair are even articulated like a folding camp-chair. Of course neither chair folds, and only Le Corbusier's has a pivoting backrest. Not surprisingly, real safari furniture was revived in the early 'thirties by Mogens Koch in Denmark, and has continued to exert its influence, often with misguided results. The new Albrizzi armchair, for instance, looks light and elegant, but is surprisingly heavy and difficult to move. The Finnish Pulkka chair designed by Ilmari Lappalainen, has an aluminium frame which acts like a sledge and so slides about easily. With its upholstered and anthropometrically shaped seat and back it is also extremely*



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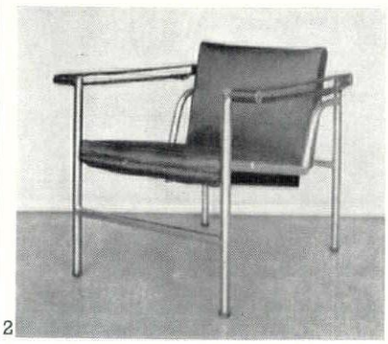

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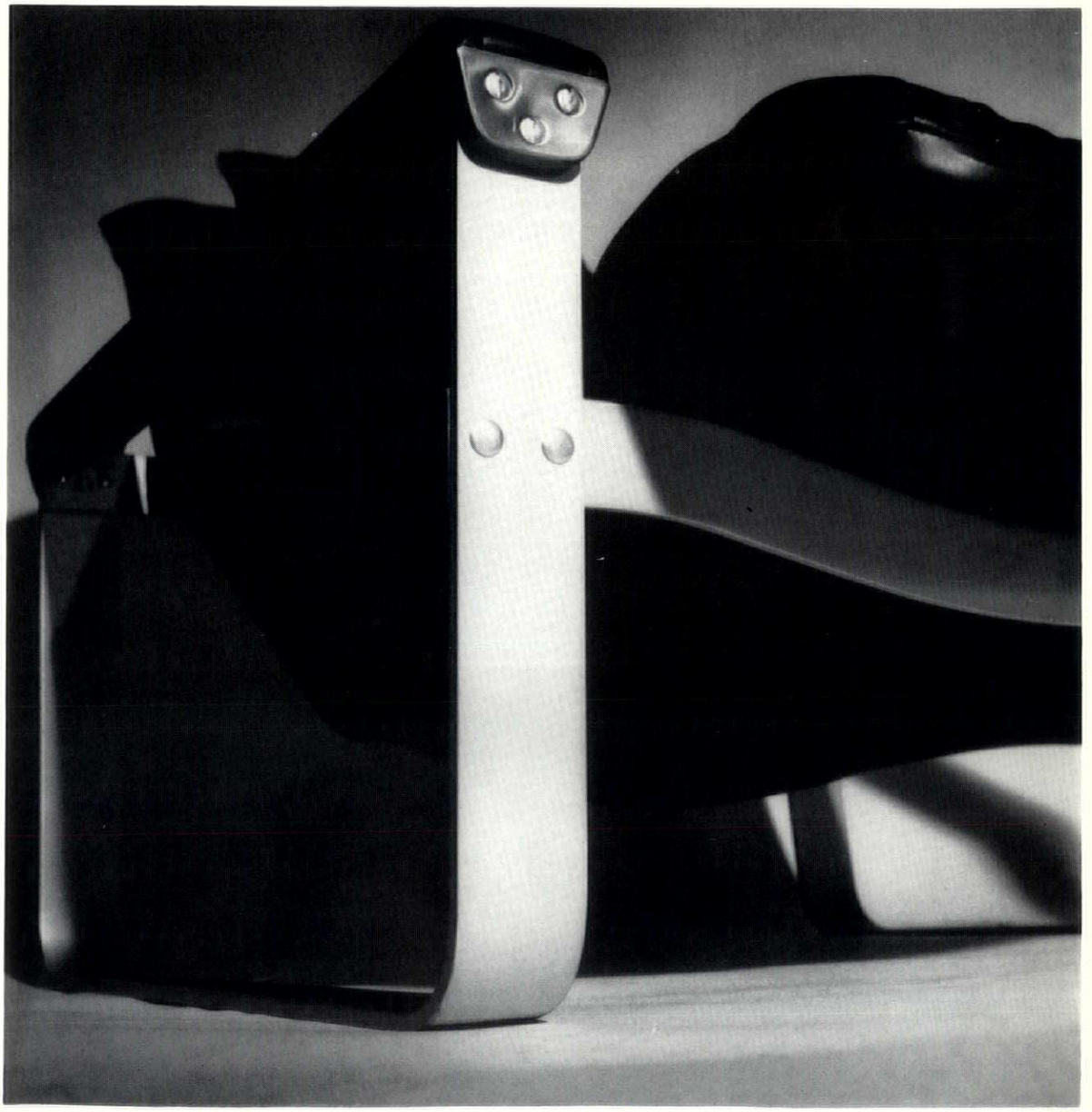

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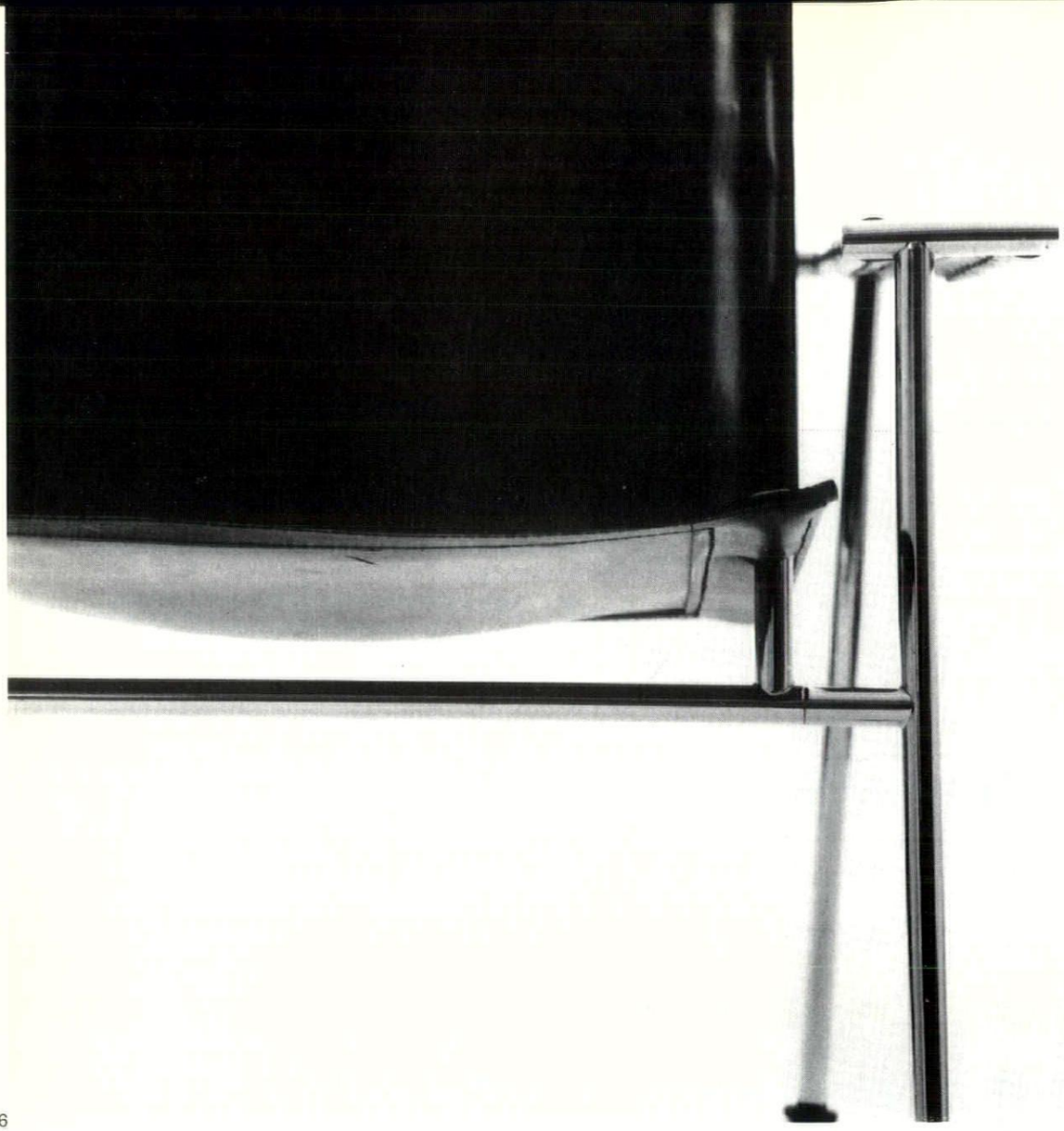
1, the new Albrizzi armchair. A suede seat and back are slung from a chrome frame.
2, Le Corbusier's 1929 tubular steel chair with pivoting backrest, available from Aram Designs.
3, Asko's Pulkka chair, designed by Ilmari Lappalainen and available through Heal and Son.
4, the Pulkka chair showing the aluminium frame and the rivetted joints.



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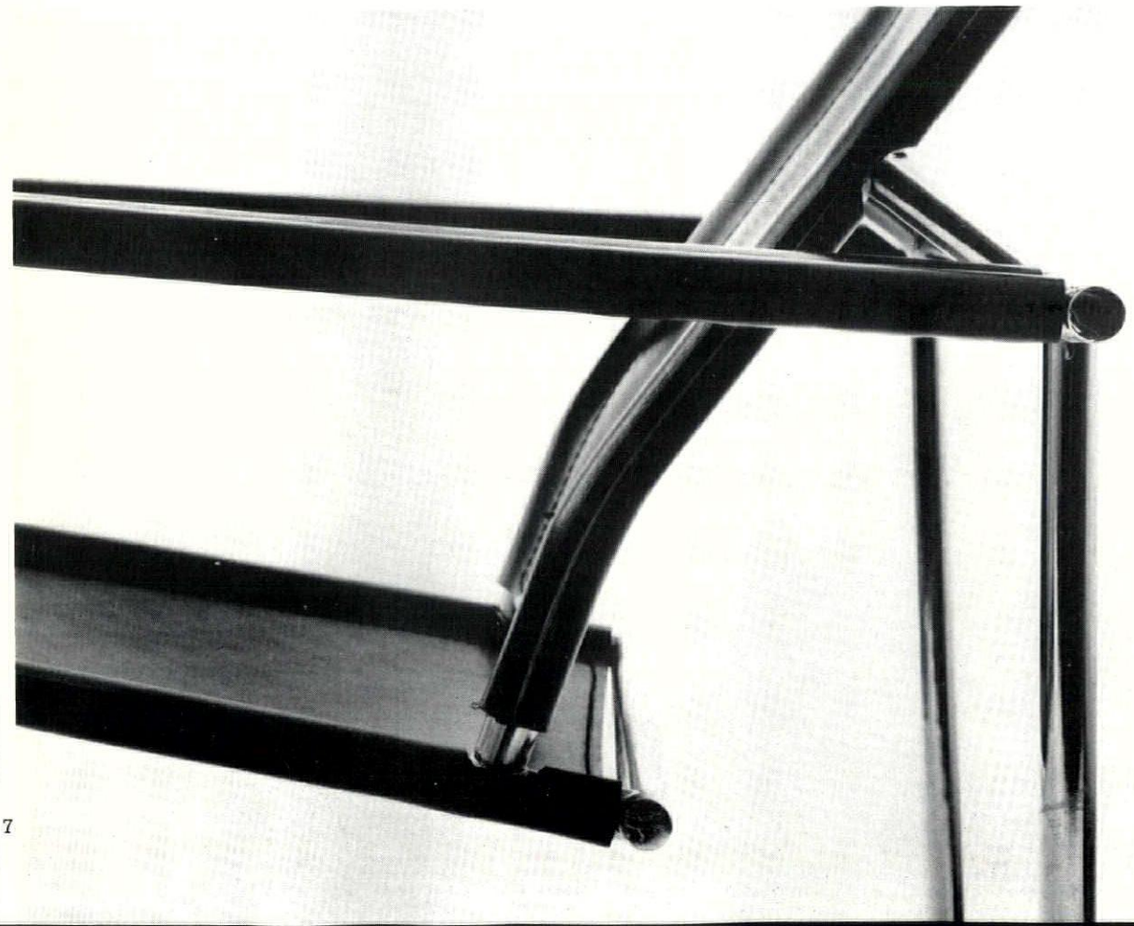

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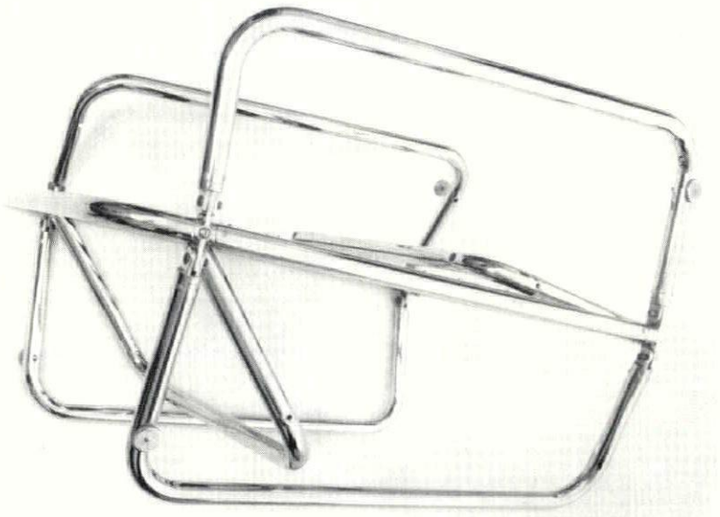
5, Lepokalusto's Casino chair, designed by Yrjö Kukkapuro and available from Liberty and Co.
6, 7, the Casino chair showing the welded joints of the chrome tubular steel frame and the slung leather seat and back.
8, the basic frame of Race's 1966 FXT1 chair, designed by Nicholas Frewing.

comfortable. The tubular steel frame in Kukkapuro's Casino chair, also from Finland, consists mainly of straight sections, like Le Corbusier's 1929 *chair, put together like a wood frame except that the joints are welded. In both chairs the possibilities of bending tubular steel are barely exploited.*
An example of a chair whose resemblance to its progenitor goes deeper than mere appearances is the 1966 *Race FXT1 chair designed by Nicholas Frewing. A frame of bent laminated timber (with a strong formal likeness to the aluminium frame of the Pulkka chair), and a seat and back of steel mesh with a high-tensile steel surround, give it resilience, strength and lightness. A hook-together principle enables the chair to be assembled or taken apart very quickly and without the use of tools. A radical approach to flexibility and mobility can be seen in Robin Moore Ede's comfortable armchair prototype of* 1963 *which no manufacturer has yet had the courage to put into production. Its upholstery unbuttons, its tubular steel frame folds up and the whole packs away into a cardboard box.*
Another classic design and progenitor was Mies's 1929 *Barcelona chair. Its simple lines, uncomplicated by arms, and the absence of articulation in the joints of its stainless steel frame, stand in sharp contrast to the restlessness and constructed look of the safari type. The high cost of the Barcelona type has limited the number of imitators. Olivier Mourgue has tried his hand in a chair for Airborne, and Arne Norell in Sweden has designed a*



9



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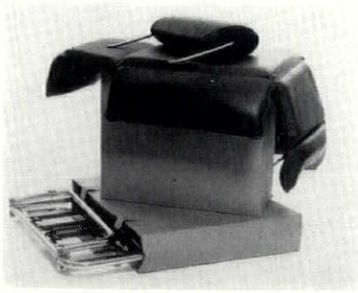

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9, Robin Moore Ede's armchair prototype of 1963. The upholstery unbuttons, the frame folds up, 10, and the whole packs into two neat cardboard boxes, 11.

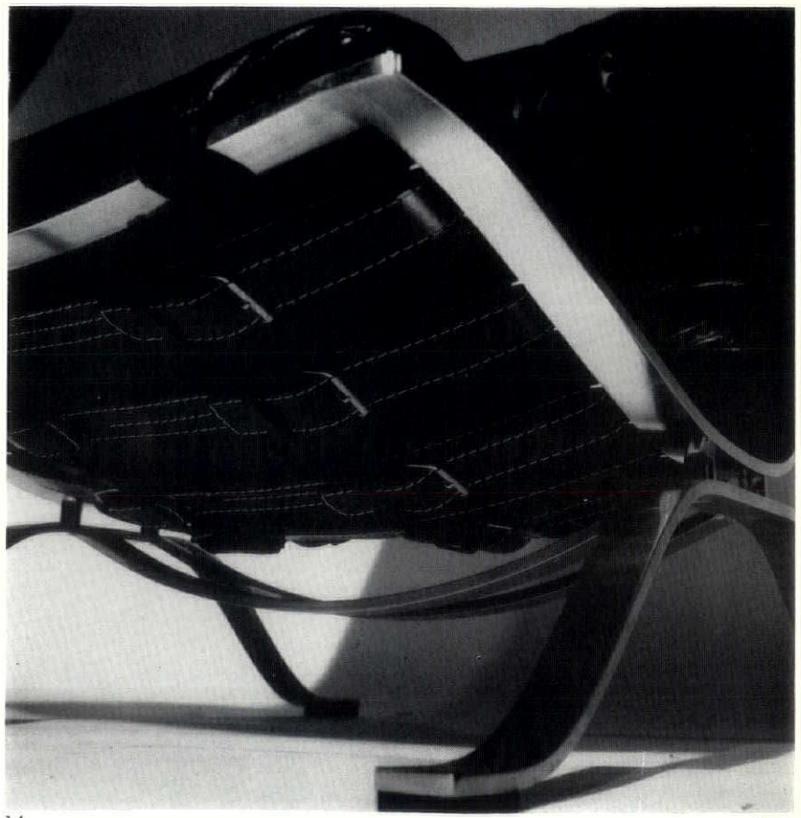
12, 13, 14, designed by Arne Norell, this Swedish chair is available from Heal and Son. A chrome frame and adjustable leather straps support water-buffalo calf or oxhide upholstery.



12

13





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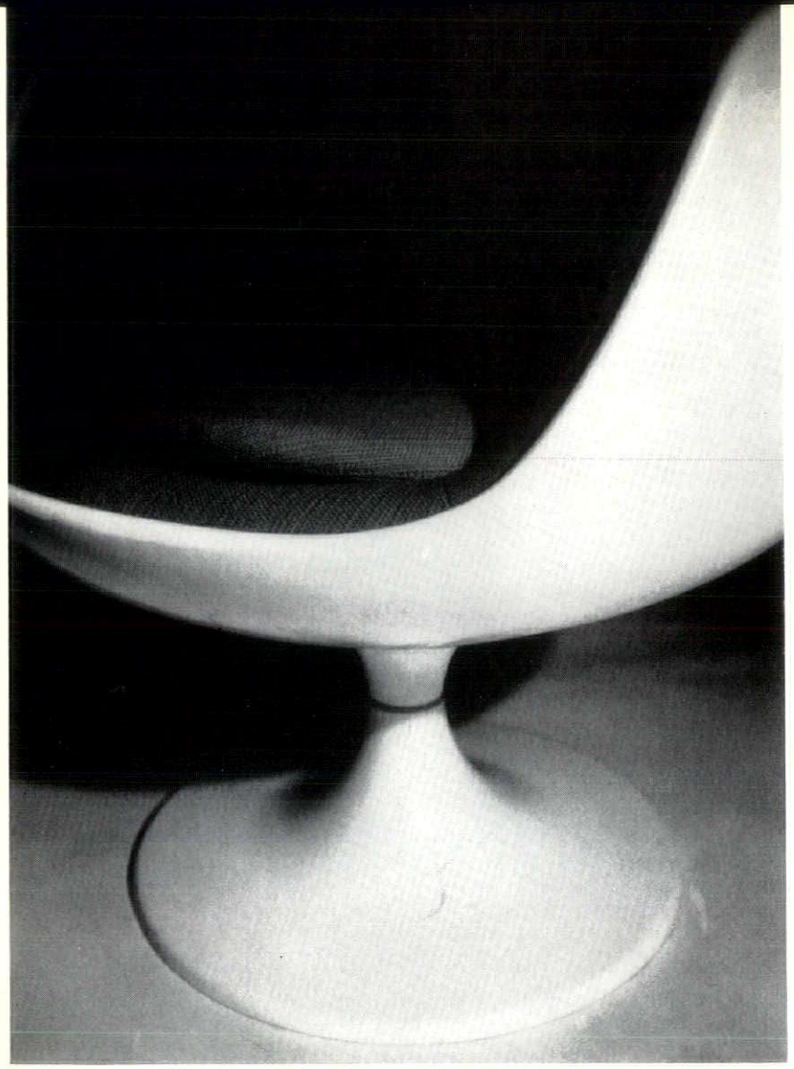

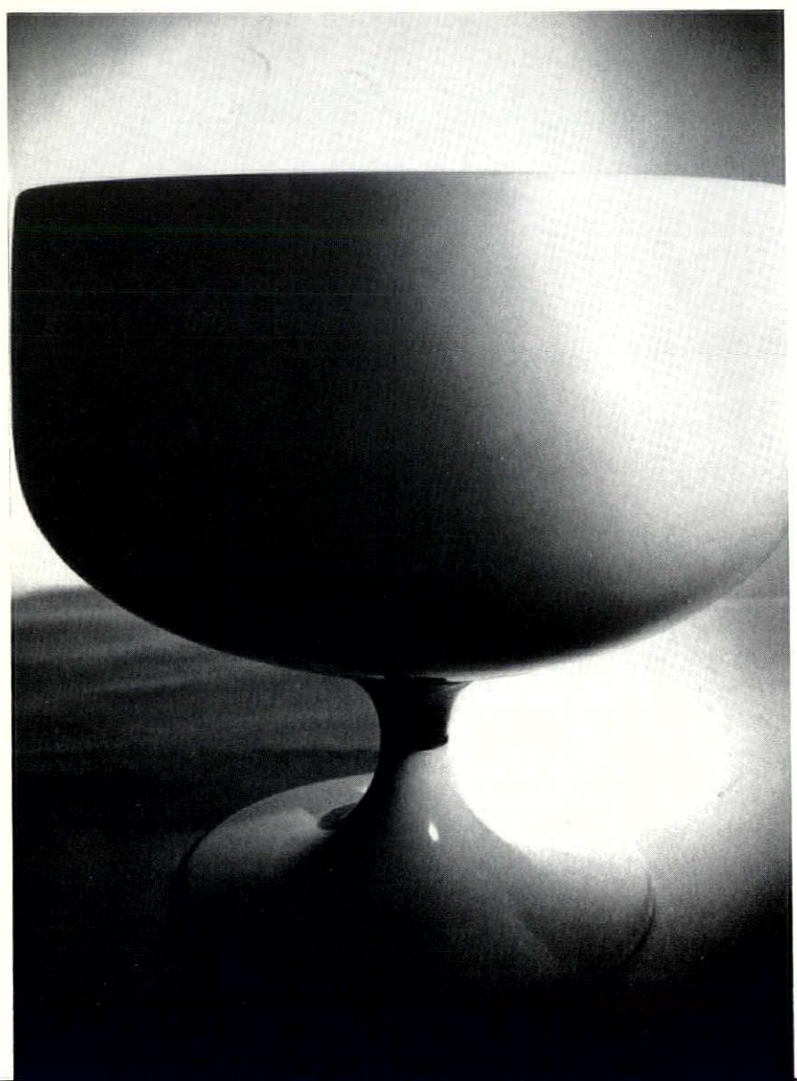



15, 16, Asko's VSOP fibreglass chair, designed by Eero Aarnio and available from Heal and Son.
17, 18, a Norwegian bent plywood chair, part of a new range of contract furniture, designed by Mona Kinn for Dokka-Möbler and available from Holloway White Allom.

chair which is less elegant but more comfortable, with softer upholstery and a back and seat made in one piece. Like Mies, Norell adheres to the cantilever principle, thus exploiting fully the springiness of the steel bar. Although Mies experimented with conchoidal plastic forms in 1946, *and Eames designed a fibreglass swivel chair on a single-pedestal base for Herman Miller in* 1950, *it was Saarinen who first made a synthesis of the two parts in his Tulip chairs of* 1953. *Saarinen's base, which had to be in aluminium for reasons of strength, continues to be made of light metal in the many similar chairs that have been designed since, even in Kukkapuro's much stouter versions (with one exception) for Haimi, now available in England through Conran. Another Finnish design by Eero Aarnio, the VSOP chair for Asko, follows the Tulip chair more closely, though without Saarinen's dancing curves. The upholstery regrettably does not turn over the edge, so that sitting in the chair one's hands are made to run along an edge of upholstery and fibreglass.*

The structural use of bent plywood is a modern innovation, and the new Norwegian chair designed by Mona Kinn for Dokka-Möbler may at first sight seem to owe nothing to older types. It certainly owes little to Aalto's chairs, most of which adopt the cantilever principle to make use of the natural springiness of the material. But the similarity to the seventeenth-century X chair is more than skin-deep. Like the earlier chair it consists basically of three parts, an upward curve for the seat, a downward curve for the base and a flat panel for the back. But unlike the earlier chair, the seat and base consist of identical conical sections simply reversed. These provide a tilt in the seat and so the depth at the back needed for comfort.

SHERBAN CANTACUZINO



Furniture in the Management Centre, Oxford

Designer: John Makepeace

Elaborate built-in furniture was not part of the architects' brief in a building which had to remain flexible for change and open-ended for expansion (see pages 136-140 *of this issue, on which the building, by Ahrends, Burton & Koralek, is illustrated). The students' rooms were nevertheless considered fixed quantities, and John Makepeace, who had been commissioned to design and make the furniture for these rooms, developed six standard built-in items and selected four colour-schemes in collaboration with the architects. Conscious of the positive quality of the two-level space, Makepeace has kept the furniture as simple as possible, leaving the architect to make his statement undisturbed. Similarly the colour-schemes, related for identification purposes to four distinctive stair-carpet colours, consist each of only two closely related tones—orange and yellow, burnt ochre and cherry, purple and navy, sand and cream. These colours, which are limited to the sofa and cushion fabric and to the* duvet *and pillow covers of the bed, are always set against the brown felt carpet and white-painted block walls. The relationship of sleeping to living area varies (see section on page* 139*). When the lower level forms the sleeping area, the sofa acts as balustrade on the higher level. But when the sleeping area is on the upper level, a loose bed in the same position, with its metal under-frame exposed, is a much less satisfactory solution.*



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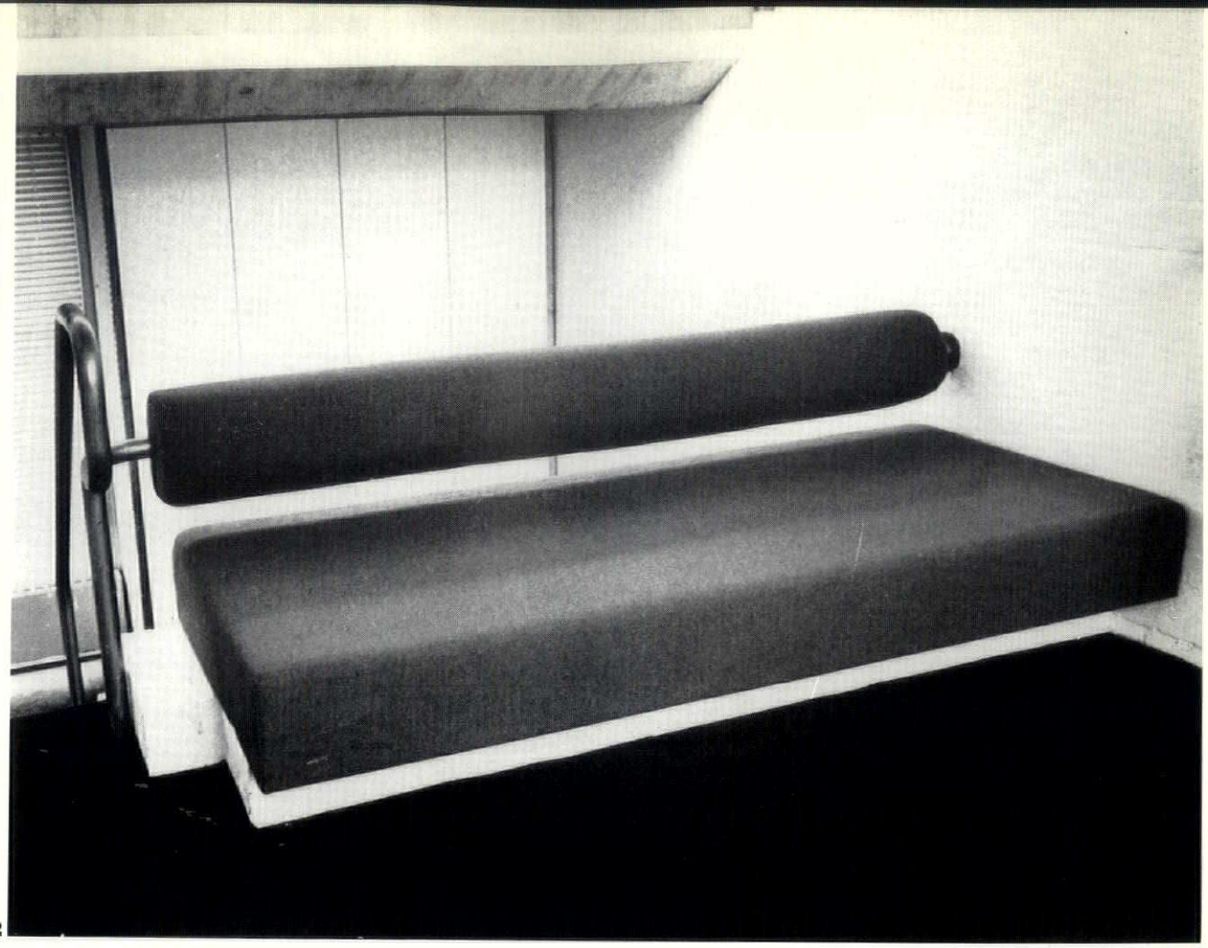

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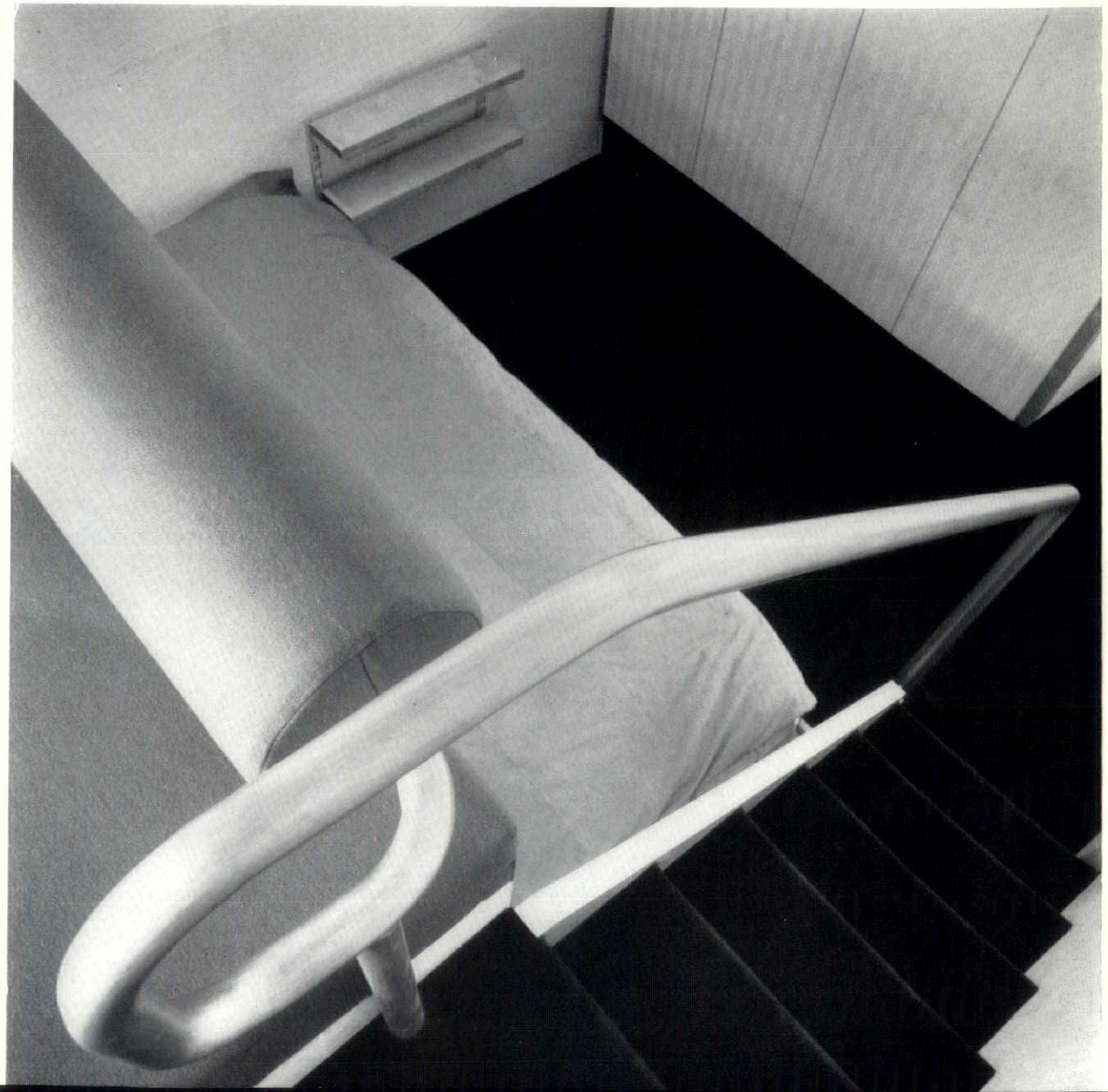

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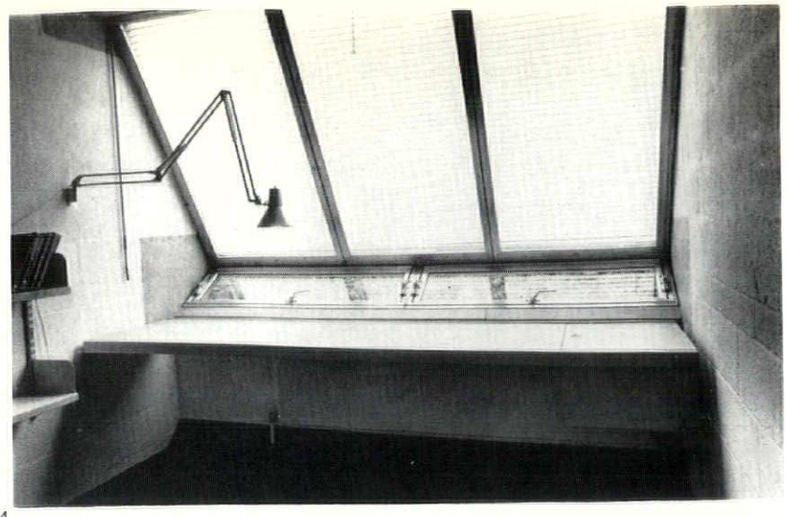
1, a student's room with the sleeping area at the lower level.
2, the sofa consists of a hardwood frame supporting Pirelli webbing and faced in chip-board. Top and sides are covered in polyether foam and upholstered in a wool-fibro fabric by Margo which has been scotch-guarded—a silicone treatment which makes cleaning easy. The bolster back, which covers the steel pipe, is laminated foam over which a sleeve of the same fabric zips tight.
3, looking down to the sleeping area which contains a bed, a Spur shelf unit as bed-side table and a wardrobe with two pairs of sliding-folding doors.

4, 5, the desk is always under the sloping window and fills the whole of one wall. The presence of rough block walls has meant that smooth furniture and soft upholstery surfaces have had to be kept away, and the desk is supported on metal wall-brackets which provide the necessary gap. The desk is edged at front and back with solid sycamore, and the top, part of which hinges open to reveal a filing cabinet (seen in 5), is lined in a cream vinyl cloth. This wrap-around solution, which is also used for the door of the wardrobe, avoids the problem of edging. But the edge itself, where exposed (as in the filing cabinet under the desk), is inclined to show through the vinyl as a result of normal movement.
6, a built-in bed creates problems of bed-making. The use of a *duvet* which hangs loose (instead of tucked-in blankets) will not appeal to everyone. The angle-iron frame of the bed is suspended at each end on wall brackets (invisible when the bed is made) which allow a gap between bed and wall face, and on the far side the bed is kept 4in. away from the wall. The tactile problem of rough wall surfaces in small rooms is well illustrated by an area behind the pillow which has been ground to a smoother surface. An interesting detail of the bed construction is the loose ash slats (connected by nylon cording and clear p.v.c. spacers), which provide additional resilience for the 5in. polyether foam mattress.



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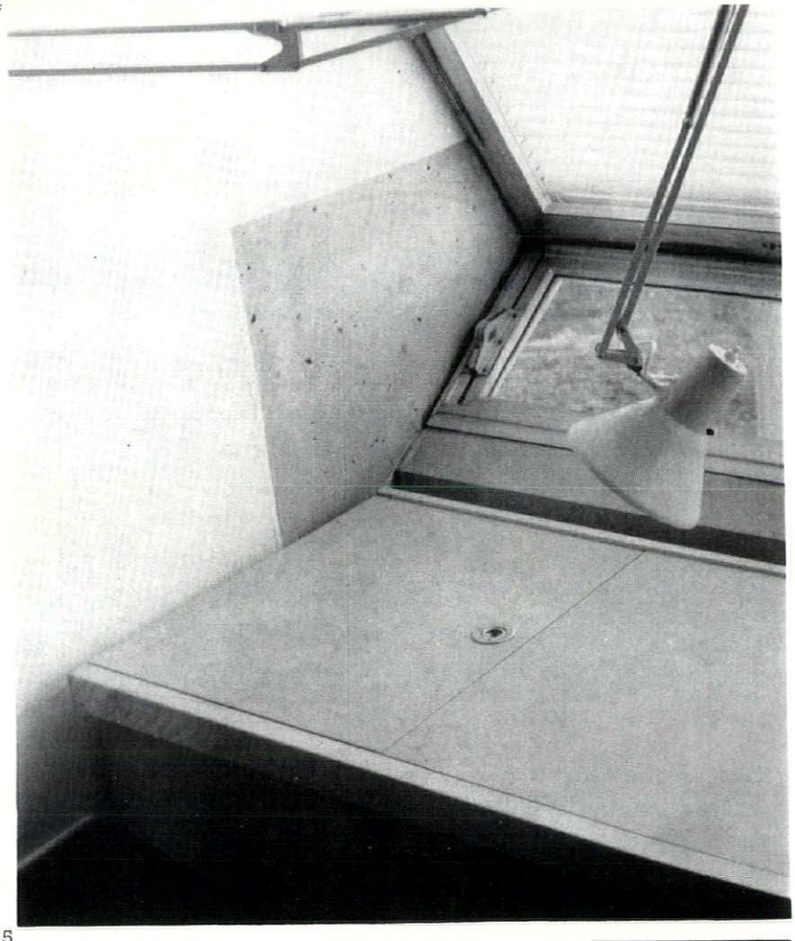

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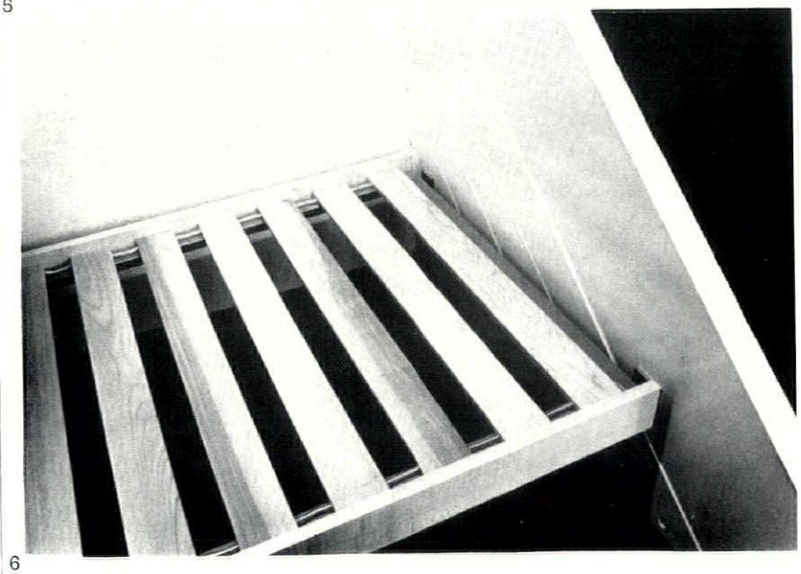


6

ROME AND THE VILLA PAMPHILJ

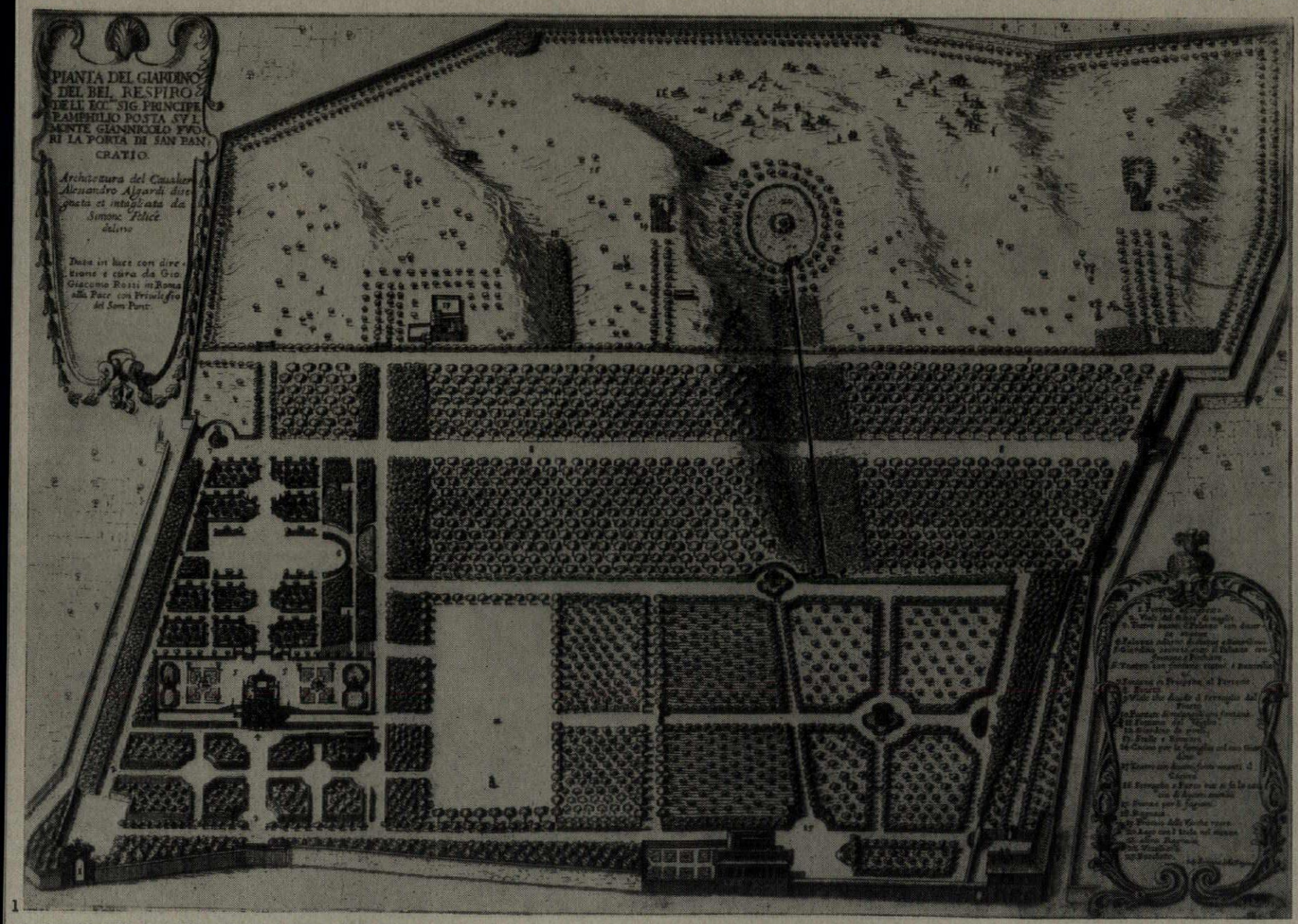
The last of the old villa gardens of Rome to have survived almost in its entirety—the Villa Pamphilj—is threatened with municipalization. In this article GEORGINA MASSON, author of 'Italian Gardens', recounts the story of this historic park and its gardens and fountains, describes its unique charms and discusses the problem of its future.

In the twelfth century an Arab poet described the parks and gardens surrounding the city of Palermo as resembling 'a necklace of jewels around the throat of a beautiful maiden'; the poetic phrase would have applied equally to Rome before 1870. Photographs taken in that year show the forces of United Italy encamped before the walls in a landscape that might have been drawn by Hubert Robert, while the breach beside the Porta Pia reveals groves of pine and cypress stretching far within the city. Thus the historic Porta Pia breach did more than make Rome the capital of the new Italy, it presented contemporary planners with the unique opportunity of creating a capital city whose monumental centre was surrounded by an existing green belt of unsurpassed magnificence.

The story of repeated failures to seize this opportunity has been told in Italo Insolera's *Roma Moderna* (Turin 1962). It can also be seen in the dismal stereotyped quarters of Rome which arose on the sites of the Villa Ludovisi (the Via Veneto area), the Villa Montalto-Negroni (the Piazza Vittorio Emanuele II area) and the Villa Giustiniani—Massimo (the St. John Lateran area), to mention only a few. To this sad story of nineteenth-century outrage our own has made its contribution, already castigated in 1954 by G. E. Kidder Smith as a 'soulless series of residential slums. They are a disgrace to the country, its planners, its architects and its people.'

Thus today only five old Roman villa gardens survive in their entirety: the Villa Medici, as the French Academy, the Villa Sciarra, an American gift to the city, the completely transformed Villa Mattei (now Celimontana) and the Villa Borghese; though, with the exception of the enclosed Giardino del Lago, this last is now better known as a car park and a haunt of prostitutes. The only great Roman villa to have survived almost in its entirety is fortunately the greatest of them all, the Villa Pamphilj, thanks to the rare sense of duty of its late owner, Prince Filippo Andrea VI Doria Pamphilj.

The Villa Pamphilj and its *casino d'allegrezze* were designed and laid out between 1644-1652 by Alessandro Algardi and his assistant, Giovanni Francesco Grimaldi, for Innocent X's nephew Prince Camillo Pamphilj, as a vast extension of an existing family property. This original property already possessed a dwelling house, now known as the Villa Vecchia, and the terms of Algardi's commission were limited to the creation of a casino for receptions and vast pleasure grounds intended for entertainment and for hunting and shooting parties. A print published by Gian Giacomo De Rossi in 1675 shows the villa as it actually was at that date and not, as it appears in Barrière's engravings of 1653-59, with Algardi's complete project which was never executed in its entirety. In De Rossi's publica-



1

1, *plan of the Villa Pamphilj, published in* 1675 *by G. De Rossi.*

tion nearly half the area of the villa is seen laid out as a hunting enclosure, quite a common feature in great Italian Renaissance country villas, but Villa Pamphilj appears to have been unique in this aspect among suburban ones, a fact which accounted for its extraordinary size. The skill with which Algardi related this stretch of wild country to the highly sophisticated pleasure gardens surrounding the casino, made his layout an object-lesson of the Baroque conception of a garden's gradual progression from the cultivated to the wild, as opposed to the Renaissance one of an enclosed area in which formality demonstrated man's mastery over nature.

Algardi's Casino

Right from the first in the Villa Pamphilj the park took pride of place over any building. At the principal entrance on the Via Aurelia the seventeenth-century visitor found himself looking down a long ilex avenue to the distant Fountain of the Dolphins, silhouetted against a rural landscape. This afforded a visual invitation to explore the park and gardens before proceeding to the casino, which was invisible and could only be reached in a carriage by making a sharp turn through the bosco to the right of the gate. From there a drive led to a great terrace, formally planted with hedged plots of trees which provided a background for classical sculpture and framed the approach to the casino on one side and on the other the famous view of the dome of St. Peter's.

The design of this façade of the casino, of which only the central block was completed according to Algardi's plans, recalls that of a Roman Triumphal arch richly decorated with classical reliefs and sculpture, with a typical Roman belvedere rising in the centre of the building. The lavish display of classical sculpture in a Baroque setting, which is the outstanding feature of the casino, was apparently due to the patron's desire thus to make use of part of his extensive collection. Together with stucco exquisitely worked in low relief in the antique style, sculpture also plays a conspicuous part in the interior decoration of the casino. This is unique among Roman ones in having a centralized plan reminiscent of Palladio's Villa Rotonda, with rooms opening off a circular hall which rises to the height of two storeys. These suites of rooms were used for the display of more sculpture and for Prince Pamphilj's collection of pictures, now in the palace in the city, while the belvedere served as a museum and was filled with carved amber, corals and other curiosities.

The supreme attraction of the casino must, however, always have been the magnificent views which it commands over the gardens and park; the principal salons have windows facing in two, or even three, directions. One of a suite of rooms lying below the level of the main entrance affords direct access to the great terrace of the *giardino segreto*, sited directly behind the casino. Here in the seventeenth century and still today, the utmost formality reigns; the terrace resembles an out-of-doors drawing-room furnished with fountains, pools, parterres and sculpture.

Garden Layout

From the terrace of the *giardino segreto*, stairs, flanking the grotto of the Fountain of Venus, lead down to what was originally the *Giardino del Teatro*. Here, although the basic layout was formal, in Pierre de Nolhac's charming phrase 'nature had in part resumed her rights'. The parterres were hedged and later planted with trees, while the fountains were for the most part of rustic stone. Some sculpture, great terracotta urns and potted citrus trees standing on stone pedestals, provided contrasting accents in this otherwise predominantly green garden. The one strikingly formal feature, and that from which the garden took its name, was the theatre—a walled hemisphere cut into the sharply rising land to the west. This was approached by paths bordered on one side by fountains, like the famous terrace in the Villa d'Este. In the theatre itself the decoration of the casino is recalled but in more rustic style; classical reliefs and busts are set in a wall encrusted with pumice stone. The arch in the centre of the theatre leads to two underground rooms. The first is decorated with a trophy of musical instruments and was evidently intended for concerts of chamber music or for an orchestra accompanying theatrical entertainments. As Prince Camillo Pamphilj and his brother Cardinal Benedetto were both librettists, and the latter also a composer, it seems likely that the theatre was really used as such and not simply as a setting for massed banks of rare flowers in pots, as was the case in the *teatro* of the villa Borghese and other Italian gardens.

Continuing his exploration of the villa, the seventeenth-century visitor now had a choice of routes. As still today, he could proceed on foot by one of the several flights of steps leading up the tree-clad slopes flanking the theatre, or he could drive down one of four parallel carriageways to the far western confines of the park. Two of these passed the great open grassy space laid out to the west of the casino, probably for use as a manège. The most northerly drive still exists and, shaded by superb ilex, leads to the Villa Vecchia and beyond, past a fountain with a colossal river god and the old lemon garden, to a charming rustic fountain.

In the seventeenth century the gently downward-sloping land before the Villa Vecchia was laid out with hedged plots of trees traversed by walks which crossed the drives leading from the manège. The whole layout was focussed upon a series of magnificent fountains; these included Bernini's *Fontana della Lumaca* or *della Regina* (originally designed for Piazza Navona) and the fountains of the *Giglio* and *Colomba*—the two last recalling the Pamphilj heraldic dove and lilies. The transition from this semi-formal landscape to the wild country of the hunting preserve was finally accomplished by a vast *pineta*, stretching alongside the preserve practically the whole length of the villa.

The seventeenth-century layout of Villa Pamphilj survived in its basic essentials until 1849, when it became the battlefield of the French forces and Garibaldi's followers during their heroic defence of the Roman Republic. Though not completely devastated, like its eastern neighbour the Villa Corsini, the damage to the villa was so serious as to prevent its owner, Prince Filippo Andrea V Doria Pamphilj, from using it for five years. However, it seems to have been about this time that he bought a large area of land to the west of the villa and in 1854 the Villa Corsini as well.

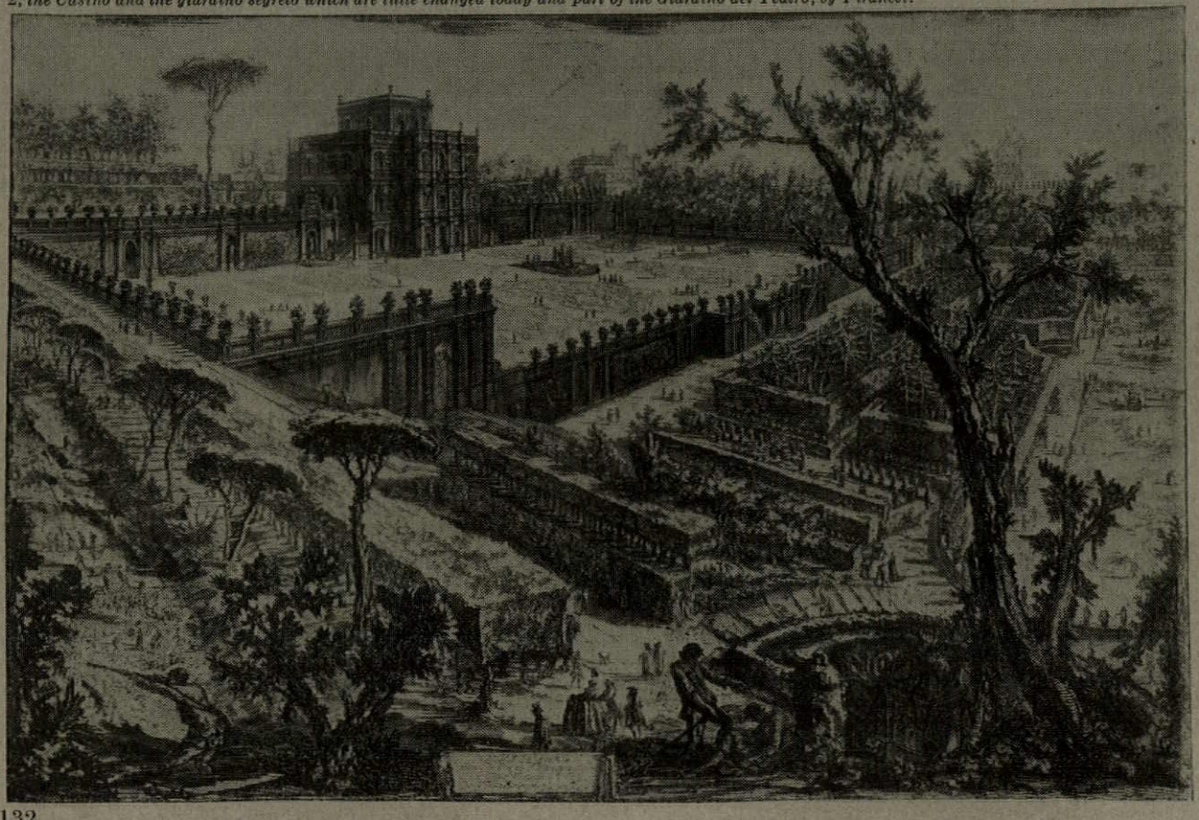
The size of the Villa Pamphilj was thus practically doubled; it now formed an irregular rectangle measuring roughly 1,000 by 2,500 metres. Part of the newly-acquired land to the west was put to agricultural uses and part was laid out in the style of an English park.

The restoration of the original Villa Pamphilj itself, however, posed a far greater problem. Here time and war-damage had taken their toll, but much of Algardi's superb layout survived. It speaks well for the taste of Prince Doria Pamphilj, his English wife (before her marriage Lady Mary Talbot) and his architect, Andrea Busiri Vici, that, at a period when Baroque was practically a term of abuse and the influence of the *giardino inglese* was paramount, they preserved so much of the old formal layout and, with one exception, carried out their transformation with such skill.

Changes in the Park

The first step was to transfer the main entrance of the park from the Via Aurelia to that of the Villa Corsini, opposite the Porta San Pancrazio. Here a monumental arch, designed by Busiri Vici, was raised over the ruins of the Casino dei Quattro Venti of Garibaldian fame, as a monument to the Garibaldini who died there. Although the Villa Corsini dated from the close of the seventeenth century, its layout had been surprisingly informal, consisting chiefly of tree plantations traversed by hedged walks. Only to the north-west of the dwelling house (as in the Villa Pamphilj this stood at some distance

2, *the Casino and the giardino segreto which are little changed today and part of the Giardino del Teatro, by Piranesi.*



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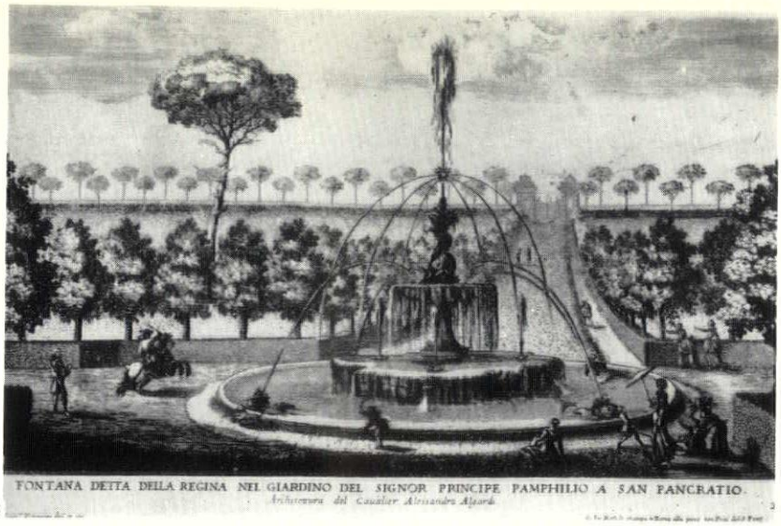

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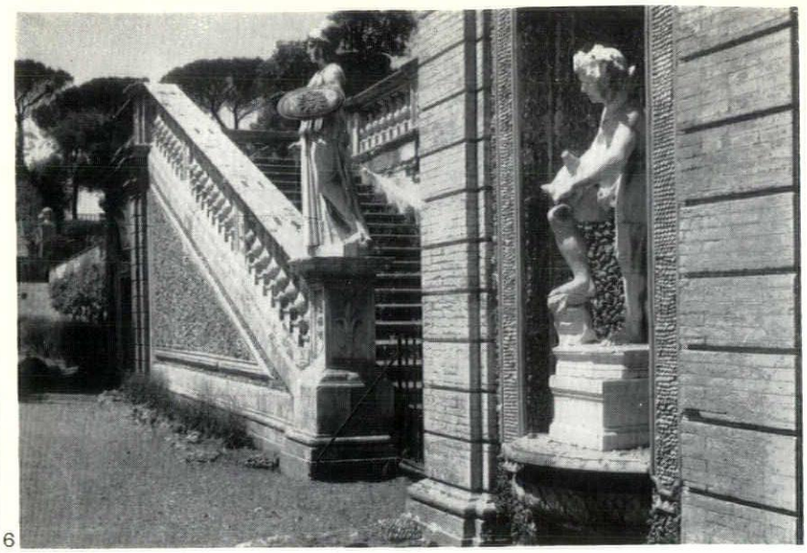
5

3, *Bernini's Fontana delle Lumaca or Della Regina in its original setting, published by G. De Rossi in* 1675.
4, *the Fontana Della Lumaca and its surroundings showing the transformation of the landscape as it is seen today; the view is roughly the same as in the* 1675 *print.* 3.
5, *painting by Alexandre Decamps, 'Fête Champêtre in the Villa Pamphilj' (Wallace Collection).*





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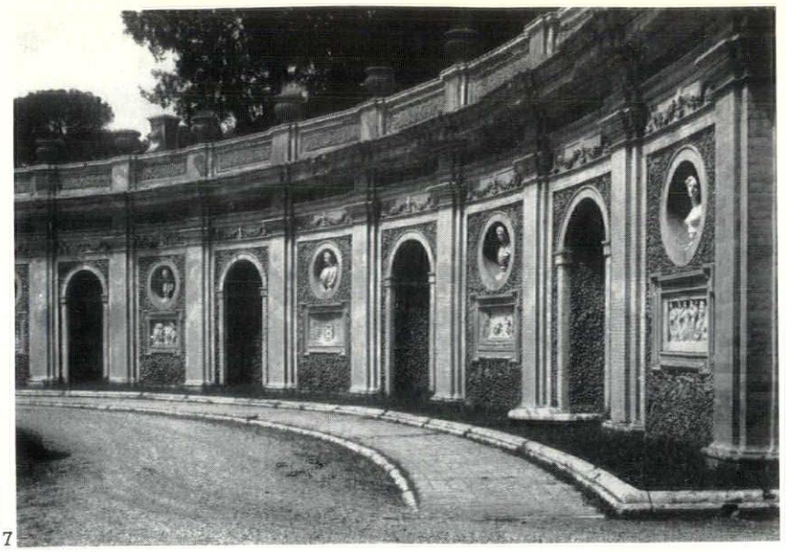

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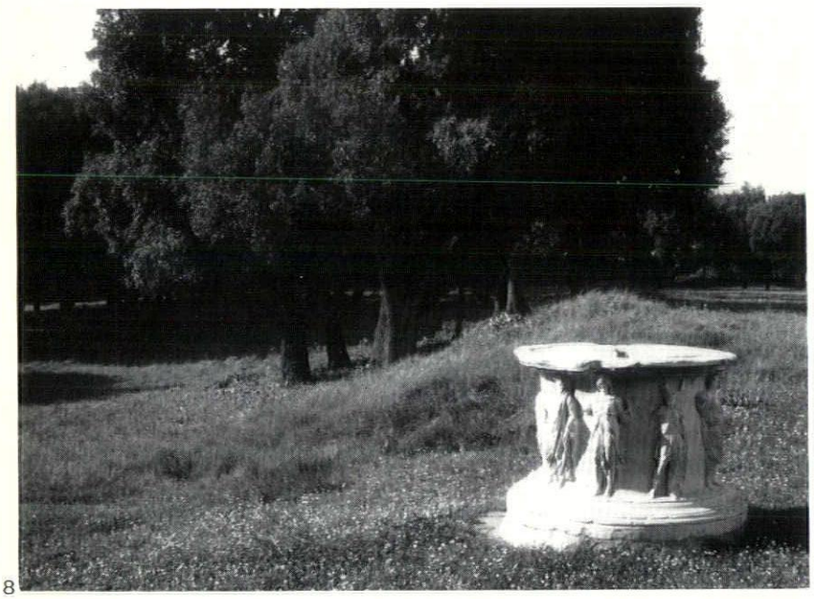
6, steps leading from the giardino segreto beside the Fountain of Venus.
7, part of Algardi's theatre in the Giardino del Teatro, now the Giardino Inglese.
8, the Roman altar which used to stand in the middle of the manège and was lately moved to a more suitable site at the beginning of the grassy ride through the old ilex groves. A small part of the manège can be seen on the right.
9, open landscape stretching out in front of the Villa Vecchia and the old lemon garden, laid out for Prince Filippo Andrea V Doria Pamphilj. It will be seen how the Fountain of the Lily in the middle distance links this part of the layout with that of the canal and ornamental pool, which can be glimpsed behind the fountain. Bernini's fountain lies just to the right of the three stone pines.
10, a typical view of the park of the Villa Pamphilj, taken on one of the hills surrounding the ornamental pool, which is just out of sight in the valley on the left. The single tree beside the modern church spire on the hill opposite, shows how planting could in many places conceal the city which now encircles Villa Pamphilj almost entirely.
11, one of the cascades in the canal. A passage, reached by the steps on the left, is concealed behind the cascade, and through openings in the rocks one can look through the falling water down the rest of the canal to the ornamental pool. The Fountain of the Lily can be seen at a higher level in the distance.



8



9



10



11

from the casino) was there a small formal parterre garden. This, however, was unique in that the terrace upon which it was laid out directly overlooked a wild marshy valley—a characteristic *marrana* of the Roman campagna, recalling in fact what the site of the Roman Forum must have looked like in its primitive state. In the supporting wall of the terrace there was a series of niches decorated with shells and fountains, but otherwise no attempt had apparently been made to alter the wild natural state of the *marrana* which nevertheless constituted the focus of the view from the parterre garden. The particular interest of this unique layout lies in the fact that it was already in existence when William Kent was in Rome between 1713 and 1719.

In the nineteenth-century transformation of the villa, the war-torn remains of the Corsini parterres and plantations were swept away and replaced by open grassland and freely planted trees. Through this open landscape a drive winds its way past the *marrana*, then used as a deer park, to the original Villa Pamphilj. Thus the Villa Corsini simply became an approach, as it were, to the Villa Pamphilj and the layout of the two villas was not directly integrated. There were both practical and aesthetic reasons for this; the *marrana* forms a natural barrier and was obviously not adapted for integration into the enclosed formal gardens of the Villa Pamphilj, which lie on its far side.

Here the *gardino segreto* and the general outline of the *Giardino del Teatro* were preserved intact, together with the old ilex avenue. Bordering this last, ingenious use was made of war-scarred fragments of antique sculpture and funerary inscriptions (recently discovered, together with two colombaria) to create a Piranesi type of landscape, thus successfully accomplishing the transition from the simplicity of the Villa Corsini approach to the formality of the Pamphilj ornamental gardens. The only unfortunate alteration—but one almost inevitable as the time— was the transformation of the *Giardino del Teatro* into a '*giardino inglese*' or typical Victorian flower garden filled with exotic palms and stars and scrolls for bedding out. Algardi's theatre was partly concealed by a clump of trees; to this camouflage clipped yews and a sunken rose garden were later added. Fragments from the old fountain walk were employed to decorate a new central circular fountain, which clearly reveals its hybrid origin. Fortunately the Fountain of Venus survived, together with its delicate shell and pebble mosaics; also another of the old grottoes. Finally, a neo-Romanesque chapel was built on the site of the original Fountain of the Dolphins. Time has taken its toll of this Victorianum and today the garden is simply a meadow sprinkled with wild flowers and ornamental trees; very little-re arrangement would be required to restore to it something of its former dignity.

The late eighteenth century had already brought one notable addition to the landscape of the great park. A small water-course which rose below the Villa Vecchia plantations, and flowed through the great *pineta* to feed the pond in the hunting preserve, had been transformed into a broad canal some 300 metres long. This is punctuated by rustic waterfalls and terminates in an ornamental pool. The composition, which was probably of French inspiration (a Doria Pamphilj cardinal was legate in Paris about this time), has only one Italian counterpart, though on a grander scale, in the park of the Royal Palace of Caserta.

Thus in this area of his villa Prince Doria Pamphilj and his architect were confronted with two distinct layouts of two different periods—the remains of the seventeenth-century plantations and fountains by the Villa Vecchia and the canal, lying at a lower level. Boldly they decided to merge the two into a single great composition, preserving as much as possible of the old architectural features and providing them with a new setting. The result was the creation of a landscape which is the chief glory of the villa today and unique in Italy. This was accomplished by replacing most of the old plantations with open grassy sward, retaining only one group of ilex as a shady foil for Bernini's fountain glittering in the sun. Stone pines and forest trees were planted in groups and as single specimens in the style of an English park. This free planting was also extended over the hilly land to the right of the canal, which had formerly been covered with rows of pines. The Fountain of the Lily was transferred to a point commanding a view down the canal, thus providing the focus of the whole composition. This is now linked by a drive leading from the Villa Vecchia, past the canal, to sweep round the green hollow encircling the ornamental pool, which in the nineteenth century had been converted into a lake. Water shortage necessitated this being drained, and the present owner, Donna Orietta Doria Pamphilj, has wisely reconstituted the eighteenth- century layout as much as possible. Today the scene corresponds almost exactly with Decamps's romantic interpretation in his 'Fête Champêtre in the Villa Pamphilj' hanging in the Wallace Collection.

The art with which the nineteenth-century transformation of this landscape was achieved, was matched by the manner in which it was related to the remaining old formal layout near the casino. Here, instead of following the contemporary vogue for shrubberies and winding paths, one of the old ilex groves was left intact, but a Baroque gate and gravelled drive traversing it were replaced by a grassy ride. Today, seen from the casino and manège, this provides a beautiful vista, framing Bernini's fountain in the distance. But in approaching this on foot, the Baroque element of surprise, characteristic of seventeenth-century townscape, is experienced to the full, when the shady ride suddenly debouches into the sunlit landscape surrounding the fountain. In few places have seventeenth-century formality and nineteenth-century romanticism been so magically combined.

The whole of this wonderful park lies within the confines of the original Pamphilj and Corsini villas. The area to the west, bought in the nineteenth century, was separated from it in 1960 by the Via Olimpica and is now a municipal park. While no-one would grudge the land-starved Romans this amenity, it is unfortunate that it was associated with driving a wide arterial road across the last great Roman villa. However, all praise should be given to the road engineers who traced the road so as to leave the seventeenth-century villa intact and the road almost invisible from it (except for the lighting system and power pylons which could be altered or removed).

The Uncertain Future

The ultimate fate of the privately owned part of the Villa Pamphilj has for some time been the subject of debate. Owing to the antiquated and unrealistic Italian laws relating to death duties, it is still not possible for the State to take over monuments of national importance in lieu of cash, nor does any organisation comparable to the National Trust exist in Italy. Heirs are thus forced to sell to any purchaser, and after the last Prince Doria Pamphilj's death, the Palazzo Pamphilj in the Piazza Navona, with its incomparable Pietro da Cortona frescoes, passed into foreign hands. The same fate threatened the Algardi casino of the Villa Pamphilj until it was bought by the Italian state and leased as an ambassadorial residence. This sensible solution was not, however, easily accomplished. It was preceded by a singularly misleading campaign in which most of the Italian press failed to differentiate between the proposed sale of the casino and a small area of garden and that of the whole park, which there was no question of selling. At this time Italia Nostra, whose Roman branch was associated with the campaign, appears to have missed its greatest opportunity as a pressure group (unlike the National Trust it is not constituted to own property), for striking at the root of the problem and instituting a campaign for the death duty laws to be altered and thus ensure the future national possession of treasures such as the Villa Pamphilj. No doubt this would be a long battle, but it is one which will have to be joined if the future of Italy's national treasures is to be assured. Successive Italian governments have not in the past shown alacrity in utilizing the preference clause which affords the State a prior claim to purchase property of national importance when it comes on the market.

The privately owned part of the Villa Pamphilj is now scheduled for expropriation as a municipal park, but in the present state of the law funds will have to be found for its purchase. When they are is it to suffer the same fate as Villa Borghese? And does the term public park include the installation in it of swimming pools and playing grounds as has been suggested. Such destruction of one of the world's great landscapes would be of national and international concern. The villa could in fact fill several roles which would not only preserve, but enhance its character. During the nineteenth century the park was planted with rare exotic trees, palms and shrubs, and many of these are now of a size possibly unique in Italy. Rome is unusual among capital cities in that its existing botanical garden is little more than a name on the map and the villa would be admirably adapted to fulfil this long-neglected function. Nor would this be incompatible with the revival of its former role of providing a magnificent setting for music and drama on summer nights. During the last few years a beginning has been made in this direction which, if extended, would provide a notable tourist attraction, particularly for the foreigner, as a welcome escape from the noise of the city, which now almost surrounds the villa.

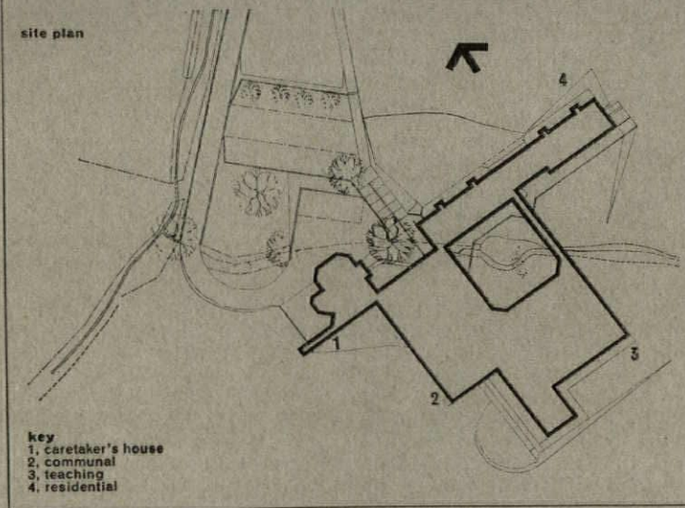
A prerequisite for such uses would be intensive planting along its confines, urgently needed to exclude noise and fumes and to recreate the impression of rural seclusion, an impression lost during the last ten years, which have witnessed the disappearance of the surrounding countryside under mammoth blocks of flats.

Curiously enough this development has been instrumental in increasing the importance of yet another aspect of the Villa Pamphilj. It has become an enclave and a refuge, almost in the heart of Rome, in which the typical flora and fauna of the Roman campagna —rapidly disappearing elsewhere— still survive. This phemonenon is particularly marked in the Villa Corsini area and its remarkable *marrana*, which is still the refuge of foxes, hedgehogs and innumerable snakes. There are many rare flowers including the very rare *Orchis purpurea* and remarkable escapes from the seventeenth-century gardens; specimens of two of the latter, the *Fritillaria obliqua* and what is probably a survival of Parkinson's 'lesser double French bastard daffodil' have been sent to Kew. Among a notable bird population, six species are found here and nowhere else in Rome, many are rare even in the province of Lazio, while nine of the species which frequent the villa are the same as those portrayed two thousand years ago in the frescoes of the Empress Livia's 'garden room' at Prima Porta (now in the Museo Nazionale). Whatever the future may hold in store for the Villa Pamphilj, it is to be devoutly hoped that part at least of it will be preserved as a nature reserve for educational purposes, and whatever opportunities may have been missed in the past, that here for once the Italian national conscience will be alive to the fact, recently expressed in a *Times* leader, that 'the destruction of a major historic landscape should cause as much concern as the destruction of a major historic building'.

THREE OXFORD BUILDINGS

1, MANAGEMENT CENTRE
ARCHITECTS: AHRENDS, BURTON & KORALEK
PHOTOGRAPHS BY JOHN DONAT

1 (facing page), south facing windows of the residential block are double glazed.



The Oxford Centre for Management Studies is at Kennington on the southern edge of the city, on an 18-acre site sloping from south-west to north-west. It has three basic types of accommodation: residential, teaching and communal, and has been planned so that each of these can expand independently of the other. This requirement largely determined the form of the building. Structural considerations led to the 4-column group for vertical support. Servicing considerations led to the placing of boiler rooms on the roof and the combining of the service ways in the ceilings of the major routes. The site is large enough to allow for facilities such as swimming pools, tennis courts, etc. which will be developed in the future.

The site is entered from the Kennington Road by way of an access road which brings the visitor obliquely to the building. This road has been planned to be extendable, to allow for future increases in car parking and to serve postgraduate accommodation and other future developments.

From the car park the approach is continued up a stepped ramp to the entrance hall in the centre of the building. This is the hub from which major circulation routes emanate. An enclosed bridge crosses the courtyard to connect with a high level walkway in the residential block, thus enabling all three main areas to be connected by enclosed circulation routes. There is also ground-level access through the courtyard.

The teaching area has a double volume space, toplit, for a library or information centre. On the ground floor it is enclosed by two seminar rooms and some teaching rooms, which have instant access to information in the library itself. The upper level perimeter circulation routes form a gallery from which the administration rooms and further teaching rooms are reached. The communal area, comprising a kitchen, dining room and common room, is a single-storey structure.

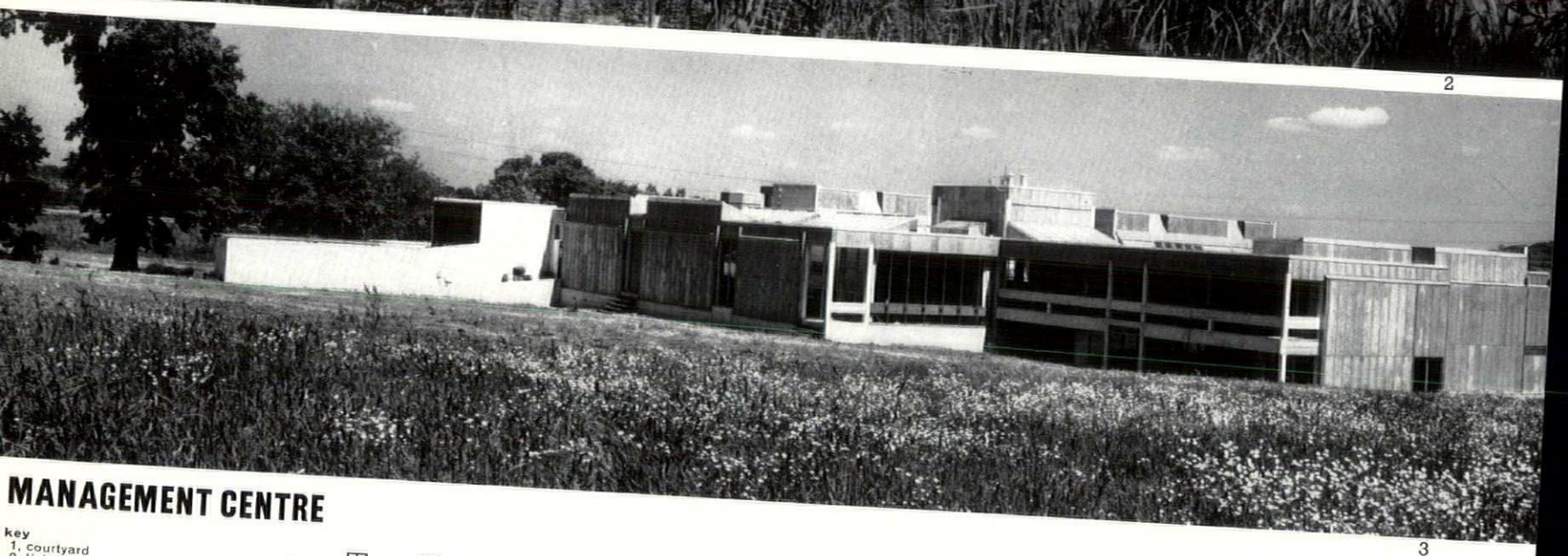
The residental area contains 24 study-bedrooms arranged in two blocks. Because of the slope of the site and the dual purpose to which each room is put, the rooms themselves are on a split level, one for living and studying and the other for sleeping. Each room has its own shower and wash basin; those for women students also have a self-contained w.c.

The communal and teaching blocks have an insitu reinforced concrete structural frame with a boarded finish externally and a smooth finish internally. The walls are non-load bearing and are of lightweight insulating blocks with a zinc cladding externally. Internal walls requiring maximum sound reduction are in 6 in. solid concrete blockwork, left fairfaced and painted. Allowance has been made for the repositioning of partitions in the teaching and administration area, and these are of 6 in. laminated plasterboard. The residential block is of load-bearing 6 in. solid concrete blockwork, with reinforced concrete floors. The cantilevered areas on the north face are supported by reinforced concrete columns and beams. The external load bearing walls are of cavity construction using white concrete blocks for the outer skin. The non-load bearing walls are in lightweight insulating blockwork covered with zinc. Windows are aluminium (horizontal and vertical sliding) and aluminium patent glazing. The south face of the residential block is double glazed with the external face consisting of patent glazing and the internal face a top-hung window. A Venetian blind is mounted in the cavity.

The building is heated by two gas-fired boilers, one serving the residential block and the other serving the teaching and communal block. The major spaces are heated by forced flow convectors. The remainder by radiators. Furniture and fittings specially designed for the building are illustrated on pages 129-130.

Architect in charge, Graham Anthony. Structural engineers, F. J. Samuely & Partners. Electrical and mechanical engineers, Engineering Design Consultants. Quantity surveyors, E. C. Harris & Partners. For contractors see page 160





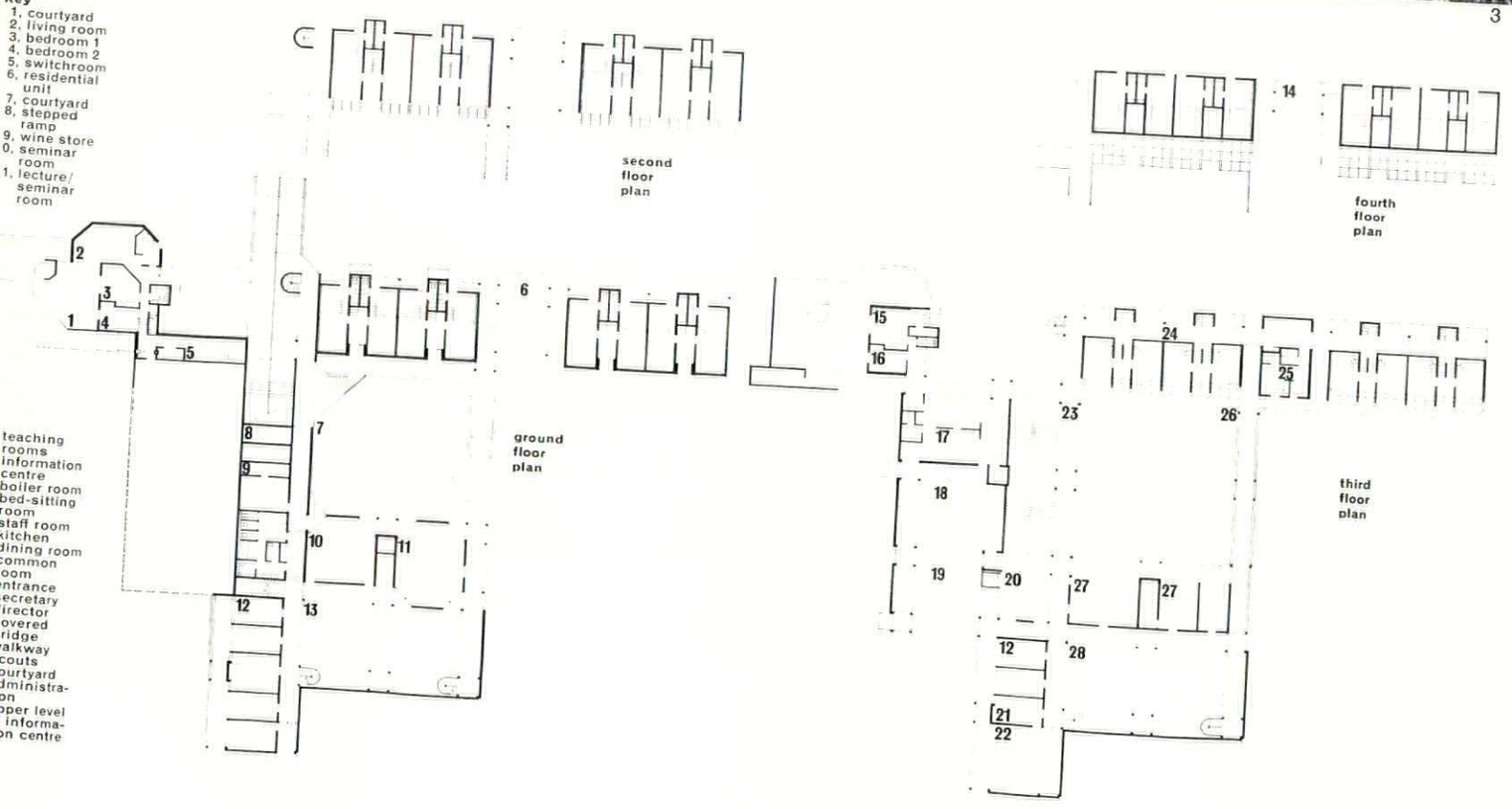
2

MANAGEMENT CENTRE

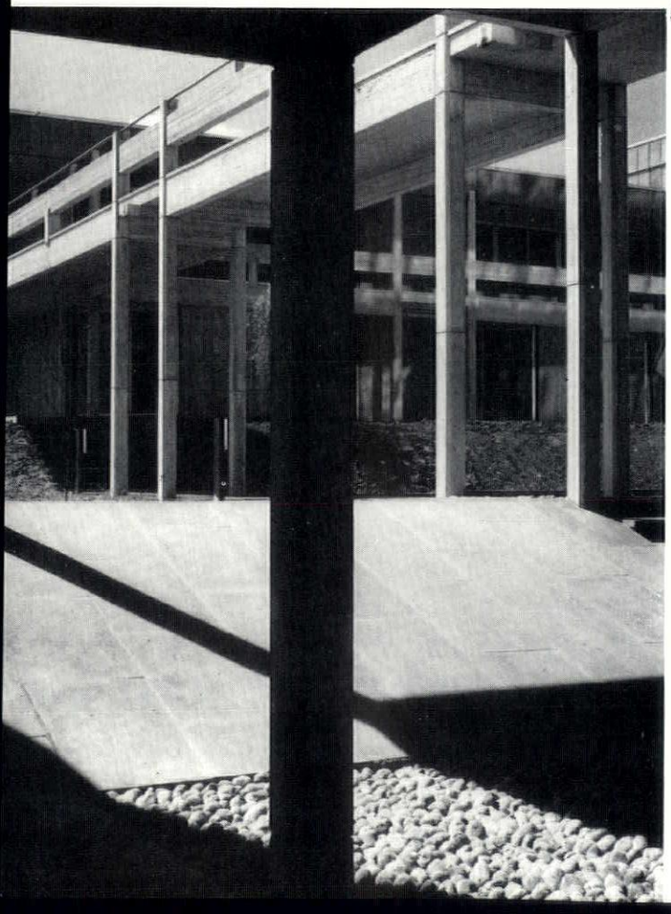
3

key
1, courtyard
2, living room
3, bedroom 1
4, bedroom 2
5, switchroom
6, residential unit
7, courtyard
8, stepped ramp
9, wine store
0, seminar room
1, lecture/ seminar room

teaching rooms
information centre
boiler room
bed-sitting room
staff room
kitchen
dining room
common room
entrance
secretary
director
covered ridge
walkway
scouts
courtyard
administration
upper level
information centre





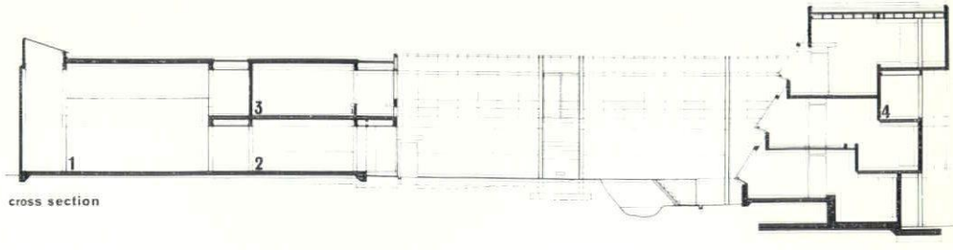


5 2 (facing page), looking north-west, showing the open bridge in the centre.
3 (facing page), south-west corner of the centre with white-painted caretaker's house on the left.
4, from the first floor, the corner of the courtyard, bounded by the open bridge.
5, looking south under the open bridge.
6, entrance hall.
7 (following page), north-east corner.

key
1, information centre
2, seminar room
3, administration
4, walkway

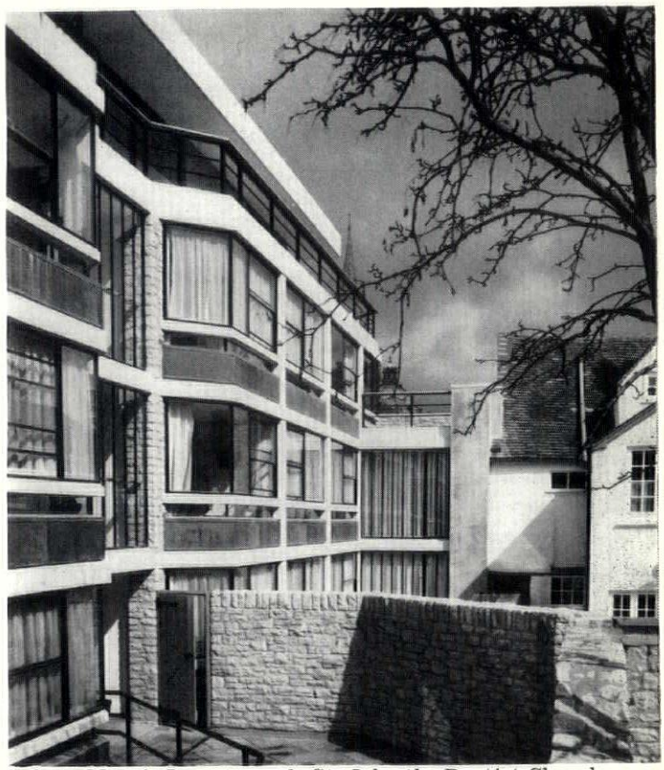


6



cross section

2, UNDERGRADUATE BUILDING FOR CORPUS CHRISTI COLLEGE ARCHITECTS: POWELL AND MOYA



2

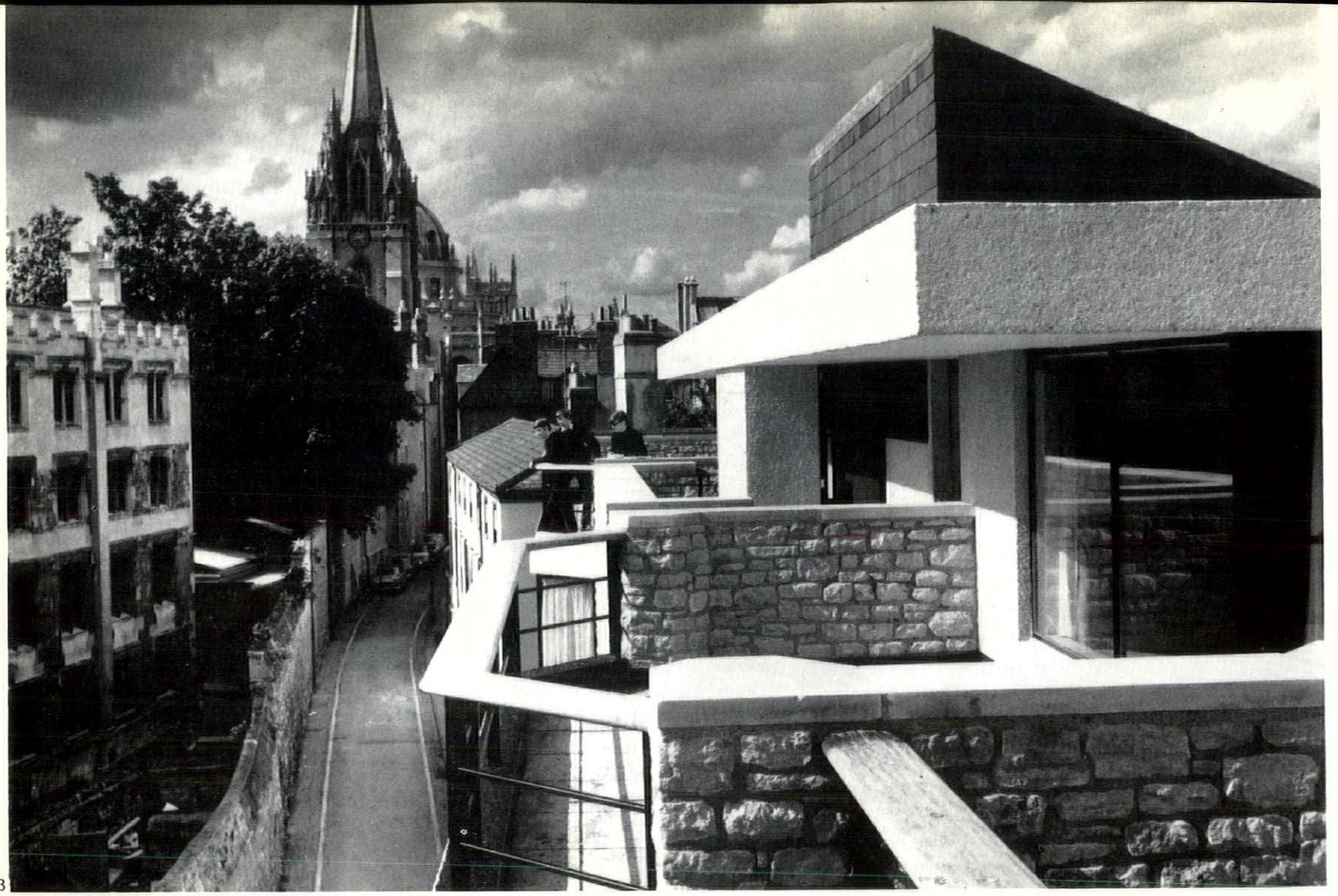
1, down Magpie Lane towards St. John the Baptist Church.
2, east side on the building showing pathway to the main entrance in the foreground.

The building, containing 41 study-bedrooms for undergraduates and one two-roomed flat for a Fellow, is in Magpie Lane, a narrow street with mainly three-storey buildings of a domestic character. The site is bounded by Merton street on the south and Kyblad Street on the north. In the latter stands Kyblad Twychen, a sixteenth-century house belonging to the college, which had to be integrated with the new building, as had the Annexe, a late nineteenth-century residential building by Sir Thomas Jackson to the south. Opposite the site, to the west, is the 15ft. rough stone boundary wall of Oriel College. Also provided is covered parking space for 11 cars and a separate covered space for 46 bicycles.

To economise space and cost, the study-bedrooms were arranged on either side of short corridors, each serving about six rooms and with natural light at the ends. Most of the rooms face east or west. The plan form breaks the Magpie Lane frontage into three, avoiding a long continuous facade. The corners are splayed, providing bay windows in most rooms. This arrangement allows the rooms on the west side to have views up or down the narrow street instead of across it, it allows sun to reach the north-facing rooms and improves the corner of the building externally.

The main structure is brick cross-walls supported on a central longitudinal reinforced concrete beam, which is itself supported on V-shaped beams spaced to suit the car-parking. Floors and roofs are reinforced concrete. External walls, where solid, are of coursed Bladon stone rubble with brick backing, together forming the outer skin of a cavity wall, the inner skin being light-weight concrete blocks, plastered. Exposed edges of floor-slabs and ends of cross-walls are precast white concrete, lightly bush-hammered. Windows are black anodized aluminium, with lead-faced panels below. Penthouse walls are cavity blockwork rendered white. The tank-room is slate hung.

1

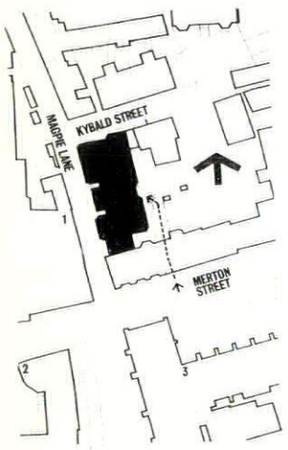


3

3, the penthouse of the undergraduate building, with St. Mary's Church beyond.
4, east-facing study bedroom.

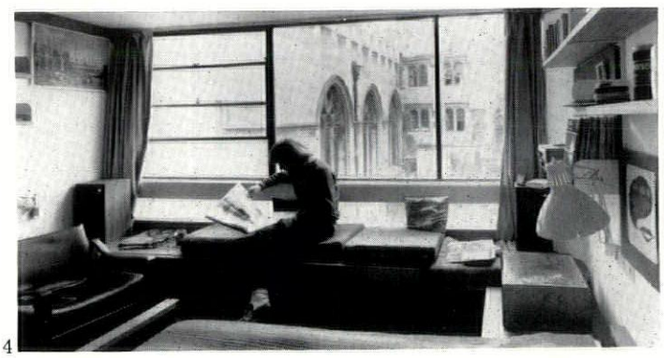
Rooms are close carpeted, with doors and built-in furniture of hardwood (idigbo). They have off-peak electric storage heaters under the window seats with fans, controllable by the occupant, for 'topping up' heat. The pantries on each floor, and the car-park, are mechanically ventilated.

Assistant architects in charge, Ray Towler and Geoffrey Burton (furnishings in collaboration with Higgins, Ney & Partners). Structural engineers, Charles Weiss & Partners. Electrical engineers, Peter Jay & Partners. Quantity surveyors, Gleeds. For contractors see page 160.



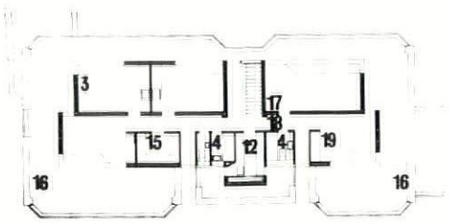
site plan key
1, Oriel College
2, Corpus Christi College
3, St. John the Baptist Church kitchen

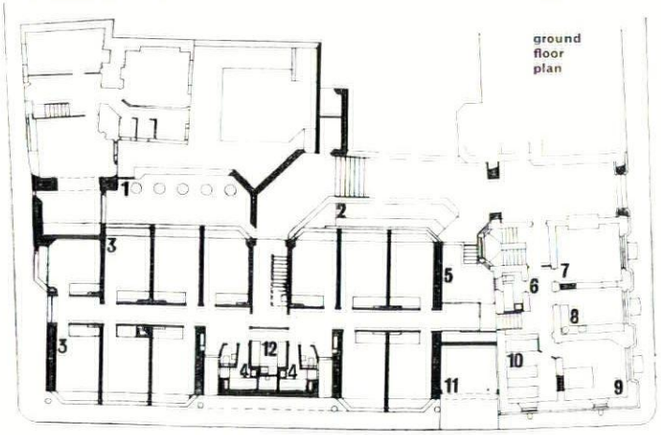
key
1, paned area
2, cycle ramp
3, study/ bedrooms
4, bathrooms
5, caretaker's yard
6, caretaker's flat
7, living room
8, dining/
9, bedroom 1
10, bedroom 2
11, car ramp down
12, pantry
13, new study
15, box room
16, roof terrace
17, sitting room
18, fellows set
19, bedroom

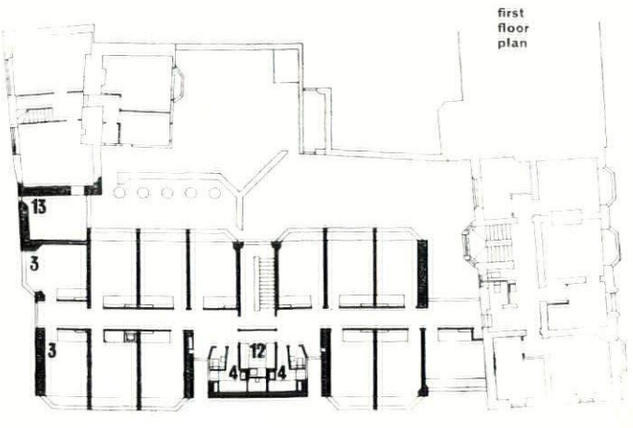


4

PHOTOGRAPHS BY PAUL G PROUDMAN









5

5, section of the east façade **UNDERGRADUATE BUILDING FOR CORPUS CHRISTI COLLEGE**

3, GRADUATE FLATS AND FELLOWS' HOUSE FOR JESUS COLLEGE ARCHITECT: JOHN G FRYMAN (ARCHITECTS DESIGN PARTNERSHIP)

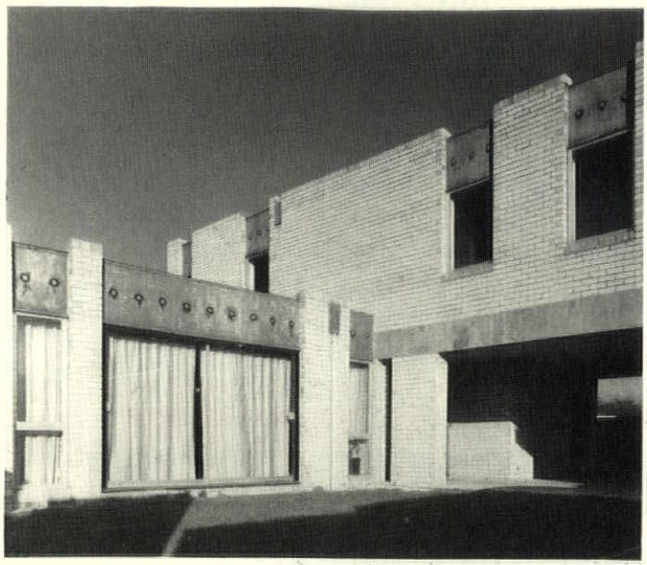
1, south front of the graduate flats



2



3



4

2 (facing page, top), north façade, showing semi-circular staircase towers, 3, (bottom), the north-west corner of the first block of twelve flats, 4, detail of one of the fellows' houses.

GRADUATE FLATS AND FELLOWS' HOUSES FOR JESUS COLLEGE

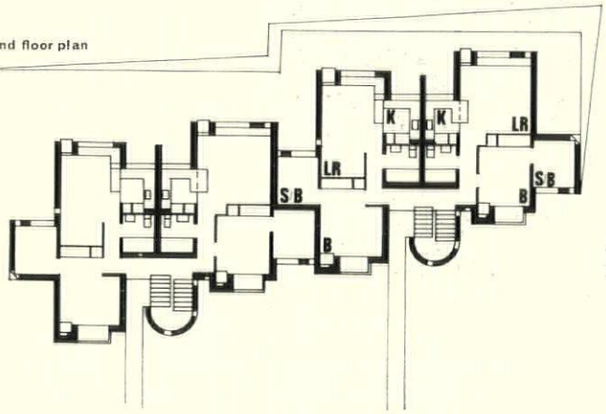
The building provides 48 flats for married graduates and 4 Fellows' houses. The site is an area of rough land rising from south to north, adjoining the college playing-fields at Cowley. The phased programme develops the site in depth whilst maintaining the existing trees and permitting the playing fields to be extended.

The college required the flats to have minimum administration and maintenance costs. Accommodation was to consist of a bedroom, living room, bathroom, kitchen and study within a suggested area of 400 sq. ft. No communal facilities were required but each flat was to contain all living facilities for a married graduate, with privacy for working. The two flat plans interlock to form three staggered terraces, with living rooms and kitchens facing either south or west and the kitchen windows protected from direct sun by the modelling of the elevation. Kitchens are separated from living rooms by a sliding door and a blind which closes on to a worktop/breakfast table. Studies are entered from bedrooms for maximum insulation from noise and distraction within the flat.

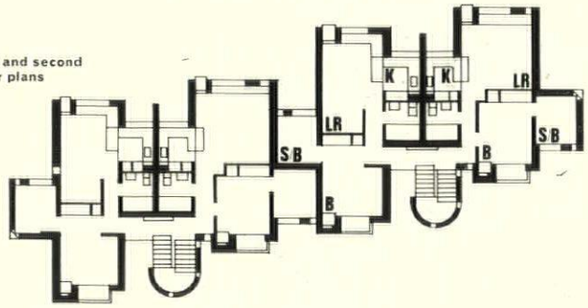
The construction is of calculated loadbearing brickwork with concrete floors and floating screeds for maximum sound insulation. Heat loss is minimised by injected cavity filling in external walls. Externally, brick, glass and lead are the only visible finishes. Buff Staffordshire engineering facing bricks contrast with lead covering and dressings to beams, transoms and canopies. Window frames are recessed behind brick rebates with only aluminium glazing beads exposed externally, limiting external maintenance to window-cleaning by the college. The roof is asphalt. The floor screeds contain off peak underfloor background heating paid for by the college. Local radiant heaters are on tenants' meters. Service cores are standardised throughout.

Associate in charge, Frank L. Hawes. Architect in charge, Graham Jessop. Structural engineers, Frederick J. Brand & Partners. Quantity Surveyors, Carless & Adams. For contractors see page 160.

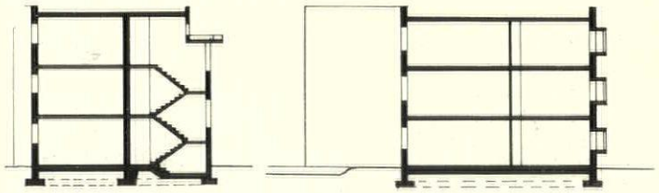
ground floor plan



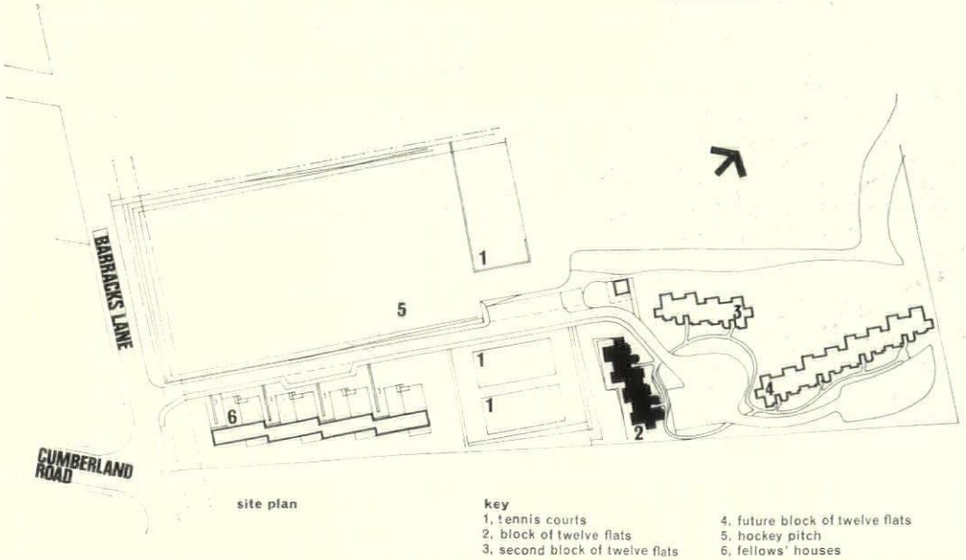
first and second floor plans



PHOTOGRAPHS BY H DE BURGH GALWEY



cross sections



site plan

key
1, tennis courts
2, block of twelve flats
3, second block of twelve flats
4, future block of twelve flats
5, hockey pitch
6, fellows' houses

GALLERY *a monthly symposium on painting, sculpture and the applied arts*

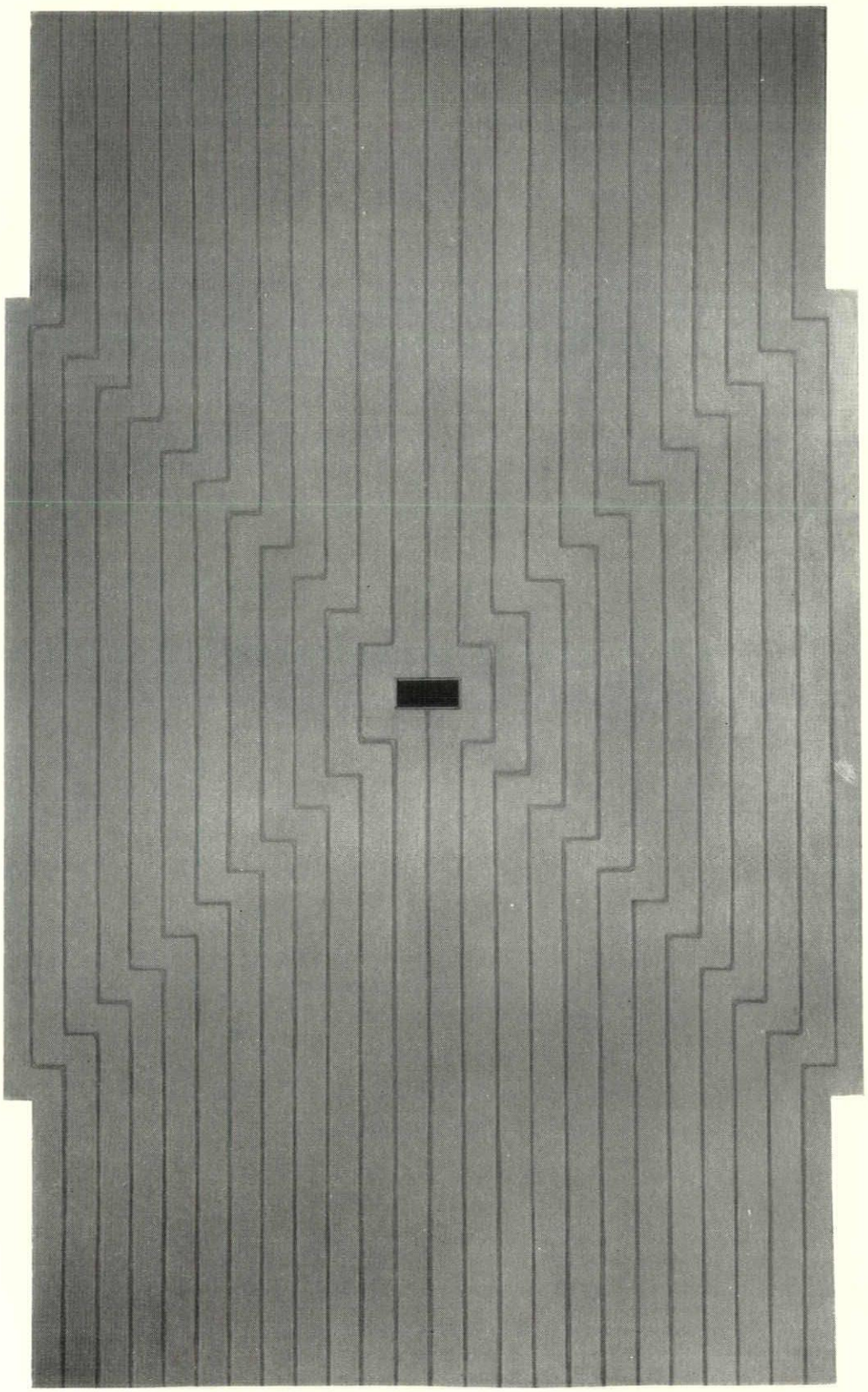
MINIMALISM

Robert Melville

The exhibition called 'The Art of the Real', packaged for foreign consumption by the International Council of the Museum of Modern Art and brought to the Tate by the Arts Council, could have had as much impact as the first big London showing of the Abstract Expressionists in 1959 if the organizer, E. C. Goossen, had met the challenge of his own definition of 'real' art, and presented an exhibition of 'simple, irreducible, irrefutable objects.' The miscellany he assembled implied that non-representational art—provided he liked it and as long as it was American—is more real than any other kind; but if his definition is detached from the word it is supposed to define, it is a more or less acceptable description of some recent American works which are so simple that they are devoid of internal relationships, almost entirely free from associations and therefore very low in content, but not without intent or purpose. The popular name for it is Minimal Art, and Studio Vista has used it as the title for an excellent anthology of critical writing which appeared just before the Tate show opened.

It will be realized that very few paintings succeed in negating all internal relationships. In this connection, apart from the band-wagon stuff by painters who have a go at everything they clap their eyes on, I can recall off-hand only the all-over blue paintings of Yves Klein and some of the all-black paintings of Ad Reinhardt in which the black-on-black cross registers so faintly that the surface appears to be entirely homogenous. Nevertheless, the organizer attempted an 'origins and development' show, and included such old masters of post-war American painting as Pollock, Rothko, Clifford Still, Barnett Newman, Ellsworth Kelly, Morris Louis, Kenneth Noland and Frank Stella. Some of these paintings were splendid in themselves, and the Noland stripe painting and Stella's strictly symmetrical 'Six Mile Bottom', 1, painted in 1960, were not entirely irrelevant to the theme; but the examples of Stella's recent work were right off the track; garishly coloured and self-consciously 'far out', they seem to me to be merely decorative novelties, 2.

The inclusion of these supposed 'origins' occupied so much of the exhibition space available that some of the best contributors to minimal art were not represented, and some of the examples of minimalism that came in the package were dumped outside, on that awful patch of grass which the Tate Trustees don't want to use for a tower block. Ellsworth Kelly, one of the 'origins' group, has in fact made a



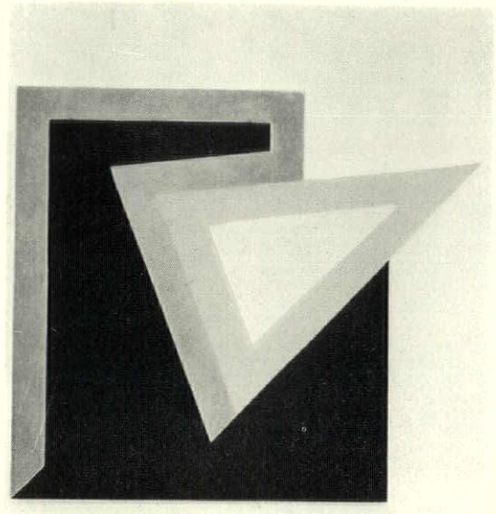
1

Frank Stella: 1, *'Six Mile Bottom'.*

strong contribution to minimal art, but although several of his works were in the show, none of them was really minimal. There was in any case no need to show so many of his things. It would have been much better to limit him to one truly apposite work such as 'White Angle', an uncompromisingly unitary form with an impeccably smooth and impersonal finish. The organizer's enthusiasm for artists tinkering about on the periphery of minimalism added to the confusion. The best of them was Doug Ohlson, who was represented by a set of ten orange-coloured panels identical in size and finish, 3; but he spoilt his straightforward approach to standardization by painting a mauve square on seven of them, which produced an insufferably arty effect.

The exhibition was installed by Michael Brawne, who has some first-rate installations to his credit, and he gave us one stunning glimpse of what might have been if the organizer had been less addicted to instant art history. After a very untidy placing of some of the early work in an open section of the sculpture hall available to visitors who didn't want to pay to see the more recent things, Brawne devised a sort of delayed grand entrance behind the partitions. He used the horizontal stripe painting by Kenneth Noland, seven feet high and nearly thirty feet long, 4, and a horizontal painting by Patricia Johanson, twenty-eight feet long, 5, to make a long narrow corridor which looked much longer than it actually was, on account of all the parallel stripes, and he blocked the view into the main body of the show with Donald Judd's marvellously simple set of aluminium boxes projecting from a white screen, 6. For absolute perfection, the effect needed a facsimile of the Noland to replace the Johanson, which was not well done. Every line on the Noland is as straight as a die, but there are several wobbles in Johanson's solitary blue line, and precision is something that minimal art can't do without.

A lot of minimal art is probably temporary. Patricia Johanson will be lucky if she doesn't have to roll up her canvas when it returns from the European tour; but at least it's played a part in a notable fragment of exhibition arrangement. But even if a minimal work is intended to be temporary it can't afford to *look* temporary. It has an uncomplicated bareness which highlights every blemish of construction or finish. In this respect, Tony Smith's colossal tetrahedral object called 'Stinger', 7, described in the catalogue as a 'painted plywood mock-up for sculpture to be made', is not helped by its temporary appearance. If it were constructed of stainless steel or given a car-body finish it might look very imposing. But it suffered not only on account of its temporary appearance; it was one of the luckless works that were put out to grass at the Tate. It probably looks all right on a plaza, as shown in the photograph, but in the Tate's backyard it looked rather pathetically unfit for salvage. It was no doubt a physical impossibility to squeeze it into the sculpture hall,



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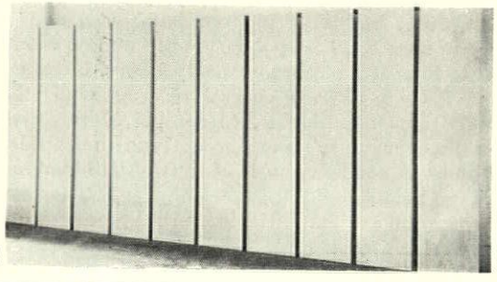

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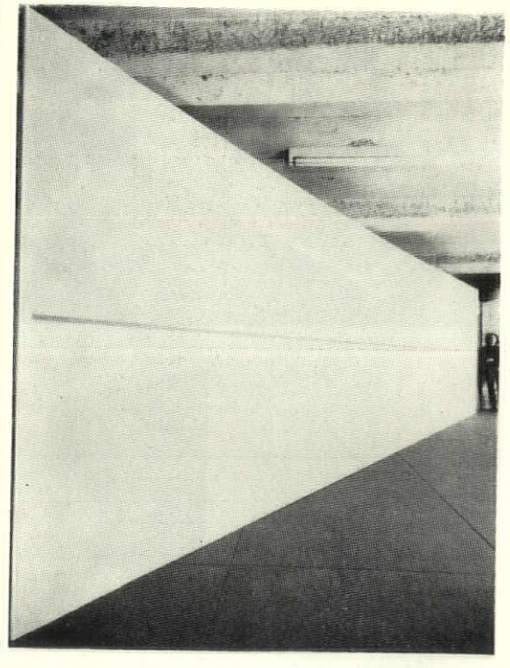
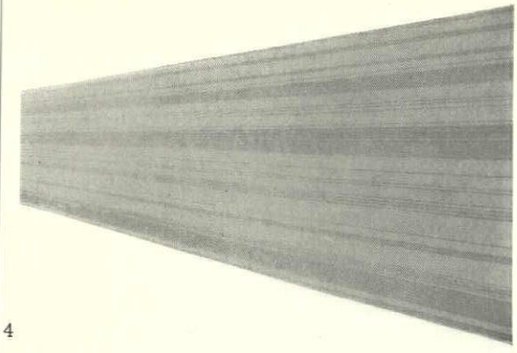


5

Frank Stella: 2, '*Tuftonboro* I'. *Doug Ohlson:* 3, '*Cythera*'. *Kenneth Noland:* 4, '*Trans-Echo*'. *Patricia Johanson:* 5, '*William Clark*'. *Donald Judd:* 6, *aluminium construction.*



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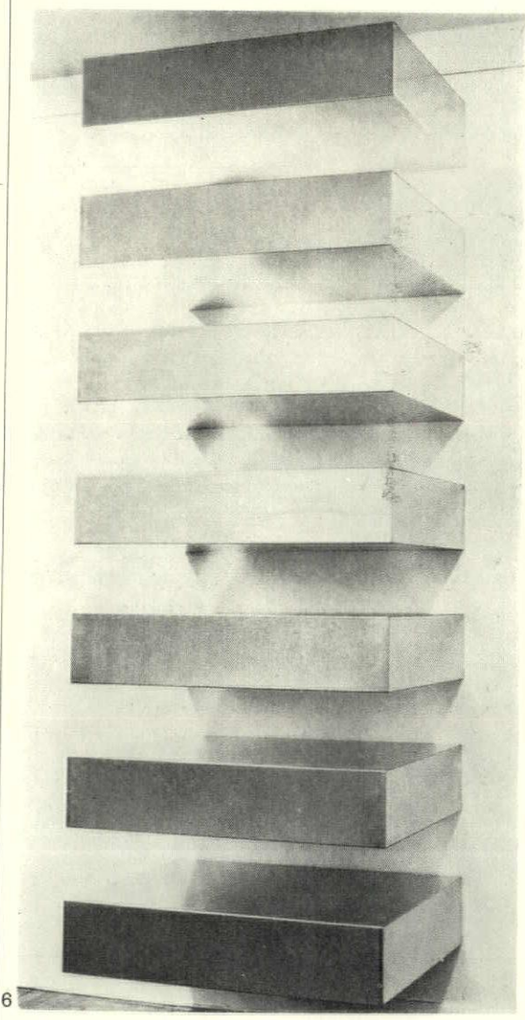
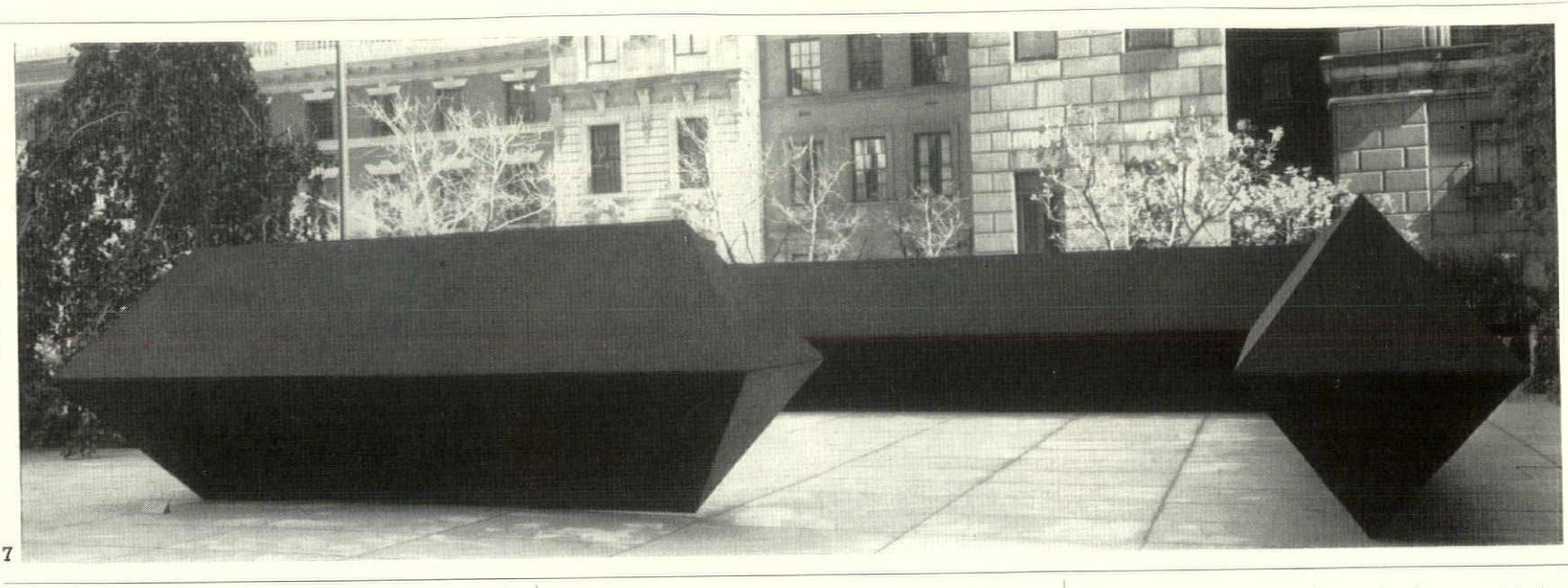


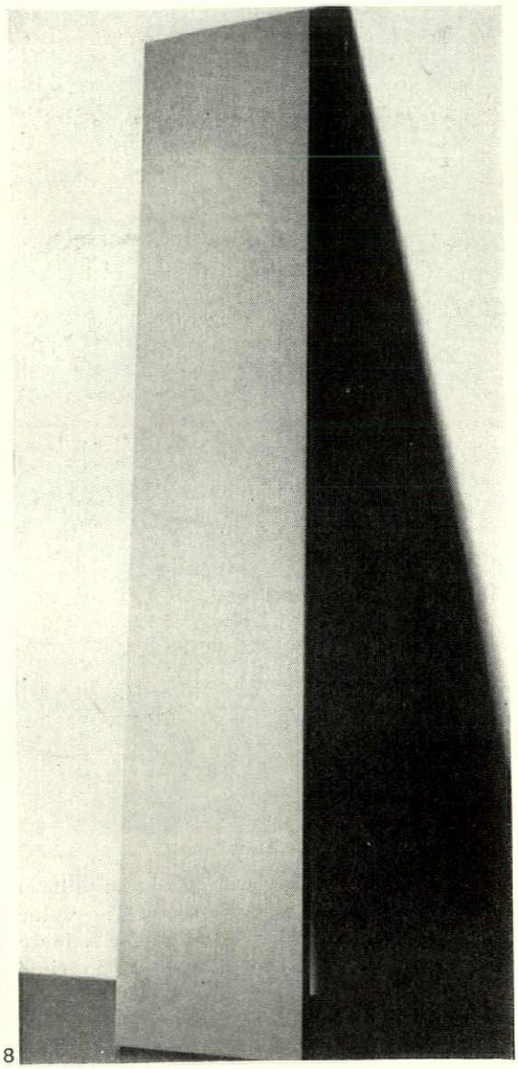
6

but its extreme obtrusiveness would have been a good reason for putting it there. The value of a suitably unsuitable situation for a large minimal work was demonstrated some time ago at Washington's Corcoran Gallery when Ronald Bladen's giant 'X' ruptured the proportions of one of its largest rooms with unforgettable élan, but Bladen is one of the minimalists who was not in the Tate show.

Carl André's '144 Pieces of Aluminium' formed

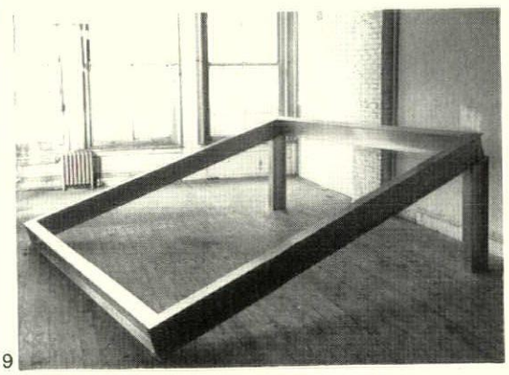


7



8

a nice, simple square of silvery metal floor-covering, but it should not have been placed in an alcove, where people simply walked round it to look at a picture by Larry Poons. It should have been given a central position with side partitions touching it, to compel everyone to walk over it. It's not for nothing that André thinks of roads as basic sculpture. Minimal art is essentially exhibition art and is not harmed by a touch of exhibitionism in its presentation.



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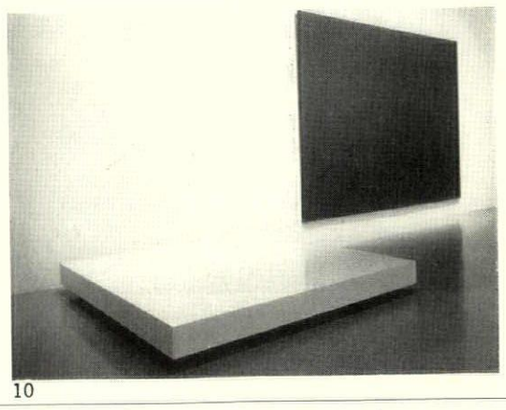


10

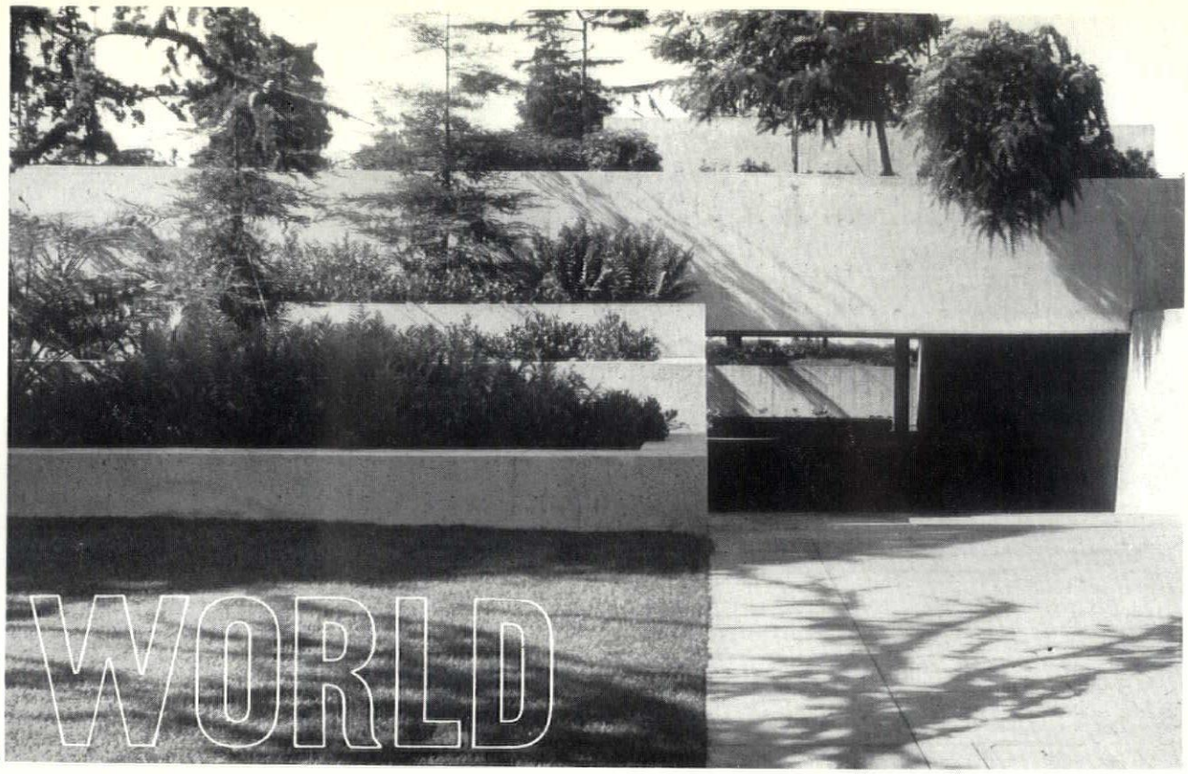
Tony Smith: 7, *'Stinger'. John McCracken:* 8, *'There's No Reason Not To'. Robert Morris:* 9, *aluminium I-beams;* 10, *'Slab'.*

On the contrary, its always in danger of being dismissed as lumber when it has to take it's chance in a miscellaneous show. John McCracken's beautifully finished pale blue plank, 8, had a devastating simplicity that deserved to be celebrated more demonstratively. It was tucked into a corner, but should have been the sole occupant of one of the larger alcoves.

Some idea of the surrealist effect it might have had in a space suggestive of an empty room is conveyed by Michael Benedikt's response, in a review published in the Studio Vista book, to a McCracken plank, 12ft high, in an exhibition at the Whitney: 'Set casually against the wall, its enormousness gives its casualness an air of the sinister and overbearing, a feeling strengthened by its brilliant glossiness.' He went on to say that McCracken's tampering with the angularity of the wall was complemented by a white object of great rectangular bulk which rested on the floor at an angle and drove a 'wedge of space' between floor and object. (The white object was by Bladen, who was omitted from the Tate show). Their work is involved in a concept of architectural dislocation as a means of animating interior spaces, and Robert Morris's frame, 9, constructed of aluminium I-beams and lifted at one end, provided a less calculatedly casual demonstration of the concept than McCracken's plank. Some idea of what I mean by the effective placing of such things is conveyed by the photograph of the same sculptor's white 'Slab', 10. Morris's 'Slab' is lifted slightly off the floor to create a pleasant effect of floating. The painting on the wall is a Poons, and if it were replaced by Reinhardt's all-black painting, which was also in the show, the all-white object and the all-black painting would, to my mind, have achieved an ideal relationship. As Morris remarks in his essay on sculpture in the Studio Vista anthology: 'placement becomes critical as it never was before in establishing the particular quality of the work.'

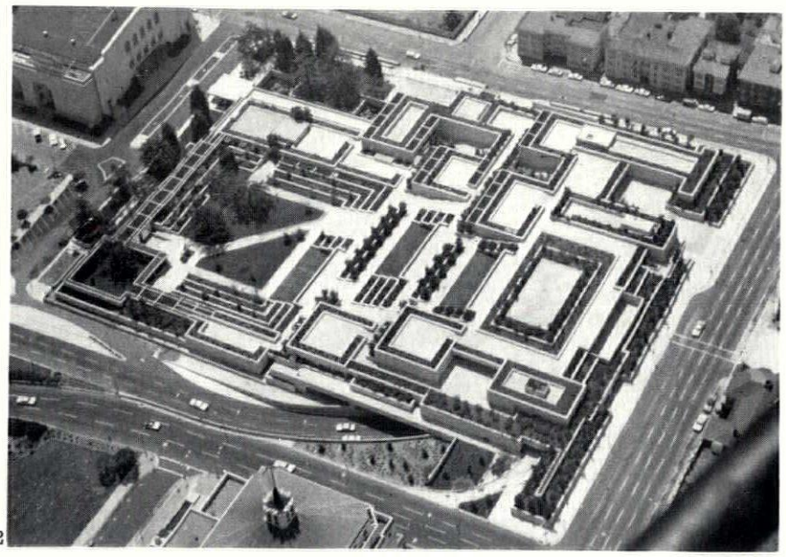
OAKLAND ROCHE

Oakland's new downtown museum, 1, by Kevin Roche (of Roche, Dinkeloo & Associates) is not a building using up a valuable site, 2. It goes underground instead, giving back the whole of the site to the community in the form of a terraced podium (landscaped by Dan Kiley, who was also responsible for the planting in the Ford Foundation building, New York) and so providing a garden environment over what had been four large city blocks. The point is well made in 3, where the only building apparent is the old Oakland Auditorium on the other side of the road. But full success of that public-



1


3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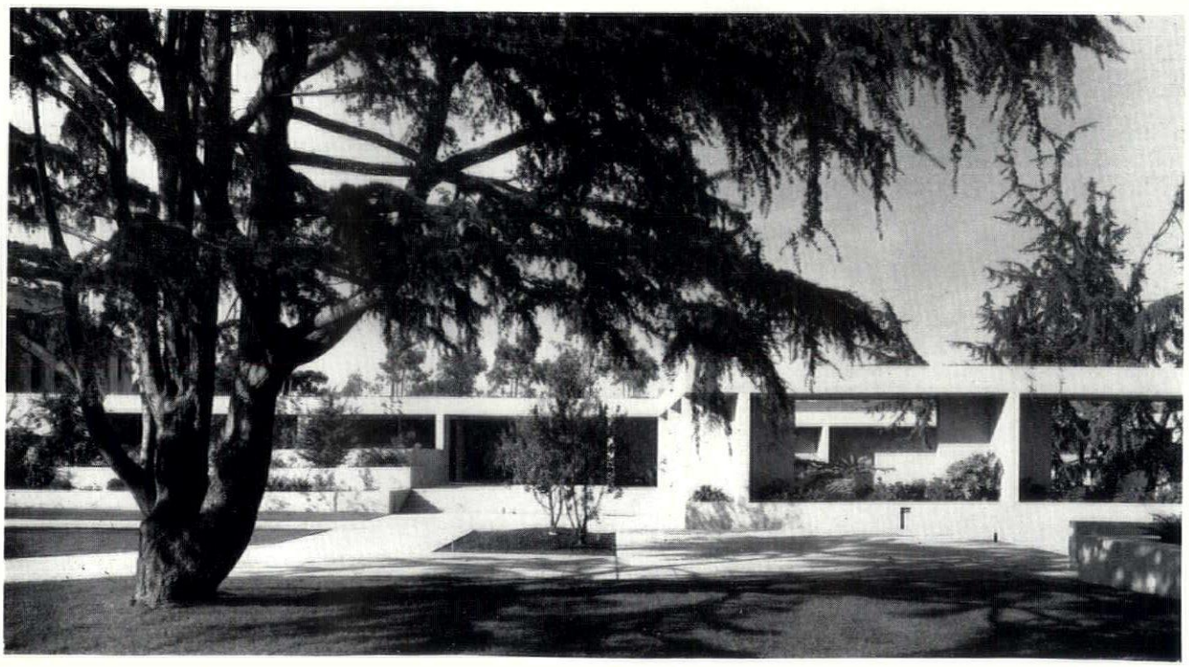
4


5

spirited idea will depend on people being able to get in as easily as into a park, something which the security problems of a museum may make impossible. The vast invisible structure was financed by a city bond issue approved by vote (a fact which influenced the conception), and will incorporate, when the museum formally opens in September, what were previously three small and struggling museums of art, natural science and history. These sections, devoted exclusively to California, will be seen in three large exhibition halls, 4, which stand on three successive levels, each hall being accessible from the adjacent terraces. The complex plan contrasts with an apt economy of form and materials (concrete with exposed white aggregate in plain cubic shapes) which forms in turn an effective background to the luxuriant foliage. The compressed effect of the hanging gardens when looking up the site (seen in 1) alternates with the more extended view downhill, 5, which also shows that some exceptionally large trees must have been transplanted.

SOVIETS ANONYMOUS

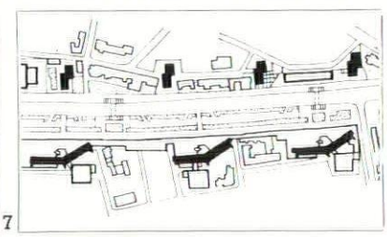
To compare an architecture as sophisticated as the Oakland museum to some of the recent developments in the USSR may seem unfair, but it will at least show the full extent of the gulf between a community where ideas and initiative are anybody's right and one where they remain the prerogative of the state. The new structures on the Kalinin Prospekt near the centre of Moscow, 6, by Posokhin, Mndoyanz, Popov, Zaitsev and Zemliakova, combine housing with offices and shops. The layout, 7, like that of the Leninsky Prospekt (World, AR June 1968) is rigid, but the forms of the individual blocks show a little more variety than usual. In many parts of Russia large-scale destruction in the war necessitated the rapid construction of housing by prefabricated means. A city which suffered severely is Minsk, capital of the White Russian SSR and vulnerably situated on the Warsaw-Moscow highway (it was in German hands for three years). It is good to see that the dreary housing blocks of the '50s are being superseded by the more humane balconied structures of the kind recently designed by Shpit and Samonchuk in Tolbuchin Street, 8, and that these are intelligently interspersed with cultural and recreational buildings with a horizontal emphasis.

Considerable advance in building technology is indicated by the partly metal-clad State Museum of Cosmonautics, 9, some 120 miles south of Moscow at Kaluga. In the capsule which interlocks with the flat roof the architects, Barkhin, Kircev, Orlova, Strogi and Fomin have provided an unexpectedly light touch and a memorable, if somewhat naive, symbol. Little of the new architecture reveals local influence, and least of all the hotel 'Russia', 10, at Tashkent, capital of the Uzbek SSR and, with Samarkand and Bukhara, one of three historic cities with native quarters of mosques, bazaars and houses of sun-dried mud. The very plain International Style design is by no fewer than ten architects—Belfer, Berkovitch, Gornstein, Knonova, Malor, Murator, Pergamentseva, Pereszogin, Perhja and Khutorskoi.

Three of the team who designed the Kalinin Prospekt buildings (seen in 6 and 7), Posokhin, Mndoyanz and Popov, together with Svirski fare, rather better with their holiday centre at Pitsunda on the Black Sea against a background of wooded hills and mountains, 11. The blocks are placed at right angles to the beach so that all the flats get a view of the sea. Russians must have a good head for heights judging from the insubstantial nature of the balcony balustrades noticeable here and in other examples. The holiday village 'Doubass' in the Crimea by Polanski and Samov, 12, suggests a more fragmented type of development where the smaller units are better integrated with the site.

Outside Erivan, the old capital of Armenia, Torosyan's rest home for town dwellers, 13, stands in the shadow


6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9


10

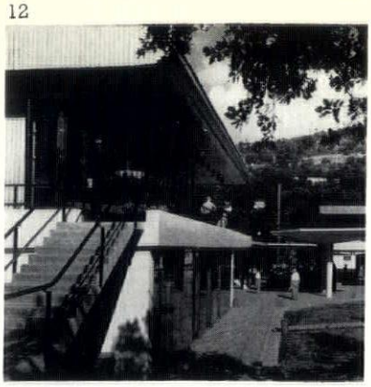

8


11

SOVIETS ANONYMOUS

of Mount Ararat's twin peaks. The ancient city traces its history back to the Urartian citadels of the eighth century BC, but the building seems to owe nothing to tradition and could equally well be taken for a modern villa on the Mediterranean. Except for a blank stone wall with a relief pattern, Kavtsev's sanatorium 'Baikal', 14, is equally anonymous. The building stands on the shores of Lake Baikal in eastern Siberia amid magnificent scenery of cliffs and mountains.

12



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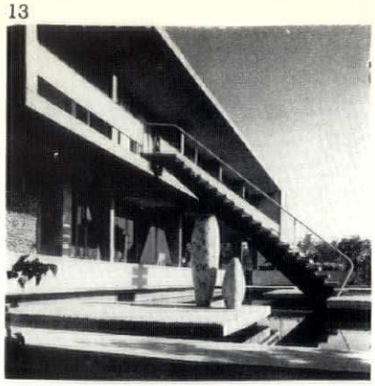


14

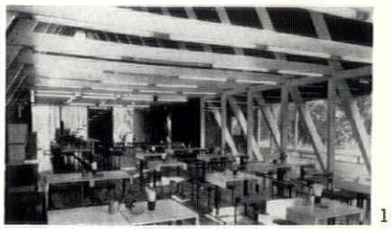


THE BALTIC STYLE

Architecture in Estonia, however, seems to follow Scandinavian practice both in the use of timber and brick as building materials, and in the style of building. The Estonians are ethnographically related to the Finns, and Kherkel's café-restaurant 'Merepeega', 15 and 16, is a well detailed timber structure covered in thatch, with tables, stools and light-fittings of a standard common enough in Finland but rare in a Soviet republic. Positively Aalto-esque with its alternating brick and window bands is Pormeister's scientific-administrative building for the poultry-farming station 'Kurtna', 17 and 18—a building which reflects the importance of just one branch of agriculture in a country in which one-third of the population still draw its livelihood from the land.



15



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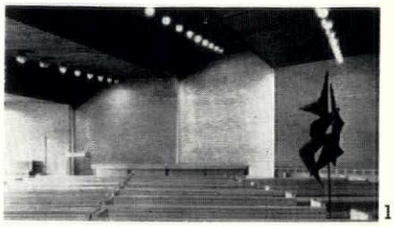

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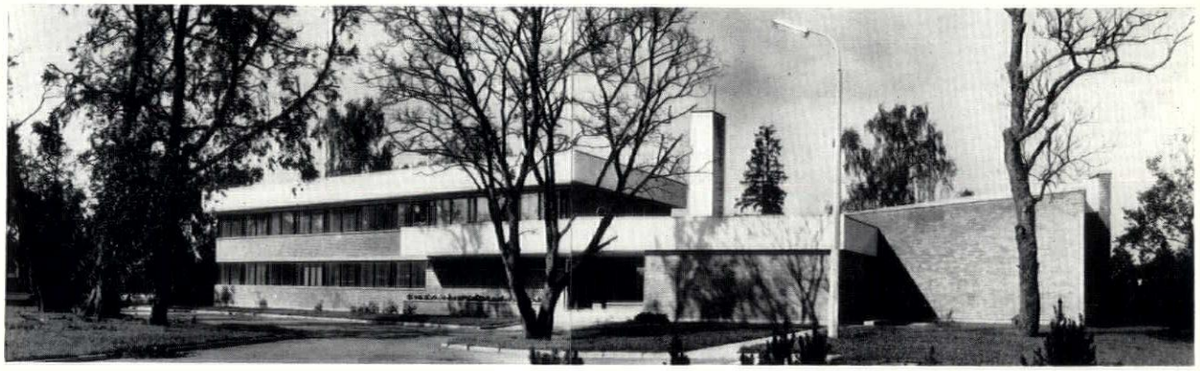
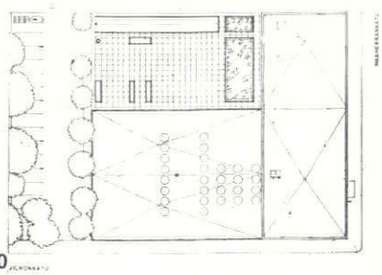


18

RATIONAL RUUSUVUORI

The 'razionalismo' of Aarno Ruusuvuori's police headquarters at Mikkeli in south-east Finland, 19, may seem untypical of Scandinavian architecture, but it is in fact a logical continuation of Finnish classicism. Its relationship to its surroundings follows the principles of Kivinen's town centre plan: preservation of the Empire grid, respect for the street frontage and development of whole blocks as self-contained units. (Such respect for traditional



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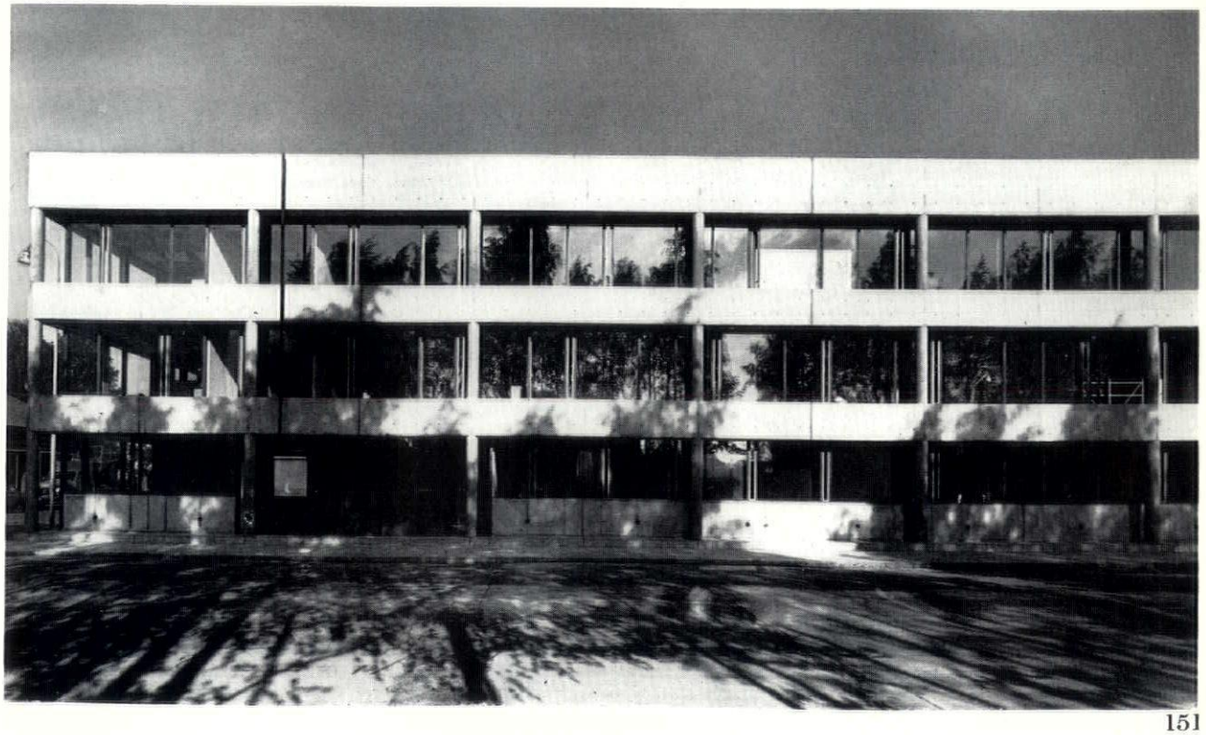

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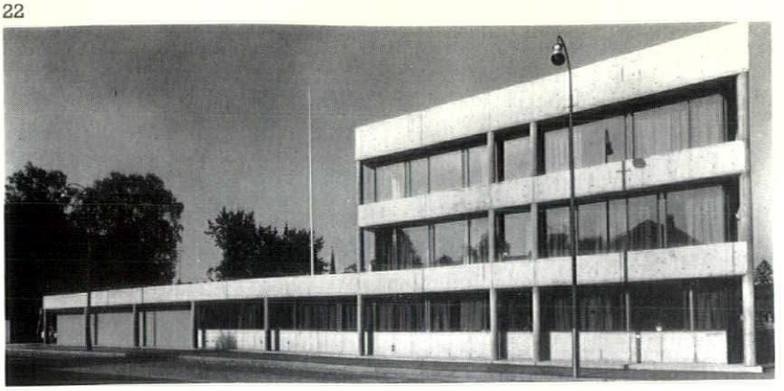
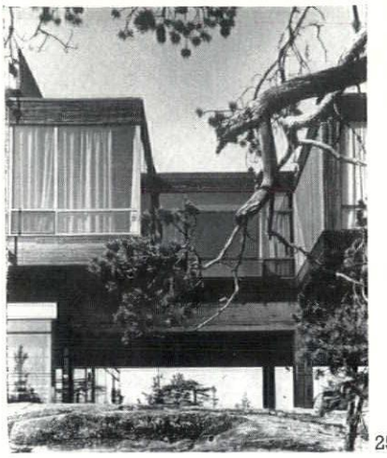


RATIONAL RUUSUVUORI

patterns is not surprising in an architect whose major works include the restoration of the City Hall and other buildings in Helsinki's neo-classical centre). The police headquarters consists of two rectangular frames, 20, one of three stories facing the main street and containing police offices, 21, as well as the Mikkeli TV and radio studio, and a single-storey section behind, 22, containing the duty, training, jail and gym areas. The interiors are painted in a brilliant colour scheme by Anitra Lucander.

23





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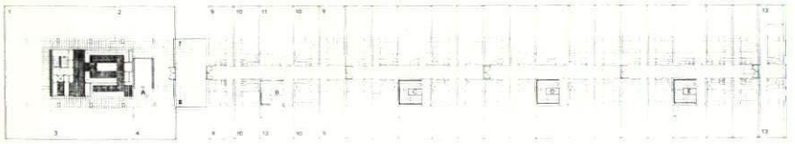
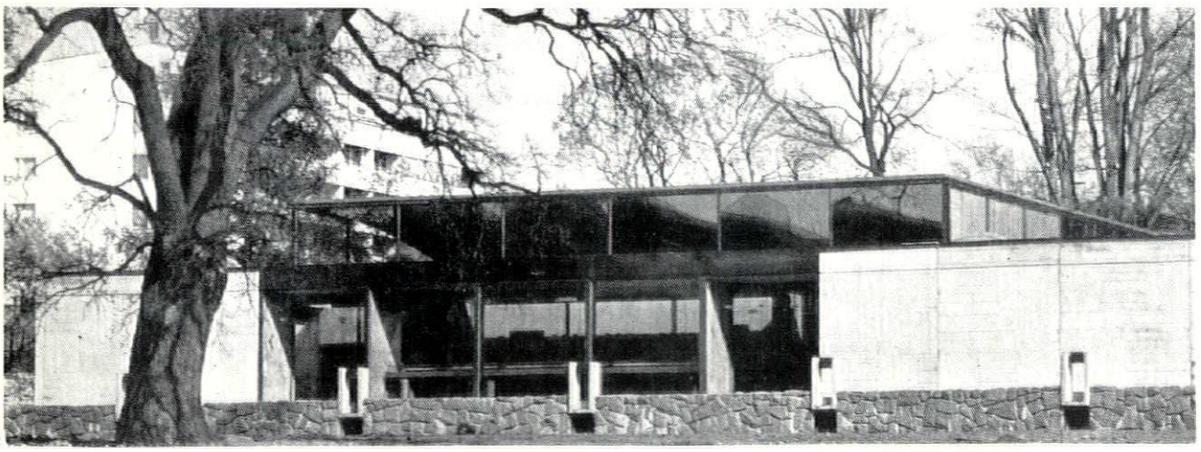
ROVANIEMI MOTEL

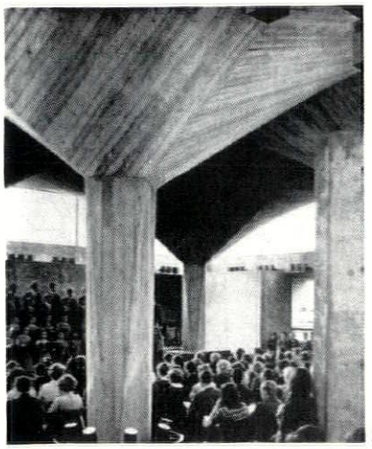
24



Outside Rovaniemi, spring-board for Finnish Lappland and a centre for winter sports, Jaakko Laapotti, a former colleague of Toivo Korhonen, has built a motel on the rocky crest of a wooded hill, 23. The height of the building has deliberately been kept below tree-top level so that the hill, a prominent landmark in a flat landscape, should retain its silhouette intact. At the same time, by lifting the hotel accommodation up on stilts, full advantage has been taken of the view and covered parking has been provided under the building. The plan, 24, divides quite simply into two parts, the joint being expressed by a narrow link, 25. One half contains the restaurant, lounges and conference rooms; the other half the 39 motel rooms and saunas. The ground floor structure is *in situ* reinforced concrete with an upper floor of steel and timber, the restaurant structure being suspended from steel poles outside the building to provide a column-free space.

26



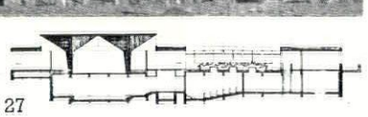


29

SIBELIUS AT TURKU

Woldemar Baeckman's Sibelius Museum, 26 and 30, is situated in the old university quarter of Turku which is dominated by the cathedral, and so discreetly buries half its accommodation underground, 27. Its elegant plan, 28, two major central spaces in the shape of a small concert hall open all round to the museum galleries, and a courtyard surrounded by premises for the local high school's institutes of music and art history, is expressed in the simple glass and concrete exterior with its large central openings. The concrete umbrella structure of the concert hall, 29, is less over-powering than it appears, and the acoustics are exceptionally lively and rich.

27



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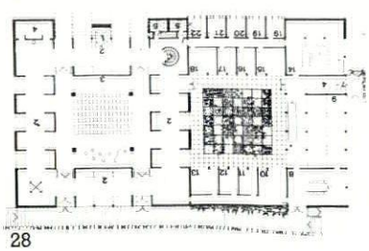
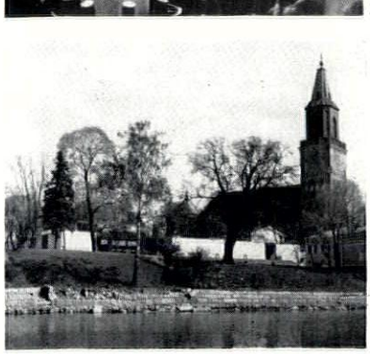




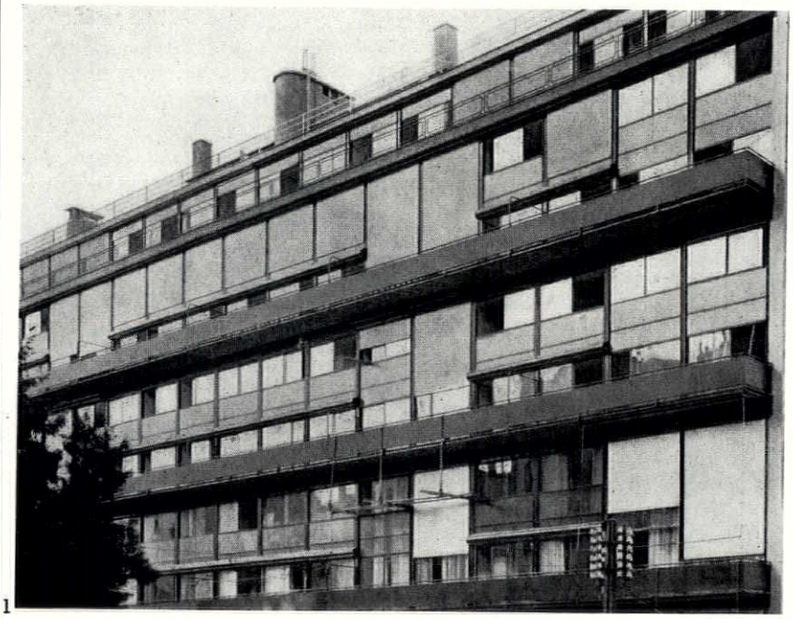
30

VIEWS AND REVIEWS

marginalia

SAVE CLARTÉ

Le Corbusier's Clarté building, 1, in Geneva (1931-2) is in danger. Neglected over many years, the block of flats has become uneconomical to repair. Fortunately its owner has agreed to withold action for the time being to allow local initiative the opportunity of saving it. The Geneva section of the Fédération des Architectes Suisses has asked three of its members to form a society of shareholders whose task it now is to buy and restore the building. (Those



1

interested should get in touch with René Schwertz, 59 Rue du Rhône, 1200 Geneva).

Clarté is a key building in Le Corbusier's *oeuvre*, being the first in which he was able to apply his ideas on standardized housing dating from the 'immeubles-villas' of his 'Ville Contemporaine' (1922), and the first major steel structure (sitting, incidentally, on a concrete base designed by Maillart). It precedes, in conception at least, the steel structure of the Pavillon Suisse. Commissioned by the steel contractor Edmond Wanner in 1928, Clarté also gave Le Corbusier the first opportunity of putting into practice principles of dry construction which continued to interest him throughout his life, and which culminated in one of his last works—also in Switzerland—the Centre Le Corbusier at Zurich.

ENGLISH ZODIAC

Zodiac 18, the latest number of the very distinguished Italian architectural magazine published twice-yearly by Olivetti, is devoted wholly to England. It is a fascinating volume, not only for the high quality of most of the contents but for the light it throws on the aspects of English architecture that are thought most significant, and most worthy of attention, by Italian editors and critics.

Their choice is a somewhat fashionable one, with nearly all the emphasis on what one might call the avant-garde establishment: the Smithsons, James Stirling, Team X, the New Brutalism, Reyner Banham and *Archigram*. But if these familiar names continue to arouse so much interest abroad, that is not a matter for complaint, especially since several of the *Zodiac* articles discuss them and their activities with some attempt at critical evaluation.

There is a well informed article entitled Phoenix Brutalism by Francisco Tentori (admirably translated in the end-section of the magazine, where the Italian articles are repeated in full—not as mere summaries—in English and the English articles in Italian). There is a rather slight article on English Architecture in the Early 20th Century by Henry-Russell Hitchcock, but this is followed by a knowledgeably written pictorial rediscovery of Sir Owen Williams, with notes by Michael Gold. Joseph Rykwert writes very briefly but thoughtfully under the perhaps over ambitious title of Universities as Institutional Archetypes of Our Age, James Stirling writes (or rather reprints a contribution to a 1966 symposium at Bologna University) on Antistructure, and Lina Marsoni writes on Twenty Years of New Towns.

There are 120 pages of illustrations of new buildings, chiefly concerned—predictably—with work by Arup Associates, Ahrends, Burton & Koralek, Lasdun, Stirling, Leslie Martin, Colin Wilson, Lyons, Israel and Ellis and, from the architects of the succeeding generation: Colquhoun and Miller, Edward Cullinan, Eldred Evans, Michael Neylan, Peter Phippen and the Foster-Rogers partnership. Within certain limitations the editors thus show themselves wonderfully well informed about trends in England.

The executive editor of *Zodiac* is Renzo Zorzi. The distributors in England are A. Zwemmer Ltd.

IMPERIAL HOTEL ON RECORD

The Committee for the Preservation of the Imperial Hotel, which made valiant but unsuccessful efforts to save Frank Lloyd Wright's Tokyo masterpiece from demolition, has made a film about it which can be obtained from the Japanese group responsible for it.

In their own words, the film 'illustrates Wright's concepts of spatial modulation, the integral relation of ornamentation and organic architecture'. 'In constructing this record of a no-longer existing building', they go on to say, 'the most advanced techniques have been employed to incorporate available documents, colour slides and old mono-colour stills into the limited available footage of mainly colour and some black and white movie film'.

The film is 16mm. and runs for 29 minutes. The producer was T. Hirafuku, the director-writer S. Koizumi and the English script writer James Wilson. Copies can be obtained, at a cost of 450 US dollars (including air freight charges but excluding any customs duty payable) from Group Gendai Co. Ltd., 129 Tomihisa-cho, Shinjuku-ku Tokyo.

LOSS BY DYNAMITE

The AR is accustomed to publishing and supporting appeals to save examples of early industrial architecture, some of the best of which are continually being threatened, but it is fortunately rare for the owners of these structures to be in such a hurry to destroy them that they blow them up while an appeal is still being launched.

This has just happened in the case of the magnificent Crowhurst-Bexhill railway viaduct, shown in 2, which adorned a beautiful stretch of the Sussex countryside until 21 May when it was dynamited by British Rail on the grounds that they could no longer afford the cost of maintaining it. A letter appealing for its preservation, or at least for a pause in the preparations for its destruction, had appeared two weeks before in the *Guardian*, and discussions were beginning about how it could be saved. But British Rail, who have shown themselves deplorably disinterested in their historical treasures, could not wait.

The viaduct, described by the writer to the *Guardian* as combining Roman grandeur with Victorian charm, was built in 1897–1902. The branch line it served was closed four years ago, and now of course it will not be possible for it ever to be reopened, as some closed lines have later been.

obituary

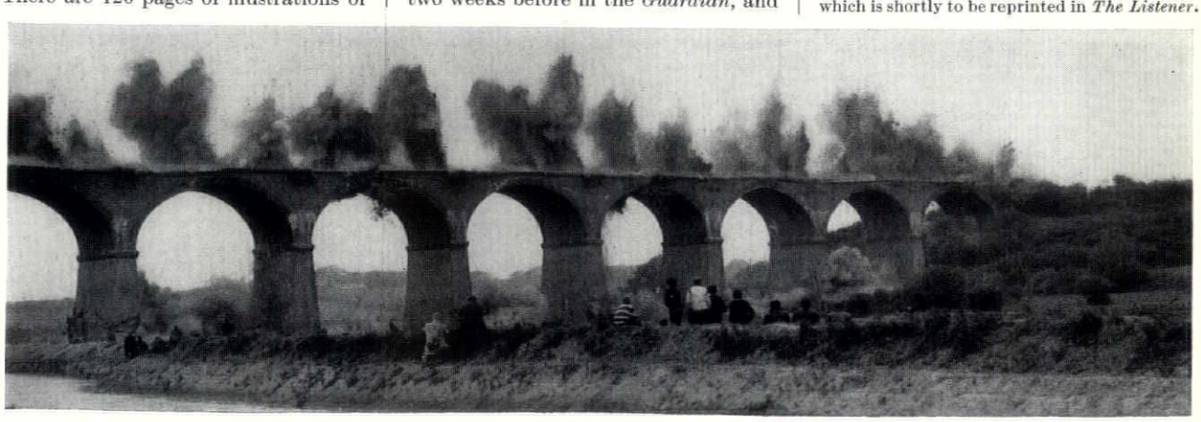
SIR E. OWEN WILLIAMS: 1890-1969

Though he had a long career as consulting and civil engineer and as architect, Sir Owen Williams, who died on 23 May aged 79, owed his place in history to the succession of buildings of reinforced concrete construction that he designed in the 1930s and that are now included among the pioneer works of modern architecture in Britain. His factory for Boots, at Beeston, Notts (1930) is a classic of its kind and is known all over the world for its clean, expressive use of mushroom construction and glass curtain-walling. Other examples are his Empire Pool at Wembley (1934) and his Pioneer Health Centre, Peckham (1935).

Williams might have appeared even more prominently as a pioneer modern architect; for his design for the Dorchester Hotel was highly original and far in advance of its time. He was commissioned as architect of this new hotel in Park Lane in 1929, but when construction had barely begun the proprieters decided it was going to be too unconventional for the clientele they hoped to attract and called in Curtis Green to restyle the exterior, upon which Sir Owen Williams resigned.* In the hotel as it stands at present, Curtis Green's design clothes a structural skeleton which is largely Williams's.

Williams first attracted architectural notice with some Scottish bridges, making interestingly plastic use of reinforced concrete, that he designed (with Maxwell Ayrton as consulting architect) between 1925 and 1930, and as it happened his last exposure to the opinions of the architectural profession was also occasioned by designs for bridges. He was responsible for all the bridges along the M1, Britain's first motorway completed in 1959, and these were widely criticised as being crude and heavy (qualities partly, it was revealed, resulting from the use, for

*This story was more fully told by J. M. Richards in a BBC talk broadcast on 13 June, which is shortly to be reprinted in *The Listener*.



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reasons of economy, of standard supporting elements whatever the scale or span), and they were compared unfavourably with the more elegant structures that could be seen on Continental motorways. Others admired them as expressing power and as being suitable for viewing from fast-moving vehicles; also perhaps as forerunners of the aggressive Brutalism that was soon to become an architectural fashion. Williams also gained wide public attention for a design he put forward in 1935 for a new Waterloo Bridge, consisting of a level road-deck cantilevered from either side of a single row of cylindrical columns.

Sir Owen Williams was consulting engineer to the British Empire Exhibition, held at Wembley in 1924, and it was for this work that he was given a knighthood at the early age of 33—along with the architect to the exhibition, Sir John Simpson. Their joint creation, Wembley Stadium, has been in continuous use ever since.

correspondence

EUSTON AND ANHALT

To the Editors.

SIRS: The fates of two important railway structures, one in London, the other in Berlin, indicate two different official mentalities towards historic monuments. The demolition of the Euston Arch was a regrettable piece of vandalism, especially as it could have been dismantled and re-erected on a convenient site (as your April montage showed), but what of a whole station building? Would the fate of the famous Anhalter Bahnhof, in Berlin, have been different to its present one, had it been erected in London? I tend to think it would.

This station was erected in 1875-1880, at a cost of 18,000,000 marks, by Franz Schwechten and the engineer Seidel, and at the time was the longest on the Continent, the breadth of the departure-pavilion being 200 feet. Externally it showed a handsome façade, tastfully decorated in terracotta, on which renaissance influences were apparent, this style being the one most favoured at that time, due to the more flamboyant atmosphere following the establishment in 1870-71 of Bismarck's triumphant Reich. Prior to this, a more austere and monumental architectural style had been prevalent, derived from Schinkel and his pupils. Internally the Anhalt Station was impressive, particularly the famous 'Princes' waiting lounge'. In 1939 58 trains were entering and leaving daily, with 40,000 passengers. It was regarded for many years as a model of how such structures should be built. The 1930's saw it as the embodiment of the Rome-Berlin axis, as it was Berlin's 'gate to the south', and many impressive receptions were staged there. It was the policy of this same axis which brought destruction to the station, as it became a prime target in the war of 1939-1945. On the cessation of hostilities, it had become a wreck.

Although the station remained in use until 1952, when it was closed, no attempts were made to repair the damage, owing to the peculiar situation that, although the building was on West Berlin territory, it was part of the S-bahn network which was (and still is) operated and owned by East German authority, and the station was of no use to them, either as a station or a historic monument

Fortunately the authorities of West Berlin were more awake to their obligations, and have been struggling with the intractable Communist regime to try and come to a decision. Although this building stands in a desolate fringe of West Berlin, isolated from West Germany and largely forgotten, the responsible authorities have not done the easy thing and let the handsome structure fall into total ruin.

When I last saw it in 1966, most of the complex had been demolished, only the façade and portico remaining, but these were still impressive, and gave undeniable proof that in some countries steps are being taken to preserve monuments well out of the public eye.

In a recent communication from the Berlin building senate, I was told that the Anhalt Station was to be preserved for some unspecified purpose, as an architectural whole.

Yours, etc.

MALCOLM G. NEESAM

Tupsley, Hereford.



3



4

3, the Anhalter Bahnhof in Berlin as it looked at the end of the war. 4 and 5, two views of the station taken in 1921.



5

ARCHITECTS' ARCHITECTURE VERSUS LAWYER'S LAW

To the Editors.

SIRS: There is a syllogism, for which I am indebted to Prof. P. B. Medawar, which goes: 'Profound reasoning is difficult to understand; this book is difficult to understand; therefore this book is profound'. Perhaps it would be unfair to suggest that Peter Collins imagined his essay under the above title (AR February) to be profound, but it was hardly a model of clarity.

I cannot agree with the author's proposal that the philosophy of architecture is at least as similar to jurisprudence as it is to aesthetics, or even that the former discipline might be a more useful paradigm for architectural students. However, there were quite a few other disturbing, if less dangerous, failings which should be mentioned first. If one is going to adopt the extreme semantic conventionalism of Humpty Dumpty, which is unavoidable in philosphic discussions, then, like Alice, I consider it only good manners to explain what one means. I have long thought that 'Aesthetics' meant the study of critical statements about works of art. If we do not criticize art, being content only to enjoy it, then aesthetics ceases to be meaningful. Apparently, Mr. Collins means something quite different by the term, though exactly what is not clear. Aesthetics can either assist us in appreciating art which we otherwise would not or, more important, it is a device with which artists can analyse extant works with a view toward improving their own facility. I take it that the latter function is the one referred to in the paper; however, the fact that a study of precedent is common to both law and architecture is hardly a novel idea. The author further seems to adhere to the monistic notion that whatever is true of one art, must be true of the others. This is a pretty theory and fashionable, regretably; it is also unfounded and tends to lead to so much confusion that it is preferrable to adopt a pluralist attitude, which assumes that all of the arts are different, while noting any similarities which may occur.

Peter Collins has similar semantic difficulties with the terms 'law', which he employs in at least two different ways, and 'natural', and with the concept 'natural law', or rather the idea that whatever exists, being natural, is therefore somehow right. The idea of natural law creeps in and out of the discussion in a particularly obnoxious fashion. Hume has shown that it is not valid to argue from what is to what ought to be. The essay doesn't seem to recognize that this is the basic confrontation of architecture; namely, that the architect is always striving to reconcile the need to give visual expression to the social structure in which he exists with the need to express his personal vision of what society should or might be. Of course, we base most of our moral judgements on what exists, but it is erroneous to accept this as true proof. In reality we often observe two mutually contradictory ethical systems which have the same result (frequently both will claim a foundation in 'Nature', in much the same way as the *Wehrmacht* had '*Gott Mit Uns*' stamped on its belt buckles). Lies or death or pregnancy only assume morality, a goodness or badness in relation to their surroundings, although whether one refrains from murder because of a fear of God or because of a lack of physical courage, the result is much the same.

One last term which seems ambiguous is 'architect's architecture', since it implies to me, at least, that architecture is too sophisticated for someone who has little understanding of it to appreciate. The love-at-first-sight syndrome is ridiculous applied to art, but it is necessary to those planners who deal in hypothetical man. However, there is increasing evidence in the field of psychology to contradict this simplistic attitude. Harlow's theory of 'learning to learn' and particularly the work of D. O. Hebb and F. A. Hayek on the role of experience in the development of the mental processes, seem to indicate, if I understand them correctly, that there are sound reasons for thinking that knowledge and understanding are critical to the appreciation of architecture, and thus architect's architecture is high praise. If a distinction is to be made between architecture and building, then such a distinction depends on those characteristics of the former which evoke the artistic experience. Actually, the experience of architecture can be dissociated from the function of a building in much the same way that we have come to divorce the similar experience of paintings from their subject matter. Finally, architecture is not an 'instrument of social reform'. To make it such is what we, in America, call 'copping out'. If we continue to broaden the base of architectural education, we shall be creating men who are part-architect, part-sociologist, etc. . . , and partly trained in each field, which seems a dangerous compromise to make.

Yours, etc.,

WILLIAM MCCULLAN

Newbury, Ohio.

COURTYARD HOTELS

To the Editors.

SIRS: Professor Hoag ('Courtyard Hotels of the Wild West', April AR) might like to be reminded of an early American precedent for a hotel with a many-galleried, sky-lighted interior

ARCHITECTS—ARUP ASSOCIATES



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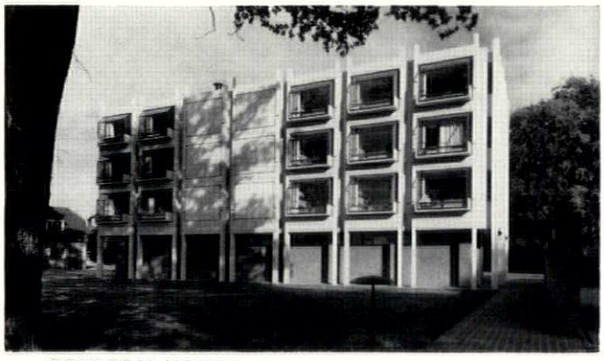

BOULTON HOUSE—TRINITY HALL, CAMBRIDGE

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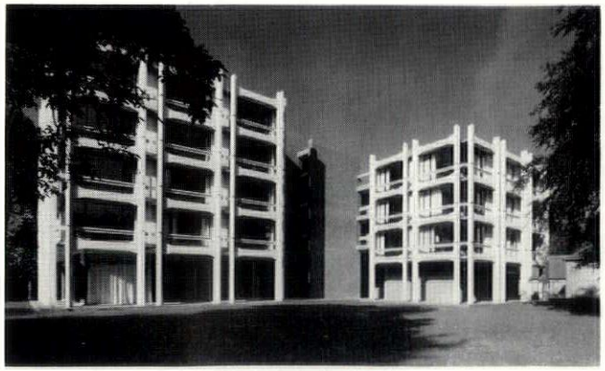

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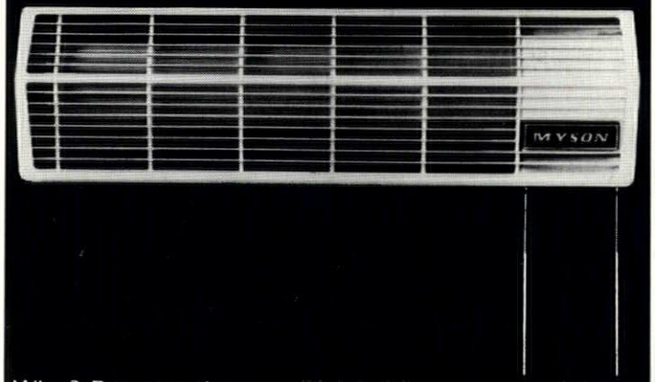

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Myson Air Units Limited, Industrial Estate, Ongar, Essex. Telephone: Ongar 2255.

court. It was the short-lived Boston Exchange Coffee House, of six main storeys plus 'ground-floor' basement and 'semi-basement' cellars, built c. 1806-8, burnt 1818. I believe Isaiah Rogers, who built the Tremont House in 1828, first went to Boston in 1816, in time to see it as a boy. There was a little note from me about it in the American *Journal of the Society of Architectural Historians* eleven years ago (XVII, 2, p. 32, calling the courtyard, by a slip, a rotunda). The description comes from Caleb Snow's *History of Boston* (2nd ed. of 1828, pp. 329-31) much of which apparently comes from a periodical, *Omnium Gatherum* for November 1809:

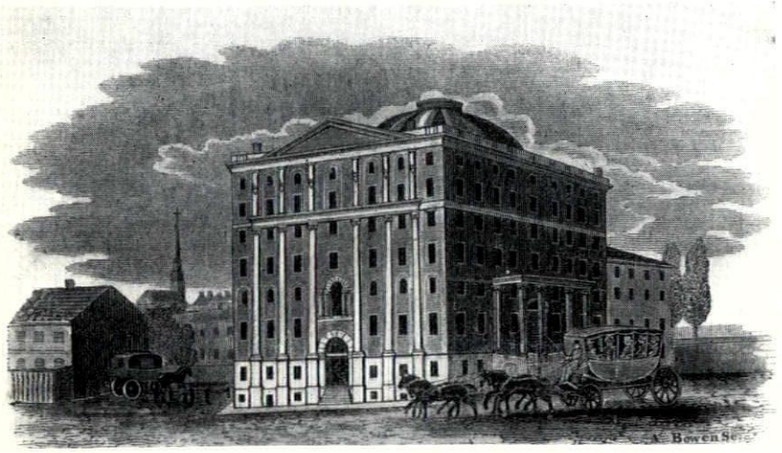
'The Boston Exchange Coffee-House . . . was the most capacious building and most extensive establishment of its kind in the US. The early history of this structure is that of an unsuccessful speculation, which . . . cost the projector, and through him the publick, upwards of $500,000. . . . In other hands it was completed . . . and went into operation in 1808, two years and a half from the time it was commenced.' (Long footnote: 'This grand edifice was destroyed by fire, on Tuesday, Nov. 3, 1818 . . . thousands of spectators . . . were witnesses to this sublime wreck of matter.') . . .'Its shape was an irregular square . . . measuring 132 feet in its broadest front, and only 94 feet on its narrowest. . . . Upon entering the house, you stood on an interior area 70 feet in length and 40 feet wide, in the form of a parallelogram, which was lighted from the top by means of a magnificent dome, 100 ft. 10 inches in diameter' (something funny there). 'Around this area was extended a portico, or rather several porticos, each consisting of 20 columns, which reached from the ground floor to the roof, and supported five galleries leading to the different apartments. The height of the top of the dome from the floor was 83 feet. Here was an assemblage of the different orders of architecture, from the ornamental Doric to the Corinthian, which produced a very agreeable impression upon the eyes of the spectator. . . . The interior space was as nearly as possible equi-distant from the sides of the structure; and the apartments which surrounded it upon the various stories, amounted to about 210. . . .'

No architect is mentioned. The principal floor had been intended for a public Exchange, but 'the merchants from long habit, prefer to stand in the street'. There was a 'publick reading room', a coffee room, a bar, a dining room for 300 persons, a two-storey 'arched ballroom', a large 'Masonick Hall', lodging chambers, and 'an observatory on the sixth floor, connected with the news room below', probably for spotting ships arriving in the harbour. The exterior seems to have been mainly of red brick, on a basement of 'hammered granite' and white marble, and some attenuated pilasters were strung across one front. The enclosed engraving, 6, of the Coffee House is included in some copies of Snow's book. It does not make it clear whether the Pantheon-like dome was all glass as the text implies, or only its eye. The fiery fate of this seven-and-a-half-storey building in 1818 probably accounts for the modest height of the Tremont House ten years later.

Yours, etc.,

PRISCILLA METCALF

London W1.



6

book reviews

EURO-INDIAN

EUROPEAN ARCHITECTURE IN INDIA *By Sten Nilsson. Faber & Faber. 7 gns.*

This is astonishingly the first book on the subject. No Englishman has attempted it, though Roderick Cameron has published some evocative photographs*. Mr. Nilsson's documentation, within his self-imposed limits, is admirably thorough. It naturally includes the two Danish stations, Tranquebar and Serampore, as well as the French Pondicherry and Chandernagore, though only at Serampore does anything of architectural interest survive. But old prints indicate rather more sophisticated planning and architecture than our own East India Company thought necessary at the time. It is inevitably the British achievement, and specifically the architectural achievements of British engineers armed with English textbooks from Gibbs through to Stuart and Revett, that dominate the book. Mr. Nilsson takes us systematically through travellers' impressions, town plans and individual buildings type by type, ending with a general appraisal in Vitruvian sequence which he rather solemnly entitles *The Indian Vitruvius*.

The total effect is charming but a little below the level of the *critique* here applied to it. The truth is that no British designer of talent set foot in India before Scott, and none of genius before Lutyens, and neither of these are within the chosen period. The fun of looking at Anglo-Indian architecture is spotting sources, and this the author does with expertise, right down to a gate-pier out of Batty Langley. To see St. Martin's in the Fields and Stowe and Kedleston and West Wycombe misquoted in plasticine and set among mangoes and dozing bearers is much more than, or less than, a purely architectural experience.

Lacrimae rerum is appropriately one's most powerful emotion as one explores the overgrown and decaying temples and obelisks in the British cemetery in Calcutta, or the white marble monuments shipped out from England and placed in St. John's Church in memory of men and women who died so young. Mr. Nilsson attributes to these Anglo-Indians 'important innovations which enriched the classical language of architecture with a new dialect'. I think this is disputable. The Gibbsian churches and the Palladian or Grecian public buildings can be paralleled in America, Australia and even Russia, and the wide verandahs of Chowringhi and Alipur seem to have started life in Clifton and Cheltenham before spreading all over the Anglo-Saxon world.

Even our dear bungalow probably derives from the Louis XV *pavillon* and the English gate-lodge, and owes nothing more than its name to Bengal. Perhaps the only truly original Euro-Indian creation of the period was General Martin's mad palace outside Lucknow. Mr. Nilsson as good as admits all this when he writes of the British: 'Contrary to previous conquerors of the country, they strove consciously not to be absorbed in the oriental mass. In architecture they had an instrument by means of which they could manifest their status and their ideas so long as they kept the style pure.' This they studiously did; there was no hybridization on their side, though much on the Indian.

India is a stucco country and a poor one, and few of these buildings are likely to survive many more monsoons —a sad thought not for merely nostalgic reasons but because so few of their replacements look like having anything like as much character. Meanwhile it is urgent that others should extend the territory so systematically opened up by Mr. Nilsson, both in space and time. There is more good stuff even in the places he covers (like Madras), and much more elsewhere—in Bangalore and Poona, in Delhi, Agra and Lahore, not to mention Goanese Baroque, Rajasthan Rococo, and Himalayan Victorian. For those who follow, let the motto be: 'less notemanship, more leg-work!'

LIONEL BRETT

*In *Shadows from India*, Heinemann, 1958.

WORLDWIDE PLANNING

VILLAGE PLANNING IN THE PRIMITIVE WORLD. *By Douglas Fraser.* URBAN PLANNING IN PRE-COLUMBIAN AMERICA. *By Jorge Hardoy.* CITIES AND PLANNING IN THE ANCIENT NEAR EAST. *By Paul Lampl.* MEDIEVAL CITIES. *By Howard Saalman. Studio Vista Ltd. 42s. each.*

Primitive planning offends me. I really wonder whether this ought to have been included in the series of which these books are the first four since its subject is not cerebrally based and therefore unjudgeable via a book: the groupings can only be experienced from inside those societies, communicated by flesh, not by print. The only insight the book gives me is one that might help in reading an archaeological site: illustration 40, South Nias village, shows causeway, ditches, edges to house platforms, terraces with simply palm fronds added. Otherwise I am embarrassed anyone has intruded on these people.

The Ancient Near East volume interested me most, perhaps by chance. Urban comments on the Uruk temples would be interesting to read alongside Giedion. I would argue with the author, Lampe, that Borsippa and Merkes quarter, Babylon, do seem to have some dimensional ordering or measure as if based on a directive or superior surveying or overseeing or state building team. Almost all the plans hold some interesting facet of ordering. Dur-Untash can be read as a diagram of approach. In the cities, the major component is a peculiar massing of long narrow passage-stores as if life was quartermaster-based inside a build-up of game pantries, preserved eggs (going bad?) in jars; an extraordinarily frightening store-away culture also seen in Crete (and Carthage?). In the Pre-Columbian volume the feeling that the author has visited the places is good: 'long walk along the main axis of Teotihuacan' and 'ascent to main square from south at Xochicalco'. The dating of photos is useful. Tikal and Mayapan show amazing centripetal urban structures.

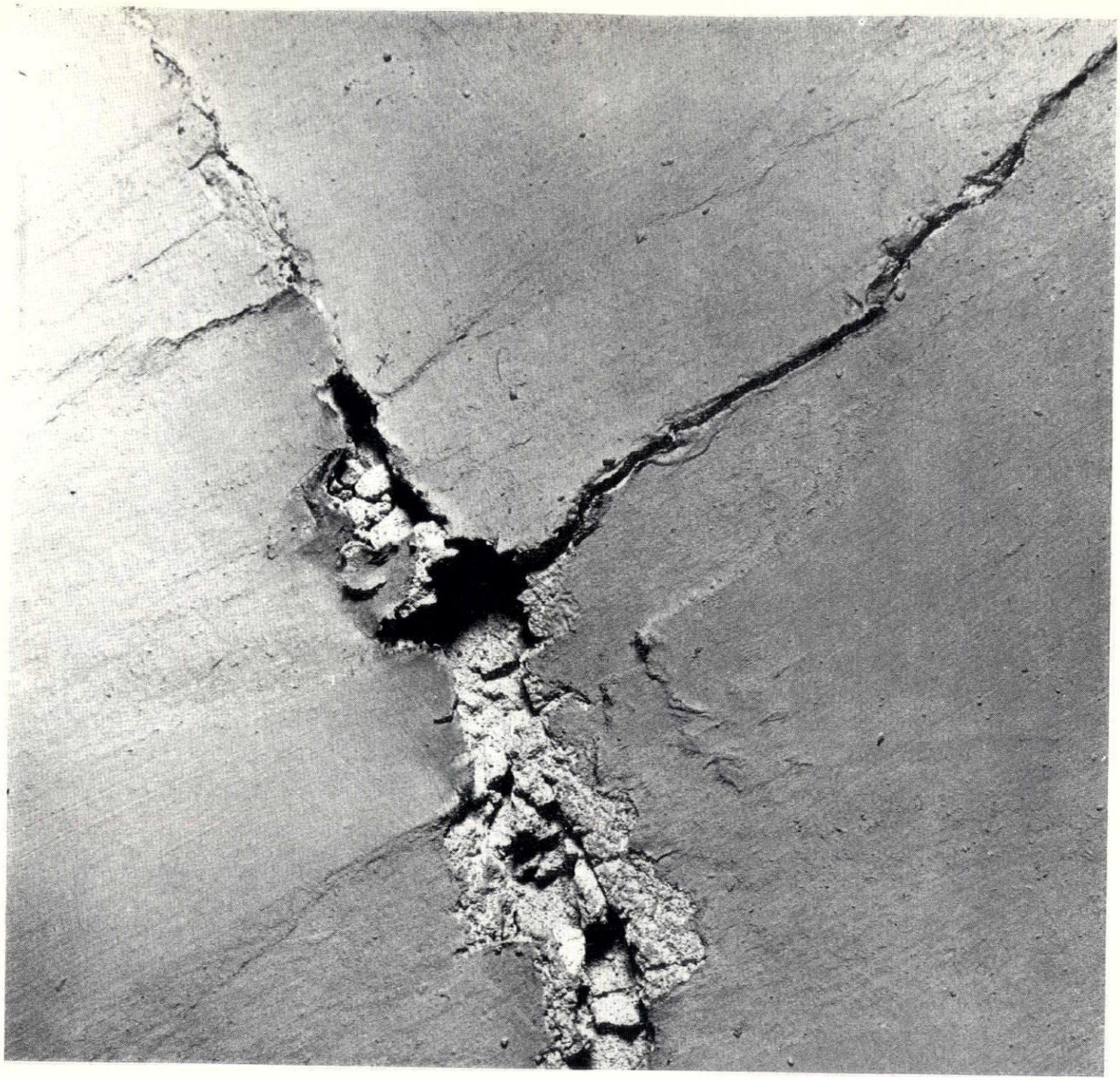
The heavy weight of building responsibility begins to be felt when one comes upon the statement 'All societies that colonised . . . adopted standard criteria for urban layouts which they applied . . . .' This makes me consider the British as colonists. They had no urban form, yet the French, co-existing in the lush period of colonial expansion, did have. We brought fairness—the French civilization, in actual built organisational form.

The Ancient Near East and the Pre-Columbian America volumes together show much that has influenced present American architectural thinking. I quote (p. 21 *Ancient Near East*): 'if there was any concept of planning it was restricted to individual building units . . . .' In both books not all the places mentioned are on the maps, an all too annoying phenomenon in this sort of book and shameful among career pedagogues: the frames of the maps are quite inconsequential. In the Pre-Columbian volume roman numerals on pages 13 and 14 and diagram 1 turn on diagrams 2 and 3 to arabic numerals, and 'Labyrinth' (diagram 46) becomes Laberinto in the text. Typographically, figure-numbers do not stand out and jolt one into turning them up at the back.

In *Medieval Cities* the illustrations are as fascinating as this sort always is. But, I quote 'There is only one criterion of failure for cities—depopulation'. I would argue with this. I think London fails, and always has failed, as a city in any built organized-form sense. In engravings 22 and 41 you clearly see that it's bitty, formless; culturally a no-place; a citizen dump for city dwellers never needing to spend money defensively or competitively, existing in unelevated mental isolation. Representing a culture it's a disgrace. It never tried—every other city and many towns in England at least tried.

For a slim volume, perhaps one insight found in each is enough—but not, I would have thought, worth a hard back or 42 shillings.

ALISON SMITHSON



The unfunniest crack of all

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Lovell Construction Group, Marlow House, Chiswick, London, W.4. Telephone: 01-995 1313

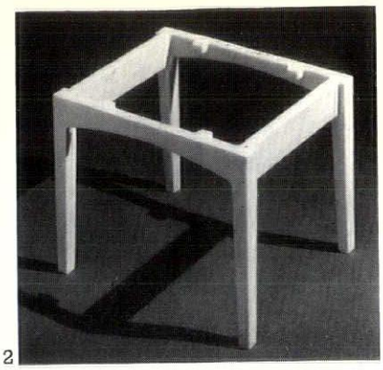
The Industry

Steel structural system
Marley Structures, a division of Marley Concrete, have designed a complete new range of structural steel portal frames as an addition to the existing precast concrete structures, which are made in spans up to 80ft. The new steel frames take over from this point, with spans from 80 to 110ft. by increments of 5ft. and are offered as frame only structures or with almost any type of infilling, with integral insulation. Eaves heights can be varied from 8 to 24ft. by increments of 2ft., allowing extra storage or overhead working space, or an extra floor. The system has been evolved to meet the demand for larger and more rapidly erected permanent structures.
Marley Structures Ltd, Guildford, Surrey.

Preventing damage to car parks
Richard Berry & Son are now making a range of spring steel buffers for preventing damage to walls in multi-storey car parks, or even to define areas in open-air parks where their installation is cheaper than kerbing and prevents cars driving on to the grass. The buffers can be fixed to walls or floor and road surfaces and consist of U-shaped lengths of flat strip 3in. wide and from 18 to 24in. high, 1, and are strong enough to stop cars in a couple of inches or so even if they are moving at about seven miles an hour. The buffers can be covered in p.v.c. (six standard colours) or fitted with rubber sleeves and can be used singly, or in pairs, with or without cross pieces. For parks or garages where walls are damaged by continual impact from car bumpers these units provide a simple answer. The makers are members of the Brockhouse group, and make springs of all kinds for the motor industry.
Richard Berry & Son, Birmingham Road, West Bromwich, Staffs.

Rigid foam instead of wood and metals
A new low-cost process for the production of moulded components, including structural units, has been developed by ICI, using a rigid polypropylene foam with a specially-formulated powder pre-mix. The mouldings are light, with a density about the same as red pine or deal, and on a weight for weight basis are almost three times as stiff as parts made from polypropylene in its solid form. The moulding process is based on sintering techniques and uses moulds made from mild steel or aluminium sheet while heat is used to complete the mouldings, which have a closed cell structure with a dense outer skin which will also reproduce any textured or grained finish on the mould face. The colour of the finished mouldings is white, and they are normally finished with paint, though they may also be clad with vinyl or fabric. ICI believe that the most promising applications are chair shells, drawers, carcases and other units for the furniture industry, window frames, car components and frames for consumer durables. Production involves none of the heavy expenditure needed with injection moulding machinery and the products made are competitive in cost with fabrications of such materials as chipboard and plywood, where there is a higher labour content. The typical coffee table frame, 2, could be made in the foam for as little as 18s. 4d. not including finishing costs and can include curved surfaces and any fixing lugs at no extra cost. There are at the moment no firms producing finished articles in the material, but industrial designers should be interested in its possibilities.
ICI Ltd, Millbank, London SW1

Study-bedroom furniture
A new range of study-bedroom furniture, 3, all within the University Grants price limits, is being produced by Gordon Russell Contracts. There is a wide choice of tables and desks, chairs, shelves and storage units, in beech with alternative surface finishes, including teak veneer. Storage units can be wall mounted or used on the top of the tables, which can also be fitted with nests of drawers. Chairs have Pirelli webbing or platform seat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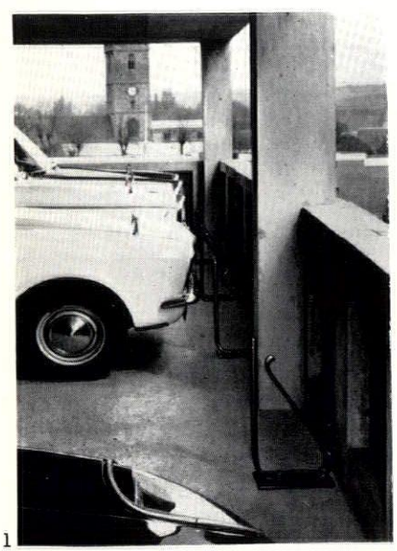
supports and there is a choice of upholstery materials. Variations in all the designs can be made to suit specific requirements.
Gordon Russell Contracts Ltd, 13 Stratford Place, London WIN ODU.

Windows in p.v.c.
Formica Ltd. have progressed, over the past few decades, from the manufacture of their laminates to be bonded to the products of other firms, to the production of laminated boards with various types of core and, more recently, to the production of complete components such as the Lifeseal range of doors, drawers and cubicles, all with the necessary hardware. This policy of introducing complete components is to continue, the latest development being the Lifeseal range of p.v.c. windows, evolved from the Agrément-approved window first marketed by Bovis Building Products in mid-1967. Formica purchased the patents for the whole range at the beginning of this year, and after some design modifications and experiments to determine weather resistance and maximum sizes are now marketing all the main types of window, vertical and horizontal sliders, casements, fanlights, hoppers and pivoted windows. The material used is high impact unplasticised p.v.c. which can be extruded to close tolerances, and it has been possible to limit the total number of extrusions to 17, which provide main frames and sashes and also accommodate captive weather-proofing strips, fixing clips, spring balance units and snap-in glazing beads. Joints on sashes and main frames are mitred and automatically welded to close tolerances. Glazing can be done on site or at the factory for nearly all types of window, the glass being held by a p.v.c. bead without any screws or clips, after which the recess is filled with mastic or glazing strip, though with sliders the sash sections are bonded to the glass with a friction p.v.c. tape or a two-part mastic, operations which are best carried out under factory conditions. Horizontal sliders takes 32 oz. sheet, but other types will take up to ¼ in. glass and standard double glazed sealed units. The standard colours are white and grey and apart from an occasional wipe down should be completely maintenance-free. At the moment the windows are about the same price as the better quality aluminium systems and are most likely to be used for hospitals, schools and similar buildings. In the long term, however, it is hoped that with increases in timber fabricating costs and decreases in plastic prices the windows may become competitive for all applications.
Formica Ltd, Thermoplastics Division, Wharfe Estate, Ealing Road, Alperton, Wembley, Middlesex.

Underground drainage
After lengthy field trials and testing Marley Plumbing have introduced a new system of unplasticized p.v.c. underground drainage which eliminates inspection chambers, which are replaced by rodding points where bends and junctions occur. The rodding point is made up with a slow bend from the drain, and a length of pipe terminating in an access cap and a small concrete inspection cover at ground level. Full details are available in Marley information sheet No.7.
Marley have also started the production of 2½ in. by 2 in. rectangular rainwater pipe. This section has been asked for by users of the firm's box eaves unit and Classic gutter systems in order to improve the general appearance of the installation. The standard colour is white and the price is about the same as the 2½ in. diameter round pipe.
Marley Plumbing Ltd, Sevenoaks, Kent.

Coloured chain-link fencing
The conventional chain-link fence, more often than not wired to concrete posts and with two or three strands of barbed wire on the top, is a depressing sight reminiscent of the concentration camp, and not much improved by painting. Plastic-coated fencing is usually a somewhat bilious green, and if coated by dipping tends to suffer from tears at the bottom of the links. Colorguard, a limb of the Firth Cleveland group, have approached the problem in an intelligent way and have produced a very good choice of colours, discovering during their investigations that most architects detest the rather strident green which most firms seem to pick almost as a reflex when thinking of country fences. The fencing itself is made with a galvanized core of 40 ton high tensile wire as against the 25 ton tensile required by the British Standard, and over this is extruded a vinyl coating before the wire is woven. Colours have been carefully chosen, a bronze being most often chosen for use in the country, and a mid-grey for industrial use, 4. There is also a useful darkish green, as well as black and white. For use with the mesh Colorguard produce a rectangular section post with vinyl in the same colours and with watertight caps, while fasteners and fittings are in stainless steel or nylon, so that the fence should be virtually maintenance-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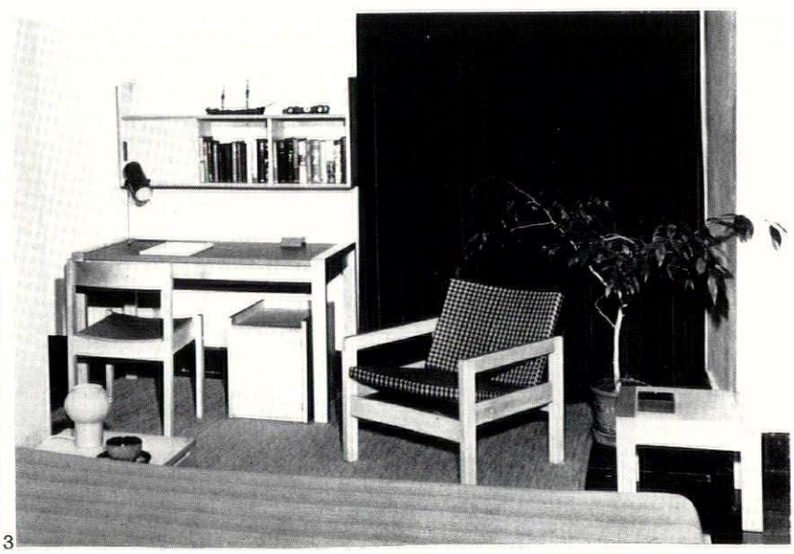
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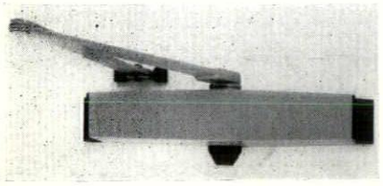
4

free. Vinyl clad gates are also produced, Some authorities use a two colour fence with alternate bronze and green wires to produce a camouflage effect which seems to be successful for some purposes. A 6 ft. high fence would cost about £3 3s. a yard run, supplied and fixed, and there is a slightly cheaper fence made in lighter gauge wire for use round tennis courts where maximum security is not needed. The fencing has the blessing of the COID.
Colourguard Ltd, Tan House Industrial Estate, Widnes, Lancs.

Door closers
There is now a new Briton type 2002 door closer, 5, which is very like the existing type 2000, but which is designed for larger and heavier doors up to 8ft. by 4ft. and weighing up to 200 lb. The standard finishes for the aluminium casing are silver, gold or bronze and there are removable black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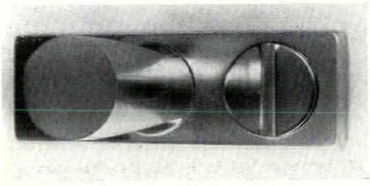
polythene covers at each end which conceal the fixing screws. Closing speed and latch action are adjustable and a single model is suitable for both right and left hand doors.
William Newman and Sons Ltd, Hospital Street, Birmingham.

Architectural ironmongery
James Gibbons, who have been making ironmongery in Wolverhampton for almost 300 years, are now producing the first range to be made in this country to a metric module. Called the Tee range, it has been designed by Tony Gibbs of Tee Design. The new series includes window furniture, cabinet fittings, door stops and pulls, cloakroom and similar fittings, and there are over seventy combinations of mechanisms, backplates and handles in door furniture alone, based on a 55mm. square module. There are three types of lever handle and also three knobs, the latter all a basically similar cylindrical shape and two of them with flattened and tapered sides to make them easier to turn, 6. The window furniture is available for both wood and metal frames and the casement stays have universal joints. The whole series is made in satin finished aluminium, bronze or polished brass.
James Gibbons Ltd, St. John's Works, Wolverhampton.

P.v.c. rainwater goods
Both half round and square section p.v.c. guttering for use with round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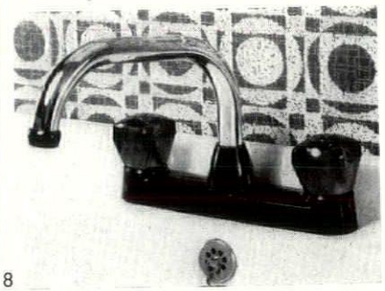
or square downpipes 7, are now being made by Key Terrain. Both types are made from unplasticised p.v.c. conforming to the draft British Standard for rainwater goods, and both are made in the standard grey colour recommended by the RIBA. Unlike most other systems, where the sealing strip is stuck to the gutter jointing brackets, the Terrain seal runs right the full girth of the gutter and is fixed in a channel in the bracket so that there is a considerable thickness of seal with triple rings to provide a watertight joint with only light compression. All joints in both gutter and downpipes provide for expansion, the downpipe clips concealing the cut ends.
Key Terrain Ltd, Larkfield, Maidstone, Kent.

Water taps in plastic
ICI's Opella all plastic tap first appeared on the market nearly two years ago, after a year or more of testing by water boards throughout the country. The plastic used is Kematal, an acetal copolymer with high strength and heat resistance. The taps are now being made not only in the original white, but with coloured bodies to match the standard pastel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shades of current sanitary ware, with a choice of colours for the cross tops: matching wastes and overflow fittings also being made.
There is also a deck type mixer unit for sinks, 8, with a grey or black body and a chromium plated swivel outlet. Both ½inch and ¾inch taps are made for basins or baths, and there is also a water saving spray tap for use in basins. This provides a water flow between 3 and 5 pints a minute. The mechanism has O ring water seals and the tap spindle opens with a non-rotating axial movement so that there is very little wear on the washer. The same mechanism is used in the Opella 500 series, a low cost range intended for local authority work and including high neck pillar taps for sinks. The tap bodies are white, but the pillar taps are also produced in dove-grey. Retail price is 46s. 6d. a pair for the 500 series basin taps.
IMI Developments Ltd, PO Box 216, Witton, Birmingham 6.

Contractors

Residential Building, Trinity Hall, Cambridge. *Architects:* Arup Associates. *General contractor:* William Sindall Ltd. *Heating:* Wilson Heating and Electrical Co. *Plumbing:* Lorne Stewart. *Electrical:* Eastern Electrical Co. *Flooring:* Marshall Davis and Co. *Furniture:* Conran Contracts. *Ironmongery:* Alpha Architectural Ironmongery Co. *Windows:* George Lister/Ideal Casements/Archital. *Blinds:* Tidmarsh and Sons Ltd. *Interior doors:* Leaderflush.

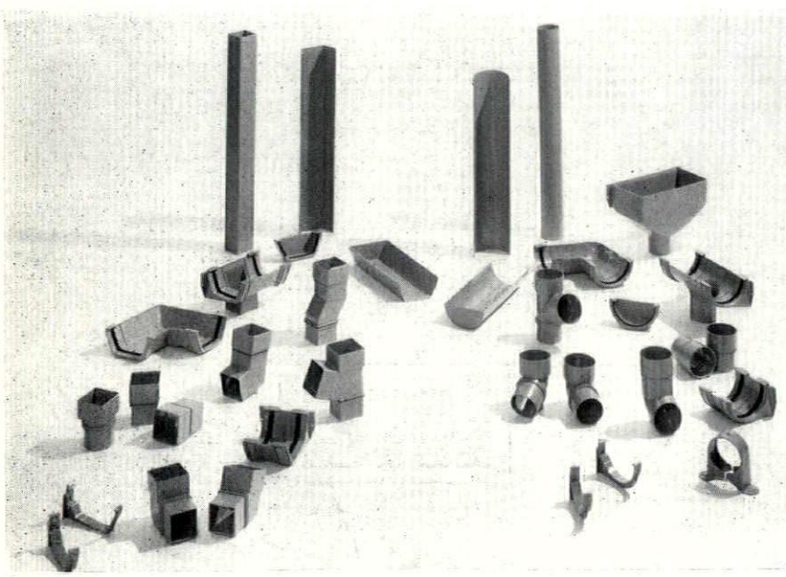
Management Centre, Oxford. *Architects:* Ahrends, Burton & Koralek. *General contractor:* Hinkins and Frewin (Oxford) Ltd. *Sub-contractors: Electrical:* Fred G. Alden (Hill Upton) Ltd. *Mechanical:* Fred G. Alden Ltd. *Zinc:* Builders Iron and Zincwork Ltd. *Roofing:* The Oxford Asphalte Co. *Windows:* Alumin Building Components *Patent glazing:* Pillar Patent Glazing Ltd *Flooring:* Variety Floors Ltd *Kitchen equipment:* Zoppas Catering Equipment Ltd. *Pressed metal:* Sintacel Ltd. *Venetian and roller blinds:* Adalon Industries Ltd. *White concrete blockwork:* Forticrete Ltd. *Sanitary ware:* Adamsez Ltd. *Suspended ceilings:* Hunter Douglas Ltd. *Ironmongery:* G. & S. Allgood Ltd.

Undergraduate building for Corpus Christi College, Oxford. *Architects:* Powell and Moya. *General contractor:* Walden & Son (Henley) Ltd. *Sub-contractors: Electrical:* B. French Ltd. *Precast concrete:* W. & C. French Ltd. *Plumbing:* Walden & Son (Henley) Ltd. *Carpet:* Sound & Scene Ltd. *Vinyl tile flooring:* Variety Flooring Ltd. *Aluminium windows:* Beclawat (Architectural) Ltd. *Metal balustrade, handrails etc:* The Wessex Guild Ltd. *Night storage heaters:* Halolux Ltd. *Metal gate:* Morris Singer, Haskins Ltd. *Plastering:* A.C.V. Telling Ltd. *Roof lighting:* J. A. King Ltd. *Roof paving:* Sealawalk Ltd. *Asphalte:* Limmer & Trinidad Ltd. *Fire-proof doors & partitions:* Durasteel Ltd.

Graduate Flats and Fellows' House for Jesus College, Oxford. *Architect:* John G. Fryman (of Architects Design Partnership). *General contractor:* Tilbury Building Ltd. *Sub-contractors: Electrical:* H & E Engineers Ltd. *Windows:* E. D. Hinchliffe & Sons Ltd. *Handrails:* S. W. Farmer & Sons Ltd. *Furnishing:* Interiors International. *Sanitary fittings:* Stitsons Ltd.

Acknowledgments

COVER: Philip Thompson. FRONTISPIECE, page 86: Patrick Ward. HIGH LIFE IN RUINS, pages 91–94: Pattrick Uden. BRIXHAM'S DEAD CENTRE, page 95: David Hicks. WINCH HUTS, pages 96–97: Philip Thompson. RESIDENTIAL BUILDING, TRINITY HALL, CAMBRIDGE, pages 98–101: 1, 5, Colin Westwood; 2, 4, 6, Richard Einzig; 3, John Donat. MILTON KEYNES, pages 102–108: 1, 2, Aerofilms Ltd; 3–6, Norman Holland. THE NEW GRENOBLE, pages 109–111: 1, 6, 10–12, 14, Pierre Joly/Vera Cardot; 3, 5, Photopress; 15, *l'Architecture d'Aujourd'hui*; 16, *Bouw*. TOWNSCAPE, pages 112–118: Browne Arphot. INTERIOR DESIGN, pages 119–130: Designer's showroom, Kensington, and airways office, Westminster, Tim Street-Porter; Sheet and panel shopfronts, 1, Sam Lambert; 2–4, Toomey Arphot; 5, Peter Hujar; 7, Hubermann. A choice of chairs, 3, 4, 12–16, Reid Arphot; 5–7, 17, 18, Felicia Cronin; 8, Ken Garland; 9–11, P. Kibbles: Furniture in the Management Centre, Oxford, 1, 3, John Donat; 2, 4, 6, Theo Bergström; 5, Sam Sawdon. ROME AND THE VILLA PAMPHILJ, pages 131–135: 1, Thames & Hudson; 2, Wallace Collection; 4, 6–11, Georgina Masson; 5, Oscar Savio. MANAGEMENT CENTRE, OXFORD, pages 136–140: John Donat. UNDERGRADUATE BUILDING FOR CORPUS CHRISTI COLLEGE, OXFORD, pages 141–143: Paul G. Proudman. GRADUATE FLATS AND FELLOW'S HOUSE FOR JESUS COLLEGE, OXFORD: pages 143–145: Galwey Arphot. GALLERY, pages 146–148: 1, Arts Council of GB; 7, 10, Museum of Modern Art, NY; 9, Burckhardt, Arts Council of GB. WORLD, pages 149–152: 1–5, Chalmer Alexander; 7, *Architecture USSR;* 20, *Finnish Architectural Review;* 21, 24, 25, Matti Saanio; 22, Simo Rista; 26–30, *Bauen & Wohnen*. VIEWS AND REVIEWS, pages 153–156: 2, *The Times;* 3, Imperial War Museum; 4, 5, Landesbildstelle Berlin. STOP PRESS, pages 161–162: 3, P. Senior; 4–7, Peter Burton; 8–11, Nairn Arphot.


7

Ian Nairn

STOP PRESS

Townscape problems, outrages and opportunities compiled by Ian Nairn, with drawings by G. J. Nason.

S.O.S.

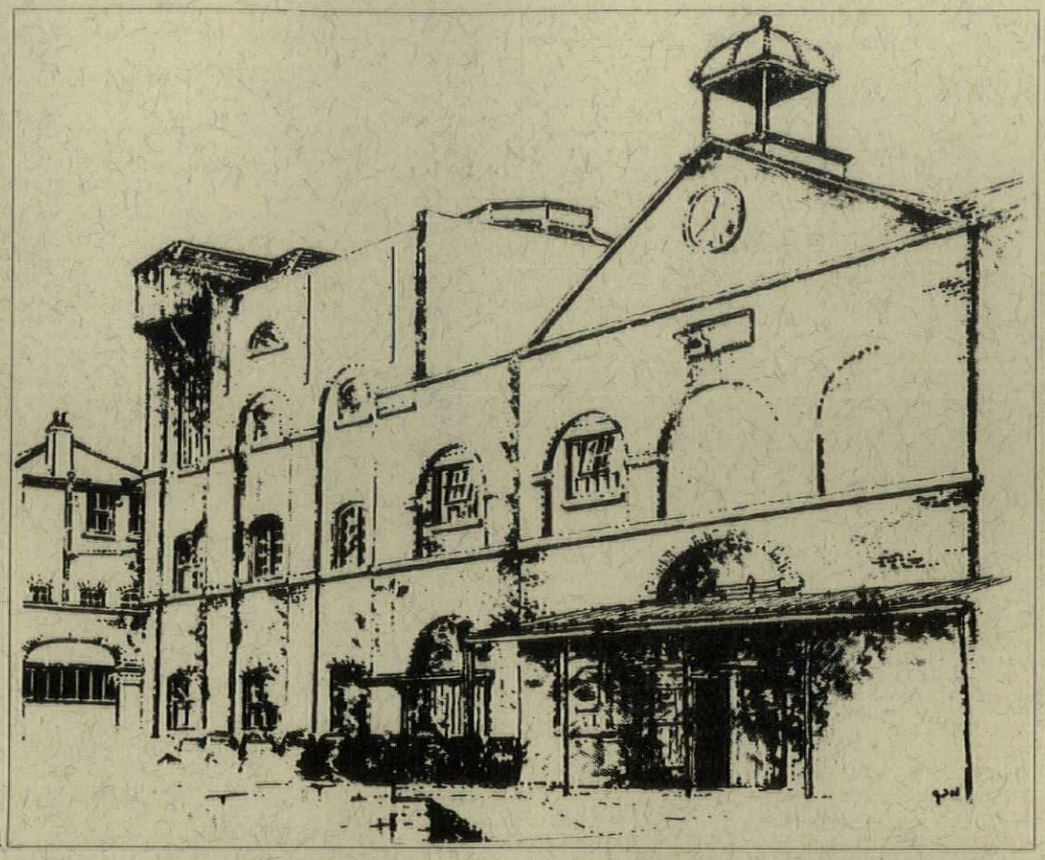
MARGATE, KENT
Cobb's brewery, 1, now taken over by Whitbreads and redundant, is one of the best of its kind: a complete back quadrangle, built in 1807 and rightly selected for illustration in J. M. Richards's *The Functional Tradition*. Surely it can be re-used, in a seaside town with a need for large covered spaces? Any new building, to judge by the rest of rebuilt Margate, will be a disaster.

LEWES, SUSSEX
A house in the High Street, 2, which is beginning to need help. Nothing too serious, yet, but the facing is beginning to come away from the window—not bricks, but mathematical tiles which makes the building quite a rarity.

ROTHERHAM, YORKS W.R.
The Neo-Classical gateway to Stubs's ironworks, Steel Street, 3: the kind of building which is all too easily swept away without notice. Mr. Senior, who sent the information, says, 'It looks to be in a very sad state. Rotherham hasn't got much that one can boast about architecturally and so preservation is of special importance.'

OUTRAGE

TADCASTER, YORKS W.R.
Too late for an SOS; townscape on the grand scale, about to go in Commercial Street, 4, 5, and smaller buildings on their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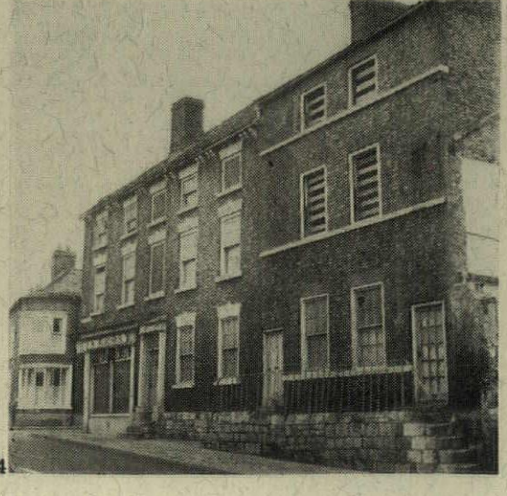
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5

way out just around the corner, 6. Okay, if the replacements will be worth looking at—that's how towns like Tadcaster grew up. But I wouldn't give odds of a hundred to one. Photographs by Peter Burton.



6

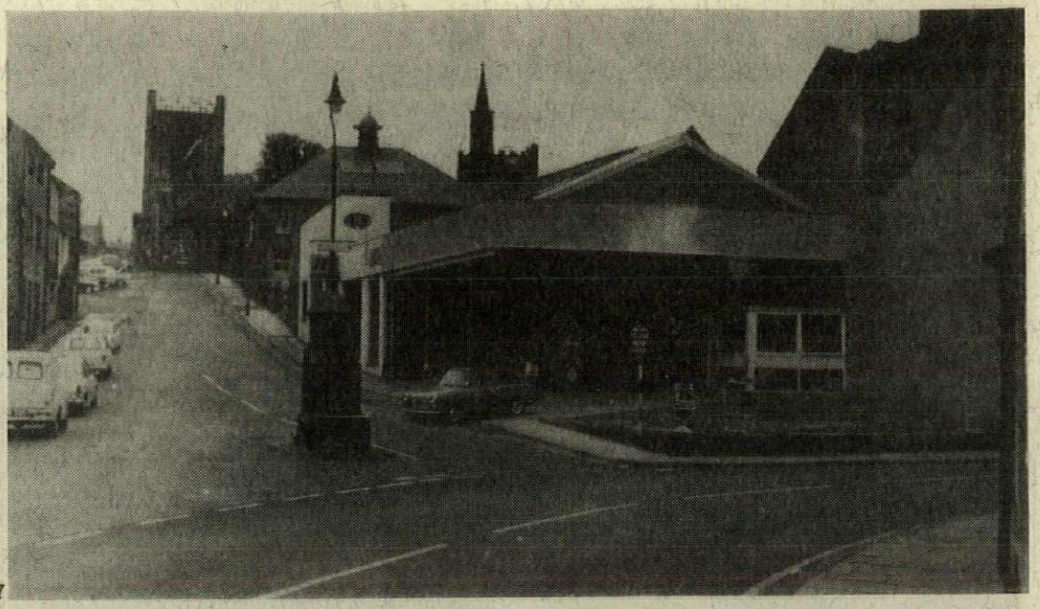
ALNWICK, NORTHUMBERLAND
Street corner, mid twentieth-century style, at the corner of Narrowgate and Pottergate, 7.

DANEBURY, NEAR STOCKBRIDGE, HANTS
A really striking and romantic prehistoric site, the mounds now covered in trees; the Hants County Council has commendably made it into a country park. What has happened at the entrance, 8 and 9, is not so commendable: over-complicated and over-rustic gates, under-rustic wastepaper basket and a grisly notice 'Welcome to Danebury' whose chief feature is a Saxon in need of Alka-Seltzer. There will be many more of these country parks, and they need to be carefully watched in case they provide the excuse for an invasion of suburban taste comparable to what 'municipal rustic' did and is still doing in the towns.

TRESILLIAN, NEAR TRURO, CORNWALL
New housing made an intrusion into rural landscape, 10, without contributing anything worthwhile of its own, in a county which has already sold itself far too much to the bungalows. What makes things worse is that between foreground and houses is a river that runs into the Fal estuary—a luxuriant landscape which was surely worth keeping intact.

OPPORTUNITY

MILLOOK HAVEN NEAR BUDE, CORNWALL
This is the opposite situation to Tresillian; a steep seaside valley, 11, which the planners have held at the pre-war level of development—and thank goodness for that. Yet the pre-war houses are all too solid, and presumably any thought of demolition is impracticable. Might there not now be enough people with enough nouse to infill the site properly with terraces, not detached houses, and with the kind of simplicity that the hotel has?



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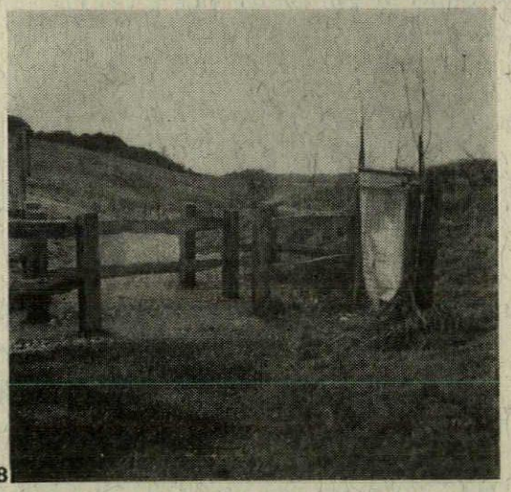

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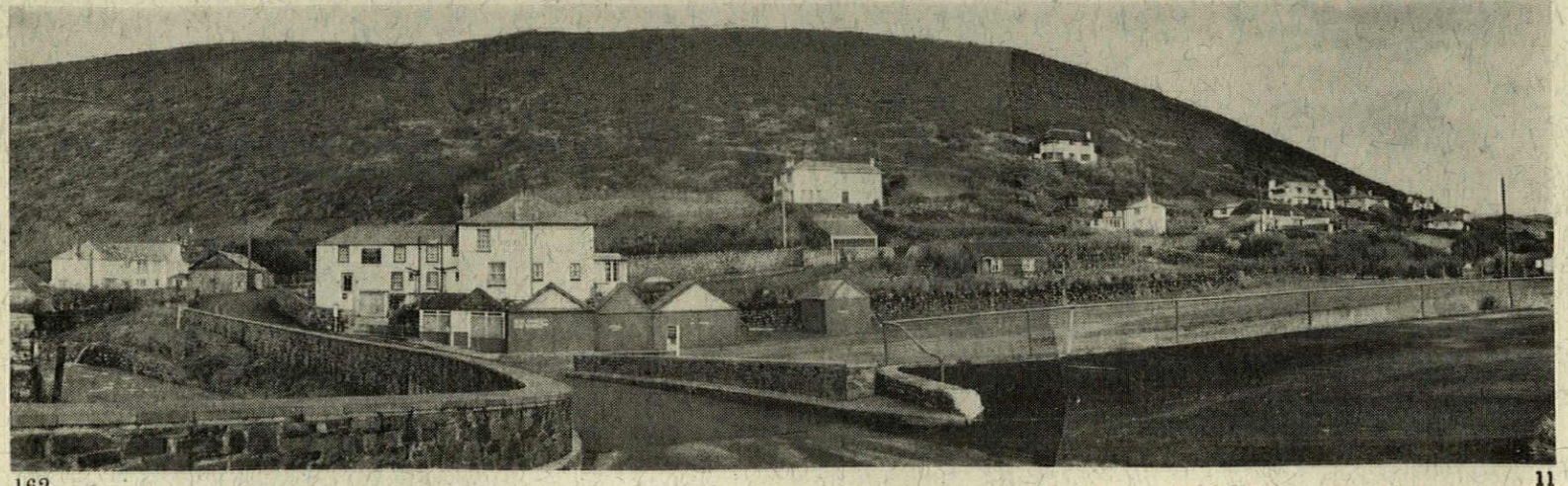

11



Leather puts excitement into cruising

Take a look at the Queen Elizabeth 2 — the most modern liner in the world; take a closer look and you will realise how much Connolly Leather has been used by the team of top designers responsible for the interior. Leather for table-tops, reversed hide for walls, cushions for the ultra-modern chairs. It just goes to show — the modern, exciting, luxurious covering is leather — Connolly Leather, of course.

Connolly Leather

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This is what the sound barrier looks like

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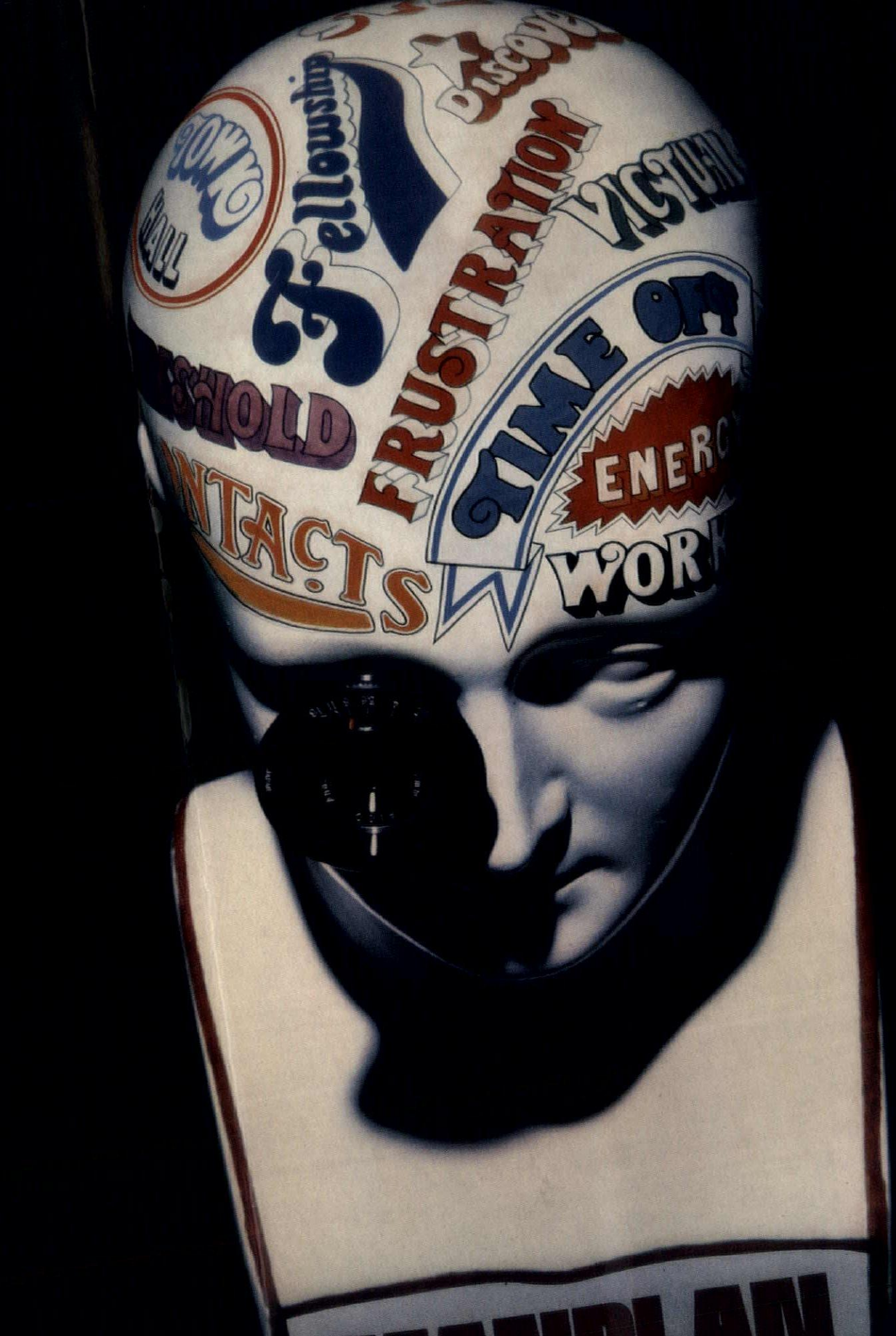
Fellowship
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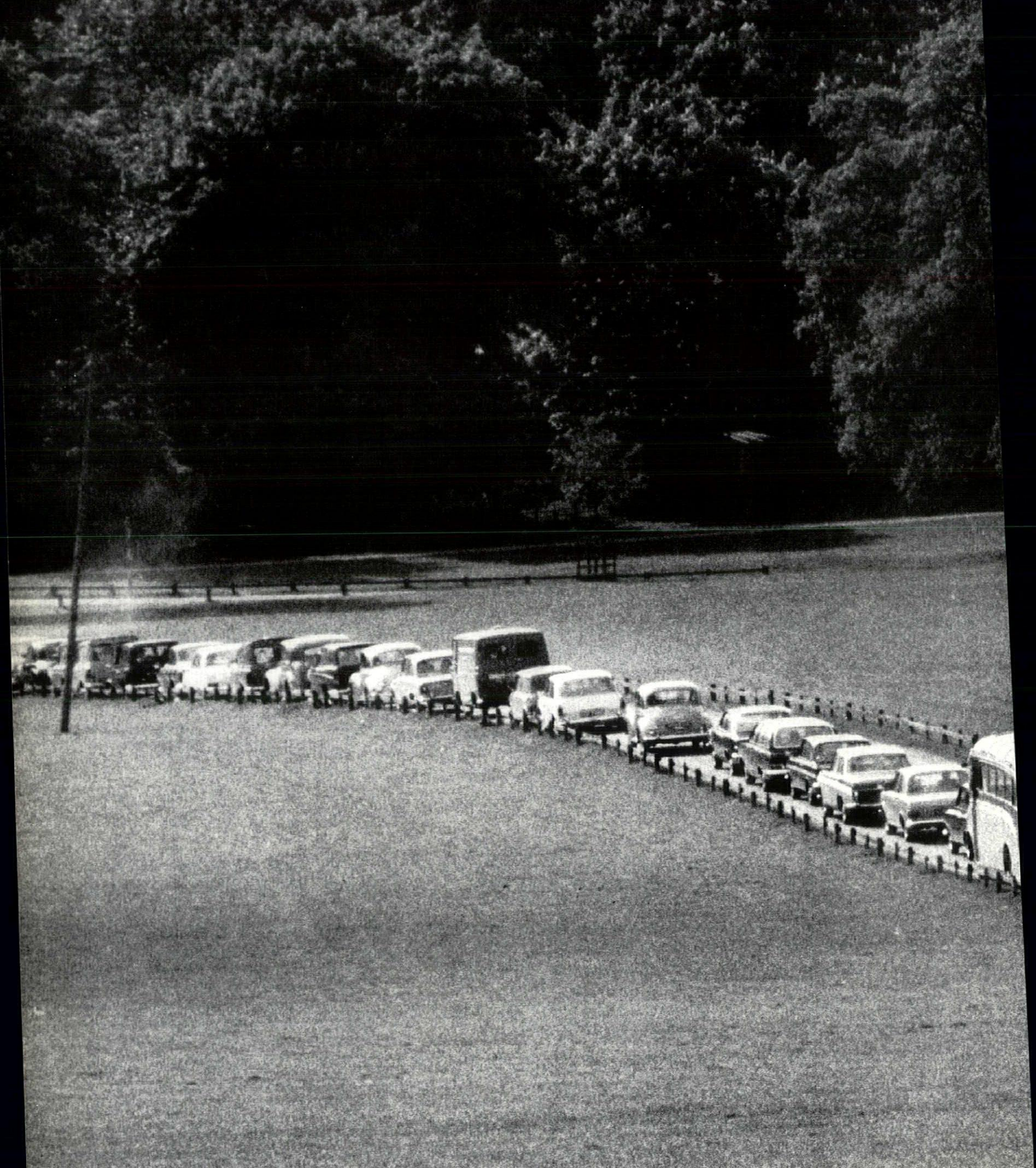
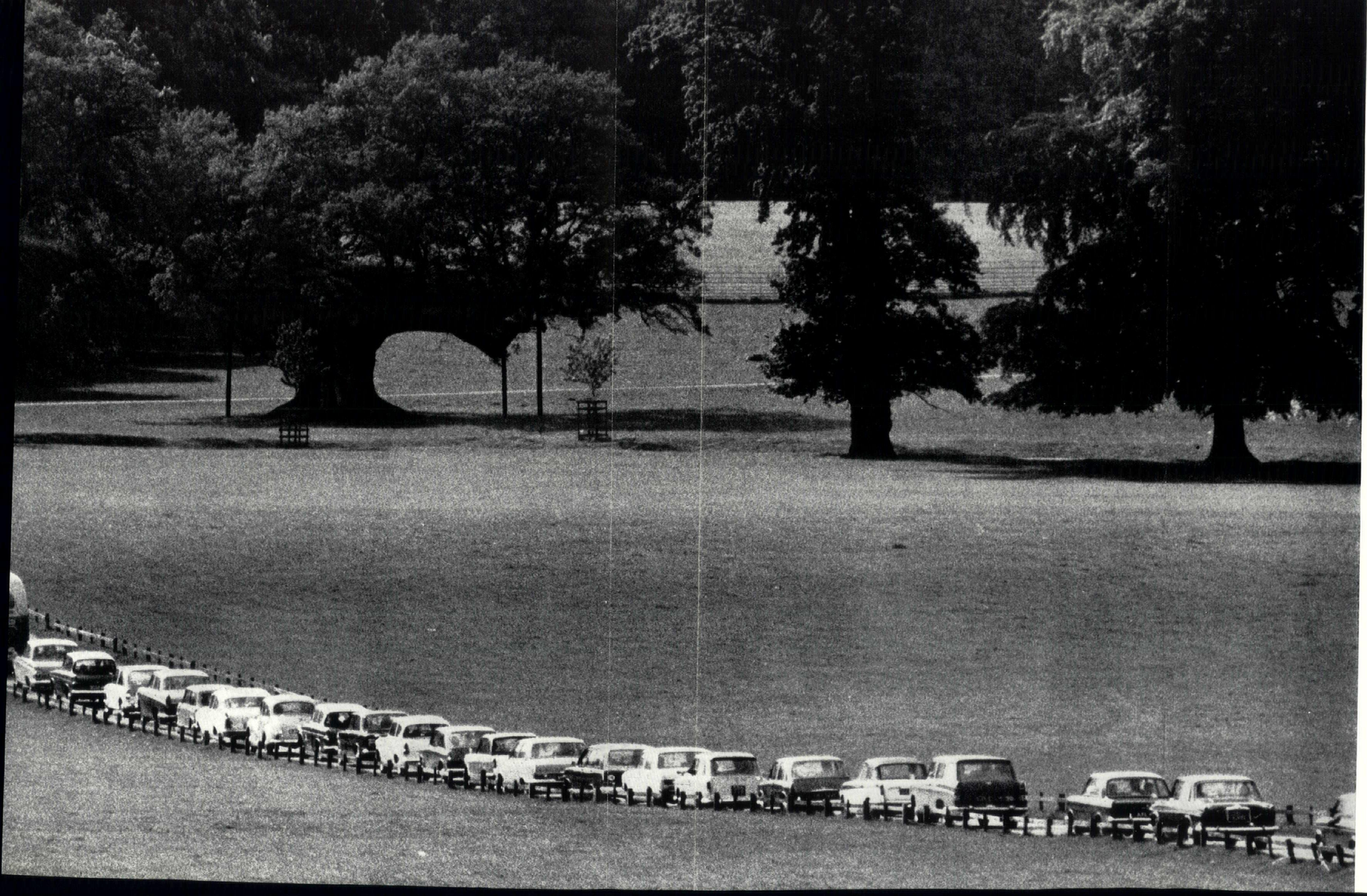




'We architects have got to reform our concept of professionalism. If we don't make certain changes . . . . . we shall progressively forfeit the limited powers which we're allowed at present to help shape the physical environment. This would be a tragedy if we were at least holding our own against the destructive forces of chaos and ugliness, but we are not even doing that. We are losing ground all the time against rapidly increasing pressures which are attacking the heart of our civilisation.

If you feel I'm exaggerating think about the topsoil of East Anglia blowing into the North Sea; think about the way we are destroying our precious heritage of towns and cities with ruthlessly sited urban motorways, visually squalid commercial development, and a peripheral sprawl of housing; think about assembly lines and strikes; think about the acoustic sewer in which the inhabitants of London spend their days [and nights]; think about Concorde, Stansted, and the Torrey Canyon; think about Ronan Point, not just as a lethal weapon but as a place for families to live in; think about the trainload of nerve gas that the American Army was going to move across the continent and dump in the Pacific; think about the Lake District covered in car parks and caravans; think about the idiot who poisoned practically all the fish in the Rhine; think about the things like this that are happening all over the world that we don't even know about; and most worrying thought of all—think about the tottering belief of our children in democratic forms of government. The evidence suggests we are in the middle of a massive deterioration in the quality of life, due partly to our inability to synthesize the actions of specialists, partly to our own incompetence, and partly to the widening gap between the escalating size of our social and economic problems and the capacity of our forms of government to deal with them.

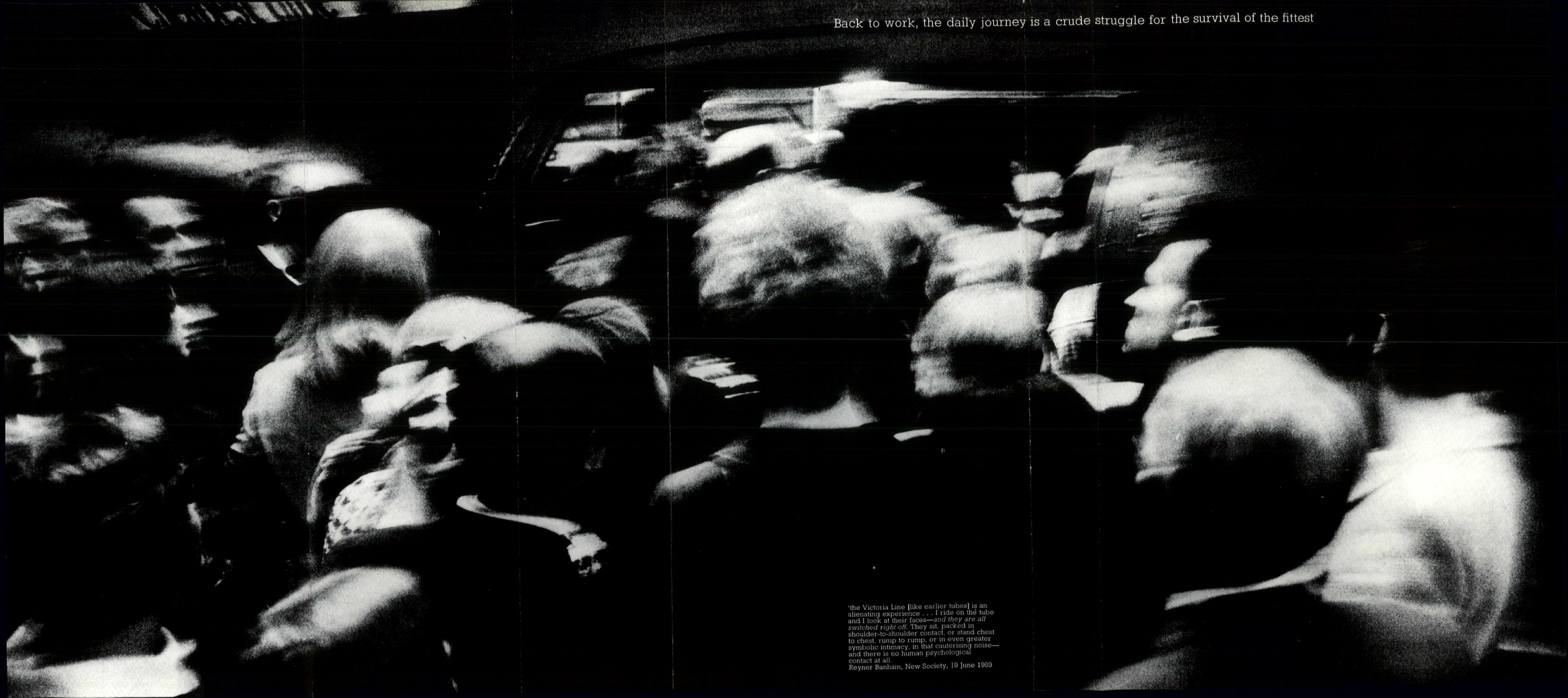
I'm not saying that architects are responsible for the mess we're in, and even less that we have all the answers and only have to be asked to rescue the world. But I think we've got to accept a large measure of responsibility for the environmental crisis, and I believe that, given the freedom to do it, we are uniquely equipped to play a leading part in the solution.'

Andrew Derbyshire at the RIBA Conference 'Preparing for the eighties'
3 July 1969

'The population of Britain allows only one acre per head, the density is fantastic. Motorists pullulate over the beauty spots, in places like the Norfolk Broads the issue of people versus birds is acute.'
Cyril Connolly, The Sunday Times, 22 June 1969

Each Bank holiday the world and his wife destroy what they wish to embrace —— beauty, tranquillity, eighteenth-century landscape

Back to work, the daily journey is a crude struggle for the survival of the fittest



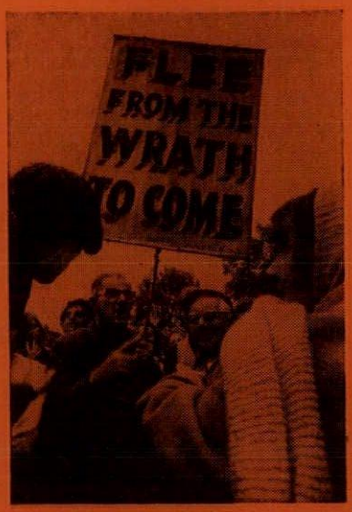
'the Victoria Line [like earlier tubes] is an alienating experience . . . I ride on the tube and I look at their faces—*and they are all switched right off.* They sit, packed in shoulder-to-shoulder contact, or stand chest to chest, rump to rump, or in even greater symbolic intimacy, in that cauterising noise—and there is no human psychological contact at all.
Reyner Banham, New Society, 19 June 1969

MANPLAN FRUSTRATION

In this and succeeding months the AR tries to prepare for the '70s and beyond — the last third of the twentieth century — by reviewing the state of the nation in those areas where it has a patent to speak—architecture and planning. A tall order, made taller by the necessity for the planner to redefine his terms. Housing for instance. Is current housing policy sound and if so will it be valid for the next decade? Or religion. What future is there for churches as buildings in terms of social — and thus town — planning ?

Here, as elsewhere, appears the eternal confrontation between the feasible and desirable, what can and what cannot be done. The REVIEW has not exactly plumped for the unobtainable but it has rejected the conventional wisdom. Instead it takes as its yardstick real needs rather than minimum standards. Hence the title MANPLAN. A plan for human beings with a destiny rather than figures in a table of statistics.

Why bother when we are told continually we've never had it so good? Because, though modern man is in some ways wealthy beyond dreams, in others he's never had it so bad. The reader is invited to leaf through the pages that follow and ask himself whether the consumer society is not paying too high a price for affluence in the pressures and frustrations which seem to dog the footsteps of every technological advance. The question is are they the inevitable fringe benefits? Or is there a gap in our thinking? Is technology for us or against us? MANPLAN proposes in the next few months to consider these matters in depth in the hope of coming up with some answers, but here forget technology and turn to the subject of this issue, the built-in spirit of defeatism which makes all our frustrations possible, since, like built-in obsolescence, it predetermines the end. We only skim the surface, but the picture that emerges covers the whole spectrum of despair from inconvenience through exasperation to tragedy and, of course, farce.



Patrick Ward, the guest photographer for this issue, has recorded one month of British frustration







Each journey, however fast, however comfortable, begins and ends . . . in waiting, interminable waiting and queueing . . .

'I simply refuse to believe that the turmoil of pedestrians and vehicles, the noise, the stench, the general misery that envelopes the bus queues waiting in patient wretchedness when it is raining are things that should be accepted'.
Professor Colin Buchanan, 20 September 1966



'We all know what urban congestion means—the frustration of traffic snarls, missed business appointments, social life disrupted, increased safety hazards, greater personal mobility threatening our ability to move at all . . .'
Robert Brown MP, Joint Parliamentary Secretary, Ministry of Transport, 4 July 1969



Each morning, cars, taxis and buses pour into the city from the suburbs, from the airport, from the Midlands, from the west, from the east, from the south . . .



where they must fight for meters, meters that may not work but will surely expire. At the airport the taxis wait in serried ranks . . . at the air terminal none in sight




STOP

'By 1973 Heathrow will have reached saturation point, with Gatwick following on behind. The Americans are the worst off. As many as 104 airliners have been held circling at one time over New York's three airports waiting to land.'
Derek Dempster, The Daily Telegraph Magazine, 21 February 1969



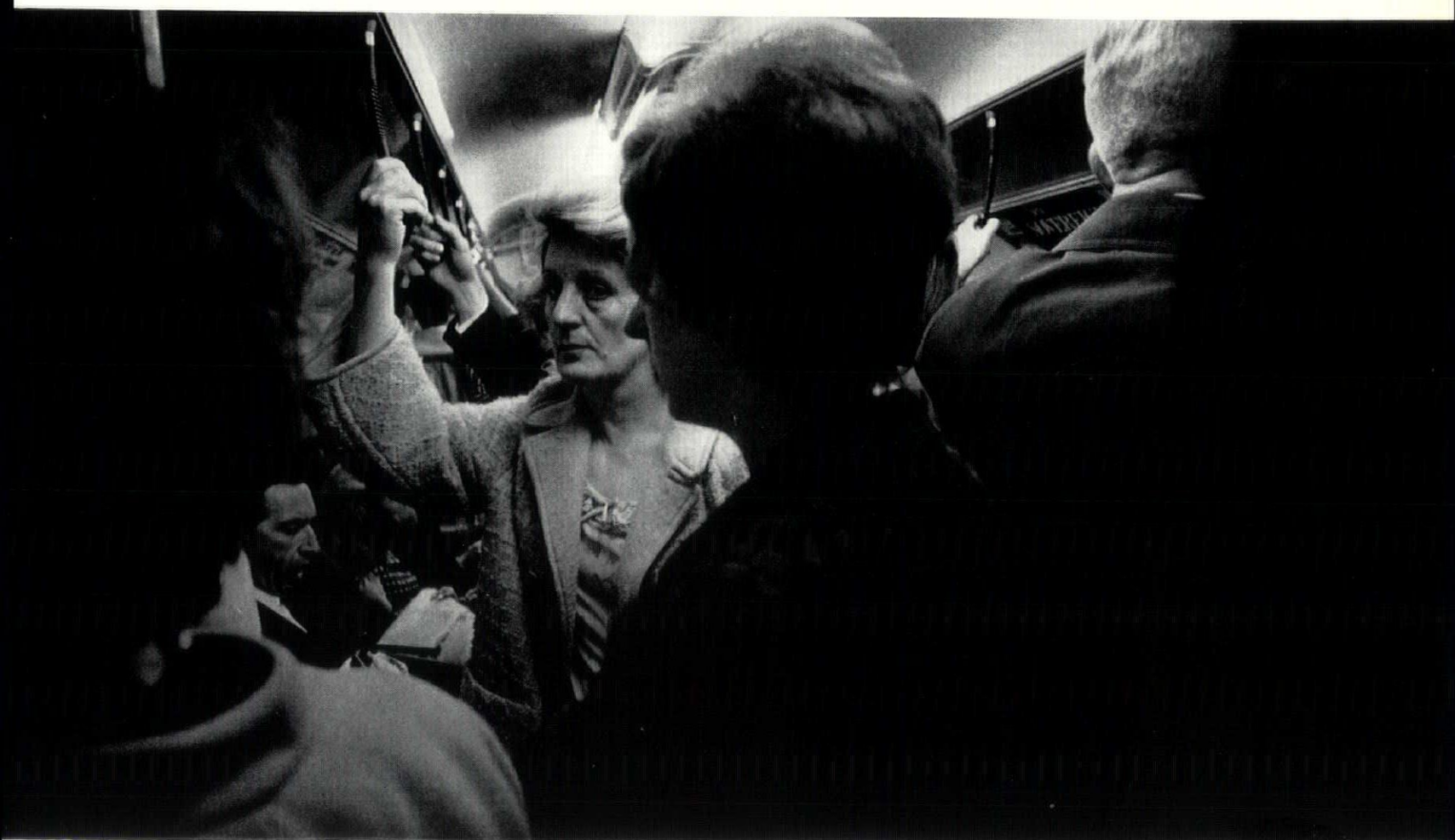


Out on the tarmac engines scream as planes queue to take off over the rooftops of surburbia. In the air they lie stacked waiting to discharge weary passengers



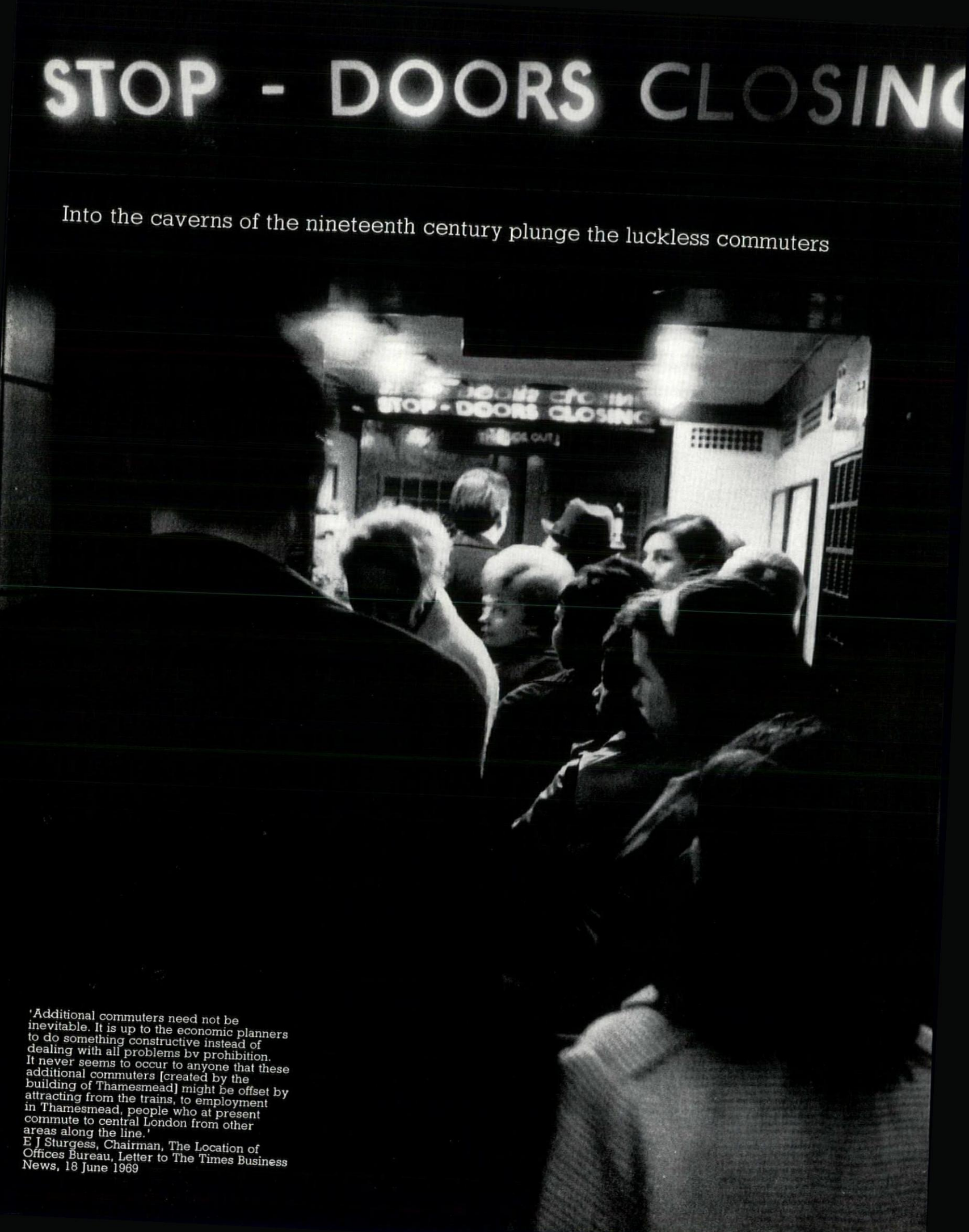
Out from the main line stations . . . down the escalators . . . into the tubes . . .





onto the buses, they run, trip, fall, stand, straphang, shake, perspire, and freeze

Into the caverns of the nineteenth century plunge the luckless commuters



'Additional commuters need not be inevitable. It is up to the economic planners to do something constructive instead of dealing with all problems by prohibition. It never seems to occur to anyone that these additional commuters [created by the building of Thamesmead] might be offset by attracting from the trains, to employment in Thamesmead, people who at present commute to central London from other areas along the line.'
E J Sturgess, Chairman, The Location of Offices Bureau, Letter to The Times Business News, 18 June 1969





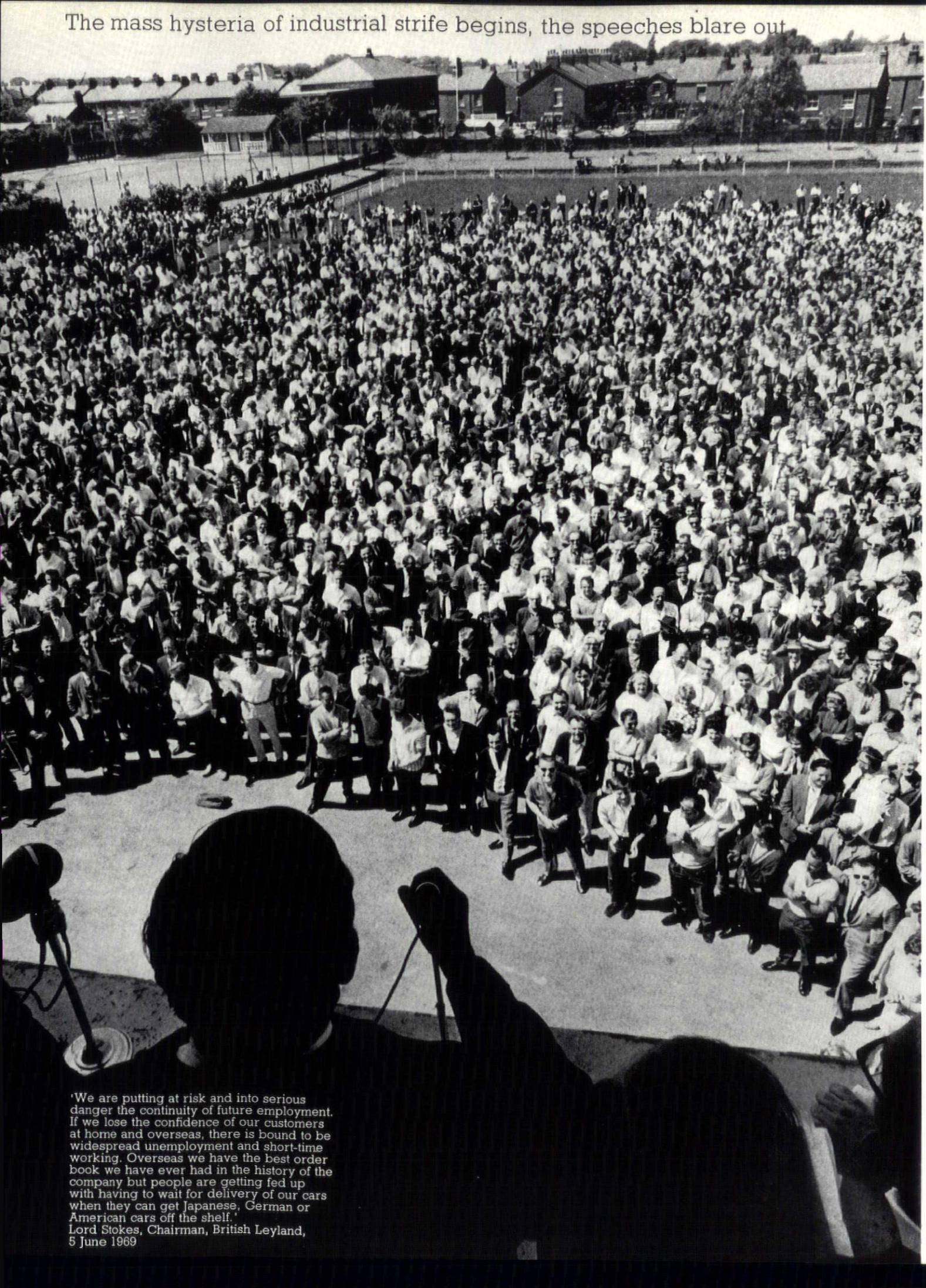
Out on the street the battle for life begins . . . one human being has lost out in the struggle. The distant siren wails . . . the ambulance arrives to pick up the pieces.





In industry the boredom is interrupted solely by hot headed unofficial strikes

The mass hysteria of industrial strife begins, the speeches blare out

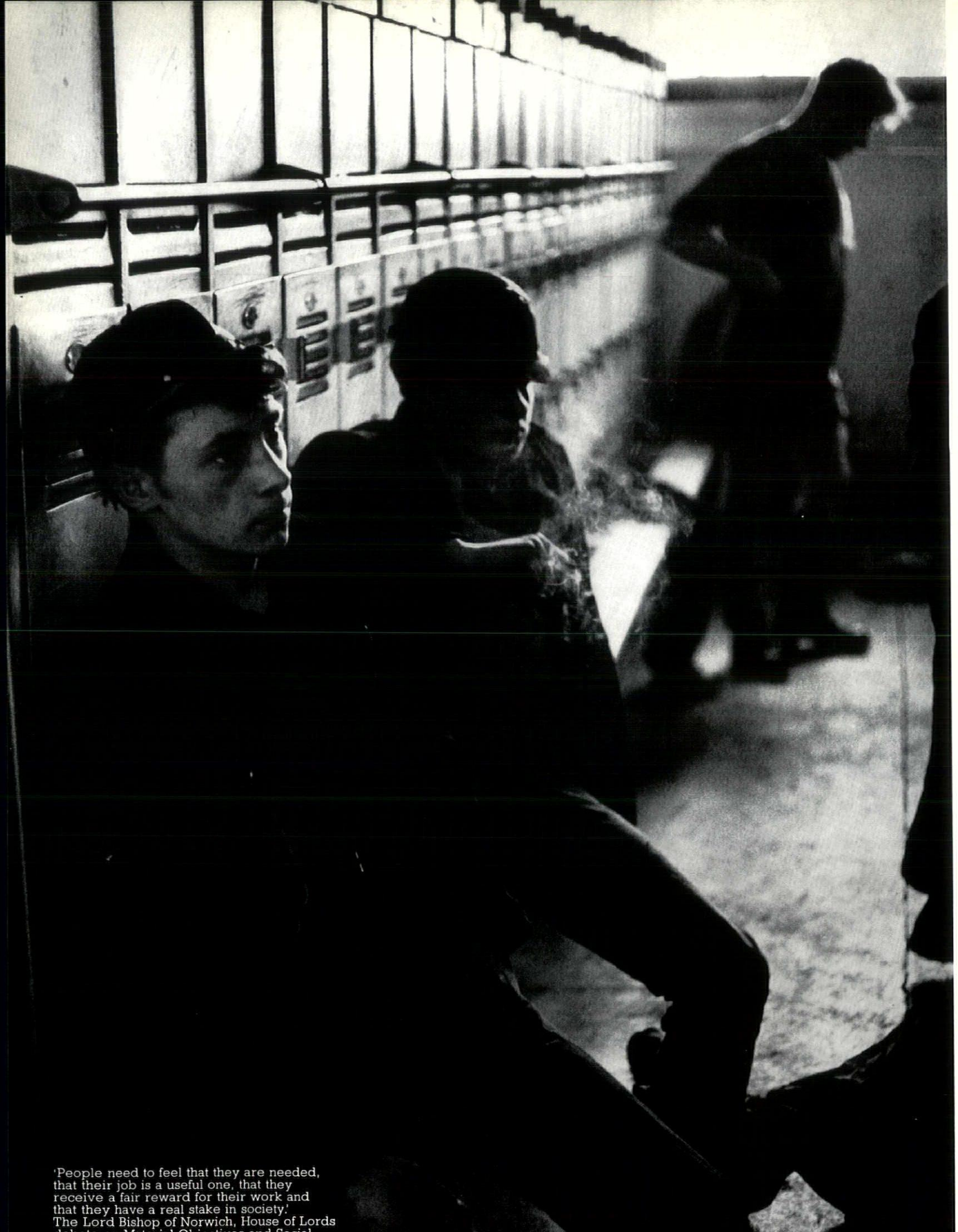


'We are putting at risk and into serious danger the continuity of future employment. If we lose the confidence of our customers at home and overseas, there is bound to be widespread unemployment and short-time working. Overseas we have the best order book we have ever had in the history of the company but people are getting fed up with having to wait for delivery of our cars when they can get Japanese, German or American cars off the shelf.'
Lord Stokes, Chairman, British Leyland, 5 June 1969



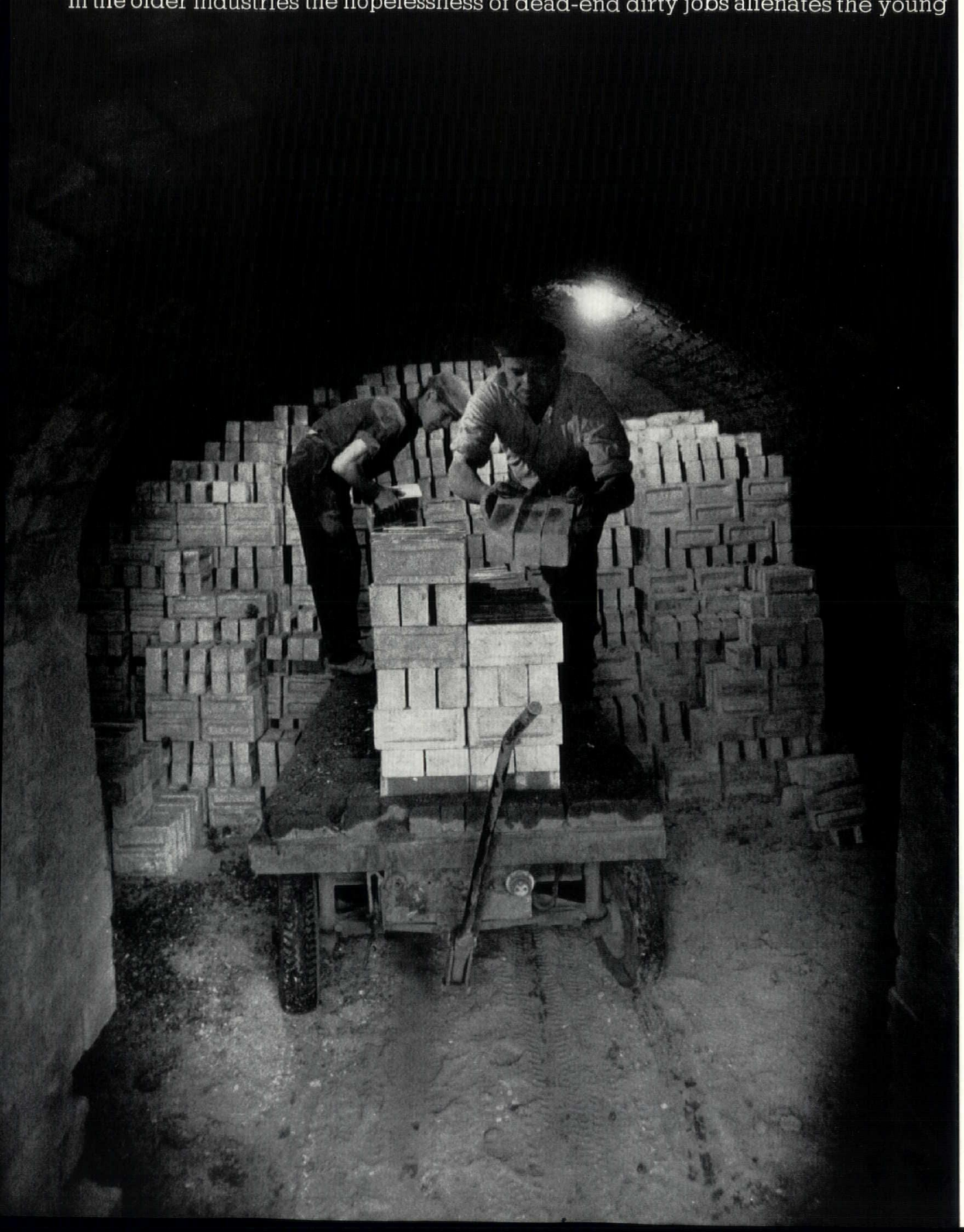


The traditional armoury - banners, pickets, militant demonstrations - peaceful and



'People need to feel that they are needed, that their job is a useful one, that they receive a fair reward for their work and that they have a real stake in society.'
The Lord Bishop of Norwich, House of Lords

In the older industries the hopelessness of dead-end dirty jobs alienates the young



. . . and scars the landscape of Britain with its tawdry buildings and belching smoke



In the new industries endless repetitive production lines turn men into automata

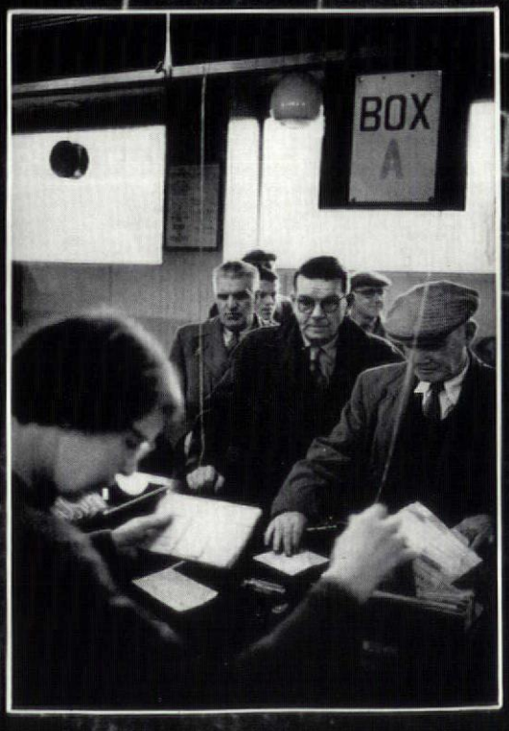




'A great many people today feel themselves isolated and fragmented in a world in which they would fain make some contribution and have some participation. For instance, how can a worker in a Ford plant in this country feel his sense of participation when he realises that the ultimate decision in these macro-corporations, which tend to proliferate, is not within his power to control or even to advise upon, but is settled far away in Detroit?'
Lord Soper, House of Lords debate on Material Objectives and Social Wellbeing, 11 June 1969



In the depressed areas, industrial decay replaces industrial strife - grim faces recall the struggles of Jarrow as men queue for the dole and stand around idle



The docks limp from strike to strike. The ships wait . . . the lorries wait

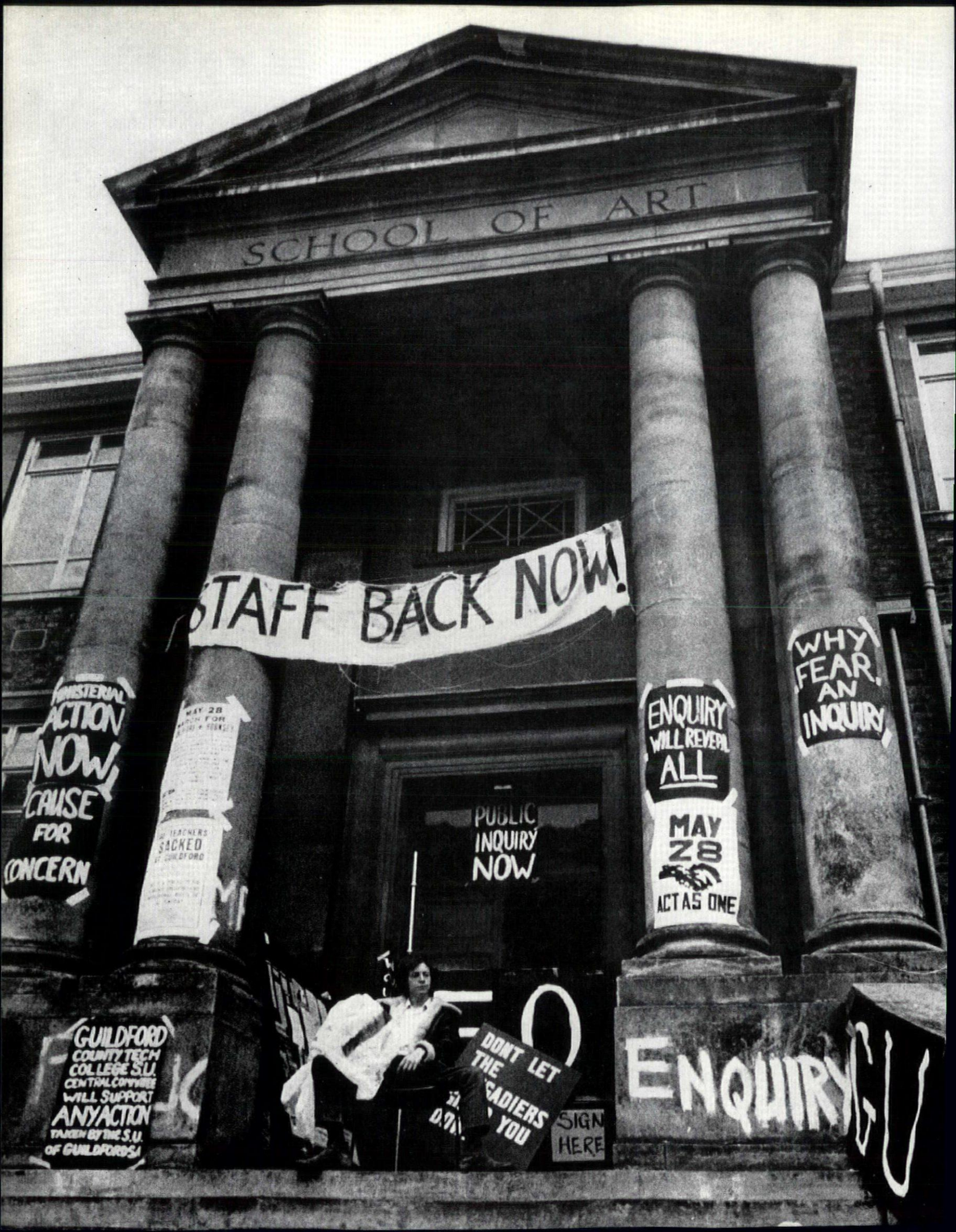








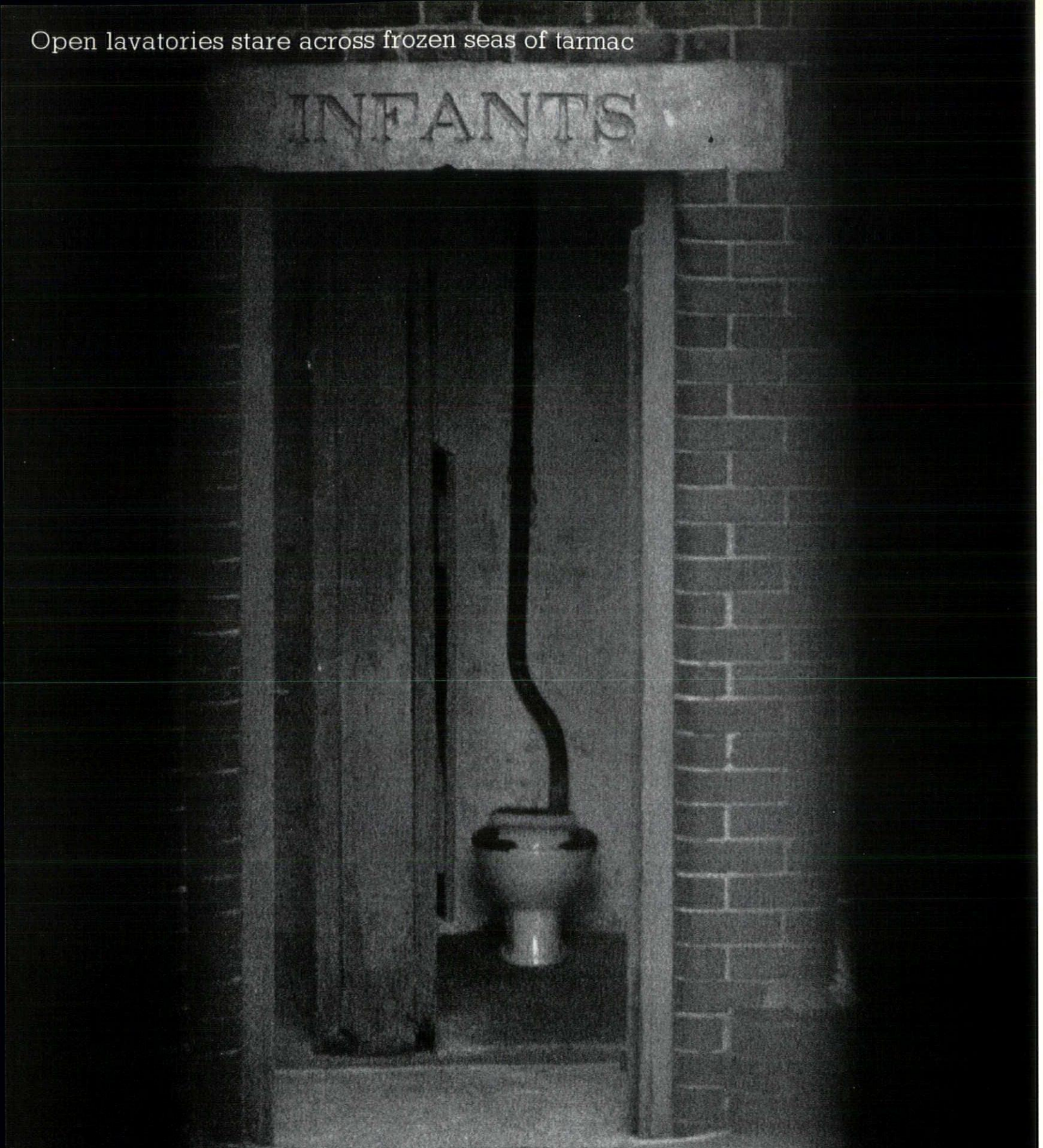
Higher education is under siege - from dissident students, dissatisfied teachers


SCHOOL OF ART
STAFF BACK NOW!
MINISTERIAL ACTION NOW CAUSE FOR CONCERN
PUBLIC INQUIRY NOW
ENQUIRY WILL REVEAL ALL
MAY 28 ACT AS ONE
WHY FEAR AN INQUIRY
GUILDFORD COUNTY TECH COLLEGE S.U. WILL SUPPORT ANY ACTION TAKEN BY THE S.U. OF GUILDFORD
DONT LET THE
YOU
SIGN HERE
ENQUIRY



Enmeshed roof top playspace is squeezed from these outposts of the welfare state

Open lavatories stare across frozen seas of tarmac



'Dear Lord, please give us a school which is cool in summer, yet warm enough in winter for us to sit without coats and gloves. Let there be an end to these dreary places where the sun never penetrates, where only one small window opens, though the rest admit small gales, where the draughts howl through the sacred portals, and where the electric light is on, constantly, from November till April, and frequently during the rest of the year. And might we have lavatories which do not freeze up in cold weather.'
Anne aged 17, The school that I'd like, Penguin 1969



Child welfare clinics are held without privacy in dank, disused church halls



. . . in which young mothers forlornly wait their turn with their new born babies The aged staring blankly sit out their life with the trappings of state 'care' in the company of those that they do not know or far removed from those they do

'The numbers of old people in the population, it is estimated, will increase by 20 per cent from 1965 to 1976.'
Social Welfare for the Elderly, Government Social Survey, 1968





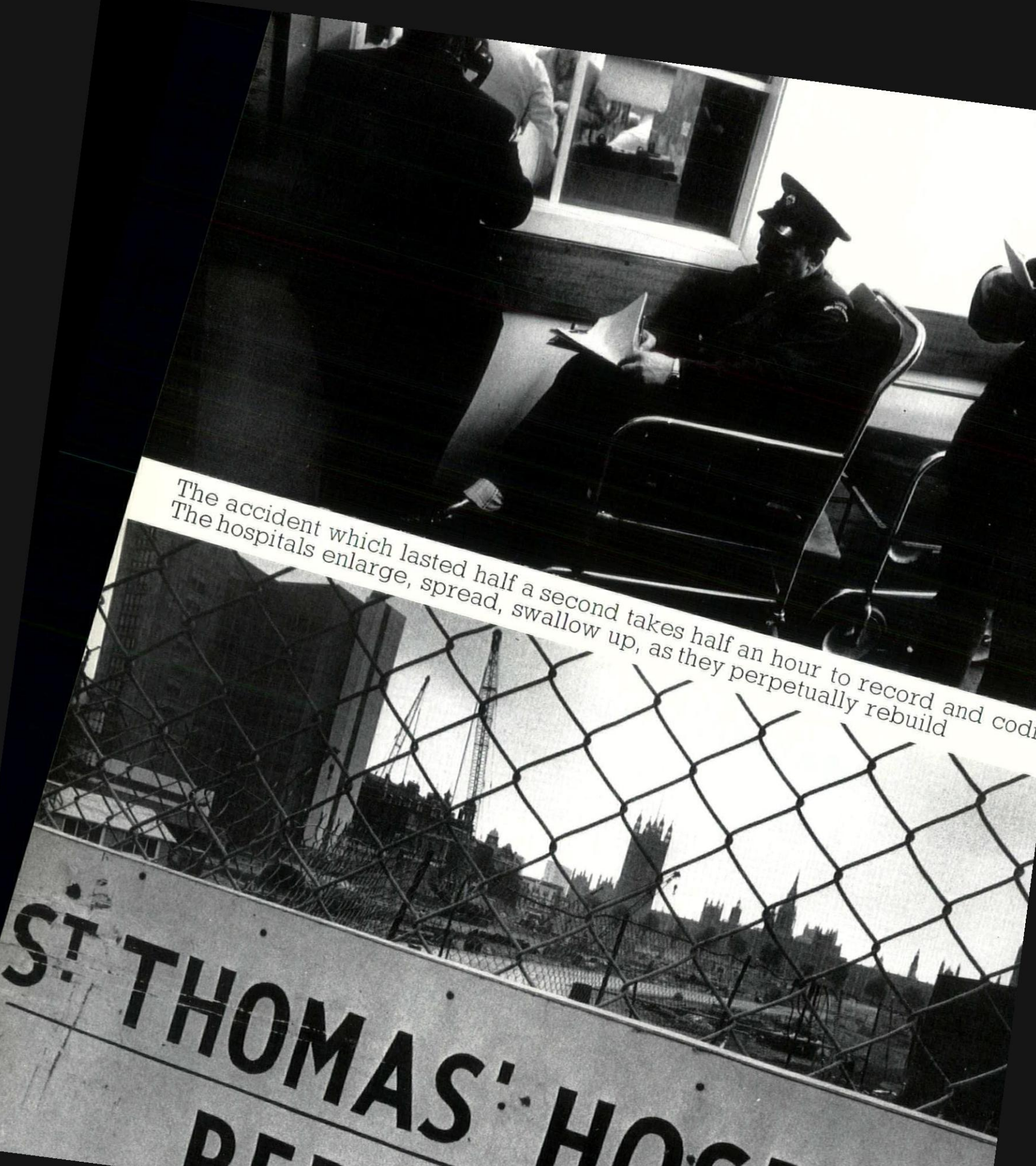
relics of nineteenth
ses and the work houses buttress

e that by putting a man
somehow make him aware
onsibilities. Pushing people
the social ladder and making
rable does not seem to
stand up and rejoin the

rector of SHELTER, The Sunday
1969

tals of the hospital strike terror into the living and seem fit only for the dead




The accident which lasted half a second takes half an hour to record and cod
The hospitals enlarge, spread, swallow up, as they perpetually rebuild
ST THOMAS'



Bank holiday merely removes the travel struggle to another setting - the stately home. After the queue to park the car, the real battle on foot begins





The queues mount . . . to see the house



to buy ice cream ... to find the way



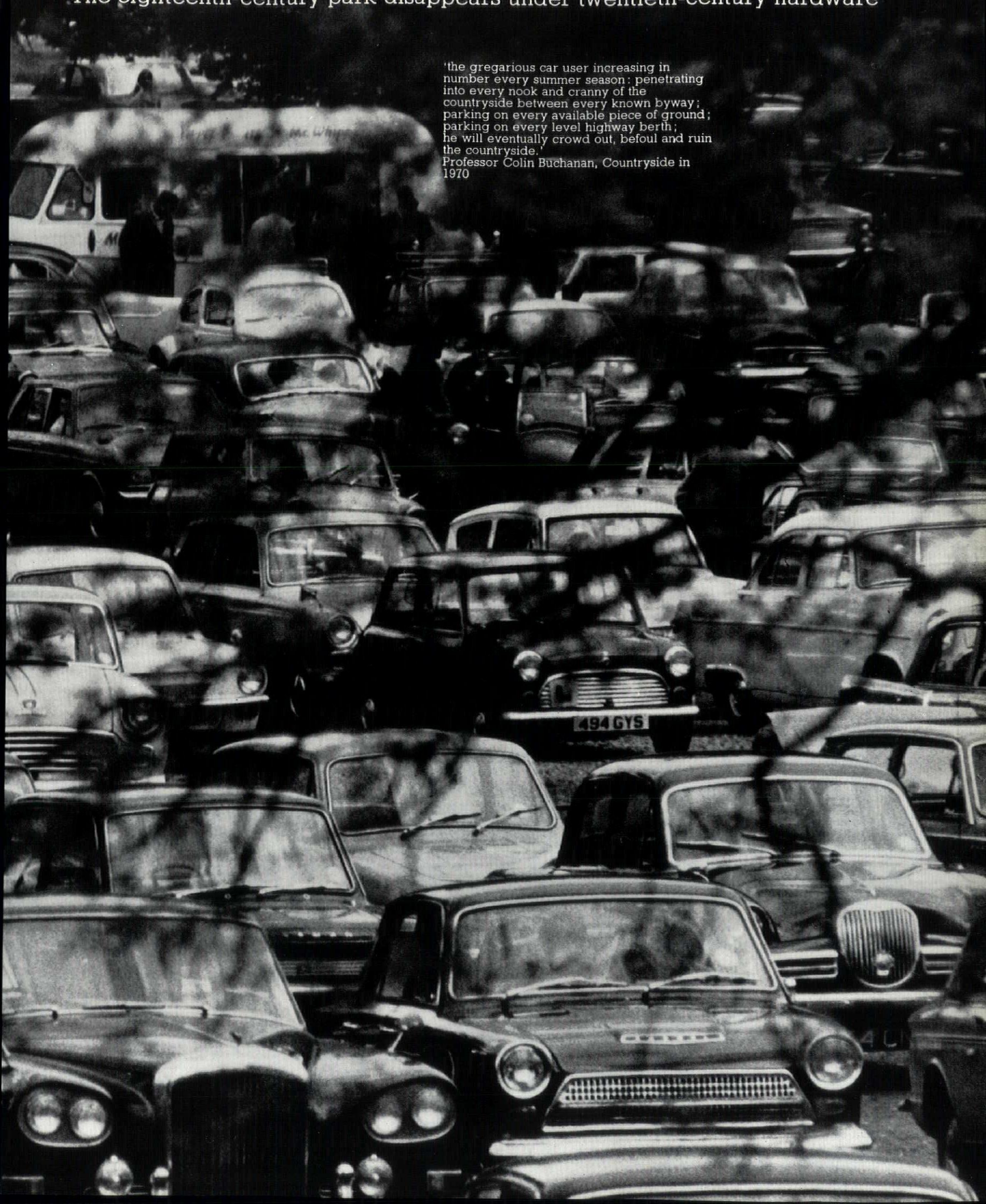


. . . to purchase ducal souvenirs . . . to go to the lavatory




XAN 572

The eighteenth-century park disappears under twentieth-century hardware

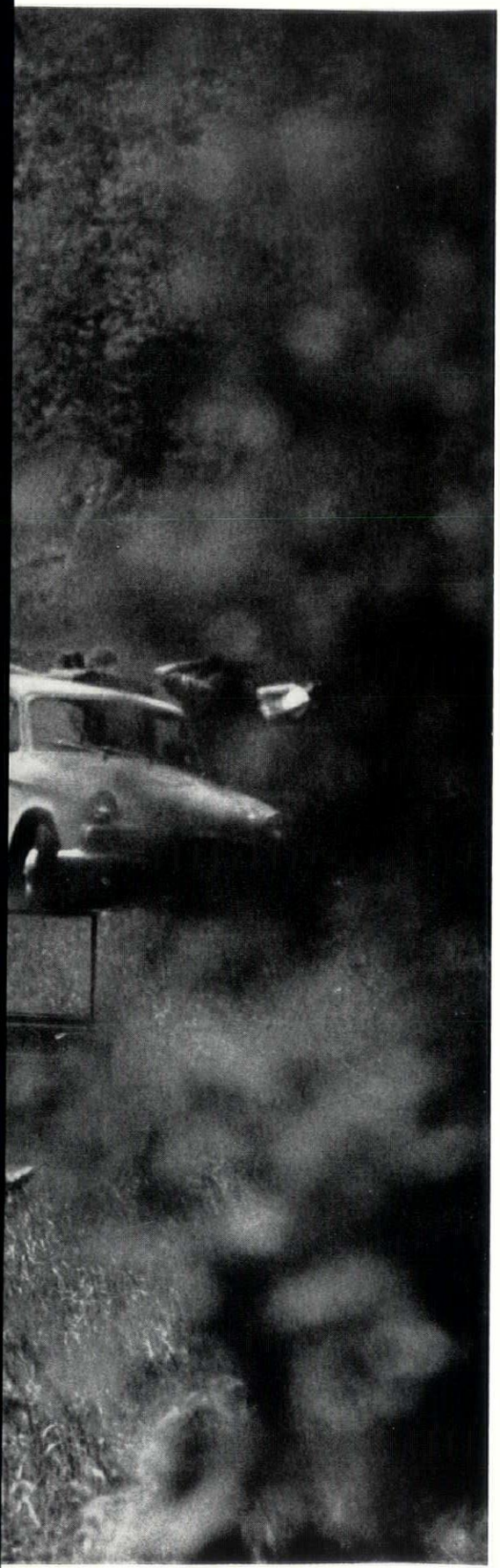


'the gregarious car user increasing in number every summer season: penetrating into every nook and cranny of the countryside between every known byway; parking on every available piece of ground; parking on every level highway berth; he will eventually crowd out, befoul and ruin the countryside.'
Professor Colin Buchanan, Countryside in 1970

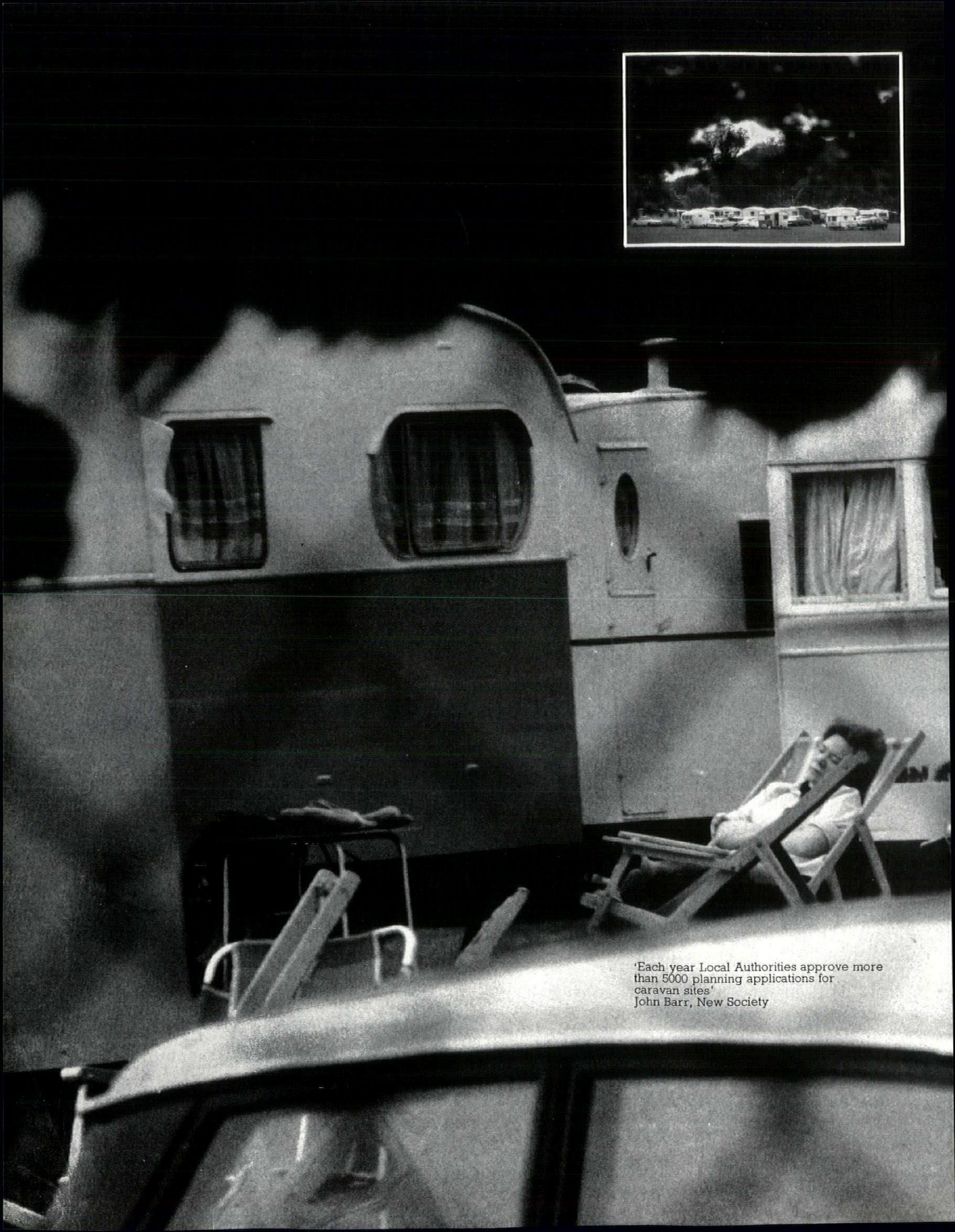
'At present provision of roadside facilities does not appear to be the responsibility of any particular body or authority.'
Countryside in 1970, Study Group 7



The travel weary pull off and sink thankfully on to the verges for a smelly noisome roadside picnic. Inside the ancestral palisade, hungry mouths queue to build up strength for the jam-packed journey back.







'Each year Local Authorities approve more than 5000 planning applications for caravan sites'
John Barr, New Society

The 'holiday-on-wheels' comes by night to the seclusion and serenity of a country-side setting with fine views . . . in the morning of those who also came to stay





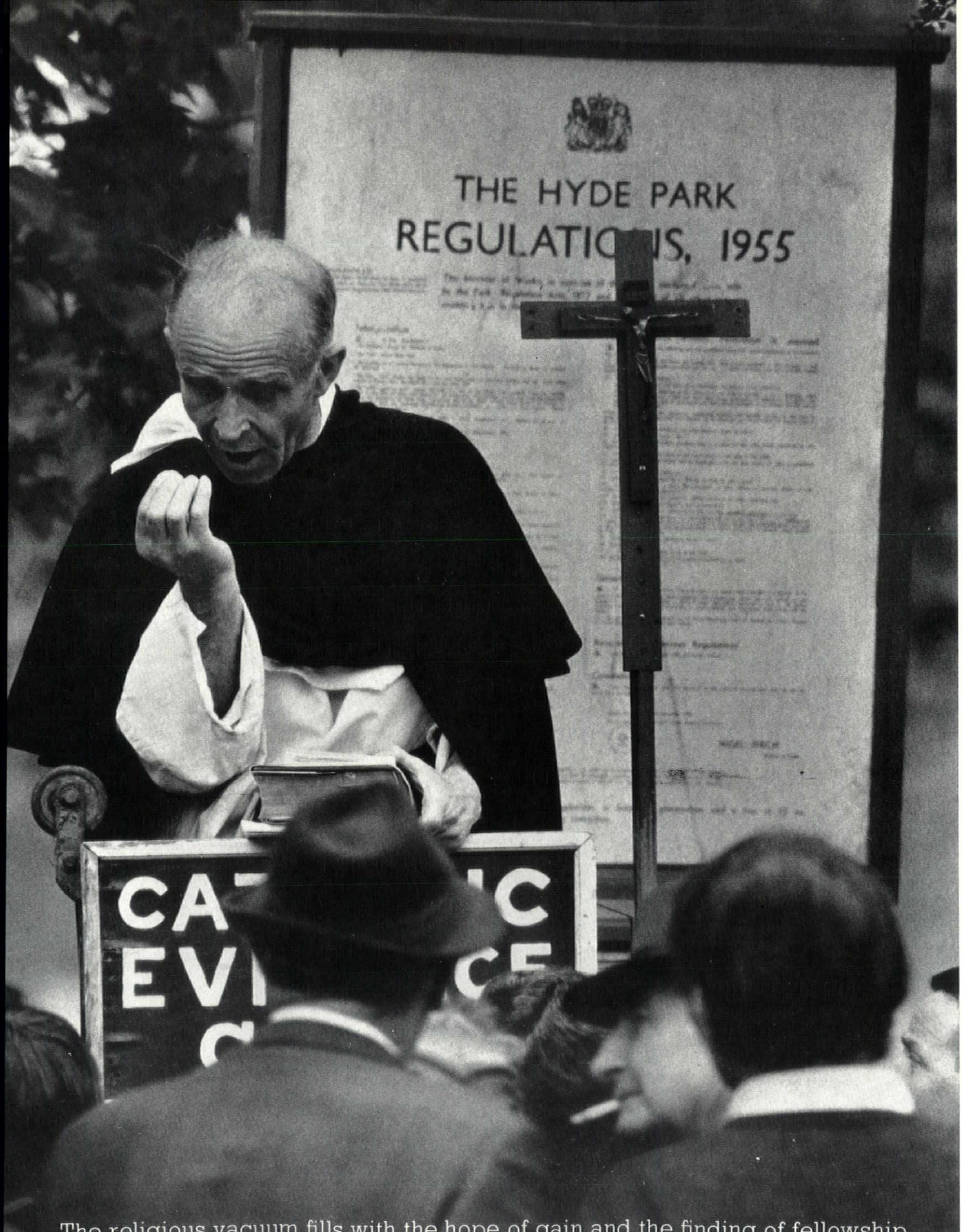
'Of the 31 million people who took a holiday away from home in 1964 more than half went by car. Two thirds of the total went to the seaside and almost two thirds started their holiday in July and August. The picture is one of extreme imbalance in timing and destination of holidays, and consequently acute traffic congestion, in the summer holiday season and at weekends. The prospect for the next two decades is of at least a doubling or trebling of the present recreational traffic pressures.'
Countryside in 1970, Study Group 7

The sport of the rich and the not so rich is played out against a shortage of moorings. Once at sea, the lonely sailor turns his back on the invasion of the beaches

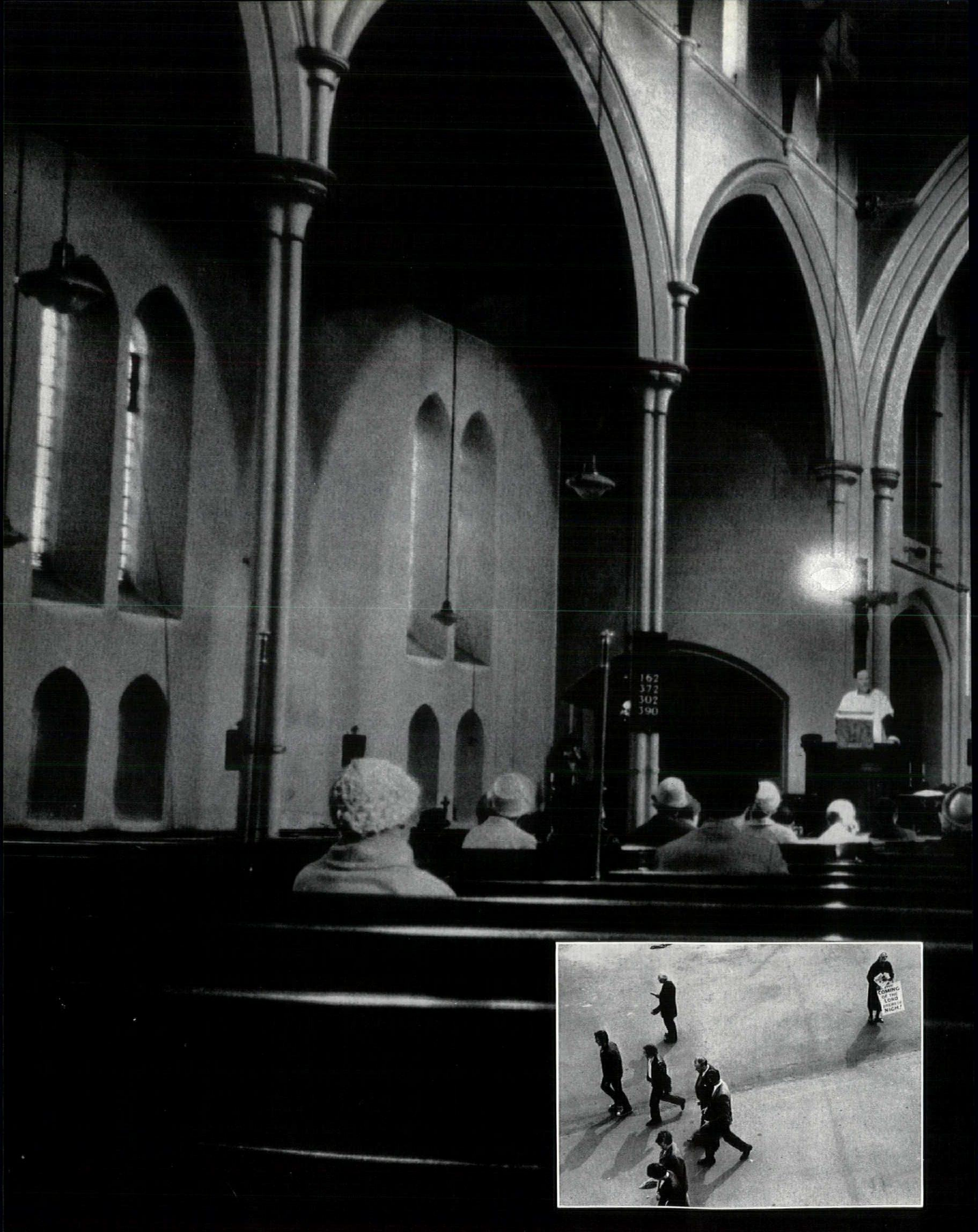




'An old lady in my church said to me that she never knew what fellowship was until she went to bingo. Though I began by laughing, I ended almost by crying, because it is a most penetrating analysis of the emptiness of so much that goes for what is called modern affluent society.'
Lord Soper, House of Lords debate on Material Objectives and Social Welfare, 11 June 1969



The religious vacuum fills with the hope of gain and the finding of fellowship


162
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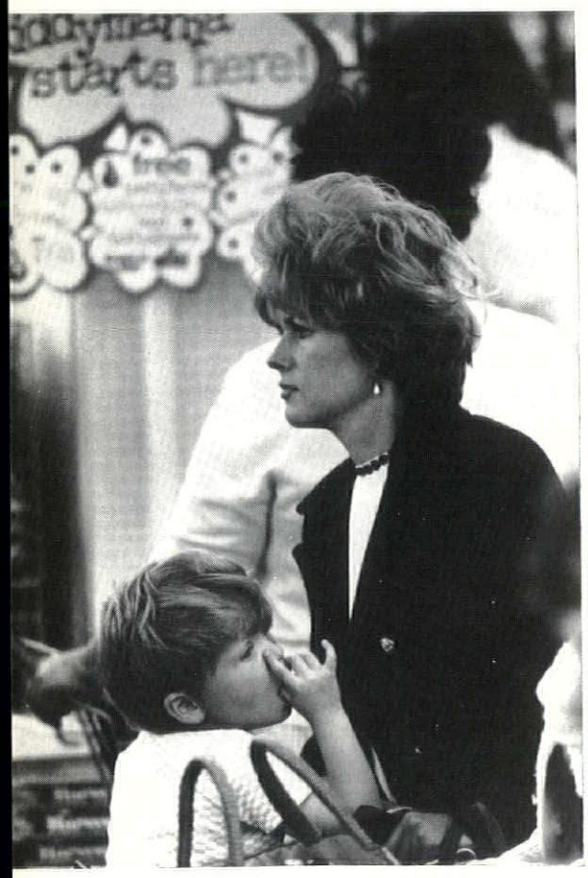
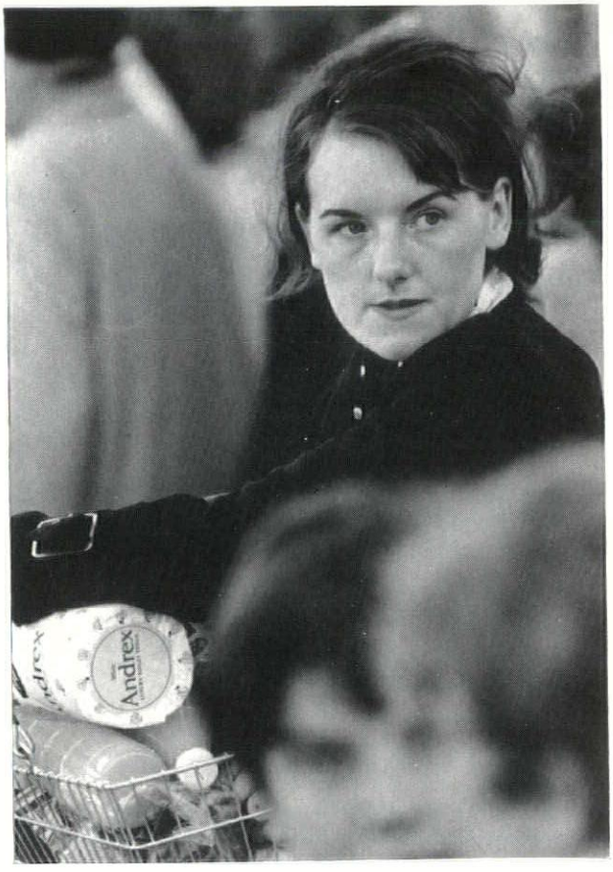
COMING
OF THE
LORD

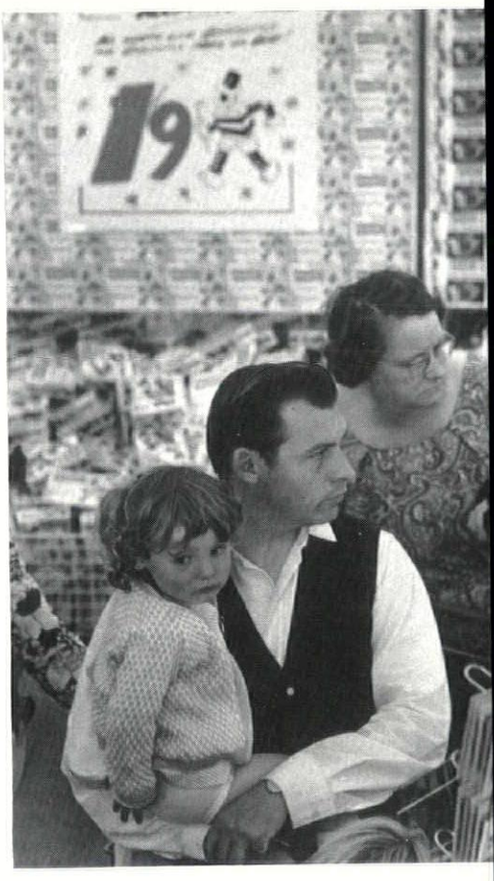


Preachers convert the converted in empty churches. Wayside pulpits are ignored







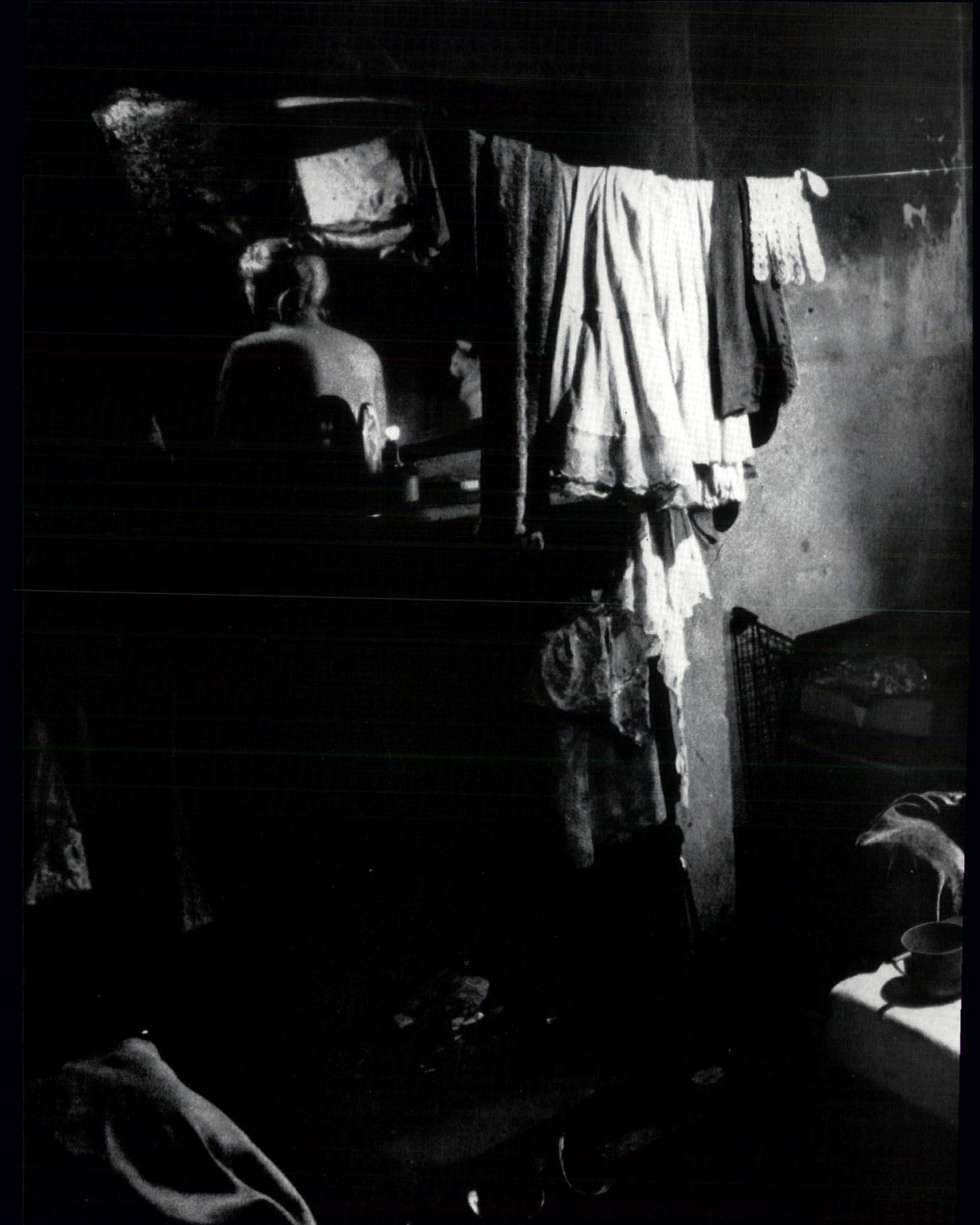


The supermarket eases the life of the shopkeeper at the expense of the customer



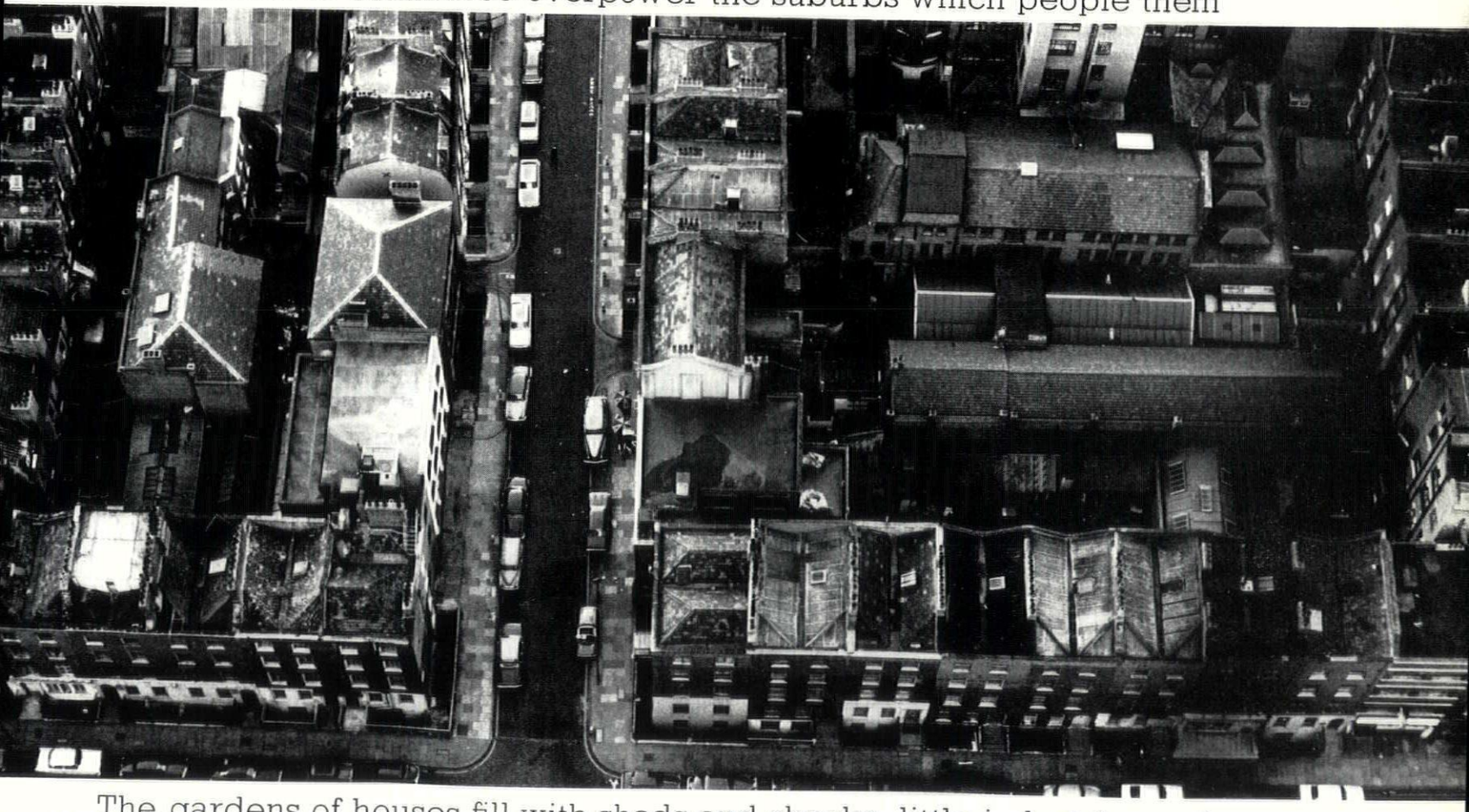


Alienated students ally themselves with those denied the basic human right





Monuments to commerce overpower the suburbs which people them

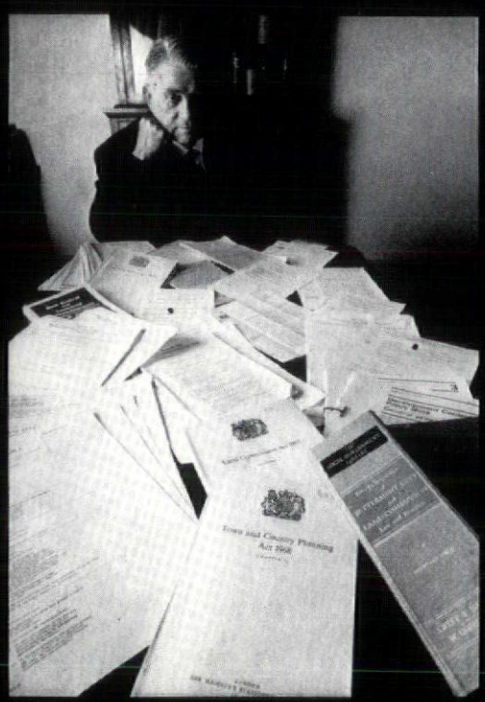


The gardens of houses fill with sheds and shacks, little industries and garages



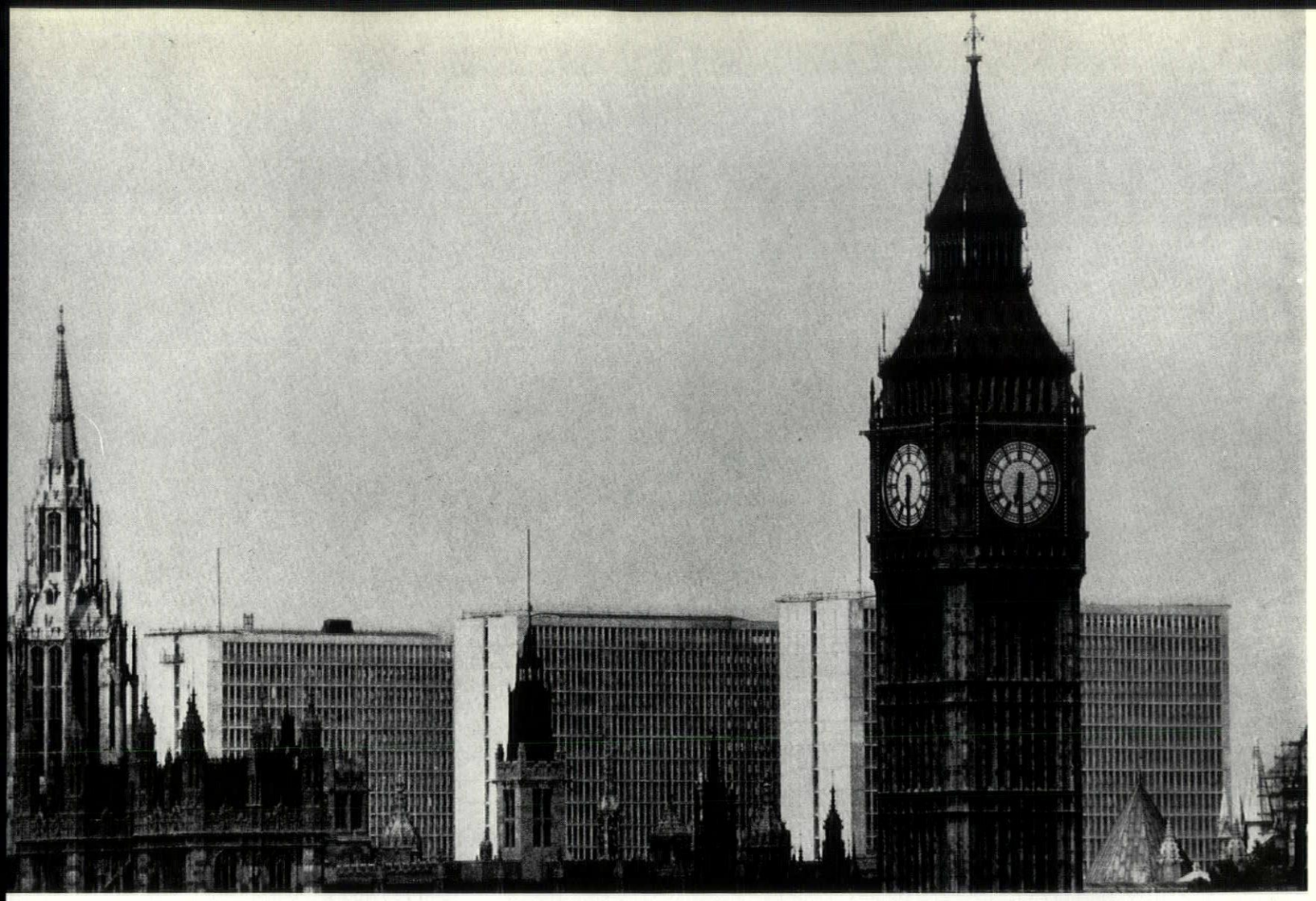
The richness of east end life is replaced by monotony and inhumanity

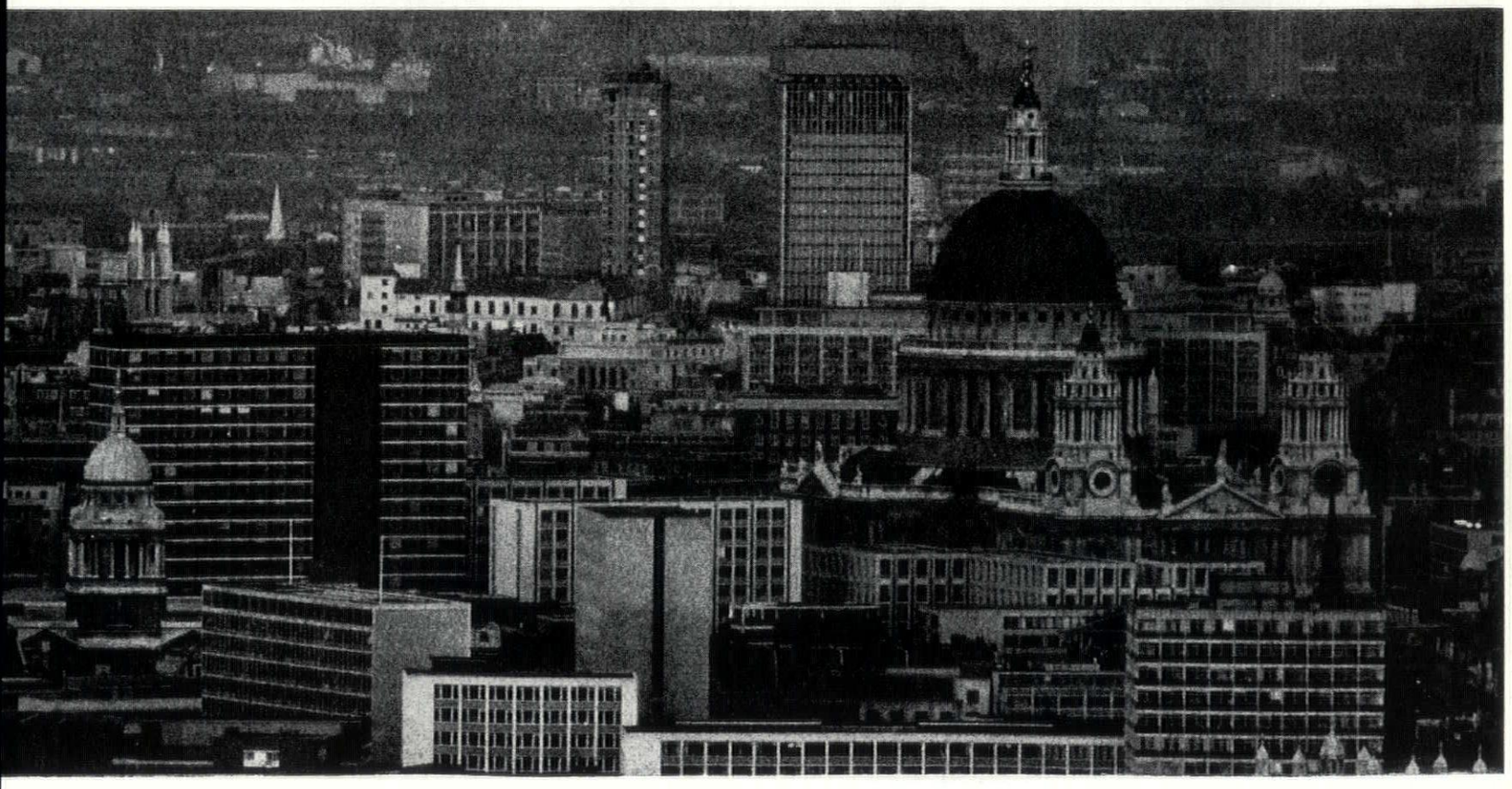




The regulations of prevention and prohibition and well-intentioned guidance rain unceasingly upon architects and builders

'People say this is a permissive society, but we live in the most regimented society ever in this country. You have practically to have a licence to breathe—you cannot move without people asking what you are doing.'
HRH Duke of Edinburgh, 'Face the Press' programme Tyne Tees TV 20 March 1968



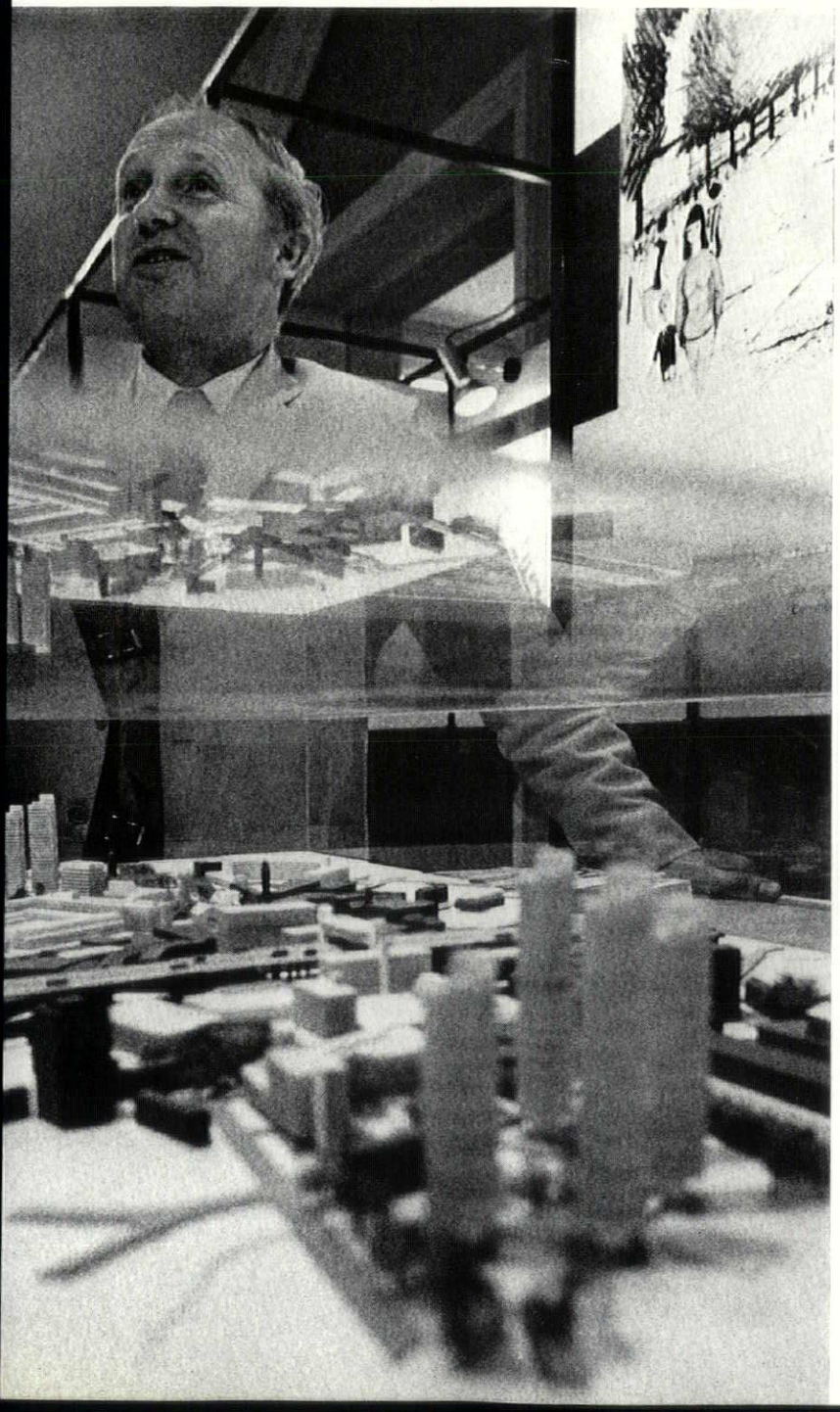


Lord Meston of the National Federation of Property Owners, attacks 'the unbending legislation, regulation and circularisation that checks house building.'
Meanwhile vast office complexes slip through the planning system on the nod.

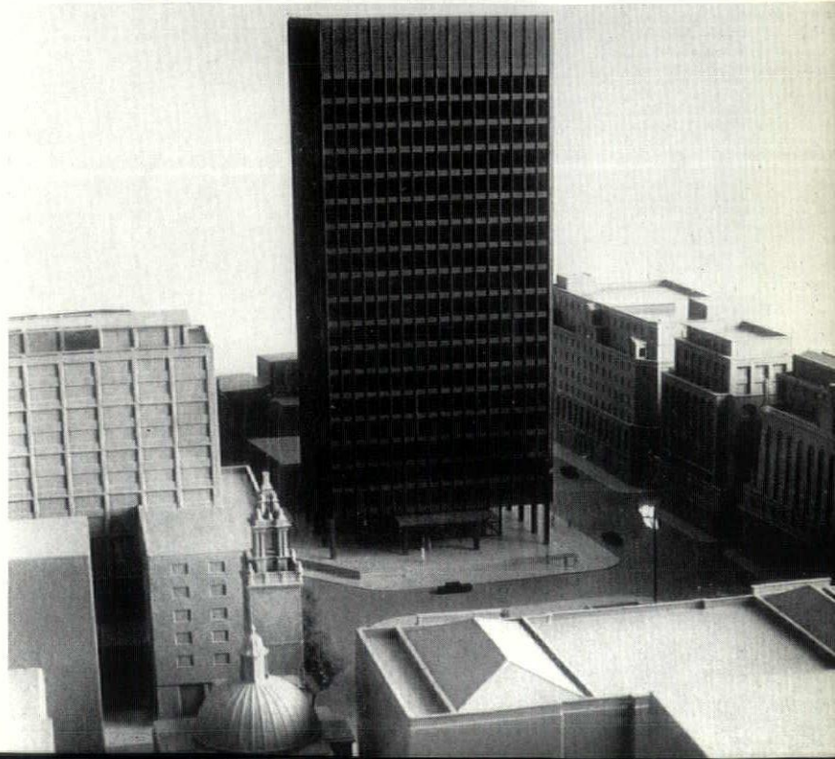

RANK XEROX

Third-rate towerdom overpowers and overshadows buildings of distinction . . . while London's only chance of a posthumous Mies is subjected to endless delay.

According to Ted Hollamby, Lambeth's borough architect, architects' real frustration is 'delay in building completion. In Lambeth, £1 million may have been raised on the capital account unnecessarily'. His plan for Brixton has been frustrated 'because all the warring barons of the state compete and simply won't agree'. 'Ministry cost levels and standards have got to a level of ludicrosity—if there is such a word—where formulas such as "one desk for the matron, one chair and four drawers" are put forward as standards'. Eric Lyons opens 'the post every day in the hope that something exciting will come. My biggest frustration is the conviction that I am never fully stretched, but isolation of the architect is the real cause of frustration. We're always designing buildings for ourselves so very few laymen have a love of what we're doing'. 'The trouble with planners is that negatively they have a benevolent disposition to interfere in design so that they can circumscribe the designer, and positively their exercises are often unrelated to real need and practical possibilities. "Comprehensive" schemes become ends in themselves and a form of intellectual masturbation'.

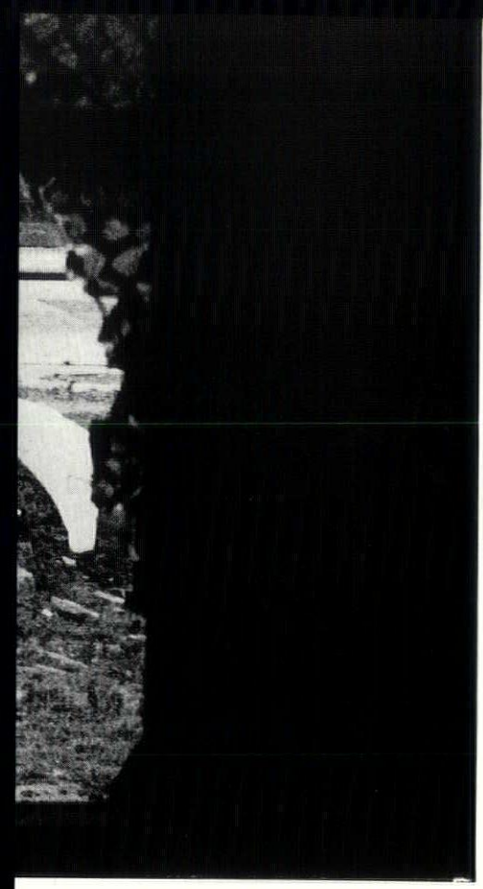


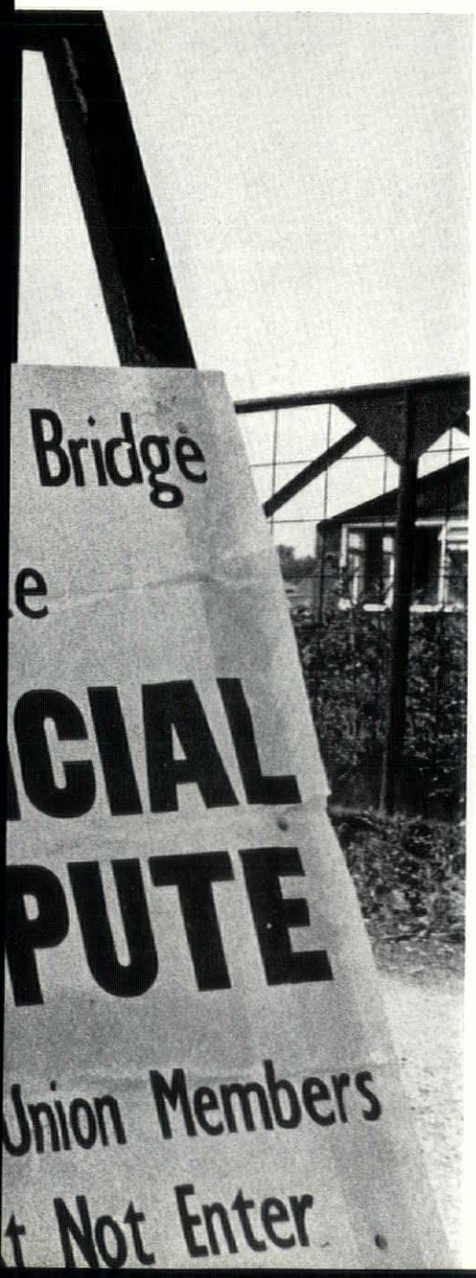












While people in the Gorbals continue to live in unbelievable squalor . . . a large Local Authority housing site in London lies for ten months unfinished, victim of industrial strife.

And when it comes to metrication, despite urgent social programmes, the building industry in one architect's experience—Kate Macintosh—stands like Ethelred the Unready:

'Having gone through the persuasion process and emerged convinced that metric is a good thing for the sake of industry, for the streamlining of production runs etc., the architect's frustration really begins. He finds that manufacturers appear in the main not only to be appallingly ignorant of the glorious future planned for their benefit, but also largely indifferent. Or, if this is not the case, enlightened management is failing to filter through the good news to its technical and publicity staff.

When I was appointed job architect for the Lambeth pilot metric study, I asked the librarian to circulate the manufacturers listed in the AJ Metric Handbook [produced March 1968] as having 'modular metric products, components or systems currently available.' Several did not reply. Of the twenty eight who did, ten were either not planning to produce metric information or had not yet published it, fourteen sent brochures with metric equivalents written against their imperial dimensions and only four were producing metric modular coordinated information ie about 14 per cent.

This overall impression of either total indifference or of over cautious hesitation has been sharply reinforced by my own independent enquiries with manufacturers, one of whom told me patronisingly that his firm was already "modular coordinated" and indeed had been for years—on an 8 inch grid. Several others had apparently never come across standard Stationery Office publications on the subject and were glad of a few tips. The one manufacturer to give unambivalent positive response, was a firm originating in Scandinavia.

Of course, the industry is not supposed to be producing any metric modular coordinated products until 1970, but it most certainly will not be possible to accomplish it overnight. A great deal of careful preplanning will be required to ensure a smooth transition. Manufacturers will also have to send out plenty of advance publicity on their new metric ranges if stock piling is to be prevented and if they are to supply the Local Authority schemes which will be filtering through the Ministry, programmed to start on site from 1970 onwards. From the consumer's end, there seems to be very little sign of this happening. After a period of struggle, first with the stringent disciplines of modular coordination, then with the inertia of the building industry, one's faith in the great coordinated future begins to waver.'

CONCLUSIONS

In 1964 part of the River Avon was re-opened for navigation after fifteen years' work by the Lower Avon Navigation Trust. In 1964 also the south section of the Stratford Canal was re-opened after three years' work by Guides, Scouts, prisoners, RAF, soldiers and thousands of volunteers led by an architect, David Hutchings. Now Hutchings is leading another team of volunteers to tackle the Upper Avon —the last blocked and disused link in a circular system of waterways comprising those already cleared and the Worcester and Birmingham Canal. The operation will involve the building of ten new locks, six weirs, and the dredging of 175,000 cubic yards of mud. When this work is completed at an estimated cost of £280,000 —a fraction of what it would cost on a civil engineering contract basis— the work force is free—loaded vessels of up to 80ft by 16ft will be able to use the navigation. Stratford will be linked to the sea once more and the

circle of waterways thus liberated is likely to become the most popular cruising route in Britain.

The Upper Avon is the latest battle in a campaign that goes back to the founding of the Inland Waterways Association by Robert Aickman in a (then) hopeless effort to save the navigational system of England, deserted by the Railways (its main owners), spurned by Local Authorities, ignored by Government, hated by Ministries, shrugged off by waterway authorities, neglected by riparian owners, all of whom could hardly wait to see the end of these muddy drains. Muddy drains they were, and those who strove to save them, intruders in a dirty business—a small band of zealots, unpaid, without influence, without finance, without expertise, who had no weapons to fight with except their hands. It was—literally—with their hands that they started rebuilding the canals. Following their efforts and those of other voluntary labour forces whole stretches of navigable waterways have been saved or re-opened. In the light of the possibilities of LASH—Lighter-Aboard-Ship, a novel goods moving technique which we shall examine in the October issue—their achievement may have more

economic significance than appeared then, but at the time it was an exercise in the defeat of inertia, hung round with every known form of frustration.

Frustration has been defined as a conflict of freedoms, the more or less necessary consequence of securing other people their rights; and planning as the art of effecting a compromise between these conflicting demands. This is nonsense. Planning is resolution not compromise. Our continuing failure to resolve the conflict of freedoms calls in question both our ability to plan and our creative capacity. Many of the frustrations illustrated in this issue could be swept away tomorrow but for a paralysis of the decision-making apparatus either in the Government or the governed. In succeeding issues we propose to offer some of the solutions. Here we have simply to remember the victory of one small band—the IWA—almost unique in the world of the '60s, which practised the art of not accepting defeat, and by so doing swung authority behind its cause, engineering finally the spectacular re-orientation of Government policy on inland waterways incorporated in Barbara Castle's White Paper 'Transport Policy'.



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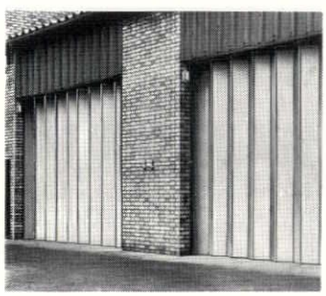

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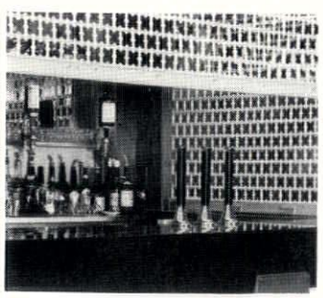

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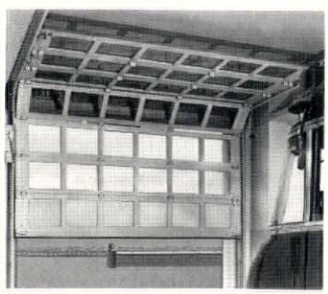

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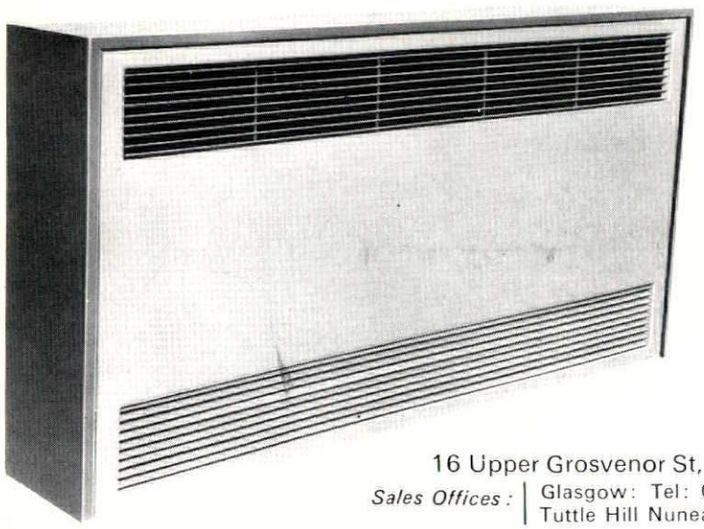
for warmth

Photographed at Antonio's Spanish Restaurant, Long Acre, Lon



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Travel was once a liberating and joyful experience—there was romance even on a 'nineties Bayswater bus. One of the treats of a day in London, as most country children over sixty can remember, was to be taken on top to sit by the driver, a coachman in the finest Sam Weller tradition.



'The peak-hour traveller squeezed in with his fellow passengers on a hot summer day travelling from spacious detached houses in the suburbs to air-conditioned office blocks in central London, must often wonder why they put up with such oppressive conditions during the journey in between'
Ray Thomas, Journeys to Work, PEP
November 1968

Today London's tubes carry over 500,000 passengers into central London every morning between seven and ten am (425,000 of them between 8 and 10 am) reducing travel to an act of human degradation equalled only in Tokyo where students are hired to compress passengers and their jutting limbs within closing doors

MAP

SOCIETY IS ITS CONTACTS

When elevated to the rank of an industry, communications—whose lines commanders in the field traditionally keep open—might be expected by the artless to remain committed to the baggage train—air, rail and road. In fact the media of the communications industry are words, its constituents Fleet Street, the advertising agencies, the PR network. Justly so. After love and hate, speech is still the most pregnant medium of communication, with a current potential in microwave, closed circuit TV, lasers, video tape and telemetry, the essential principles of which are the separation of word and mouth and the broadcast of one without the other. Developments such as these may produce a revolution in our work structure equal and opposite to the factory revolution. Production was once the cottage industry: to-day much of the paper work of commerce could be churned out in the home, by the fireside, with magical result upon urban congestion, the typists' pool, the managerial car.

Nevertheless most of this issue is devoted to transport for the good reason that while cybernetics and allied disciplines have grown enormously in sophistication, the movement of live- and dead-stock has either stood still (the railways), or developed brutalistic symptoms (H bomb, rocketry, sonic boom, VTOL, hovercraft, jet-propulsion, buzz-saw, pile-driver, road drill).

However, before they are seen as merely lines-of or words-of it is important to emphasize the fact that communications take many forms. Even to break one's fast involves intricate contacts. Rousseau merely stole an apple; the bacon on the modern table is the end term of a complicated series between man and pig, feeder and breeder, auctioneer, buyer, transporter, the chaps at the slaughter house, the chaps at the bacon factory, pre-packer, wholesale, retailer housewife, shopping basket, breakfast table. By the standards of modern organization a simple series of operations, in fact highly complicated, but a demonstration that the satisfaction of a desire as elementary as that for breakfast requires a long chain of social relationships. Seen thus the distributive pattern embodies the society it serves. The boundaries of a society are the limits of its communications ie contacts, ie distributive network, ie organisation. Contraction, dislocation or growth in one will involve equivalent growth, dislocation or contraction in the other. The other *is* the one. Society *is* its contacts. Speech is the social organisation of air.

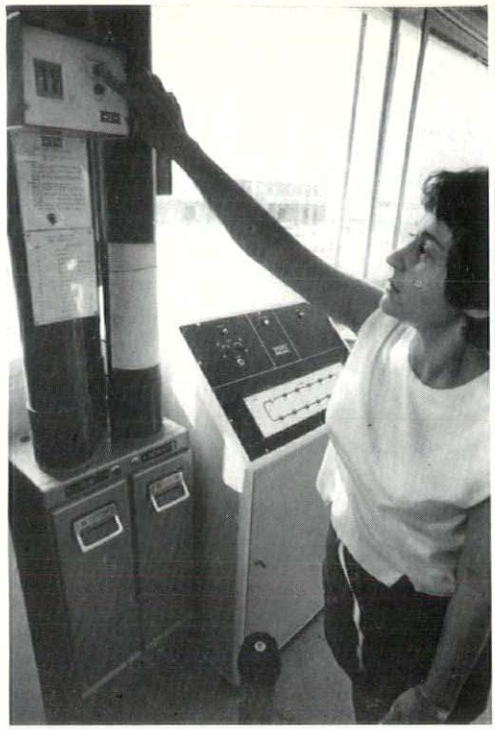
The proposition means that any breakdown or bottle-neck (in traffic for instance) should be seen as a functional failure within



The rescue of travel from its dehumanising and devalued status is more likely to be achieved by a revolution in communications than by act of Government

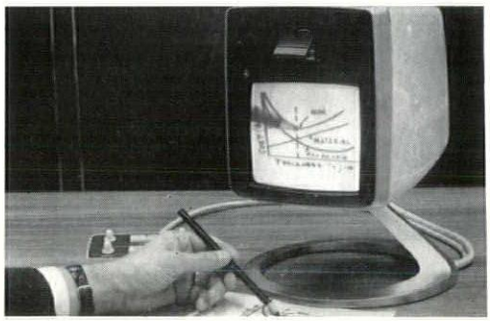




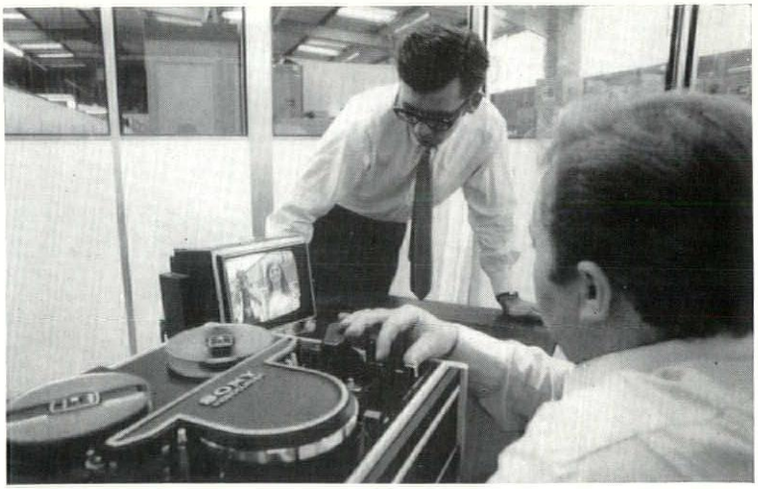


Multitone's latest vhf pocket paging and speech receivers locate individuals by 'bleeping' or flashing lights or both when the terminals calls. They are also capable of being used for group alert or emergency calls in hospitals or in case of fire. Being vhf they can penetrate poor reception areas such a steel or concrete structures.
Sony's portable video camera unit (below) simultaneously records twenty minutes of picture and sound on tapes that can be posted and then played back through a television receiver hundreds of miles away.
Computers are suddenly making great strides in the communications field and

Boadicea (British Overseas Airways Digital Information Computer for Electronic Automation) consisting of three IBM 360/655 and Ferranti terminals is one of Britain's most sophisticated examples. Representing a £50m investment over ten years and a saving of 2000 clerical staff, from Heathrow it will handle all BOAC seat reservations the world over, passenger check-ins at airports, flight planning, weight and balance calculations.
Dialled Despatches' computerised air tube system (above right) installed in TWA's Marketair Centre is one of several pneumatic document conveyor systems at London Airport.
Bell System's Picturephone (right)—with Plessey





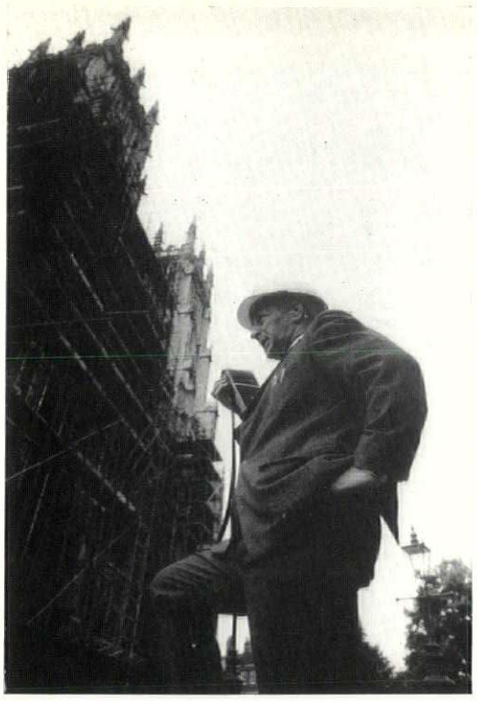


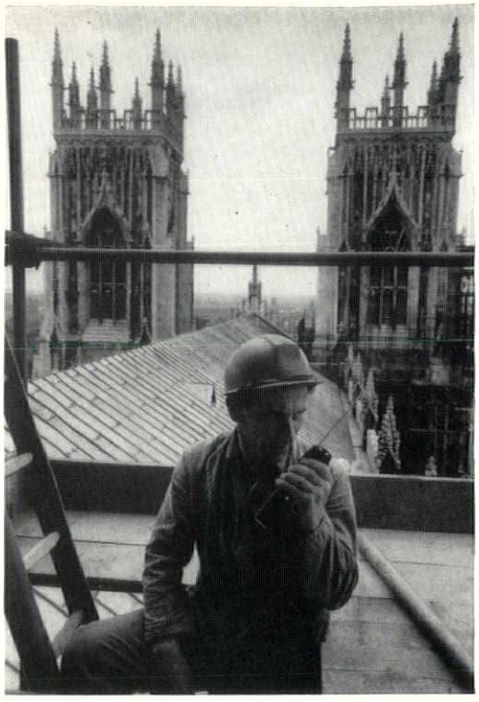
We stand on the threshold of a revolution in communications which *The Economist* reckons will 'bring changes in the organisation of life as radical as those brought by the motor car and perhaps even the printing press'. Very soon telephone networks in developed countries will be handling much more sophisticated traffic than mere telephone calls. They will be carrying television programmes, computer-fed data, business letters and newspapers that can be played back through

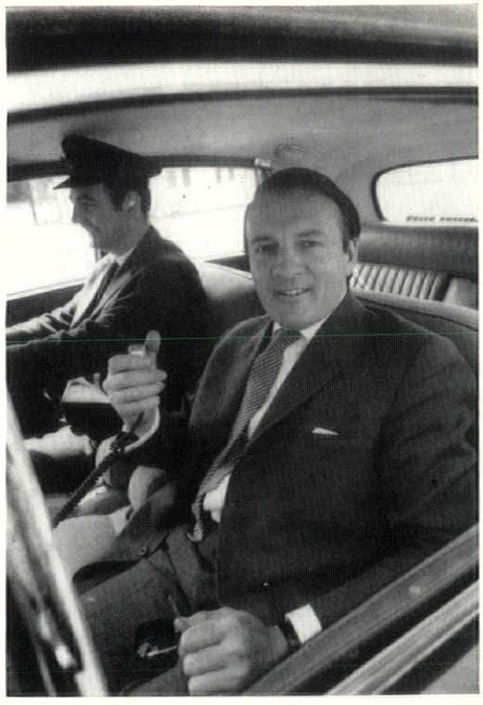
Plessey, television sets in the home or onto electric teletypewriters, and financial informion between bank and bank, bank and shop, bank and offices. In the home, according to Peter Rosenwald, a direct marketing managing director, it will be possible to shop 'by video telephone for a whole range of things from refrigerators to radios simply by dialling a number and viewing the goods. Payment could be made through the giro system. This form of direct marketing—which is real convenience as opposed to the

inconvenience of self service—would put the customer in a position to buy on the spot.' Similarly a whole range of other services not normally thought of as communications—monitoring burglar alarms, turning on central heating in empty houses, reading electricity and gas meters—would all become possible. *The Economist* in its latest survey claims that 'any kind of signal from turning on an oven to broadcasting a colour television programme will be able to travel over the telephone network.'

Come the revolution there will be more talking less walking. Bedside computers' wristwatch-walkie-talkies, transmission by lasers, microwave radios, closed-circuit TV, picture telephones, cordless telephones, miniature telephones, portable videotape recorders, pneumatic tubes, robotugs and inventions as yet un-

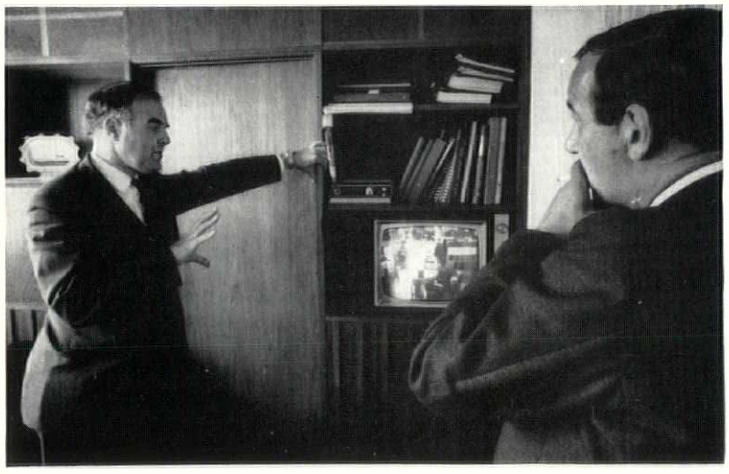








Siemen's and Toshiba—is one of four world prototypes on commercial trial now and will be offered in limited quantities for public service in the early 1970's. Standard Telephones' Starphone (left)—claimed to be the world's smallest UHF radio telephone—weighs under a pound and without the aid of an aerial provides two-way speech over an area of several miles radius, both inside and outside buildings. Radio telephones are being used during the restoration of York's Minster (above) to aid ground-to-tower communications. Twenty three ounce hand held Pye receivers used between the top of the central tower and the floor of the have have saved thousands of feet of unnecessary climbing. Sebastian Ferranti (above right) is well prepared—when not beating the traffic by taking to the air in his own helicopter—he can talk through it from his own immobilised car. Molins Machine Tool Company installed Britain's first private microwave system (below left) which enables the technical director to 'pan', from seventy miles away, the production line with a Pye TV Camera. In large warehouses driverless Robotug trucks and tailer systems (below) are replacing manual handling and human movement by means of electronic control systems set into the floor along tracks.





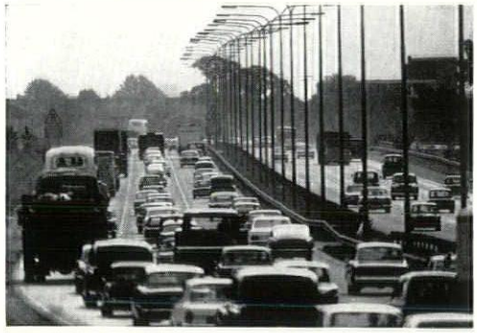
If these are still in the future, new ways of communicating illustrated here, are already making radical changes in the pattern of industrial and commercial life. They are all working technological advances already in use. Every one of them reduces the need for human mobility at the same time as it increases human contact. All transmit messages.

For those that must move but see that GK Chesterton's prophecy that the London traffic jam will become a form of architecture in itself, the answer may be as *New Scientist* suggests 'for the car-borne businessman to give up fretting and compromise with the inevitable by regarding his car not as a means of getting to his place of work, but as his place of work,' In which case Sebastian Ferranti is one of Britain's lucky ones—there are only 320 mobile telephones in London with another 322 on the waiting list. *The Economist* survey reckons that 'the world market for small radio transmitters is growing at about 12 per cent a year. There are about 100,000 in Britain, about 3.5 million in the United States and the potential uses for them, in rural areas as well as cities, defy listing. There is no shortage of demand—only the bandwidth to accommodate them.

The weapons for the revolution are already invented. The only obstacles standing between their use and the man in the street—or more likely in the home—are political, social and economic, not technological.

dreamed of, could enable twentieth century society to exchange its restless and often needless mobility for real contact man-to-man untramelled by distance. But, till the glorious revolution comes, the traveller's lot must be improved by experiments of a kind and a scale as yet untried by successive Ministers of Transport

The M4 at the Severn Bridge in June 1968 was the first of the motorways to receive a permanent system of remotely controlled signals aimed at reducing accidents and achieving safer all weather driving conditions. Now an eleven mile section of the M4 between Chiswick roundabout and the A4 is remotely controlled by a police officer at Heston Service Area. The signals are computer controlled and this system is expected to be extended throughout the motorway system by the mid 1970's.
In urban areas Glasgow has the most sophisticated computerised traffic control to date—journey times have been improved and congestion costs cut. West London has another successful road traffic control experiment using a computer, cameras and road sensors. This and other less desirable traffic management schemes have already resulted in slight increases in average speeds through Central London since 1960. Average peak hour journey speeds in 1966 were 9.5 mph (10.7 mph off peak) compared with 8.7 mph (10.6 off peak) in 1964. The experts however cannot agree on the extent to which individual schemes have contributed to the reduction of total travel time



'I reject Los Angeles. More than that I reject the idea that we should aim at a British version of it—scaled down, as it were, to match our resources of land and finance . . .the solution lies in a planned combination of policies; better urban roads, better public transport, better traffic management'.
Barbara Castle MP, Minister of Transport
27 October 1966

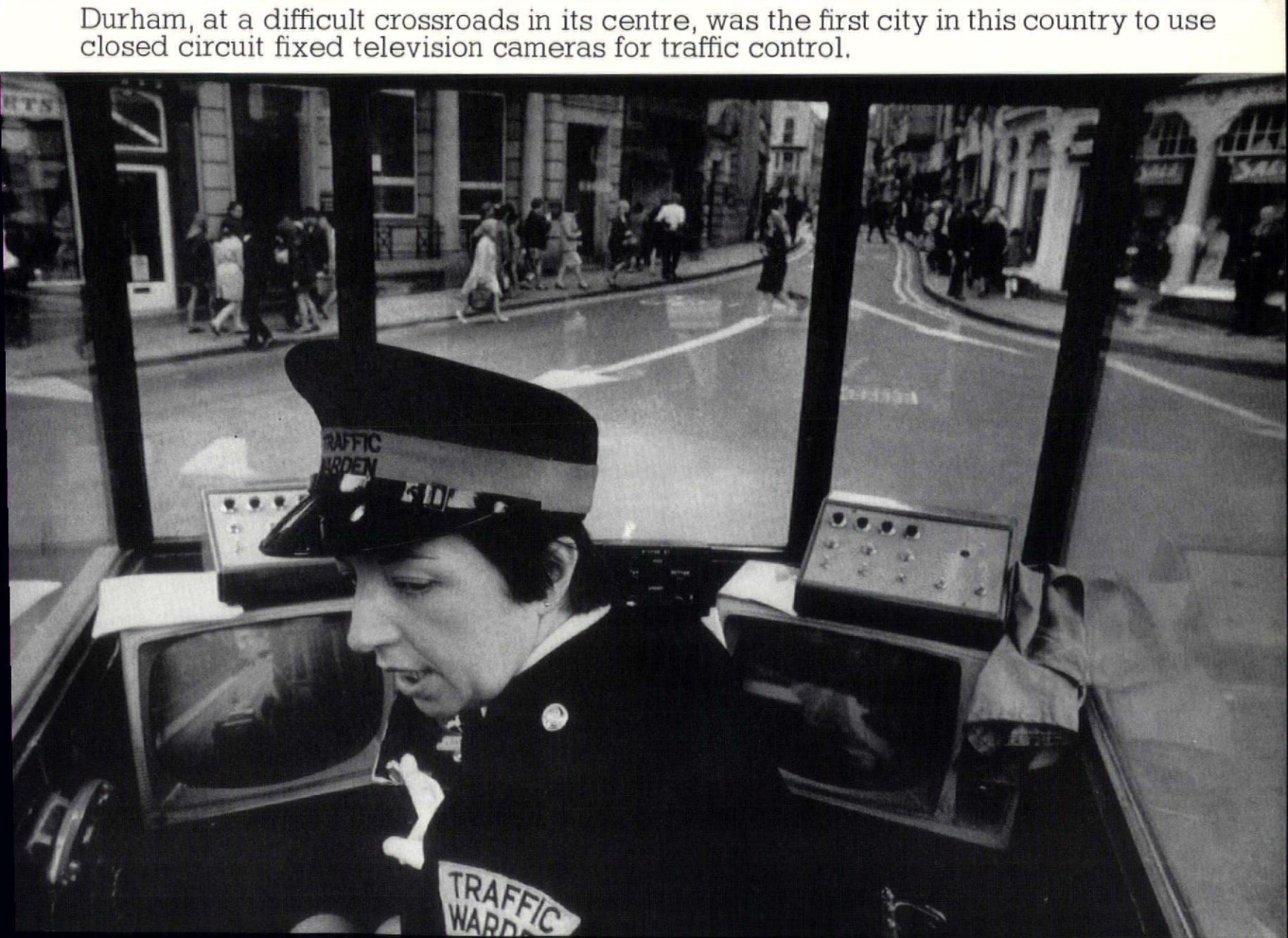
'Eighty per cent of our population live in urban areas . . . it is in the towns that we are faced with our most intractable transport problem—urban congestion. This is why urban road expenditure is one of the fastest growing elements in the road programme.'
Robert Brown MP, Joint Parliamentary Secretary, Ministry of Transport
28 August 1969

'The Glasgow City Traffic Experiment Control Centre—a Dalek world where blinking lights and punched tapes spell out some of the answers to Glasgow's traffic tangles—cutting city centre journeys at times by as much as one minute in every hour. This is a cash saving—in terms of vehicle operation—of more than £½ million a year'
Richard Marsh MP, Minister of Transport
27 June 1969

164,090 commuters pour into London by car every day; into Birmingham 29,880 Manchester 32,540, Liverpool 26,760, Newcastle 17,420, Glasgow 17,160. At night the tide flows out. Each year the tide grows ever stronger. Yet in this country the application of modern communications to the control of traffic is still in its infancy



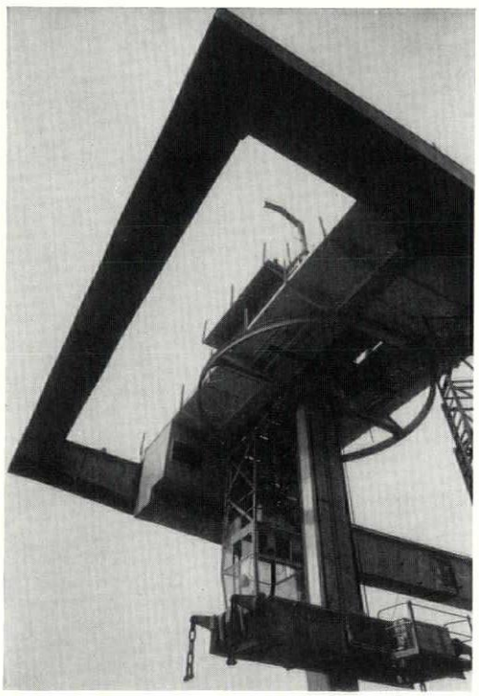
Durham, at a difficult crossroads in its centre, was the first city in this country to use closed circuit fixed television cameras for traffic control.





Scotland Yard with computer-controlled traffic lights can speed traffic at intersections by changing the intervals. On the M4 four cameras scan the motorway and in bad conditions the operator remotely controls the computerised gantry signals





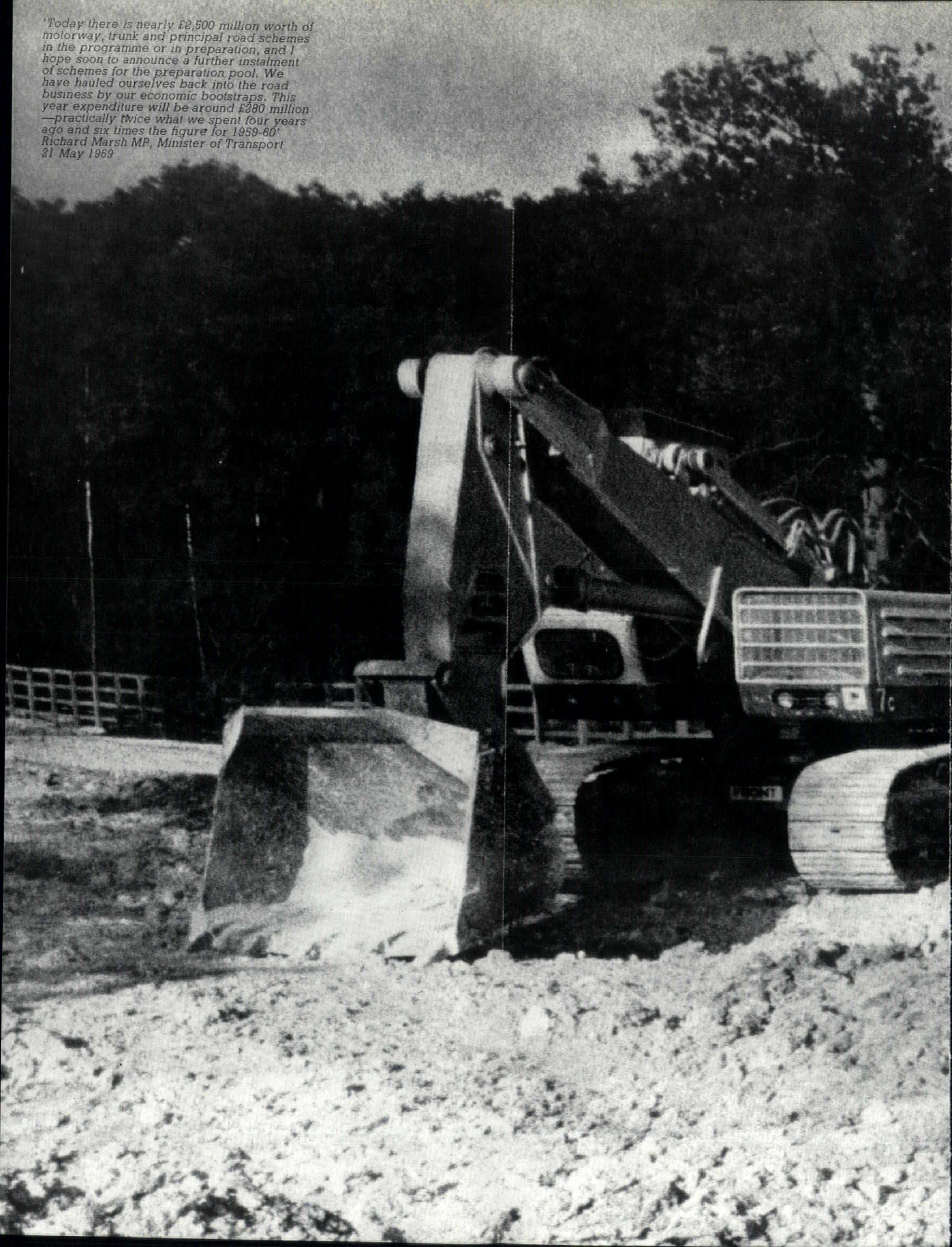
'Britain's traditional docks in London and Liverpool are gradually grinding to a halt and it is this fact that must be the final answer to doubts and fears about the container revolution. For Britain's main ports, there is almost no alternative'
The Economist, 14 September 1968

'We are pumping more into the ports industry than ever before. Before 1964 investment was around £18 million a year. In 1965 it was £26½m; in 1966—£35m; in 1967 £45m and investment continues at this high level.'
Richard Marsh, Minister of Transport 27 June 1969

However reluctant Britain may be in getting to grips with the technology of traffic control, she has faced up to the technological implications of the transport revolution which is sweeping the industrialised world. The container spells death to the traditional transport practices. Transport operators are now able to integrate road, rail and sea transport by moving containers rapidly between each mode. Equipment is costly—special cranes cost around £250,000 each—but if containers mean more machines they also mean less road hauliers, lorries, shippers, ports, ships, and men.



Nowadays a single transport company carries the container by road, rail and sea



'Today there is nearly £2,500 million worth of motorway, trunk and principal road schemes in the programme or in preparation, and I hope soon to announce a further instalment of schemes for the preparation pool. We have hauled ourselves back into the road business by our economic bootstraps. This year expenditure will be around £280 million —practically twice what we spent four years ago and six times the figure for 1959-60'
Richard Marsh MP, Minister of Transport
21 May 1969

'Canals are now carrying less than one half per cent of the total inland freight tonnage. The economic use of the waterways must be fully developed, but it can never be significant on a national scale and the Government does not consider it necessary to make specific provision for this traffic in its new proposals for freight transport.' 'The Government does not propose to invest large resources in new transport waterways.'
White Paper, Transport Policy July 1966

'Traffic congestion is now spreading more rapidly on roads in Britain than in any other major country in the world. There are now 59.2 vehicles for every mile of road compared with 48.3 in Germany and 45.1 in Italy. The United States and France both have less than 26 vehicles to the mile. This means that on the trunk and secondary roads in this country there are only 11.5 yards of space for every vehicle.'
Basic Road Statistics 1969, British Road Federation, July 1969





But rationalisation stops at the international level. Inland, Britain's roads are overloaded while canals lie neglected with lorries plying the very same routes



The road lobby—one of the most vociferous pressure groups governments have to face—would have us believe that the answer to intolerable conditions on the roads is to build—more roads and bigger roads. So successful has their campaign been that Britain, alone among her European contemporaries, has dismissed waterways altogether as a mode of transport. Existing working canals are progressively to be relegated to recreational use or run down and no new canals are to be built




SHELLABEAR
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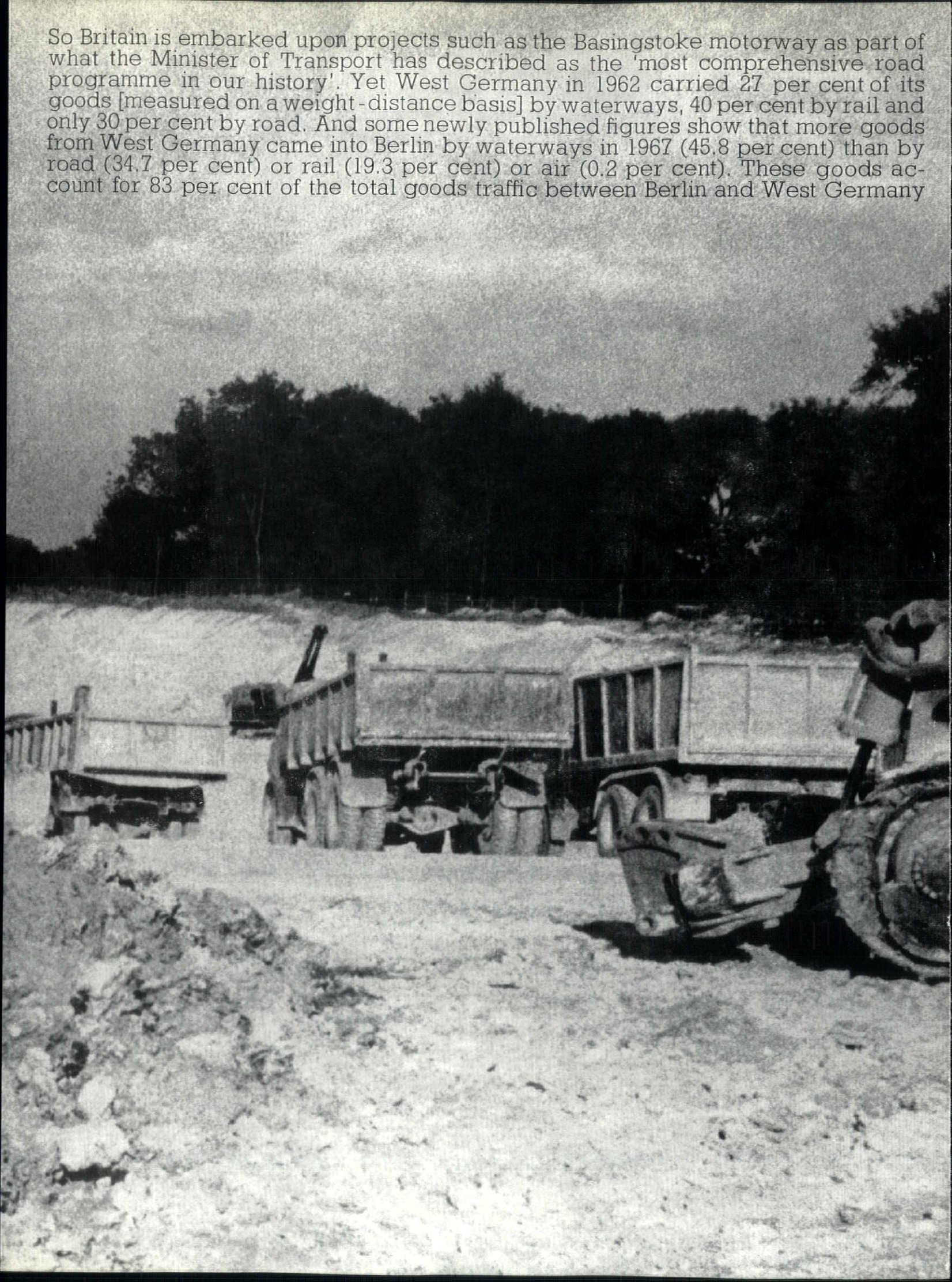
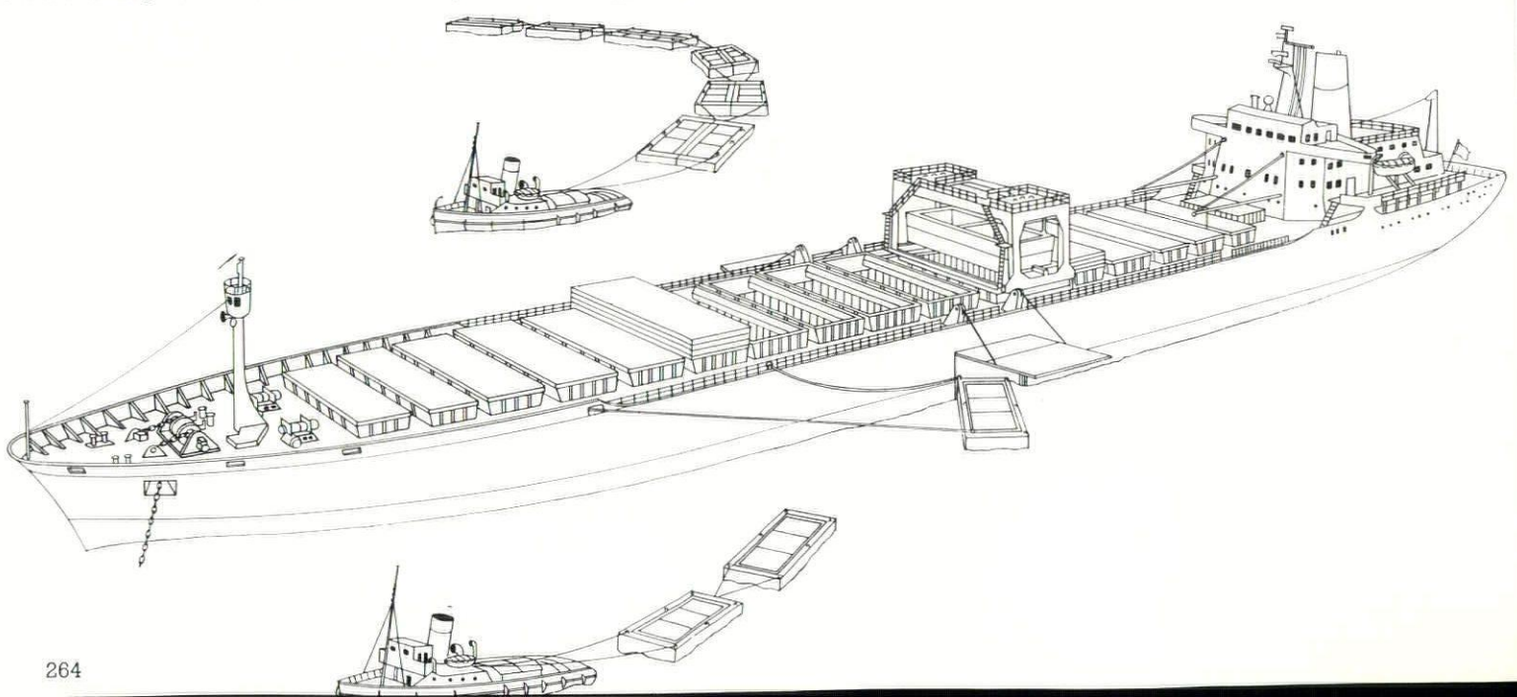
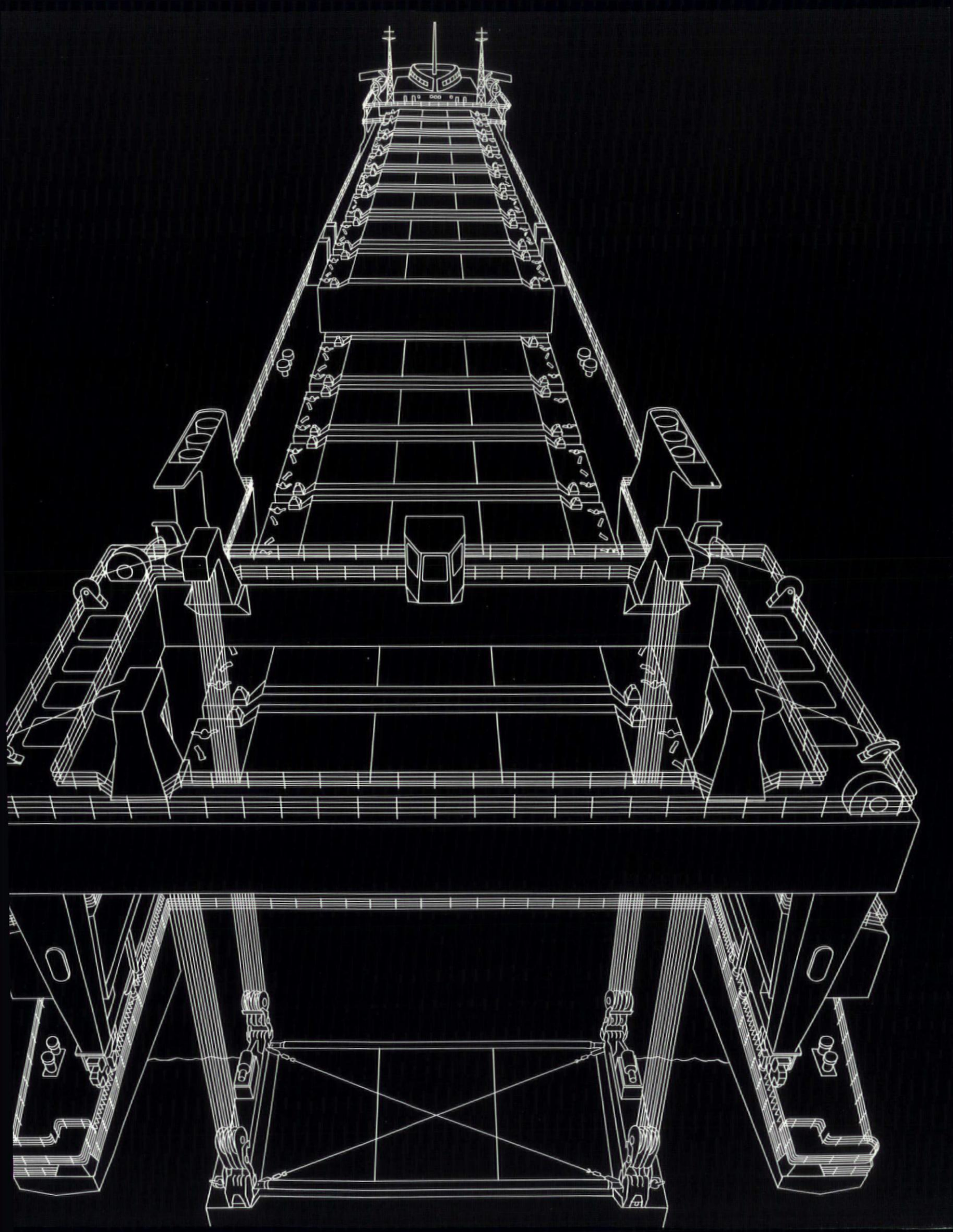
So Britain is embarked upon projects such as the Basingstoke motorway as part of what the Minister of Transport has described as the 'most comprehensive road programme in our history'. Yet West Germany in 1962 carried 27 per cent of its goods [measured on a weight-distance basis] by waterways, 40 per cent by rail and only 30 per cent by road. And some newly published figures show that more goods from West Germany came into Berlin by waterways in 1967 (45.8 per cent) than by road (34.7 per cent) or rail (19.3 per cent) or air (0.2 per cent). These goods account for 83 per cent of the total goods traffic between Berlin and West Germany



The container revolution means that ships will spend most of their lives at sea, instead of half of them in port as conventional vessels do. This in itself will sharply reduce the number of ships—one container berth could replace up to 20 conventional berths and the entire British trade with North America could be handled by 14 container ships. On land the effect is equally dramatic. Container handling requires fewer dockers. A container berth can run with about a tenth of the labour needed for a conventional ship. At Tilbury a team of 15 can handle up to 400 containers per vessel. A ship of about the same 11,000 tons carrying capacity. conventionally loaded, requires 102 men. Cargo-shipping will never be quite the same again—nor will the road haulage business. Six container ships ordered by Britain's biggest container shipping group cost just under £30 million. To keep these ships on the move called for another £10 million in containers and road trailers. And the bill did not end there. While the investment in hardware is increasing—Vickers are trying to find a buyer and a backer for nuclear powered container ships and for completely automated warehouses to handle the volume of cargo likely to be generated by a fleet of giant fast container ships—the ports, British Rail and container companies are all beginning to buy software. In August Liverpool became the first port to link a computer to the operational control of its Gladstone container berth. £600,000 'Portia' will print out records of containers' arrival, contents, departures and destination. Controllers, drivers, dock workers and ships' crews will have available up-to-the-minute records—all processed four miles away. World container capacity is expected to increase 40 per cent this year and, by 1980, sixty per cent—or 680 million tons—of seaborne non-bulk dry cargo will be carried in containers. Will the revolution ever stop ?
A further step in the rationalisation of goods transport is the waterborne container—the container that floats from its mother ship —known as LASH.
The 43,000 ton Acadia Forest, right, owned by Central Gulf Lines of America, stores its cargo in 73 lighters or barges each of which is capable of carrying a load of up to 400 tons. Central Gulf and their British backers Hill Samuel are building a second one in Japan. In operation the ship will be able to unload its entire cargo of 27,000 tons in twenty four hours—a rate of one barge every fifteen minutes—by means of its own built-in mobile crane with a lifting capacity of 510 tons and the lighters are then towed up river—probably on the Thames as far as Brentford. Later lighters will go up to 1350 tons—the equivalent of 61 lorry loads. The lighters will be uniform in size—61ft 6 ins long by 31 ft 2 ins wide and 13 ft high. Their hatch openings will be large—44 ft by 26 ft and watertight steel doors will cover them.
The shipping company will have 120 lighters at each end in Europe and in America.
The turn round is phenomenal—19 days from St. Louis in America to Duisberg in Germany including loading and discharging and inland waterway journey either end (compared with 35 days by conventional methods)—and the cost lower than other forms of transport.
LASH will reduce costs in two main ways. First in common with container ships, the Acadia Forest will spend next to no time in port. Second, the breakthrough comes with the revolutionary reduction in cargo handling time involved—LASH can be virtually a waterborne door to door service.
A British firm, Turnbull Marine Design Company Ltd. of Sale has produced an extension of the LASH system. Their Barge-On-Board (inevitably called BOB) system, below, has a watertight dock compartment amidships which runs across the width of the ship. Watertight doors open to allow barges to float into the ship where they are lifted by a travelling gantry crane to be stacked like normal containers.
The National Research Development Corporation has two other British variations available under licence.
BOB will of course slightly reduce the normal cargo carrying capacity because of the air space around the barges but its advantage is that it can be incorporated into otherwise conventional container vessels by simply cutting doors into their hulls. BOB still has to find an operator. Meanwhile Gulf have chosen the Medway to disgorge the lighters because it suits their export trade. It clearly favours British exports much less. The Medway can only serve Brentford, Dagenham, Poplar and Sheerness and Tilbury, all of which are southern and largely importing ports. If the Government took the initiative, the Humber, with British Steel Corporation as a major potential user of LASH, might be better for British exports.
The implications of either LASH or BOB are as significant in terms of turnround cost and increased speed as containerisation is proving and they extend the container principle. But LASH has the advantage that port investment would be reduced in most countries, Britain apart. How would heavy lighters move about in Britain ? She is alone amongst the big industrial nations in having no inland waterways big enough to carry payloads of the size that LASH demands. The Inland Waterways Association, back in 1963, argued the case for building new waterways—it fell on deaf ears. The basis of their argument was that the initial cost of new waterways would be less than that of motorways, their maintenance cheaper and as a mode of transport cheapest of all. West Germany's belief in the cheapness of water transport is shown by the dramatic growth in waterborne goods transport over the last ten years. Their case rests on good hard economic sense. They have also taken measures to drive goods back onto the railways as a parallel to encouraging inland waterways traffic. Belgium and Holland are jointly building a large new canal from the Rhine to the Scheldt at a cost of just under £800,000 per mile (a British motorway costs £1 million). Belgium is currently committing £100 million to new and reconstructed waterways. Industry in Britain requiring bulk carriage—even now with the waterways in a perilous state—is prepared to sign up new agreements (Alexander Duckham and Co Ltd recently contracted with the Birmingham and Midland Canal Carrying Company for the carriage of 7500 tons of motor lubricating oil a year along 90 miles of waterway). If so, the IWA proposals for a new Grand Contour canal need urgently to be got off the shelf and looked at in a new light. Theirs is no longer a crank's case. It is a wholly feasible and potentially money-making investment. The entire canal could be built at one level at a 310 foot contour. It would join the Manchester Ship Canal to the Thames, with a branch to the Eastern counties. It could be joined to the existing outdated waterways and provide at one fell swoop a linear water reservoir *and* recreational park *and* water transport system. From the heart of England's coffin—the Midlands—lighters would float down to Tilbury or out into the Atlantic at Liverpool or Bristol.

The container represents a revolution because it integrates rail, road and sea. Britain's transport system-by its persistent neglect of inland water—stands unprepared for its logical extension, waterborne containers. Britain needs new waterways to redress the transport imbalance and to take advantage of LASH, this exciting new cargo concept. Their cost could be less than motorways—their advantages safety, economy and a means of providing for Britain's water and some of her leisure needs







Liverpool's £55 million spending spree on general dockside modernisation and refitting plus a further £11 million on container hardware has turned her into Britain's



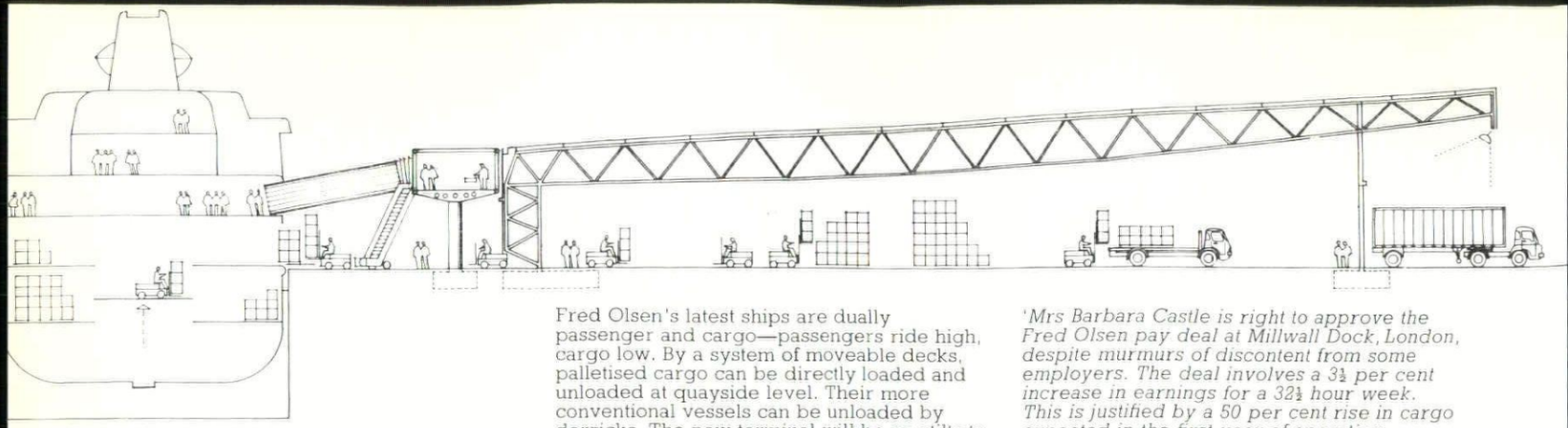




'Over the past 20 years more than £66 million have been spent on new facilities for vessels and their cargoes in the port of Liverpool' The Guardian, 14 April 1969

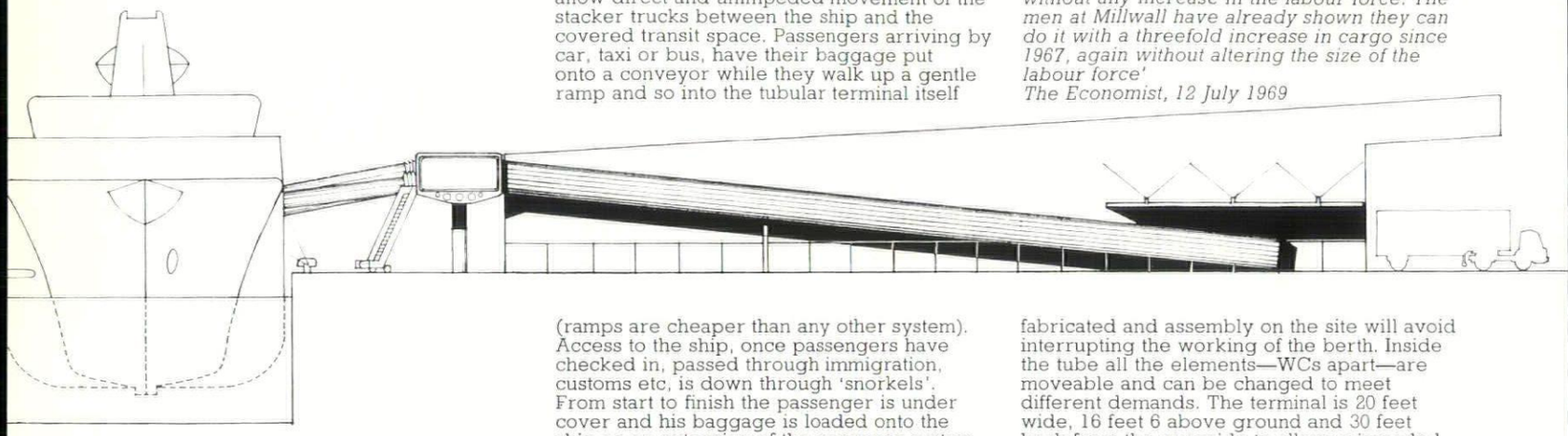
Mersey Docks' Harbour Board gave as a brief 'vermin proof, practical, easy to maintain, pleasant canteens'. They were keen to have them prefabricated but the servicing problem proved insuperable within the budget limits. They have been built at a cost of £5.16 per square foot exclusive of site works and kitchen equipment. From brief to completion was fourteen months. Each canteen has standardised elements but they vary in size and kitchen equipment. Dockers can wash and feed there. Showers and recreational facilities are elsewhere.

number one export port. Some of the cash has been spent on a programme of replacement of seven outdated canteens, designed by Gerald Beech and Partners

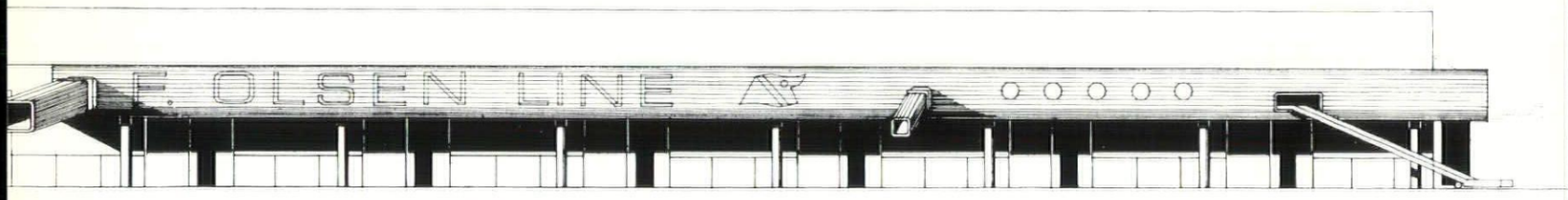


Fred Olsen's latest ships are dually passenger and cargo—passengers ride high, cargo low. By a system of moveable decks, palletised cargo can be directly loaded and unloaded at quayside level. Their more conventional vessels can be unloaded by derricks. The new terminal will be on stilts to allow direct and unimpeded movement of the stacker trucks between the ship and the covered transit space. Passengers arriving by car, taxi or bus, have their baggage put onto a conveyor while they walk up a gentle ramp and so into the tubular terminal itself

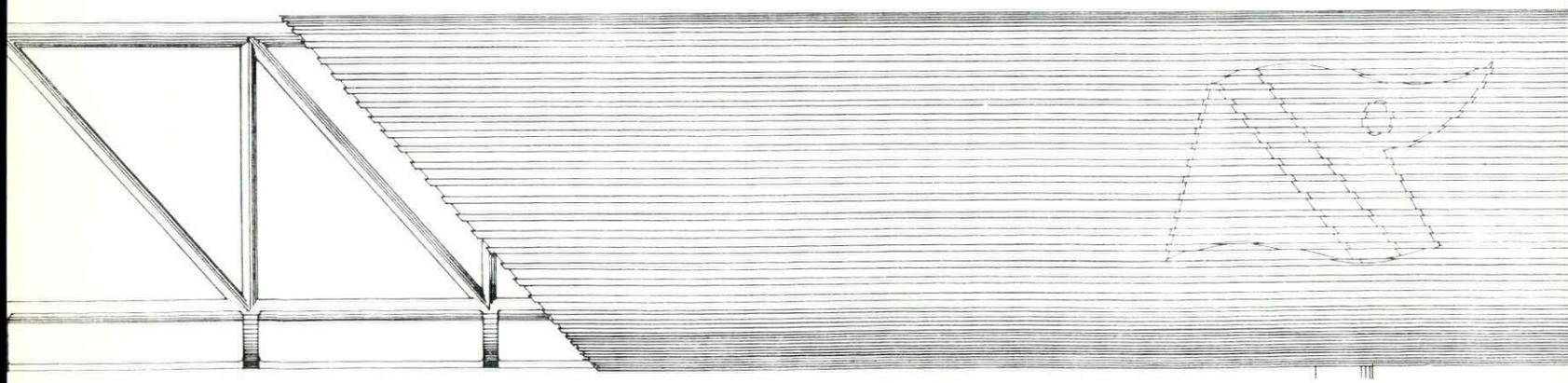
'Mrs Barbara Castle is right to approve the Fred Olsen pay deal at Millwall Dock, London, despite murmurs of discontent from some employers. The deal involves a 3½ per cent increase in earnings for a 32½ hour week. This is justified by a 50 per cent rise in cargo expected in the first year of operation without any increase in the labour force. The men at Millwall have already shown they can do it with a threefold increase in cargo since 1967, again without altering the size of the labour force'
The Economist, 12 July 1969



(ramps are cheaper than any other system). Access to the ship, once passengers have checked in, passed through immigration, customs etc, is down through 'snorkels'. From start to finish the passenger is under cover and his baggage is loaded onto the ship on an extension of the conveyor system into the snorkel. The tube is light weight steel frames and floors, clad in anodised aluminium. The whole building will be shop fabricated and assembly on the site will avoid interrupting the working of the berth. Inside the tube all the elements—WCs apart—are moveable and can be changed to meet different demands. The terminal is 20 feet wide, 16 feet 6 above ground and 30 feet back from the quayside to allow unimpeded use of the derricks for conventional vessels. It will open early in September 1970
13 months from the first brief



Fred Olsen Line are shippers extraordinary—in a world notorious for its conservatism and backwoodsmanship as far as labour relations are concerned. They decasualised ahead of Devlin, negotiated a revolutionary pay and productivity



deal in the teeth of opposition from other employers and persuaded the PLA to allow them to rationalise the site they lease. Foster and Associates were asked to draw up a masterplan and design a group of buildings. Shortly, Olsen's lucky employees will get Britain's first post-Devlin dockside amenity centre. Stage two is this tubular passenger terminal which can be built without disrupting the berth

'We are still guilty of the most elementary and avoidable blunders in dealing with the problem of urban traffic and the urban environment. What is most surprising about this state of affairs, is that we still persuade ourselves that we are the pragmatic chaps of the world. We may not be good at theories like the Germans and Americans but when it comes down to a plain practical solution, we win hands down. In fact, when it comes to urban traffic, we prove to be completely dominated by theory of the most apocalyptic kind. If you doubt that, go tomorrow morning at nine o'clock into any of the euphemistically-styled "twilight areas" of London for ten minutes and record what you find most objectionable. It is not the outworn housing, the mixture of land use, or the quality of the street furniture—bad as all these will be. It is the utterly anarchic quality of the traffic, which manifests itself in the mixture of vehicles and pedestrians in a maelstrom of chaos; the appallingly anti-social, and even pathological, quality of the driving; the intrusion of through traffic into residential areas where it was never intended to go; the utter destruction of the visual and oral and emotional environment of millions of people.'
Peter Hall, TCPA National Conference 26 October 1966



In May this year 31,005 people were killed or injured on the roads of Britain. This represents an 8 per cent increase compared with May 1968. The figures for the first six months of 1969 just published show that road deaths and serious injuries were up by about 3 per cent. Speed limits are generally accepted as one factor in cutting down the number and severity of accidents. Yet Britain now has a complex set of speed controls ranging from 30 mph for most urban areas to 70 mph for motorways. In between the two extremes there are 40-50 mph in some urban areas and special restrictions for caravans and 30 cwt lorries (both 50 mph) and heavy lorries (60 mph). When Britain goes metric in 1970, the scale of speed limits will be further complicated. Such a range of speed limits constitute a real frustration to the motorborne public in the arbitrariness of their siting and in the actual choice of speed for limitation. But their deeper frustration is that through lack of manpower to enforce them properly, they are little more than voluntary observations. And to enforce them properly in the areas most in need of controlled speed, an army of traffic wardens or police would be required.

To alleviate the kind of problems Peter Hall describes, a workable speed and route limiting system is required.

Suppose, for a moment, a transistorized device could be linked to the speedometer of a car and set to give a continuous audible warning whenever that car was driven above the speed limit for the stretch of road it was on. There is the beginnings of a basis for an infinitely variable control system. The Road Research Laboratory has confirmed such a device could easily be developed, and when mass-produced, cost as little as £10. In action the device would be set for a given speed by the vehicle passing over an inductive loop embedded in the road surface and its audible signal triggered by the vehicle exceeding the speed at which the device had thus been set. If the signal's pitch and volume had been designed by its unpleasantness, actually to inhibit the driver from breaking the law, speed limits would suddenly become mandatory because they were self imposed. Thus speed limitation would become a really effective form of traffic management because drivers could go faster provided they chose routes carefully. It could become a charter for environmental areas. America has already a big brother version built. Orbis 3, a highway traffic monitor, designed and built by L T V Aerospace Corporation, Dallas, can detect and photograph vehicles travelling faster or slower than statutory speed limits. The Road Research Laboratory is well ahead with a homing device fitted to the front and back of a car that would automatically steer the vehicle along a route with a cable buried beneath the road surface. The laboratory has made a cost benefit analysis of vehicle automation in Britain showing that such a system might pay for itself in terms of reduced accidents and the need for less road space. But the snag about such a sophisticated system is that, 'it is not on now, but there is some hope that it might be sometime in the future—say within the next 20 years.' The advantage of the simpler system which Manplan puts forward is that it is feasible within the next five years. But its implications go far beyond mere safety and traffic regulation—vital as these are. It calls into question the whole basis of Britain's current concentration on urban motorways. Used in conjunction with computerised traffic control systems and a flexible approach to the use of key urban roads for tidal flow, it could prevent Britain from copying the worst mistakes of American urban surgery.

Support comes from Colin Buchanan and Partners in their report 'The Conurbations' which portrays vividly the excessive length of time taken for the implementation of proposals. 'The inner ring road in Birmingham will have taken almost 30 years to bring to completion.' But Buchanan fails to conclude the lessons that Manplan would draw from this. The British will not change overnight; urban motorways will be long term, very costly, dislocating and uprooting operations and will continue to be built on the cheap—which Buchanan rightly campaigns against. Even with the massive level of road building currently intended in London (£860 million by the early 80's) public transport will have to carry two-thirds more passengers than if sufficient roads were built to satisfy motorists' demands. The spiral is never ending. So the sudden conversion of Alan Proudlove, the traffic engineer responsible for the design of Liverpool's £50 million inner ring road, to the better use of existing roads in older urban areas as an alternative policy to urban motorways is all the more striking. 'A careful examination of the geometry of a city's road system will often reveal a few key points where lack of articulation could be rectified, to increase capacity appreciably and reduce delays. It is only after such measures have been assessed that the value and need of an urban motorway system can be evaluated. Both the ring and raidial concept and that of urban motorways induce intense traffic concentration, particularly at the centre' and exhibit a complete 'inability to shed load on to additional elements of the network and to reflect the increasing emphasis on outer area travel.' What urban areas want is practical relief here and now. The most contentious proposal is the black box which would tick away under the motorist's car, charging him a heavy price for peak hour travelling and perhaps even giving a rebate at light periods. This could be coupled with the voluntary speed control. Peter Stott, Traffic Commissioner of the Greater London Council went as far as to say—on faraway soil—'In the end the only really practicable way of managing movement will be the price mechanism. This is a traditional and well proven way of equating supply and demand. My own view is that the concept of direct road pricing—pay as you go on the roads—is potentially the most efficient means of management.' The Government has a report from 1967, 'Better Use of Town Roads', which came out equivocally on the side of road pricing; only political will is preventing a trial scheme. Research under Professor Smeed shows that one extra vehicle entering a traffic jam imposes enormous delays on the cars and buses already on the road. When traffic is moving at only 5 mph the time loss imposed by this extra vehicle amounts to ten times its own journey time. However at speeds above 13 mph the delay imposed on other traffic appears to be minimal which leads to the next proposal. All towns are subject to peaking. According to a Road Research Laboratory study during the peak periods 8.15-9.15 in the morning and 5-6 at night, flows in the major direction increase by 60 per cent. Flows in the minor direction show a peaking of only about 15 per cent. The case for tidal flow coupled with a sensitive speed and route control system of the type described earlier is inescapable. The third alleviation could be to use Britain's underused rural secondary road system. Britain has 66,632 miles of secondary roads and a further 106, 792 of unclassified roads. She has only 8,919 miles of trunk roads and a pitiful 549 miles of motorway. A radical reorganisation of Britain's secondary roads into one-way systems could provide a temporary palliative to congestion experienced on inadequate trunk roads.

Cities are congested, people are killed or maimed, environmental areas are violated—for want of a means of speed and route control. The man at the head of this page is not dangerous—his car is automatically guided. The sensor that guides him could, in a simpler form, effect major improvements in urban traffic—so could tidal flow, road pricing and one-way re-organisation of some of our rural roads. The one doubtful starter is what Britain is now building—the urban motorway. We have not yet established a strong enough case for the benefits it brings. We know only of all the dislocation, disruption, noise, traffic growth and huge resources it involves.



'Thousands of small towns, villages and hamlets are presenting a case for the removal of through traffic. The by-passing of every settlement in every direction would pose a heavy liability in terms of cost, land and serverance. The alternative to universal by-passing is a skeletal system involving disciplined movement.'
Traffic in Towns, HMSO 1963

'I have never claimed that our road system is adequate, and it will be a long time before it is adequate. The plain fact is that this country woke late to the full implications of mushrooming vehicle growth and use. Now we are paying the price—in terms of congestion and of safety.'
Richard Marsh MP, Minister of Transport 21 May 1969

'By the year 2000, Britain will be a nation of car owners with about eight families out of 10 running at least one vehicle.'
A D J Flowerdew, Economic Adviser to the Roskill Commission on the third London Airport, International Road Traffic Conference 6 June 1969

A sizable market and County town—100,000 population with a large hinterland, served by a radial road pattern bringing traffic from well outside the mere artificiality of county boundaries. For the experiment, parallel routes to the north south east and west were chosen which could be worked on a tidal flow basis as well as a one-way system. All the villages would be fitted with induction loops at entry and exit points and traffic would flow at peak times at a steady 30 mph limit. Little road improvement would be required. In fact the town is Cambridge—but it could have been hundreds of other smaller market towns. The minor roads between each of the parallels are sufficient to allow the environmental areas between to connect in either direction with the distributors. If traffic increases, computer controlled intersections could ease flow further and increase safety.

One way systems need not be considered an urban solution—a rural experiment





Villages already split by continuous traffic would welcome with open arms the certainty of knowing in which direction traffic was coming at reasonable speed





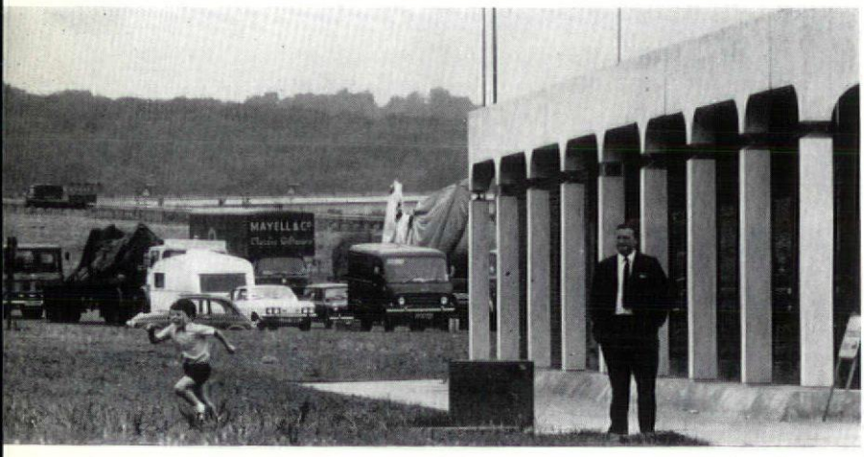
Morning 'in', evening 'out' tidal flow with minimum expenditure can maximise road space at peak times—provided that the right roads environmentally are chosen

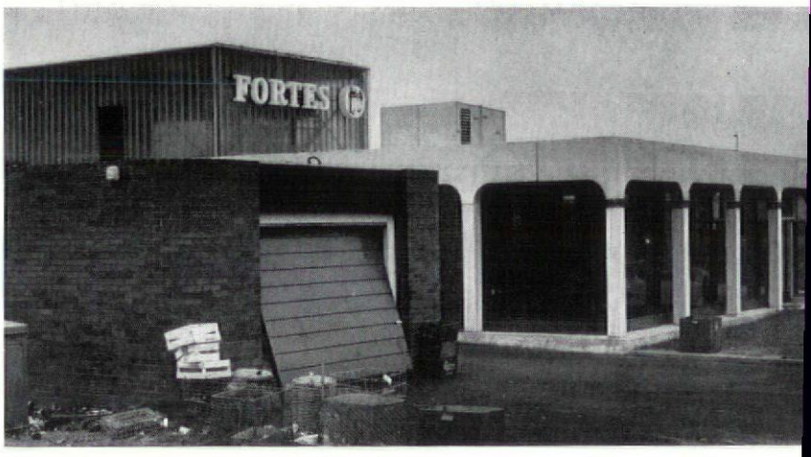




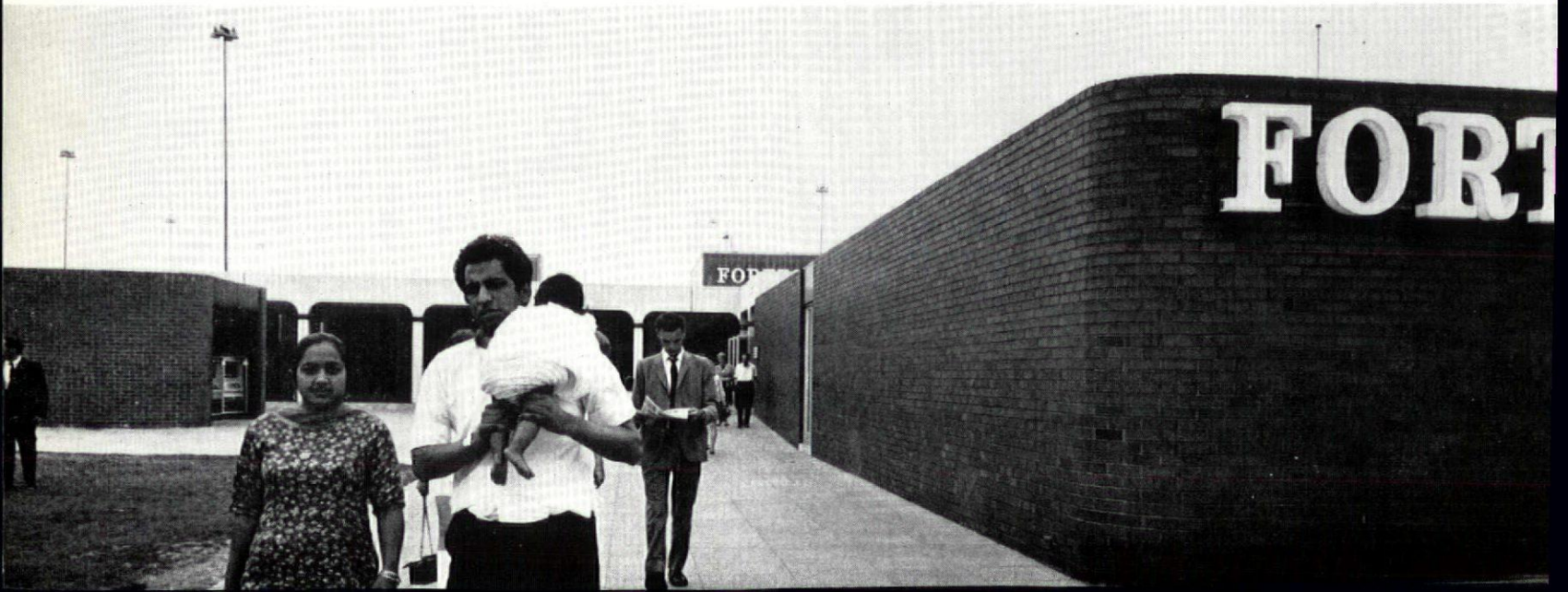
For the inter-city carborne, Britain has 549 miles of motorway and only 15 service stations—one every thirty six miles. Scratchwood on the M1 by Garnett Cloughley and Blakemore turns its back on the traffic and creates a get-away-from-it-all landscaped inner courtyard onto which the glass-lined dining-room for car owners look

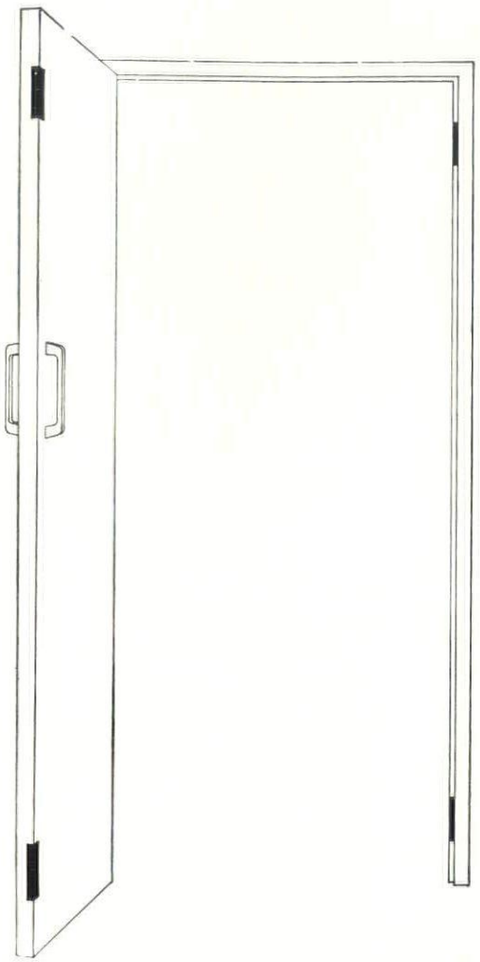
From the motorway the service station is unprepossessing,—a building to be seen and enjoyed close to—except for the blight of waste insufficiently designed

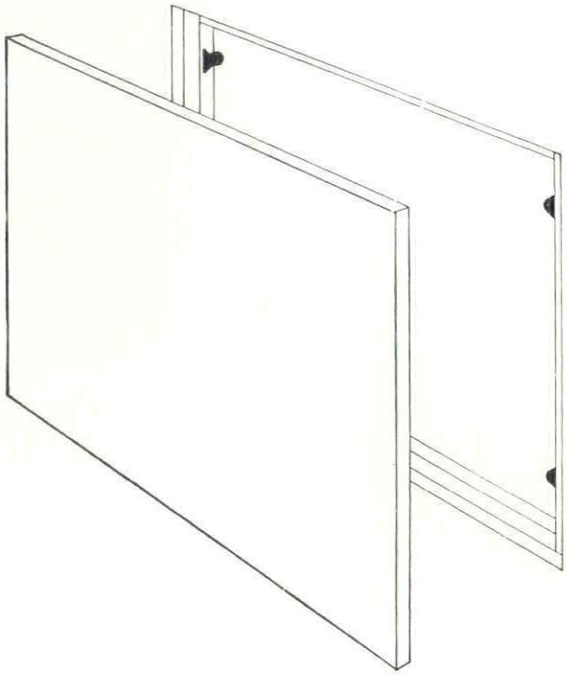


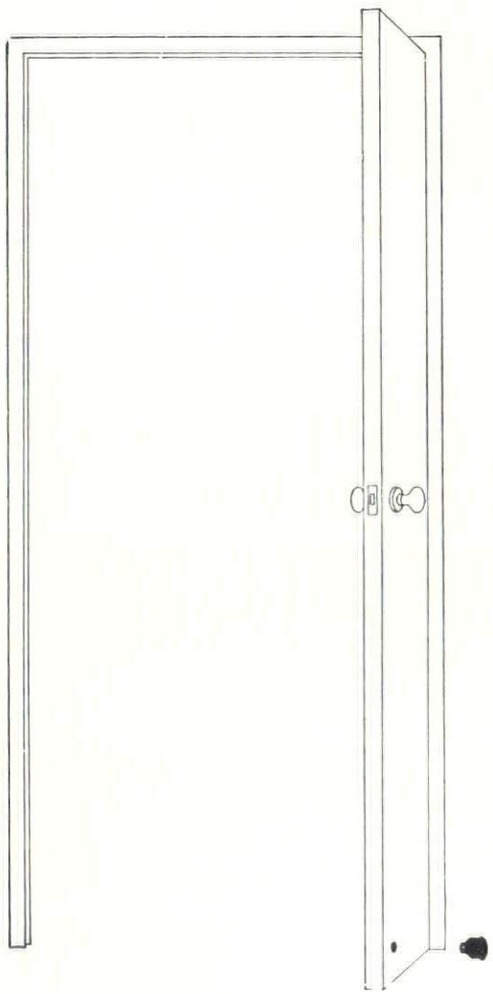


for. Lorry and van drivers have no choice of view because of hijacking but their com fort inside is not down-graded. For the motor car owner the ambience is quite different









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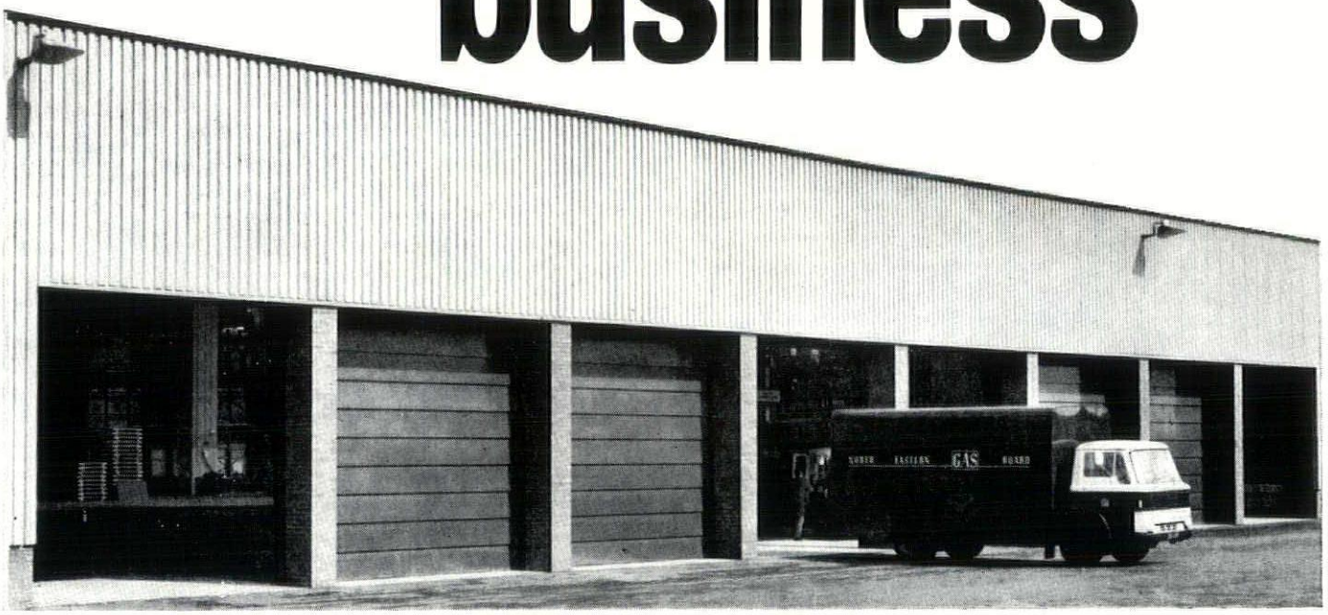

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'Each passenger who shifts from peak hour travelling by bus to travelling by car:
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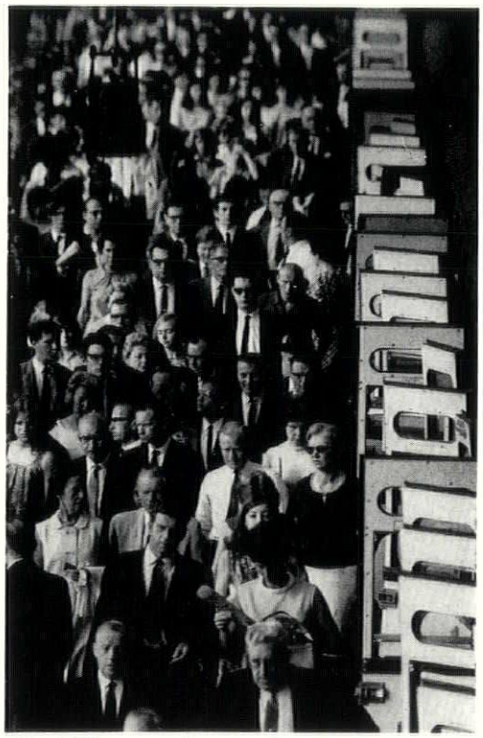
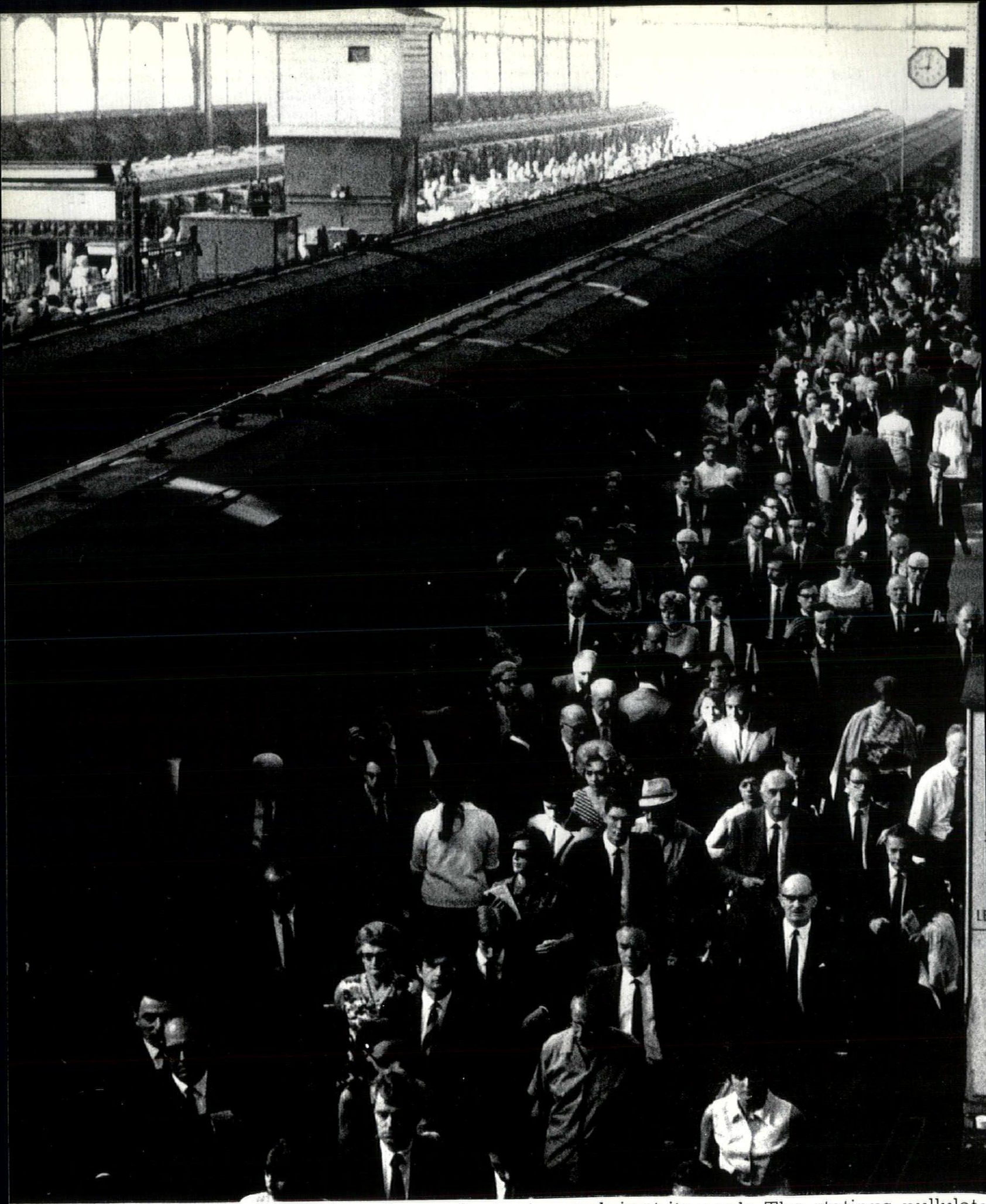
saves bus congestion costs of 5.5 pence per mile
incurs car costs (net of petrol tax) of 3.7 pence per mile
imposes car congestion costs of 90 pence per mile
Giving a net addition to costs from the point of view of the community as a whole of 59·2 pence per mile.
No case for peak pricing by London Transport can at present be made out. When and if the introduction of road pricing makes the motorists pay a charge equal to the congestion cost which he imposes on others, however, matters will be different'



'The LTB's operating conditions could be improved, overcrowding could be reduced and the attractiveness of public transport could be increased if peak traffic were spread over a longer period'

Proposals by the London Transport Board for Fares Increases
National Board for Prices and Incomes
Cmnd 4036 May 1969

Increased competition from private motoring has led to the demand for public transport becoming concentrated on the peak-hour flows of commuters into and out of the centres of our cities. The result—congestion on the roads and intolerable conditions on public transport. In cities of a million people, 75 per cent of journeys to and from work at peak hours are by bus. In towns of 20,000, private cars provide for 65 per cent of peak movements. Either way the quality of life is declining



Two minutes past nine—the mad morning rush is at its peak. The stations pullulate



with thousands of commuters, the trains heave, the buses swell, the tubes vibrate.



To improve standards of travel by public transport at peak hours and carry more passengers at those hours, new capital works of a major order would be required on lines such as the commuter routes of the Southern Region—the busiest rail network in the western hemisphere; 300,000 pour into London every morning, one of the greatest commuting armies of the world.

But as far as the buses are concerned a recent study by the Road Research Laboratory showed that if private cars were banned at peak hours in Central London—much as parked cars are banned at precisely 4 pm every American city by the awful warning of NO STANDING. VIOLATORS WILL BE TOWED—and bus sizes reduced to 20 seaters, direct journey speeds would increase from the present 6½ kilometres an hour to 10 kilometres. And the disenfranchised car drivers, who on average spend at least 10 minutes parking, would actually gain. The laboratory has done further research suggesting that if all private car users in central London travelled by bus, travel costs could be reduced by nearly 20 per cent or £30 million a year. Even if only half travelled by public transport the saving would be £20 million.

But it is the spreading of loads over longer periods at peak hours that really would transform the profitability and, more particularly, the comfort and convenience of public transport. The Prices and Incomes Board lent its weight to this attractive solution in its recent report on London Transport fares.

While it recognised that the staggering of offices presents difficulties because of their need to maintain contact with each other, it cited studies in the USA on the possibility of staggering hours between interrelated groups of businesses. The latest survey volume from the GLC 'Movement in London' shows that of the 4,772,550 who work in central London 2,424,570 are in offices and service industries, the remaining 2,347,980 being in retailing, manufacturing or wholesaling. This suggests a substantial and urgent field of study for the GLC—could offices start and end earlier or later than other forms of employment?

The PIB records one suggestion by a transport users' association that 'employers having more than a specified number of employees should be given a financial incentive to stagger hours, with a corresponding disincentive for those who do not, by, for example, a rate rebate for the former and a rate surcharge for the latter.'

But if this is too big a political pill to swallow at one gulp, as the PIB point out there is room for local action. An alteration in shop hours in Oxford Street for late night shopping has already spread some of the load on public transport on certain nights. The recently approved extension of shopping in parts of the West End to six days is likely further to ease congestion. The PIB suggests. 'In our view the time has come for an effort to obtain more firm information about the potential benefits by means of an experiment designed for the purpose. What we have in mind is that shops in a defined area of Central London should change their time of closing on, say, four days a week, so that the rush of homegoing shoppers and shop assistants would not coincide with the rush of homegoing office workers, The present "late night" in the Oxford Street area might be preserved, but on the other nights a change of half an hour in the time of closing might be sufficient. It would be necessary for shops to choose to close earlier, or later, on the same nights; moreover, there would be a need for co-ordination with the LTB and British Rail whose time-tables might need some adjustment'. The Board proposed the setting up of a working group by the Government or the GLC, to evaluate the experiment and see whether it was capable of extension.

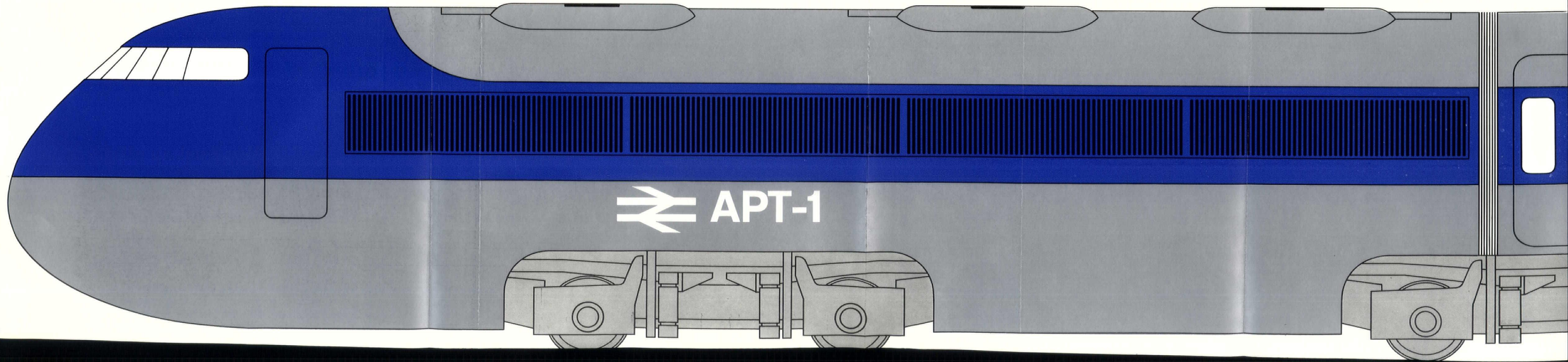
The staggering of the journey to work, although a sizeable part, is only one part of the urban congestion problem. The other is the progressive clogging up of roads by goods distribution. But in June 1968 the freight group of the Transport Co-ordinating Council for London sponsored a hush-hush, out of hours, delivery experiment known as Operation Moondrop. The major participants were large grocery firms and supermarkets including Tesco and Unilever. Tesco among others found it so successful that a proportion of their deliveries are now always made outside normal hours. For the small man Norwich's limited time servicing periods as applied in its London Street pedestrianisation scheme could be an answer. London Street provided two things. First, that the removal of vehicles does not harm business—quite the reverse. Second, that lorry and van drivers who might have objected to trolleying goods short distances found in practice that the elimination of private vehicles from 'service only' streets made deliveries easier, especially out of hours. Who will follow Norwich?

Seventeen minutes past nine and the crowd has evaporated. The trains stand empty waiting to shuffle in and out like ghosts until they are peopled again at 5 o'clock. Only the staggering of hours can arrest this waste of resources and reverse the tide of discomfort. Congestion on the streets can only be reduced by extending out of hours goods distribution and root and branch restraints on the peak hour use of cars

'It may bring little solace to the harrassed commuter, but railways are entering the first really revolutionary era of development since the age of Stephenson and Brunel, and British Rail's engineers are leading the world in this respect. Within five years, BR will have operating prototypes capable of carrying passengers at up to 150 mph. The first test vehicles will be built in two years. This is a speed half as fast again as the Euston—Lancashire expresses and faster than any trains running anywhere in the world today'
James Ensor, The Financial Times
22 January 1969

'A site for a third London airport, 51 miles (80 km) from the centre, could be as little as 32 minutes away by APT 1. Assuming that for the average business traveller time cost is far more important than money cost, this fact alone should completely alter all traditional calculations about airport location, allowing sites up to 50-60 miles away (80-100 km) to be considered as real competitors to nearby sites. In particular it profoundly alters the time-cost calculations made by the Ministry of Transport before the Roskill Commission.
The introduction of the APT 1 will greatly reduce the advantage of the aeroplane in the critical journey range 250-400 miles (400-650 km), if city centre to city centre journeys are considered. Because of the introduction of the APT 1 there may be only a limited future for short haul domestic air transport.'
Peter Hall, World Airports The Way Ahead
23-25 September 1969

Whatever the dehumanising aspects of city travel by rail, inter-city rail suddenly promises real comfort, real speed and real city centre to city centre travel. British Rail has just unfolded its vision of inter-city travel in the 70's—the APT 1





British Rail's Advanced Passenger Train 1 is part of an international rail revival. It all started back in 1964 with the first shot fired by Japan. The all electric 'Ivory Bullet', above, better known as the Tokaido Express, started operations covering the 320 miles between Tokyo and Expo City 1970, Osaka, in three hours ten minutes at speeds of 130 mph. The line itself was brand new, and expensive (£150 million) the engine technology impressive, and the interiors—disappointing historical hangovers. (New trains planned to run in 1970 will cruise at speeds up to 160 mph and will reduce the time to 2½ hours).

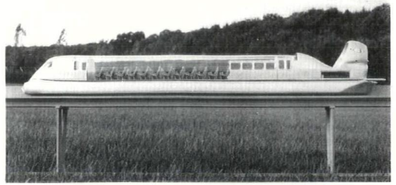
'The Tokaido line is a completely new system, specially built wherever possible in a straight line, but, consequently, at high capital cost. But commercially the line has been a notable ...ress, despite the new parallel motorways, ...tempted scores of passengers away ... airlines plying on the important Osaka route'
...conomist 13 September 1969



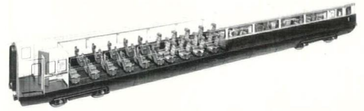
Two to three years later Canadian National produced a revolutionary gas turbine equivalent which knocks one hour off the Toronto-Montreal journey. CN have ordered five seven-car turbos and joined together in pairs they will make 14-car trains with the fifth unit as a spare. The engines—550 horse power—are made by United Aircraft of Canada, a modified version of those successfully used by turbo prop aircraft. Like its British counterpart (on paper as yet), light-weight aluminium with stressed skin makes it weigh only a quarter as much as a conventional train of similar length and shows its genesis more from aircraft design than from traditional railway thinking. Top speeds will not be particularly high—120 mph with a running-in speed of 95 mph but its great advantage over the Tokaido express is its ability to use existing track. Difficulties with its suspension system have delayed its appearance and in any case the suspension is not as sophisticated as the 'top secret' British one.
French Railways have quietly drawn ahead of other competitors with their experimental turbotrain. Due to enter revenue service on the Paris-Cherbourg route next year, on its test runs it proved



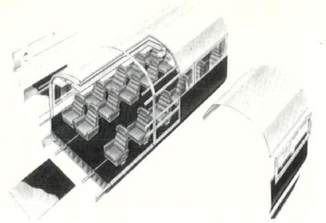
convincingly, according to the technical editor of Modern Railways, 'that a maximum speed well in excess of 100 mph and average speeds of around 100 mph are bearable on existing track.'
The vehicle is basically a series production SNCF 75 mph two car diesel motor unit—with new bogies and a Turmo III 152 hp gas turbine. On its trials, above, it achieved a top speed of 147 mph. Over the more difficult lines, its improvement in running times, compared with conventional stock, has been near the 20 per cent mark. France also has the Railjet by Jeumont-Schneider which uses linear motors on each bogie and ordinary lines to attain speeds as high as 300 kph (187.5 mph). A full scale vehicle using this form of propulsion will be tested this year. The effect of linear motors is to stabilise movement at high speed—a revolutionary break with the concept of maximum adhesion which has hitherto dominated railway engineering.
Simultaneously the French government is supporting, to the tune of 40 million francs, a Hovertrain being developed by Ste de l'Aerotrain which runs on a special concrete track in the shape of an inverted T beam laid on the ground, without foundations. Two prototypes have been tested—one a 44-seater called the 'Surburbain' with top speeds of 200 kph (115.5 mph), the other an 80-seater for inter city transport, above, with an official speed limit of 300 kph (187.5 mph)



though 450 kph is likely to be nearer the mark when fully developed. America has proposals for a gas turbine service between Boston and New York. And this summer British Rail released preliminary details of its gas turbine or electric Advanced Passenger Train. The APT 1 will incorporate advanced technology of a kind as yet unseen in foreign examples of high speed trains. It will have a sensing unit which can monitor its speed and the curvature of the track so that the hydraulically operated, vehicle-body tilting mechanism can adjust itself for speeds of 150 mph and above. But what the world waits to know is British Rail's most closely guarded secret, its suspension system. The system allows individual carriages to bank *independently* by as much as 9° to either side. And this is where the puzzle lies. This is what BR did not allow to be shown in the drawing below.
BR have evolved a system whereby the link unit between carriages operates like a fixed ball-bearing. The carriages pivot on the link as the train swings with the track. The ends of the carriage fit glove-like round the unit and passengers cross through unaware of the role of the link. Its nearest domestic equivalent is the ball and socket joint which allows a wire to pass from a lamp fitting into a shade and yet still manages to give the shade a turning circle of 180°
The total weight of the train will only be about half that of a

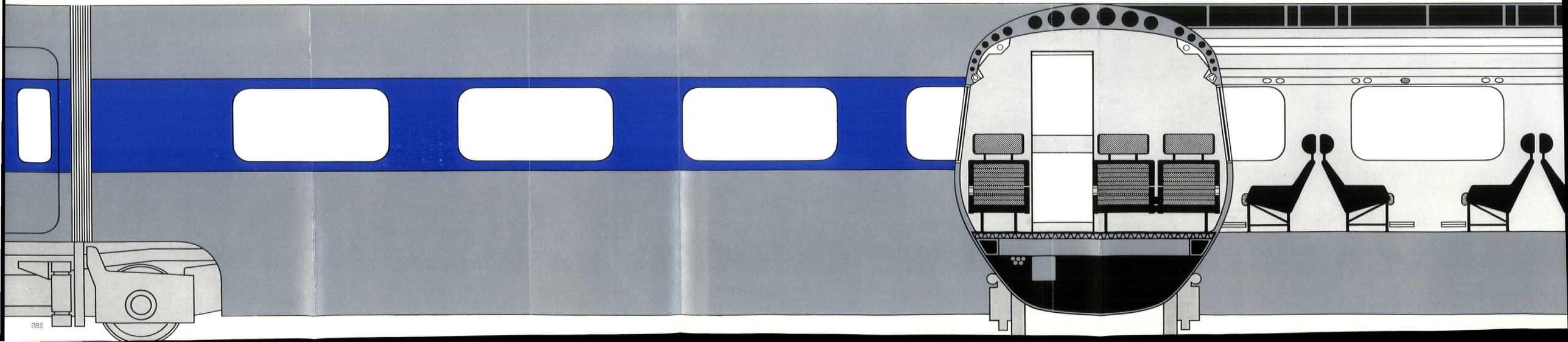


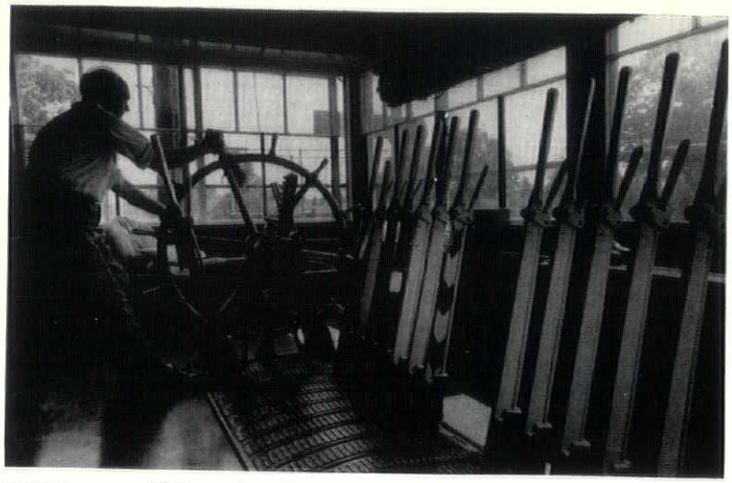
conventional one of comparable length because light alloy construction is used. An eight-car train would weigh less than 200 tons, would be capable of very high speeds, would cause less wear and tear on track than conventional rolling stock and would give a more comfortable ride. Hydronamic brakes in which a turbine wheel revolving in oil is used to absorb energy, will be used to reduce speed to a point at which disc brakes take over. Stopping distances at 150 mph will be shorter than a 100 mph conventional train. The engines were to have been Rolls Royce Dart but as the project developed, modifications led to the selection of 350-400 hp automotive Leyland gas turbines—five in all per engine.
But whatever the technological advances APT 1 makes, its real significance in economic and in planning terms will be in its reduction in journey times. King's Cross to Newcastle could be 2 hours 40 minutes compared with the today's best time of 3 hours 36 minutes. Paddington to Bristol (118 miles)—1 hour 40 minutes; to Swansea (191 miles)—just over two hours including a stop at Cardiff which is 75 minutes better than the fastest times today. And London-Edinburgh in 3½ hours would eliminate the need for night sleeper trains, so that a dual railway-passenger by day and freight by night (perhaps even fully automated by night like the Post Office's

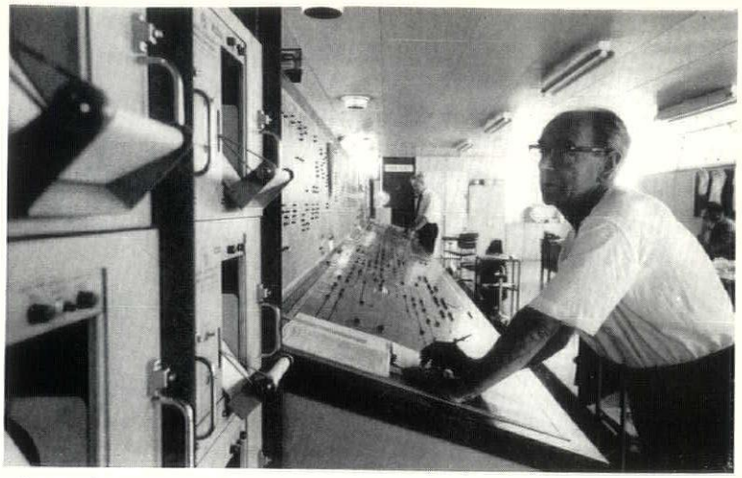


automatic freight railway which has been running under London for years) becomes feasible. Where British Rail's project gains hand over fist compared with Tokaido or France's other turbine train linking Lyon and Paris in 1½ hours compared with 3 hours 50 minutes, is that it uses existing track. Even the electrification of the London-Manchester-Liverpool line cost over £195 million (though this brought one per cent increase in passengers for every 1 mph extra speed). So for an investment of £50 million BR will get 100 trains.
True, signalling systems will have to be updated—gone are the old hand turned wheels to be replaced by computers. And track technology will have to change—BR are experimenting with sleeperless tracks set in reinforced concrete beds. It still appears a tiny cost compared with the massive investment of the Tokaido for speeds only marginally higher. Alongside BR's programme for speeding inter city travel, conventional trains are to be made more comfortable and more flexible. On one standard carriage structure, Sir Basil Spence Bonnington and Collins have produced a component based interior, top left, which will cater for seven wholly different types of carriage — open first class saloon, open first class lounge car, first class compartment, second class open saloon, second with tables, open restaurant and sleeping car. The components, top

The glamour of domestic air travel is wearing thin. Rail the world over is entering a new era. Fast rail links to coastal airports could end the noisy dominance of aeroplanes over man's natural habitat—the land. But the changing technology of rail engines is not

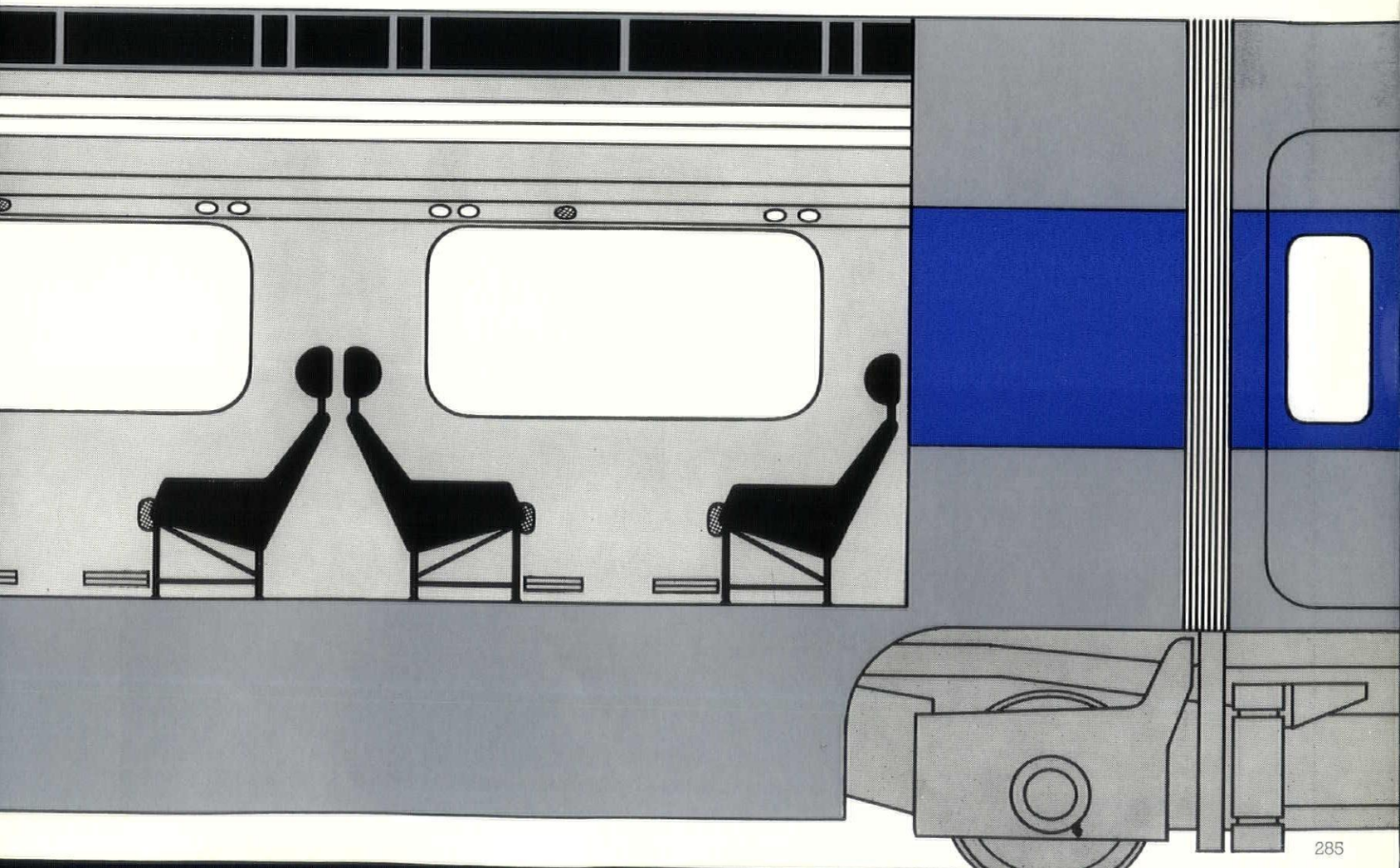


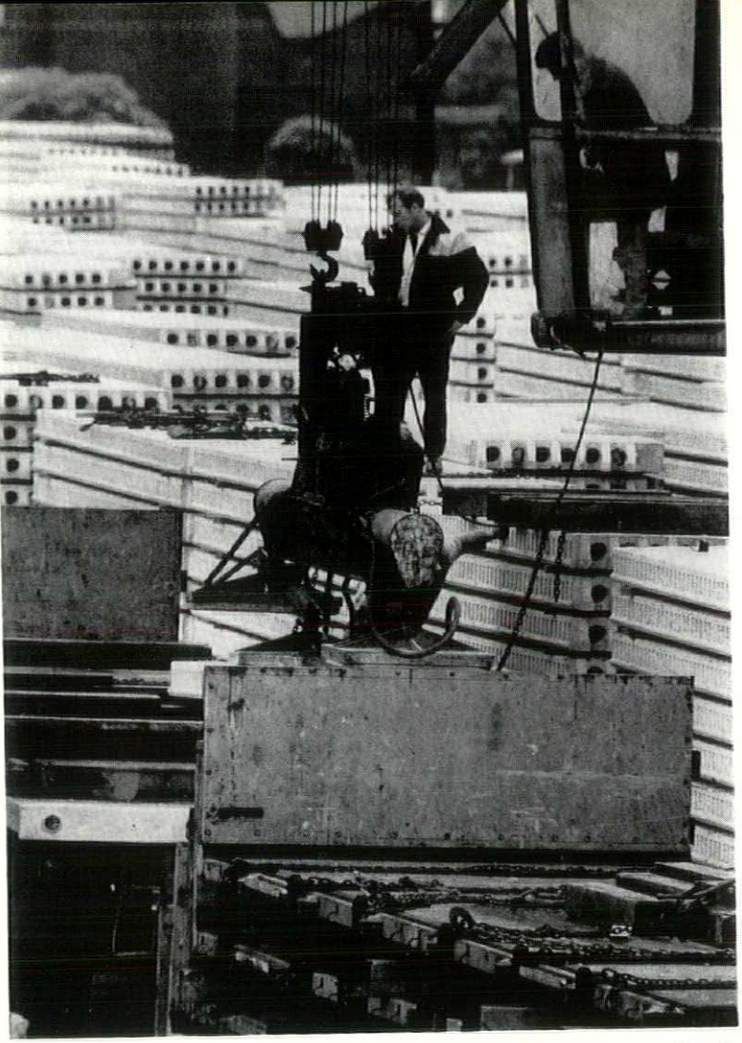




right on page 284, reading from left to right, consist of a window unit, a ceiling panel, a below window panel, a side floor panel and a centre floor panel. Inside the cutaway can be seen the luggage rack. The outer skin is fixed to a hoop frame and the air conditioning (first ever on BR) duct and lighting channels are standard elements also. Bays are on a 6 feet 6 inch module. Window units have smaller openings for sleeping cars. BR have also been borrowing from air travel—the airliner seat which Reyner Banham has called 'one of the triumphs of ergonomic intelligence'. Kenneth Grange's 'string bag' is a striking development from current air seats.
But probably the best news about BR and its APT 1—if it can be made to work and quickly—is that it could effectively cause the still-birth of STOL and VTOL projects—or of overland flying altogether. According to a paper presented by K R Sealy at the conference 'World Airports—The Way Ahead' held in September 1969, for journeys .of less than 150 miles, VTOL aircraft will be hard put to compete with ground systems—whether of rail or air cushion types. In a detailed study he cited, the VTOL advantage over 200 miles is time (London to Middlesbrough, city centre to city centre, 119 minutes faster than APT 1 ; London to Sheffield 58 minutes faster) and the fact that 'rail fares have tended to increase in the UK at a faster rate than air fares ; a trend favourable to the VTOL system.' But even that may have been knocked on the head by BEA's sudden and recent demand for a 7 per cent increase in fares and the threatened closure of her services from Birmingham to London because of under-use and more importantly, because BEA is losing heavily on her domestic routes. And conventional planes cannot beat APT 1 times over a large number of routes if terminal to airport times are included in air travel reckonings. The green light is on for rail. BR are already looking at the NRDC sponsored tracked hovercraft capable of speeds of 300 mph and have shown interest in magnetic suspension rail cars capable of similar speeds.
Foulness could be London's third airport, taking its noise over the sea. And rail could be its link to London. It's up to BR. In the week that the Design Centre exhibition opened, her go-ahead image slipped as spokesmen vigorously defended the policy of depriving passengers at Euston of seats ; and at Oxford of the down exit. Technology alone will not secure BR's resurgence as a planning force.

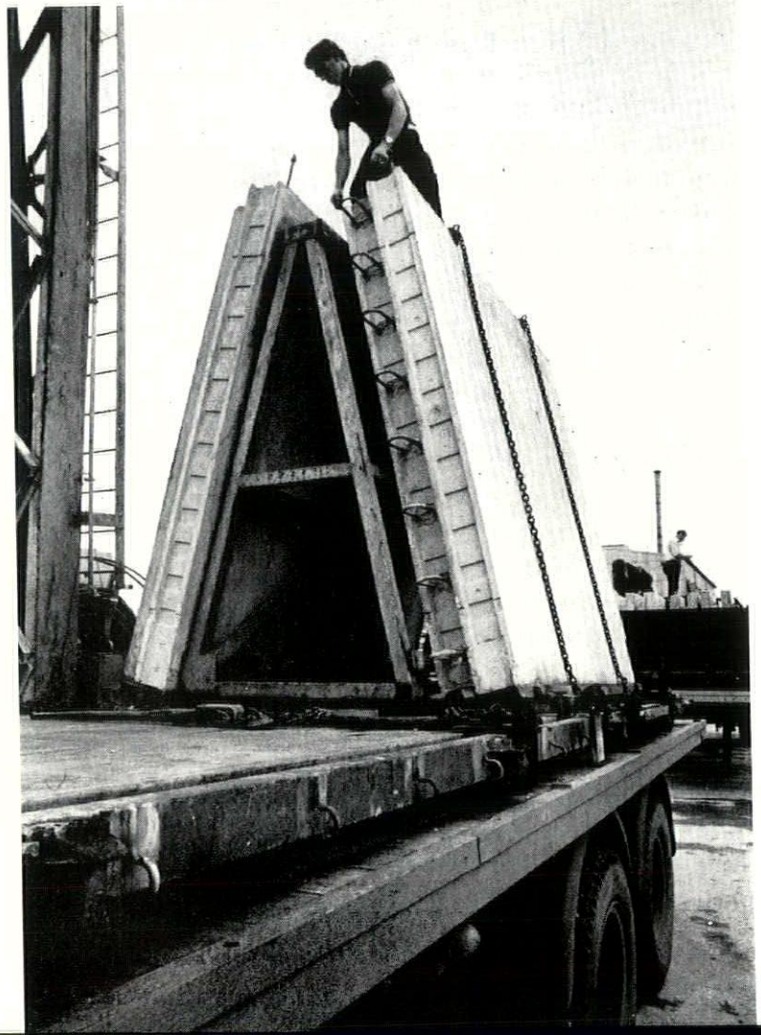
ched with an architecture through which passengers can pass comfortably and effortlessly



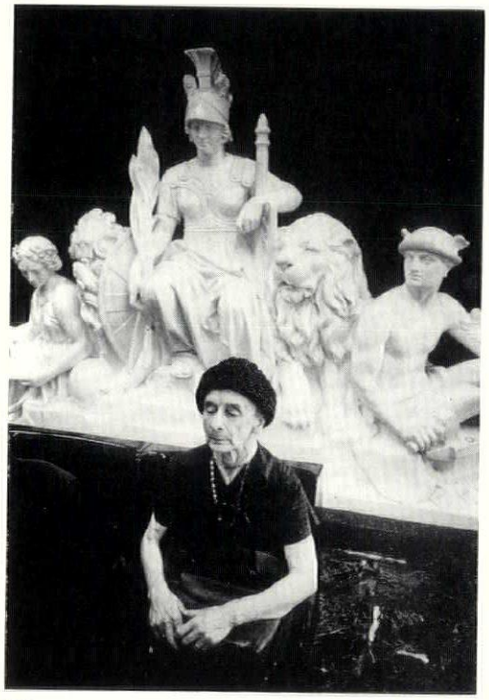




Laing's use Freightliner to transport their Jespersen system components from Manchester to London. Rail has proved faster, cheaper and easier to plan accurate arrival







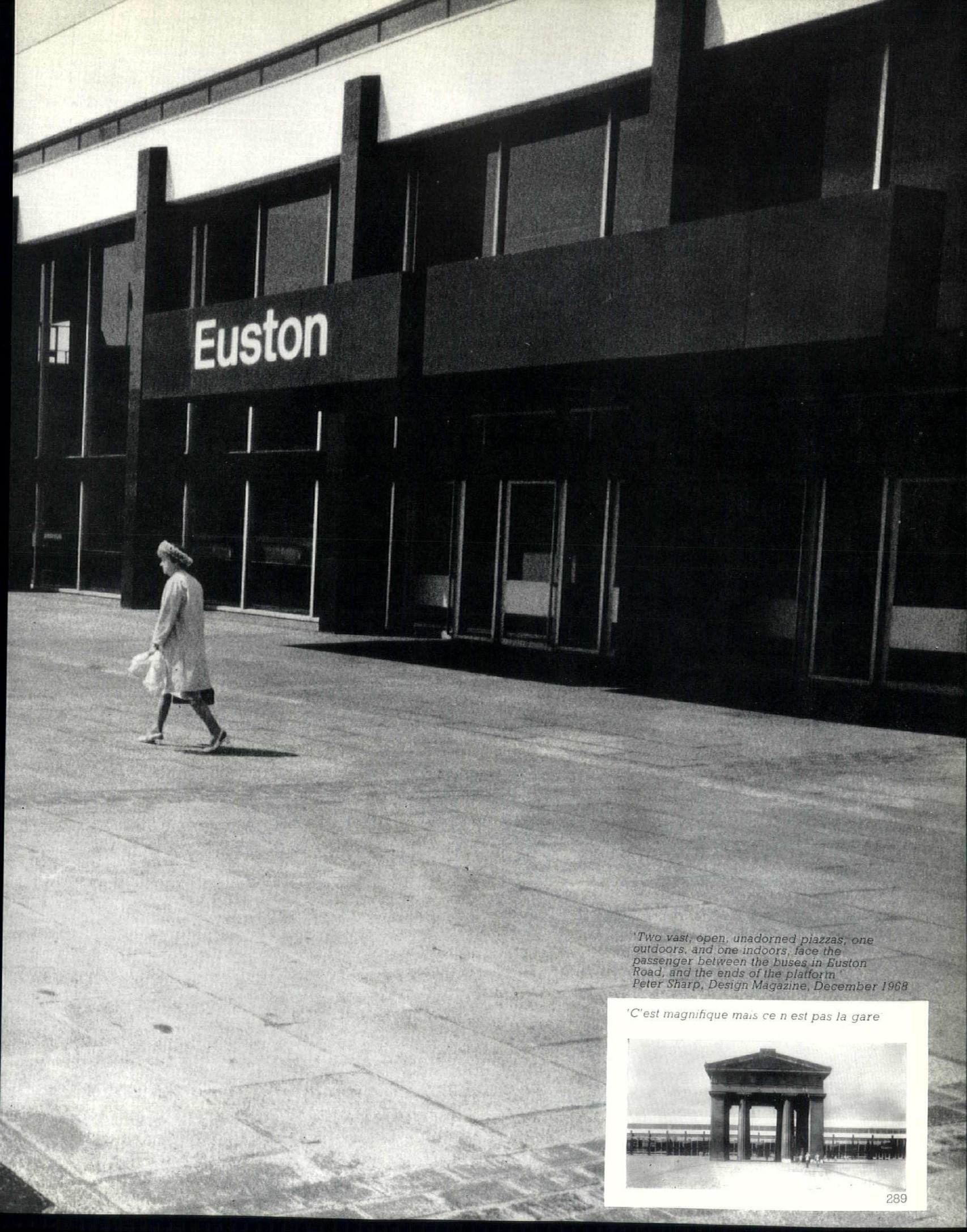
'The most up-to-date and civilized station in the world. Enjoy the most convincing British Rail advertisement of them all.'
British Rail advertisement, The Times, 14 October 1968

'Here was the most historic railway terminus in the country with many acres at its disposal, with exemption from planning control, offering one of the finest architectural and commercial opportunities for which any responsible body could wish. All we have got after ten years is an architectural pancake.'
Harold Brockman, The Financial Times, 18 October 1968

At first sight Euston's links with its past are tenuous — a Britannia re-erected here, Stephenson out on the concourse. But the station in its monumentality is utterly nineteenth century in conception despite extravagant claims to the contrary by British Rail

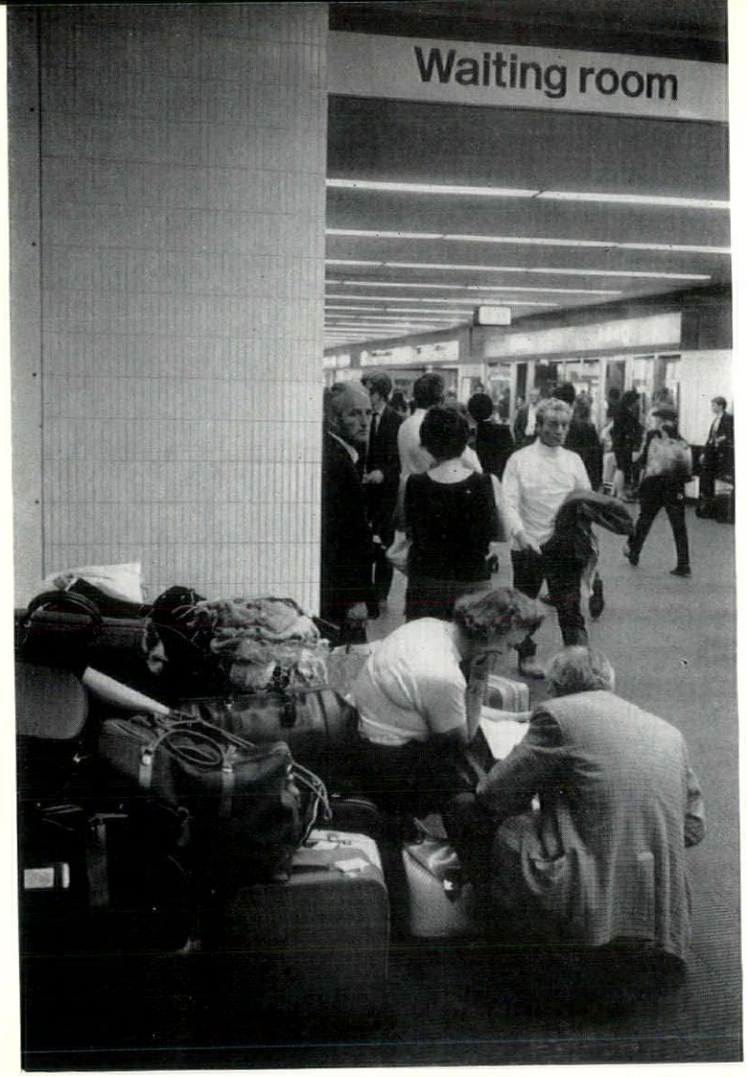
The Euston arch was murdered. The grandiose piazza — a senseless space more often than not wind swept — was robbed of the one thing that could have given it meaning





'Two vast, open, unadorned piazzas, one outdoors, and one indoors, face the passenger between the buses in Euston Road, and the ends of the platform'
Peter Sharp, Design Magazine, December 1968

'C'est magnifique mais ce n est pas la gare'





80,000 passengers a day pass through Euston. 160 seats are provided. The official answer. 'If we did provide seats, they would quickly be taken up by hippies, layabouts and drunks.' For passengers on foot, long walks and flights of steps to car park and taxis





The concourse snack bar breaks with railway station restaurants of the past. And the concourse bar is a waiting room of real comfort. Euston's two sides – comfortable cosiness and outrageously inconvenient monumentality – are odd, conflicting bed-fellows

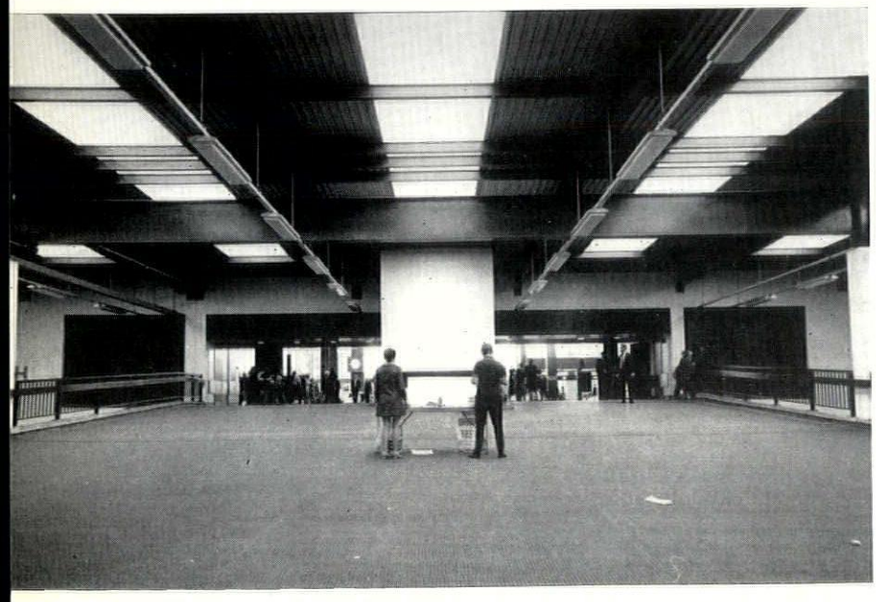


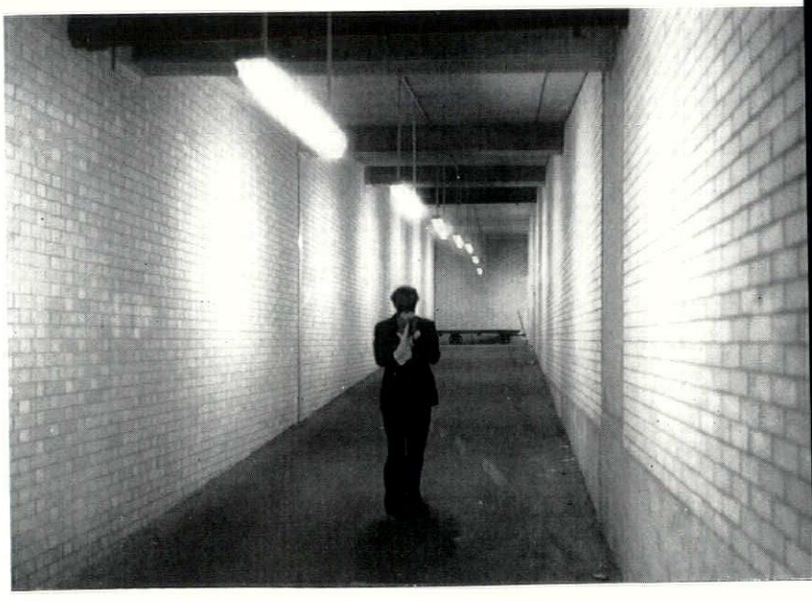












Inside, 'ant-like bustling',—with luggage trolleys if they can be found—a rare concession to passenger convenience. Beyond marble floored elegance, workaday platforms—with only one barrier per train. From end of train to nearest bus—a mile, only half under cover. For taxis. two flights of steps and lengthy barrier. Between platform and concourse empty 'weaving' space or chilling corridor



'Heathrow, the typical Mark 2 airport of the immediate post-1945 period, occupies an area of 2178 acres. In contrast, an ideal Mark 4 airport to serve up to the end of the twentieth century with four runways allowing up to 144 movements per hour, would demand an area 6.8 by 3.4 miles, or 15,000 acres. A compromise Mark 3 four-runway airport for London would have a minimum area 3.3 by 2.6 miles or 5700 acres.'
'A detailed study of the third London airport has suggested that in full operation there might be as many as 64,000 primary employees and another 15,000 secondary, giving a total of 79,000, total service employment of 127,000 and a total work force (in and around the airport) of 196,000. The total population thus generated might eventually be of the order of 395,000.'

Peter Hall, World Airports the Way Ahead Conference, 23-25 September 1969

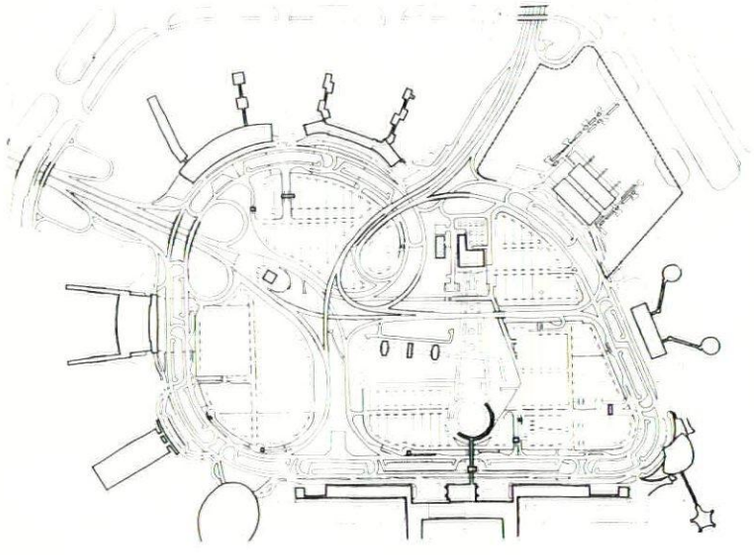
ongestion of airspace and airports seems the only check on otherwise unrestrain-
d growth in world passenger flights—delays in 1968 at Kennedy airport in New
ork cost airlines more than $2 million per month in out of pocket expenses alone

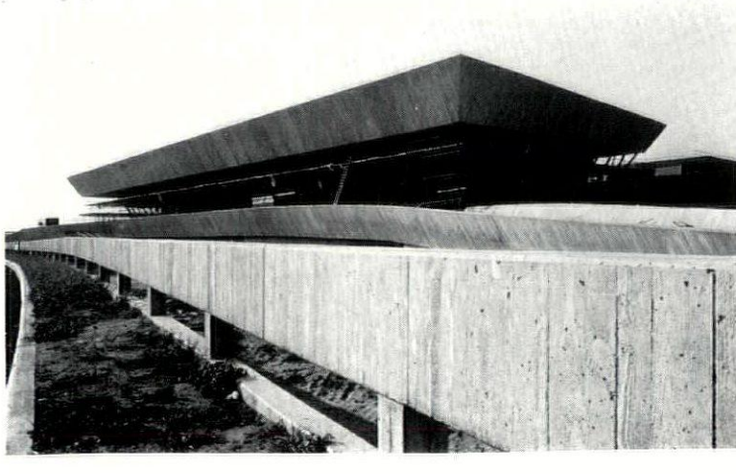
'World scheduled internal onal and domestic passenger traffic increased almost seven times over the past 15-year period, reaching 263 million passengers and 308,000 million passenger kilometres in 1968. This is expected to increase more than twice by 1975, and about four times by 1980. World-wide domestic traffic showed an average increase of 12.8 per cent, but during the past five years this accelerated to 16.6 per cent, which is above the 14.9 per cent five year average, for international traffic. The expected rate of growth is similar to that forecast for world passenger traffic.'
Knut Hammarskjöld, World Airports The Way Ahead Conference 23 September 1969

'Few people—if any— doubt that eventually this aeroplane (the Boeing 747 Jumbo jet) will prove to be one of the most significant (and expensive) ever built. By the time all the money involved in building, buying and introducing this aircraft, including outlays on new terminals on the ground, the world wide cost of the "Jumbo" will be in excess of £3,000 million.'
Michael Donne, The Financial Times 1½ September 1969

The era of the Jumbo dawns with Heathrow well in the van of the race to be the first European airport able to cope with the new generation of mammoth passenger aircraft. British Airports Authority is spending £13 million on a new terminal to open early next year. For Britain it will mark a breakthrough in providing for passenger comfort. Long fingers which would otherwise be unbearable because of the walking distances involved, will have moving walkways 900 feet long—broken at intervals so that if one part breaks down, the rest will go rolling on smoothly. Initially seven Jumbos with a capacity of 360 each will be able to disgorge their passengers simultaneously. Eventually eleven aircraft will stand at the 1,000 foot long cross bar. Each will be served from 3-room forward lounges linked to the aeroplanes by three telescopic air jetties. The terminal is an extension of the No 3 Oceanic terminal, which will be departures only, with a new arrivals building alongside designed to cope with 900 passengers in any fifteen minute period. Whether the baggage system will stand the strain is another question. And even more pertinent, is whether Heathrow's road system will. This is really the crunch point for most airports throughout the world. Heathrow is urgently discussing with BR a fast rail link to Victoria while LTB is promoting an alternative tube link to its Piccadilly line. What neither BAA nor BR nor LTB is facing up to is that the most modern aeroplane technology will bring passengers' expectations to a level beyond outworn 19th century tube concepts or 19th century railway 'terminalogy'. The Boeing internally promises to be the most civilized aeroplane to date—Jumbo offers leg room, 'in-flight cabaret', sauna, mobile 'hover' kitchens and a life for a hostess more like that in an hotel. The gap comes when passengers at world airports step out of their pampered paradise—and get blown off the top of a ladder feet from the ground. How are airports of the world facing up to the challenge—the challenge of moving masses in comfort and at speed?

The ten year—1965-75—forecast for Kennedy International Airport, New York, was for a doubling of the number of passengers to thirty million, a threefold expansion of air cargo to nearly two million tons and an increase by one third in aircraft movements to 450,000 a year. So, like Britain, the hunt started for another airport site. Meanwhile plans were laid for the rapid expansion of Kennedy at a cost of 150 million dollars. Four years later—all too familiar—the site has not been agreed. And New York's two other airports have been extended and improved—at a cost of 200 million dollars for Newark and 150 million dollars for work nearing completion at La Guardia. But in spite of the huge scale of investment (the total to date at Kennedy has been 391 million dollars), New York's main problem is still too many aeroplanes chasing too little space—in the air and on the ground. Kennedy, 1, because of the inherent inflexibility of its overall plan—a central area known as Terminal City carved up into parking lots and highways serving seven self-built airline terminals and one international arrivals building, completely enclosed by a ring of parallel taxiways and runways—had to close one runway in 1967 to make room for the expansion of passenger terminals (Saarinen's TWA and Gollins Melvin Ward and Partners BOAC terminal (2) and one other on the far right) and relocate some taxiways by building 14,000 feet of new ones. The International Airport building, at the bottom of the plan, is being expanded by building satellites, as is Saarinen's. The others are all extending fingers. The total expansion will increase capacity from 120 gates to 171. But Jumbos will place heavy strains even when the jetties are there to cope with them—'a sudden siege of bad weather at the dinner hour, with, among other aircraft, fifteen fully loaded B-747's awaiting take-off, could mean as many as five thousand people to feed at once, a strain on the most efficient restaurant system.'

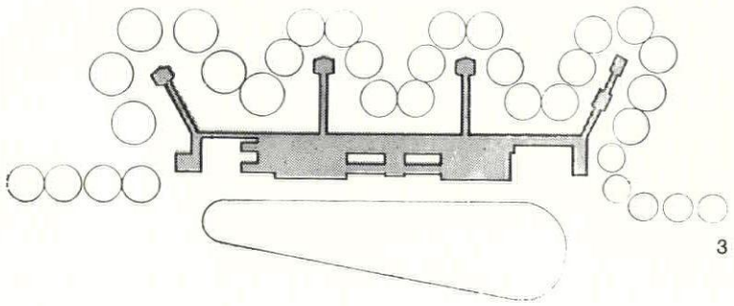




1

World Airports are growing at a phenomenal rate to meet insatiable demands for ai

The new airport at Osaka in Japan, 3, with fingers extending from a linear terminal and designed by the Yasui Architect's office, is handling twice as many passengers (mostly on domestic flights) as Schiphol with 33 gates and only two runways (Kennedy has 171 gates and 6 runways). Like Schiphol, it has its main parking at ground level in front of the terminal but all traffic circulates at one level only. Arrivals and departures are separated only inside the building—departing passengers are sent up to the third floor on elevators, arrivals come in at first floor level. An hotel is an integral and central part of the terminal and is flanked by overseas and domestic flights blocks each with relatively short (400 feet) fingers. As yet no travelators for these have been installed. The long term aim is to provide automated triangular baggage containers—until then it's footslogging and bag-humping.



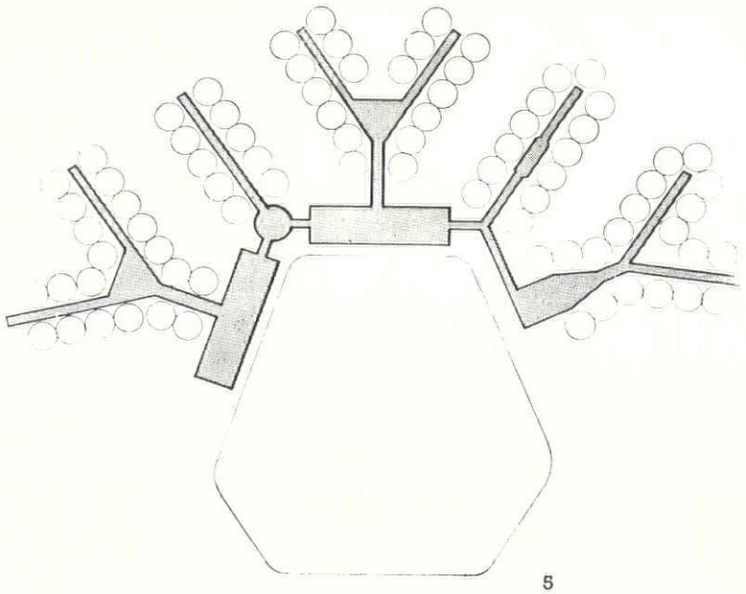
3

Frankfurt, 4, the third largest airport in Europe with fifty per cent of its passengers in transit, began, in 1965, a new terminal 1km west of the existing one. Designed by Giefer Mäckler and Kosina, it is another finger plan but with 2000 feet walks for passengers and no travelators. The two existing runways are being extended and a third built. Of the 36 gates, 20 can be used by Jumbos and airbuses. Customs and passport control are stuck out in the middle finger so that when, it is saturated by international flights, absurdly passengers have to walk through a tunnel to the middle of the west finger. Baggage travels underground and, unusually, a bus service for domestic flights passes under the building on the airside bringing passengers almost direct to their aircraft—the BEA *Executive* service in reverse. In the long term a rapid transit underground railway is planned.



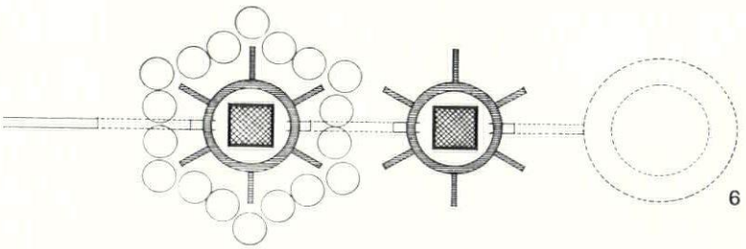
4

O'Hare, Chicago, 5,—the busiest airport in the world handling 30 million passengers a year and 690,800 aircraft movements (compared with 247,400 at Heathrow for instance) has 80 flight stations and a 280 million dollar expansion programme under way. Passengers will be carried about the airport in 'people movers'—trains of six cars carried on high speed conveyor belts. A rapid transit rail-car system will connect it with central Chicago and may link up with new parking lots—five or even ten miles from the airport. High speed baggage conveyors will be sped to aircraft direct by means of electronic sorting. By 1970-72 this system will be handling 9,300 bags an hour at a speed of 1,800 feet a minute or 20 mph. Baggage retrieval points will be in car parks just as much as in the terminal. All the passenger has to do is to place his coded ticket in a machine and it will come scuttling along. By the early 1970's O'Hare expects to handle 60 million passengers a year. It is certainly buying in the hardware in preparation.



5

At Malton Airport, Toronto, 6, 7, Parkin have ruthlessly applied the drive-in principle by doing away with the main building concept altogether—'the central terminal has no place in future airport design'—and by stringing a number of satellites along an underground transportation spine. But inflexibility is inherent in this kind of plan—the tunnel has an absolute capacity and in any case each of the satellites has to provide all the usual airport facilities, so what's in a name. ?
Each satellite consists of a square multi-storey car park rising out of a circular perimeter building. Walking distances, car to aeroplane are remarkably short—two minutes maximum. Malton is impressive in organisation but its first satellite, 7, when it comes to looks, is very much the square peg in a round hole.



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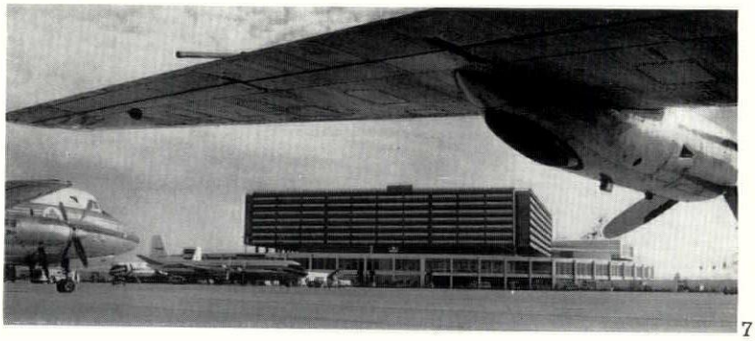
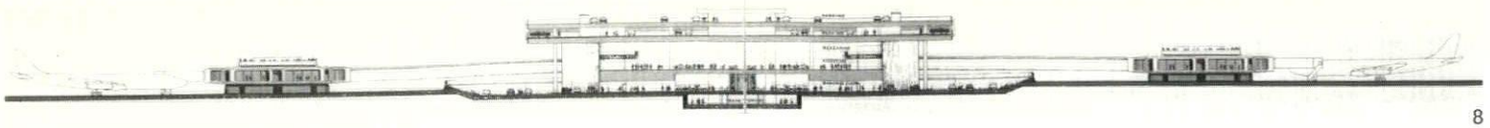


7

The ultimate in drive-ins, as might be expected, is American. Houston, 8, and 9, is the product of business acumen on the part of 18 men of Houston who in the early 'fifties acquired a large area of land as an investment. In 1959 when Houston decided to build a new airport, the land was offered by them at cost price. In essence it is a development of the Toronto plan with satellites and a transport spine. The difference is that the spine is above ground and effectively cuts off one side of the airport from the other. It also means that later expansion of runways will involve expensive tunnelling—just as it has for Heathrow's new cargo village. Passengers are carried from satellite to satellite in automatic electric trains. Average walking distances are about 350 feet. The satellites designed by Golemon and Rolfe and Pierce and Pierce, are square with diagonal corridor links at each corner to circular flight stations. Each flight station serves five aircraft. Cars are parked on the second floor or on the roof and because of jet engine blasts, roads are 6 feet below airfield levels.

travel. Yet Jumbo jets alone will require 30 million new passegers to sate their appetite

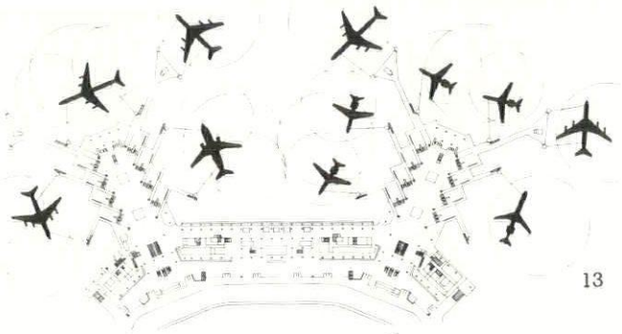


8



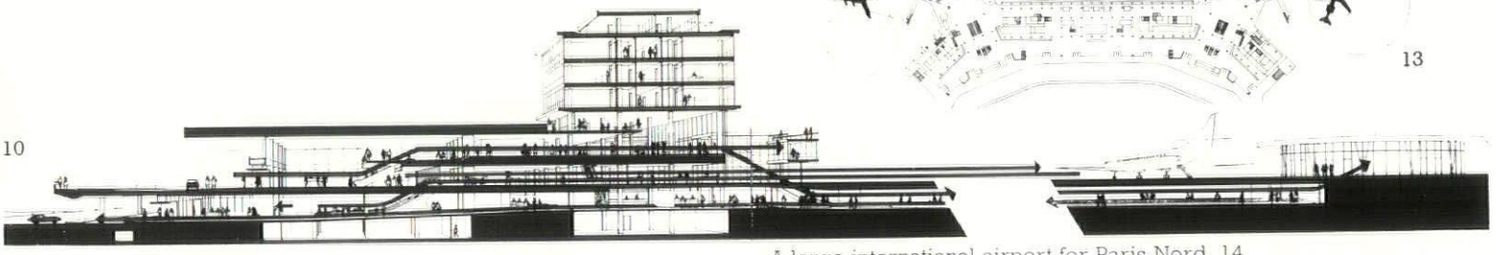
9

The new airport at Orly West, Paris, 13, for domestic flights only, will be similar to, though marginally better than, Köln-Bonn. Three underground parking levels for 3,800 cars in front of the terminal will penetrate deeply under it so that passengers will emerge in the heart of the building and walking distances will be shortened—300 feet maximum. Four stubby fingers will each provide 5-8 flight stations.



13

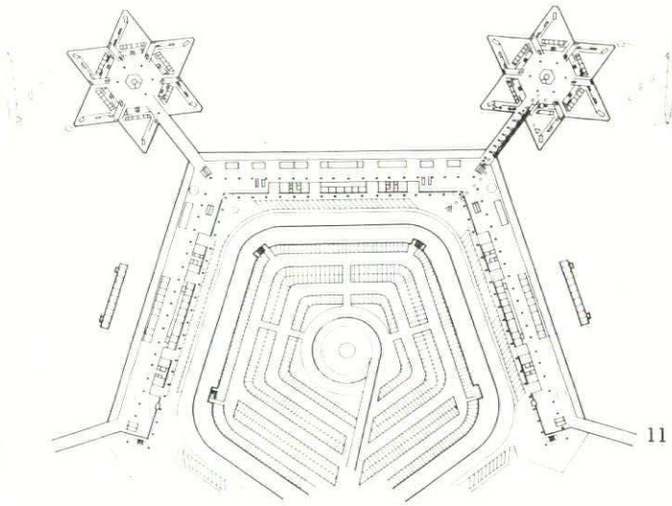
At Geneva-Cointrin, the old terminal has been turned over to freight and administration. The new terminal, 10, designed by Camoletti and Ellenberger, has a conventional main building and—more unusual, in Europe at any rate—three circular flight stations connected by underground travelators—at distances of 2500 feet (some of the longest in any airport in the world) they are a sine qua non.



10

Schneider-Esleben's Köln-Bonn, 11, 12, is claimed to be Europe's first drive-in. And, not surprisingly, European standards of drive-in have not matched American. 'Drive-near' might be closer to the truth. Passengers will not actually be able to drive underneath the aircraft in one of a series of small half-satellites, half-fingers. In practice cars can be parked on two levels in the main terminal building. And then the passenger will have to walk with his luggage to one of these satellites before checking in.

A large international airport for Paris-Nord, 14, offers a more uncompromising European interpretation of the drive-in principle. A central transportation spine feeds five circular satellites—linked to small embarkation and disembarkation buildings by underground passages—each of which provides 24 flight stations for a variety of aircraft. In the centre of each satellite are the multi-storey parking areas for 4000 cars. Walking distances will be kept to the 600 feet mark or less. The terminals will be linked to each other and to a central building by an automatic passenger conveyance system—whether travelators or rail cars is not yet settled. The cost will be about 900 million francs.



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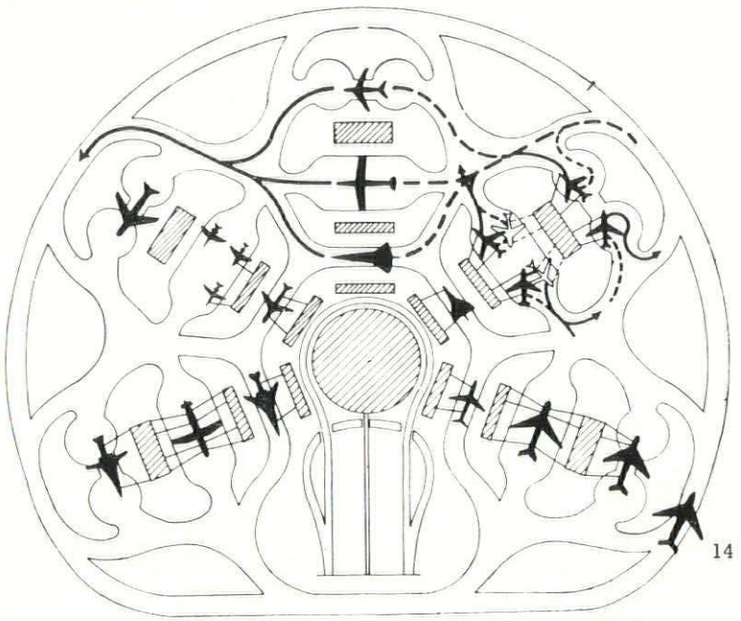

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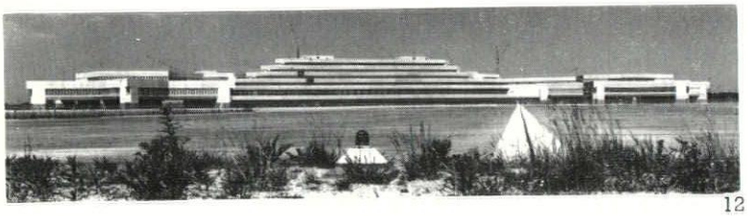
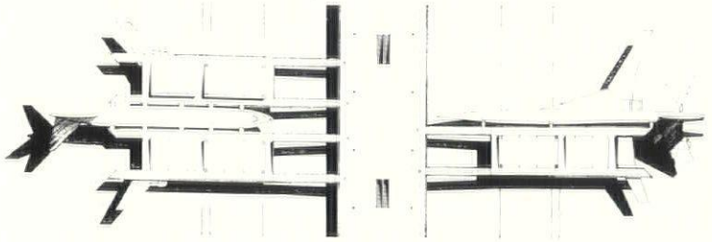


12

A more flexible system for airports, right, has been proposed by Harry Weese—a mobile over-wing loading machine, 15, adaptable to any plane. The loading machine consists of a central waiting area (for 250-300 people) which remains level but can be raised or lowered by means of four hydraulic cylinders. Each waiting area is flanked by gangways which are vertically adjustable and connected by cross-ramps with each other. One is level with the waiting area, the other with the plane and each gangway has five gates which

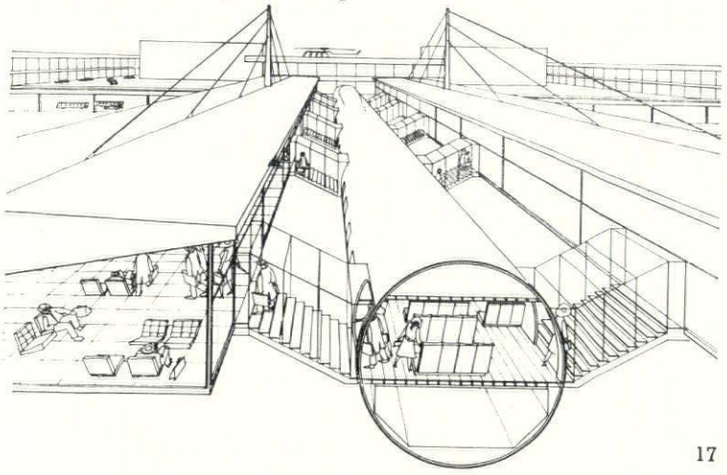
Airports at their best are the testing ground for new and exciting systems of movement. At their worst they are an exhausting twentieth century experience

slide on rails to the position of the aircraft doors. The mobile loading machine is connected by covered bridges to the concourse building. 16, shows an SST aircraft at a single loading machine, and a jumbo-jet between two loading machines.



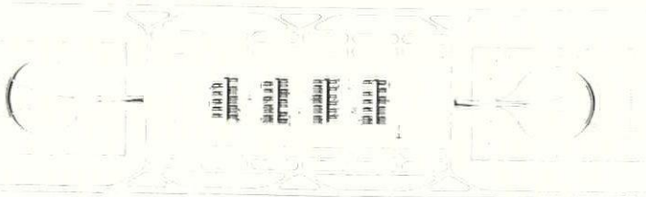
16

Strizic in his research at Braunschweig proposes on both sides of a linear transportation spine, double fingers or docks, 17, to enable a Jumbo-jet to slip in between with its wings under the docks. Ten short adjustable bridges (five on each side) would provide rapid loading and unloading of passengers.



17

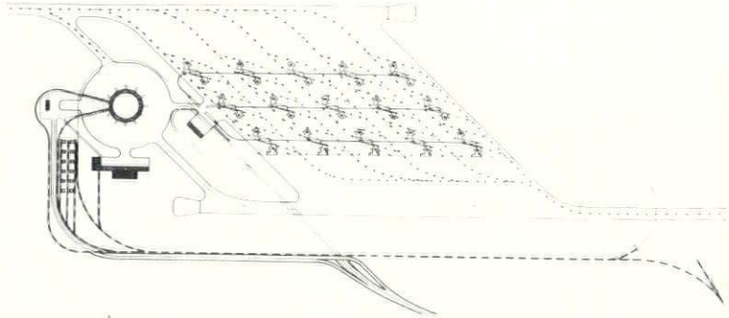
Harry Weese's design for a no-compromise linear airport, 18, shows the application of the overwing loading machine and much else as well. Two-storey concourse buildings 1000 feet apart, flanked by loading machines, would lie astride an underground transportation spine. Each concourse building could be lengthened, or additional buildings built along the spine. Aircraft can move logically from one side of the airport to the other through the gaps between the concourse buildings. Instead of traditional runway layout, there would be two parallel end-to-end runways each four miles long. Aircraft would land one side,



18

pass through the gaps unloading and loading their passengers, and take off on the other. Harry Weese says .the logical and ultimate development of this configuration would be a city with its airport in its centre, with its four mile end-to-end runways extending like boulevards.'

Equally radical proposals have been put forward in Germany by Arbeitsgemeinschaft Airbus. What they propose is that separate landing and take-off runways should be parallel but offset to one another, 19. In between are numerous small satellites linked by an underground rail system Future expansion would take the form of additional satellites, although the siting of a large freight centre would make this possible in one direction only. They also propose an automatic ground guidance system for runway turn-off and taxying for position; complete automatic control of the aircraft; and underground aircraft servicing at satellites. Passengers and luggage would arrive underground at their satellite, 20, and feed into the aircraft from underneath.



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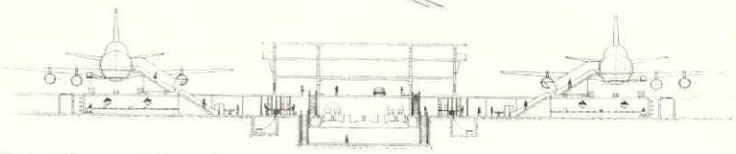

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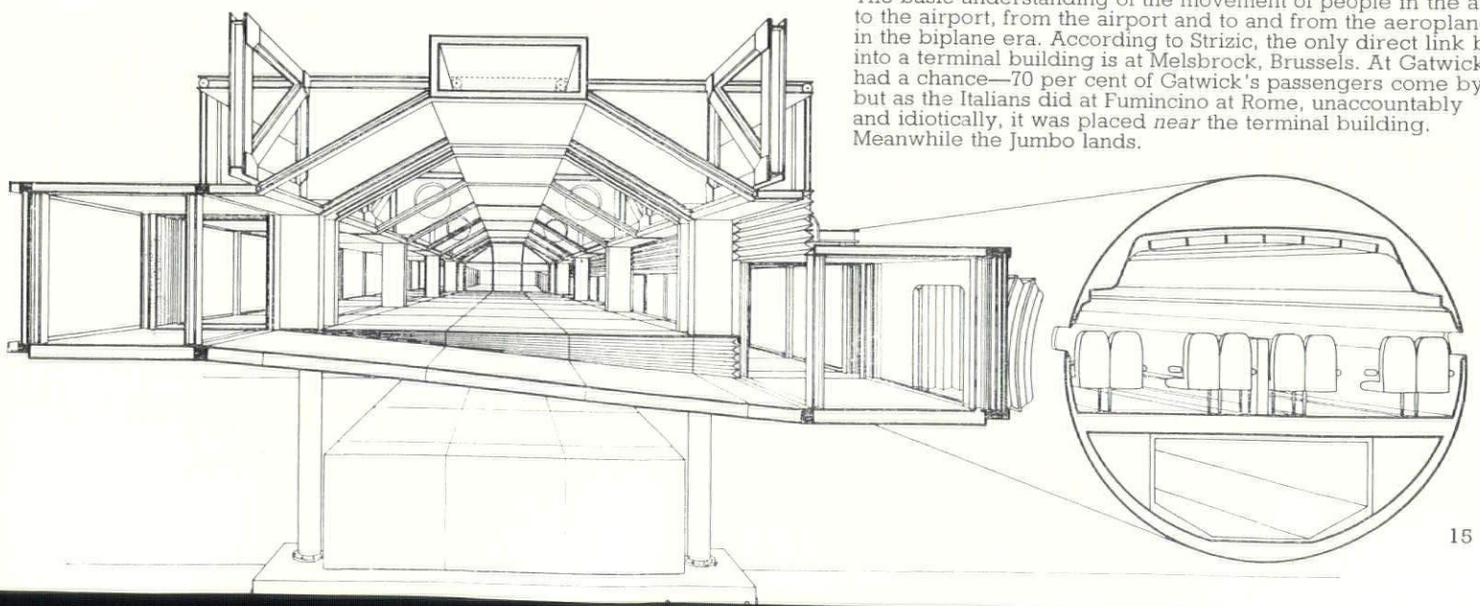
But at the world's existing airports conventionally planned, there are great worries ahead. For instance how will London cope with moving a collapsed Jumbo weighing 350 tons off the tarmac as planes land at the rate of 150 an hour ? For that matter, how will the world face the news of 500 deaths at one stroke ? The answer is we don't know. Air travel is dominated by the speed of change—its motto—the unimaginable today flies tomorrow. 390 passenger Jumbos are with us. 10,000 passenger planes are possible.
The problem that still presses on most peoples minds most is noise. Increasing noise is unavoidable despite Peter Masefield's pious hopes of quieter engines—unless measures are taken now. And Shell with their £172 million scheme to float London's third airport on the sea off the Essex coast at Foulness, is undoubtedly one way out. Costs according to the two firms of designers would be comparable with reclamation schemes and the floating airport would be constructed three miles farther out to sea, reducing noise significantly. While Britain dithers, Denmark is one step ahead. It is already starting to build a £230 million island airport on Saltholm in the Ore sound between Denmark and Sweden. The airport will be the biggest in north Europe and will be linked to Copenhagen by a tunnel and to Malmö on the Swedish coast, by a bridge. And in America a number of water based airports are on the cards. Two New York architects —Charles Gallichio II and Jan Dabrowski— have proposed a floating jet port for New York—as a solution to one of the world's most congested airspaces. The American FAA later this year is to publish a study of existing proposals for offshore airport construction which will include airports built on fill, on piles and behind dykes. Meanwhile according to *Time*, Cleveland, Ohio is seriously considering a $1.2 billion Lake Erie jetport to be built on 1,050 acres of land fill and protected by breakwaters, dykes and cofferdams. Chicago has a project by Stanley Tigerman for a floating airport constructed of aluminium modules and reached by helibus and Hovercraft—at a cost of $500 million. Closer to approval however is a $\$\frac{1}{2}$ billion dyke protected jetport below water level on Lake Michigan, and connected to the Hopp by six miles of causeway, tunnel and bridge.
The basic understanding of the movement of people in the airport, to the airport, from the airport and to and from the aeroplane is still in the biplane era. According to Strizic, the only direct link by rail into a terminal building is at Melsbrock, Brussels. At Gatwick, Britain had a chance—70 per cent of Gatwick's passengers come by rail—but as the Italians did at Fumincino at Rome, unaccountably and idiotically, it was placed *near* the terminal building. Meanwhile the Jumbo lands.



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In 1968 Heathrow Airport, London handled 13,335,906 passengers. Of these, 10.4 million were international passengers—more than any other airport in the world. The European league is topped by Heathrow whereas in terms of world total aircraft movement it ranks 59th—after 58 American airports. No 1 Terminal is Frederick Gibberd and Partners' best building to date at London airport. In the words of Peter Masefield, Chairman of British Airports' Authority it 'may have its faults but it is still very modern and equal to better than most in the world.' It has a sizeable multi-storey car park integral with the terminal building though the inevitable road has to be crossed from the park into the terminal at two levels. Projecting piers have protruding air jetties with retractable noses connecting with aircraft



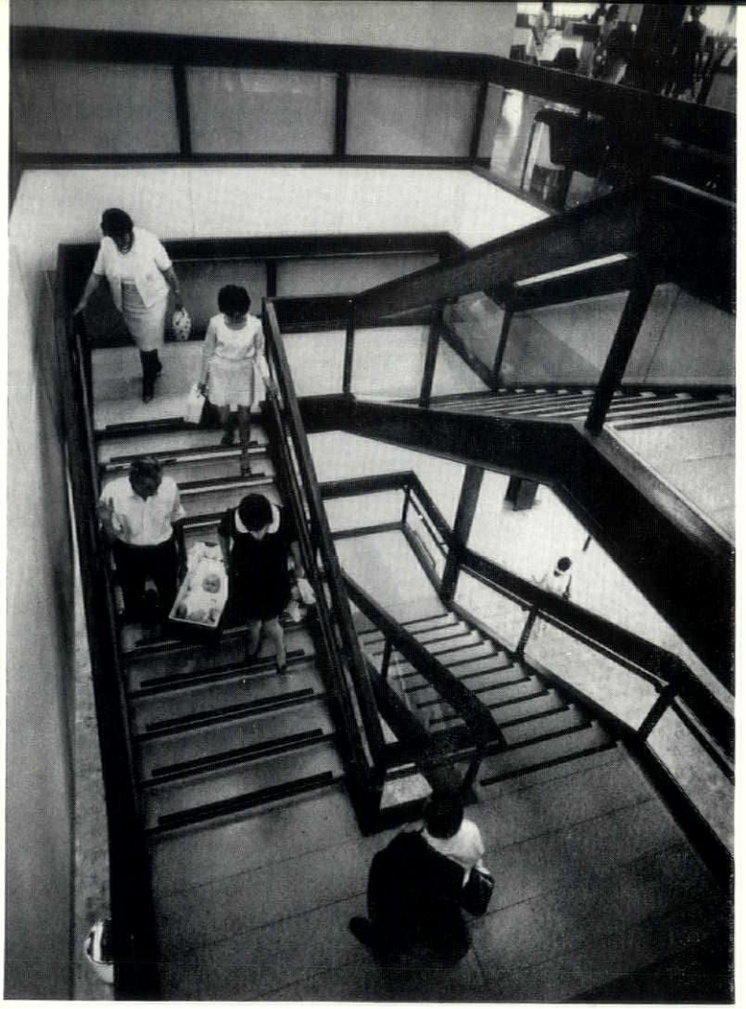


'Air traffic has increased beyond the wildest forecasts, so we always seem to be running up a down escalator. But we are getting somewhere. In 1968 we opened the first part of a terminal more suited to the needs of 1962. In 1970 we'll open a terminal suited to 1968.'
Peter Masefield, Chairman, British Airports' Authority, The Sunday Times, 17 August 1969

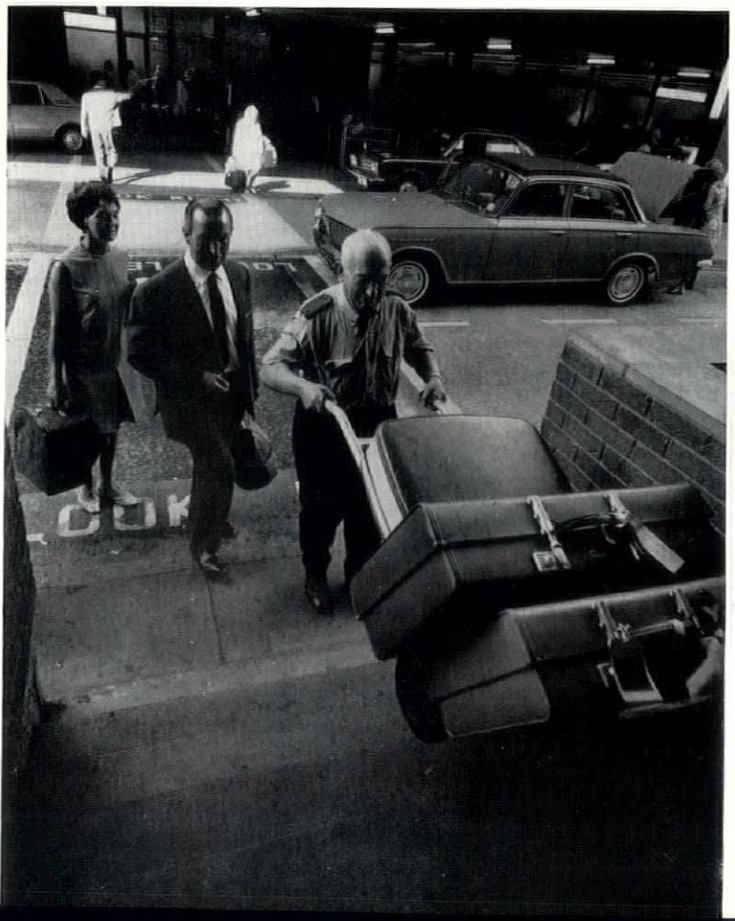


Conran's telephone kiosks —uniquely visible and internationally signposted— sensibly have separate book carousels





British Airports Authority are not guilty of British Rail's arrogant assumption that terminals are for elegance and movement only—the concourse is amply provided with seats. But the most inviting cafeteria are up flights of stairs in both rail and air terminals—simultaneously built. Whereas Conran's baggage trolleys at London Airport are readily available, at Euston they are like gold dust. Both, when it comes to getting in or out of the car park with luggage, show nil commonsense






destination time flight number informa
EDINBURGH 18:10 BE 5404 NOW BC
BLACKPOOL
HULL/TEES-SIDE 18:35 OU 027
MANCHESTER 18:35 BE 4106 NOW BC
DUBLIN 18:40 BE 871
JERSEY 18:45 BE 3058
ABERDEEN 18:50 BE 5528
TEES-SIDE 18:55 OU 049
GLASGOW 19:00 BE 5058
JERSEY 19:05 BE 3058A
GLASGOW 19:30 BE 5060
Flight departures for United K



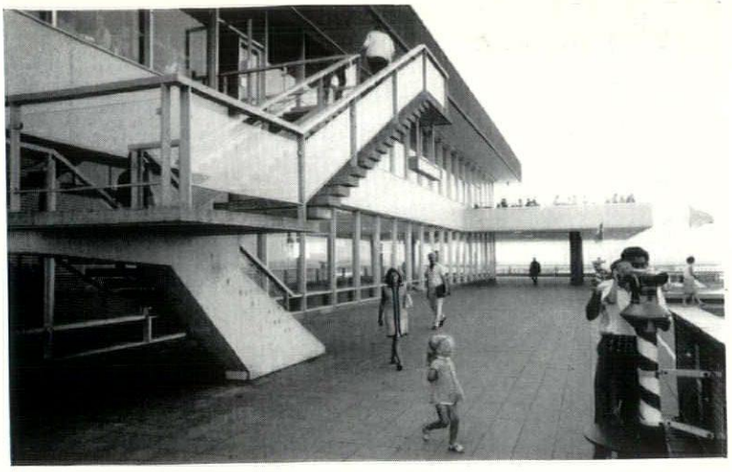
The public waiting areas are refreshingly clean, in design, light and in this terminal only, air conditioned. But even if its use as an international terminal is only short term, the non-concessions all-English departures board shows an abysmal understanding of passenger movement. Add to that points of detail like the frequent breakdowns in the public address system and there's the key to why airport terminals the world over are exhausting



Schiphol lies seventh in the European airport charts for passenger movement and probably top for passenger comfort. Last year 3½ millon passengers passed through and by the mid-70's an additional terminal will increase capacity to 23 million. Opened in May 1967, it was equipped with three piers. Initially only the central pier was fully developed. Next year the south pier will open for Jumbos and air-buses



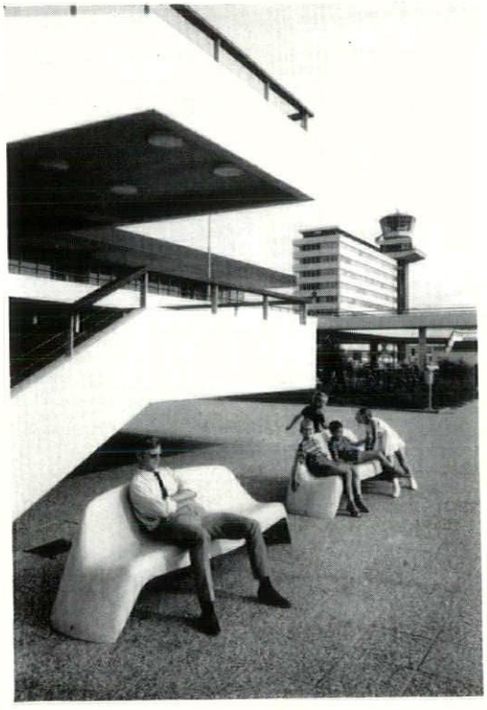


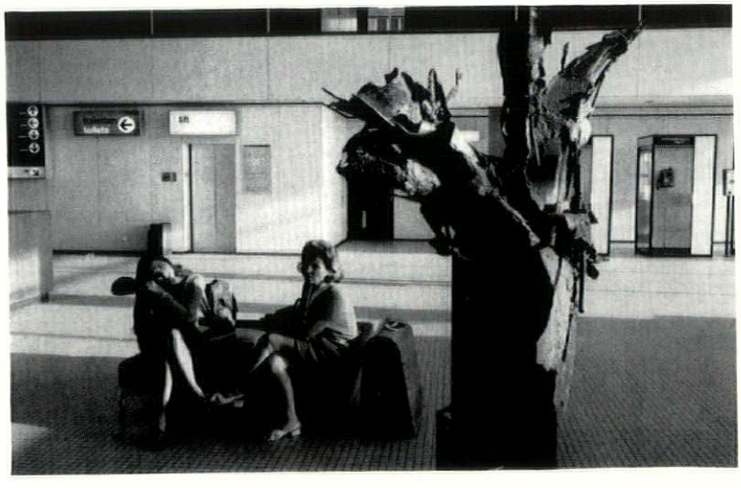


'From the passenger's point of view, Schiphol airport is the most satisfactory in Europe. It is designed with the overall aim that passengers may move easily and logically to where they need to go.'
Corin Hughes-Stanton, Design, December 1968

Land which was once the treacherous waters of Haarlem Lake, reclaimed in the last century and turned into one of the richest agricultural districts of Noord Holland, is now engulfed by Schiphol, Amsterdam's new airport. Designed by M Duintjer and Kho Liang (interiors) and built by the firm of F C de Weger, it has a finger plan. From each finger enclosed bridges lead to round towers through which passengers in turn pass into telescopic aerobridges hydraulically pressed against the aircraft. The roof of each finger connects at the same level with the terminal and provides a spectacular set of viewing platforms. Its considerable walking distances are relieved by a passenger conveyor belt—at present in the central finger only. When the South Pier





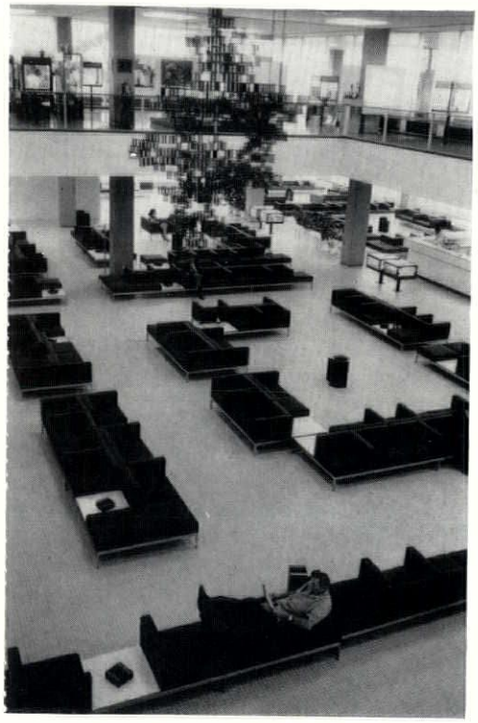




Schiphol is a thoroughly thought out conventional answer to passenger movement. Its travelators, electric runabouts and clear signposting in themselves are unusual



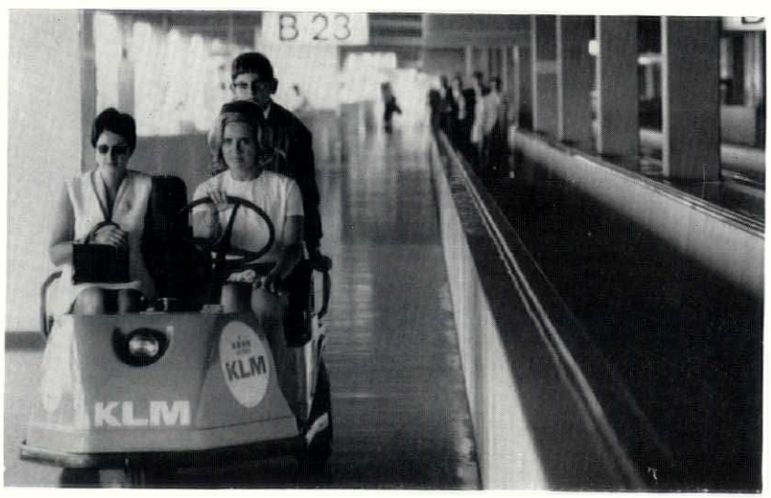






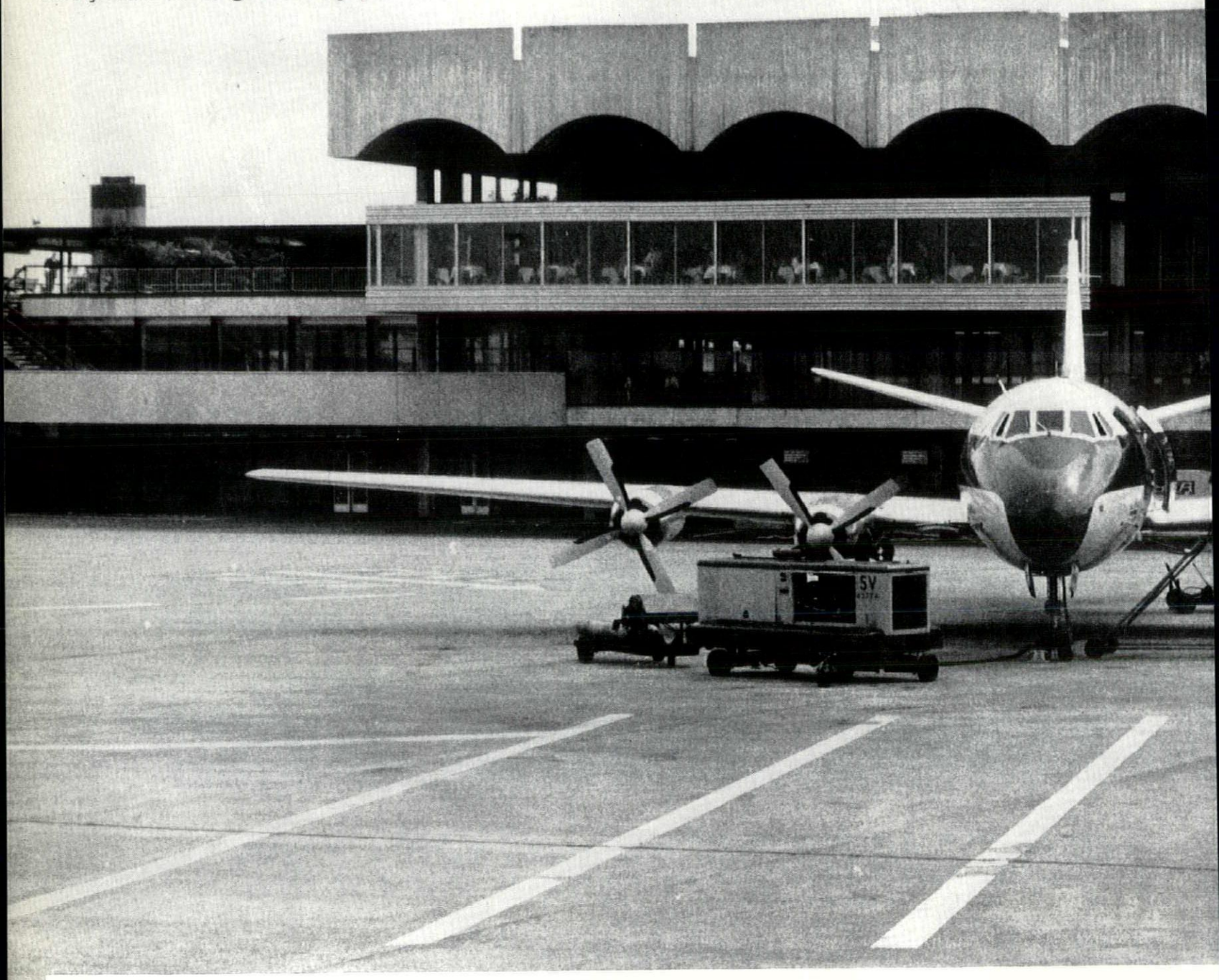
is extended next year, it will also be equipped with a conveyor belt. Arrivals and a conference centre are at ground level; departures on the first floor. Traffic is similarly segregated. Visitors bars and roof terraces connecting to the finger spectator walks are at third floor level. The large public rooms are uncluttered and clean. The terminal is sculpture bedecked inside and out and on the second floor is an art gallery and the main restaurant. Unlike Euston, Schiphol faces up to long waits and provides for baby washing. Its two 'blind' spots seem to be tawdry advertising in the check-in areas and the main car park for 5000 cars surface parked which is placed slap bang in front of the main entrance (a wholly inadequate 350 are parked in the basement). In line with most airports the walk from the car to the entrance is uncovered and involves crossing a stream of arriving and departing traffic. But unlike almost any airport in the world—at present—for the old and infirm, mini electric vehicles speed passengers along the fingers.





even among world airports. Its forward-thinking phased extension planned as far back as 1954 make it outstanding and effortlessly prepared it for the age of Jumbo

Abbotsinch is still the best looking British airport outside London. Designed by Sir Basil Spence, Glover and Ferguson its impact on a foreigner arriving to do business in Glasgow must be favourable — at the moment. If air travel quadruples over the next ten years as is generally predicted, its weak points will begin to matter more than its



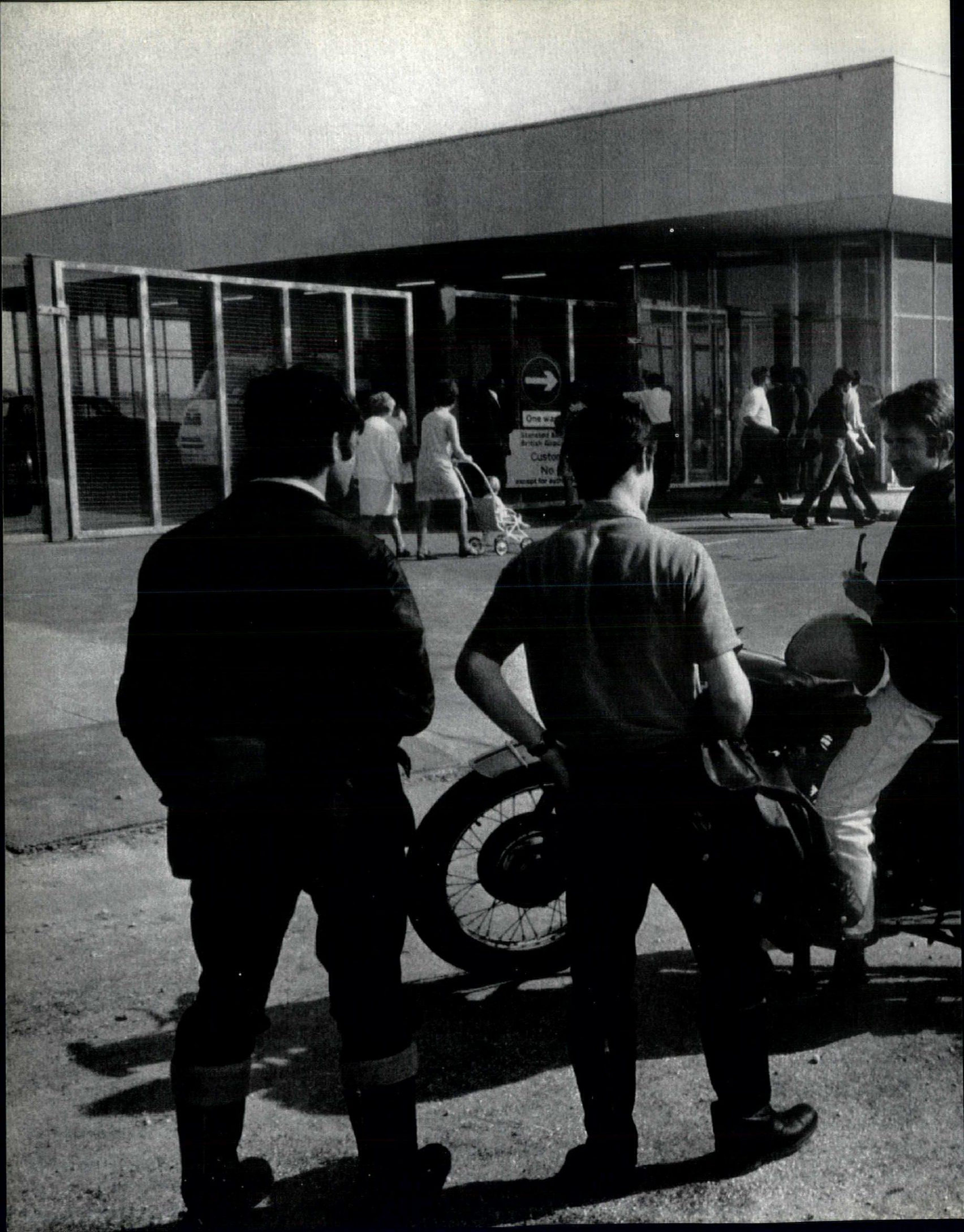




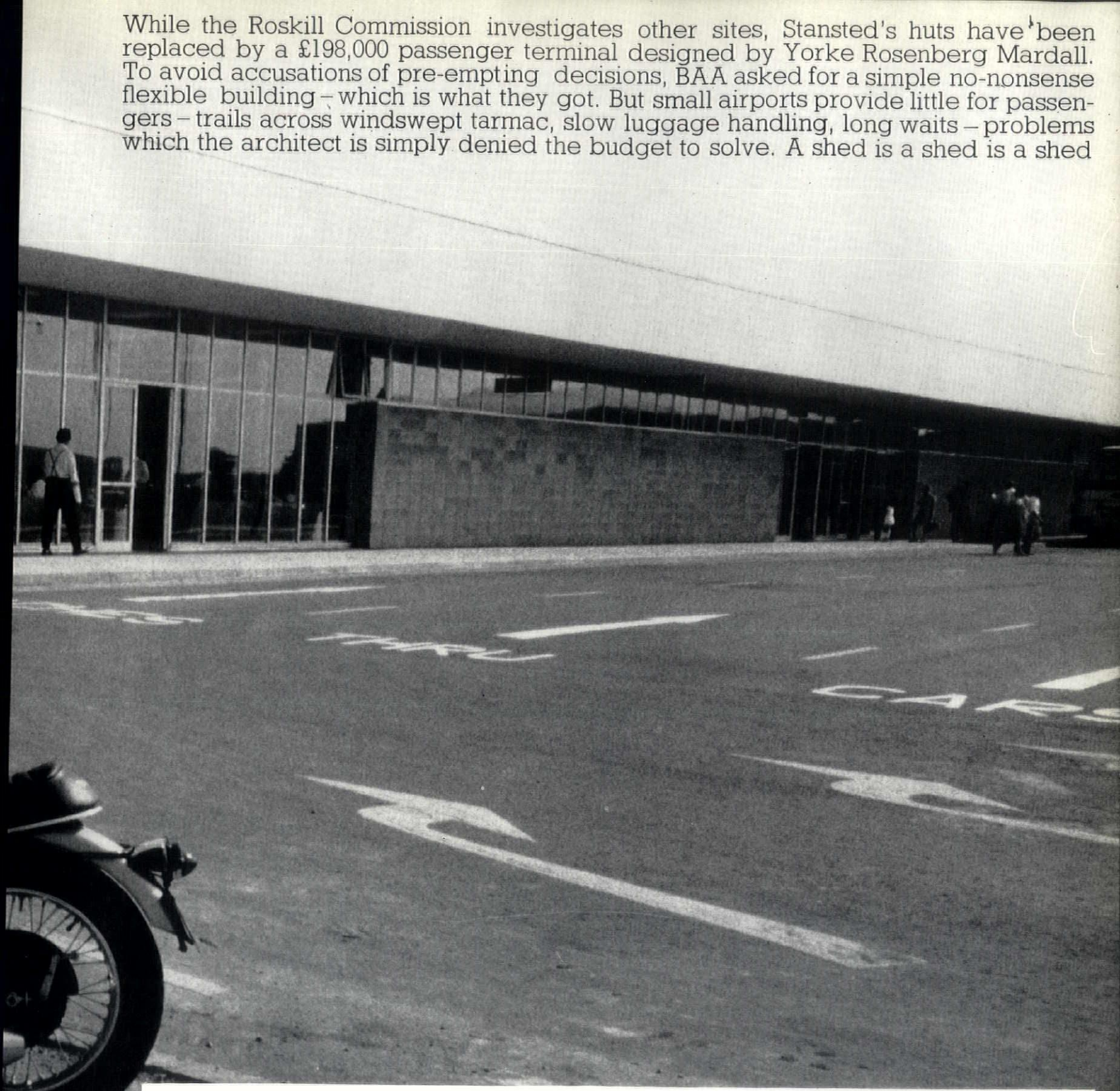


good looks—inflexibility, passengers unprotected from moving cars as they walk from the car park into the terminal, congestion at the head of stairs which lead direct into the the departure and arrival gates and more serious perhaps, insufficient ways up to the first floor departures shared with the invasion of arriving passengers





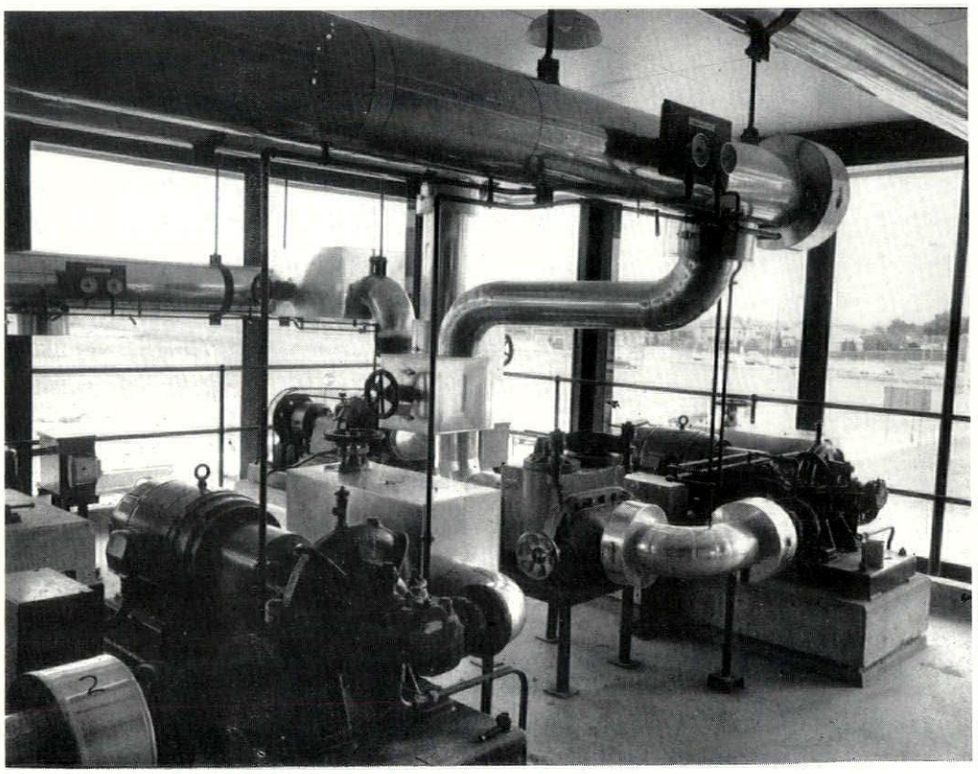
While the Roskill Commission investigates other sites, Stansted's huts have been replaced by a £198,000 passenger terminal designed by Yorke Rosenberg Mardall. To avoid accusations of pre-empting decisions, BAA asked for a simple no-nonsense flexible building – which is what they got. But small airports provide little for passengers – trails across windswept tarmac, slow luggage handling, long waits – problems which the architect is simply denied the budget to solve. A shed is a shed is a shed





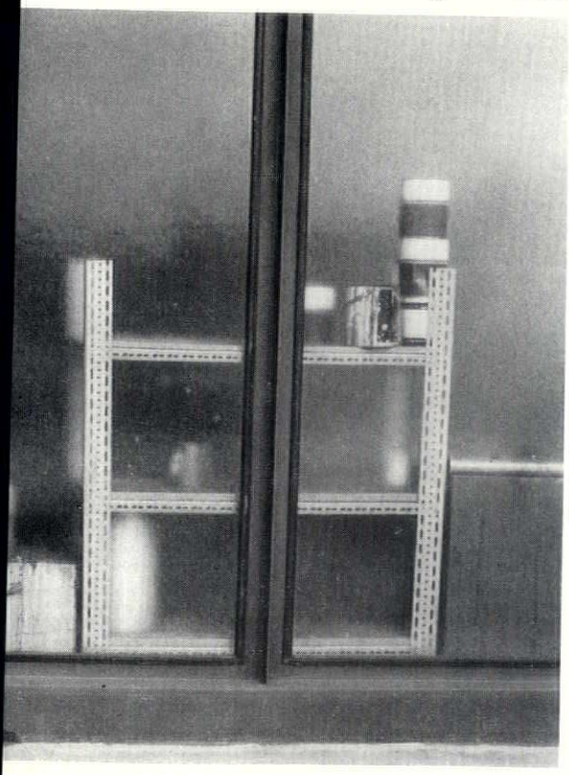


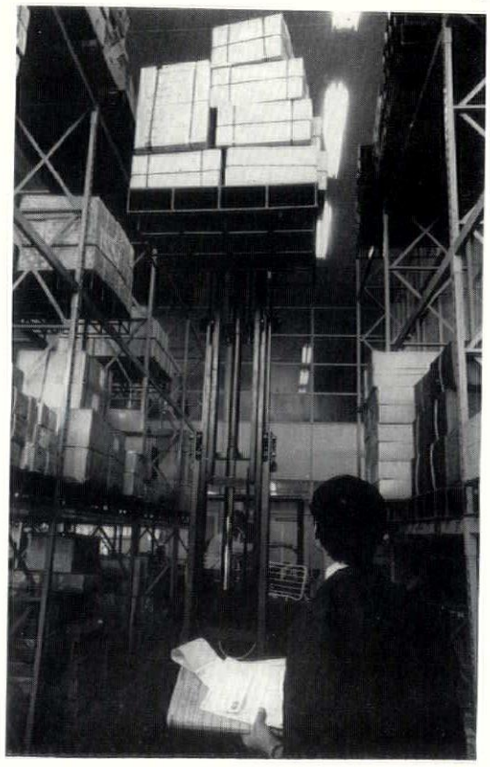
Like it or not, in 1968 London Airport ranked as Britain's third port – exceeded only by the London and Liverpool docks – in terms of the total value of exports and imports. To cater with the rapid growth of air cargo, British Airports Authority commissioned Yorke Rosenberg Mardall to design this Agents freight handling depot. A long, low,

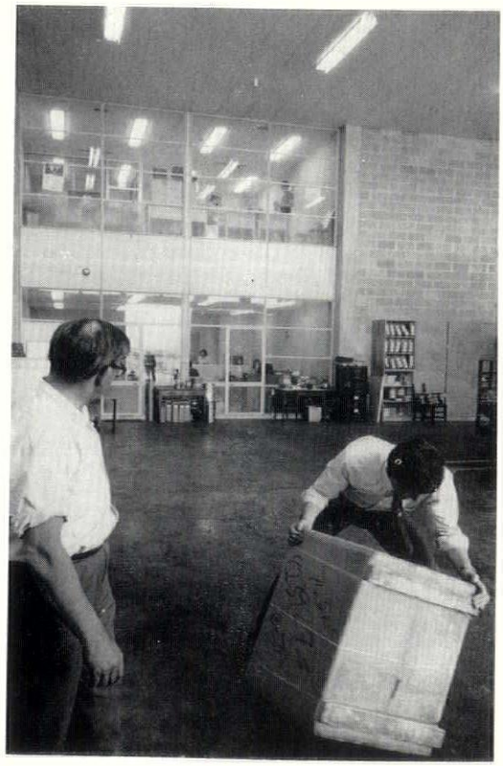


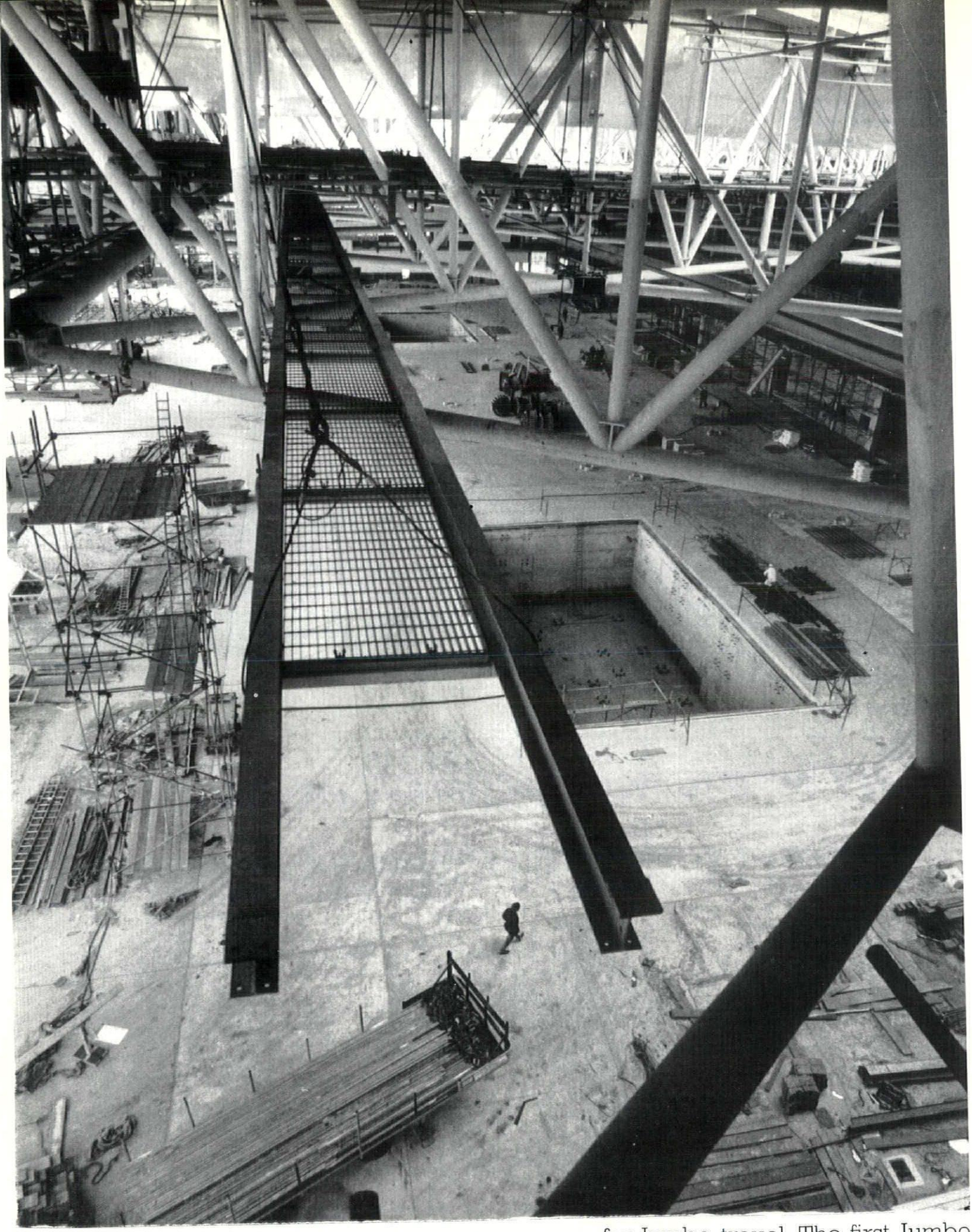


not quite Miesian exercise in structural and not so structural steel and glass, it consists of lettable bays. Some agents have racking systems and fork-lift trucks. Others have none. Bays are air conditioned from a centralised plant glistening at one end. At the other end the seamy side is begining to show – bad management or inadequate design?



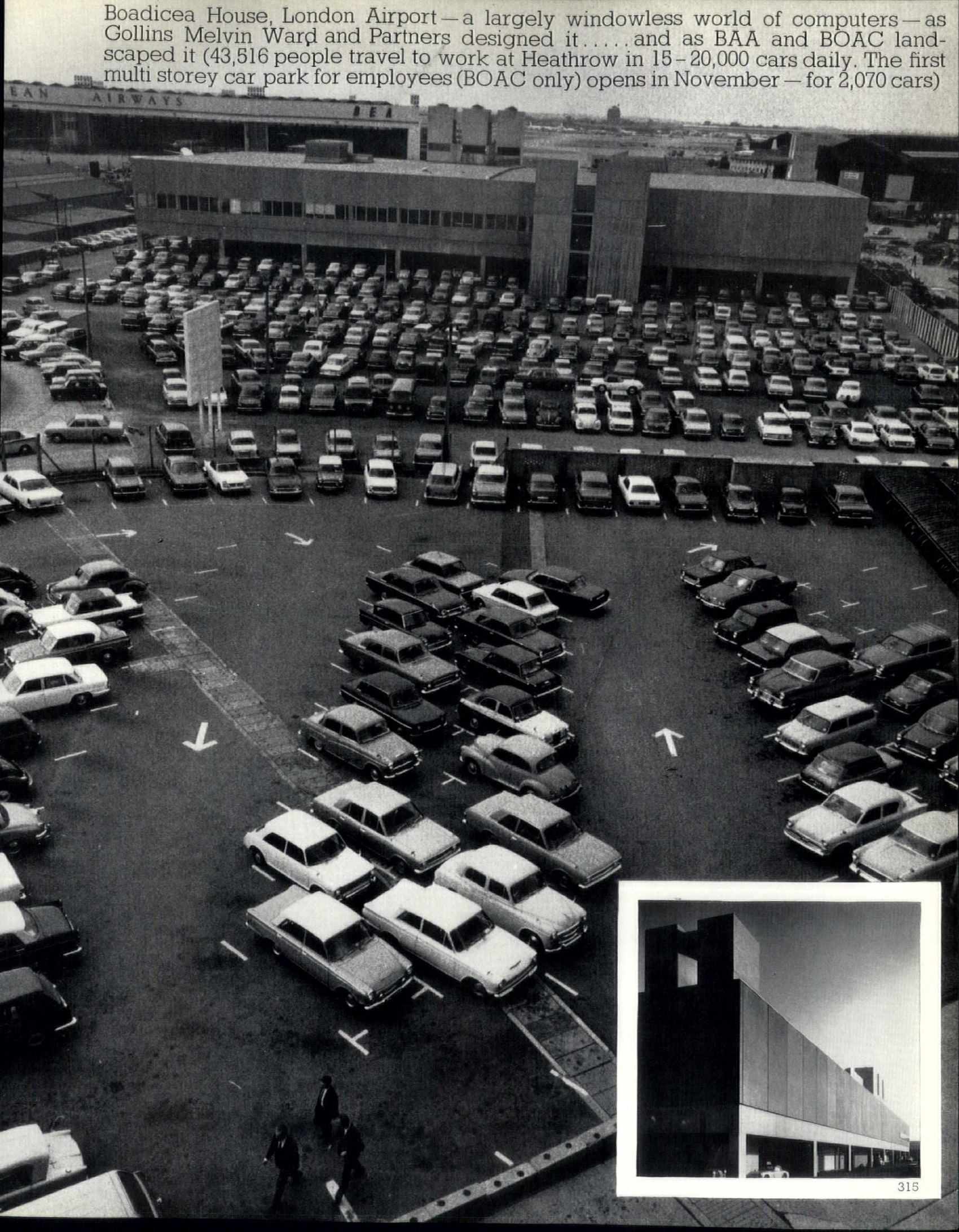






Airports have had less than three years to prepare for Jumbo travel. The first Jumbo hangar at Heathrow 273 feet wide and 618 feet long, designed by Norman Royce Topping and Partners, has a mammoth roof, over three acres in area with a 445 feet clear span. The giant doors are 75 feet high. The era of airborne elephants has dawned

Boadicea House, London Airport — a largely windowless world of computers — as Gollins Melvin Ward and Partners designed it . . . . . and as BAA and BOAC landscaped it (43,516 people travel to work at Heathrow in 15 – 20,000 cars daily. The first multi storey car park for employees (BOAC only) opens in November — for 2,070 cars)





Inside, a controlled environment. Ceilings and floors to a common module conceal a network of wires and pipes and quietly unify the complex computer world



CONCLUSIONS



Moving about in cities over short distances is still transport's most neglected sphere. This moving pavement installed in a shopping precinct at Croydon is one of Britain's first out of doors examples. MANPLAN's 1971 new town project will incorporate this and many other novel forms of transport.

Realism in the sphere of transport is a scarce commodity. Those who have no alternative but to use public transport, generally the lower paid workers, are subsidising the system, while those who can afford to do without it are strangling cities with congestion. Estimates vary but current paper plans for new and improved roads in Britain's cities and towns amount to £4000—£6000 million. The GLC's London road plan alone is expected to reach £1000 million. Mr Marsh, Minister of Transport, maintains that Britain is spending at the rate of £1 million a day on the current road programme. To what end? The grim reality of American experience forces recognition of three awful prospects: an increase of road use demand that will quickly render new urban motorways inadequate; an increasing restriction on actual vehicle use because none of the plans provide for full motorisation; and an increasing urban intrusion and disturbance unequalled by, for instance, Victorian railway building. Professor Colin Buchanan's report to the British Road Federation indicated the time scale involved in implementing proposals of such magnitude—30 years for the Birmingham ring road alone. And the Smeed report on *Road Pricing*, *Better Use of Town Roads*, the Prices and Incomes Board on London Transport fares point to ways in which the car can be curbed. The latest volume of the London Traffic Survey *Movement in London* shows conclusively that all the Ringways so far planned will not satisfy demand.

Order can only come out of this disorder by recognition of the way every fragment of the transport infrastructure interlocks and interrelates. Public transport fares will go up as long as the motorist has cheap road space. Delivery vans will be delayed as long as they insist on delivering at peak hours. Commuters will be constricted as long as the majority of working hours coincide. Public transport will be inefficient as long as peak hours remain congested. Inefficient public transport will lead to more car use and to fare increases to replace lost revenue. So action in any one direction must be reinforced by action in every other. The system is a total system—or nothing. Even the government is beginning to realise the facts ('far from being the poor relation of Britain's transport system, the waterways are entering a new era'). There is no escape for the politician. He must experiment with every weapon of control and direction at his command—road pricing, staggered hours, tidal flow, computerised traffic control, environmental management, sensor operated speed controls, the movement of some goods off the roads onto rail and of others onto the canals, and off-peak delivery.

This approach was clearly recognized in the RIBA's evidence to the Roskill Commision on the Third London Airport—'Jumbo jets carrying 300 or more passengers will proportionately

reduce traffic problems in the air, but will increase traffic problems on the ground.' MANPLAN's emphasis on the role of APT 1 (pages 279-285) grows out of the same preoccupation. The siting of inter-national airports on or nearly off-shore may offer the first real relief from overflying, but if a coastal site produces choked roads and STOL or VTOL (page 285) in the hinterland, the last state is as bad as the first. Even while Peter Masefield, as Chairman of British Airports Authority, is decrying Foulness and bitterly complaining of £30 million to be spent as a temporary measure on Gatwick and elsewhere, BAA could be joining a consortium to build a rail-road-air-LASH-container port, the first experiment in an integrated transport system. Masefield will not be ready when Roskill reports—because Masefield chooses not to be. And Britain's position as Europe's No 1 airport is not threatened, as he would have us believe, by the opposition of vested interest nor by a public blind to the need for another airport, but by BAA's determination to fly in the face of common-sense.

The same confused thinking haunts the 44-ton lorries which are shortly to thunder along British roads if a Ministry of Transport internal report is accepted. Here, as Sir Hugh Casson made clear, the issue is 'not can the bridges stand forty-ton lorries—but can we?' MANPLAN has asked basic questions such as these and has put forward practicable solutions ranging right across the total transport 'problem'. The overwhelming need is to understand that the principal problem is not how to move, but how to live. Improved living conditions and the fast changing technology of communications could reduce the need to move. The transport 'problem' is the urban 'problem' in disguise—the one cannot be solved without the other. Society is its contacts.

Announcing concentrated carpet



It could even carpet an office car park

It's time you stopped thinking of carpets in a conventional way. Carpets have been revolutionised. By Gilt Edge Carpets and ICI. ICI's fibre research laboratories invented Tultrim, a new kind of pure nylon carpet. Gilt Edge Carpets—who make Britain's finest Axminsters and Wiltons—applied their know-how to its development.

Through a unique concentration process, it was transformed into a carpet of incomparable quality. Colourful, economical, durable, it makes carpeting a practical proposition where you've never dreamt of specifying carpet before.

This new carpet is called Endura concentrated carpet. Here are the details—and remember, it's a carpet we're talking about.

1. Endura concentrated carpet has outstanding durability, proven by extensive abrasion tests. Endura withstood 100,000 revolutions on the WIRA machine. An average AO wool/nylon Axminster will normally withstand 20-25,000 revolutions.

2. Endura is 100% synthetic and, consequently, damp- and rot-proof.

3. Endura concentrated carpet is easier to clean and maintain. Its unique texture makes it highly resistant to dirt and staining. There is a significant reduction in maintenance costs compared with hard floor coverings.

4. Endura has exceptional dimensional stability.

5. Endura needs no underlay. It is bonded to a springy, non-slip PVC back.

6. Endura is available in a range of standard widths up to 12′.

7. Endura comes in a range of sixteen textured colours with high fastness to light and wet treatments.

8. Endura is easy to lay. It can either be free-laid or fixed to a sub-floor with recommended adhesives.

9. Endura has excellent noise absorption and thermal insulation properties.

Specify new Endura concentrated carpet.

Please send me the colour brochure with detailed technical information.

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VIEWS AND REVIEWS

marginalia

ANOTHER LOSS FOR LIVERPOOL

While the fate of Jesse Hartley's magnificent Albert Dock buildings at Liverpool (see AR April 1967, pages 296-8) is still under discussion, another range of Liverpool warehouses by the same architect is, at the time of writing, being demolished.

These are the grain warehouses at Waterloo Dock and, as the accompanying photograph shows, are first-rate specimens of their kind. The Liverpool planning officer was approached about them when demolition was threatened but answered that, since they belonged to the Mersey Docks and Harbour Board, he had no control over them. If more of these characteristic dock buildings are allowed to disappear, Liverpool will lose its character and will be that much poorer a city.

NEW THREAT TO MALTA

It is evident from a story that appeared in *The Financial Times* for 16 July that the alarm-call sounded in the AR's special issue on Malta ('Malta: past, present and future', July 1969) was not unfounded. The first article in the AR issue discussed the damage being done to the unique and delightful Maltese landscape by the building of little houses away from the compact established villages and by the poor design generally of new buildings, especially those that departed from the local tradition in form and material. 'There is just time', the AR article said, 'to save Malta, though only just'.

The following are extracts from *The Financial Times* report. 'A British company, Steygate, which has recently branched out into Malta, today concluded a £4m contract to provide prefabricated houses for the Maltese property concern, Real Estates, Malta, which is buying 2,000 industrialized houses from Steygate, Malta. The prospects are that these will be manufactured on the island'.

'Mrs. Phoebe Ross, who owns both the UK Steygate and Steygate Malta companies, commented that the Maltese company was presently negotiating with the Malta Government to set up a £500,000 manufacturing plant . . . a final Government reply is imminent'.

' "The Government had asked us to ship a prototype so that it could see what kind of industrialized houses we produce". (They are, apparently, aluminium covered.) "The reaction has been astounding. We have—besides today's deal—about 7,000 provisional orders from Malta . . . Both the Government and the church have given us favourable reactions to the project. We were told that ten sites are likely to be made available. This would create 10 new minor villages outside the towns".'

ART GUIDE

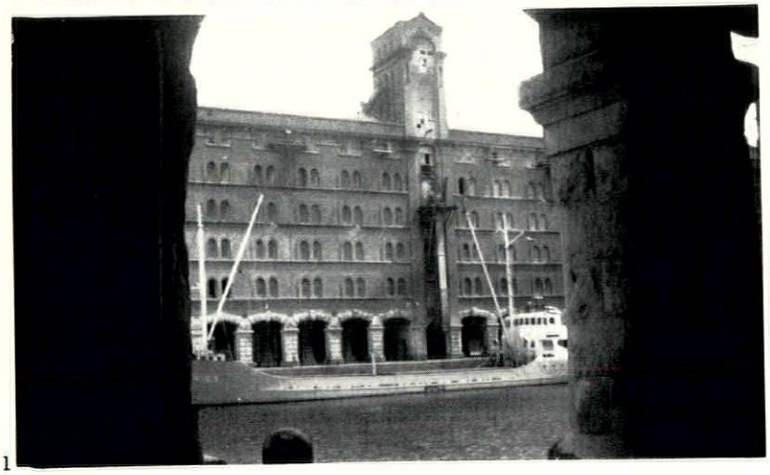
Art Centres of the World is the general title of a series of books being put out by Michael Joseph, aiming to give tourists and other visitors a detailed guide to the principal museums and art galleries in various cities. The first two in the series dealt with Paris and London; two more have just appeared: on Rome, by Ronald Bottrall, and on New York, by Randolph E. Osman, Each costs 30s. They are building up into a useful series, conveniently small in format and containing an informative, agreeably illustrated account of the history of each institution and of the building that houses it and a summary of its principal contents. There is also a list of dealers' galleries and salerooms.

CONTRASTS REPRINTED

The Victorian Library, an enterprising new series published by Leicester University Press and emanating from that university's Victorian Studies Centre, consists of facsimile reproductions of Victorian classics, the text being reprinted photographically. Among the first three titles is an architectural one: Pugin's *Contrasts* (45s). A second architectural volume—Eastlake's *History of the Gothic Revival*—is promised next year.

Contrasts is reproduced from the second edition (by Charles Dolman of London) of 1841, in which Pugin nearly doubled the length of the first edition of his influential manifesto, and added five new plates. It has an introduction by Henry-Russell Hitchcock, who describes *Contrasts* as 'neither an archaeological treatise nor a collection of models for direct emulation. It is a polemical work whose motivation was almost as much religious, and even social, as architectural.'

1. *warehouses in the Waterloo Dock, Liverpool (photograph by F.W. Holland).*



1



2

This bronze portrait-bust of Frank Lloyd Wright, 2, has been presented to the National Museum of Wales at Cardiff. Wright's mother was Welsh, and Wright himself showed great feeling for Wales. The University of Wales conferred an honorary LL.D. on him in 1956. The bust is the work of Heloise Swaback, a student of Wright's, and formerly stood in Taliesin West, Wright's foundation in Arizona.

obituary

WALTER GROPIUS 1883-1969

Walter Gropius had the most beautiful eyes imaginable. They met you in a level gaze from a deeply modelled but not rugged face, and the effect was serious but inviting. He was a man of great modesty, addressing himself to persons of whatsoever standing with a deference, a diffidence nearly, that belied the immense resolution with which from his earliest years he met the circumstances that engaged his heart and soul.

Feininger, the painter, whose views on the nature of art differed from those of Gropius, said that his single-minded idealism and the modesty with which he pursued his aims were such that, agreeing with him or not, he would follow wherever he led. And this modest demeanour was the sign manual of a deeply based morality concerning the sanctity of mutual indebtedness, and explains the patience he brought to his great work of reformation for the fulfilment of which he held but lightly his widely acclaimed personal achievements as an architect.

When he took over the Bauhaus at Weimar in 1919 he made what every architect of promise would regard as a supreme sacrifice, yet he took up this arts and crafts school with the joy of a medievalist among brothers, determined to find his holy grail only in the company of a like-minded society whose work he would share. And how unlikely that society proved to be, how divided in its aims and at a period of social and political upheaval, is set down in many a history of the Movement, and was recently displayed to an astonished generation of students in, of all places, the Royal Academy. The power of reflection is rare among us. More rarely is it conjoined with the power of effective action. It calls for the exercise first of an expansive intellect operating in a state of contemplation; and second, a transforming zeal based, not on self-aggrandisement, but compassion. Both these Gropius had. 'No-one else had the same intellectual grip of the situation, the real feeling for industry, the modest and single view of the idea of work, a morality so much in tune with the associated disciplines. Few of his contemporary architects thought of what the proposed fusion with industry truly implied. Walter Gropius provided the hard thinking. As Cromwell wrestled with his demon searching for his instrument of power and fashioning his Model Army, so Gropius wrestled to find at last in the Bauhaus the instrument with which to strike deep into the heart of the European canker'.*

When he came to me in 1934 this great work was over, and he had gone on to share in the so splendidly urban schemes of housing round Berlin that I admired so. He was a great man and I a fledgling, yet there was no trace of condescension, nor of self-pity, nothing but an absorption in what we had to do, increasing as we found in Henry Morris of Cambridge a client after our own minds, though indeed all our clients seemed to be conjured up out of Jack Pritchard's loving imagination, that poor man's entrepreneur who served the Movement with a single-mindedness rarely to be found.

But times were hard and commissions few in a country so little aware of what went on elsewhere in the world. I complained to Gropius who only said, 'Do you love architecture?' and when I assented replied, 'Then you must pay for it.' He came to England when the modern movement was establishing itself with the greatest difficulty and had as yet made the smallest impact upon society, and he left us when recognition was only beginning to be felt. Through these few years his influence was greatest in the seminal workshop of CIAM and even there he was overshadowed by Le Corbusier, and was without the means he later found in America of gathering round him a group of young men to work under the canopy of his benign personality. As the years progressed the very nature of the industry with which he had once freely collaborated changed. With the rapid growth of populations, the extension of

*From *Art in the Machine Age* by Maxwell Fry. Methuen, September 1969.

Asbestolux[C/U] = sanded or natural finish

Asbestolux[C/U] = unique manufacture

Asbestolux[C/U] = reliable performance

Asbestolux[C/U] = freedom from failure

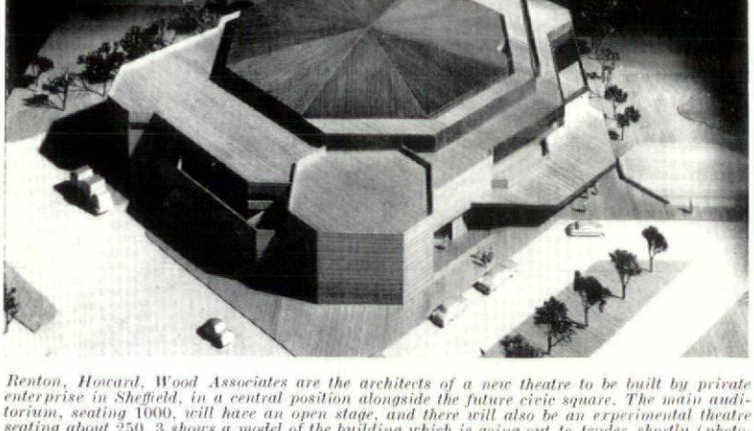
Asbestolux[C/U] = detailed information service

Asbestolux[C/U] = Co-partnership support

but nothing = **Asbestolux**[C/U]

Crosby/Fletcher/Forbes

Asbestolux the multi-purpose asbestos insulating board is manufactured by Cape Universal Building Products Limited, Exchange Road, Watford WD17EQ Telephone Watford 34551. A member of The Cape Asbestos Group of Companies.



3

Renton, Howard, Wood Associates are the architects of a new theatre to be built by private enterprise in Sheffield, in a central position alongside the future civic square. The main auditorium, seating 1000, will have an open stage, and there will also be an experimental theatre seating about 250. 3 shows a model of the building which is going out to tender shortly (photograph by Henk Snoek).

continued from page 320

science-based industry into every walk of life, aided by an instrumentation carried beyond the bounds of social discretion, and with a new found toleration of violence in the pursuit of all manner of aims, social as well as political, his capacity to influence events diminished.

Unlike Le Corbusier, who rejected a system he had only partly understood, Gropius held on indomitably, and died among his many works, surrounded by the young he treasured, a man honoured not only for the views he held or the buildings he built, but for his belief in humanity and the courage with which he wrestled for its salvation.

E. MAXWELL FRY

correspondence

'JERUSALEM UNITED'

SIRS: In your March issue you included an article about the plans being made by the Israeli government for the reunification of Jerusalem. Picture 3 in that article illustrated very clearly the destruction that is being done to the area around the Wailing Wall, and I would like to bring this to your readers' attention.

That old buildings surrounding religious shrines in medieval towns should be torn down because they are condemned or unsafe is a stock argument used to conceal excessive nationalistic zeal. The open heraldic plaza created in front of the Wailing Wall has brutally damaged the mysticism and the element of surprise that once surrounded the approach to the Wall. The eradication of the environmental character and the urban tissue of great medieval towns such as Jerusalem can never be justified by contemporary concepts of urban renewal. Restoration rather than destruction would have seemed a more felicitous solution. What has occurred in Jerusalem is reminiscent of what happened to the Piazza of St. Peter in Rome in the 1930's under the pretext of improvement.

Yours etc.,

Beirut. ASSEM SALAAM

This white and gilt Baroque ballroom from Paris, 4, has been re-erected in the Israel Museum at Jerusalem. It was originally at No. 46 rue du Bac in the Faubourg St. Germain quarter of Paris, and was designed between 1740 and 1745 by Gabriel Germain Boffrand for the Comte de Coubert. The house was demolished to make way for the Haussmann road improvements in the mid-nineteenth century, but the ballroom was acquired by Baron Edmond de Rothschild who incorporated it in the house he built in the rue du Faubourg St. Honoré between 1875 and 1880, and used it as his study. The room, which measures 42ft. by 31ft. 6ins., was given to the Israeli Museum by the present Baron Edmond de Rothschild, together with $100,000 to build and maintain a special pavilion for it. The work was supervised by the French interior designer Henri Samuel (photograph by David Harris).



4

book reviews

THE WHOLENESS OF PEVSNER

STUDIES IN ARCHITECTURE AND DESIGN, VOL. 1: FROM MANNERISM TO ROMANTICISM, VOL. 2: VICTORIAN AND AFTER. *By Nikolaus Pevsner. Thames & Hudson, 90s. each.*

In the preface to these two sumptuous volumes of selected essays, Nikolaus Pevsner refers ruefully to the fact that such collections 'get almost without exception a bad press'. The reason he gives for this is an interesting one and important for any student of his writings: 'Try as hard as he may, the author cannot perfectly blend into a whole what had been written over a period of many years and for a variety of purposes.' The desire to blend disparate features 'into a whole' is one that is central to his early writings, and it is again interesting that when, a few lines further on in the same preface, he compares these with his later essays, he should come down so firmly on the side of his work as a young man. 'They started in Germany and end in England; they started with lusty generalizations and end with humble specific facts; they started with scholarship and end in what strikes me often as superficiality. The substance, to put it in another way, tends to get thinner'. Curiously enough my own impression is exactly the reverse.

Only Pevsner would probably be capable of reviewing a volume of essays by Pevsner. The range—from Italian Mannerist and Baroque painting to the new Yale School of Art and Architecture—is far too wide for most historians—and certainly for this one. There is, nonetheless, a certain fascination in trying to gauge the mind and methods of a great historian from the outside, so to speak, though I am aware that in adopting this approach I may well be falling into the very same kind of error with which I am about to charge Pevsner himself.

That there is a break between the early essays (1925,–28,–32) on Italian Mannerist and Baroque painting, now for the first time translated from the German, and the others, mostly concerned with architecture and design (from 1938 onwards), is beyond doubt, and this is not merely a question of the change of subject. Basically the first essays represent an attempt, very much in the manner of German art historians from Burckhardt onwards, to uncover the underlying core of an age by examining not merely its arts, but also its philosophy, politics, religious beliefs and so on. In the end Pevsner aims to demonstrate that all these are facets of the same spirit and can thus be related in an enlightening manner. (For English readers the most familiar example of this sort of technique is provided by Pevsner's well known—dare one say notorious?—Reith lectures on *The Englishness of English Art*).

Pevsner was a great pioneering expert in the fields of Mannerism and Baroque, and it goes without saying that he demonstrates his theses in immensely subtle and scholarly ways with many insights of great value. I must admit, however, that I not only find them unconvincing but also believe that the answers they lead to are, of necessity, uninteresting. Thus it may be possible 'to define categories into which Bernini, Poussin, Rembrandt and Velazquez fit without difficulty' (though Pevsner's arguments suggest that the difficulties are much greater than he acknowledges) and to relate the works of these artists to the beliefs of the scientists, politicians, theologians and philosophers of the first half of the seventeenth century, but the similarities that can be found between them all seem to me to be so much less important than the distinctions, that the whole procedure hardly seems to justify the sometimes tortuous reasoning that has gone into its demonstration. Or again, while Pevsner has no difficulty in showing the fallacy of Weisbach's view that Baroque is the quintessential style of the Counter Reformation, I am not altogether sure that it is much more helpful to claim that Mannerism is 'a unique style of painting' expressive of that phenomenon. When Pevsner says, as he still does, that 'Pontormo, Federigo Zuccari, Barocci and Tintoretto all have *essential* [my italics] features in common and . . they are features expressing the spiritual state of Italy during the same period,' I cannot help feeling that this pronouncement, though one can give it a sort of limited endorsement, avoids all the really interesting problems about religion in the sixteenth century and the demands made by widely differing patrons on widely differing artists.

Perhaps it is merely our well known empiricism that makes me feel distrustful of such 'lusty generalizations'. Certainly the English essays which make up the remainder of these two volumes are very different in approach. That historians of English art and architecture owe an irrepayable debt of gratitude to Nikolaus Pevsner is, fortunately, recognized on all sides, but it is perhaps not too presumptuous to claim that Pevsner himself has derived something of value from the 'Englishness of English art history'—or such of it as there was before he came to this country. In any case whatever else these later essays prove it is quite certain that he himself is able to pursue 'humble specific facts' without incurring any charge of 'superficiality.'

The later essays in fact seem to me to be infinitely superior partly because Pevsner has retained in them some of the best features of the earlier ones. The hankering after 'wholeness', for instance, can be of great value when applied to one man rather than to an age or a nation, and the conclusion to the paper on Richard Payne Knight—'So his failures and his successes, his perspicacity and his blindness appear in the end as part of one fairly consistent character'—is fully justified by the beautifully perceptive and sympathetic analysis that has preceded it. Again he continues to follow the 'welcome tendency among modern art historians not to be satisfied with purely formal analysis, but to treat art history as essentially part of the history of thought' which he commends in Weisbach; but his later application of the method is very much more subtle and rewarding than it was when he wrote these words in 1925. Finally, there is the practice, which can often prove so helpful, of thinking in terms of generations—a habit which, as he himself acknowledges, he derived from his master Wilhelm Pinder.

Pevsner essay often takes the form a sort of discussion with the figure hose thought he sets out to investigate -Payne Knight, Humphry Repton, atthew Digby Wyatt, William orris and many others. With old shioned courtesy he will allow these en to speak in their own words, will ucidate their ideas for us, and will en—as it were—take issue with em, making use of well chosen ustrations and the insights that are vailable only to the historian who can e problems in a wider perspective an those who originally struggled ith them. Thus, quite frequently, we e readers seem to be overhearing a markably interesting conversation tween two experts deeply concerned ith their subjects. Moreover, with a ries of deft touches, he will add here d there some significant detail about s interlocutor's temperament, politi- l beliefs and so on, which by the end ill—without any concession to trivial ecdotalism—give us a sketchy but lly rounded impression of his charac- r. For Pevsner's approach is essential- humanistic and based on the belief, take one example, that 'Mackintosh -the historian might as well accept is—would not have realized his ision of spatial intricacies, nor would have designed as he did and drawn he did, if he had not been Mackin- sh, whisky and all.'

t other times the essays are more istere and amount basically to a ries of documents followed by com- entaries, but always designed with ch ingenuity that here too his terests and personality emerge with rce and clarity. These interests are umble and vast at the same time: a ideous piece of furniture or a London us, things which most art historians ill see dozens of times a day without iving them a thought, will arouse him well argued reflections on the nature f industrialism which—I cannot help eling—are very much more illumin- ting than those earlier 'lusty general- ations', for which he still feels evident ostalgia, about the seventeenth cen- ry, which were stimulated by iordano Bruno and Descartes.

bove all, of course, Pevsner speaks as man deeply concerned with the ature of our own society and its rtefacts: I use the word 'concerned' ather than 'interested' because, with- ut distorting the past in order to fit it nto some current campaign, he does ave very strong views about what is ght and what is wrong, and he is ware the whole time that present-day tyles are necessarily affected by the nterpretation we put on those of the ast—'the choice of passages [from fvedale Price] was largely dictated by ny conviction—as firm now as it was hen [1944]—that Price has a great deal teach the planner to-day [1968]'. his gives Pevsner an exceptional lace among contemporary art his- rians who tend on the whole to make rigid separation between the past and he present, and it also links him to the radition of Ruskin—about whom his elings are very mixed. Though for any reasons the analogy between the wo men cannot be pressed very far, is difficult when reading Pevsner's elancholy reflections on the part that e himself may have played in promot- g 'the return of historicism' to the rchitectural scene to-day not to be reminded of Ruskin's lament about the effects induced by his advocacy of the Gothic on 'every cheap villa-builder' in London. Pevsner has some interesting suggestions to make about the links between his historical writings and the new styles which he deplores, and these will have to be taken into account by the historians of the future. Those of to-day, and especially those who, like the present reviewer, are all too inclined to distinguish between past and present in the very way that Pevsner deplores will probably feel that even the horrors of contemporary 'neo-Art Nouveau' constitute a price well worth paying for the stimulation and interest afforded by these splendid volumes.

FRANCIS HASKELL

ST. PANCRAS STORY

ST. PANCRAS STATION. *By Jack Simmons George Allen and Unwin.* 52*s* 6*d.*

This is a timely book, not only because interest both in Victorian architecture and in railway history is greater than ever, but because the future of the great station which Professor Simmons has chosen as his subject is still uncertain. But the book is far from being an ephemeral polemic. The author in his preface rightly points out that studies of important nineteenth-century buildings in relation to the actual purpose for which they were built are too rare, and his work is concerned above all with St. Pancras as a railway station—how it came into being, why it turned out as it did, and how it has done the job it was built for.

Professor Simmons sets out with admirable clarity the whole story of the Midland Railway's determination to have a London terminus of its own, the tremendous difficulties that had to be overcome and the glorious boldness with which the technical problems were solved. Despite great financial troubles, the Midland managed to outdo all its rivals in the splendour of its new station and hotel. He also describes the working of the station up to the present day, and ends with a reasoned but heartfelt plea for the retention of the whole—for he makes it abundantly clear that, contrary to the view still held in some reactionary circles, the train shed and hotel do form a coherent whole.

While giving Barlow's achievement the praise it deserves, Professor Simmons is on the whole admirably fair to Scott. One may, however, doubt whether his assessment of that complex character is correct: epithets such as 'masterful', 'autocratic', and 'formidable', together with references to his 'more than ordinary self-esteem' and 'grotesque complacency', are contradicted by the remarkable patience he showed in dealing with the directors, and still more by, for example, T. G. Jackson's account of his 'modesty and simplicity'.

What one misses most in the book is a proper account of the hotel building, with a full discussion of Scott's sources (dealt with very summarily in the last chapter) and a full description of both exterior and interior. It is particularly surprising that there is virtually no reference to the extensive use of iron made by Scott, and, what is more, iron left exposed, as in the girders supporting the staircase, or those supporting the ceiling of the coffee-room.

On the whole the book is well produced and laid out, though the price seems high for 120 pages of text and 24 of plates. The 51 illustrations are well chosen, but one wishes that some could have been larger: for example, O'Connor's famous view from Pentonville Road—the apotheosis of St. Pancras— should surely have been given a whole page (the original measures 5 ft. by 3 ft). Also a map of the Midland Railway network, and a plan of the St. Pancras area, would have been helpful, although the excellent air photograph largely makes up for the latter.

A postscript has to be added: when Professor Simmons was writing, the declared policy of British Rail was to close St. Pancras as a station. As a result various schemes were proposed, the most highly favoured one being that the train-shed should house the great new museum of transport and technology which Prince Philip is sponsoring, while the hotel should revert to its original use. (Incidentally, although Professor Simmons refers to 'the formidable problem of finding an alternative use' for the building, a plan for converting it back to its original use was sufficiently practical to attract the interest of Mr. Maxwell Joseph.) However, at the end of last year it was announced that British Rail intend to 'preserve' St. Pancras as a station after all. The future of the hotel is still left undecided. This can hardly be considered good news: the attitude of British Rail towards historic buildings in their ownership is notorious—for instance, since Professor Simmons wrote, the great clock at St. Pancras has been taken down, broken, and sold, for no apparent reason. In fact, sad as it would be for St. Pancras to cease to serve the purpose for which it was built, many people had been longing for the day when it would no longer be in the hands of British Rail. PETER HOWELL

OLD MEXICO

LIVING ARCHITECTURE: ANCIENT MEXICAN. *By Henn Stierlin. MacDonald.* 63*s.*

This is the newest addition to the excellent 'Living Architecture' series which already has volumes on Mayan, Egyptian, Roman, Ottoman, Romanesque, Baroque and Greek. They are notable for really authoritative texts, good photographs (in this volume taken by the author) and clear drawings. Their defect is a complicated layout and page arrangement which makes it difficult to relate text to illustrations, a confusion aggravated by the photographic plates having no captions—one has to search for the necessary list on another page. This Mexican volume has a pointless, but fortunately brief, preface entitled 'The Legacy of the pre-Columbian past in modern Mexican architecture', which sententiously says absolutely nothing and is not wanted in a serious historical work. J.M.R.

BOOKS RECEIVED

THE CHALLENGE OF THE CITY. *Ed. Lyle W. Dorsett. George Harrap.* 21*s.*

ENVIRONMENT AND POLICY. *Ed. William R. Ewald Jr. Indiana University Press.* 42*s. paperback;* 95*s. hardback.*

COMPUTER GRAPHICS IN ARCHITECTURE AND DESIGN. *Ed. Murray Milne. Yale School of Art and Architecture.* $3.95.

REGIONS OF TOMORROW. *By Maurice Ash. Evelyn, Adams & Mackay.* 35*s.*

ANGLO-SAXON TOWERS. *By E. A. Fisher. David & Charles.* 50*s.*

Contractors

Four canteens, Port of Liverpool. *Client:* Mersey Docks and Harbour Board. *Architects:* Gerald Beech & Partners. *General contractor:* Holland, Hannen & Cubitt. *Sub-contractors: Electrical:* Manweb. *Mechanical:* George S. Hall Ltd. *Kitchen equipment:* Modern Kitchen Equipment Ltd. *Tables:* Hostess. *Chairs:* Hille.

Scratchwood Motorway Service Area. *Client:* Forte's & Co. *Architects:* Garnett Cloughley Blakemore & Associates. *General contractor:* Marples Ridgeway Ltd. *Sub-contractors: Mechanical services and ventilation:* Norris Warming Co. *Structural frame and steelwork:* Helmar Structures Ltd. *Electrical:* Frank Hancock (Midlands) Ltd. *Windows and doors:* Crittall Manufacturing Co. *Suspended ceiling:* Clark and Fenn Ltd. *Glaziers:* Shepherd Tobias and Co. *Sanitary fittings:* A. Olby and Sons. *Kitchen and servery special equipment:* Stangard (Metal Workers) Ltd. *Ironmongery:* G. & S. Allgood Ltd. *Signs:* Industrial Artwork Signs Ltd. *Light fittings:* Rotaflex (Great Britain) Ltd.

Euston Station, London. *Architect:* R. L. Moorcraft, British Railways Board, London Midland Region. *Chief civil engineer:* W. F. Beatty. *Quantity surveyors:* G. J. Jebb in association with Langdon & Every. *Consultant architects (forecourt and car park):* Rice Roberts Hamilton. *Structural engineers, general contractor:* Taylor Woodrow Construction Ltd. *Sub-contractors: Demolition, structural steelwork, indicator and advertisement panels:* McWeeney Smallman & Co. *Demolition works:* Cementation Construction Ltd. *Structural steelwork:* Redpath Dorman Long Ltd.; United Steel Structural Co. *Steelwork:* T. C. Jones & Co. *Piling:* The Cementation Co.; Terresearch Ltd. *Metal deck roofing:* The Ruberoid Co. *Roofing:* D. Anderson & Son Ltd.; Quality Asphalte Co. *Deck roofing and finishes:* Limmer & Trinidad Co. *Precast roofing slabs:* Concrete (Southern) Ltd. *Precast concrete units:* John Ellis & Sons. *Balustrading, curtain walling:* Henry Hope & Sons Ltd. *Spiral staircase:* Sebry Staircase & Ironworks Ltd. *Patent glazing:* Penny-cook Paragon Glazing Co. *Shutter doors:* P. C. Henderson Ltd. *Fire shutters:* John Booth & Sons (Bolton) Ltd. *Gates:* Light Steelwork (1925) Ltd. *Precast terrazzo partitions:* A. Quiligotti & Co. *Bank front granite cladding and pavings:* Weltern Brothers (Southern) Ltd. *Cladding, boundary walls:* H. H. Robertson (UK) Ltd. *Boundary walls:* Mills Scaffolding. *Precast mosaic faced units:* Mono Concrete Ltd. *Fascias:* Grundy Arnatt Ltd. *Cladding erection:* EBS Ltd. *Ironmongery:* James Gibbons Ltd.; Alpha Architectural Ironmongery Ltd. *Mosaic and marble flooring:* Marriott & Price Ltd. *Tiling:* Carter & Co (London) Ltd. *Hardwood flooring:* Hollis Bros. *Furnishing:* Russell Furnishings Ltd.; Conran Contracts Ltd. *BR symbol:* Culford Art Metal Co. *Directional signs:* The Franco British Electric Co. *Signs:* Pearce Signs Ltd. *Door signs:* Ward & Co (Letters) Ltd. *Safes:* Chatwood Milner Ltd.; Chubb & Sons Lock & Safe Co.; The Rainer Safe Co. *Shop fittings:* Frederick Sage & Co.; A. Edmonds & Co. *Storage units:* Dexion Ltd. *Electrical installations:* Electrical Installations Ltd. *Lighting hoods:* Lensgrete Ltd. *Insulation:* Pyrok Ltd.; Kilsons Insulation Ltd. *Automatic controls:* Honeywell Controls Ltd. *Ductwork:* Henry Hargraves & Son Ltd. *Kitchen equipment:* Allied Ironfounders Ltd. *Curtain walling:* Aygee (Metal Windows) Ltd.

Passenger Terminal, J. F. Kennedy International Airport, New York. *Client:* BOAC. *Architects:* Gollins, Melvin, Ward & Partners. *Structural engineers:* Ammann & Whitney. *Mechanical and electrical consultants:* Burns & McDonnell. *Quantity surveyors:* Langdon & Every. *General contractor:* Gilbane Building.

No. 1 Terminal, London Airport. *Architects:* Frederick Gibberd & Partners. *General contractors:* George Wimpey & Sons Ltd (substructure); Tersons Ltd. (superstructure). *Passenger building sub-contractors: Structural steelwork:* Redpath Brown. *Precast concrete floors:* Concrete (Southern) Ltd. *Roof contractors:* William Briggs & Sons Ltd. *Furnishings and shop-fitting suppliers:* Conran & Co. *Windows:* Henry Hope & Sons Ltd. *Window cleaning gear:* Cradle Runways Ltd. *Terrazzo and random marble floors and stairs:* Alan Milne Ltd. *Heating and ventilation:* J. Jeffreys & Co.; Henry Hargraves & Son Ltd. *Electrical installations:* Electrical Installations Ltd. *Lifts and escalators:* Otis Elevator Co. *Baggage conveyors:* Spencers (Melksham) Ltd.; Sovex Ltd. *Piers sub-contractors: Structural steelwork:* Dawnays Ltd. *Roof covering:* Limmer & Trinidad Co. *Heating and ventilating:* Sulzer Bros Ltd. *Demountable partitions:* Roneo Vickers Partitions. *Specialist joinery:* Gaskell & Chambers Ltd.

Glasgow Airport, Abbotsinch. *Architects:* Sir Basil Spence, Glover and Ferguson. *Quantity surveyors:* Reynolds and Young. *Structural consultants:* Ove Arup and Partners. *Heating and ventilating:* Donald Smith, Seymour and Rooley. *Electrical consultants:* Ramsay and Primrose. *Landscape consultants:* Sylvia Crowe & Associates. *Signposting:* Kinneir and Associates. *General contractors:* John Laing Construction Ltd. *Sub-contractors and suppliers: Fencing:* Albion Fencing Ltd. *Built-up felt roofing:* D. Anderson and Son Ltd. *Balustrading:* Barnet and Morton Ltd. *Heating installation:* James Boyd and Sons Ltd. *Bituminous felt tanking:* William Briggs and Sons Ltd. *Structural steelwork:* Colville (Constructional Co) Ltd. *Dry bound and tarmacadam work:* Constable, Hart and Co. *Lightweight concrete floor and roof slabs:* Costain Concrete Co. *Window walling:* Crittall Manufacturing Co. *Shopfitting:* Heggie and Aitchison Ltd. *Lightweight concrete screeds:* Isocrete Co. *Electrical installation:* James Kilpatrick and Son Ltd. *Glazing work:* George G. Kirk Ltd. *Lift installation:* Marryat and Scott Ltd. *Thermoplastic handrails:* Marley Tile Co. *Wellpoint and dewatering:* Millar's Machinery Co. *Suspended ceilings:* R. F. Morrison and Co. *Insulation work:* Newalls Insulation and Chemical Co. *Painter work:* William Osbourne and Sons (Painters) Ltd. *Patent roofing:* Paropa (Scotland) Ltd. *Rubber flooring:* Pirelli Ltd. *Sprayed limpet asbestos:* J. W. Roberts Ltd. *Steel staircase and handrail:* Steelway Ltd. *Korodur flooring:* Stuart's Granolithic Co. *Ventilation:* Sun Ventilating Co. *Rolling shutters:* J. Taylor (Syston) Ltd. *Plaster and floor screeding:* Matthew Thom and Co. *Wall and floor tiling:* Oswald Toffolo and Co. *Plumbing:* Hugh Twaddle and Son. *Sheet floorings:* Limmer and Trinidad Co. *Vinyl flooring:* Dunlop Semtex Ltd.

Stansted Airport. *Client:* British Airports Authority. *Architects:* York Rosenberg Mardall. *General contractor:* J. A. Elliott Ltd. Project under general direction of Department of Engineering, BAA. *Sub-contractors: Patent glazing:* Heywood Hellitwell Ltd. *Paving stones and curbs:* Hullar Products Ltd. *Fascias and suspended ceilings:* C. C. Horsburgh & Co. *Tarmacadam:* Home Counties Contracting Co. *Shop fittings:* Hills Shop Fittings Ltd. *Tabopan wall panelling:* Ketzer-Venesta (Southern) Ltd. *Joinery:* Walter Lawrence & Sons Ltd. *Fencing:* Metalwood & Link Fencing. *Fabric reinforcement:* McCall & Co. *General building materials:* Pratt (Watford) Ltd. *Painting:* Pickering & Sons Ltd. *Roof coverings:* Ruberoid & Co. *Pre-mix concrete:* Ready Mix (Transite Ltd); Warecrete Products. *Ironmongery:* N. S. Ramsay & Co. *Partitions:* Roneo Vickers Ltd. *Cast iron pipes:* Stantons' Staveley Ltd. *Structural steel space frame:* Space Deck Ltd.

Agents building, London Airport. *Client:* British Airports Authority. *Architect:* Yorke Rosenberg Mardall. *Structural engineers:* Quantity surveyors: British Airports Authority. *mechanical and electrical consultants:* Donald Smith, Seymour and Rooley. *General contractor:* Richard Costain Ltd. *Sub-contractors and suppliers: Mechanical services:* Richard Crittall and Z. D. Berry Ltd. *Electrical services:* Drake and Gorham. *Steelwork:* Boulton and Paul (Steel construction) Ltd. *Steel windows and pressed steel sub-frames:* Metal Ltd. *Steel staircase balustrades:* The Wessex Guild Ltd.

747 Hanger, London Airport. *General manager of properties BOAC in charge of project:* Kenneth J. Joyner. *Consultant architects:* Norman Royce, Topping & Partners. *Civil engineers:* Edwards & Blackie. *Quantity surveyors and cost control:* Wakeman Trower & Partners. *Consulting structural engineers:* Z. S. Makowski & Associates. *Consulting systems engineers:* Bernard L. Clark & Partners. *Consulting mechanical and electrical engineers:* D. Rudd & Partners. *General contractors:* Holland Hannen & Cubitt (London) Ltd. *Structural steelwork:* Dawnays Ltd. *Steel (space roof):* Stewarts & Lloyds.

Computer Building, London Airport. *Client:* BOAC. *Architects:* Gollins, Melvin, Ward and Partners. *Quantity surveyors:* Harris and Porter. *Structural engineers:* Sir Frederick Snow and Partners. *Mechanical and electrical engineers:* J. Roger Preston and Partners. *General contractor and precast concrete:* W. & C. French (Construction) Ltd. *Sub-contractors and suppliers: Fabricated steelwork:* Hotchkiss Engineers Ltd. *Suspended flooring:* Archibald Lowe & Sons Ltd. *Aluminium ceiling louvres:* HB Sheet Metal Welding Co. *Woodwool slabs:* Thermocoust Ltd. *Screed:* C. Flooring Co. *Balustrades:* Grundy Arnatt Ltd. *Short flight steps (computer room):* Pirelli Ltd. *Aluminium windows and doors:* Architectural Aluminium Ltd. *Fire resistant roller shutter dampers:* E. Pollard & Co.; C. Brady & Co. *Fire doors:* Durastic Ltd. *Aluminium louvre grilles:* Culford Art Metal Co. *Venetian blinds:* Tidmarsh & Sons. *Demountable partitions and doors:* Anderson Construction Co. *Ironmongery:* G. & S. Allgood. *Antistatic floor tiling:* Marley Tile Co. *Rubber flooring:* Runnymead Rubber Co. *Glass chalmboard:* Westland Engineers Ltd. *Mechanical services and ventilation:* J. Jeffreys and Co. *Electrical services:* Troughton & Young Ltd.

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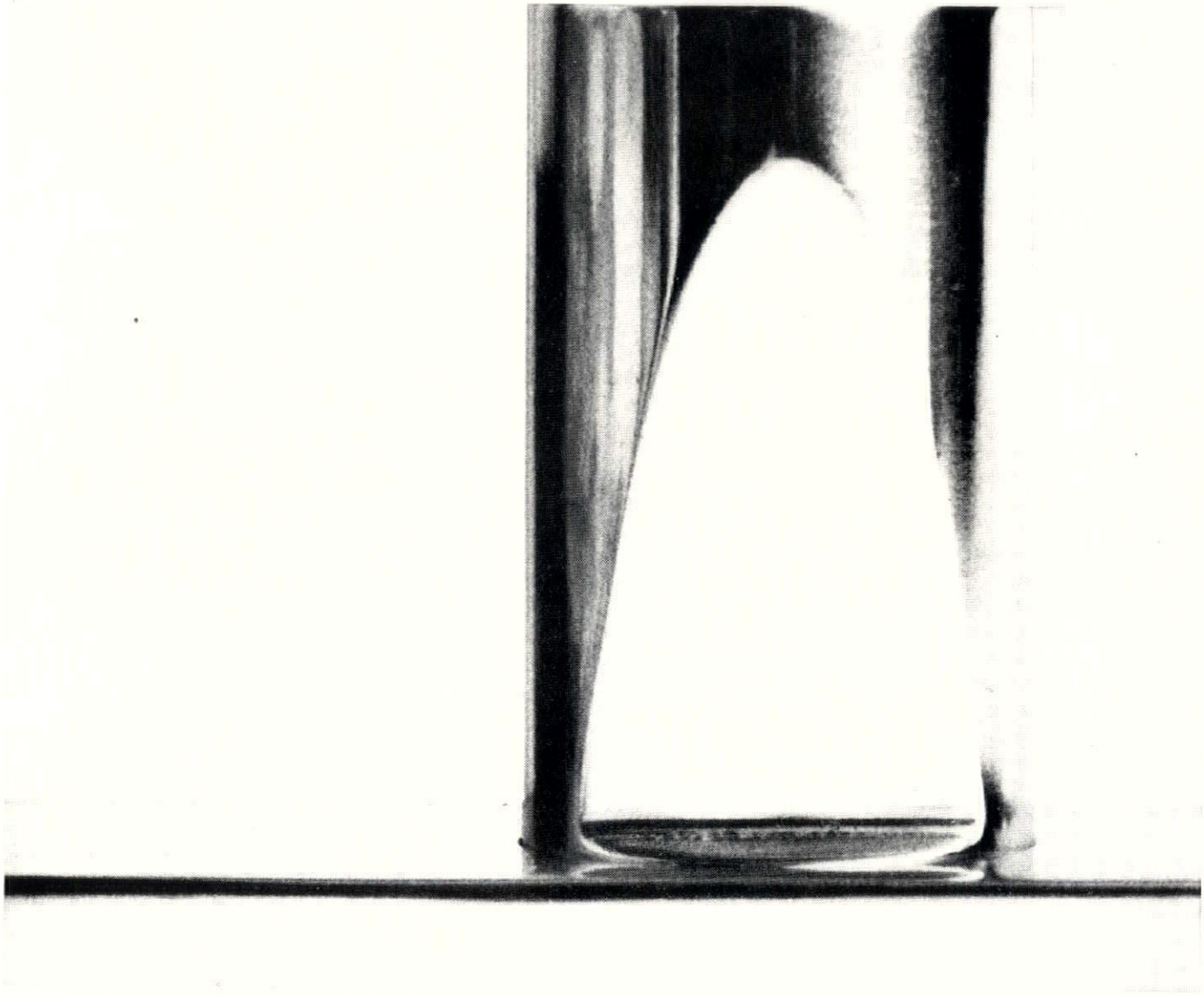

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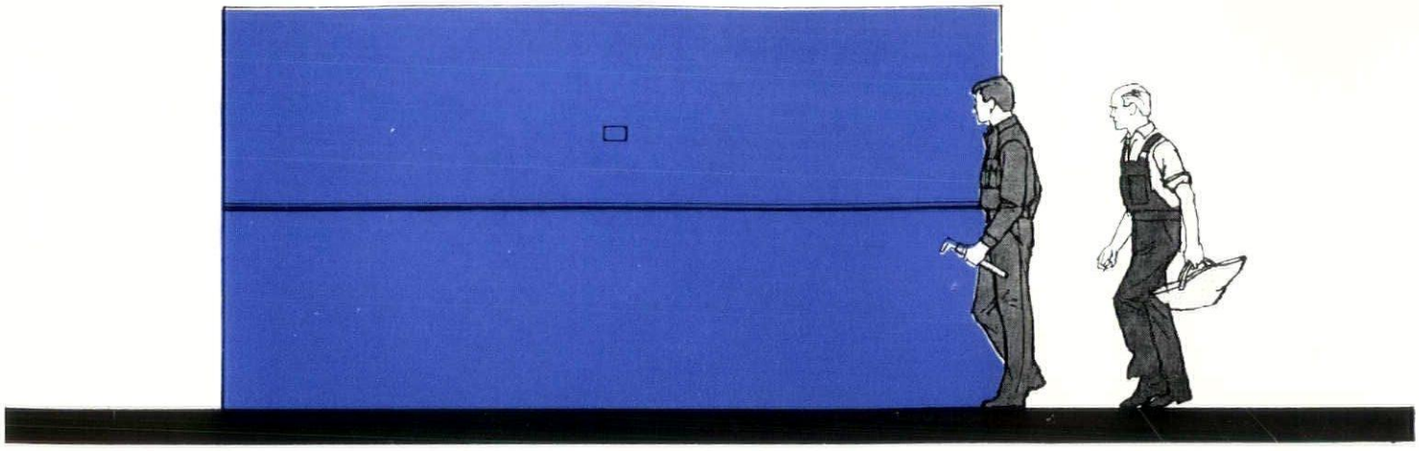

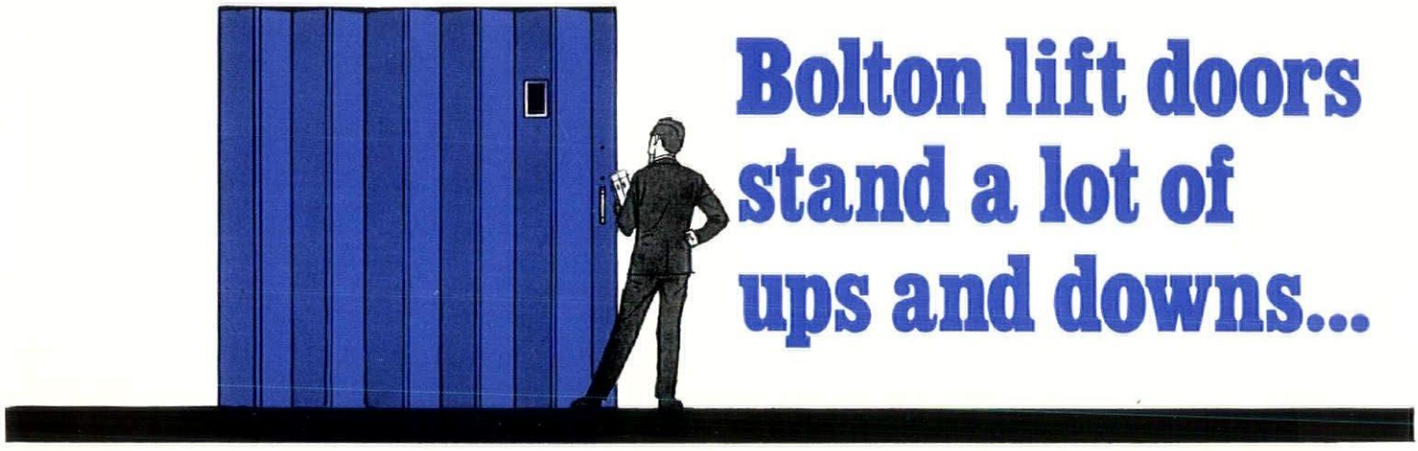

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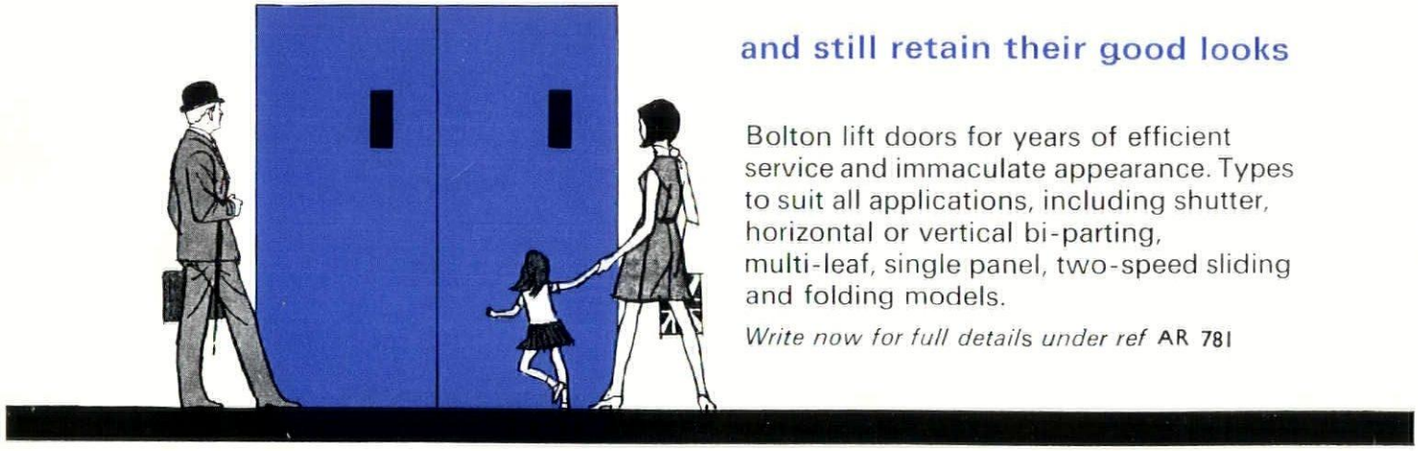

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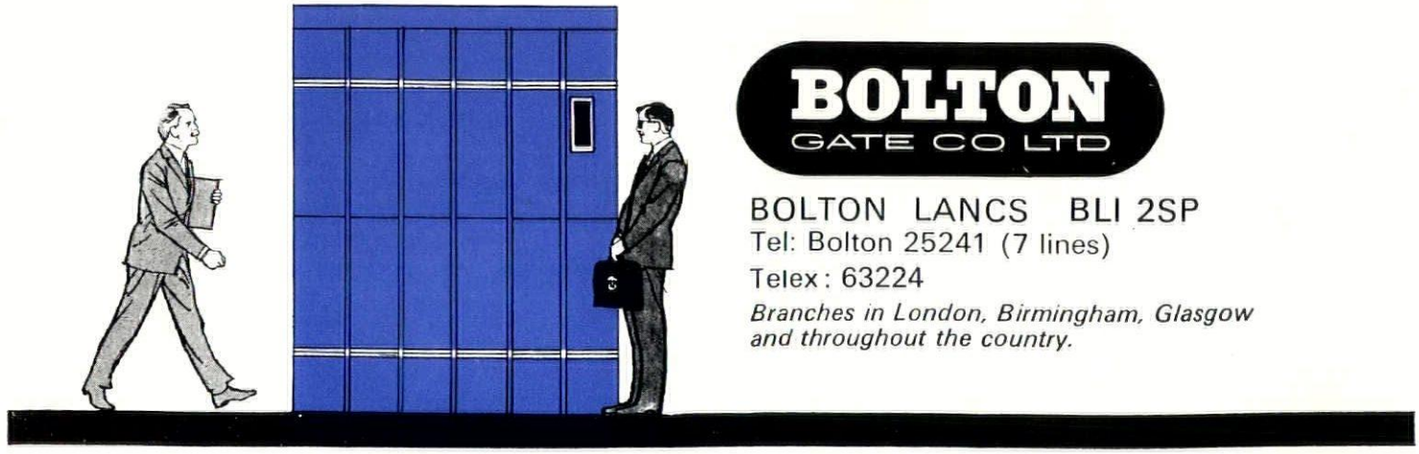

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Burradon, lies equally forlorn. Its once wide-awake street is dominated by a death wish—the dying pit which once imparted life and now takes all with it—hope, employment, history, man, woman and child. But Burradon is a stone's throw from Killingworth where new industries, new lives are beginning to shape. The first industrial revolution is dead . . .



Sinking slowly into the mud, amidst the rotting carcasses of twentieth century affluence, are the timber staiths (inset) that once bore Stephenson's first locomotive 'My Lord'—a proud product of the part-glorious part-inglorious industrial revolution—as it worked the Killingworth waggonway system with coal from Burradon colliery down to the Tyne and so to sea.

therefore utterly depressing to know that these factories—for want of research—will for the most part have been designed by architects—and not by architects—working in a vacuum. Who is going to provide the framework for designers? Only the most elementary standards of heating, lighting, ventilation, health and safety are actually required by law—and it takes a large corps of Factory Inspectors to ensure that even these basic statutory requirements are met.

To shake British industry out of its slumbers an onslaught on present attitudes is needed. If the now defunct Board of Trade is anything to go by, Whitehall is unlikely to take the initiative. The Board of Trade, traditionally laissez faire and non interventionist, handed out millions of pounds annually by way of grants towards factory buildings but neither regulated how this was spent nor used it as a sanction to demand standards in new buildings. Compare the Ministry of Housing, which lays down minimum performance standards on the one hand and maximum cost yardsticks on the other.

Nor on present showing is it likely to come from the Confederation of British Industry. The initiative will have to be taken by the TUC, whose early role—to eliminate the barbaric working practices of the last century—could now be exchanged for a new offensive on the chronic squalor and inefficiency of much of the manufacturing environment. The 'Financial Times' with its annual award to outstanding industrial architecture is making a lone attempt to make industrialists wake up to their responsibilities, but even that is poorly supported by architects who are either reluctant or ashamed to enter.

But the trading estate is not the weapon MANPLAN suggests for refashioning the industrial environment. This deliberate separation of industry from housing is based on a misconception. There is one colour-bar that could profitably be applied and made to stick, and that's the great divide between black industry and white; noxious and non-noxious. An increasing area of production is free of any domestic offence, and some reclassification of work according to its degree of offence, be it from noise, smell, fumes, traffic, would be one immediately effective way of reversing the factory's isolation from the other activities of urban life. By all means banish black power, but bring the white back into town. The prodigal 'clean' industry must be drawn back within the community whence it was kicked out for reasons which are no longer valid. This is the central argument of MANPLAN 3. White industry could resume its traditional function as the town workshop, no longer isolated in some peripheral ghetto but slotted into the general scene in which a man can drink, eat, shop and play in between, and to and from, spells on the factory floor.

Terry Wright was responsible for the research for this issue of Manplan, Tim Street-Porter, our guest photographer, took the photographs except those credited below. Evelyn Cox wrote the article on growth poles on page 384.

Wolf Spoerl designed the cover, which following last month is also based on an anatomical plate taken from *Anatomia*—published in Rome in 1811. And also drew the diagrams on pages 340, 343 and 345.

Richard Powell drew the axonometric of Roche Products on pages 350-351, Birkin Haward the sectional perspective of Computer Technology on pages 357-359 and Richard and Su Rogers the drawings on pages 370, 371 and 372.

Norman Foster drew the multi-purpose factory on page 376, *Diagram* the diagrams on 374-375, 385, 388 and 389, *Design Practitioner* those on pages 381, 382, 383, 386 and 387.
Photographs: *Northern Architect* (page 328 (inset); Euan Duff pages 333-334; Aerofilms pages 335-336 (bottom); Austin Engineers Builders Ltd page 337 (right); Julius Shulman pages 340-342 and 344; Henk Snoek page 344 (top left and bottom) and page 355 (centre); Pilkington Bros Ltd page 347 (bottom); Graham Parsey page 350; Simon Dell page 353; Bill Toomey page 355 (top and bottom); Tom F Walters pages 362-363; R. Kamunen page 364 (top left); Matti Saanio page 364 (bottom) and page 365 (bottom); Clyde May page 368 (top); Alexandre Georges page 368 (bottom); Christian Moser page 369 (centre); Alfred Hablützel page 369 (bottom); John Mills page 377; A L Hunter page 379 (lower left and bottom centre); Product Support (Graphics) Ltd page 380 (top); James Hall page 389 (top); Geoffrey Wright page 390 (inset, left); Eric de Maré page 390 (inset right) and page 391 (inset).
The photomontages on pages 394-396 are made up of photographs by Julius Shulman, Sam Lambert, Gross (St Gallen), Bill Toomey and William Slack.
We acknowledge with gratitude the help given by Mr James Hunter, Mr Winston Barnett, Mr James Milne, Mr Cervin Robinson, Mr Alan Stones, Mr David Gosling, Mr Derek Codling, Mr Roy Gazzard, Mr George Duncan and Mr Peter Townroe and numerous others.

TOWN WORKSHOP

It took a heating and ventilating company to add a new dimension to industrial relations. 'You can stuff your 28 days cooling off period, Barbara' ran the bold copy of an advertisement in the Sunday coloured supplements. 'That sun comes belting down through the roof, the machines are so bloody hot that you can hardly touch them . . .' If you installed their heating and ventilating equipment, it implied, you wouldn't have any more trouble with strikes. 'Those politicians who carry on about productivity ought to try holding their Cabinet meetings in our factory in the middle of summer . . .'

Labour relations aren't quite that simple, of course, nor is factory design. But the fact that the moment the factory day is over, people pour out of the gates as fast as they can, and leave the whole industrial environment for the shrinking countryside or the sea-coast, suggests that something is rotten in the industrial state.

The responses to sociologists' questionnaires about work satisfaction have—for mass-production workers on assembly lines—overwhelmingly shown that much industrial work is fragmentary and monotonous, almost beyond bearing point. The car workers, of Detroit, who two years ago stuck 'Humanize working conditions' on their bumpers, and persuaded the United Automobile workers throughout America to follow suit, were not asking for more wages and shorter hours, but for a radical change in industrial life.

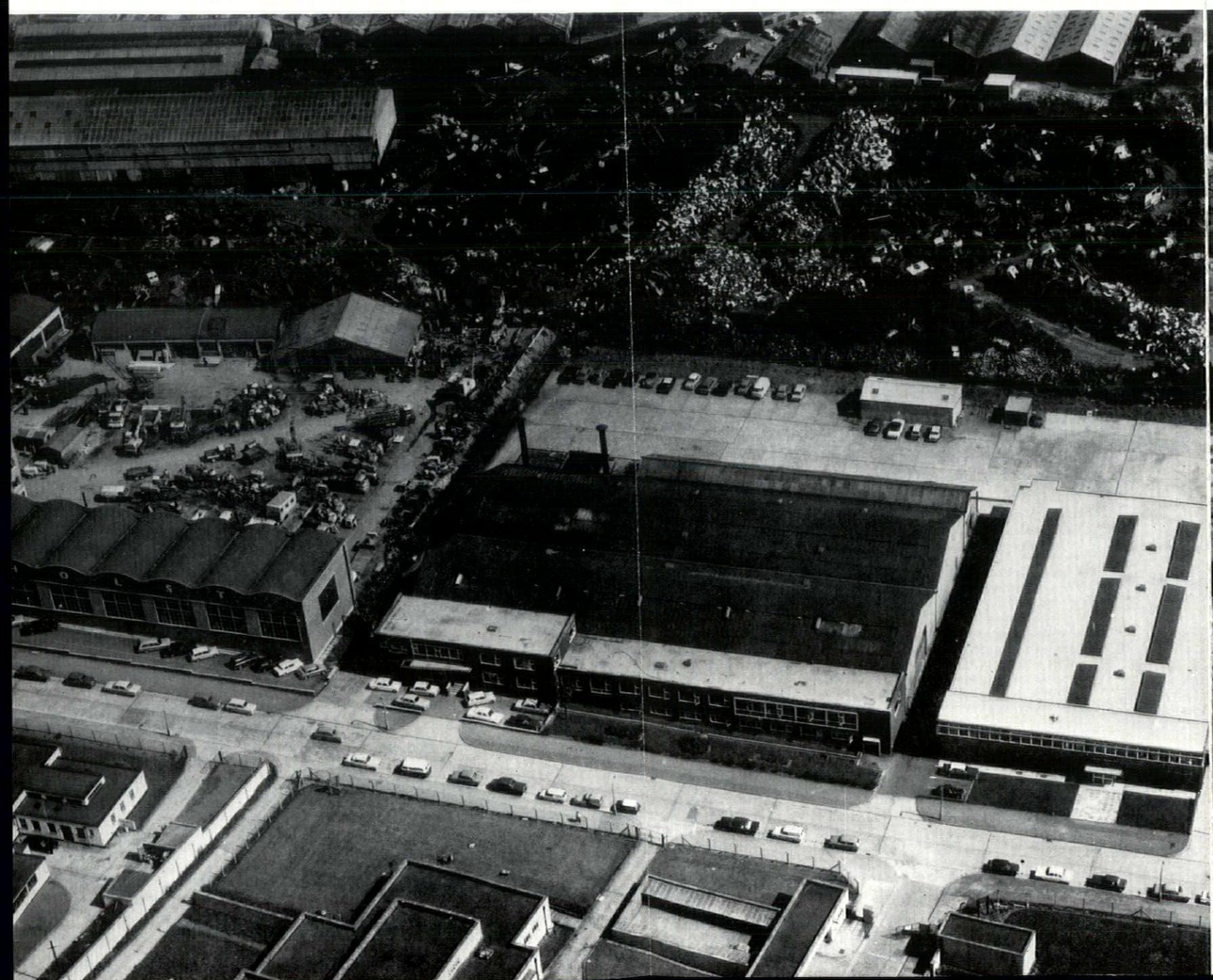
How is this radical change to come about? First we need research into the actual effects of industrialization and of the industrial environment. What has so far emerged from studies in America, France and England, is the great variety of work within the industrialized world: mass production work on the one hand, automated flow work on the other. But nothing clear has emerged on the extent to which a well designed environment can alleviate these anti-industrial feelings. The President of the TUC, Mr John Newton, voiced at the recent TUC Congress his conviction that 'underlying many strikes is a protest against this unnatural environment.' He went on to say that 'until we have an occupational health service committed to a study in depth of the psychological consequences of modern production methods, unrest will continue.' In 1970 capital invested by British industry in new factory buildings will be of the order of £610 million. This level of investment is second only to the housing programme in size and it is

'. . . after a month I am bored to the point of rage and near tears at times. We all are, and it's lucky for the management that that point is reached at different times by each one of us. The humour and generosity of my friends on the work bench stopped me walking out a week ago. My hackles rise when They come down from Upstairs and watch me working as if I am something in a zoo. They would no doubt be horrified if They knew the impression They give. We work for eight hours a day, drilling holes, threading plates, waiting for a machine to break down, or a fire or a chance to have a go. The good things are the jokes, the moaning, the kindness and the bonus'
Letter in The Times, 7 October 1969

. . . or is it? The outrageous conditions which 'Life and Labour in London' depicted in the late nineteenth century may have disappeared. But the downright misery and degradation of monotonous work in appalling factories is a fact of life, today, in 1969.



So the awfulness of the industrial revolution lingers painfully on. But its worst by-product has been the reaction against it. Because stinking industry so long dominated the lives of thousands of men and women, the planner's prescription has been a violent, puritanical and dogmatic policy of apartheid putting asunder industry and housing for ever. Factories severed from town life litter bypasses and backwaters. Industrial ghettoes begin life as a scatter of windswept shacks and fast develop into overcrowded areas of outstanding unnatural ugliness. But why? Industry in Britain is in the midst of a gigantic capital spending spree. The architecture, as succeeding pages will show, is ready. Where are the clients?



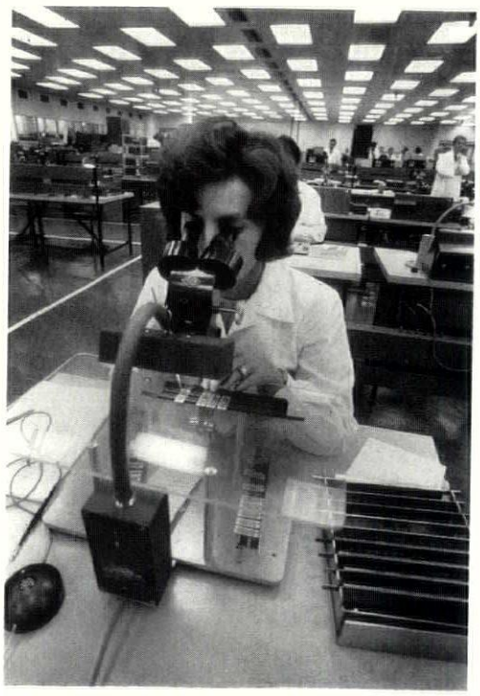


'One of the characteristics of growth or planning for growth is that it is different from what we thought it would be five years ago. To assume that you can add increments of the same thing five years later is unrealistic. It is seldom possible to predetermine growth, and the problem is how to plan for undetermined growth without throwing the architecture away. Architects haven't thought much about it. They prefer to think of something "finished". When they plan a building to be finished in stages all they do is delay the time when eternal architecture is completed. By and large, architects are still building temples'
Cesar Pelli of Daniel, Mann, Johnson & Mendenhall, quoted in Forum, July/August 1968

'It is dangerous and inhibiting to tailor a building too closely to its function since this inevitably quickly leads to obsolescence'
Arup Associates, report to John Player and Sons, March 1969

'The $100 million Boeing plant is an odd ball. Were humans 40 or 50 feet taller and proportionately wider, the facility would receive small notice. But the fact that it is one storey high—one storey 114 feet high—containing 300 feet clear spans and 205.5 million cubic feet of space, makes it the largest building ever erected. Its scale dwarfs man. From a construction standpoint, one of the most critical factors, was the project schedule. This was geared to Boeing's roll out of the first of the 747's. Start to completion had to fit into a 24-month time span'
Engineering News Record, USA, 18 January 1968

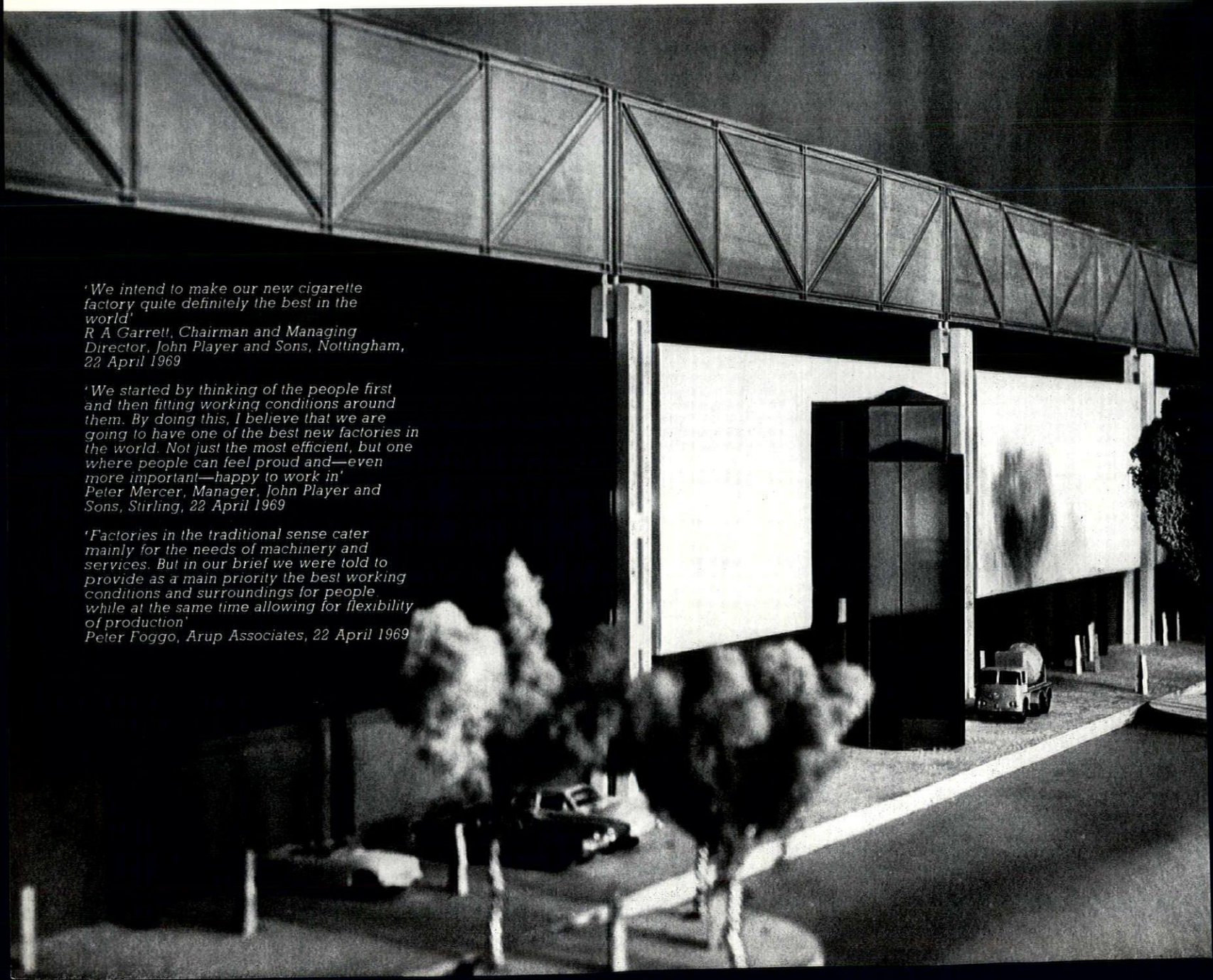
Traditional barriers in industry are falling. The management box—production shack, Queen Anne front—Mary Ann back, is fast being replaced in some of the newer industries by buildings in which the physical boundaries between production and administration are disappearing. In the electronics industry the same fitted carpet may even bind the two together. At the other end of the scale, the mammoth construction industry is bringing the outside inside. Huge spaces are being enclosed to allow ship—and aerospace—building to be all weather industries. But whatever the scale, the architectural emphasis is on flexibility and the capacity to expand. Modern industry is no longer able to think in terms of finite monuments. No more should architects.





Resiting and rebuilding a factory is more than just a design problem—complex though it may be. In the hands of the right management it becomes a major opportunity for forging strong industrial relations between the employer and the employed. On the drawing board of the right architect it develops into a refashioning for the better the working environment and thus the lives of thousands. John Player and Sons at Nottingham seem to have provided the right management; Arup Associates the architecture—an endlessly repeatable fully serviced structural box.

Player's cigarettes started off life in the heart of Victorian Nottingham. And John Player himself when building his first factory there, saw to it that there was room to expand by building in excess of his immediate needs and hiring it out to lace manufacturers. With the passage of time, buildings which were essentially lace mills became increasingly difficult to adapt and refashion for a highly automated and ultra hygenic process. In 1966 the search started for a site, an architect and a brief. By 1967 a site had been found on an industrial estate on the outskirts of Nottingham—next to Boots. Player looked at package dealers—'but the quality of their ideas didn't seem to match up to what we were looking for.' They talked to Arthur Ling who was on their doorstep as Professor of Architecture at Nottingham University and they consulted the RIBA. Arup Associates emerged after Player had interviewed a short list—not confined to British architects—and a management team had looked at their buildings elsewhere. Arup received a preliminary brief on 31 May 1968 which asked for three things: the best possible working environment, flexibility and adaptability. More specifically Arup had to design for high noise levels, extremely heavy floor loadings, the largest economic column-free spaces, special air conditions, the accessibility of services, and of course minimum maintenance. There were special problems with potential contamination by the tobacco beetle and mould growth. Arup's preliminary investigations of Player's requirements produced two design determinants: firstly, large column-free areas, involving column spacing of not less than 30 metres, B, with floor to ceiling heights of not less than 6.5 metres and production services feeding machines from below; secondly areas with more columns allowed but needing floor to ceiling heights of not less than 5 metres with production machines being fed from above. Both types of floor would have to bear heavy plant so this in turn led to the decision to put the large span space at the top and design the roof structure accordingly, A. The fact that the machines would have to be serviced from below made a service void, C, as the next tier inevitable. Car parking and despatch, D, clearly had to become the bottom tier in the hierarchy.
Regularity of column spacing

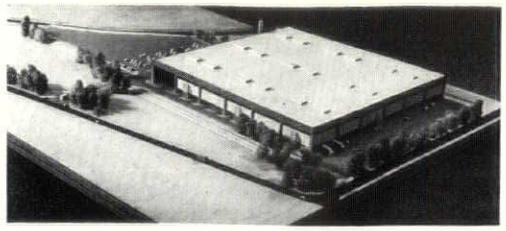


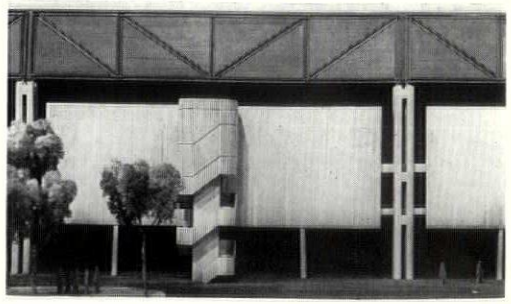
'We intend to make our new cigarette factory quite definitely the best in the world'
R A Garrett, Chairman and Managing Director, John Player and Sons, Nottingham, 22 April 1969

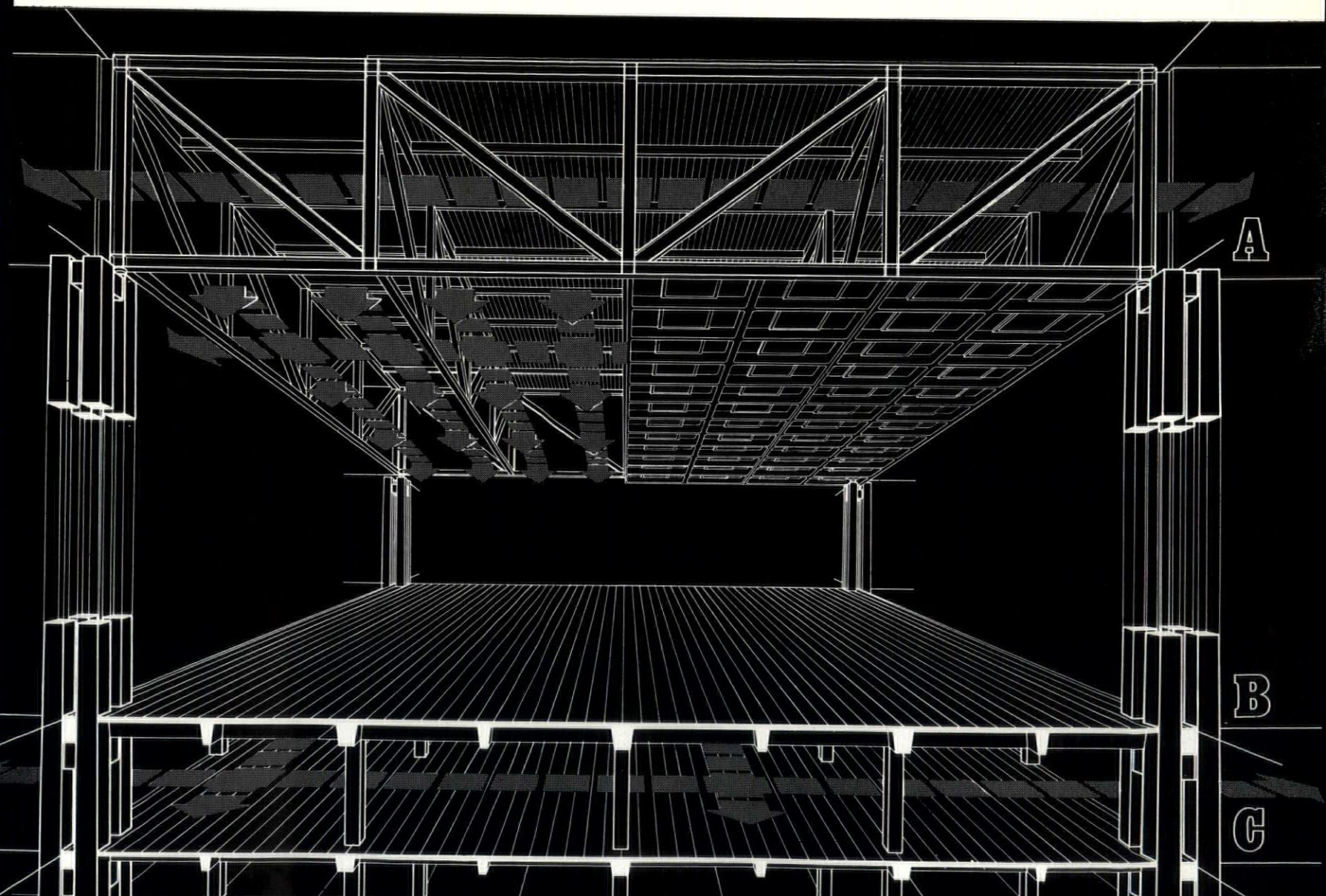
'We started by thinking of the people first and then fitting working conditions around them. By doing this, I believe that we are going to have one of the best new factories in the world. Not just the most efficient, but one where people can feel proud and—even more important—happy to work in'
Peter Mercer, Manager, John Player and Sons, Stirling, 22 April 1969

'Factories in the traditional sense cater mainly for the needs of machinery and services. But in our brief we were told to provide as a main priority the best working conditions and surroundings for people while at the same time allowing for flexibility of production'
Peter Foggo, Arup Associates, 22 April 1969

added a third dimension to the section. This is the point at which Arup's concluded that the logical progression was to think of this as a basic unit. So the Horizon project, as it became known, is to be 36 units.
After the structural hurdle, came the power needs. Imaginatively, Arup's plan to instal the first 'total energy' system in Europe to use North Sea gas. A single fuel input will supply the entire factory with power, lighting, process steam and air conditioning. From the heat 'wasted' by the gas turbines which can be as much as 75 per cent of the energy in the fuel—all the other power requirements are met. On-site generated electricity can be up to 30 per cent cheaper than normal Electricity Board's supply.
The Player's unit will be by far the largest total-energy system in this country to date. Eight gas-turbine alternator sets will generate and exhuast reheat steam boilers with auxiliary firing will meet heating requirements. The total annual gas load will be in the region of 10 million therms—about the domestic consumption of a town the size of Norwich.
But there's more to 'Horizon' than just a deceptively simple and radical piece of industrial architecture. One of Player's prime concerns has been the effect on employees—largely female—of moving the factory from the city centre to an area starved of shops and all the other features of city life. The other has been their plan to change working hours over to two shifts a day thereby extending use of highly expensive capital machinery.
Arup's have compromised on the no-windows issue by providing a strip of glazing almost at ceiling level which allows those working there at least to gauge night and day and the state of the weather. These strips are coupled with vertical slits at the columns to provide regular viewing points at eye level. Player set up a joint management-employee group which toured other factories and worked closely with Arup's and Player's own design team. From this, it emerged that even a swimming pool was low priority compared with the provision of shops which could be 'a post-office, general store for sweets, tobacco, newspapers and so on, a hairdressers, and a dry cleaners and launderette.' One thing Player's were rightly adamant about was that 'even when the amenities have been agreed we don't just stick to them without making some provision for change in the future.'
Construction started in August 1969 and is expected to take two years. Even the contract for this pace-setting project is innovatory: Bovis have been engaged to manage all the construction on a fixed fee basis and have been involved with the design. At the end of it they will come out with a clean pair of hands—their role will have been purely management and supervision. All the construction work will have been sub-contracted.

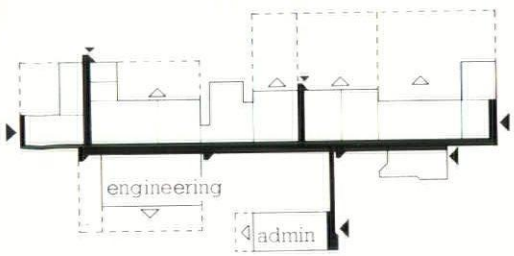






'To prepare for change in a plant of this type, two main problems must be prepared for: flexibility and growth. Sometimes the two have been confused but they have two quite different characteristics. Flexibility in architecture relates to the possibilities of change within a given area. Growth has to do with the addition of new areas and functions to existing ones. In Teledyne both problems are present'
Cesar Pelli of Daniel, Mann, Johnson & Mendenhall quoted in Forum, July/August 1968

Daniel, Mann, Johnson & Mendenhall's exquisite complex in a Californian orange grove contrasts strongly at the conceptual level with Arup's factory for Player. Cesar Pelli, director of design at the time but now with Gruen Associates, holds the view that to plan for flexibility in factory design beyond a certain point must be wasteful. He rejects outright the notion of trying to provide for widely dissimilar functions within the envelope of a single building. He therefore planned Teledyne along a circulation spine as the permanent, infinitely extendible feature with the changeable elements growing out of it. In fact he designed this corridor first, with various swellings to provide meeting places—some, like the restaurant, even seated—along its length.



The spine runs at two levels, the upper one for visitors. Off the spine are the major functional areas—administration, engineering, assembly and laboratories—all of which Pelli, consistent with his attitude of differentation, positively *makes* different—from ceiling heights to bay widths. And lest he be accused of being perversely different, for good measure, his building is constructed entirely of standard off-the-shelf elements.
At $14.60 per sq ft it is not exactly cheap by British standards but for a fast changing electronics firm with high environmental standards, it is undoubtedly successful at the level of prestige premises for a go-ahead American firm.
The steel frame is clad in brown reflective glass to reduce solar glare and heat. The spinal corridor is glazed on both sides—the interior from waist height to ceiling, which gives employees views out into the orange grove. In certain of the secret working areas where classified objects are being produced, no external windows at ground floor level are allowed so that this corridor



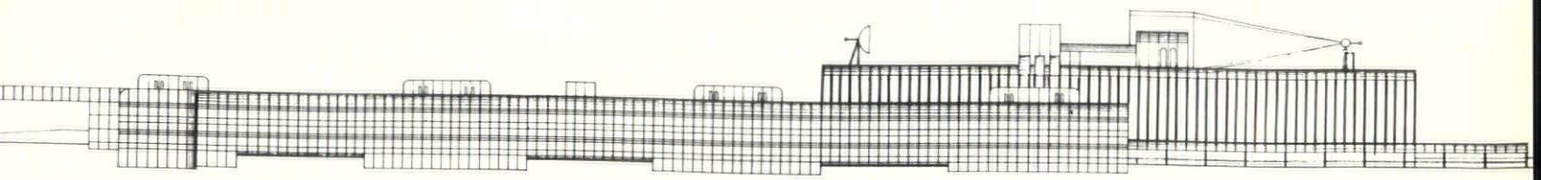
Teledyne Systems Company plant, designed by Cesar Pelli of Daniel, Mann, Johnson & Mendenhall, is poles apart from Player's factory. Arup's is a repetitive system, Pelli's a flexible framework hung from a fixed and permanent circulation spine.

Teledyne's varied streetscape—always strongly directional—opens out at various points into irregular and interesting spaces of which the restaurant is one. Just as quickly it narrows. But unlike a run-of-the-mill office corridor, it is ever light and inviting.



'The interior corridors are like city streets, old streets with pedestrian traffic only. This is the environment the architect is mainly responsible for. Within the rooms, the dead spaces, the most important thing is production and one's attention is directed towards work. It is in the elements of circulation, the non-work spaces where the pressure of work is released that we can enjoy other stimuli. Accordingly in the Teledyne complex the lines of circulation are the most life-rich places in the plant with the best views, the largest windows and the best materials'
Cesar Pelli

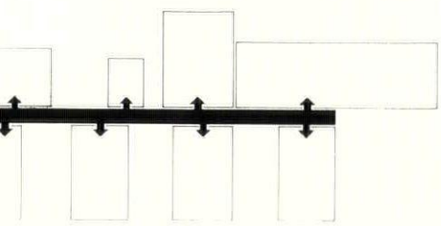


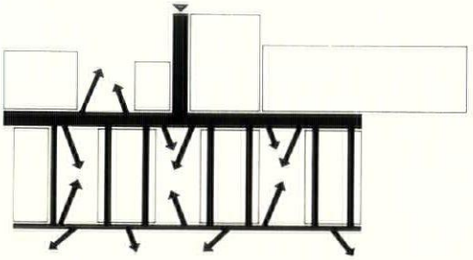


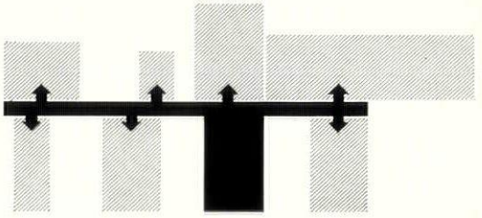
Comsat Laboratories, again by Pelli, is designed on the same principle—circulation spine with offshoots—but adds a growth-inhibiting secondary spine to one side.

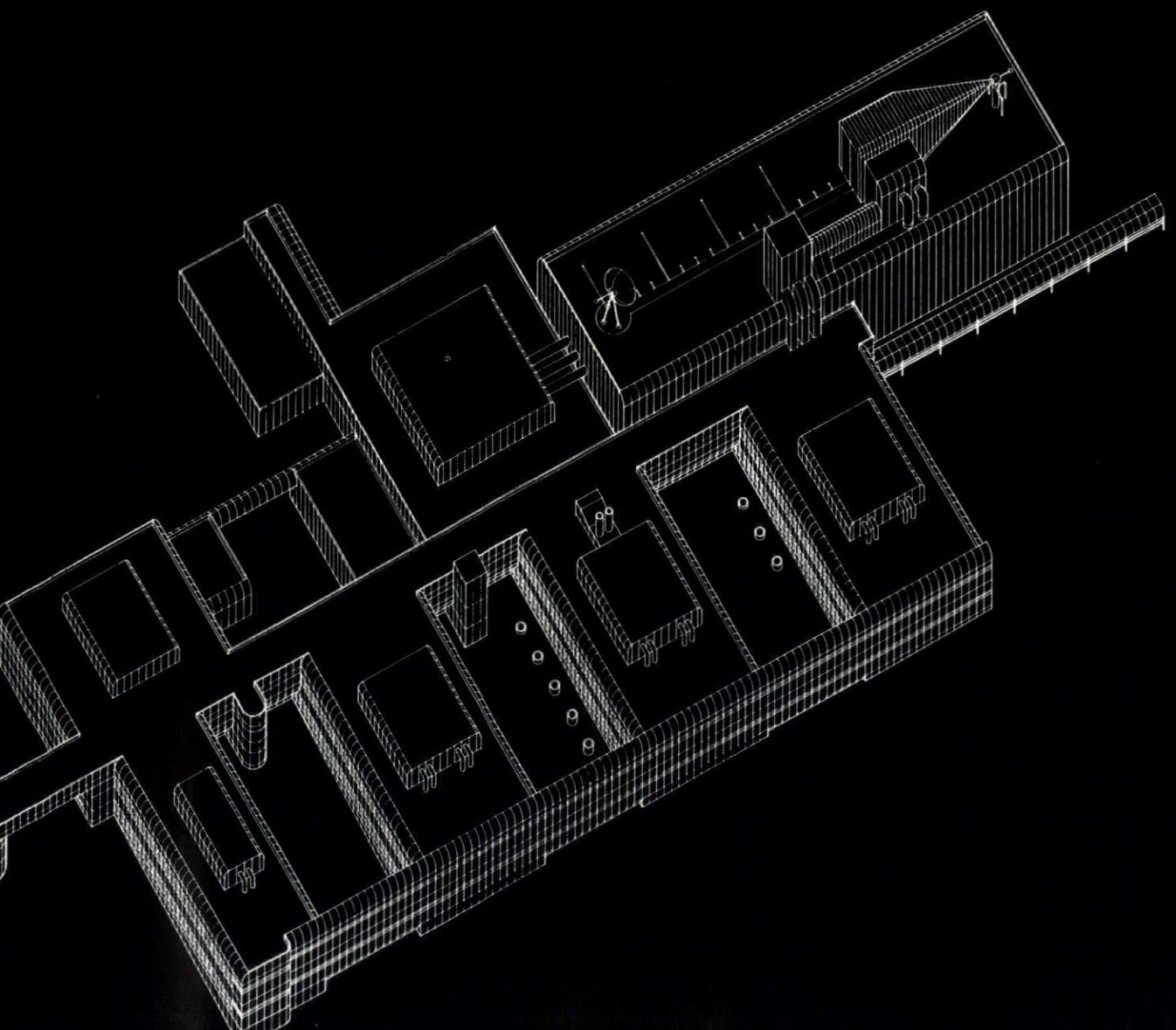
'The plan is generated by the circulation. A complex is different from a building. In a complex the corridor is the most important space. This is the common room, the meeting room, the room away from work. It should therefore have its own life in the plan. It should not be a leftover. It deserves the best views and the better materials.'
Cesar Pelli

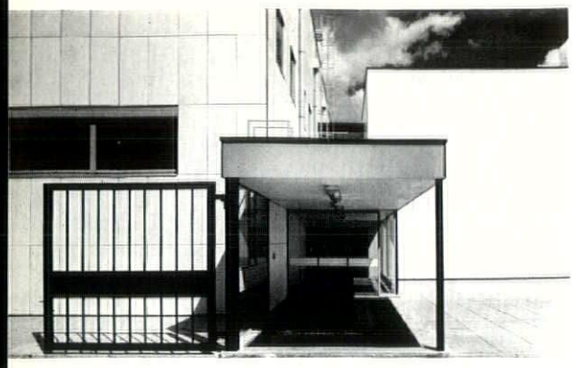
At Comsat Laboratories in the rolling hills of Maryland, Pelli has developed the spiral concept further and weakened it in the process. The simplicity of Teledyne's one spine and uninhibited outward growth along it, is transformed at Comsat into a main circulation corridor (below left), and a secondary one in parallel on one outer edge (below centre), with views in all directions, thereby limiting growth. Mechanical services follow the same pattern (below right). Built like an aircraft with a skin independent of the structure, it is a steel frame clad with aluminium. The outer corridor is all glass and therefore protects the courtyards from the weather, without obstructing the view from the main spine and working areas.

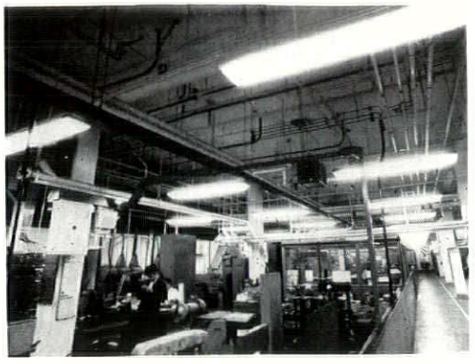


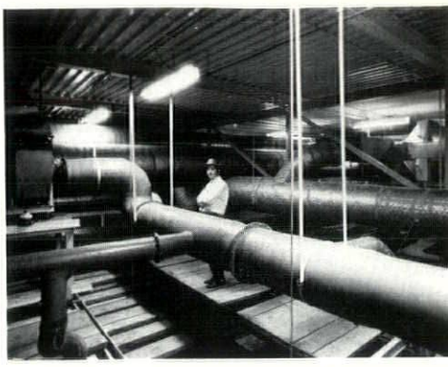








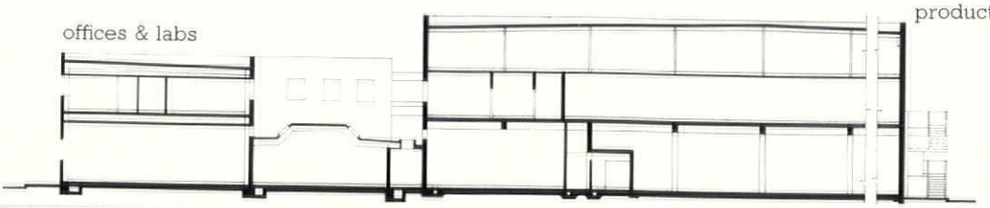




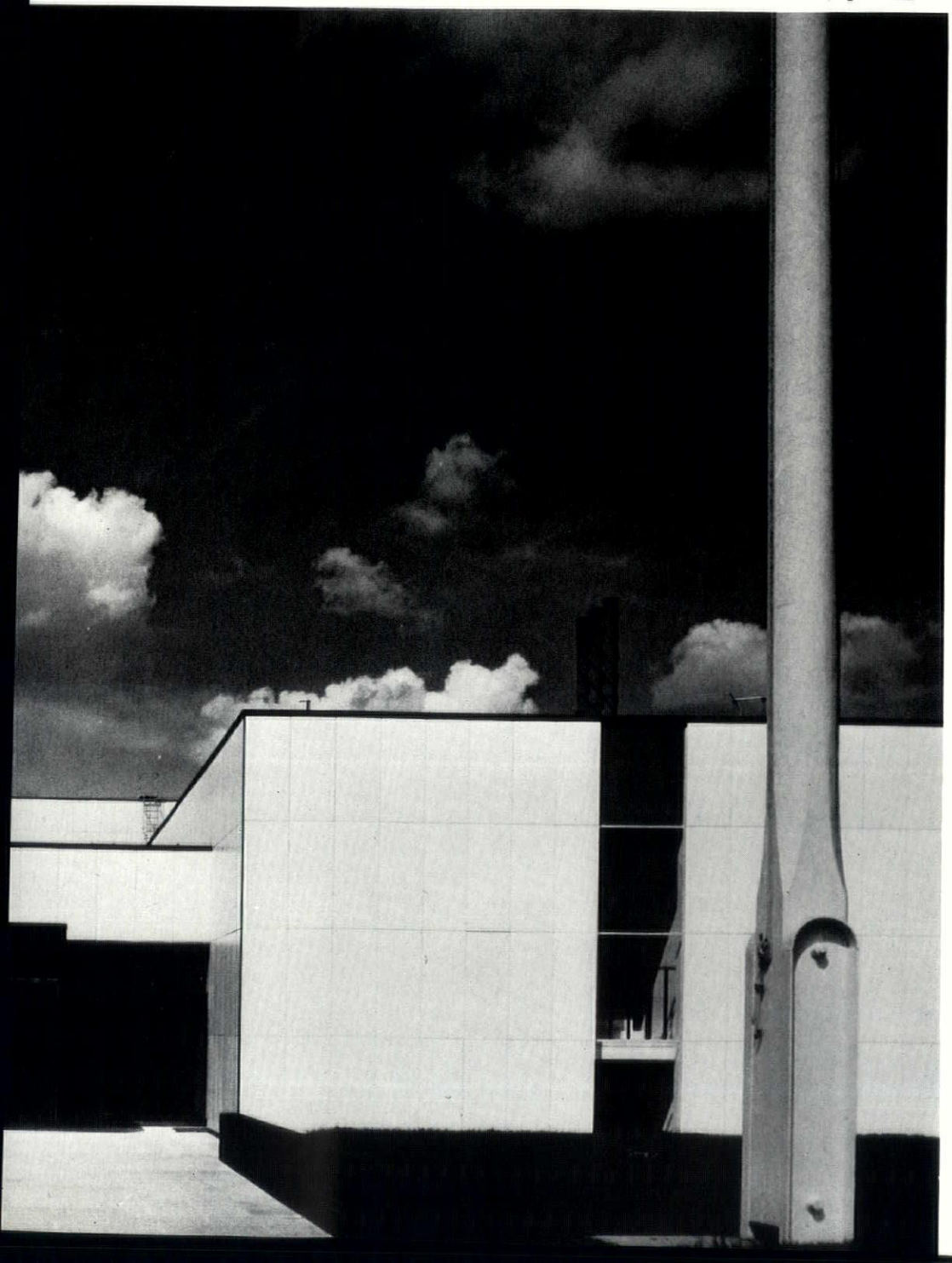
Marconi-Elliott Microelectronics and Teledyne are in the same line of business bu
their sizes and planning philosophies are very different. Teledyne is a rationale
Marconi-Elliott designed by Anthony B Davies Associates a rationalized huddle

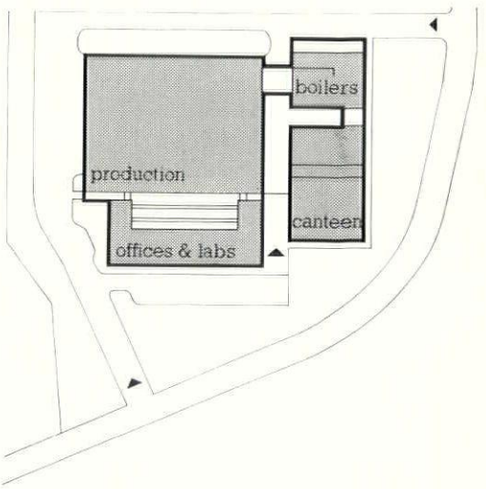






The Marconi-Elliott Microelectronics factory at Witham, Essex serves much the same functions as Teledyne—producing, researching into and developing electronic components or units. And like Players, the production area is on the first floor allowing plant and services to be on the ground floor and additional services to be run overhead in the capacious roof space. Again as at Players, the roof structure is used to provide large column-free work areas.
But there the comparison ends. Marconi lacks the structural logic of Players and the planning simplicity of Teledyne. At the planning level, admittedly following the client's brief, it separates management and production staff in the traditional way—separate entrances—though this to some extent stems from the fact that entry to the production area has of necessity to be through air lock doors.
The basic planning philosophy has been to separate out all functions including the boiler house and air conditioning plant and to keep each in a self-contained wing. Limited growth can be accomodated on the ground floor—only where that will not interfere with servicing. The factory is designed as a finite building again following the client's brief and a new and separate building is to be built later on another part of the site for a different function.
What gives Marconi a strong visual unity is its crisp uniform cladding of silicon enamelled flat asbestos sheets—a relatively cheap and maintenance free external finish. The asbestos panels are used with an 'open joint' technique which has the effect of reducing solar gain and weather protecting the wall beneath it. Internally all surfaces are designed to avoid dust collection.
The whole factory is highly serviced with air conditioning, artificial lighting, compressed air, vacuum cleaning plant, deionised water, and acid neutralising effluent system. Construction is steel frame with cavity lightweight blockwork.





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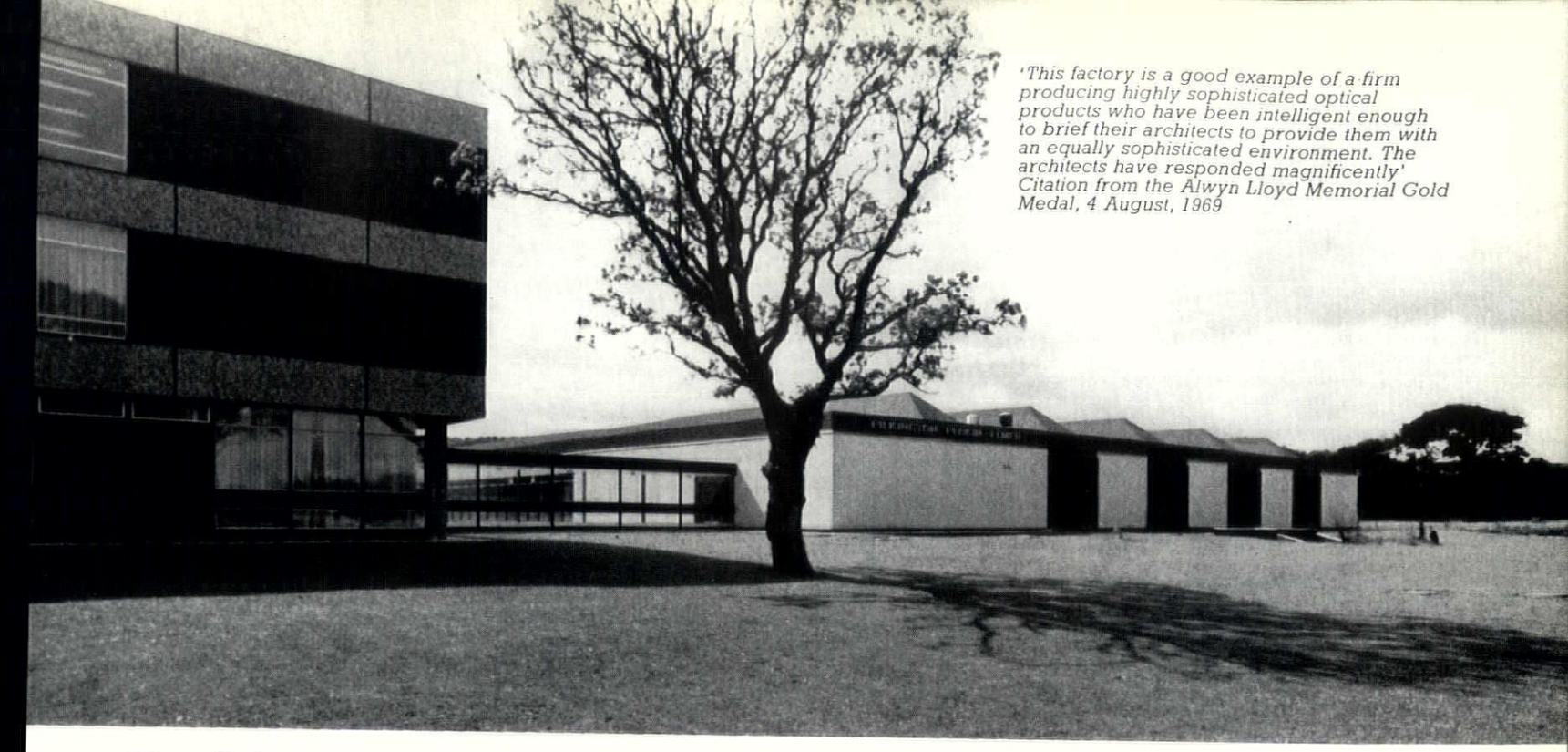
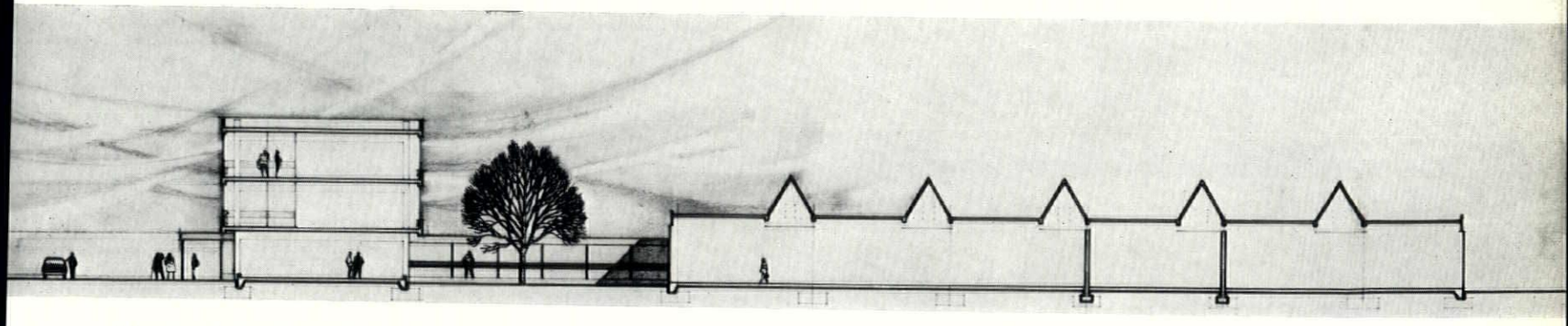


'This factory is a good example of a firm producing highly sophisticated optical products who have been intelligent enough to brief their architects to provide them with an equally sophisticated environment. The architects have responded magnificently' Citation from the Alwyn Lloyd Memorial Gold Medal, 4 August, 1969

The division between management and production in Ormrod and Partners' factory for Pilkington Perkin-Elmer is absolute. Stemming from the brief they operate in separate buildings with a different architecture and contrasting environments for each.



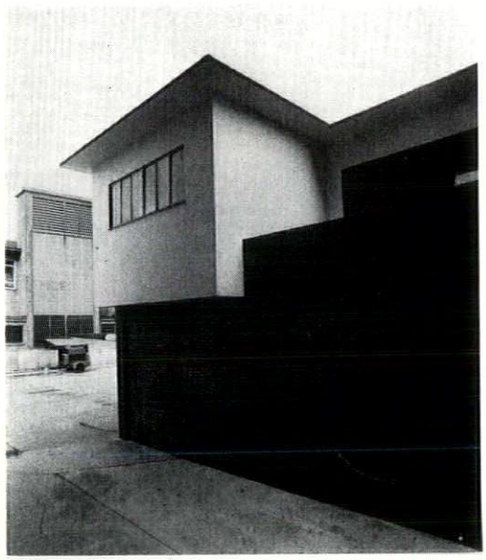
Pilkington Perkin-Elmer factory—offspring of an Anglo American *marriage de convenance*—is a producer of electro-optical systems—the base material being crude optical glass. The requirements are much the same as in the electronics industry—large column-free work areas all highly serviced and 'clean'. But rather contrary to American practice, and basically because the Pilkington part is a different company from the other office and factory are kept entirely separate in self-contained buildings, linked only by a glazed corridor. The factory is windowless and a controlled environment in which humidity and temperature are continuously held in check. The office is windowful—a veritable shop window for Pilkington's—and environmentally uncontrolled compared with the factory block—heat loss and solar gain problems are experienced to the full. The factory is a neat unaffected building externally clad in insulated plastic coated steel and internally lined with rubber painted smooth block walls. Roof spans of 200 feet in two bays are provided by inclined lattice beams which are sizable enough to hide and house nearly all services except effluent channels buried in the floor. The factory is lino floored, the offices carpeted.
Rural St Asaph has, according to a Civic Trust commendation, been graced with an unpretentious piece of industrial architecture, but chain-link fencing still creeps into view from around the back. This factory rebounds to Pilkington's credit—which is more than can be said of their factory opposite.

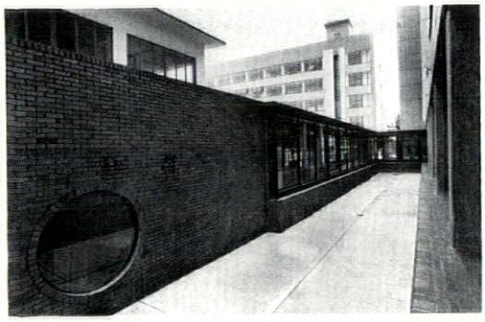


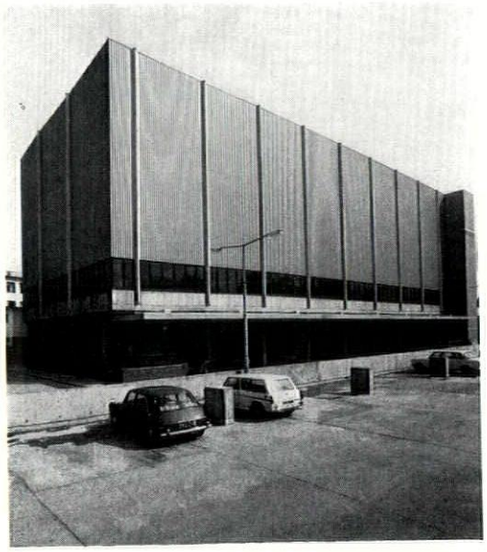
Electronics—filigree work in controlled environments—are at one end of the technological spectrum; storage—highly mechanised heavy duty work—is almost the other. Roche Products storage building designed by James Cubitt, Fello Atkinson and Partners has organizational clarity, and adds distinction to an already distinguished pre-war factory. Inside a forklift truck on rails fetches and carries racked goods.

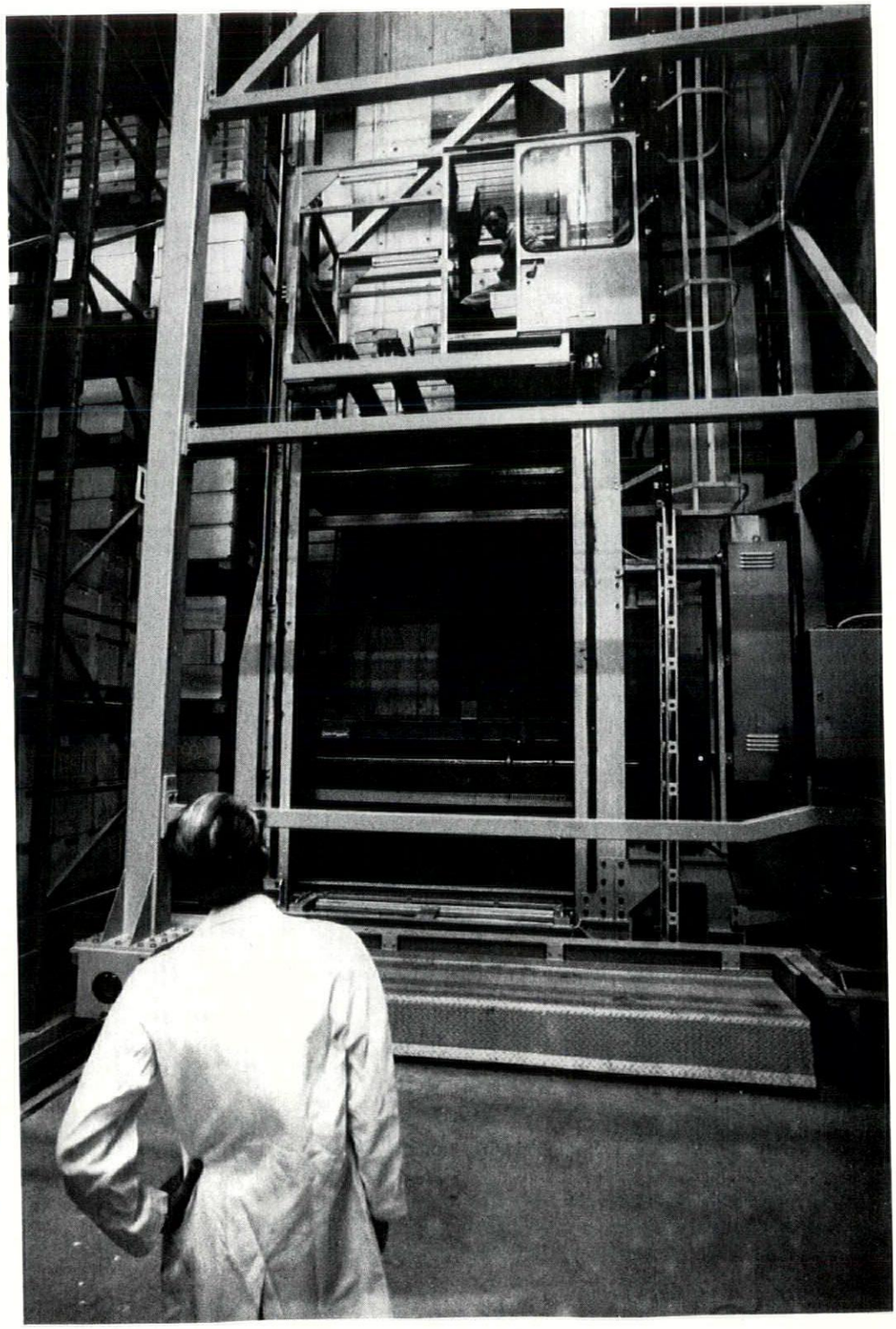
'Comprising administrative, processing and manufacturing buildings for a firm of manufacturing chemists, the block form was controlled by separate access requirements for administration and processing blocks, with the factory itself as an isolated building' The Architectural Review, March 1939

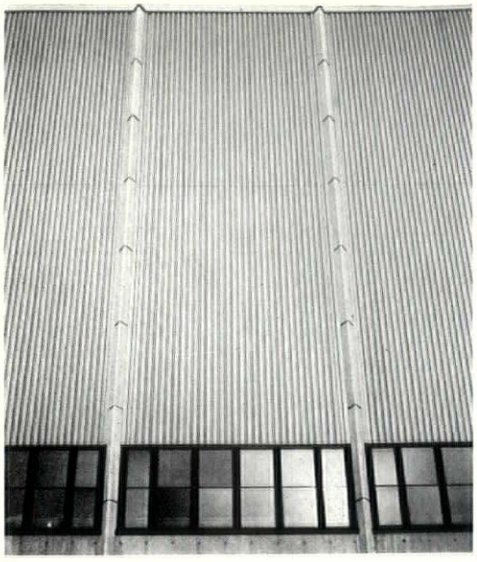
Roche Products have a reputation for enlightened architectural patronage. In 1938 they commissioned a distinctive all-white Modern Movement factory from O R Salvisberg, which was still fresh enough to win an RIBA bronze medal in 1948.
Now they have added to the original administration, processing and manufacturing complex a storage building.
The spare simplicity of the storage building's exterior belies its intricate and complex function, though its organization—storage upstairs, circulation downstairs, bulk storage in the basement—is largely represented in its outward appearance. Its functions are manifold: bulk storage of raw materials; storage of packaged pharmaceuticals; assembly and despatch of orders; receipt of incoming goods. So in essence it provides a complete storage and goods transit depot for a pharmaceutical firm.
The lofty (13.625 metres clear height) second floor, where only finished products are stored, is a strange technological world of automatic stacking and racking. Glorified



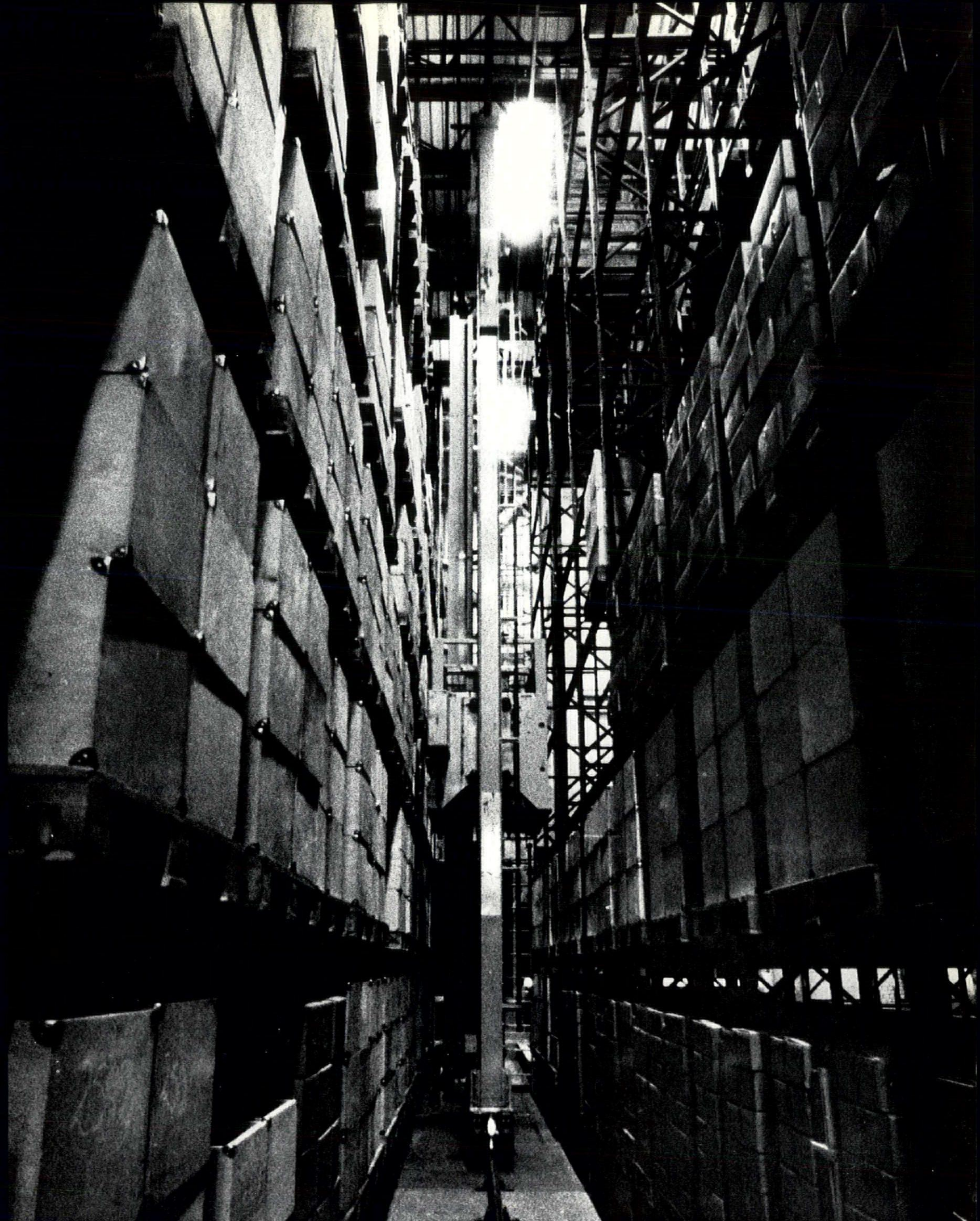




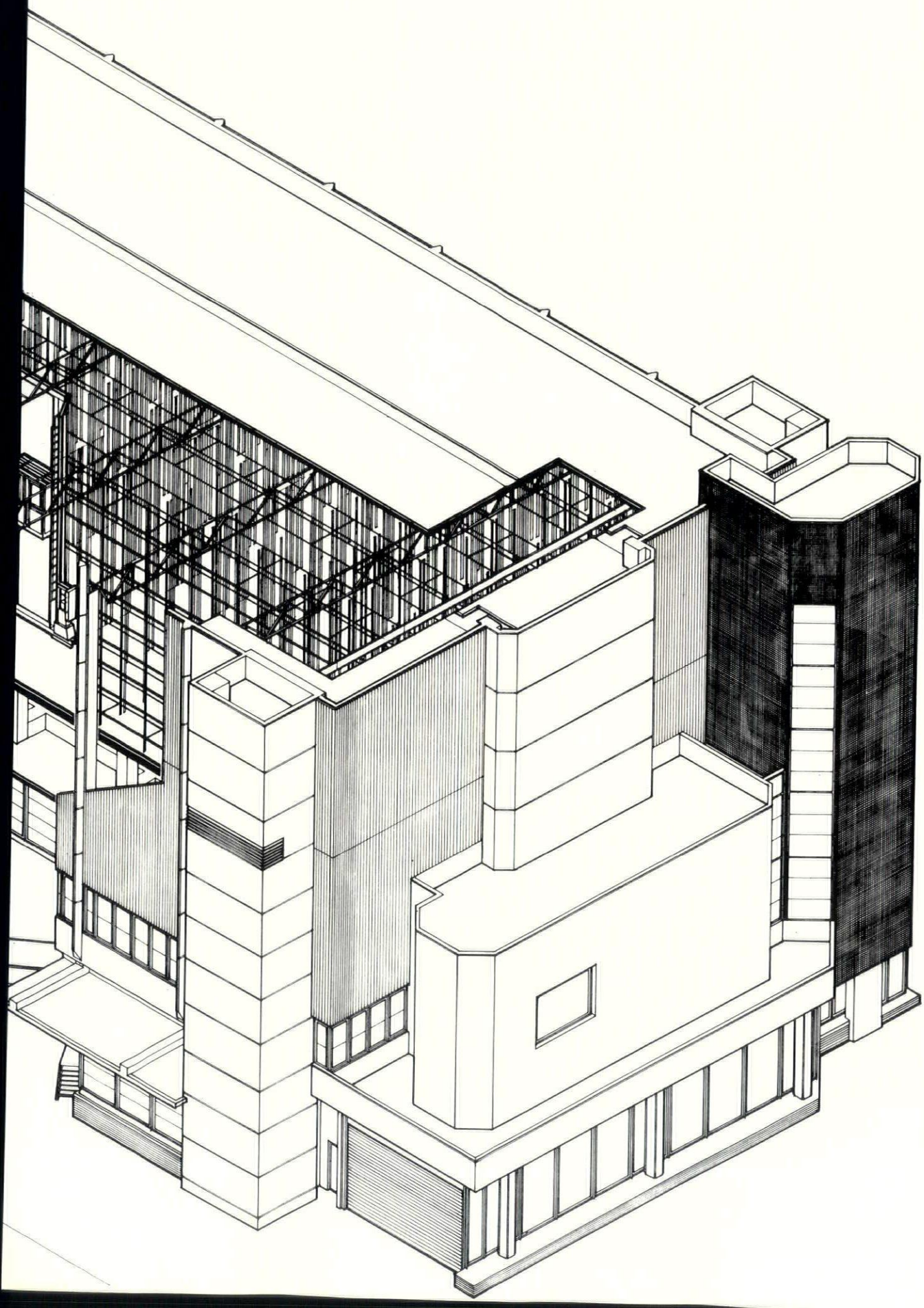




fork lift trucks on horizontal rails and vertical tracks move up and down the aisles between racks to position and retrieve palletized goods. These are loaded by the same machine, in one continuous movement, onto platforms which are then picked up by trucks and taken into lifts at either end. On the first floor a conveyor system carries boxes from the pallets into holding racks ready for orders to be made up and despatched. From here they are dropped by lift to the ground floor for despatch. Incoming finished goods enter at ground floor level and are taken direct by lift to the second floor. James Cubitt, Fello Atkinson and Partners have skilfully interwoven their link corridor between the old and the new and, by using dark brick, have formed a strong deliberate and yet wholly successful contrast with the blanched 'thirties architecture.

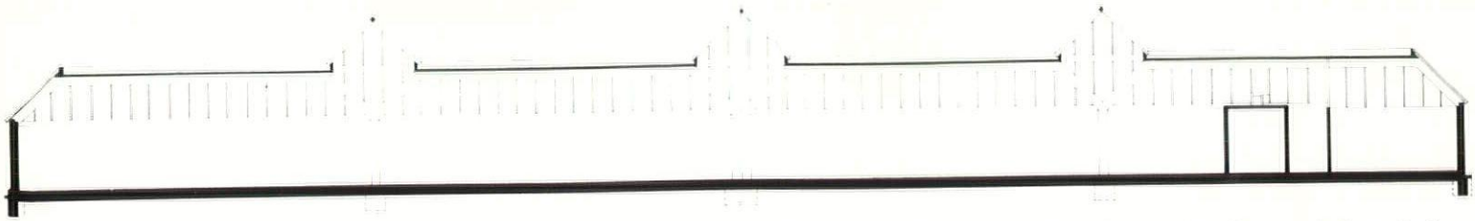


James Cubitt, Fello Atkinson & Partners' Welwyn warehouse for Hoffman-La Roche is a technological all-steel maze of stacks and racks fed by a gigantic Oehler crane.





'When all is said and done, one realizes gratefully that one possesses a factory which stands out among its neighbours as an example of eclectic building which is modern today, as it will be twenty years hence. Never before have we had sufficient, or even well planned executive space; never before a Staff Room, modern sanitary arrangements or, in fact, room to move. We are going ahead with projects which for so many years were merely ideas. How grand it is to be able to lay out the lettering for a thirty foot fascia, how satisfactory to think of growing into rather than out of your available space'
Norman Cox, Director of the London Label Company, Era, October 1968



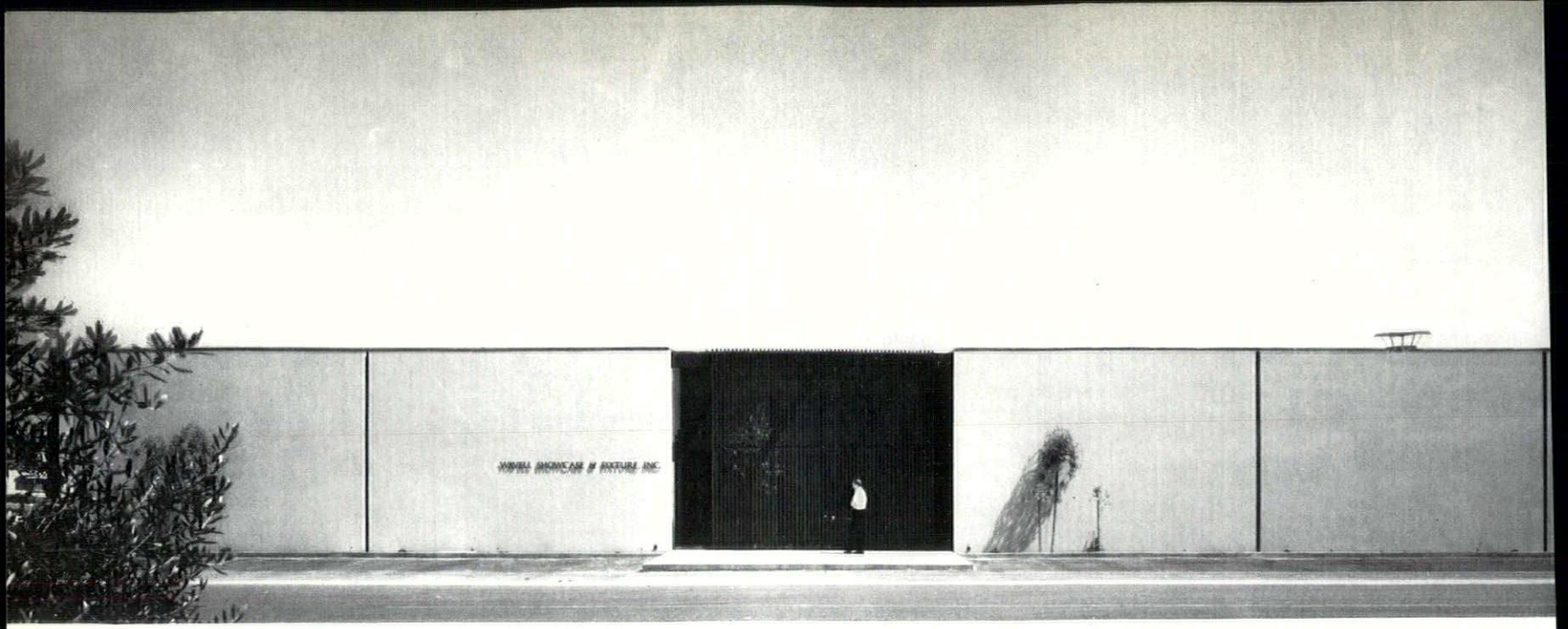
On a different scale altogether, London Label Company's building designed by John Whitehead & Associates is typical of the small factory which architects are rarely called upon to design. A go-ahead client has his criticisms of it—and his plaudits.



For nearly half a century London Label Company occupied tatty cramped East End premises. They decided to take the leap and move out to Mildenhall—one of London's overspill agreement towns. The Urban District Council provided the site.
Label making involves the same sort of fine detail work as electronic assembly so it is odd to find this entire factory top-lit with large expanses of glass. According to Norman Cox, the director, the factory has 'a heat-in-summer problem, made only two degrees more tolerable by the use of special glass'. But the explanation may lie in what Cox has to say about his relationship with his architect: 'any building must be constructed to preconceived plans based on the requirements of the proposed user, and inevitably the features lacking in a former building are given prominence in the user's mind during the periods of discussion. The discerning architect will latch on to emphatic requirements and perhaps enlarge their importance and will, by the same token, touch only lightly on those things of assumed unimportance. Thus, we have natural light, most essential to our processes, in abundance'. No bets are being taken on what the discerning architect found when he visited London Label's East End premises—dark satanic gloom. The heat problem is aggravated by individual spotlights over machines and by the fact that the client has not installed venetian blinds as originally planned on the south faces.
Bays using exactly similar structural members can be added to the east and the wall cladding would simply be dismantled and reused along the new bay.
At under £3 per sq ft including an expensive steel frame to carry extensive and costly areas of glazing it is good value for money. It is too simple and small a building (6,460 sq ft) to have any great philosophy of plan form but it does scrupulously avoid the management-box, production-shack syndrome by putting everybody under one roof using the same entrance. In any event, the management still speak of the building with some pride and the factory continues to look good after four years hard use.



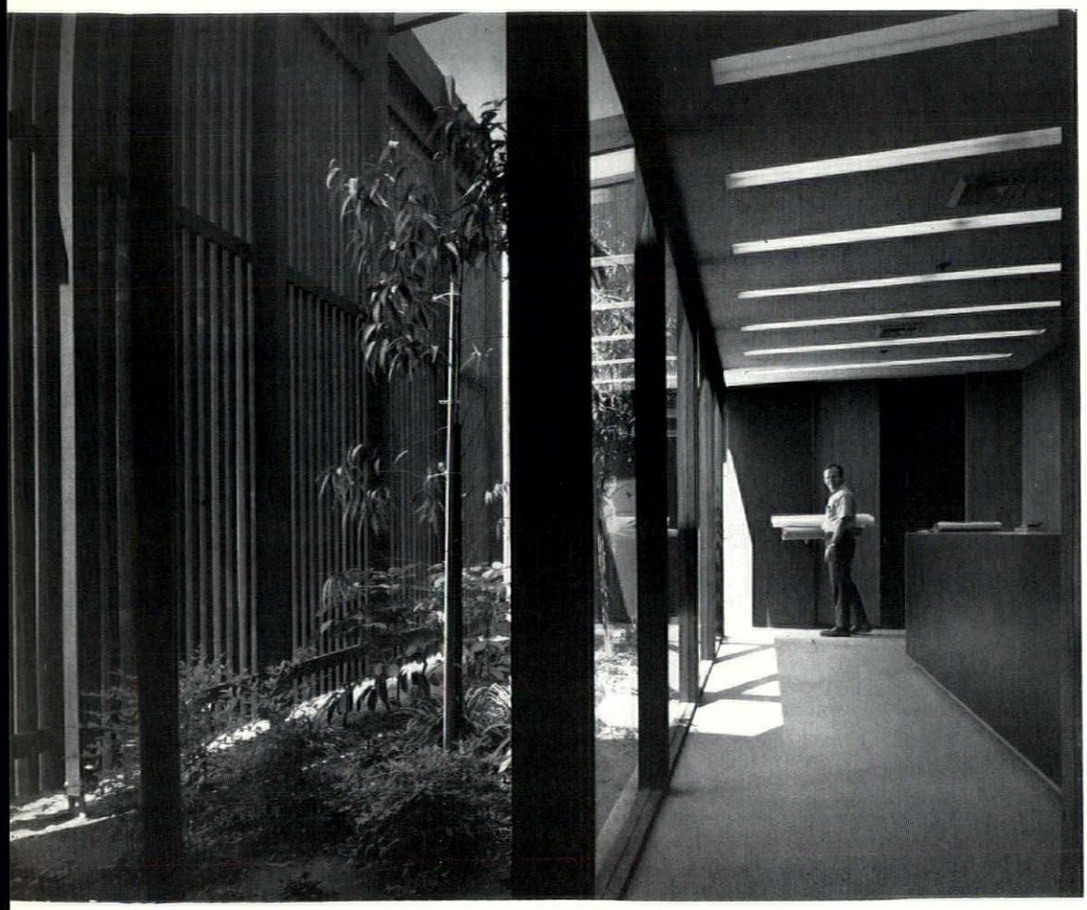


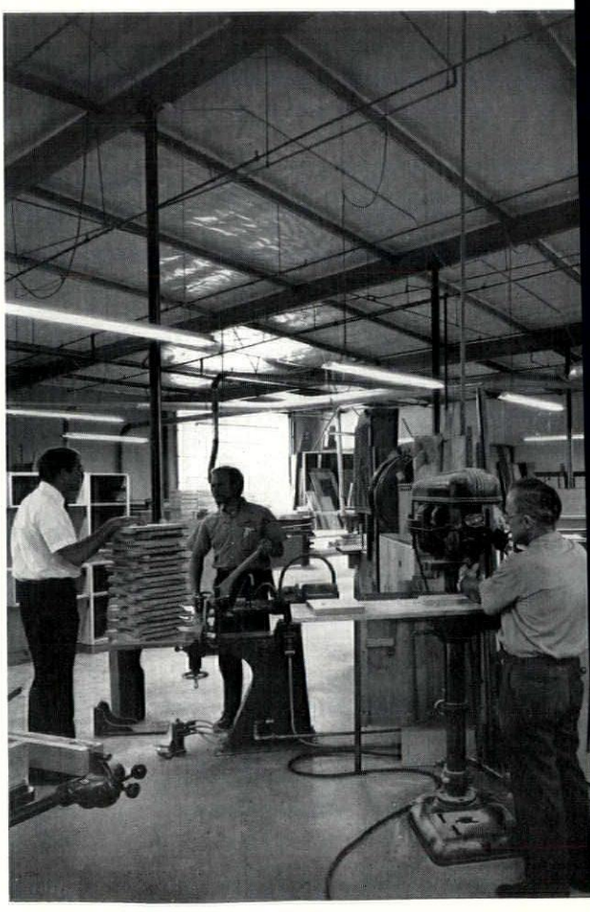


Simplicity of a kind rarely found, using completely standard elements, conceals the fact that Wavell Showcase and Fixture Company's factory in California by Hugh Gibbs and Donald Gibbs is—a box. An elegant, cheap and small scale flexible box.



An American example at about the same scale and two-thirds the cost (40s per sq ft) of Lonlabel has some interesting lessons in small scale factory design. The architects, Hugh Gibbs and Donald Gibbs designed Wavell Showcase and Fixture Company's new factory using absolutely standard methods and materials. Somehow they have contrived to produce a non-standard vocabulary. Panels and doors are equal in size—one less panel is cheaper than a specially pierced one. The concrete walls were cast on the floor slab and then tilted up by crane into a vertical position. Glued laminated beams are supported on pipe columns, with prefabricated ply panels nailed in place by machine. Aluminium foil stapled to the soffit provides insulation. Rainwater drains down the reveal between panels eliminating the need for down pipes. The air conditioned reception area and office integral parts of the building, are protected from solar gain by louvres. But this is done without in any way detracting from a supremely simple and elegant example of what the average industrialist is supposed to want—even if he doesn't know it—a flexible box.





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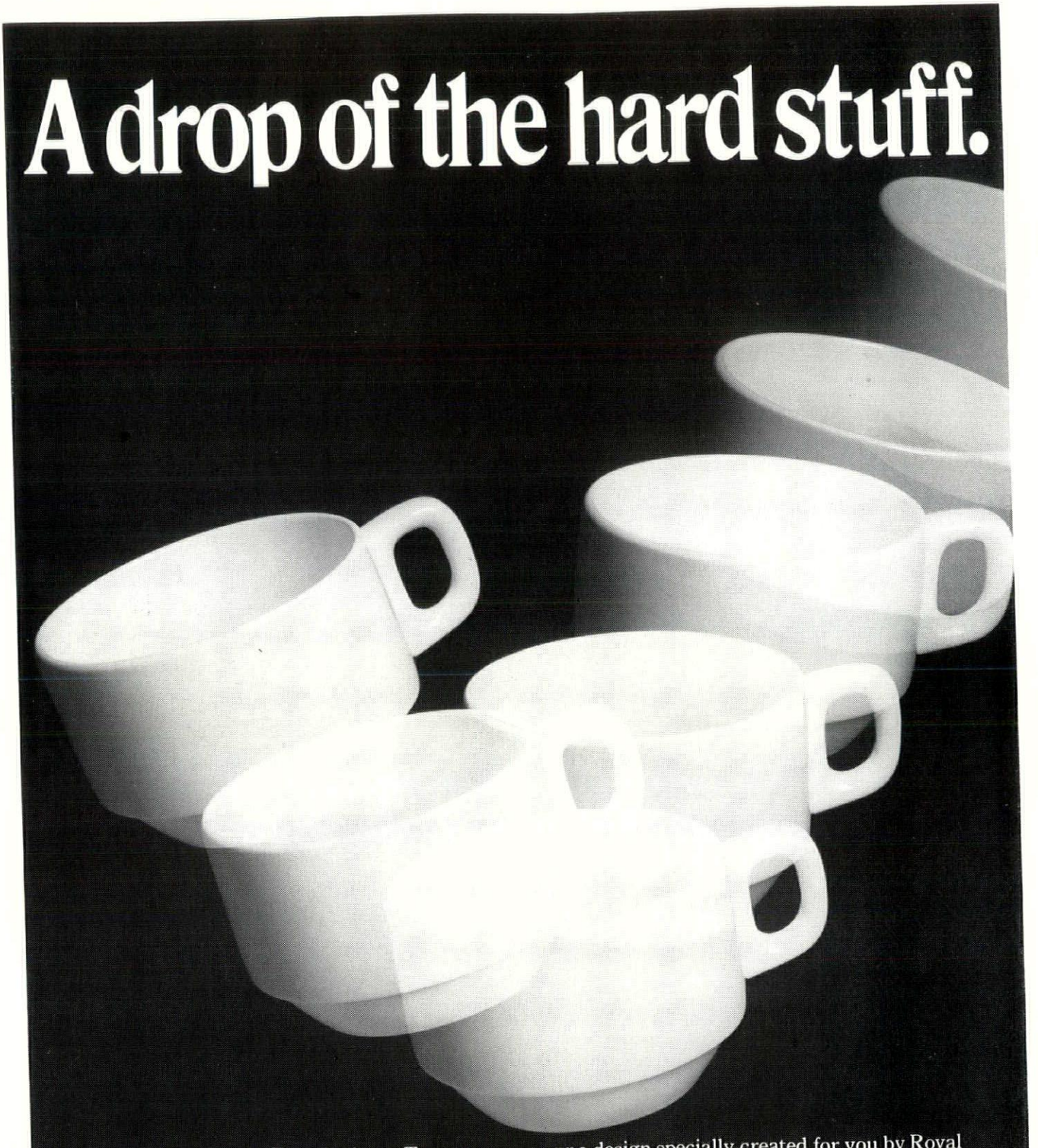

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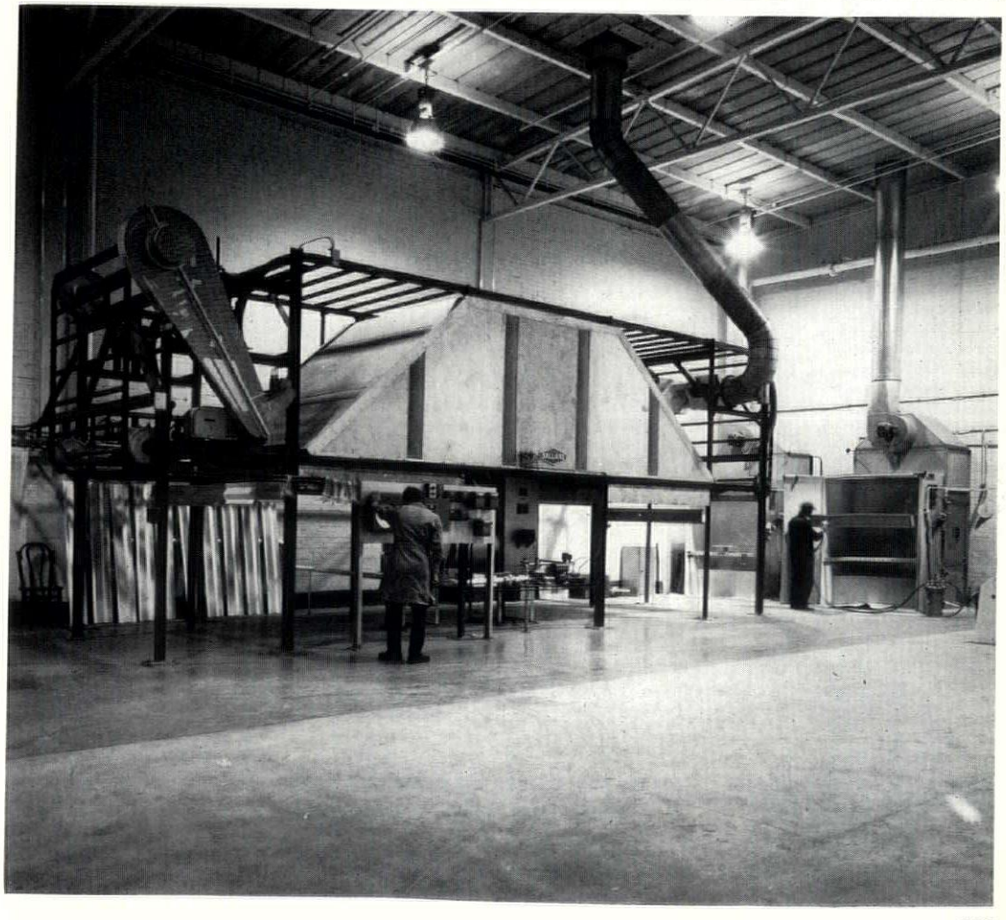
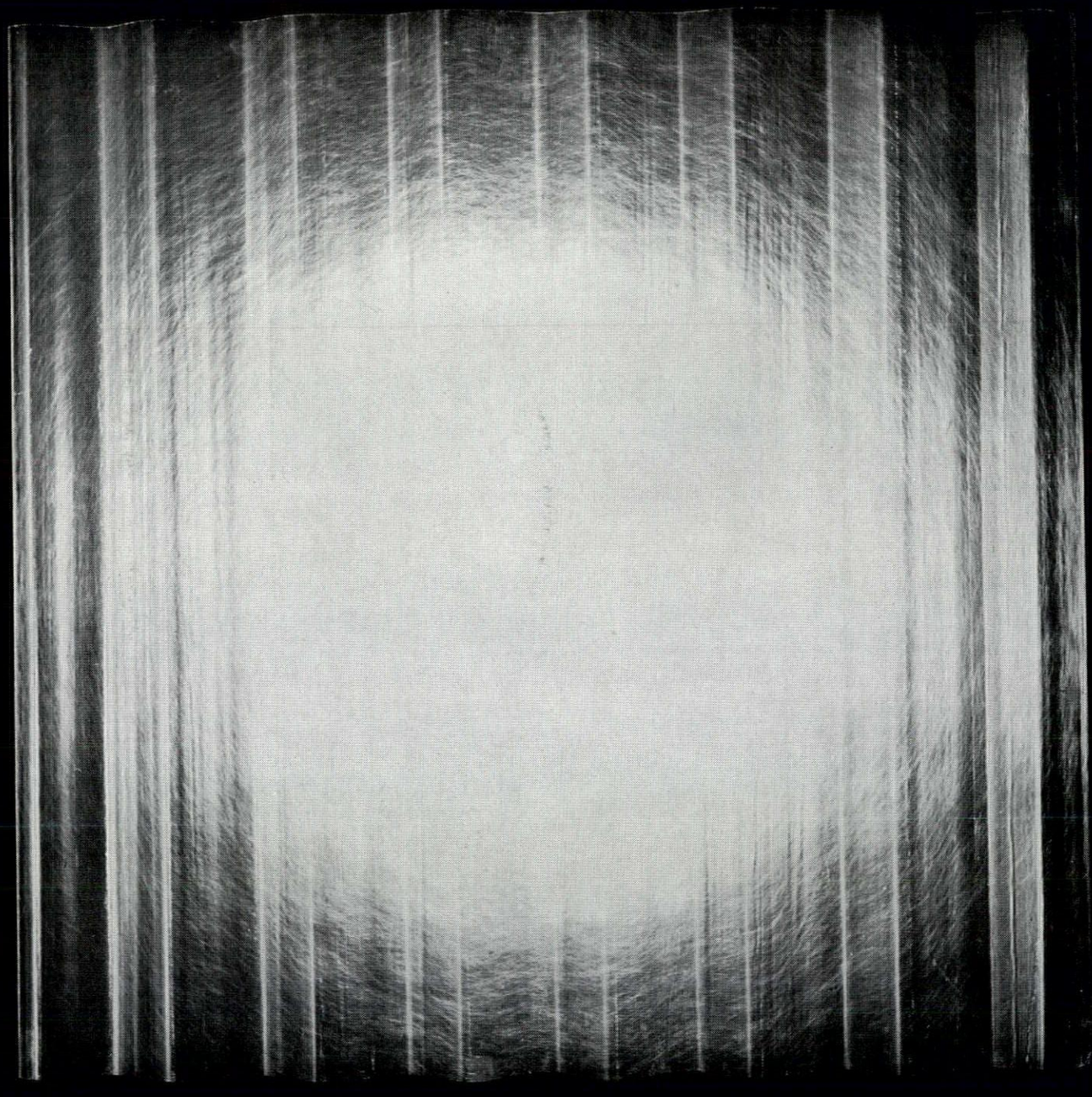
Holophane's factory at Bletchley is an industrialist's dream. It was designed and built at breakneck speed by Gollins Melvin Ward & Partners and was cheap into the bargain. The only nagging question—need offices and factory have been separated?

'The interest in this building lies in the way in which the architects have reacted to what is becoming a more frequent brief from industrialists: a complete new plant required in a very great hurry. Here is a demonstration that good architects selected by a client who knows what he is looking for, can produce architecture in the shortest possible time (factory occupied within six months and office block completed three months later) and at the right price of £4 per sq ft'
The Architects' Journal
31 July 1968





Holophane (British) asked for their new factory at Bletchley in a hurry—they had previously occupied overcrowded premises in Westminster. Gollins Melvin Ward & Partners matched speed with cost control and in the space of nine months pulled out of the bag a well designed low-cost factory and a separate office block. The client's brief was for a separate but linked office block. Yet everything pointed to a single all purpose solution—the industrial development certificate limited the size of the administration block to 5,200 square feet; the factory has a controlled environment, the office does not; and the factory was ready for occupation three months quicker than the office block. Ironically the factory as the first stage of the project contained temporary knock-down partitioned office space. Holophane make industrial lighting fittings so the factory—a totally windowless and controlled environment—demonstrates incidentally their fittings in use very effectively. Flexibility is built into it by unusually high ceiling heights (20 ft). High fork lift trucks can thus be used throughout the building. The rear wall has something of a 'built-in bomb damage' look as it is clad with asbestos sheeting easily removable when expansion becomes necessary. Visually the factory is a simple rectangular mass of blue engineering brickwork and this of course contrasts strongly with the small white glazed tile clad office block. Underneath the engineering brick is a conventional steel frame. Landscape and crudely sited car park apart, Holophane is an object lesson in delivering the goods.



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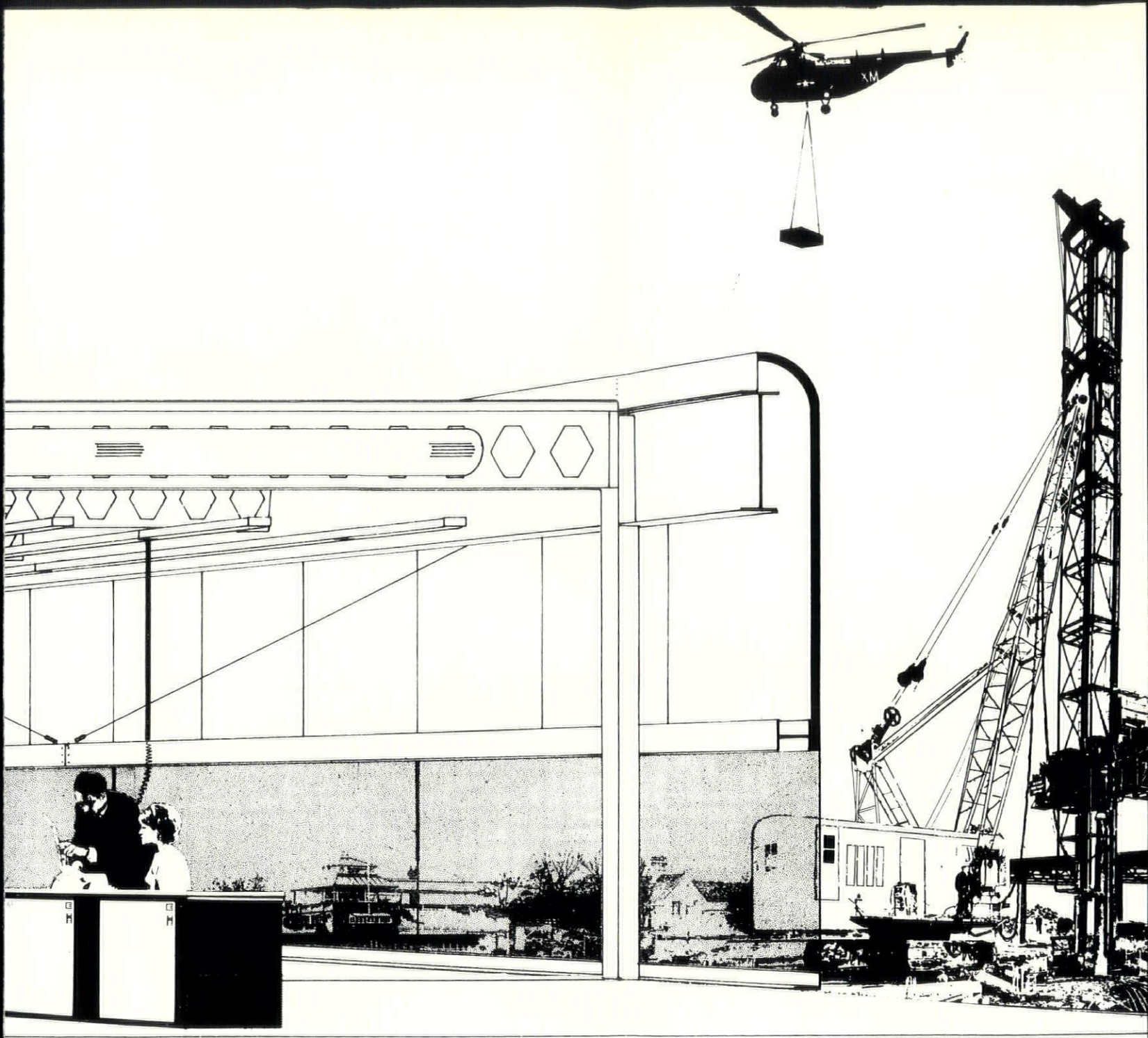
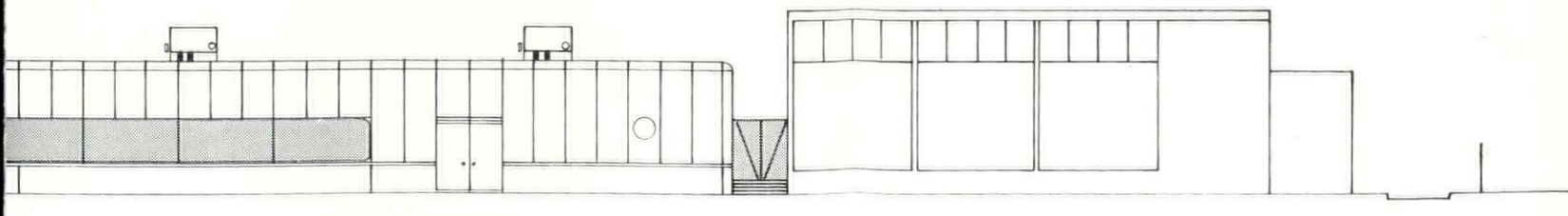


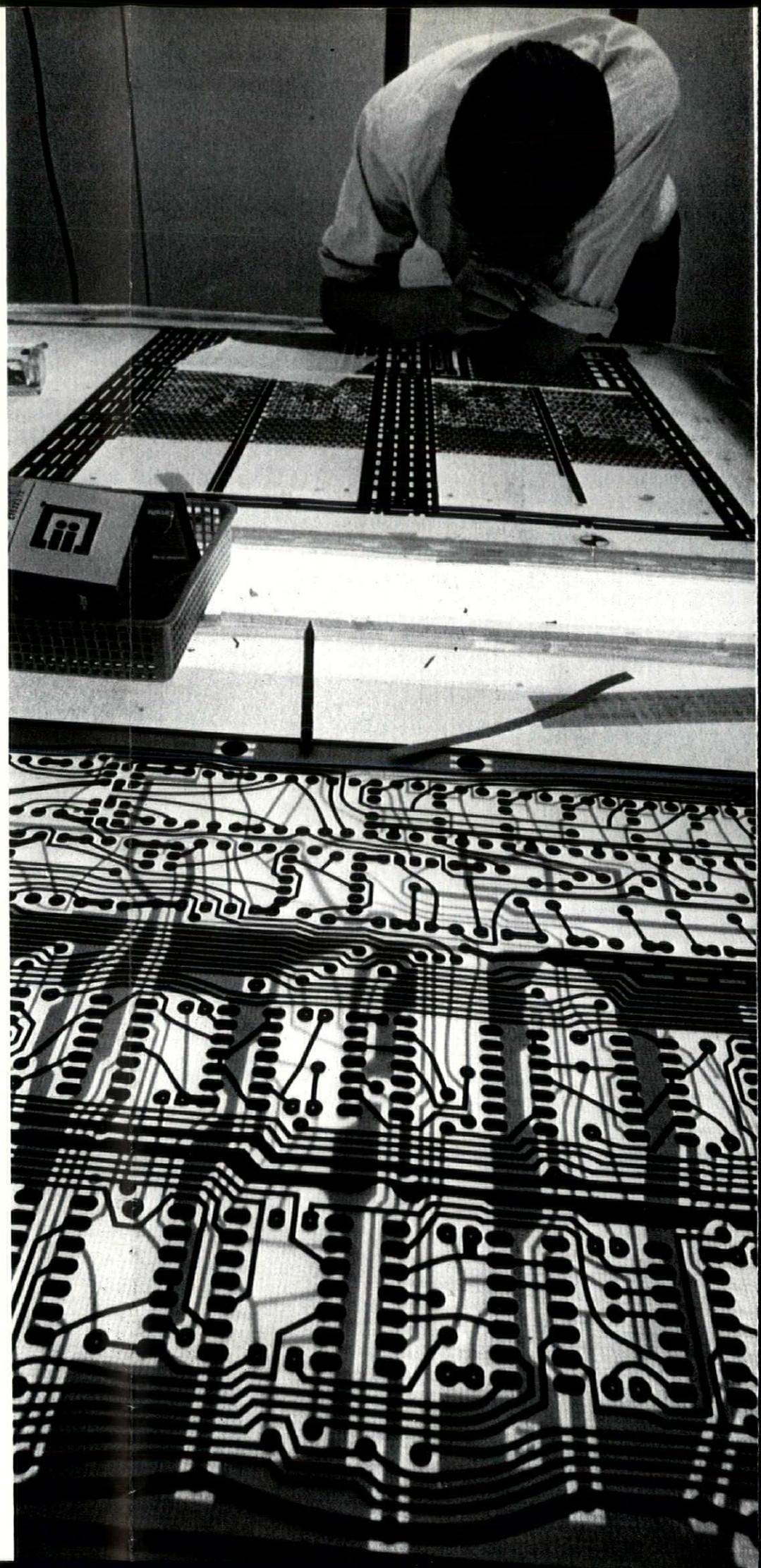


modation in an air tent will be replaced by a sophisticated, glistening, deep-plan tube.

Computer technology is run by young whizz-kids in a hurry. Founded by a breakaway group of computer technocrats from Elliott-Automation, they rushed in where the market seemed right with mini computers. They needed premises fast so they leased a prime example of the traditional inflexible box and shack variety standing in three acres in a New Town. They then commissioned Foster Associates to transform it into the kind of environment which the go-ahead electronics industry demands as a matter of course. Within an impressively low budget of 35s per sq ft the proverbial pig's ear was turned into a silk purse—the 'before' and 'after' pictures tell their own story convincingly enough. A shed was turned into a svelte, all-carpeted (claimed to be Britain's first) wholly flexible work-space with tubular steel poles holding partitions in position and a simple 'knockdown' systems of units—including some 'untidy' booths—designed by the architects and made of hardboard sprayed with white cellulose paint. Power, light and telephone conduits run up and down the length of the ceiling and can be plugged in at any point. Lighting is so brilliant at 70 lumens per sq ft that individual table lamps lie on worktops unused—another barrier broken as the architects forecast but about which the management initially were not wholly convinced. The entire conversion was completed in three months. But the quiet revolution came with the carpet. Made of non-woven natural fibre, it has actually changed peoples lives—production men with solder irons are seen flicking them clean onto their bench trays instead of the traditional floor flick and the carpet is so absorbent that production noise is swallowed—'in fact there's more likelihood of trouble being caused to the production workers by the noise of those of us who are arguing over research and development'. The 'box' was made into the one and only entrance and the rest of its space unusually was divided into storage on the ground floor with mobile racking and a sizable common room, conference room and kitchen on the floor above. Stage two in what turns out to be a large scale expansion programme was the conversion of the other bay of the shed (making 16,000 sq ft in all) along the same lines as the first transformation scene. Stage three is temporary and 'instant' production space which arrives on site next month in the form of a capacious air tent. At one fell swoop this adds 10,000 sq ft of space, so it is far removed from the realms of architects' fantasy. And unlike Robert Wilson & Sons' air house, at Computer Technology the concrete base will become the hard-standing for the car park when the air tent is taken away.

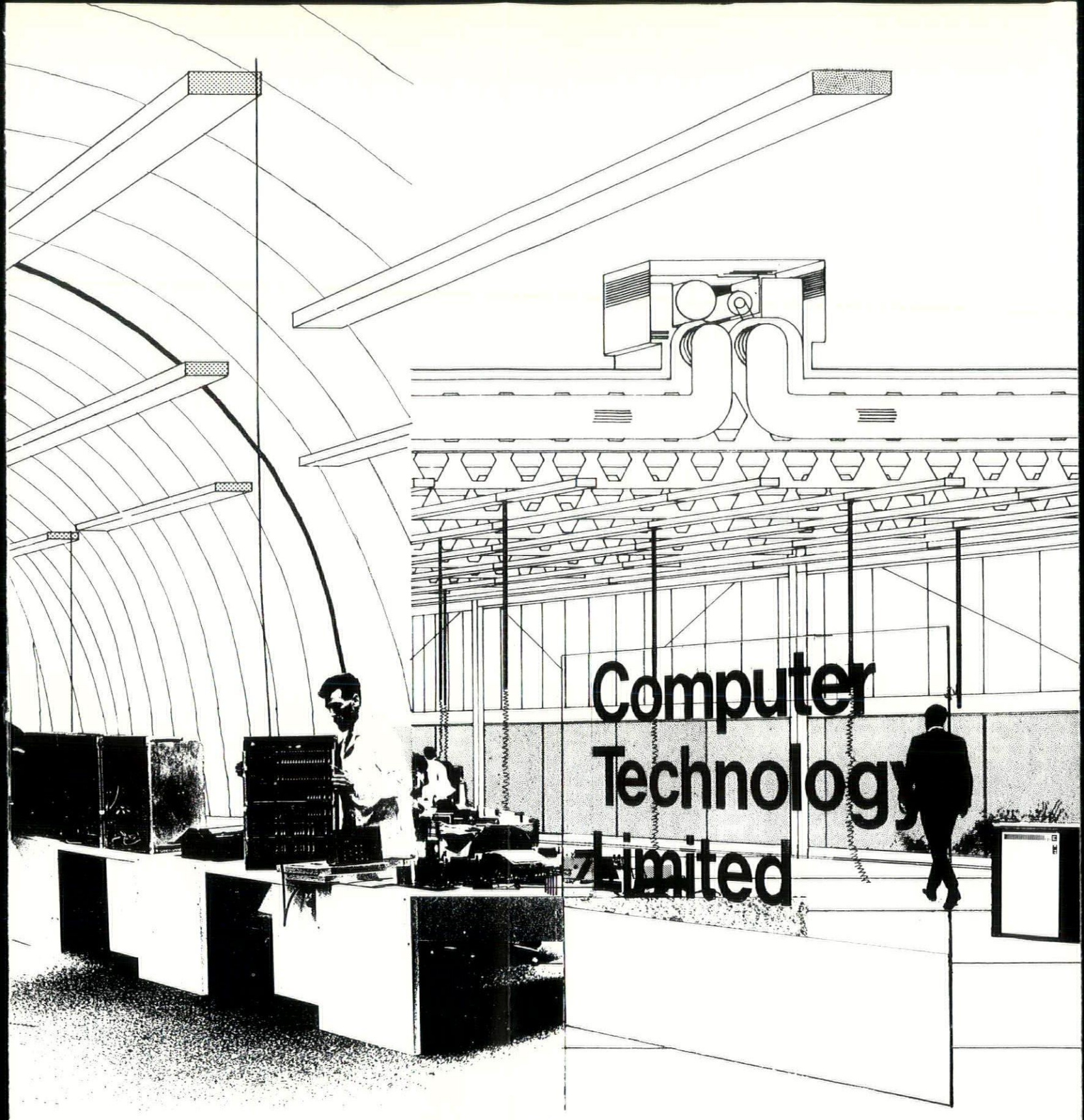
Stages four and five will be a two phased operation adding 48,000 sq ft in the form of a deep (160 ft) single storey building some 300 ft long. With a concrete retaining wall base echoing the existing factory, the new building will be clad with Alply panels, walls and roof. Alply are all purpose panels with finished interior and exterior faces, insulated with vapour barriers, and laminated into single prefabricated units. Each panel is light and demountable, making phased building operations relatively easy, and has an ingenious neoprene gasket jointing system which makes them completely air tight. This of course is a pre-requisite of an air-conditioned factory which the new building is planned to be. The air conditioning units will be roof mounted so as to remove them as a noise source from the inside of the building and also to simplify maintenance. The glazing will be Spectrafloat.

So taking the expansion programme for Computer Technology as a whole, the factory will have grown from 6,000 sq ft to 48,000 in five easy stages in the space of four years. In other words, unlike Topsy, to a carefully considered plan, Computer Technology will have nearly doubled in size every year. That's what phrases like 'the fast-growing computer industry' really mean.



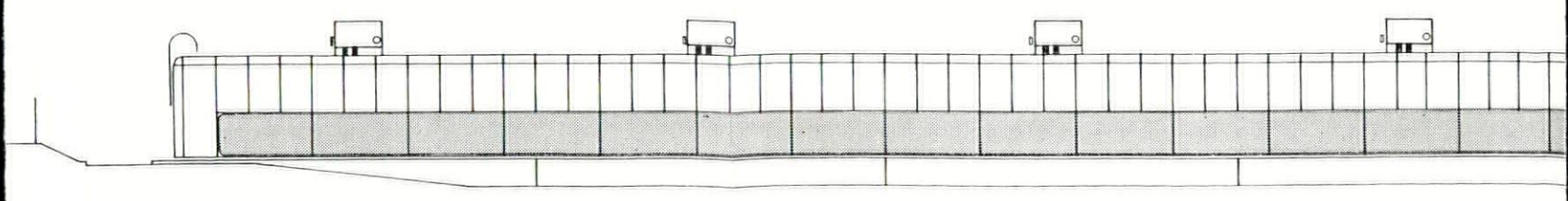


Computer Technology, designed by Foster Associates, is a classic case of planned expansion—a doubling in size every year over half a decade—in a growth industry.



mporary air tent)

stages 4 & 5



soft carpeted, software computer world entirely serviced from overhead. Temporary accor

ere is nothing soft about Computer
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nolas Taylor, The Sunday Times
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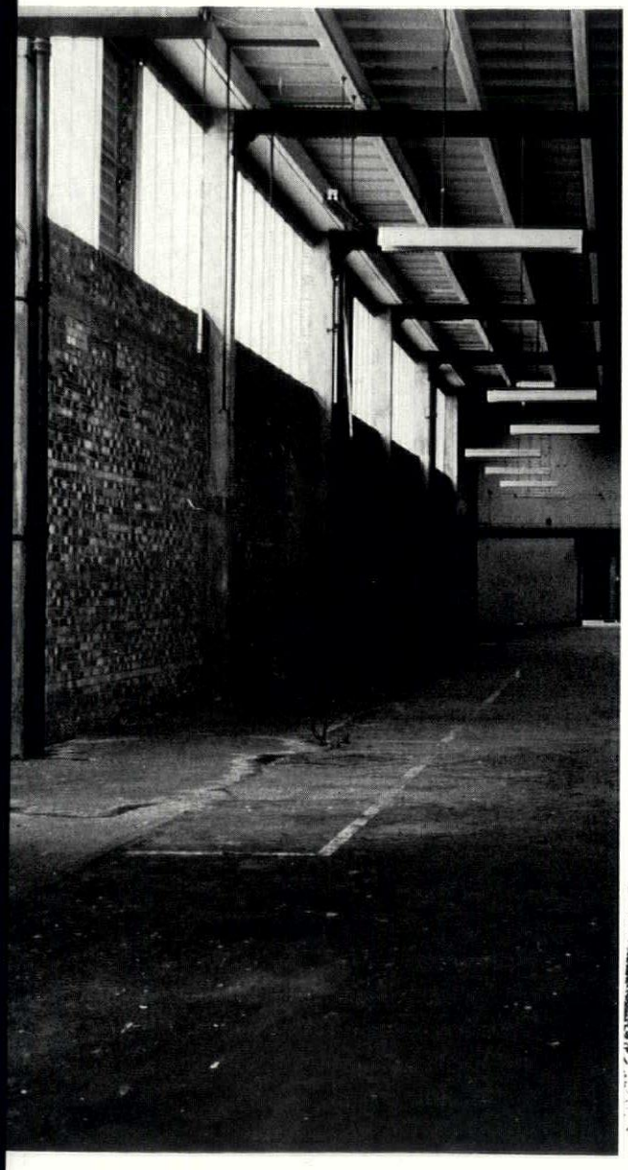
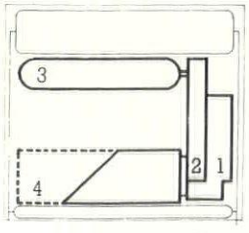


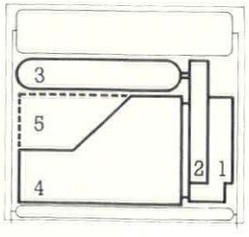


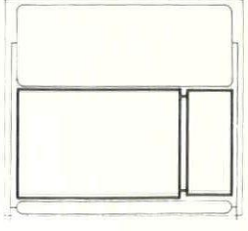
stages 1 & 2

stage 3 (te



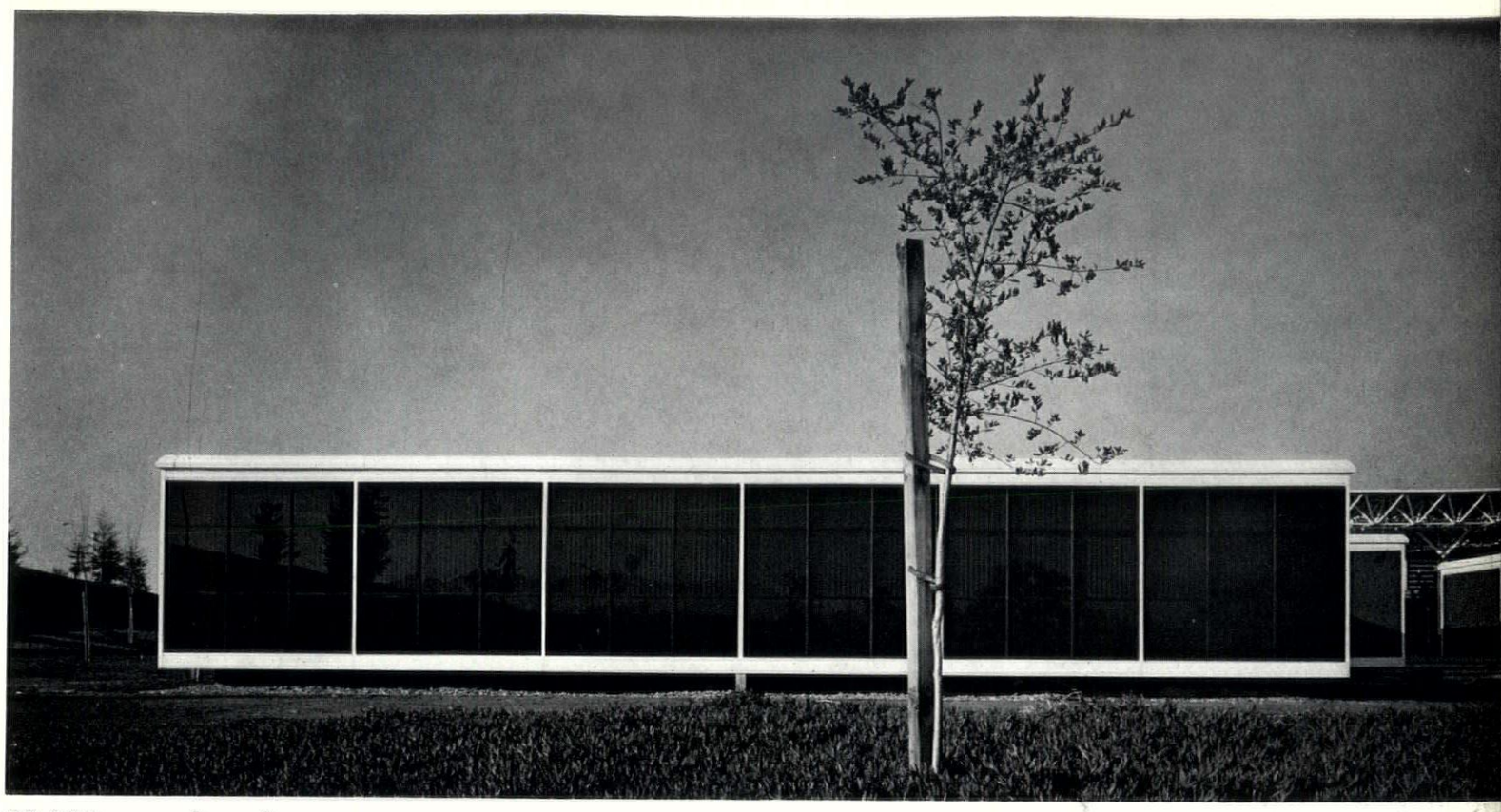






n archetypal management box, production shed (formerly a canning factory) converted into a





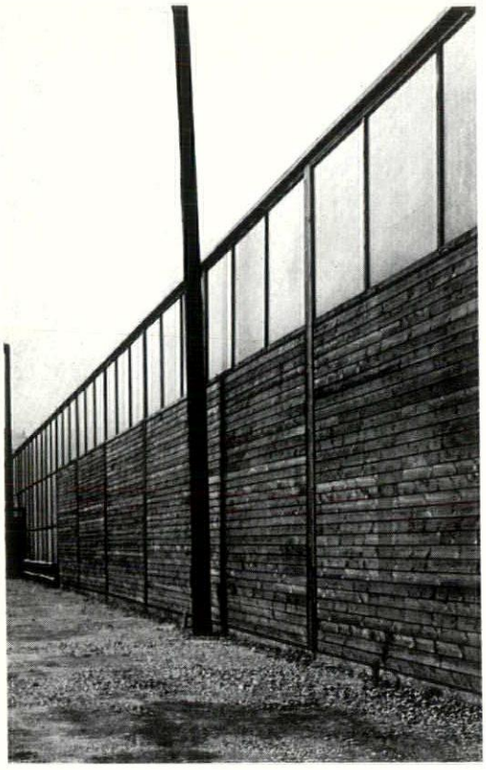
23,000 sq. ft. of temporary office space to be ready in six months was the stiff order from Syntex Laboratories Incorporated—met by Mackinlay Winnacker & Associates ordering factory-built classrooms which they improved in design and grouped under a space-frame. Almost exhibition architecture brought into real life.

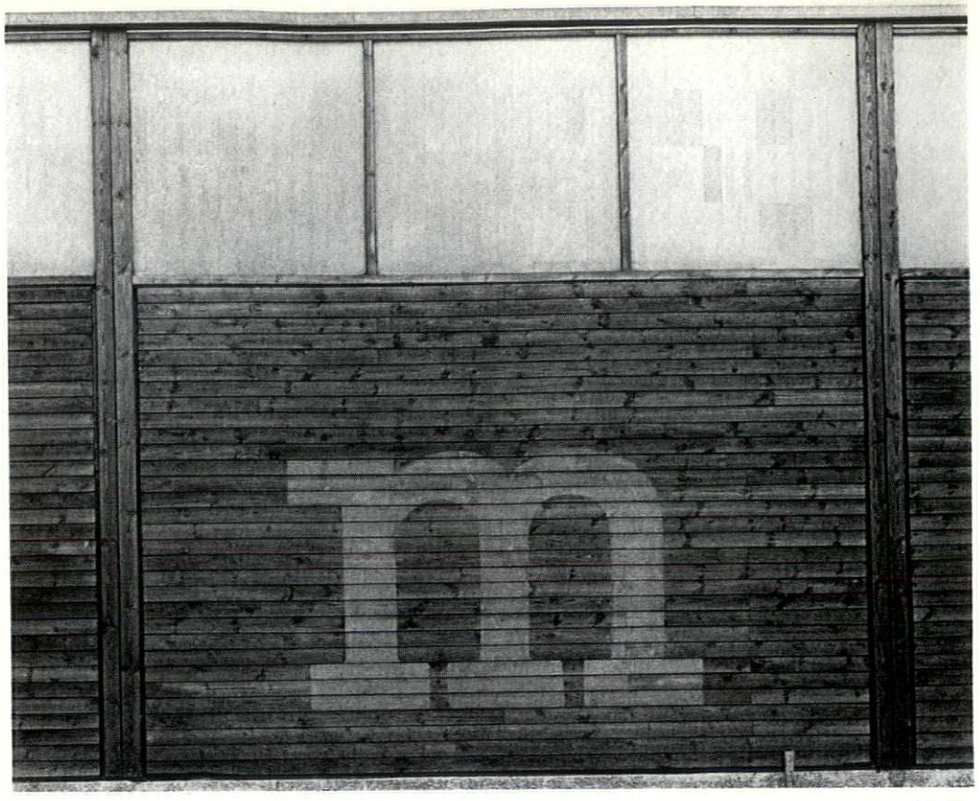


Even Foster Associates' rapid growth plan for Computer Technology—their air tent solution apart—would have been too slow for an American firm, Syntex Laboratories Incorporated, who demanded 23,000 sq ft of occupable office space plus a cafeteria and conference-cum-training centre within the space of six months, to be used until a more permanent building was ready. Mackinlay Winnacker & Associates ingenious solution was to order some off-the-peg classroom units, modify them, put down the footings fast and lay on a crane to drop the classroom into position when they arrived on site from the factory 400 miles away—the only thing missing from this up-to-the-minute approach to an industrialist's instant needs was the proverbial stork—or should it have been the helicopter shown in Foster Associates' drawing?

Each classroom, 10 ft wide by 32 or 60 ft long, was brought to the site as a trailer on wheels. After they were all in position, down went wooden decking between the buildings—grouped round a longitudinal square—and cover came in the form of a gigantic and exciting spaceframe. The Unistrut space frame came in short, 49 inch, steel channels with connector plates, packed in boxes from Michigan. On the site large sections were bolted together on the ground and lifted by the crane onto prepositioned steel columns. Covered with Plexiglass, the space frame protects the 'Mall' from sun and rain. The structure of the frame incidentally allowed the architects to position columns where they would not interfere with circulation. Not surprisingly the project has been 'gonged' by the AIA and by the American Institute of Steel Construction. Where will it move to next? Set in gently rolling landscape, it evokes images of CLASP—but what British architect has yet solved his industrial client's problem in such an ingenious way?







Marimekko, in Finland, found themselves in a planning posture familiar to this country—restricted in what they could build. Aarno Ruusuvuori designed an elegant temporary building and Marimekko plan to move it elsewhere after five years.

Syntex wanted a temporary building fast and had the land. Marimekko in Finland had rather a different problem. They had the land and would have settled for a permanent building but for fierce planning restrictions which prevented then from building anything other than temporary premises. Sensibly Marimekko have decided to opt out of the area in five years time to move to somewhere they can expand freely.
So their brief to Aarno Ruusuvuori was for a halfway house—a factory five years on one site and then up sticks and away to another. What they got was an elegant timber rectangular box—easily demountable. Marimekko are textile printers, famous for their world wide exports. Their needs in one sense were fairly simple—a well lit rectangular box to allow long runs of textiles to pass through printing machines, and to be inspected. In another sense, they were complicated in that the printing technique involved in textiles is a wet process and therefore the humidity level is fairly high. Because of this the columns are reinforced concrete with glued wooden beams as ceiling joists. The walls and roof are all made out of pressure-impregnated wood and are demountable.
Nonetheless all the constructional elements are steam-tight. Simple Dekaphen units have been used for windows. The entire building is modular (1.5 metres, based on the work-top height of the printing table) and air conditioned. From design to completion took exactly six months.









Adam stables, a ruined castle, a lush park, a canning factory, an ideas industrialist and his answer to expansion—an air tent—seem altogether Hitchcockian (the thriller director not the architectural historian). The blood is there—the air tent houses the butcher's department. A lesson in enlightened expediency for architects and clients.

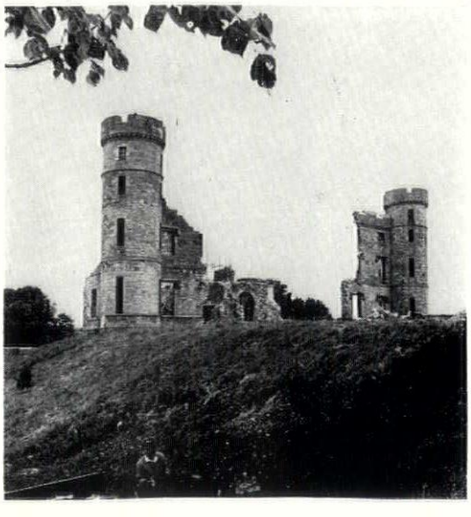
With increasing business it became evident that this unit was no longer capable of dealing with the volume of meat required and I began to examine the possibility of renting premises locally. Whilst this was possible each of the buildings examined would have required something in the order of £10,000 spent on them to bring them to our required standards of hygiene and this figure, in addition to a fairly formidable annual rent started my mind working in other directions. The results we have achieved with this air house have exceeded our expectations. This building met the growing need for space without committing ourselves to a permanent structure, the siting of which might well have influenced the total site development. All we have to do is deflate it, transfer or sell the fabric, break up the foundations and we have a virgin site to replan.
R M Kennedy, Plant and Property Manager

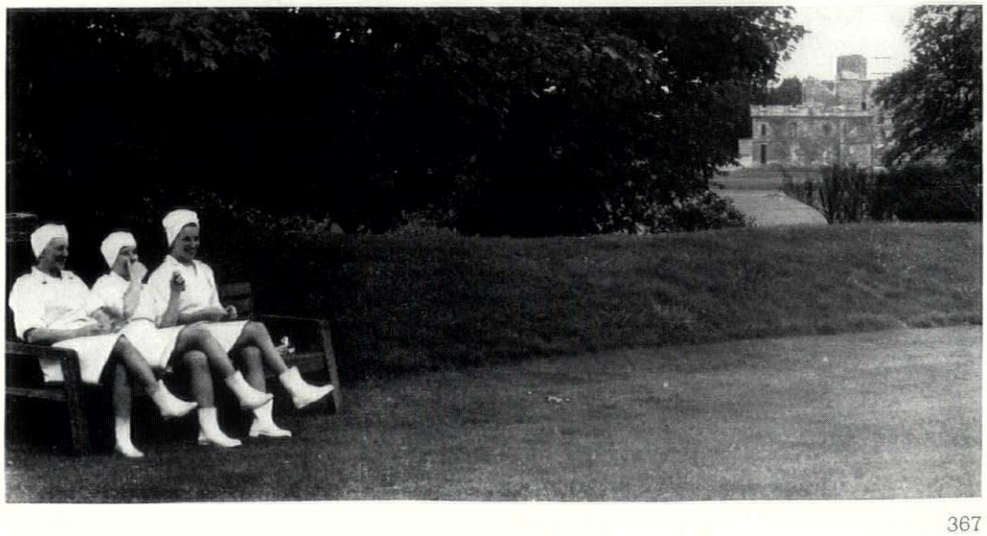
17 years ago Robert Wilson and Sons moved their food canning business to what is now part of the designated area of Irvine New Town. Production started in an unusually glamorous converted building—a Robert Adam stable block which used to go with Eglinton Castle, now a ruin in an advanced state of 'pleasing decay'. Gradually Wilson's expanded in a motley of buildings to the rear of the stables. And they started to look round for premises to lease for their expanding butchery department. Anything that looked vaguely possible was either too expensive or needed pulling up by the bootstraps on hygiene terms—at a cost. So the plant and property manager remembered a Swedish air tent covered tennis court. He telephoned the Gourock Ropework Company —until recently housed in Robert Owen's New Lanark mill—and ordered an 'Airhouse' 120 ft long and 40 ft wide. The footings were speedily prepared and six weeks after the order the manufacturers delivered and the tent went up in a day. Air conditioning plant was installed and the butchers moved in.

The slightly positive air pressure in the tent itself has the useful side effect of keeping out dust, microbes and insects. Added to which pvc coated nylon walls are easy to wash down.
The question now is will Wilson's call in an architect for the permanent replacement—that they need one is clear from the abysmal concrete chain link fencing surrounding the tent. Obviously the 'Airhouse' could be slashed or vandalized but the fencing utterly mars an otherwise ingenious industrialist's answer to instant, controlled space.
Sharing the same premises, but otherwise completely independent, is a charitable body, the Clement Wilson Foundation which owns the 50 acre park surrounding Eglinton Castle (the castle was built in 1802 and partly demolished in the 1920's). The park is being restored and the castle ruin made 'safe'—no more we hope—for use by the public and company staff. It is rare to see such obvious lunch time enjoyment of a park on this scale by the lucky employees of this company.











The completion on time to a near impossible schedule of Lockheed-Georgia Company's drawing offices designed by Heery and Heery, using School Construction Systems Development components, is the sort of miracle that the aerospace industry has come to expect. And more questionably the giantism man has to endure.

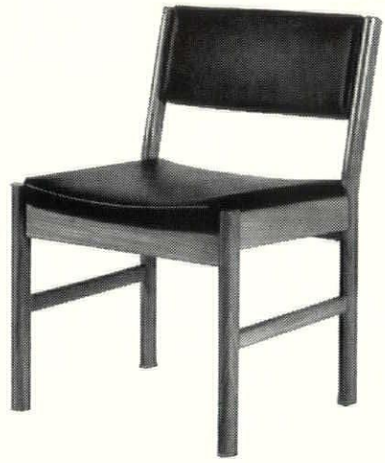
Just as world airports had only three years in which to gear themselves for Jumbo and all its implications, Heery and Heery were given just six months to provide 300,000 sq ft of offices to enable the Lockheed-Georgia Company to make an immediate start if they were successful on a potentially highly lucrative contract to build the monster C-SA 700 passenger jet airliner. On 2 August 1965 Lockheed telephoned their architects with their superhuman demand. According to *Architectural Record,* that same evening Heery and Heery hammered out a design and production schedule. The next day they negotiated a flat fee contract.
By 10 August they had reached sketch plan stage and obtained approval from Lockheed. They then went out to competitive tender.

In at the bottom of the cost list jumped Inland Steel with Ezra Ehrenkrantz's School Construction Systems Development components. The contract was awarded to Inland Steel on 18 August. The preliminary design approved 1 September and on 3 September the heating, ventilating and air-conditioning contractors, Lennox Industries, were appointed using the SCSD roof-mounted cooling and heating system ducted through the prefabricated ceiling system.
Final working drawings and specifications were completed on 30 September, the day that Lockheed won the contract.
The main contractor accepted a programme of 123 days for construction of the first slice (180,000 sq ft) and 154 for the completion.

Construction began 15 October. The client occupied the first 54,000 sq ft on 18 January and by 20 April the building was finished bar minor details.
In true American style, the building when finished claimed a number of 'firsts' and 'biggests': first use of SCSD in the eastern United States; largest application of SCSD in the world; largest engineering design facility (4,000) employees) under one roof. At a cost of $16.00 per sq ft in record breaking time and size, it's something of an achievement. Questions on the human side of such mammoth drawing offices are best left to Lockheed—the architects have done their best by breaking the area down using strong colours in bold patterns on floors and walls.







Elegance that will not date

The 'Sloane' armchair and its armless companion the 'Brompton', a Design Centre award winner, are outstanding examples of how the functional can still have elegance —and timeless elegance at that. Equally suitable for hotel, restaurant, Boardroom or office, these chairs have been designed as key models to a large range of furniture including an upholstered tub chair, a swivel chair, stools and tables.

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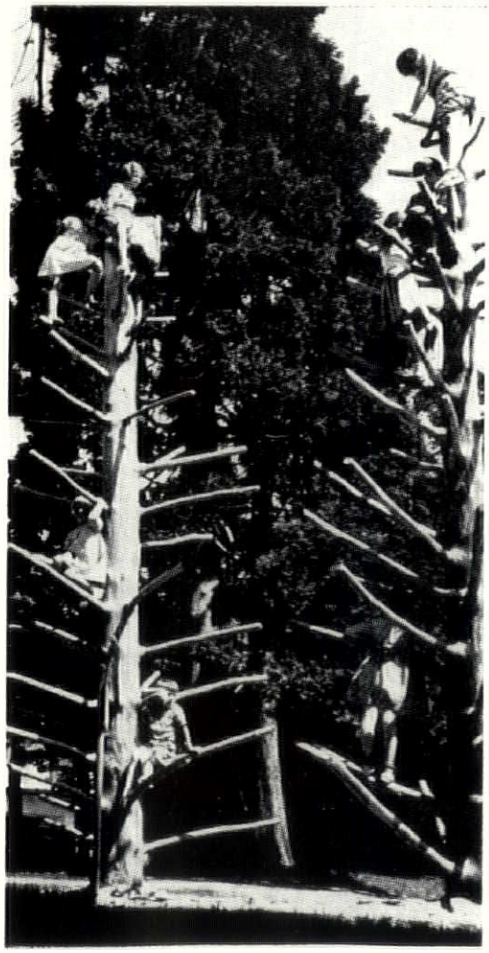

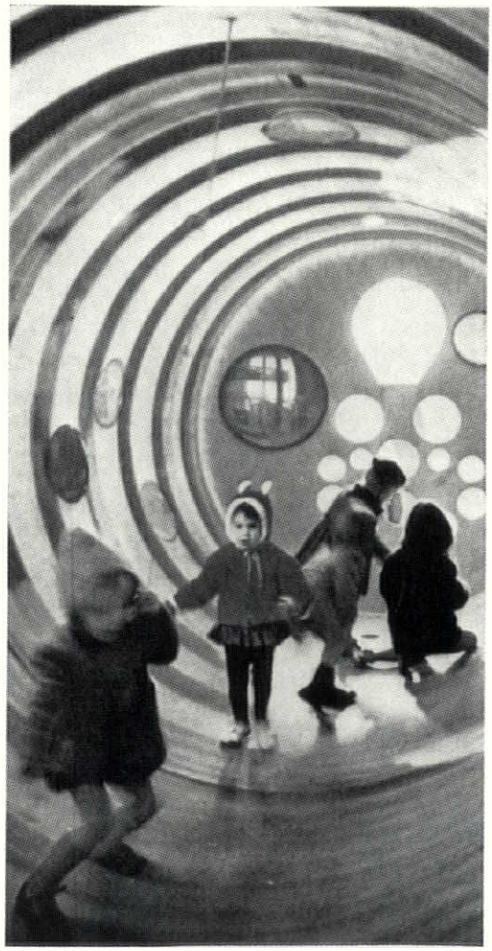

Playgrounds and Recreation Spaces

by Alfred Lederman and Alfred Trachsel
Second revised edition

Size 11 x 8¾ inches
176 pages, illustrated throughout
1969 £5 10s

In recent years there has been much re-thinking on the provision of playgrounds for children in cities; for if children are to be kept off dangerous roads the alternatives must be more attractive than the variety and excitement offered by open streets. Extremely interesting work has been done in this sphere, mainly on the continent and in America and this book illustrates, with photos, plans and explanatory text, the work of the best contemporary playground designers. The skill and ingenuity with which they have constructed playspaces—sometimes on very constricted plots—which present children with an amazing variety of activities will interest architects, and provide a source of ideas for teachers, local authorities, road safety bodies and all concerned with the welfare and upbringing of children.

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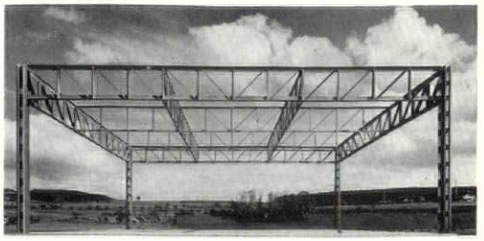
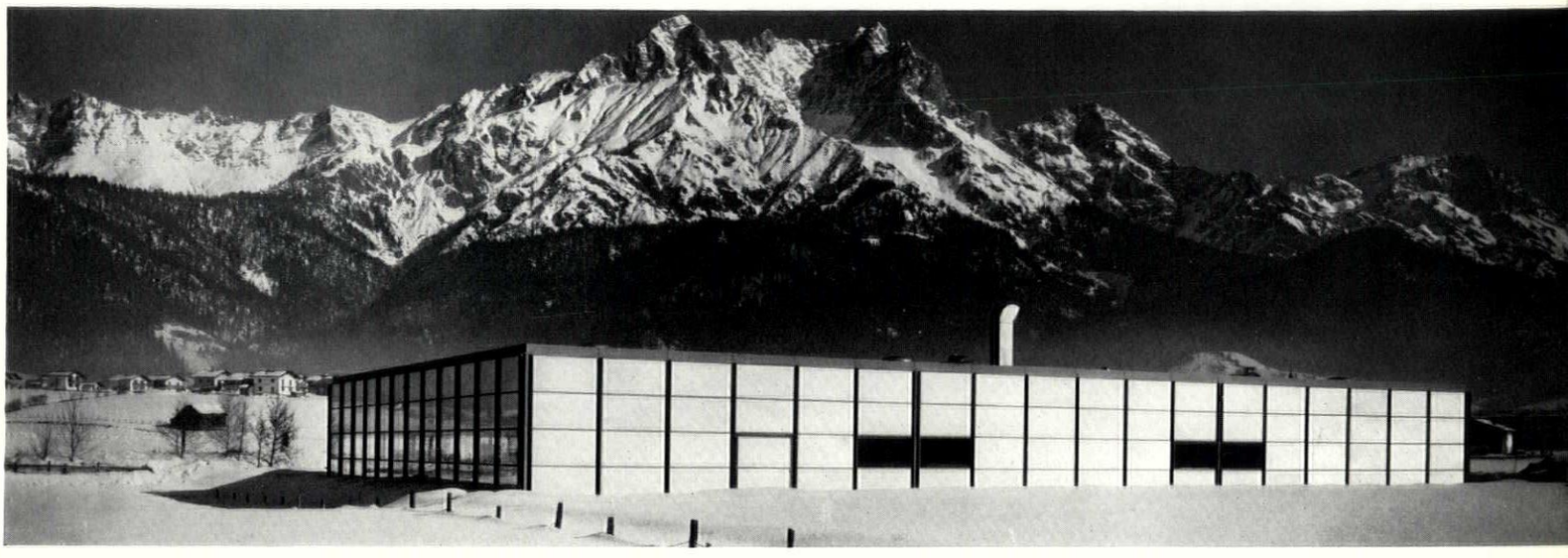
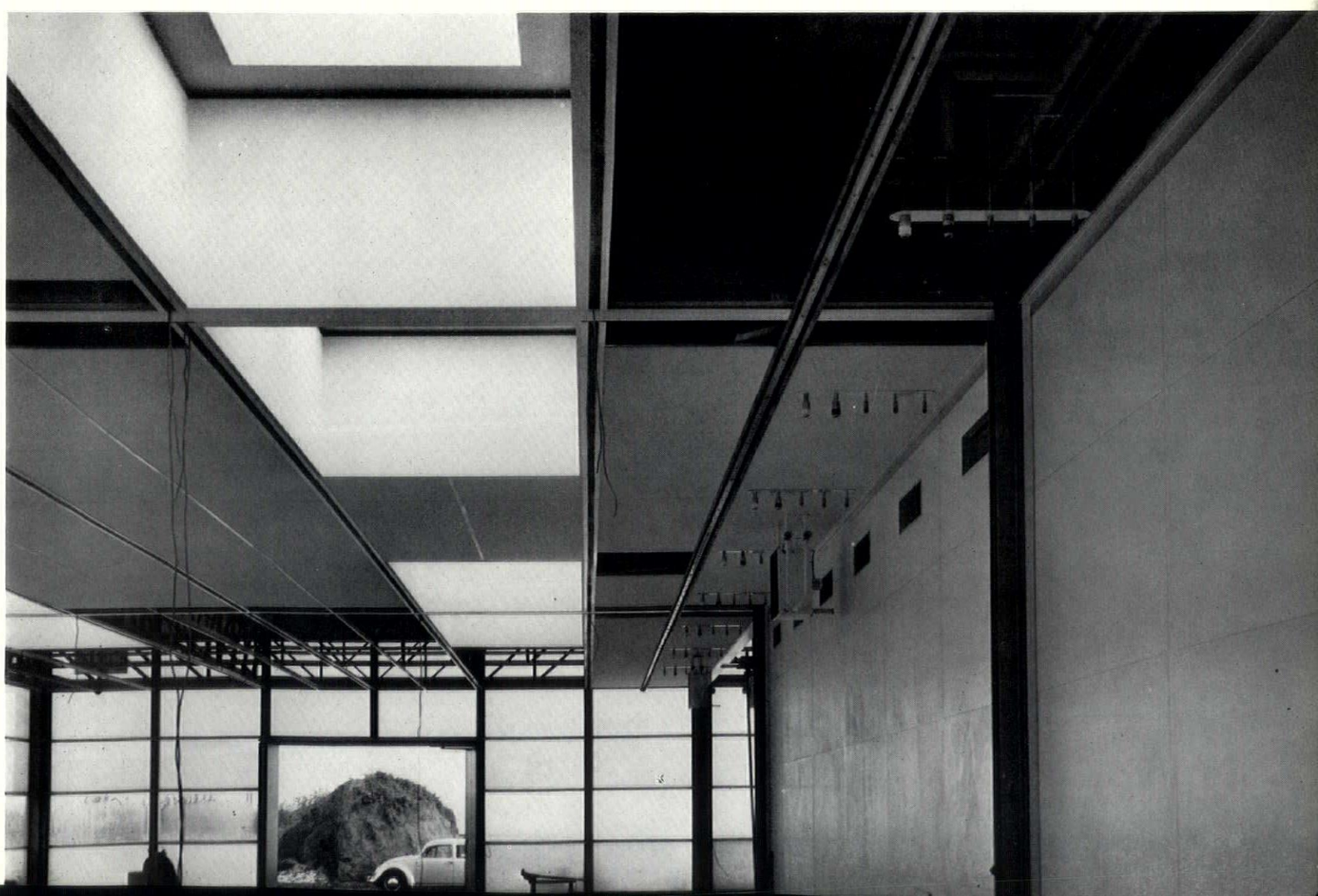
The 'Haller' structural steel frame system is a cool elegant, extendible box. Designed by Bruno and Fritz Haller, it is now being used under licence by architects in Austria.

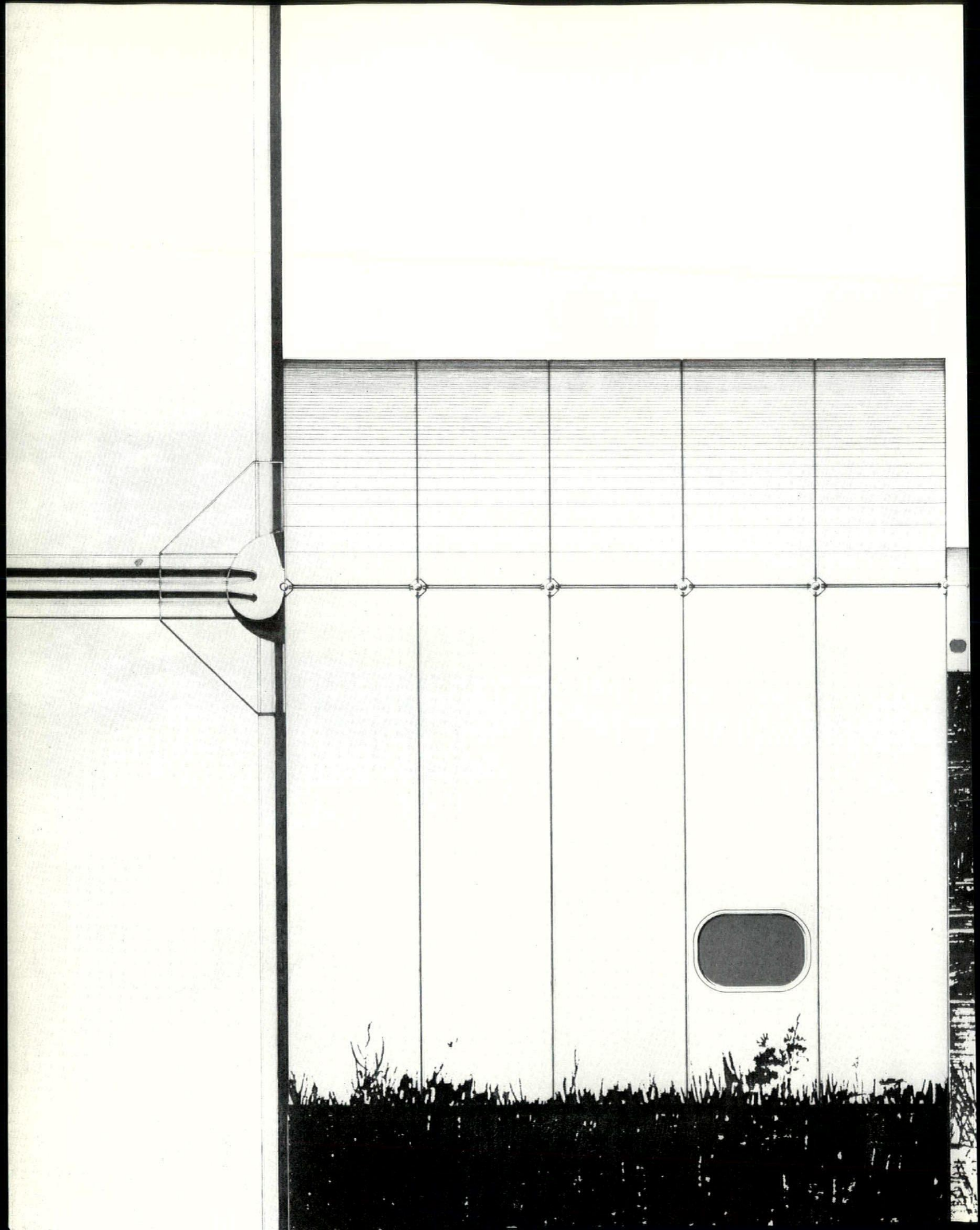
In essence the sophisticated, crisp and infinitely extendible Haller USM structural steelwork system is an earlier and lightweight version of Arup's repetitive box. By comparison it makes Player look ponderous —an impression heightened by Arup's latest modification incorporating externally expressed reinforced concrete staircases and infill panels. The Haller system consists of a three bay wide, three bay deep, basic structure of lattice girder roof bearing onto four-, three-, or two-way (according to their position in the building) upright channels.

Lighting and other electrical wiring runs in the roof space, but this method has not generally been used for all services runs—in one example the services are housed in the basement. Illustrated below is the Saalfelden printing works in Austria designed and built by the Hallers. On the right is a model of the basic structural element and the interior, bottom, is a factory at Dulliken in south Austria using the Haller System but in this case designed by Hans Zaugg who has run all the services in the ceiling.

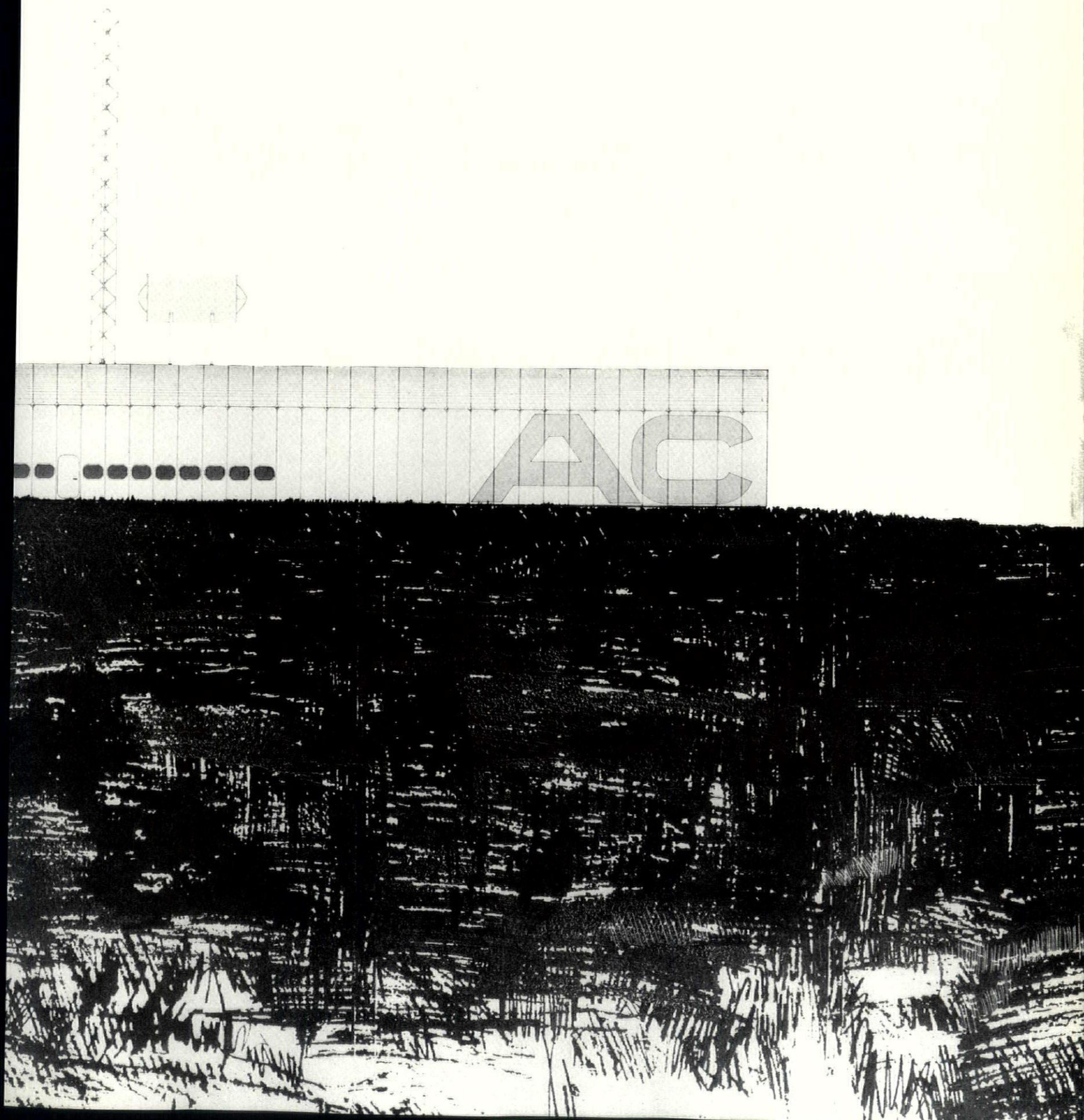


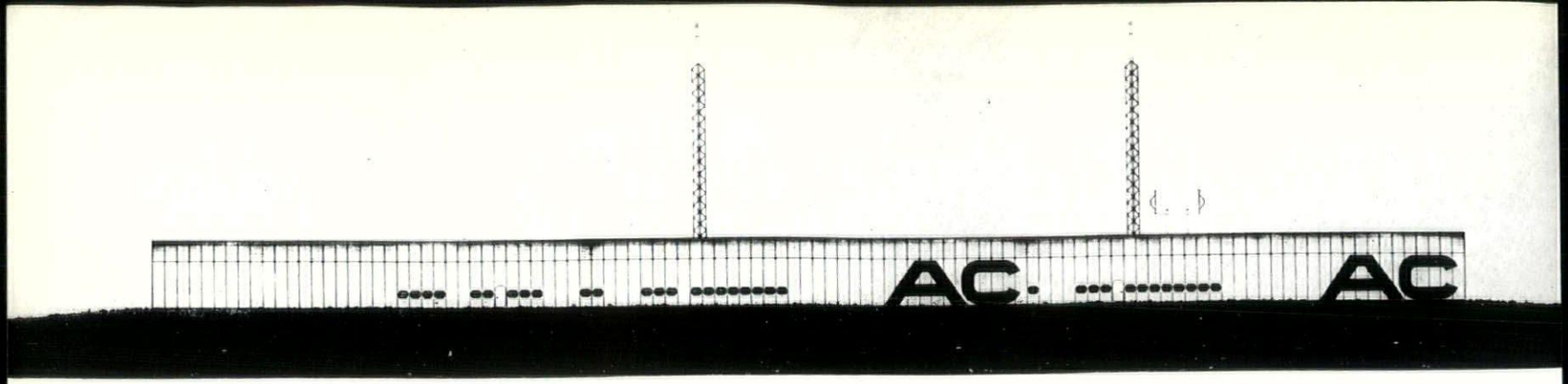






Universal Oil Products is by Rogers out of Ehrenkrantz—a wholly flexible multi-purpose extendible tube which by its sheer glamour makes package deal parcels look what they are—off the cuff, off the peg, easy-way-out, inflexible, ugly and inefficient structures for lazy minded industrialists who can't be bothered to plan nor to improve.





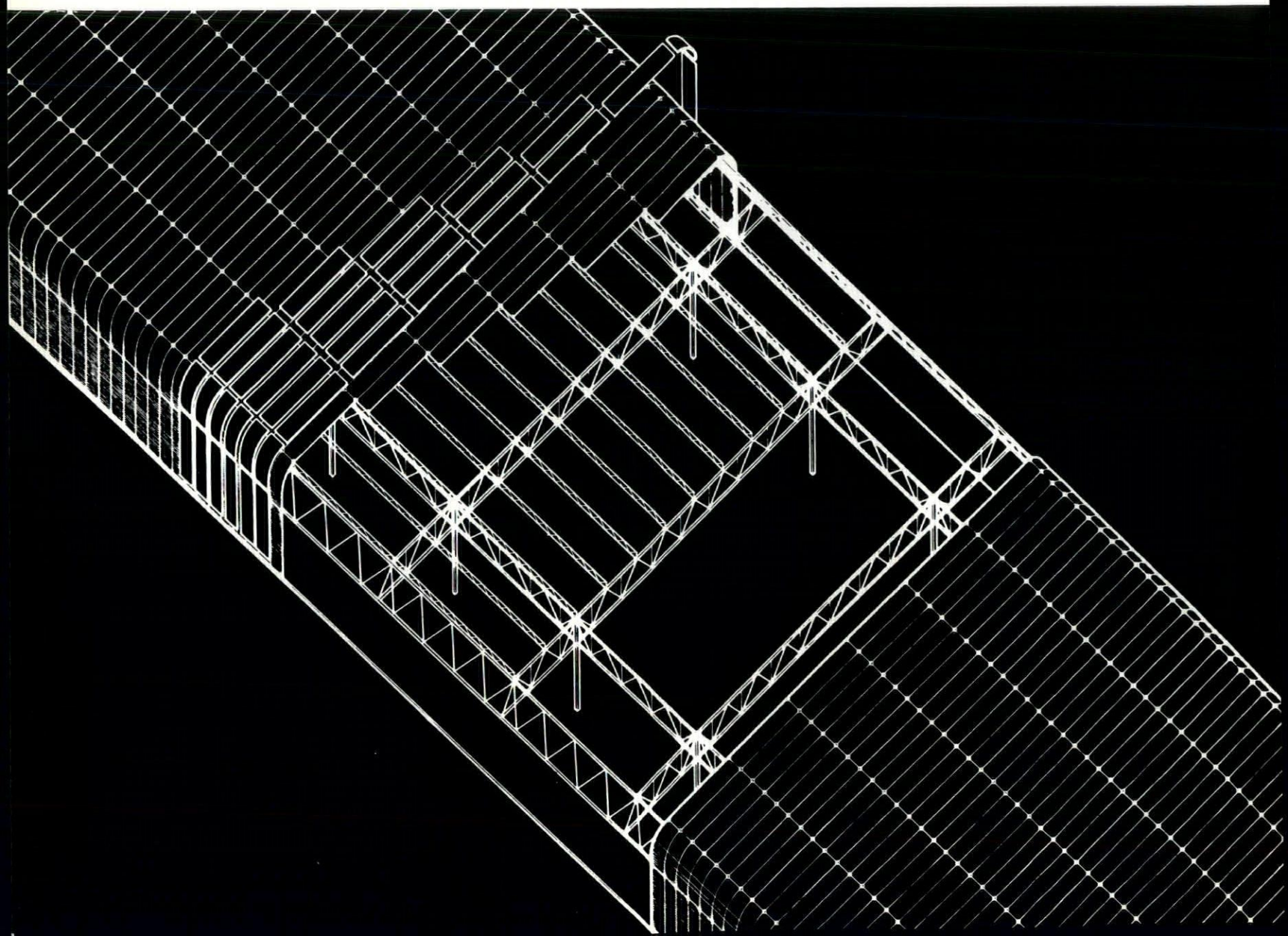
Richard and Su Rogers, John Young and John Doggart's project, in association with Design Research Unit, for UOP might have walked out of Peter Manning's mind. There it all is—consistent bay dimensions. unvaried clear heights, uniform constructional form and to cap it all, warehouse and storage space within the same building. So it's no surprise to find Peter Manning's horse sense obiter dicta quoted in the factory analysis for UOP. This analysis is one of the best and simplest argued explanations of what factory design is about, and, as an unmistakable product, what the architect's role is as a pacesetter for the client.

The whole argument is undeniably in the client's interest. It runs: well designed multi-purpose factories are flexible (by definition), they sell easily if the owner uos sticks, they can still provide everything client needs whether it's function or prestige, and the cosmetics industry is classifiable as general purpose.

A sophisticated development of this project became their prize winning DuPont house entry—the one that got away because the judges had cold feet and gave it second place. Single storey—again all the pros and cons are skilfully set down in their analysis—the entire building is made up of two inch thick Alcoa light weight panels zipped together with neoprene. With curved tops they form a continuous skin with no eaves and nothing different about the roof. Gutters are slotted in where openings occur and windows or doorways can be cut into the panels before or after erection. They are just slotted into neoprene gaskets. The aluminium is hot yellow ICI novalum pvc outside and white inside—with a manufacturers' guaranteed maintenance free life of 25 years.

The membrane clings to a 130 ft cantilevered truss (6 ft deep) with 40 ft purlins spanning the short distance. The structure is entirely internalised to minimize maintenance. Services run naked in the roof, while heating and ventilation units sit atop the roof. The 'clean' and 'dirty' areas are separated by a glazed screen and clean gets carpet, dirty—epoxy flooring. The ends of the building are completely double glazed and can be slipped off when linear expansion becomes necessary—and re-used of course.

The initial project is for 30,000 sq ft at £5 10s per sq ft and later expansion will take it up to the 60,000 mark. Its affinity with Computer Technology and its own technological breeding stem from a brief but brilliant partnership between the Rogers and the Fosters and the fact that both Richard Rogers and Norman Foster have spent time in America—some of it one suspects at the altar of Ehrenkrantz.



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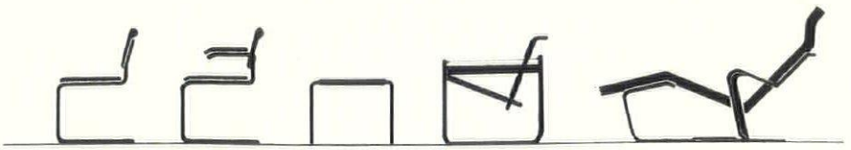
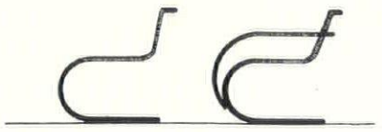
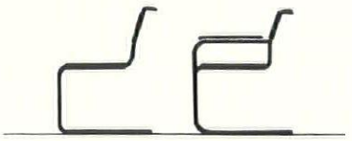


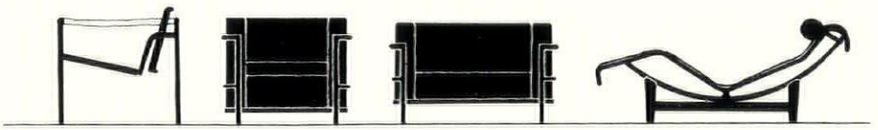
MIES van der ROHE



MART STAM



LE CORBUSIER

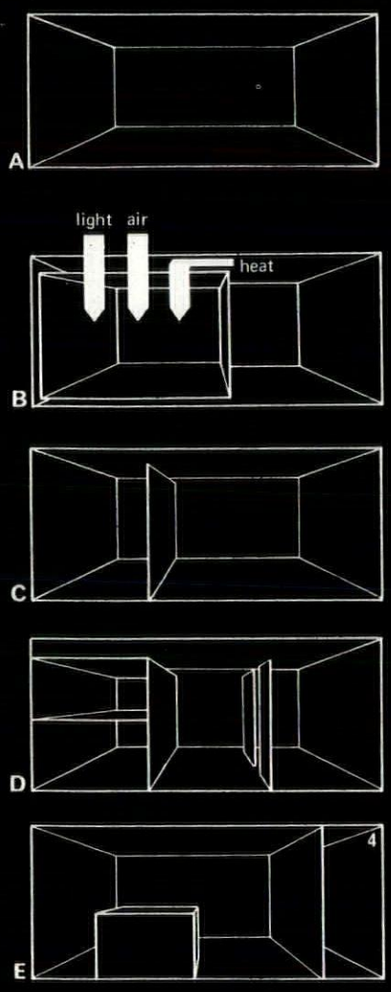


CHARLES EAMES

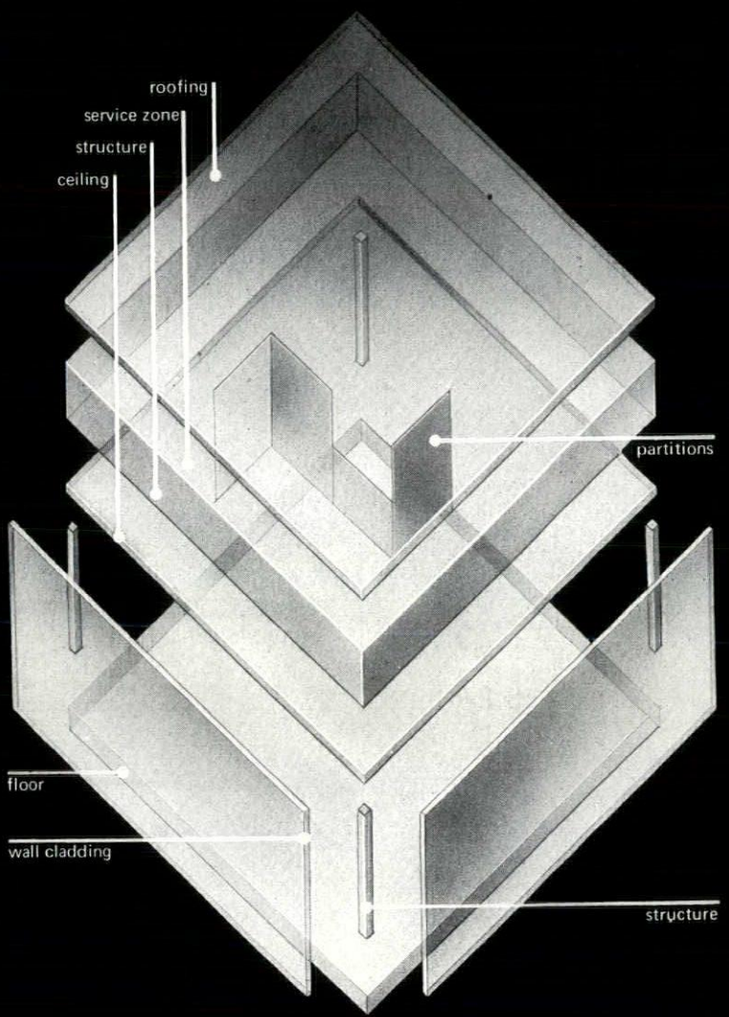


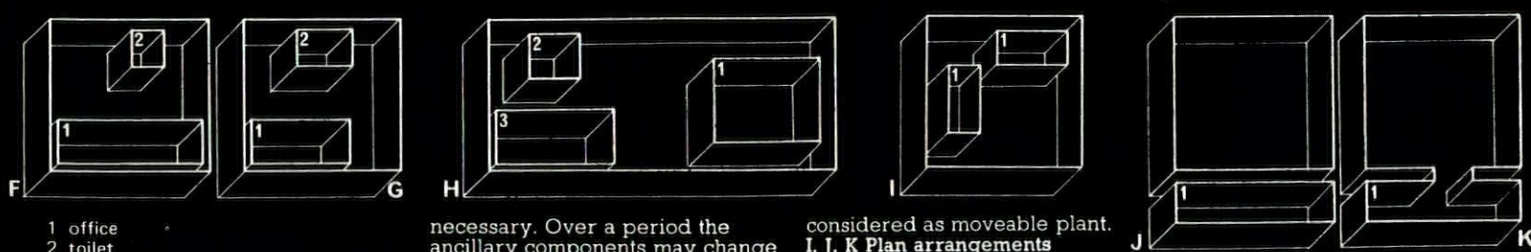
ARAM DESIGNS LIMITED 57 KINGS ROAD LONDON SW3 01-730-2451/2

Company pride apart, the factories so far illustrated, even if their products are diverse, could nearly all satisfy their building needs by using a sophisticated, architect designed, multi-purpose factory building system. Which is what the National Building Agency abortively proposed in an unpublished report to the Industrial Estates Management Company in the hope that IEMC would be intelligent enough to spend their annual £8,000,000 budget on a commissioned system—akin to SCSD. Peter Manning's Pilking-



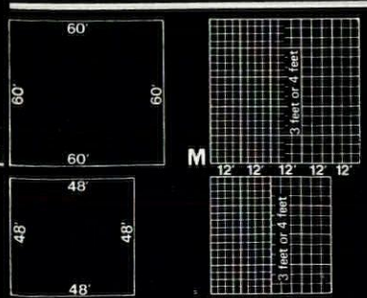
The basic structure
Right, the main elements of the system built factory.
A The shell
The two basic spatial requirements are the shell, which is the production or process area and the ancillary accommodation such as offices, cloakrooms etc. The production area may house anything from a laboratory to light engineering.
B Controlled areas
Within the shell some processes may require a controlled environment with carefully regulated humidity, noise levels, temperatures, lighting etc.
C, D Adapting for change
The basic shell can be changed by adding, subtracting or substituting various components such as partitions, suspended ceilings, light fittings, heating units, humidifiers etc, or more simply by adjusting the controls, e.g. setting thermostats, opening or closing valves, switching lights, opening or closing ventilators and windows, adjusting louvres etc. Changes may be of the whole, C, or part, D, of the shell.
E Ancillary accommodation
The ancillary accommodation can be housed within the shell, E.
F, G, H Changes in size
In 1969, F, the office may be large but because the staff is virtually all male, the wc requirement small. By 1970 the office space may be reduced by employing part-time female secretaries—separate wc accommodation will increase accordingly, G. By 1973 the firm may have increased size and a canteen within the enlarged shell, H, become



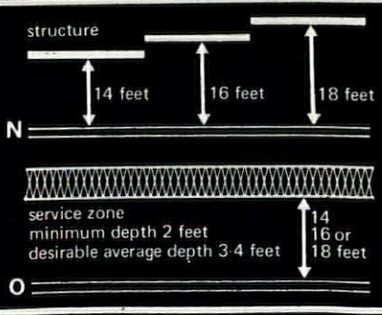


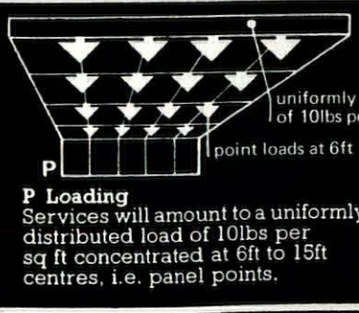
1 office
2 toilet
3 canteen
4 laboratory

necessary. Over a period the ancillary components may change in location, type, quantity and size. In fact the ancillary accommodation can be considered as moveable plant.
I, J, K Plan arrangements
All these subsidiary elements can be within, I, separate from, J, or linked to, K, the shell.



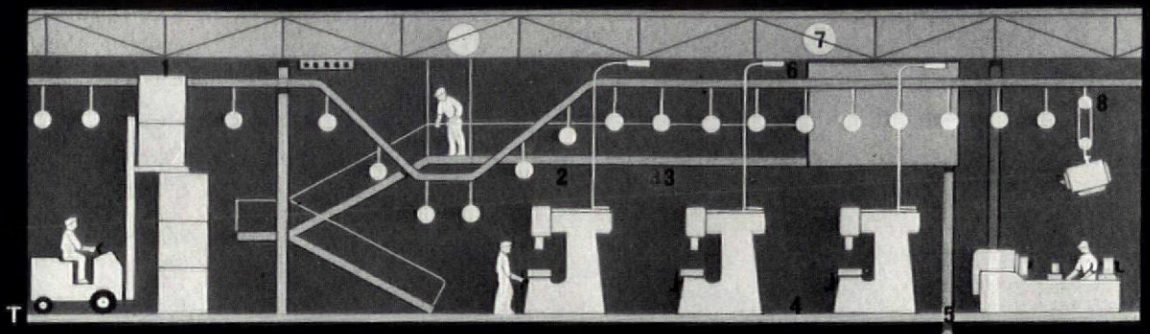
L, M Structural module
The structure is a basic grid 60ft by 60ft, L, or 48ft by 48ft, M. The grid can be subdivided into 12ft by 12ft bays and 4ft by 4ft or 3ft by 3ft sub bays.
N Height
The unobstructed floor to ceiling height is 14ft, 16ft, or 18ft.
O Service zone
The service area lies within the roof structure, minimum depth 2ft, but preferably 3 to 4 ft.





P Loading
Services will amount to a uniformly distributed load of 10lbs per sq ft concentrated at 6ft to 15ft centres, i.e. panel points.

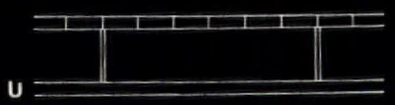
ton research in the same field back in 1962 advocated a similar policy, and Arthur Aldersley Williams, after intensive study at MIT of American practice was able to conclude by extrapolation that a multi-purpose prefabricated system would meet the requirements of three quarters of the manufacturing industry. The now defunct Board of Trade originally commissioned the NBA report. The new superlord Minister of Technology should find out why IEMC carelessly tossed it unheeded on the shelf.



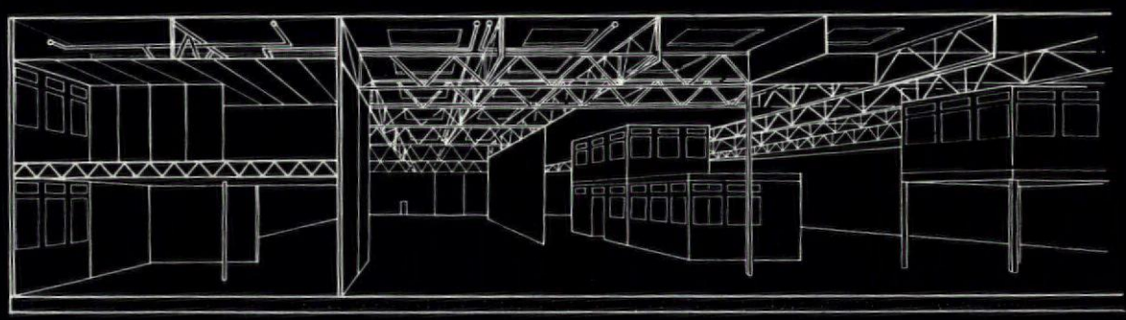
T

T Multi-purpose factory
Arthur Aldersley Williams took the NBA's basic requirements for a single storey factory further when he outlined specific performance criteria for a multi-purpose factory building. He established the need for: 1, adequate height for stacking with fork lift trucks; 2, headroom for overhead walk ways and monorail conveyors over machines; 3, adequate height for the insertion of mezzanines, sub-stations etc; 4, heavy floor slabs to support loaded trucks and machines; 5, underfloor drains for waste removal from wc s and machines; 6, overhead power distribution; 7, roof top air conditioning units; 8, pulley blocks fixed to the structure to lift machinery for repair.

'For a very large number of industrial activities it is not only difficult but inadvisable to design a factory building too closely to a particular manufacturing process. What is really wanted is not a building form which follows a particular industrial function but one which will accommodate any likely activity . . .'
Peter Manning,
Architects' Journal, 6 April 1966

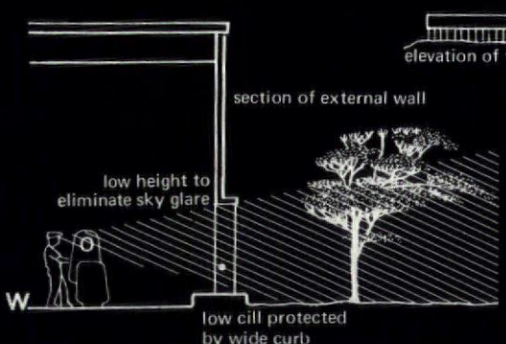


U

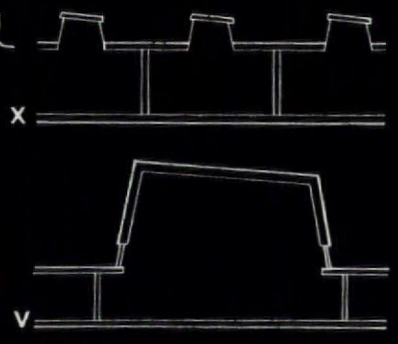


U The basic structure
All these requirements were to be met by a light, easily adaptable and extendible superstructure supporting all services and overhead handling equipment. The other element is a massive concrete floor slab to support heavily loaded trucks and machines but not easily changed.

The NBA system, left, given a rough visual form to show the possible range of components.



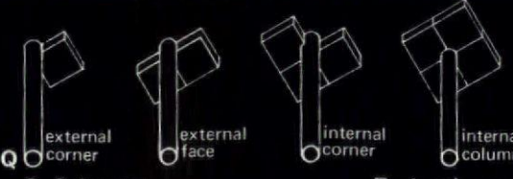
W



X

V

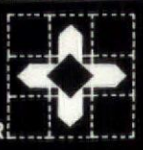
V, W, X Natural lighting
Aldersley Williams had two suggested forms: side lighting, W, at low level to eliminate sky glare and overhead, X, by means of a rigid frame monitor, V, added to the structure. The low sill is protected internally by a wide curb.



Q

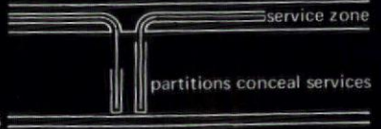
Q Columns
The columns will be 14ft, 16ft or 18ft high for structural grids of 60ft by 60ft or 40ft by 40ft or alternatively on a 12ft grid.

Each column, with no projection above ground slab level, may have to perform four functions and take additional bays after erection.



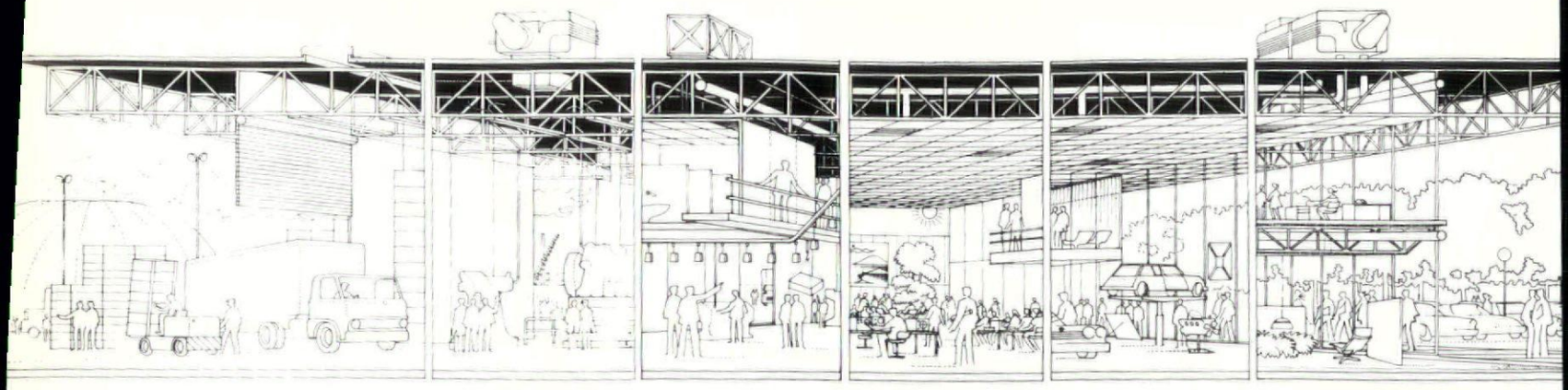
R

R Services extensions
Service systems are planned to allow for future extensions of the shell and the arrows indicate that extension might be in any direction—a factor which is taken into account in the service system. All services components are readily accessible for maintenance and are independent of any adjoining structural or constructional elements.

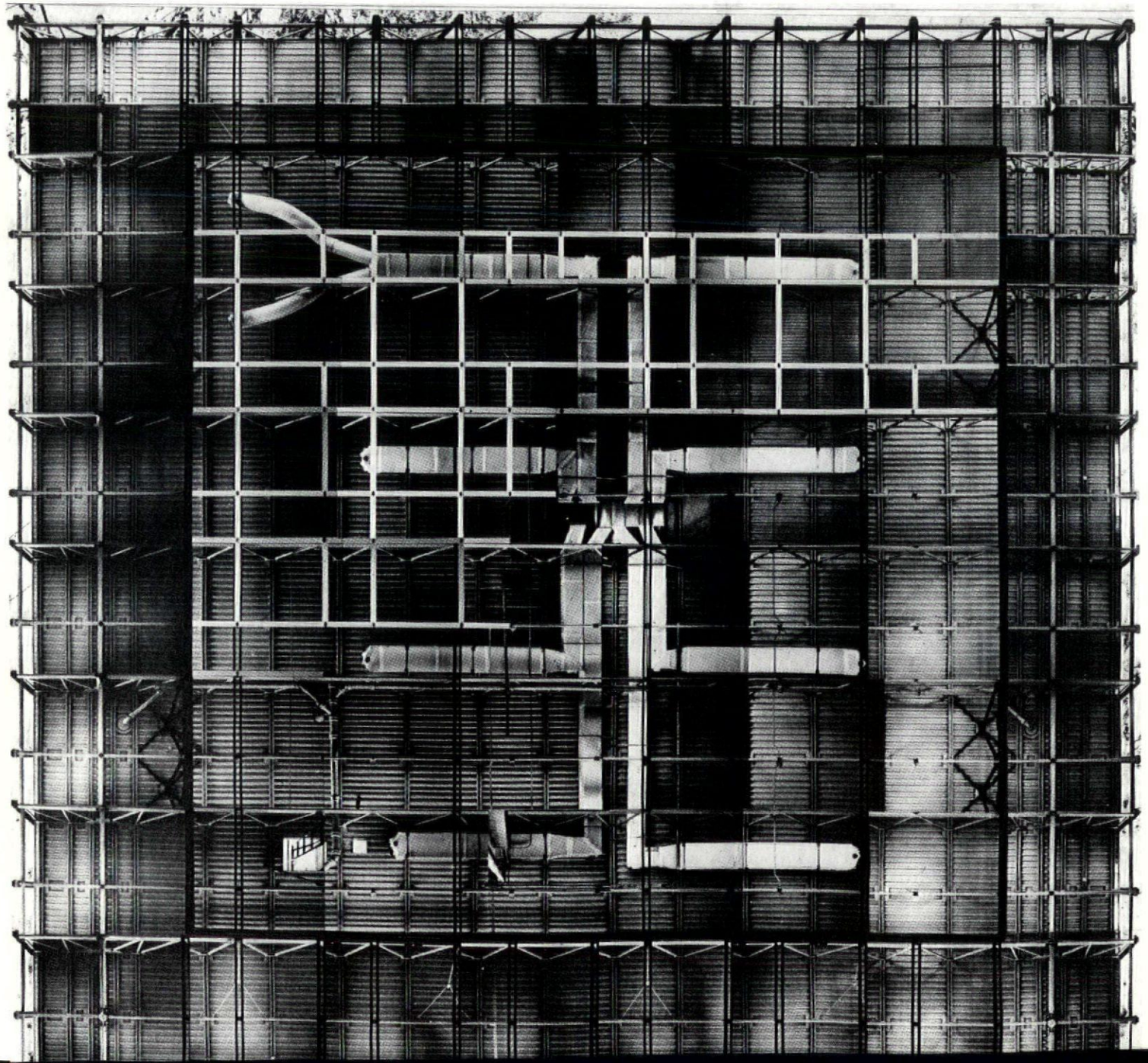


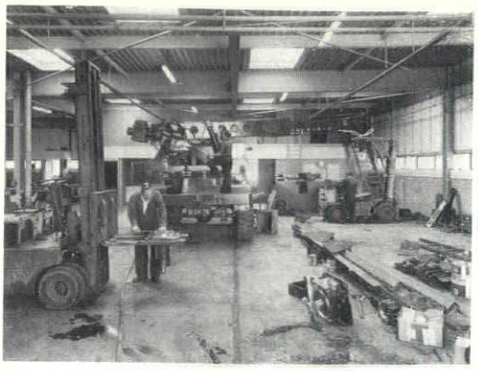
S

S Heating and lighting controlled areas
Partitions conceal electricity and water services and support lightweight terminal fittings. Heavy basins, wcs, fire hose reels have to be self-supporting.



Norman Foster of Foster Associates, guest editor, demonstrates in the drawing above the logic of a multi-purpose system. Within one structure he houses a factory with its production area, its offices, its storage, a supermarket, teaching space, space for visitors. The services for the entire megastructure are run in the roof using the SCSD rooftop air-conditioning units and trunking. The SCSD system is shown in the dramatic roof photograph below. Not so much town workshop as a workshop embracing a town.





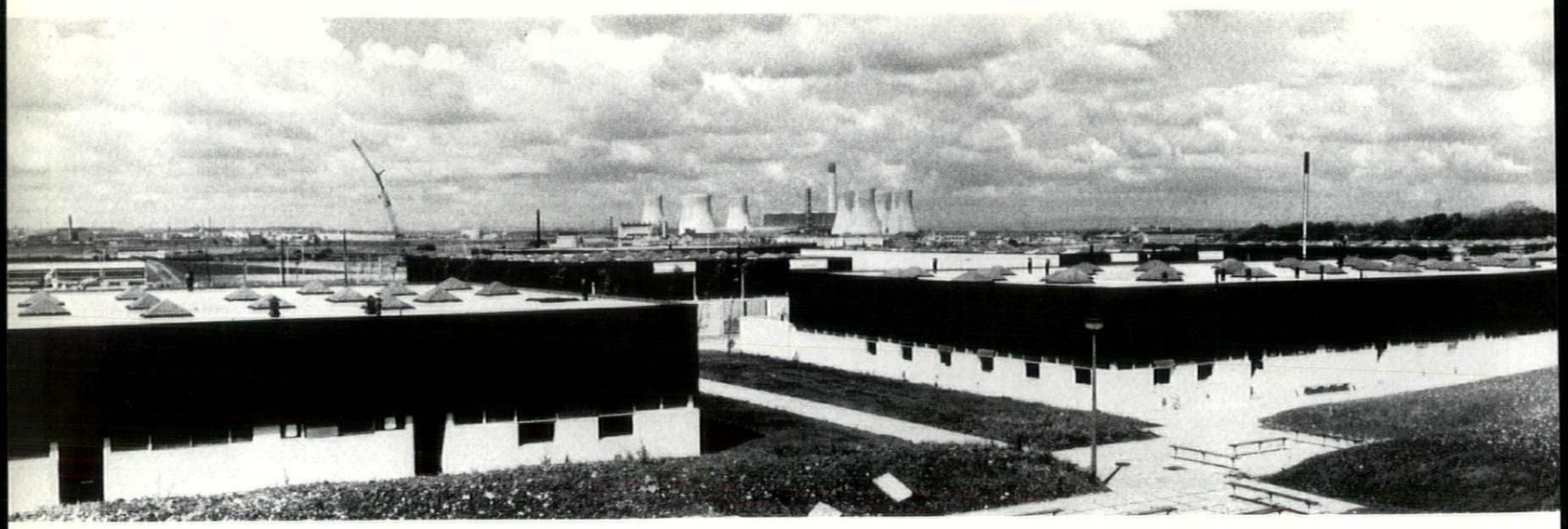




'The layout of these first generation industrial estates is much the same all over the country. The better ones are designed on the grid-iron principle, with factories fronting the roads and usually comprising a two or three-storey office block on the front with a single-storey factory behind, with space off the road for loading, unloading, and car parking. This does not always produce good townscape, but it does meet the requirements of the industrialists. The poorer ones are not so clean cut and frequently operate at low efficiency because of road and plot congestion'
Ronald Lyon, The Guardian, 27 January 1969

'In searching for a forward-looking example of a new town industrial estate I tried to get away from one that I had already known about. This was Runcorn in Cheshire. But I find I must come back to it for there does not seem to be any other new town industrial estate which is quite comparable to it'
Harold Brockman, The Financial Times, 28 October 1969

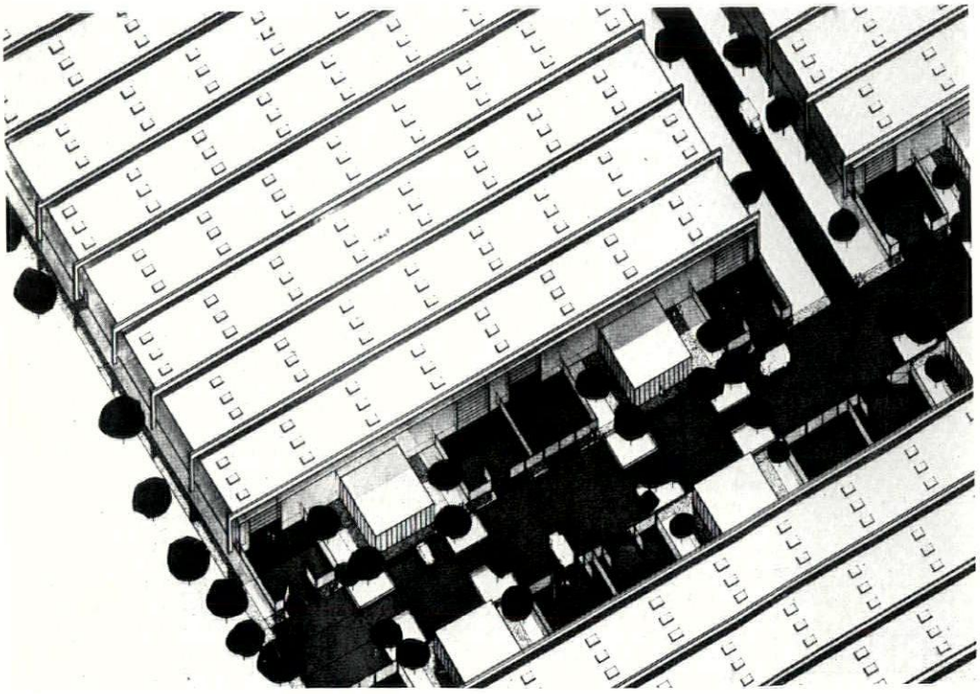
For every industrial firm that is prepared to sit down quietly with an architect planning the short and long term needs of their obsolescent and obsolete premises, there are hundreds who won't. And whereas industrialists will haggle for hours over a £12,000 piece of machinery investigating to the last ball bearing and the last nut and bolt whether the machine is what they want and will give good and lengthy service, they will order a £120,000 off-the-peg shed with no clearer brief than a great big space at rockbottom price. No questions asked on maintenance, heating and lighting costs let alone on the more sophisticated problems of matching the building to the job. And many of these 'impulse buyers' as the Board of Trade called them are footloose. Almost one in 10 people employed in manufacturing now works for a company which has either moved or opened branch factories since the war. It is primarily for these industrialists' needs that the advance factory is designed, and in the New Towns or Development Areas, generally a clutch of them are assembled to make up an industrial estate. The prerequisite of the advance factory therefore is that it should never be taken by surprise whatever activity the incoming industrialists want to pursue inside it, whether it is light engineering, electronics or even office use. British New Towns spend around the £4m mark annually on these flexible 'bribes' to woo industrialists.



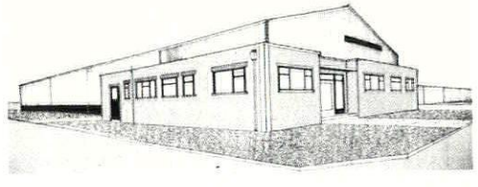
The Astmoor Estate at Runcorn stands on the northern edge of the New Town within a stone's throw of the Manchester Ship Canal. Connected to the rapid transit system, the estate will eventually have about 6000 people working on it. To date 30 firms have moved into factory units which vary in size from 3200 sq ft to 12,800 sq ft—the larger units being capable of 100 per cent expansion. The estate is served by a dual-carriage spine road coming off the urban express-way. Off the spine road are a series of service road loops giving access direct to the factories. Pedestrians are segregated and given separate access to car parks and to the nearest residential areas. Each factory unit has office accommodation facing onto a landscaped pedestrian footpath system at one end and full height doors opening onto uncovered yards for servicing at the other. Car parking is centralized off the spine road. The buildings are simple flat-roofed boxes with steel roof structures. The roofing is aluminium decking and the walls are brick with sheet steel above the windows and doors. At £2 10s per sq ft they are about the right price for the job. Floor to ceiling heights on the other hand are on the low side (13 ft) although 15 ft units can be made available if a prospective tenant asks in time. The roof structure does not provide for machinery lifting and services run under the structure eating into the overall height. Fred Lloyd-Roche, the chief architect, in designing Astmoor, closed his ears to forecasts of doom from his Estates Department. Factories at Widnes just across the Mersey were selling at much lower rents, but after a major confrontation between the Estates and Architects Department over the cost of the proposed development which called for some compromises on both sides, the tale ends happily with Runcorn letting units at 7s 9d per sq ft even though others are available in Widnes for as little as 5s 6d. Roche has the courage of his convictions and has even persuaded firms coming to Runcorn hellbent on building their own low grade factories to have them dressed up in the Astmoor vernacular—as the before and after pictures show. But Roche would be the first to admit that this is not the real answer. Equally he is entitled to fire back 'what is the answer ?' While Astmoor may be an

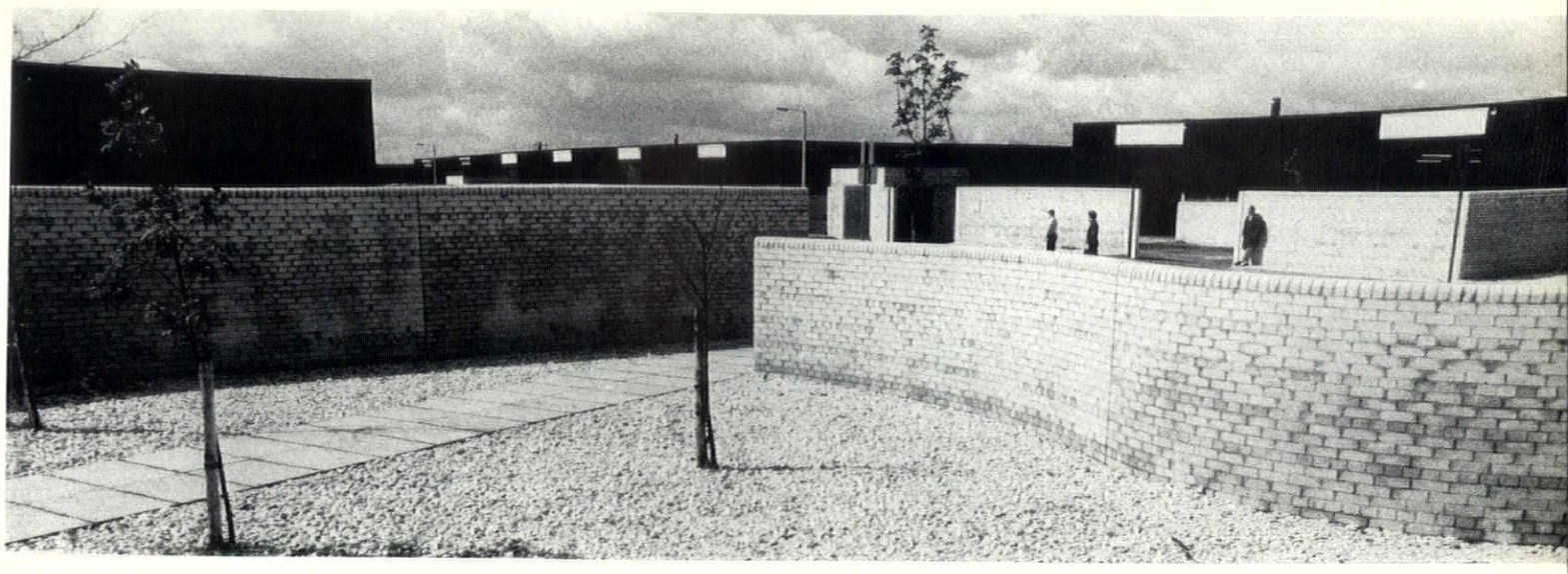


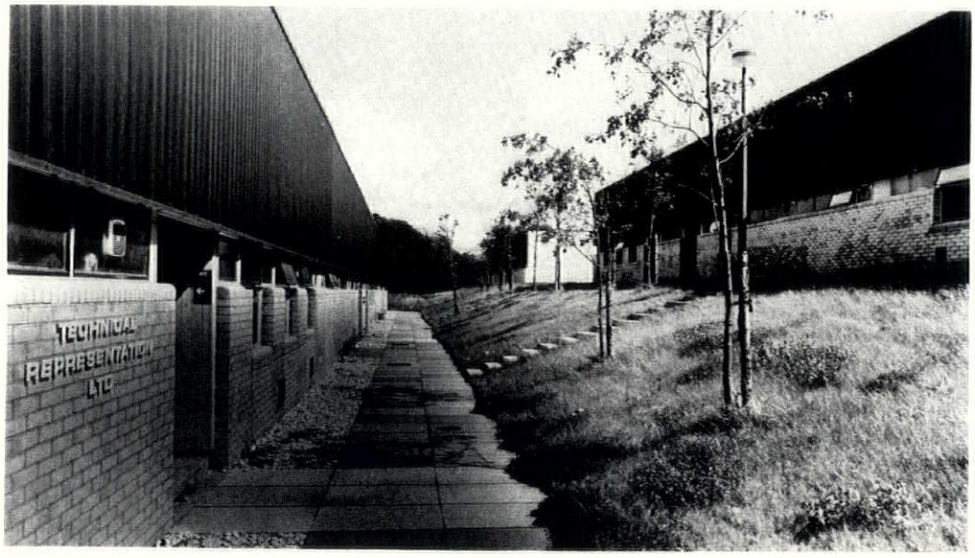
Astmoor Estate at Runcorn is the first built example of the Radburn principle applied to British industrial estates. But Runcorn New Town Corporation is already weakening in its later Whitehouse Estate on economic grounds and although the Whitehill Estate





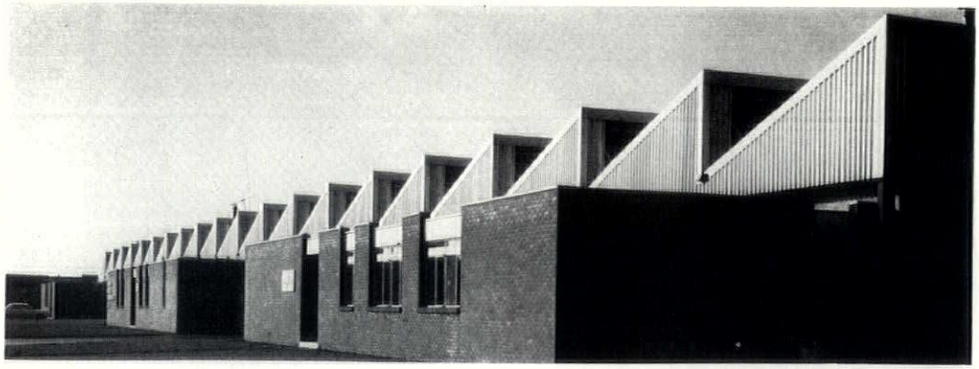


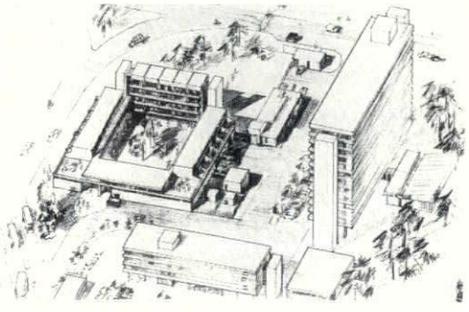


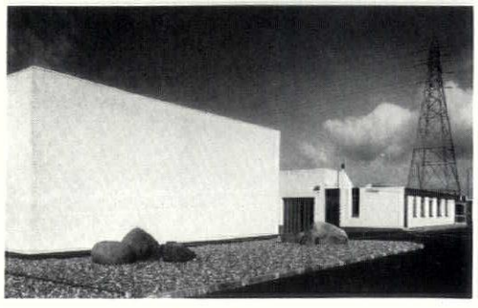


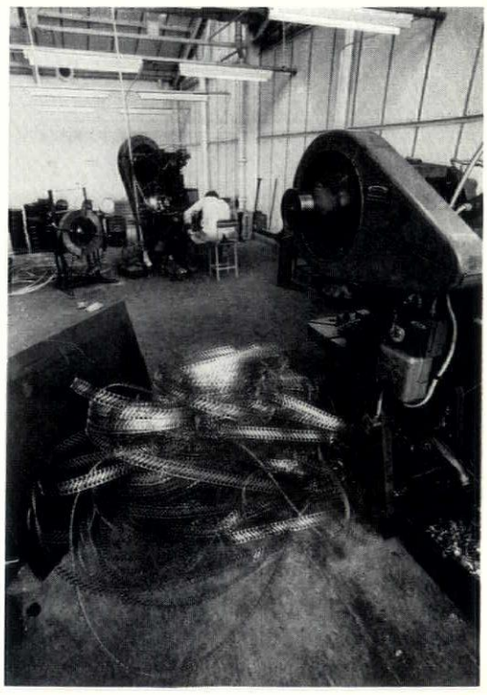
environmental success, hard economics seem to have led to the immediate abandonment of the segregated system at Runcorn's second estate at Whitehouse. Whitehouse is a careful attempt at landscaping combined vehicle and pedestrian accesses. But the semi-detached offices turn back the clock completely. West Lothian County Council—being Scottish an all-purpose authority unlike its English counterparts—has bravely tried to improve the standard of the industrial environment in its county by introducing good architects to incoming industrialists—successfully—and developing its own estate—less successfully. The Whitehill Industrial Estate, West Lothian, below, provides 20,000 sq ft advance factories subdivided into four 5000 sq ft units. Each unit is 100 ft long and 80 ft wide with low internal heights of 12 ft. The rear walls are demountable to provide for extension and the structure is steel framed with sawtooth roofs. Ancillary accommodation is provided in a separate unit. The amenity group is still at design stage only though the drawing shows how the elements are to be grouped around a courtyard.

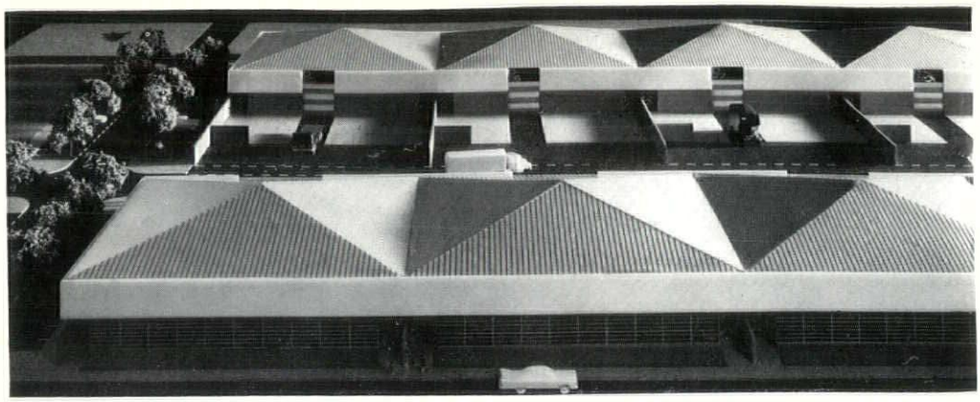
in West Lothian makes a real attempt to humanize industrial estates by bringing in the corner shop, at the planning level it is little better than some of the more traditional grids for factories—and humans. Industrial estate design still is a neglected art.





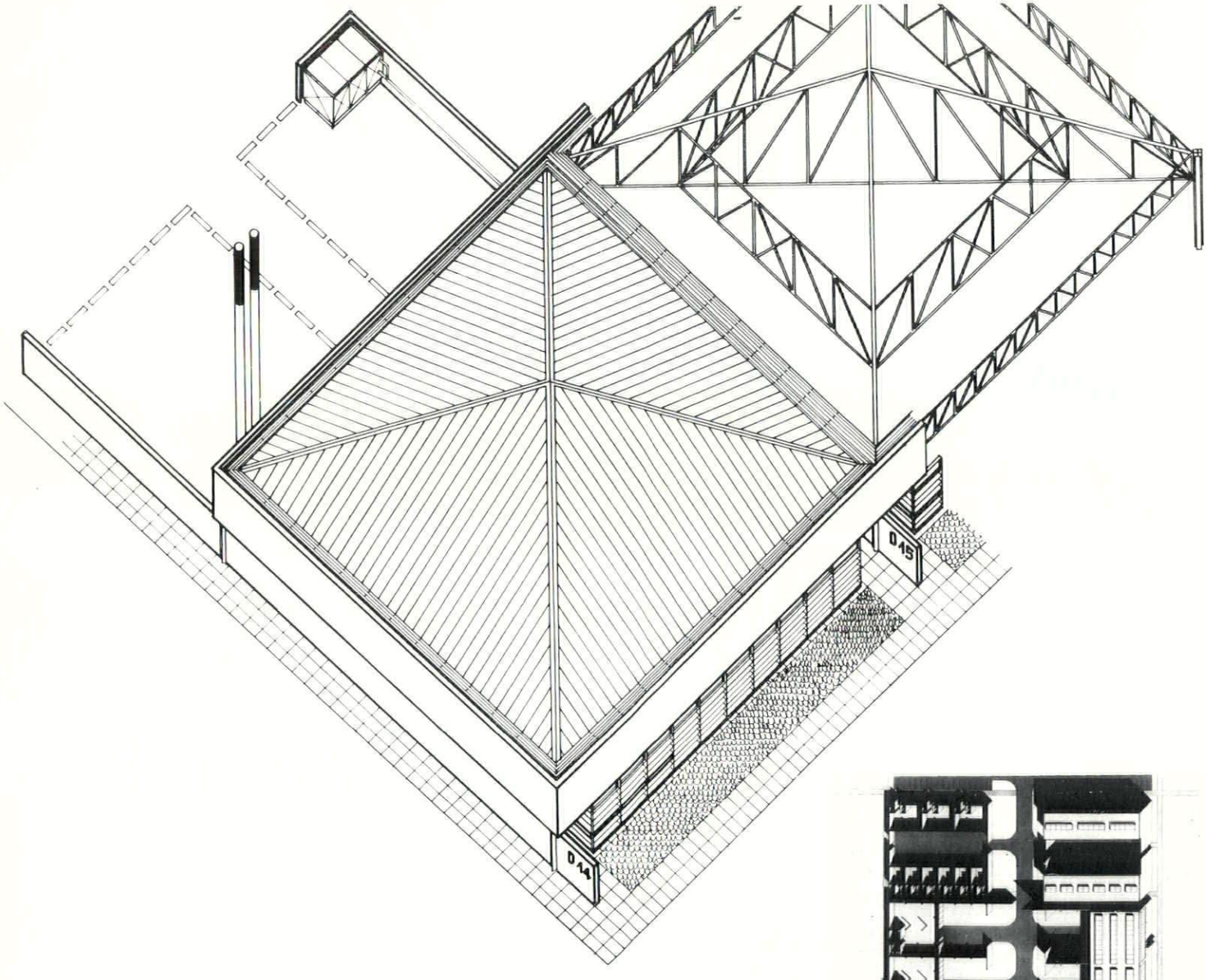




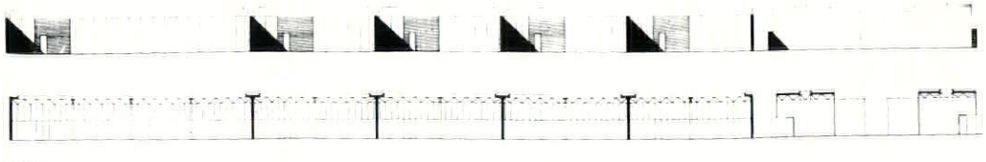


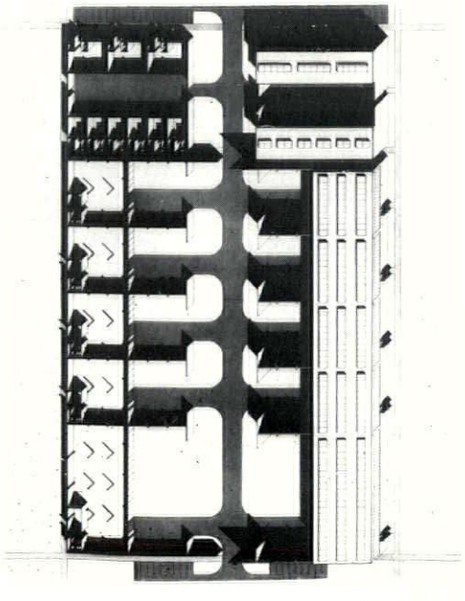
At Irvine New Town, the advance factories separate heavy vehicles from pedestrians by consigning the heavies to the back entrance. At the other end where the offices are, pedestrians and light vehicles compete—in chief architect David Gosling's view to no great harm. The present series uses a 7 degree pitch portal frame giving a clear height of 13 ft 3 in. The Corporation's first instinct to provide windowless factories has been dropped in the face of client demand not to say insistence on daylighting. But their latest development is the more interesting since it moves in the direction of a multi-purpose structure. The model left and the axonometric below show its application to advance factories with spans of 20 ft, 40 and 80 ft. The clear spans in two directions offer distinct advantages over the portal frames.

At Irvine New Town advance factories have given birth to a multi-purpose structure.

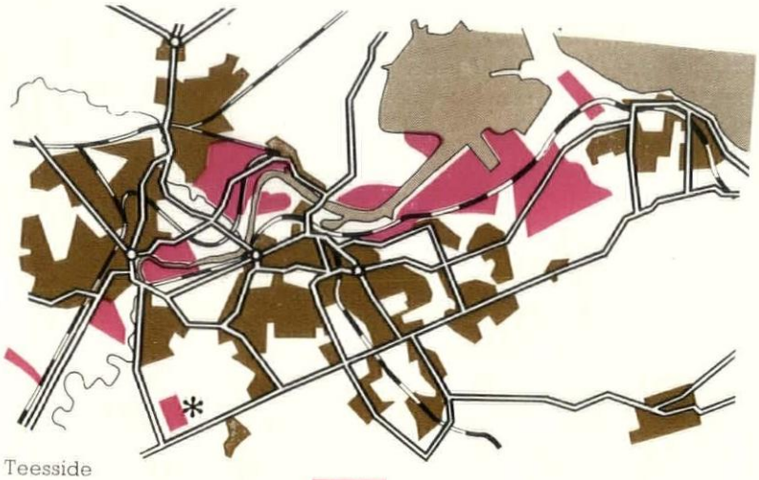


Derek Walker and Partners have developed their version of the same plan form separating heavy vehicles and pedestrians for speculative development in Wales by Modern Buildings Ltd (right and below). The details are different. Prefabricated timber stressed skin roofing panels sit on open web steel joists and unlike Irvine with its 80 ft portals the basic clear span here is 42 ft. The units are planned as 6000 and 12,000 sq ft units, with smaller units at one end of the main compounds. But 12 ft clear heights are low compared with Irvine. The units are top and side glazed.



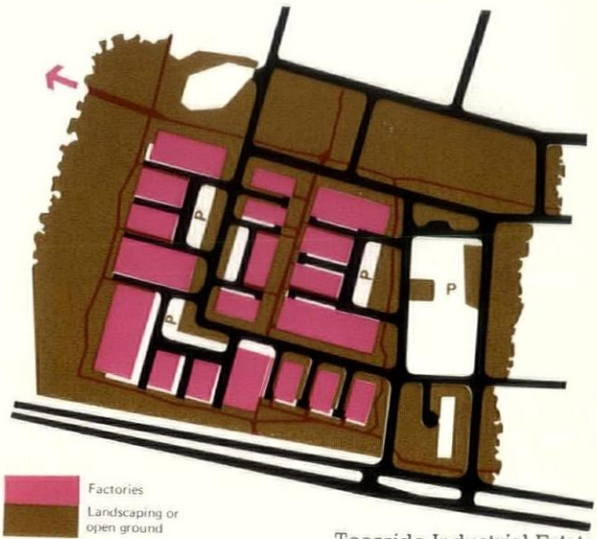


72 years lie between the first industrial estate and the latest. Yet the advances made in the last five years in environmental planning at Teesside and Runcorn stand out as the most significant development in all the long, undistinguished history of trading estates. And even they pale into insignificance when put alongside the enormous strides made in almost every other field of architecture and planning. The industrial environment, inside the factory and out, almost without exception, is utterly third rate.



Teesside

Industrial
Residential
Town centre
Rivers
Main roads and motorways
Railways
Estate illustrated
P Parking



Teesside Industrial Estate

Factories
Landscaping or open ground
Pedestrian ways
Roads and areas for vehicles only

Industrial estates began their life in this country in 1896 at Trafford Park. The estate there was a private enterprise attempt to encourage growth at the end of the Manchester Ship Canal and barge traffic on the canal itself. Slough Trading Estate, which followed in 1920, started off selling surplus war materials in wartime building. When a number of the ex-Army huts were sold off for industrial use, the demand was so great that the company turned all its attention to building factories to let. So, when in the thirties, the Government was forced to take radical action to attract employment opportunities to depressed areas, the industrial estate was latched onto as an 'instant' solution to the problem of diversifying industry in areas where basic industries were declining.

These first generation industrial estates are much the same wherever they are—a grid of roads to a rigid pattern with one firm occupying each block. The result is a series of unrelated single-storey blocks with a large space margin all round to permit expansion. The provision for growth generally is about as subtle as leaving a lot of land to lie fallow for building on some time in the distant future. The road systems have to serve as an universal circulation system in which pedestrians and cyclists compete for road space with lorries, vans and cars.

Various attempts have been made to achieve a more rational circulation system, but not with a great deal of success. Napper Errington Collerton Barnett's master plan for the English Industrial Estates Corporation estate at Teeside for instance is disappointing —in the execution that is, rather than the design, which is a modified Radburn layout with car-free areas within the superblocks. They argued that the Corporation should complete a superblock right at the beginning to demonstrate how the circulation system would work but building is going on piecemeal and most of the estate roads over several hundred acres have been laid out—complete with lamp-posts and signs.

This, says the Corporation, provides economies of scale. Others are more blunt: 'a big white elephant' and 'a dog's paradise' are two cryptic North Eastern comments.

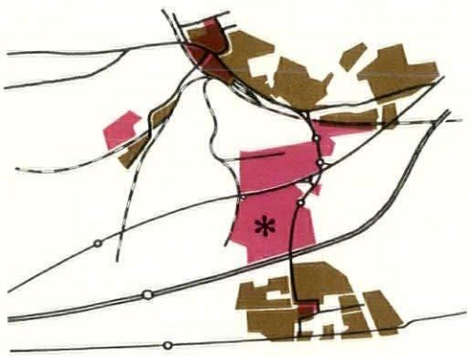


The dream (above); the present reality (below)



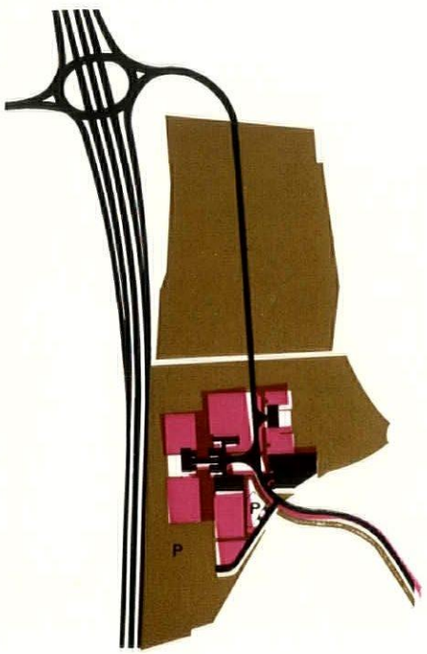
At Irvine New Town, David Gosling, the chief architect, has designed a comparable superblock of advance factories but, unlike Teesside, the main pedestrian routes cross roads in several places, although the circulation system by and large does separate heavy service traffic from pedestrians.
The Whitehill Estate at Bathgate, West Lothian has a rectilinear perimeter road dividing the estate into sectors which has made the phasing of development relatively easy. The pedestrian system however is weak, despite the county council's geniune attempt to humanize the estate by proposing an amenity centre, a bank, shops and a pub (see page 379).
The Stephenson Estate at Washington New Town, apart from being rather more centrally placed in relation to the town centre compared with the ordinary run of estates, makes little concession to the separation of pedestrians and service traffic.
The Astmoor Estate at Runcorn on the other hand is at this level much the most successfully designed estate in Britain to date. It manages completely to separate traffic and pedestrians and at the same time to establish a workable hierarchy of roads for circulation. It does also provide communal facilities and will be linked to a rapid transit system—the first industrial estate so served.

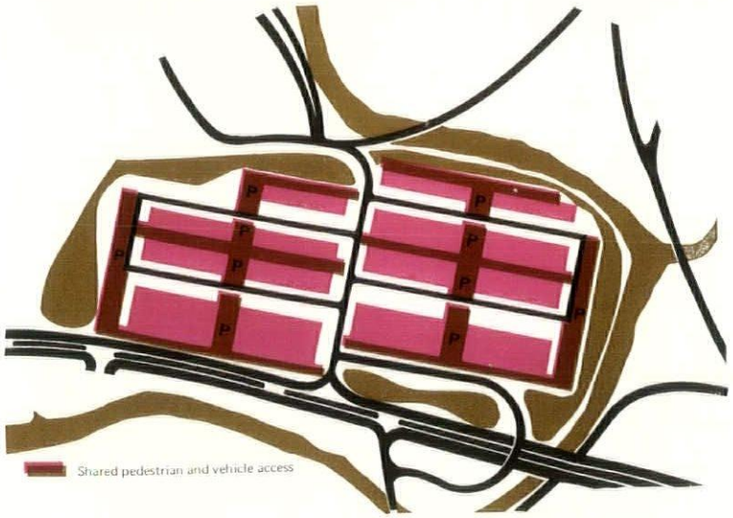




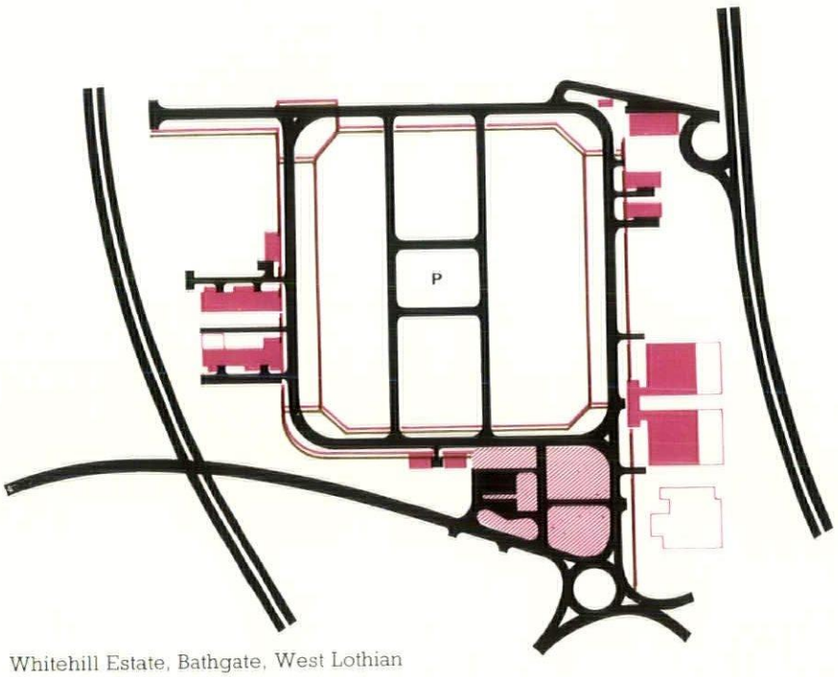
Bathgate, West Lothian

Stephenson Estate, Washington New Town (see town plan on page 386)





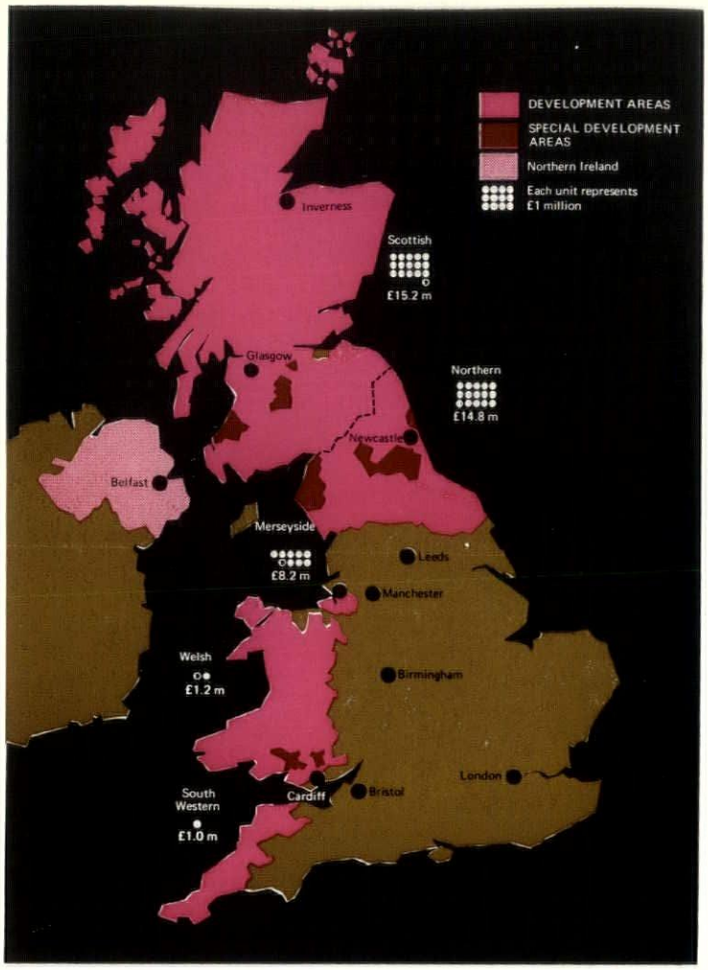
East Mains Estate, Irvine New Town (see town plan on page 387)



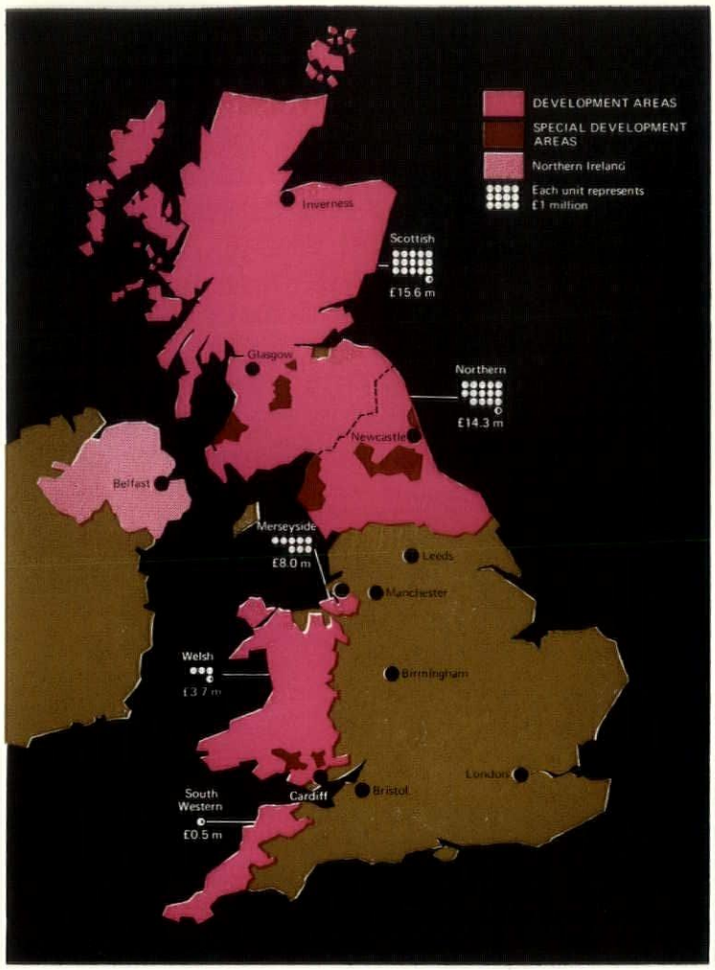
Whitehill Estate, Bathgate, West Lothian

Astmoor Estate, Runcorn (see town plan on page 387)



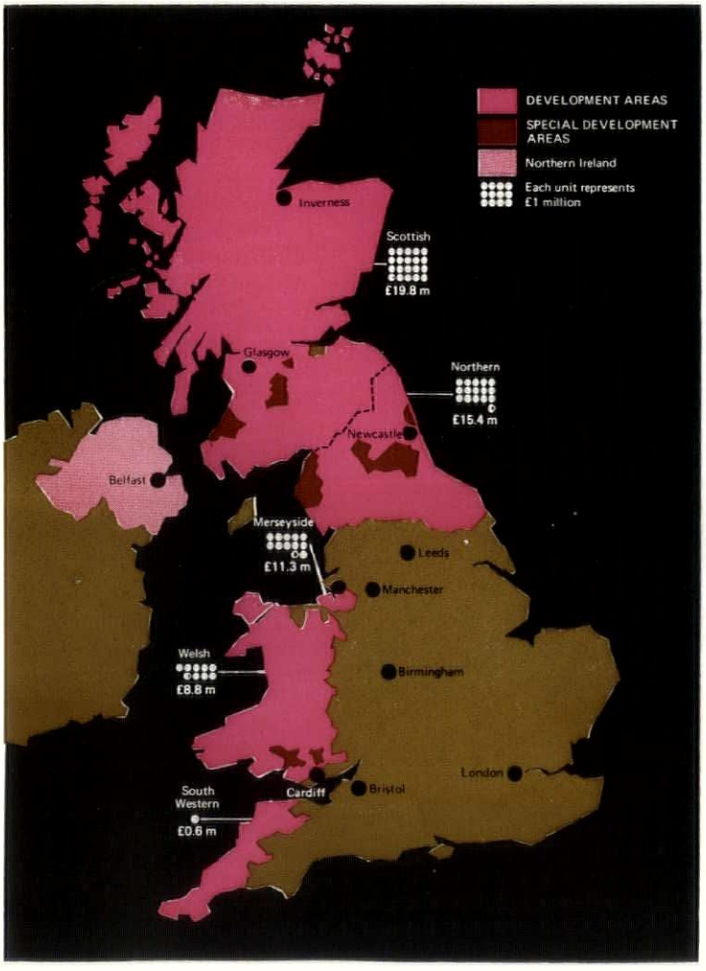


1964-65

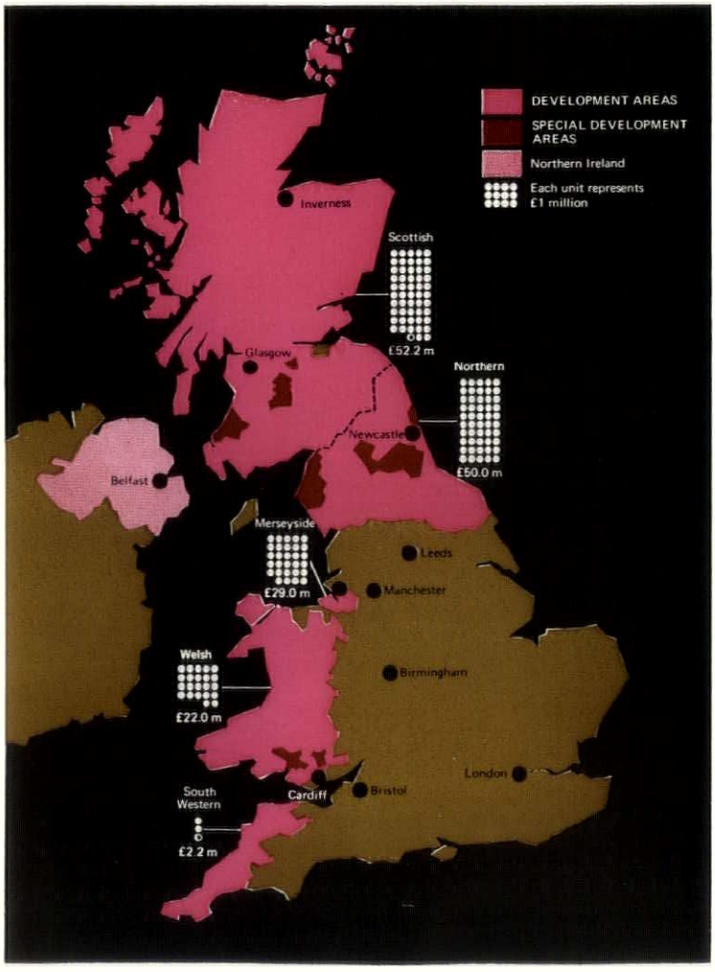


1965-66

Since 1934 financial assistance to Development Areas has been 'a political beacon of faith' for successive governments. And during 1968-1969 rose to an estimated £268m . . .



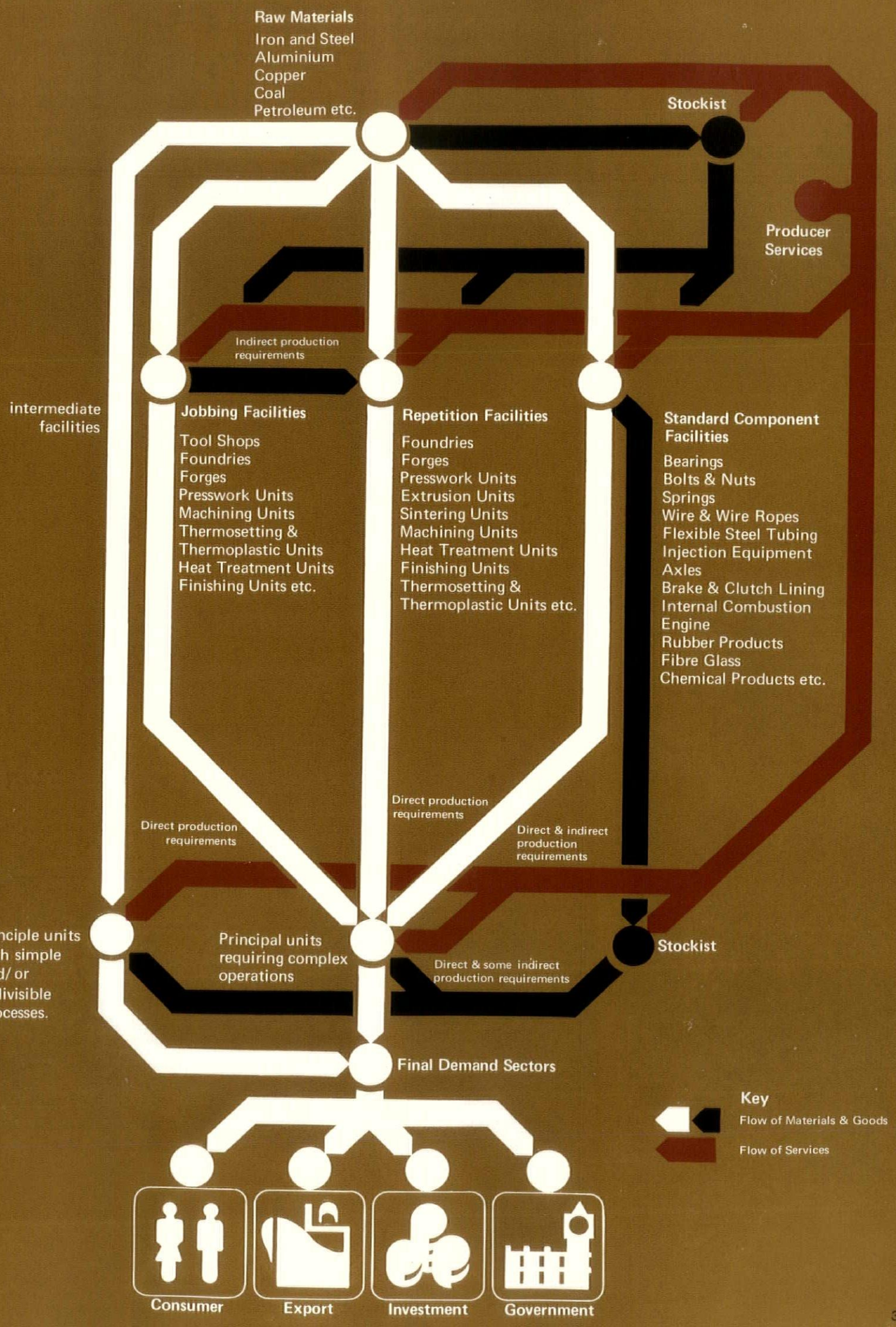
1966-67

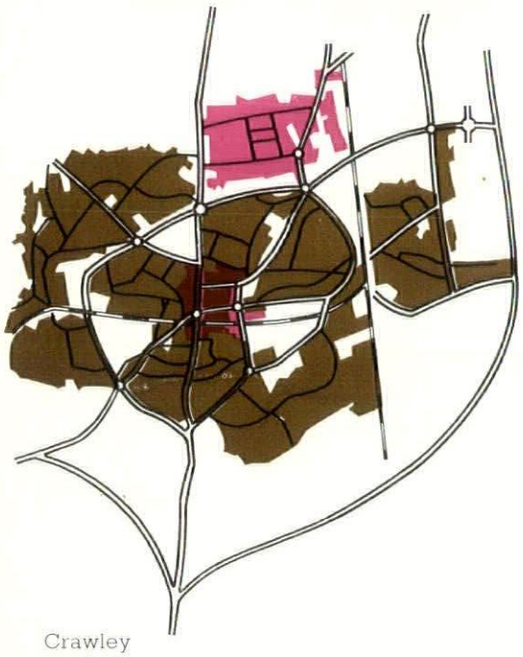


1967-68

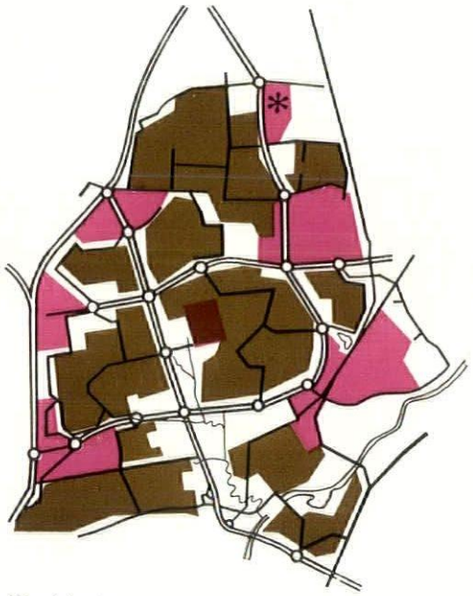
. . . but there is a growing volume of evidence to suggest that this blanket distribution of government largesse is too crude a tool. Development Areas have attracted a disproportionate amount of manufacturing industries such as vehicles, man-made fibres, textiles, clothing and footwear, and many too few of the growth industries of chemicals, electrical engineering and instruments, mechanical engineering, metal manufacturing, metal goods and building products. A report commissioned by the short lived DEA, as yet unpublished, advocates a refined tool for government policy —the creation of growth poles—which could transform Development Areas from the problem children they continue to be despite massive government investment. The diagram opposite shows the basis of a central Lancashire growth complex.

During the 1960s the government has accelerated its efforts to revive regions with chronically high rates of unemployment —the development areas.
These development areas are generally dependent on dying industries or undeveloped regions with little industry at all. Altogether £260 million a year is spent by the government on luring industry into them and new jobs have been created on a substantial scale. New plants opened in development areas by firms based elsewhere between 1946 and 1965 provided some 438,000 jobs in 1965. By December 1968 unemployment, which for most of the 1960s was at least twice the national average, had fallen to 4.1 per cent compared with 2.6 per cent for Britain as a whole.
But the success of the government's development area policy has deepened the gloom of the grey areas. Places with stagnating industries such as the north west of England, are rapidly becoming the new backwaters of economic progress.
The first major report on the grey areas was that of the Hunt Committee published last April. It made four main recommendations: industrial development certificate controls should be relaxed throughout the country; Merseyside should lose its development area status and be reclassified as a grey area; there should be a major review of the effects of the various incentives offered to firms in development areas, and Yorkshire, Humberside, and the north west region should qualify for a 25 per cent building grant unlinked to the creation of new jobs.
In addition the report suggested that development, aided by the provision of adequate road networks and Government built factories, should be concentrated on a number of fixed centres chosen solely on the basis of their growth potential.
But the Hunt Committee's ideas for the grey areas were strangled at birth when the Government rejected most of its recommendations outright. Instead of giving the regions a blanket subsidy plus some extra help in potential growth zones, the Government decided to tie its assistance to the creation of jobs and concentrate it on areas where present and prospective needs were greatest. Aid in the form of a 25 per cent building grant, training grants, and government built factories, is therefore being given to the recently designated intermediate areas—north east Lancashire, Yorkshire Coalfield, North Humberside, the Nottingham Derby Coalfield, south east Wales, Plymouth and Leith. The Government's approach is a practical one; the economic circumstances of grey areas are very different from those of the development areas and demand a different approach. Most grey areas already have a long established industrial infrastructure with some of the essential foundations such as good roads and other communications, services, training facilities and so on.
Applying a policy of free handouts to all comers is probably neither the quickest nor the cheapest way of breathing new life into these regions. Where industry needs to be revitalized rather than started from scratch it is preferable to concentrate aid on selected industries small areas. In fact the Government has opted for a 'growth pole' development policy.
The idea behind growth poles is to build on the fact that there are some groups of industries in which the individual units are highly dependent on each other; certain broad categories can be distinguished where only 10 or 20 per cent of the output of the various industries goes to industries outside the block. These industries are not only interrelated at a national level, they also tend to congregate in geographical areas to form a natural clustering of economic activity. The textile industry is one example. The growth of the cotton textile industry in the north west of England stimulated the development of an engineering industry to produce textile machinery; a chemical industry sprang up to supply dyes and bleaches, and from that evolved a general chemical industry. At the same time the growth of industry and towns gave rise to other assets like markets, a skilled labour force, transport services, all of which tended to attract industries which were not related to the original pioneers.
By injecting a limited number of carefully selected units growth can happen much more rapidly. A regional development policy based on growth poles, would offer incentives to attract certain specific industries from a strongly interrelated group which would then in turn act as magnets to draw supporting industries into the area.
Growth pole development policies have already been applied in a number of countries with a fair measure of success, particularly in Brazil and Spain. But Britain has made only a half-hearted attempt to implement a watered-down version of the policy.
The Government's new development policy for the intermediate areas has fully resurrected the idea. But no clear criteria for pinpointing the potential growth areas has been established. Nor has the vital question of determining which industries would make the most impact on employment in those areas apparently been considered. A firm's decision to move is often more influenced by the support activities which already exist in the areas than by government incentives.
To pick an industry suitable for growth pole development it is essential to discover which sectors of the economy are likely to grow most rapidly in terms of their labour force The mechanical, electrical and vehicle engineering sectors, offer by far the best prospects for growth in employment and output. In addition these sectors have spawned a large number of mobile plants (offshoots which are not geographically tied to a particular area) and they are likely to continue to do so in future.
Once a suitable sector has been selected a blueprint of the complex can be drawn up. When picking the types of product groups for the complex, those where the minimum scale of operation for efficient production is very large would be obviously excluded. On the other hand groups which are heavily dependent on intermediate facilities or with high growth potential would be short listed. The list of support units can be sieved in the same way.
The labour implications of the complex would also come under the microscope. For it is vital to discover what kinds of workers will be required, where they will come from, and what kind of training facilities would be involved.
At the same time it is important to have an idea of what the complex will look like in the early stages of its development—how many jobs it will provide, the acreage required, the capital investment involved. And finally a forecast of the long term development of the complex is needed, including indications of its effects on the surrounding areas—plus a contingency plan if progress fails to match forecasts.
Government grants, are, of course, a key factor in implementing a growth pole plan. The grants would have to be discretionary ones made available only to plants which fit in with the aims of the complex.
Capital intensive plants will find the move more costly than labour intensive ones because their capital is likely to be under utilized in the early years.
To meet the different needs of the different firms it is possible to devise a system of flexible grants with a negotiable range of assistance. This discretionary element would present some administrative headaches for the Ministry of Technology but those could be cured by establishing clear guide lines.
It is important to build up the industrial momentum of the growth pole complex rapidly.
A time limit for grants would induce firms to take the decision to move relatively quickly instead of adopting a wait and see approach. Training grants would also be essential; direct assistance to employers, and indirect assistance to encourage the expansion of central training facilities. A higher proportion of skilled workers may be needed as well as training grants to all firms in the complex. The government incentives for a growth pole should be more attractive than those available in the surrounding region. And development area incentives would probably have to be added to the special growth pole ones.
Such a concept of planning growth poles is highly ambitious. Its application is new to Britain and miles ahead of anything which has been carried out anywhere.
The Department of Economic Affairs has already commissioned a study on growth poles. And Economic Consultants Ltd is completing a report on the feasibility of establishing a growth pole centred on the metal working industry in central Lancashire. It will be a report in great depth and will probably include a detailed plan for the complex which will have to embrace a complicated structure something like the diagram on the opposite page.
If the plan is adopted and succeeds it will bring great advantages to central Lancashire. But more important it could spark off a series of changes that could restore the north west as one of the most prosperous industrial regions in Britain, which would of course greatly boost the national economy. Many hopes are pinned on this pilot growth pole project.

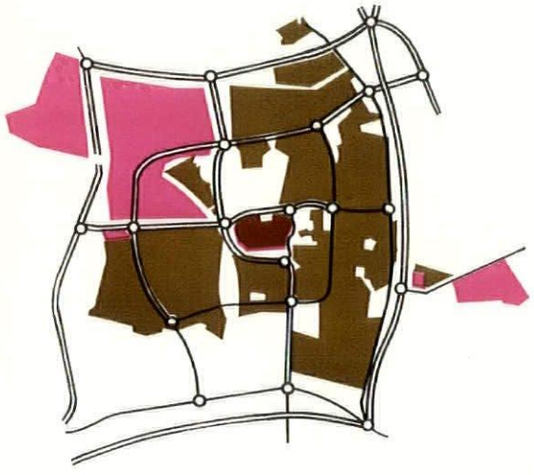

Raw Materials
Iron and Steel
Aluminium
Copper
Coal
Petroleum etc.
Stockist
Producer Services
Indirect production requirements
intermediate facilities
Jobbing Facilities
Tool Shops
Foundries
Forges
Presswork Units
Machining Units
Thermosetting & Thermoplastic Units
Heat Treatment Units
Finishing Units etc.
Repetition Facilities
Foundries
Forges
Presswork Units
Extrusion Units
Sintering Units
Machining Units
Heat Treatment Units
Finishing Units
Thermosetting & Thermoplastic Units etc.
Standard Component Facilities
Bearings
Bolts & Nuts
Springs
Wire & Wire Ropes
Flexible Steel Tubing
Injection Equipment
Axles
Brake & Clutch Lining
Internal Combustion Engine
Rubber Products
Fibre Glass
Chemical Products etc.
Direct production requirements
Direct production requirements
Direct & indirect production requirements
Principle units with simple and/or indivisible processes.
Principal units requiring complex operations
Stockist
Direct & some indirect production requirements
Final Demand Sectors
Consumer
Export
Investment
Government
Key
Flow of Materials & Goods
Flow of Services



Crawley



Washington

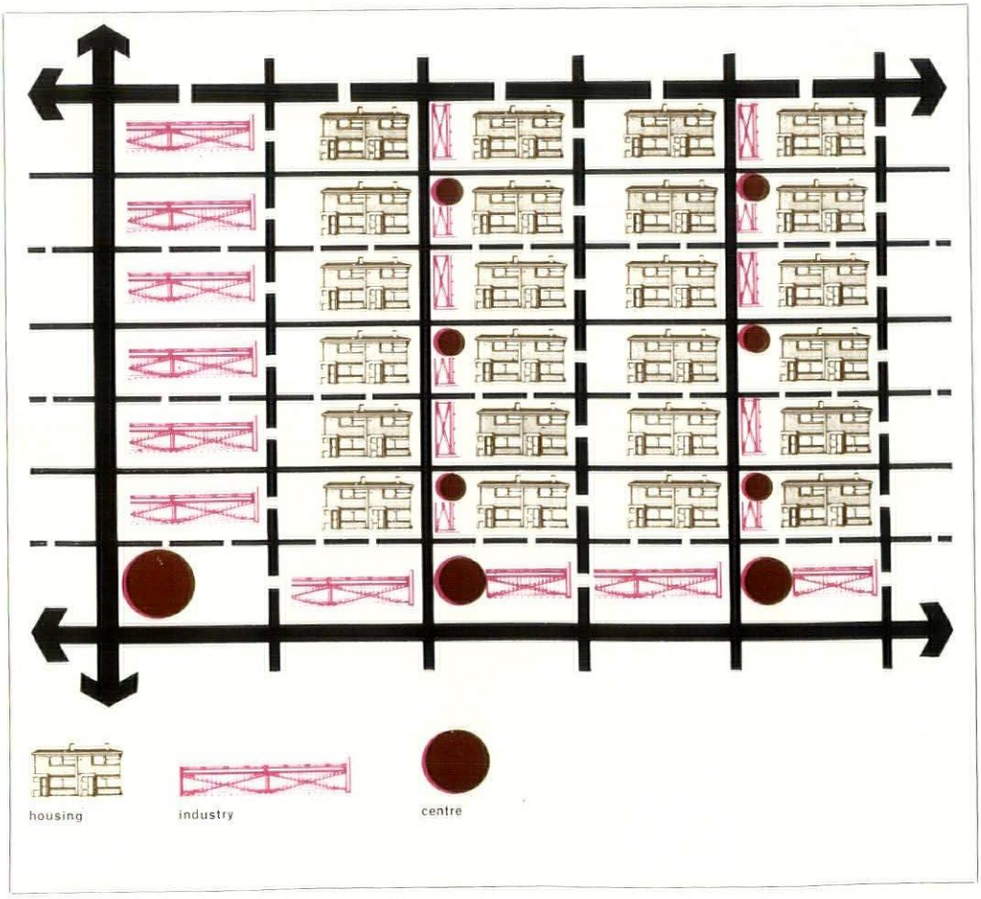


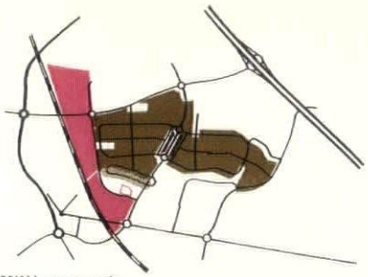
Cramlington

Amidst all the sophistication of contemporary British planning, its welter of new towns, sub-regional and regional plans, the crude zoning of land for industry—based not on the realities of modern industry and its relationship to labour supply but upon a dogmatic reaction to the evils of nineteenth-century industry—remains a strange anachronism. The first wave of new towns adhered rigidly to this policy of root and branch separation of industry from housing and Crawley is the most blatant example among the Mark I New Towns. By the time Washington came to be designed, the industrial area was broken down from its conglomerate size into smaller but nonetheless self-contained pockets by and large hugging the periphery of the town. Cramlington—Britain's first postwar private enterprise town which preceded Washington, clung to the most rigid apartheid.
One whole quarter of the new town was consigned to industry with a tiny palisaded huddle of housing turning its back on the industrial zone. Nearby Killingworth tried—and indeed nearly succeeds—to have it both ways by putting industry in a curving ghetto, wrapped, visually at any rate, round the town space which imaginatively includes a stretch of water. Washington stands alone, among all the north-eastern New Towns of Peterlee, Billingham, Killingworth, Cramlington and Aycliffe in attempting to spread industry around.

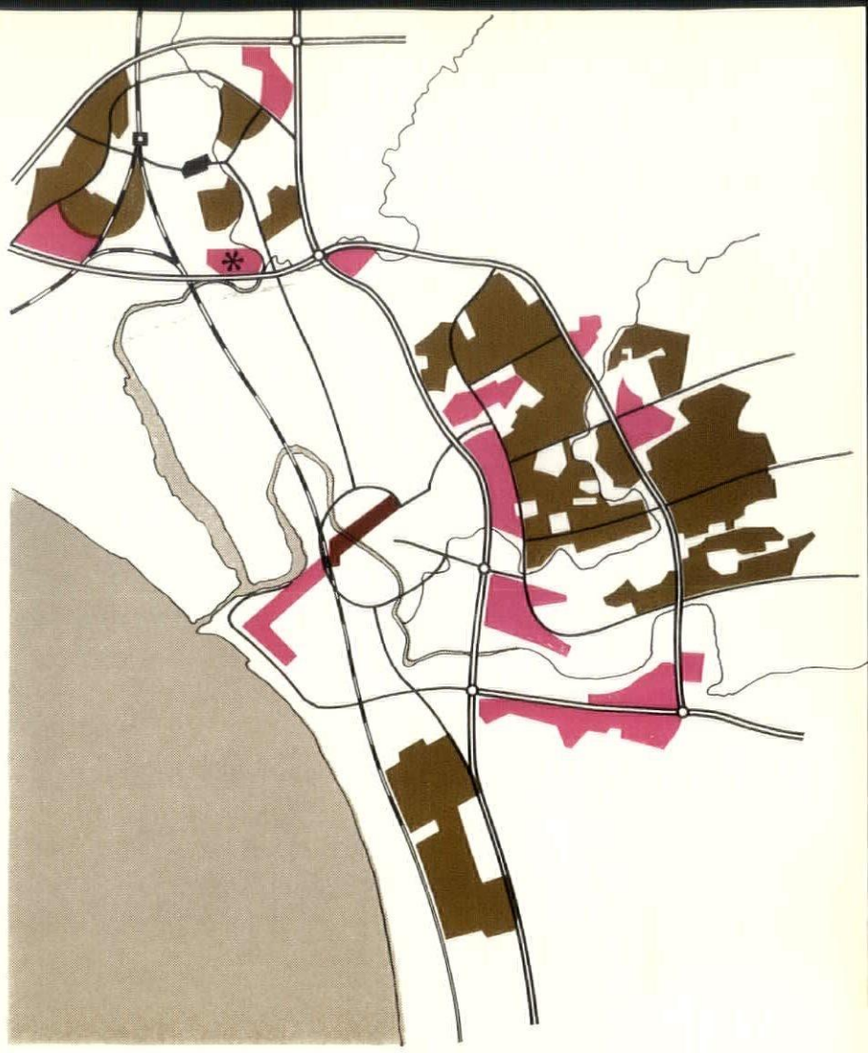
Irvine in Scotland attempted a mild scatter largely on the outer edges of its three strand form but still has one large crude lump at its southern end. Runcorn surprisingly expelled industry completely outside its figure of eight form but the sophistication of its rapid transport system was intended to provide a firm functional bond between industry and its labour pool In practice the rapid transit system turns out to be no more than an up-graded bus so the concept is less acceptable. The most recent of all the new town master plans—for Milton Keynes—is the first to really mix it, And the mixture is the inevitable logical consequence of the transportation network. But its genesis—as the authors freely admit—lay in the pioneer work of Colin Buchanan and Partners' South Hampshire Study which examined the relative economic effects of dispersed or peripheral industry on the roads budget. Their conclusions were overwhelming support for a policy interlocking industry with housing area (below) and for spreading industry like manure evenly over the ground to do most good.

Hugh Wilson and Lewis Womersley were thinking along very similar lines when they prepared their master plan for Northampton. In formulating their proposals they looked closely at alternative strategies for expansion. They finally settled for linear growth in the form of wide bands of development along lines of communication with housing and industry interrelated and within easy walking distance of one another. They looked hard at the possibility of dispersing growth industry from the town centre. What they found was that industry was for the most part happily housed in cheap premises quite near to the town centre and certainly much cheaper than they could be on new industrial estates. For most of them the only incentive to move was physical restriction in their existing premises.

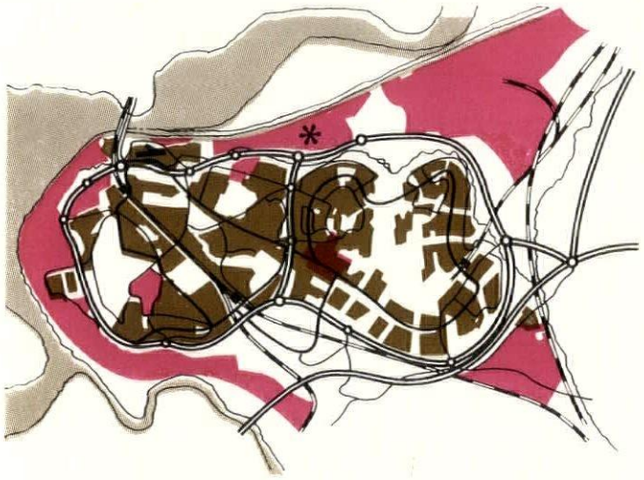




Killingworth



Irvine

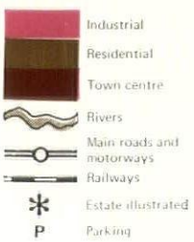


Runcorn

British New Town experience has slowly led planners to the conclusion that concentrating industry is an unnecessarily expensive and wrongly conceived policy.

Milton Keynes

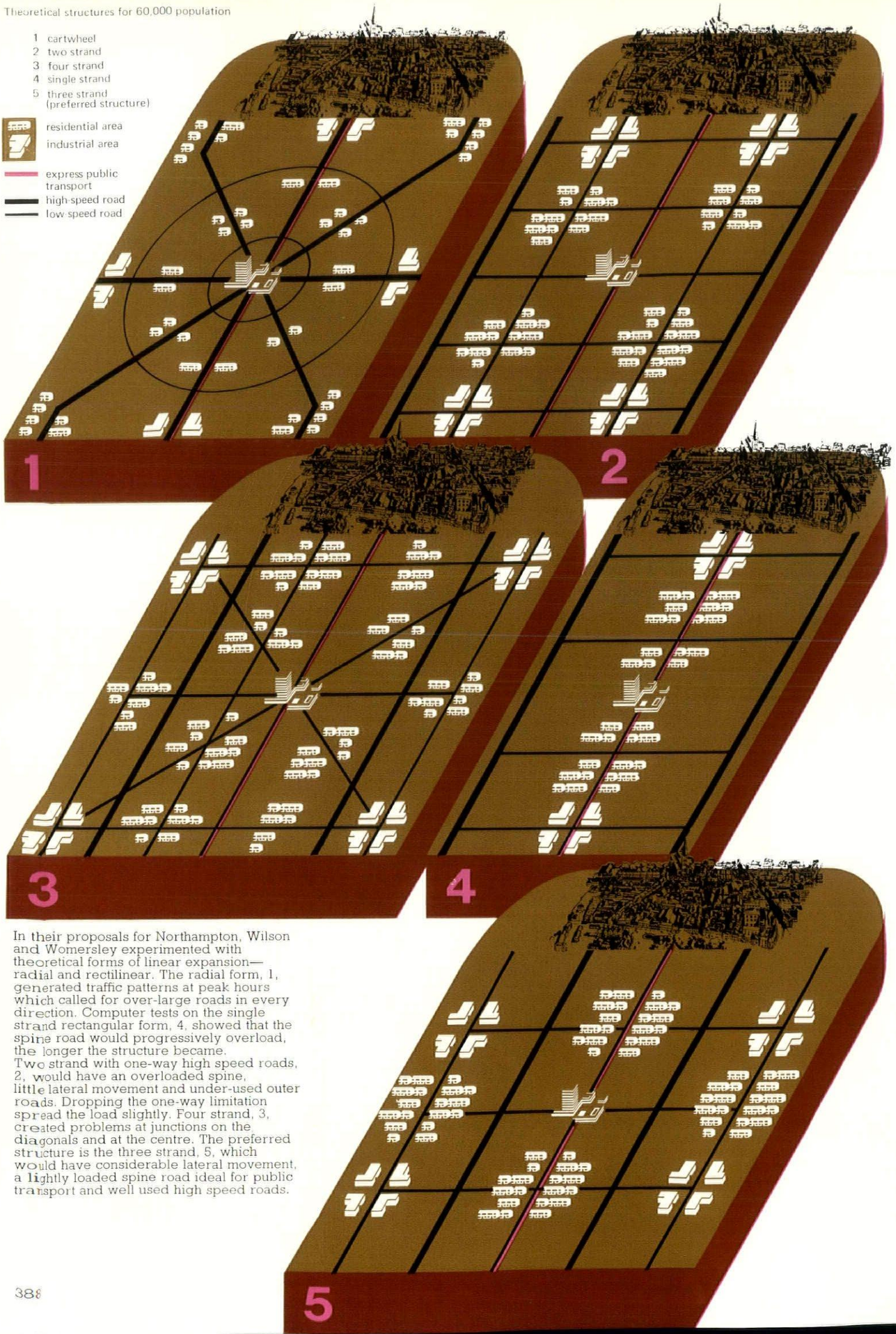




Theoretical structures for 60,000 population

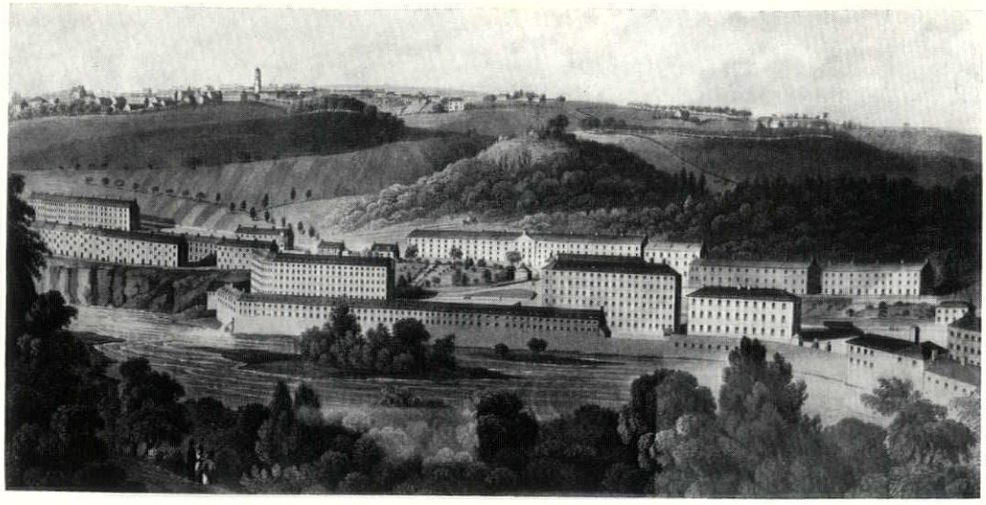
1 cartwheel
2 two strand
3 four strand
4 single strand
5 three strand (preferred structure)

residential area
industrial area
express public transport
high-speed road
low-speed road



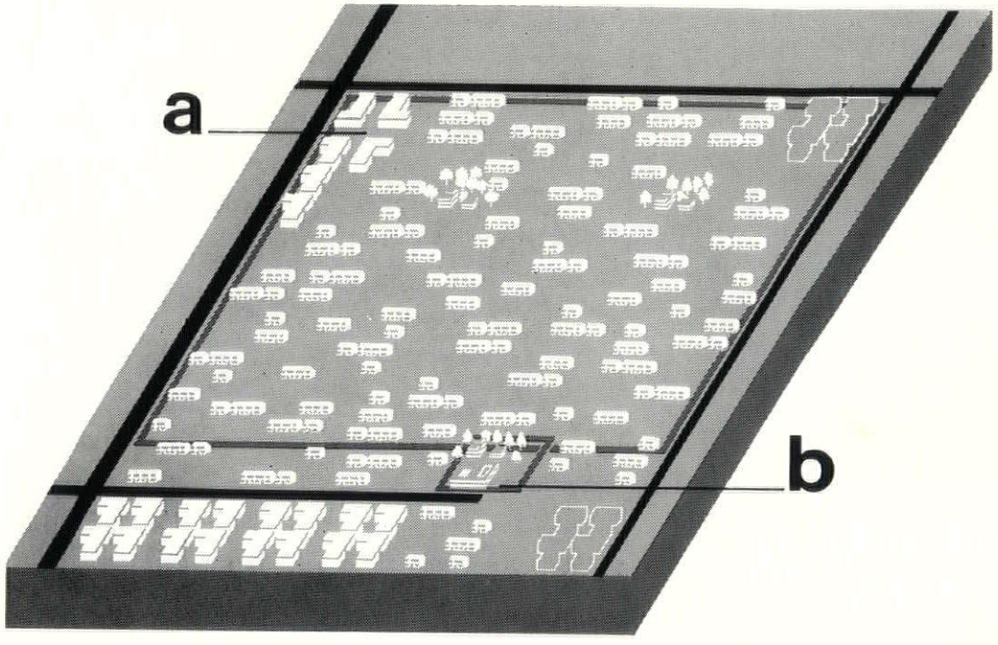
In their proposals for Northampton, Wilson and Womersley experimented with theoretical forms of linear expansion—radial and rectilinear. The radial form, 1, generated traffic patterns at peak hours which called for over-large roads in every direction. Computer tests on the single strand rectangular form, 4, showed that the spine road would progressively overload, the longer the structure became. Two strand with one-way high speed roads, 2, would have an overloaded spine, little lateral movement and under-used outer roads. Dropping the one-way limitation spread the load slightly. Four strand, 3, created problems at junctions on the diagonals and at the centre. The preferred structure is the three strand, 5, which would have considerable lateral movement, a lightly loaded spine road ideal for public transport and well used high speed roads.

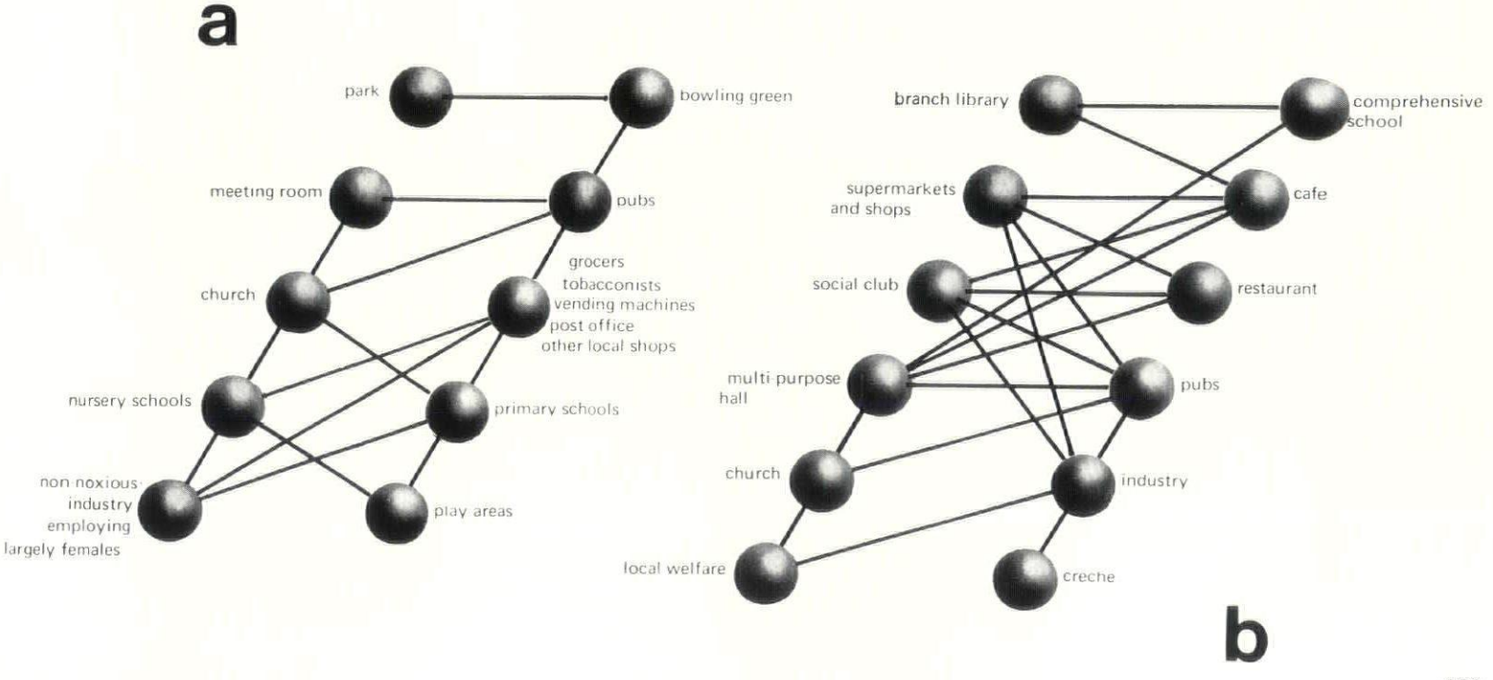
What has still to be worked out at Northampton is the detailed relationship between industry and other activities—housing, shops, schools, recreation, the pub etc. Robert Matthew Johnson-Marshall and Partners using the same transport consultants and adopting Wilson and Womersley's three strand structure for the central Lancashire city have been looking rather more closely at one section of one of the strands. Though still highly schematic, the diagram below shows half one strand with housing for about 15,000 people in the neighbourhood (a) with a district centre at (b) the major relationships within the neighbourhood are shown in (a), bottom left, and these would be dotted around the neighbourhood.
The relationship of the facilities which would serve the whole district are shown in (b), bottom right, with another neighbourhood to the south.
Most of these—the multi-purpose hall, the social club and the shops—would be within the centre itself while others such as heavy



Studies for Northampton (opposite) and the new Central Lancashire city (below) provide evidence that a convenient relationship between industry and housing makes good economic and social sense—which Robert Owen pioneered at New Lanark.

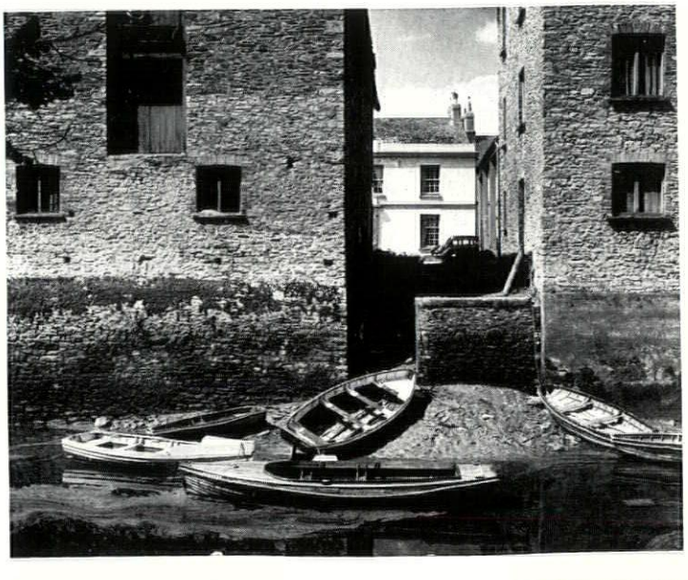
industry would still be closely related in time and distance. In the neighbourhood, of course, the non-noxious industry would be almost indistinguishable from the housing—as far as zoning is concerned.
The analysis is at a fairly crude level but it is the first real expression in post-war plans of the need for industry to have ready access to the day-to-day life of a city or town.
Consider just one aspect: on average 16,000 of the 41,000 jobs created annually by firms moving to new locations between 1945 and 1965 were for women. Where are the creches, the shops, the nursery schools?
A firm at Mitcham has to operate a twice weekly lunchtime bus service for its 200 workers on an industrial estate 20-minutes walk from the nearest shopping centre. Even so they only have 30 minutes to shop when they get there. Robert Owen at New Lanark over a hundred years ago tried to provide for every need. How many since Rowntree and Cadbury or planners for that matter—have followed his example.
Arthur Ling asked 'Have we reached the point when people will demand more work nearer home?' The evidence is that economy alone is likely to demand it. And that's likely to be the decisive argument though MANPLAN's thesis resides firmly on the social and urban case.

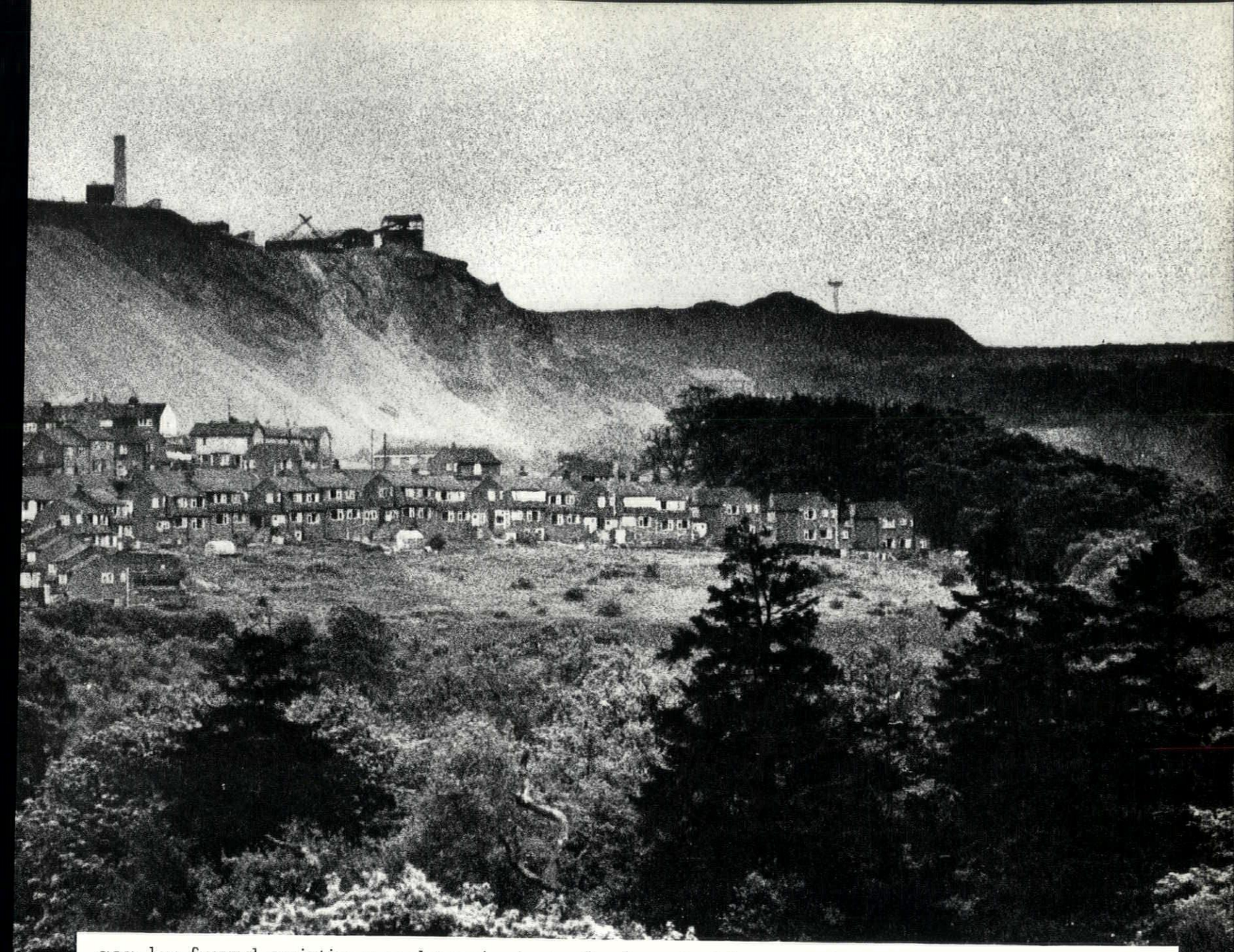




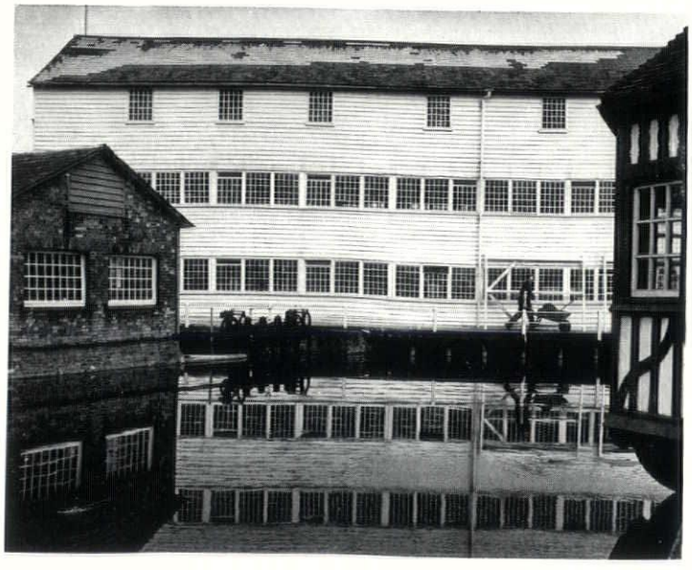
Consett in County Durham epitomizes the planners' partial vision of industry—as a massive, noisome, smoky, disruptive element which no civilized town can possibly tolerate. And certainly to perpetuate or, worse, to recreate this classic incompatibility would be unthinkable. But look back a hundred and fifty years or more and industry

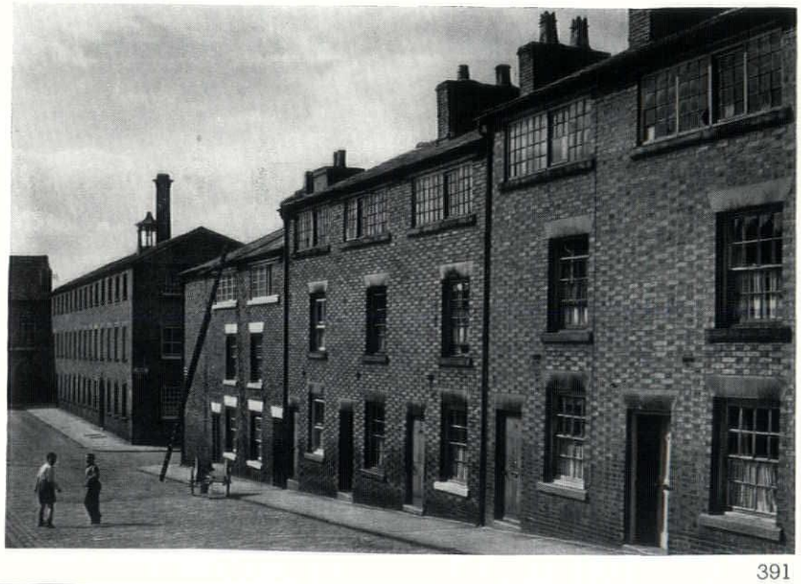






can be found existing unobtrusively in the heart of towns—the weavers' cottages, the waterfront warehouses and the mill. Much industry today is of that sort—clean and small scale. The proper place for it is in the town, not hived off into industrial estates—the case for the recreation of the convenience of cottage industry has been established





The only industry able to slip under the planners' net is the ungovernable statutory undertaker. But in the town the planners' stranglehold over truly assimilable industry must be broken. Which is what has happened on the waterfront at Liverpool. Kingham Knight Associates, Hall, O'Donahue, and Wilson's Strand Paradise (opposite top) is almost a town within a town—offices (bottom), showrooms, car parking, a pub, a fire station and flatted factories. And the signs are that in Liverpool at any rate, at 15s 6d per sq ft, industrialists are prepared to pay over the odds for town workshops.





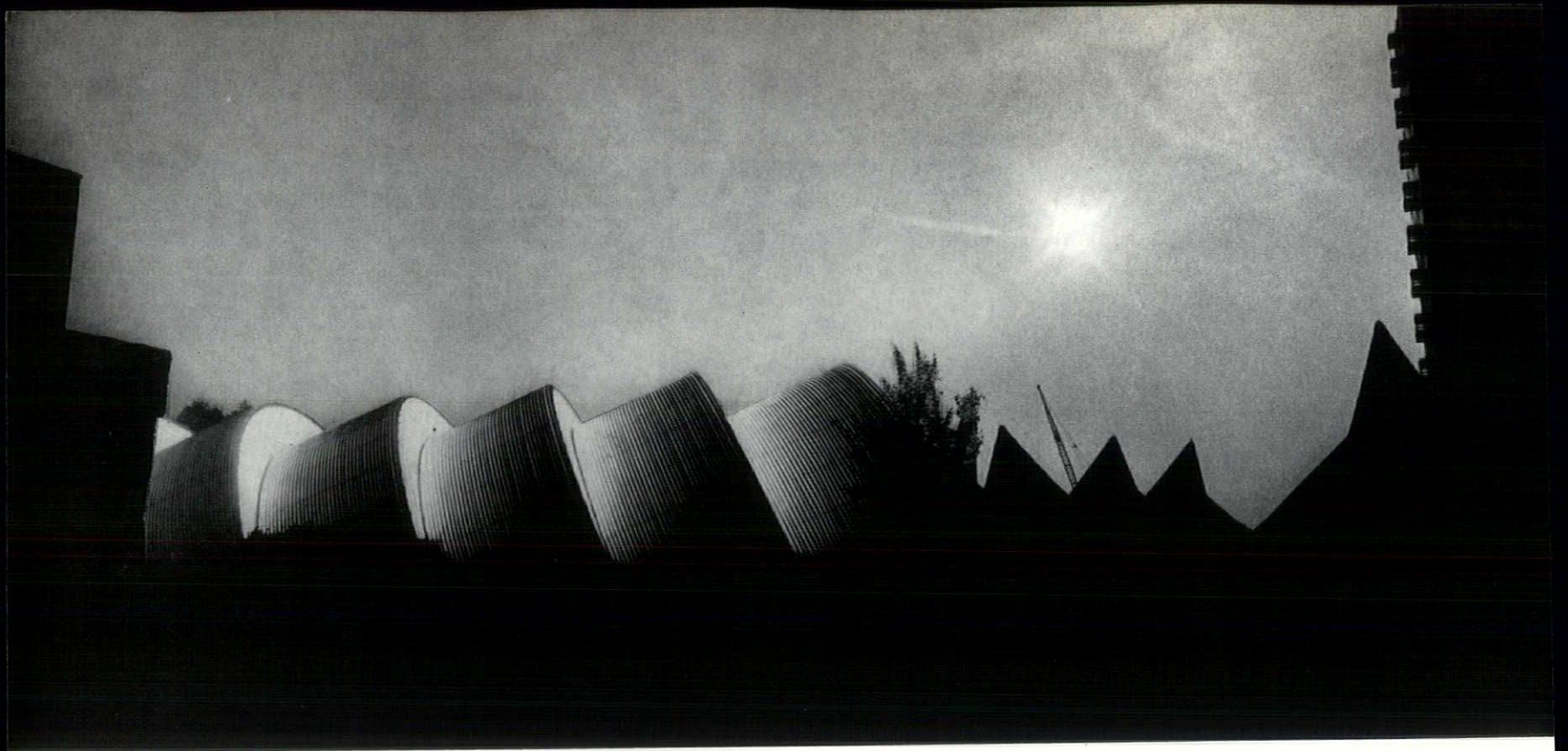




What has happened in Liverpool by design, exists at the Pepys Estate, Royal Victoria Yard, London, by happy accident. The industry was there before the housing and long may it rest undisturbed in its canalside yard. What could be more dramatic than this waterside townscape with industry, a welfare club, a tower block and scissors maisonettes cheek by jowl with a working canal. But the whole area around the Pepys Estate is ripe for similar no-nonsense conjunctions between industry and housing. And many of the factories illustrated in this issue, if snatched out of context and slotted into the Lewisham scene, opposite, are wholly feasible town workshops. Lonlabel in fact was one of the small clean industries uprooted from London, and Teledyne is no more a traffic generator than hundreds of office blocks and a good deal more elegant.


PRINCESS OF WALES
TOBY
ALE
ABEL
THE LONDON LABEL COMPANY





The best designed industrial buildings can easily stand the test—but only if industry is brought back into the town will it face the environmental challenge. Industrialists can opt out just so long as they are hidden away on the outskirts of towns and cities.



CONCLUSIONS

Just at the moment when the triumphs of science have made possible almost complete control of our environment (or, rather habitat) modern industry is either blindly evolving or wilfully creating environments which are basically inhuman. Inhuman in their physical giantism and in their insulation from the life of the town in sprawling industrial estates. The question for Society is whether control is to be used purely in deference to local economic cliché or employed on a long-term basis to cover what might be called social cost-in-use.

In the industrial field, clients, architects, planners and governments have all failed to provide the impetus that will produce a rational and human industrial environment and make up for a century of expediency and neglect.

Recent government changes, however, could well produce the body which can set the pace. Anthony Wedgwood Benn's Ministry of Technology which has taken over all the Board of Trade's responsibilities for industrial development has, through the work of the Industrial Reorganisation Corporation, shown itself capable of dealing with the massive power of industrial inertia. Economic Consultants Complex Study, which could well become a text-book for industrial development, has passed to the Ministry of Technology from the Department of Economic Affairs which, in its brief life, managed to get to closer grips with the problem in the regions than the Board of Trade in its forty years of administering development area policy. The hope is that the new white hot MinTech will appreciate the need to plan industrial development for the benefit of the regions and ditch the ad hoc policies still current. The only reasonable criteria for the success of regional policies is whether they have instilled growth and not just slowed up the decline.

The second failure of Government, but this time with the collusion of clients, architects and package dealers, has been at the other end of the scale, down on the factory floor. The client's satisfaction with the status quo, well catered for by the package dealer, is well known. The architects whose work is illustrated on these pages have been luckier, and more intelligent, working as they have towards solutions which bear comparison with the best of our schools and housing. There are still, however, many who take their cues not from Arups and Fosters but from the package dealers, the attitude being that industrial work is bread-and-butter work, not worth the effort made over more prestigious jobs. And the failure of Government to help sort out this shambles is all too apparent. The bodies which ought to be doing it even exist, the three Industrial Estate Management Corporations of England, Wales and Scotland newly responsible to the MinTech for Industrial Estates and Advance Factories.

Lord Holford gave them a good start back in the 'thirties when he laid out the Team Valley Estate and designed advance factories but since then there has hardly been a forward step,

and even where progress has been made as at their Teesside Estate by Napper Errington Collerton Barnet and Partners, bad management and general lack of enthusiasm is destroying a well considered scheme. Convinced at last that windowless factories were a good idea the Corporation built two, only to realize that they never installed lighting until the lease was signed. The result is that the prospective tenant can't be shown round—so no more windowless factories up there for a while. This is the body which has for many years been in a unique position to foster better standards for factories and estates and claims that there is no need for a system for factory building. The brief for one such system it managed to ditch with the help of the Board of Trade—the report by the NBA which has never been published. It pointed out that the IEMC's put up about £8 million worth of factories yearly, the New Towns £4 million, and that the system it proposed would cater for about half of the £525 million of new factories built each year. In fact the IEMC's annual output is almost enough in itself to make a system viable. CLASP by way of comparison, runs at the level of £16 million annually.

Have the planners done better? In some departments, yes, but the myth of industrial pollution by smoke or noise or smell dies hard. Most of the factories in this issue could well be accommodated next door even to the managing director's house. And if they were, there is little doubt that the squalor would be kept under control. Why then exile them to the periphery of the town when computer studies for a number of sub-regional and new town plans have demonstrated well enough the fallacy of concentrating industry in large estates? The need for industry to be reintegrated in terms of time and distance to the facilities which urban life offers is now the subject of studies for Central Lancashire City, but integration of work, home and leisure was once a matter of course in trade (John Gilpin). Is it beyond the ingenuity of planners to recreate a modern equivalent of the workshop principle and so effect a new partnership between home, industry and the town? Norman Foster points out, for instance, how similar space and performance requirements are for a wide variety of uses; factory, sports hall, supermarket, office, teaching space. With appropriate environmental tuning or detuning according to the grade of accommodation required the multi-purpose structure is almost with us. Indeed at least one New Town, Irvine, is thinking along these very lines, which may lead to the recreation of the Town Workshop.

The argument affects architects directly, because having been frozen out of large scale industrial building like the Ford Plant, with unlovely consequences to the amenities of the industrial scene, they would in the controlled environment of the city be in a position to take command again. With advantage to themselves of course, but also with profit to the community for it would mean that design standards which have been allowed to lapse on the industrial estates would once more be imposed by the local authority.

Announcing concentrated carpet



It could even carpet an office car park

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6. Endura is available in a range of standard widths up to 12′.

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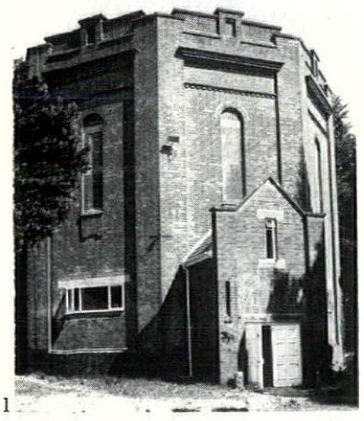
VIEWS AND REVIEWS

marginalia

THEATRE IN THE OCTAGON

It is always a pleasure to record the intelligent re-use of the kind of nineteenth-century utilitarian building that is no longer required for its original purpose, and possesses character, but not the high architectural quality that makes its preservation essential.

News of the successful conversion of one such building has been received from Stillite Products, whose slabs have been used in providing it with an acoustic ceiling. The building, 1 (photographed by E. A. Sollars), is a disused water-tower that belonged to Winchester city council. Hampshire county council were persuaded by Mr. James, the county's advisor for speech and drama, to buy it from the city for use as a drama centre. It was in a poor state of repair, but the Gulbenkian Foundation made a grant of £3,275 towards the cost of conversion and of installing the necessary electrical equipment. Much of the work was done by volunteers, and although—judging from the photograph—the insertion of new windows has not been very sympathetically handled, the building will provide a useful area centre for future development.



1

The tower is 40 ft. high and octagonal in plan. It now holds 150 people in tiered seating. A landing has been built across the entrance porch to serve as an electrical control-point, and a false ceiling of wire netting with Stillite slabs has been installed 17 ft. above this, reducing the reverberation period from 5.2 seconds to 1.2. The acoustic problems were overcome with the help of Southampton University's Industrial Noise Unit.

RESEARCH REGISTER

A note was published in these pages in October 1966 about a proposal to set up a historical research register to prevent duplication in any particular field of study and to make available to architectural scholars information about research work already done.

Dr. and Mrs. Andor Gomme, of the Department of English at the University of Keele, undertook the work of compiling the register on behalf of the Society of Architectural Historians, and its usefulness has already been amply proved. Their list (of unpublished writings and work in progress) is being circulated at regular intervals by the Society. The latest list is impressively—even alarmingly—large, consisting of 497 items. These are classified under seven headings: Biographical Studies and Works on Specific Architects; General Stylistic and Period Studies; National Architecture; Ecclesiastical Architecture; Regional Architecture; Public Buildings and Miscellaneous.

Dr. and Mrs. Gomme will be glad to hear, at Keele University, of activities of architectural historians that are not already on record.

FOR LONDON HISTORIANS

The London Archaeologist is the name of a new quarterly published by The London Archaeologist Publishing Committee, 7 Coalecroft Road, SW15. The current number contains a long, informative and illustrated article on St. Katharine Docks. It ends by saying: 'In January this year the site was sold to the Greater London Council for £1,800,000, only £100,000 more than the original cost. To what new use the docks are put, remains to be seen. There is a possibility of the buildings may remain, as proposals for the site have included a yacht marina and a Thameside museum.'

This is a very weak ending. The Greater London Council ought never to allow these best of all London dock warehouses to disappear. One developer at least has a scheme including their complete retention, and others may too.

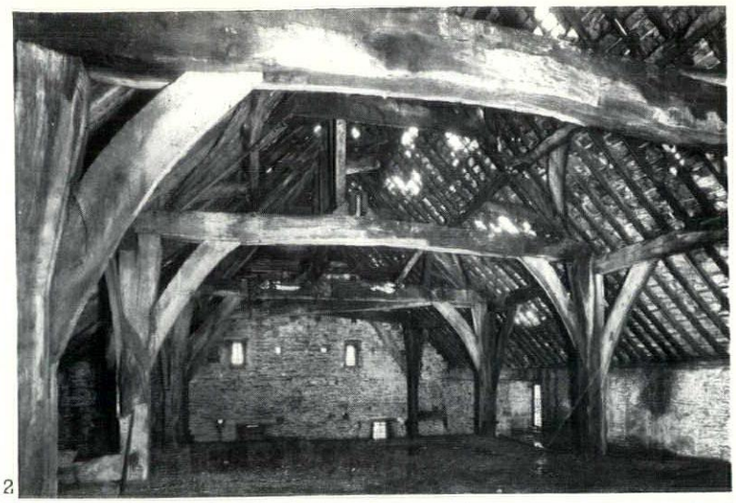
The St. Katharine Docks are, of course, also a special concern of the Greater London Industrial Archaeology Society (c/o Mike Kensey, 59 Kingsway, Enfield, Middlesex), and this society is doing conducted tours. One, for instance, was scheduled to be an exploration of London waterways.

Thirdly, there is the Thames Basin Archaeological Observers' Group (c/o Paul Carter, 20 Chestnut Grove, Wembley, Middlesex). They have just published a *Survey of Industrial Monuments of Greater London*, compiled by John Ashdown, Michael Bussell and Paul Carter. This is a paperback of 64 pages and should be in the possession of every keen architectural traveller through London. The St. Katharine Docks, needless to say, are illustrated in it.

MORE BAUHAUS PUBLICATIONS

The revival of interest in the Bauhaus, occasioned by last year's celebrations of the half-centenary of its foundation, has produced a number of interesting publications. One of these is the first translation into English of Moholy-Nagy's *Malerei, Fotografie, Film* which was originally published in 1925 as volume 8 of the *Bauhausbücher* series. A facsimile of this original German edition was produced in 1967 by Kupferberg of Mainz in their *Neue Bauhausbücher* series, and it is surprising that no English version has been done before this one, which is published by Lund Humphries along with two other books on the Bauhaus. The title is *Painting, Photography, Film*, the translation is by Janet Seligman, the price is 50s. and the format and typography follow the style of the original.

The other two volumes in the Lund Humphries series are *Principles of Neo-Plastic Art*, a translation (also by Janet Seligman) of the book by



2

2, the great barn at Wingfield Manor, Derbyshire, an unusually good specimen of its kind 71 ft. long and 30 ft. wide, dating from the mid-fifteenth century, which has not been as well looked after as it deserves. The Manor, built by Lord Cromwell in 1441, was afterwards owned by the Shrewsbury family and Mary Queen of Scots was imprisoned there. It was dismantled by order of Parliament in 1646, after it had been held first by the Roundheads and then by the Royalists. The ruins have been well looked after by the Ministry of Public Building and Works since 1963, and it is only the barn that is in poor condition.

3, another London theatre in danger of demolition: the Lyric Theatre, Hammersmith, listed by the GLC in 1967 but now standing in the way of a new development—architect Richard Seifert. The theatre's value is in its exuberant late nineteenth-century interior, which is in plaster and, therefore capable of being dismantled and re-erected. The developers at one time stated their willingness to have the auditorium reconstructed in their new 'entertainment centre', but they and Hammersmith Borough Council now seem anxious to evade this obligation.



3



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continued from page 403

van Doesburg—see AR May 1969, pages 376-8), and a new book by Hans Wingler, director of the Bauhaus Archive at Darmstadt, entitled *Graphic Work from the Bauhaus*. This is an admirably chosen anthology, with biographical notes on the artists represented. Translation by Gerald Onn. 84s.

RESCUED MILL

The Avoncroft Museum of Buildings, at Stoke Prior, Worcestershire, has acquired the last surviving repairable example of a Midland-type post mill. The mill, in a semi-derelict state, was at Danzey Green, near Tanworth-in-Arden, Warwickshire. It has been dismantled (the photograph, 4, was taken by Frederick Covins during the process) and is to be rebuilt, and put in full working order, at the Avoncroft Museum.

The operation, which will take more than a year, is under the direction of Mr. Michael Field, engineer and windmill enthusiast, assisted by Mr. Frederick. Mr. Derek Ogden will make the new sails and Mr. Gunolt Greiner will repair the structure. The last two experts were responsible for the recent restoration of Sarehole water-mill, Birmingham.

Removal and restoration of the Danzey Green windmill will cost about £5,000. Half this sum has already been subscribed, partly by its previous owners, the Alne Estate, who paid for the dismantling and transport, and partly by the Victoria and Albert Museum.

book reviews

FASHION AND FUNCTION

AN ATLAS OF TYPEFORMS. *By James Sutton and Alan Bartram. Lund Humphries. 70s.*

It looks more and more as though the industrial revolution divided culture as decisively as the renaissance. Even in the most unlikely areas of study and sensibility the immense upheaval wrought by technology unites us with the Victorians while it divides us from the aristocratic past. There is presumably a danger in trying to squeeze too much into this mould, but it is dramatically—and perhaps unexpectedly—borne out by the contents of *An Atlas of Typeforms*, which is an excellent chronological review of type. About two-thirds of the way through the book, at the start of the nineteenth century, the black, confident letters used in the advertisements of the new age come as a shock and a recognizable prelude to the typography of today.

There follows a story that can be parallelled in other areas of industrial design and in art. There was at first a full and vulgar exuberance that went with, for example, the strength and solidity of the Victorian railway train or the plum-pudding flamboyance of the music hall. The flowered and coruscated letters matched the flowered and coruscated interiors of prosperous middle-class homes. After a while there was indigestion and, through Morris and the private presses, there was an attempt to rediscover the classical principles of letter design and their origins in Christian civilization. A little later the modern movement recovered confidence but still rejected, as impure and messy, the excesses of the nineteenth century. The statement in favour of a rejuvenated tradition and that in favour of a distinctively twentieth-century functionalism interacted with commercial and technical pressures to produce the most characteristic of modern types—Gill, Times and now, as the outcome of a variety of sans-serif faces, Univers. The same ideas and pressures also made possible the careful recutting and reissuing of a number of old types—notably Baskerville and Garamond.

The violent swings of action and reaction; the pressures of commercialism and technology; the mixture of inconsequence and rationalism; the variety, humour and pragmatism of typography since the industrial revolution—all these are rather different from the development of letters from Rome and Gutenberg to the eighteenth century. There is in that earlier development a consistency and awareness of letterforms as a part of civilization that could only have been possible in a basically aristocratic culture.

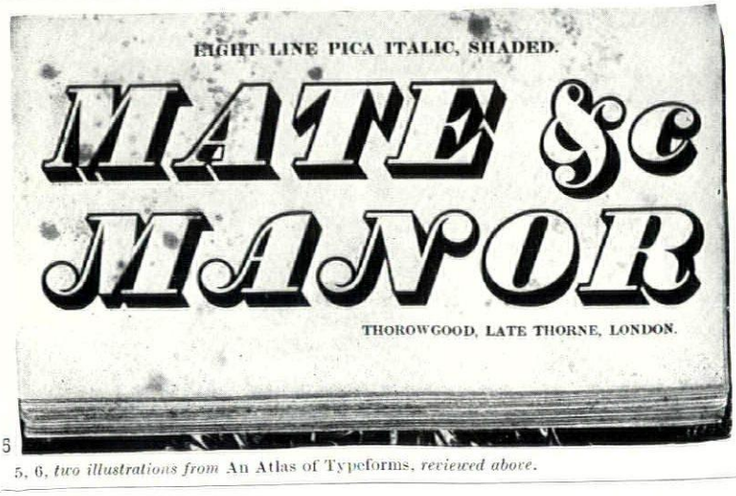
It is one of the virtues of *An Atlas of Typeforms* that, by showing types together in 'families', it clarifies both continuity and discontinuity across the divide of the industrial revolution. Modern versions of Baskerville are illustrated in relation to their originals, and so on throughout the range of available types. This makes clear the amazing richness of forms that the typographer can choose from today, but it is also a further demonstration of difference from the past. In typography, as in other areas of art and design, the historical awareness that coincided with the industrial revolution made possible the ransacking of old styles.

Altogether James Sutton and Alan Bartram have produced an unusual and valuable book. It is unlike run-of-the-mill type collections in its keen sense of history and sure awareness of the way one letterform is related to another. It is unlike most histories in the richness, consistency and good printing of its illustrations. The authors have in fact fulfilled their intention, stated as follows in the introduction: 'this atlas is an attempt to show by illustration, rather than by explaining in words, the main changes in type forms over 500 years of printing.' It is therefore an important source book, coherently and logically arranged. It is a compliment to the authors that another reviewer, with different preoccupations, could undoubtedly have discussed them in the context of the examples illustrated. KEN BAYNES

ENTHUSIASM FOR ENGLAND

VINCENT VAN GOGH IN ENGLAND. *Compiled from his letters by Dr. V. W. van Gogh. Amsterdam: N.V. 't Lanthuys.*

This over-ambitiously titled collection of extracts from letters written by Van Gogh to his brother, Theo, during the 1870s and 1880s is in two sections. One deals with his impressions and memories of two sojourns here, as unpaid usher in a boy's school and as an art dealer's apprentice, the other with his enthusiasm for the black and white 'journalist' artists of the *Graphic* magazine, whose work he admired and collected for most of



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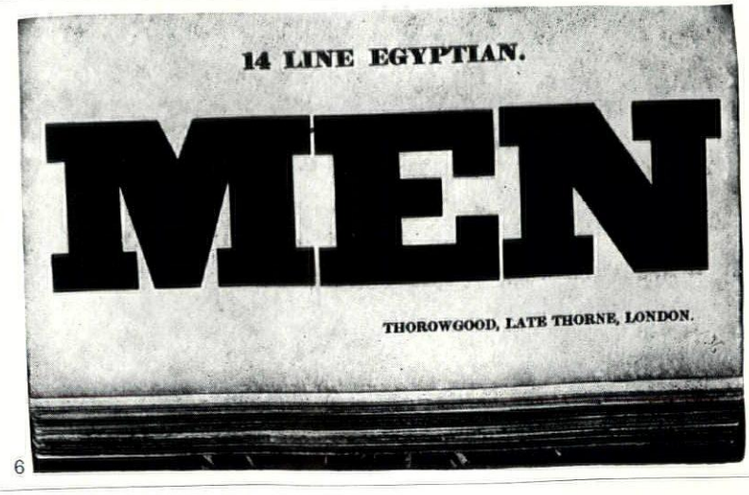

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5, 6, *two illustrations from* An Atlas of Typeforms, *reviewed above.*

Photographed at Bristol Airport



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continued from page 402

his life. Included also are an introduction by Dr. V. W. van Gogh, a brief life-history of the artist, a score or so of illustrations and an index. The whole production (designed by Harry Sierman) is exemplary—every page a pleasure to see. But was it worth all this trouble? Hardly.

After all van Gogh's complete letters already exist in a number of translations, and his observations on the English scene, as recorded here, although affectionate and sensitively observed, are unremarkable and often rather dull to read. Yet the reader's heart cannot fail to warm to the solemn, soft-hearted, surprised, Bible-reading student, with his exclamatory enthusiasms: 'My God, how beautiful Shakespeare is!'; 'Lord, how beautiful that is' (of a London rubbish dump); 'My God, what an artist' (of Dickens); 'You'll be crazy about it' (of a *Graphic* engraving); his deep felt feeling for the under-dog—a homesick pupil, a starving curate, a school skivvy—his love for long walks, from Ramsgate to London, from Lewisham to Welwyn, from Isleworth to New Cross, and above all his passion for those largely unknown masters—Hill, Boughton, Walker, Fildes and Pinwell—of the *Graphic* scene. Unashamedly moved by the subjects of these works—'Washed Ashore', 'At Death's Door', 'The Last Muster', 'Her Poverty but not her Will Consents'—he cut the pages out, crooned over them, mounted them, swapped them and wrote about them ('great artists' he called them) with endearing enthusiasm; and boring as such personal enthusiasms—like love affairs—can ultimately be to those who do not share them, how much more welcome is such ungrudging fully-committed devotion than the punch-pulling, bet-hedging squeaking of contemporary critics.

HUGH CASSON

PLEASURE OF BAROQUE

SICILIAN BAROQUE. *By Anthony Blunt. Weidenfeld & Nicolson.* 70*s.*

Many recent studies of the history of art might almost seem to have been intended to convey to the reader the author's toils and tribulations—perhaps in the hope that he may be impressed, like a university examiner, by evidence of hard labour. How pleasant, therefore, to open Sir Anthony Blunt's handsome *Sicilian Baroque* and find him stating: 'My first intention in this book is to convey to others some of the pleasure I have enjoyed in looking at Baroque architecture in Sicily'.

That is not to suggest that his text is rhapsodic; far from it. His enthusiasm is none the less infectious for being transmitted in a tight and somewhat taciturn manner. It has inspired him to examine the buildings and the scanty literature on them with careful attention. As a result, he tells one more about the subject as a whole than any Italian or other writer to date. Yet the text is very brief, running to no more than 38 pages. It is illustrated with 156 photographs, most of which were taken specially for the book by Mr. Tim Benton. Many are of outstanding quality; but one feels confident that none was included simply because it was a good photograph, while no subject has been left out simply because it was unphotogenic (here lies the difference between the well illustrated book and the coffee-table book).

Apart from Francesco Fichera's two-volume *G. B. Vaccarini e l'architettura del settecento in Sicilia*, published in Rome in 1934 and now something of a rarity, there are few worth-while books on any aspect of Sicilian architecture. The more seriously interested tourists have been obliged to rely almost exclusively on the Touring Club Italiano guide. Like all the other volumes in the series, this is weak on domestic architecture. It is also maddeningly uncommunicative even about churches, omitting to mention many which excite curiosity and generally describing baroque façades as *fastose* or *grandiose* without providing dates or names of architects. Sir Anthony gives much more factual information, but he too has often had to resort to approximate dates and attributions. This is not for want of research. Contemporary, or even early, source material is not to be found—no eighteenth-century guides of the *Forestiere informato* type (for the simple reason that there were too few *forestieri*), precious little early nineteenth century local antiquarian literature.

To date Sicilian buildings on stylistic grounds is perilous. Even traditionally accepted dates may arouse suspicion. As Sir Anthony remarks of S. Giovanni at Modica, 'if the date 1839 . . . is correct, it is a remarkable example of how an essentially eighteenth century style could last with real vitality'. Without firmer dates and some biographical information about the architects (under whom they studied and where they travelled) it is hard to detect any patterns of development. Sir Anthony is, however, able to show that connections between Sicilian baroque architecture and both Apulia and Spain are more tenuous than generally supposed. The main sources of influence were, as he demonstrates, Rome and Naples—though he is able to point to connections with Austria in the early and with France in the late eighteenth century.

Between a 'Prelude' on sixteenth and seventeenth century architecture and an epilogue on the 'transition to Neo-classicism' (with a valuable account of G. V. Marvuglia), the main text is devoted to a tour of the island beginning at Messina and working round clockwise to Palermo. Commenting perceptively on building materials and details of decoration (especially stucco-work and inlaid marble), no less than on more general points of design and plan, Sir Anthony describes the few well known buildings—Syracuse cathedral, the great churches of Ragusa and Modica with their towering façades, Serpotta's stuccoed oratories in Palermo, whole streets and piazzas of Noto—and also includes a great deal that will be unfamiliar even to those who know Sicily well. He is no less good and informative on domestic architecture (a subject strangely neglected by most Italian historians) than on churches. Indeed, he is at his best on the villas around Palermo with their ingenious exterior staircases, which are a Sicilian speciality though not quite as uncommon on the Italian mainland as he suggests (Tiralli's at the Villa Vendramin, Fiessa Umbertiana, near Rovigo, is as elegant and very nearly as dangerously complex as the best in the Piana dei Colli).

Sir Anthony makes no great claims for Sicilian baroque architecture, seeing it always in relation to major developments in the rest of Europe. But he shows that it merits much more attention than has hitherto been given to it.

HUGH HONOUR

NEO GOTHIC IN AMERICA

THE GOTHIC REVIVAL AND AMERICAN CHURCH ARCHITECTURE: an episode in taste 1840-56. *By Phoebe Stanton. John Hopkins Press/Oxford University Press.* £6 3*s.* 6*d.*

The origins of Gothic still puzzle the Society of Antiquaries. The origins of Gothick are likely to keep literary critics employed for a very long time. And the origins of Neo Gothic? C. H. Spurgeon had a simple answer: 'the devil invented it!' Thus spake the Low Church fundamentalist. Early Victorian High Churchmen, on the other hand, welcomed the Gothic Revival as an authentic expression of sacramentalism—what Coleridge called 'the petrifaction of our religion'. After the decorative Gothic of Rococo and the scenic Gothic of the Picturesque, functional Gothic had been rediscovered—liturgically as well as structurally functional. It is this rediscovery, on both sides of the Atlantic, which Dr. Stanton sets out to examine. She begins by briefly—very briefly—surveying the influence of several leading ecclesiologists: Benjamin Webb, J. M. Neale, E. J. Boyce, F. A. Paley and Beresford Hope. Then—rather more interestingly—she deals with their para-ecclesiological competitors: G. A. Poole, G. R. Lewis, J. L. Petit and M. H. Bloxham. However the core of the book is concerned with the impact of English Gothic Revivalism on American church architecture in the 1840s and 1850s.

The growth of ecclesiology 'in the Colonies' stemmed from the missionary zeal of both the Cambridge Camden Society and the Oxford Architectural Society. But one man in particular deserves the credit for introducing Neo Gothic to the United States: the Right Reverend George Washington Doane, Bishop of New Jersey, 'the John Keble of the American Church'. His patronage of Richard Upjohn and James Renwick Jnr. is carefully documented by Dr. Stanton, and the churches built to their designs at his behest are perceptively compared with contemporary English work by Chantrell, Pugin and Place. The union of English and American ecclesiology was symbolised by two churches in Philadelphia: St. James the Less and St. Mark's, both built between 1846 and 1848 with explicit reference to contemporary designs by Benjamin Ferrey and R. C. Carpenter. When two expatriate West-countrymen, Bishop Medley of New Brunswick and his architect Frank Wills of Exeter, joined forces (vicariously) with William Butterfield, that union was complete: Christ Church Cathedral and the Chapel of St. Anne, both built at Fredericton between 1845 and 1853, are their joint memorial.

Besides a useful topographical survey of colonial church building, Dr Stanton's study includes a thoughtfu chapter on the beliefs and battles o the New York Ecclesiological Society Founded in 1848, it never shared the rigid orthodoxy of its English proto type, and by the 1850s had begun to adopt an independent line, emphasiz ing utility and function rather than religious symbolism and stylistic accuracy. This leads the author to conclude with a general consideration of revivalist theory. She ends, as she began, with Mr. Pugin and his Prin ciples, 'the revival's most construc tive and enduring contribution'. The hero of her story—from Liverpool to Brownsville, from Nottingham to New York—is, of course, A. W. N. Pugin. And on this occasion, as so often before, Dr. Stanton holds out tantalising glimpses of that major work on Pugin for which we have now waited twenty years.

J. MORDAUNT CROOK

TRANSPORT TRILOGY

ROADS AND VEHICLES. *By Anthony Bird.* IRON AND STEEL. *By W. K. V. Gale.* NAVIGABLE WATERWAYS. *By L. T. C. Rolt. Longmans, Green & Co.* 45*s. each.*

The interest in the buildings and artifact of the industrial revolution which has arisen in the last few years, and clearly come to stay, is appropriately reflected in these three books, the first titles of an enterprising new series—the Industrial Archaeology series—of which the general editor is L. T. C. Rolt. Later volumes will deal with the steam engine, the textile industry, seaports and shipping and wind and water mills.

Though they are meant to appeal to the wider public that now exists for the history of science, they have avoided the temptation of over popularization, being serious scientific histories that go into considerable technical detail. This has the added advantage of stressing the functional and pragmatic nature of the structures that emerged from the industrial revolution and preventing our newly acquired romantic affection for them from endowing them with more aesthetic pretentions than their origin justifies.

Of these three volumes, that on waterways naturally has most architectural content, though neither its descriptions of canal works, nor its illustrations quite succeed in bringing out the sensitivity and precision of the engineer's vernacular that emerged from the canal-building age. The volume on iron and steel deals more with the materials and their manufacture than with the uses to which they were put. This was surely the right context in which to have said at least something about the development of steel-framed buildings.

Mr. Bird's volume will deprive architects of one source of professional pride: their belief that an eminent architect, Joseph Aloysius Hansom, designer of Birmingham town hall, also designed that elegant and sophisticated vehicle the Hansom cab. His cab of 1833 was, it seems, a clumsy affair with 7 ft. 6 in. wheels, and the completely redesigned version later associated with his name was by John Chapman, founder and secretary of the Safety Cabriolet and Two-Wheel Carriage Company, whose cab for some reason retained the name of the original patent holder.

J.M.R.

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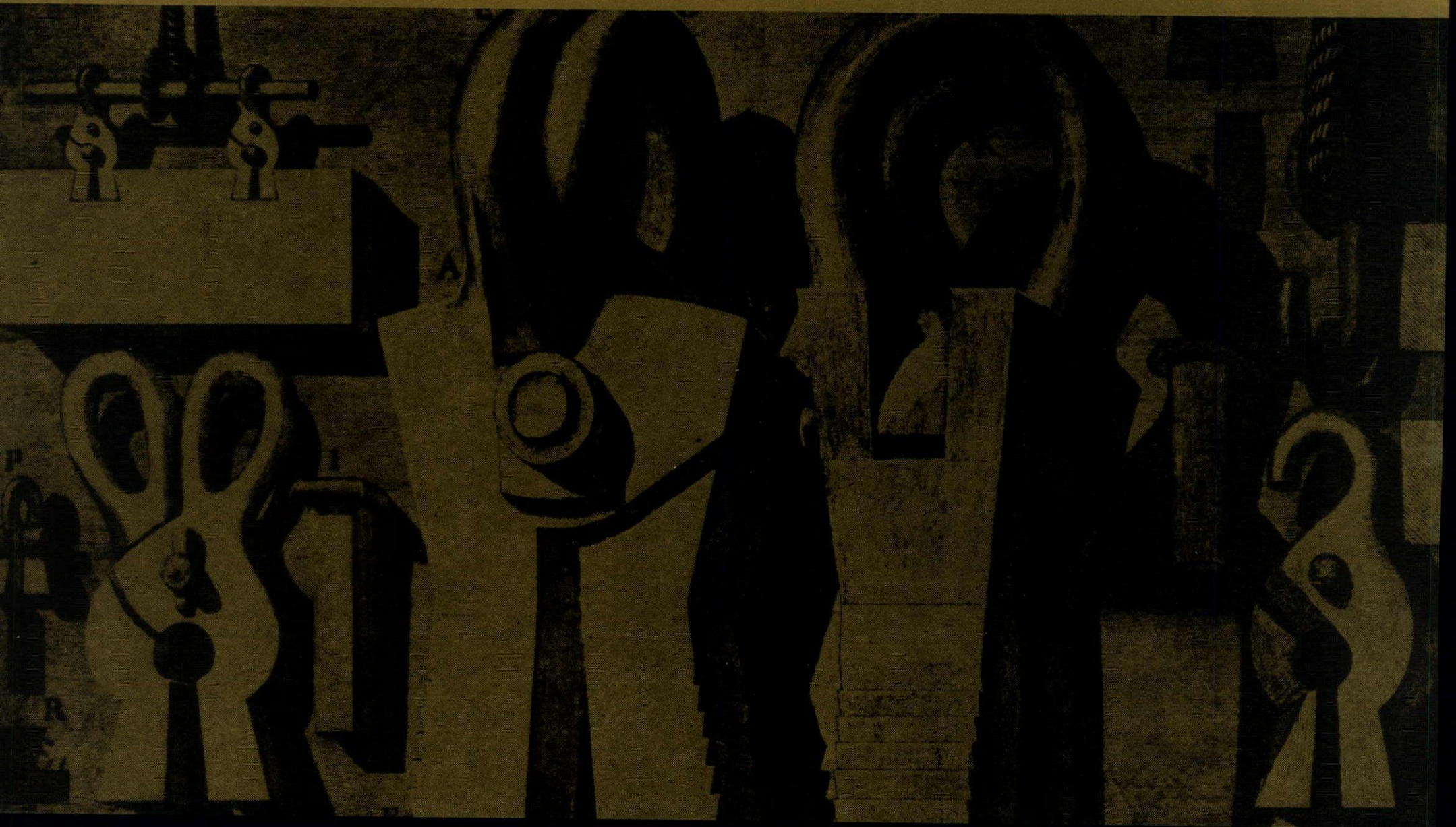

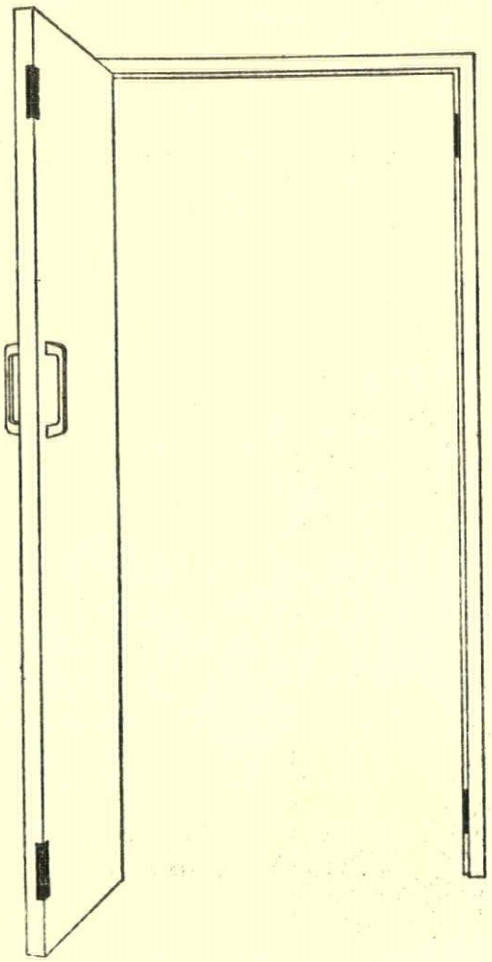

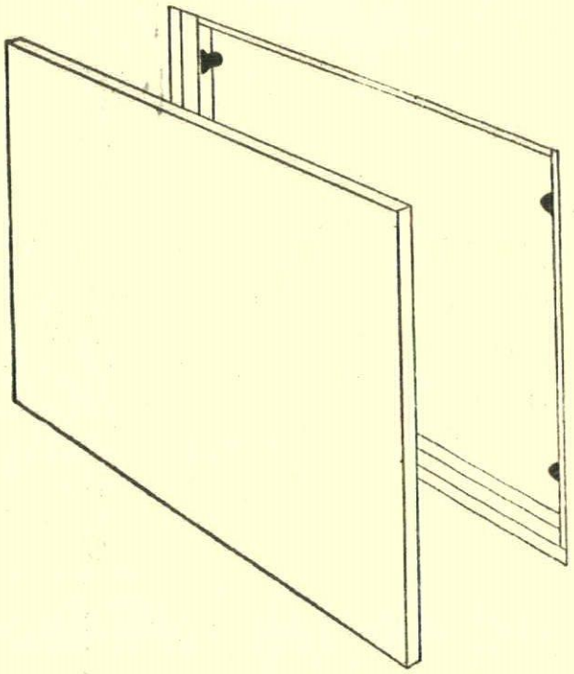

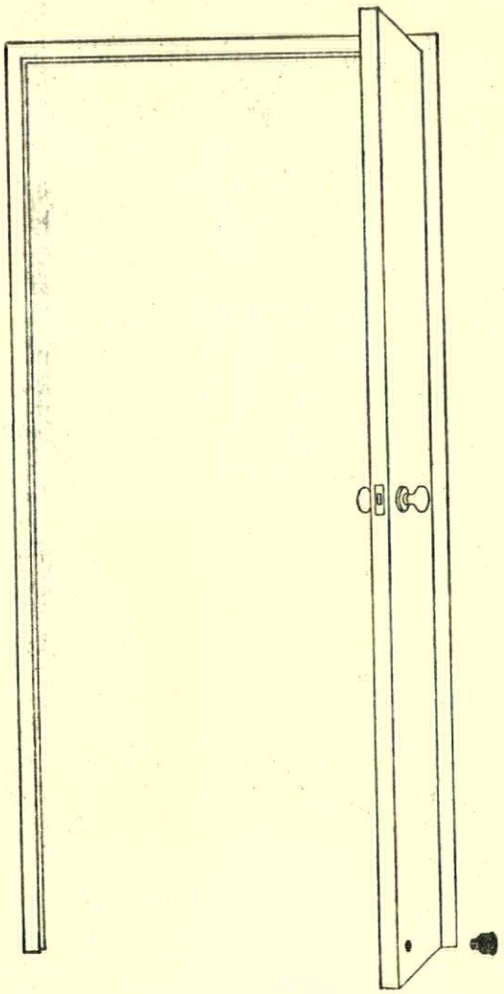

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COVER
The cover of this issue is based on one of the illustrations in Mario Praz's recently published book On Neo-Classicism. *It is an engraving of grappling-hooks by Piranesi. See also pages* 478 *and* 482.

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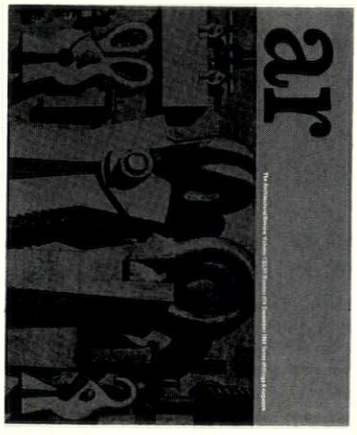


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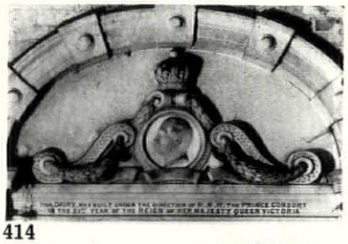
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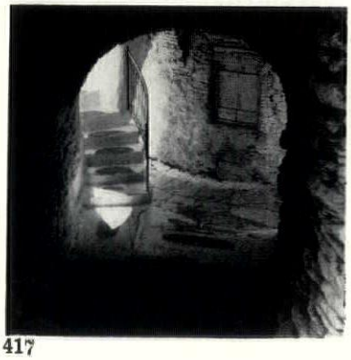
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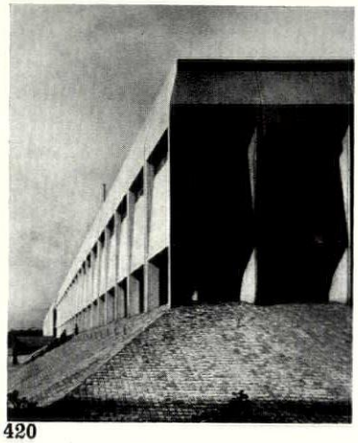
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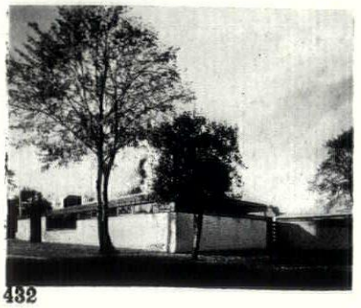
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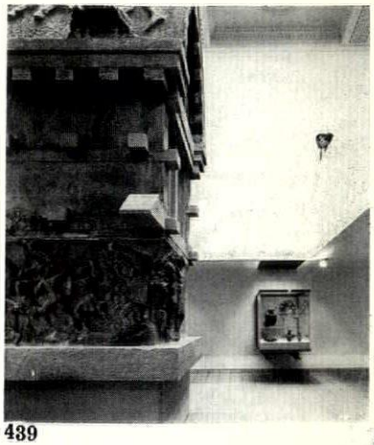
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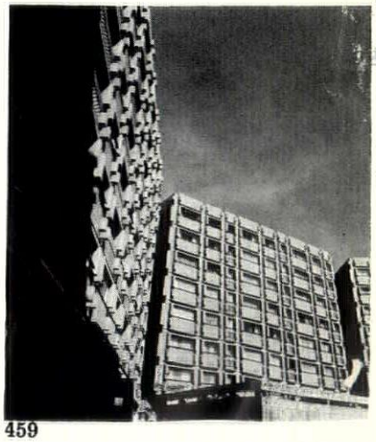
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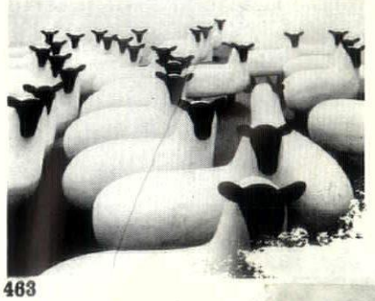
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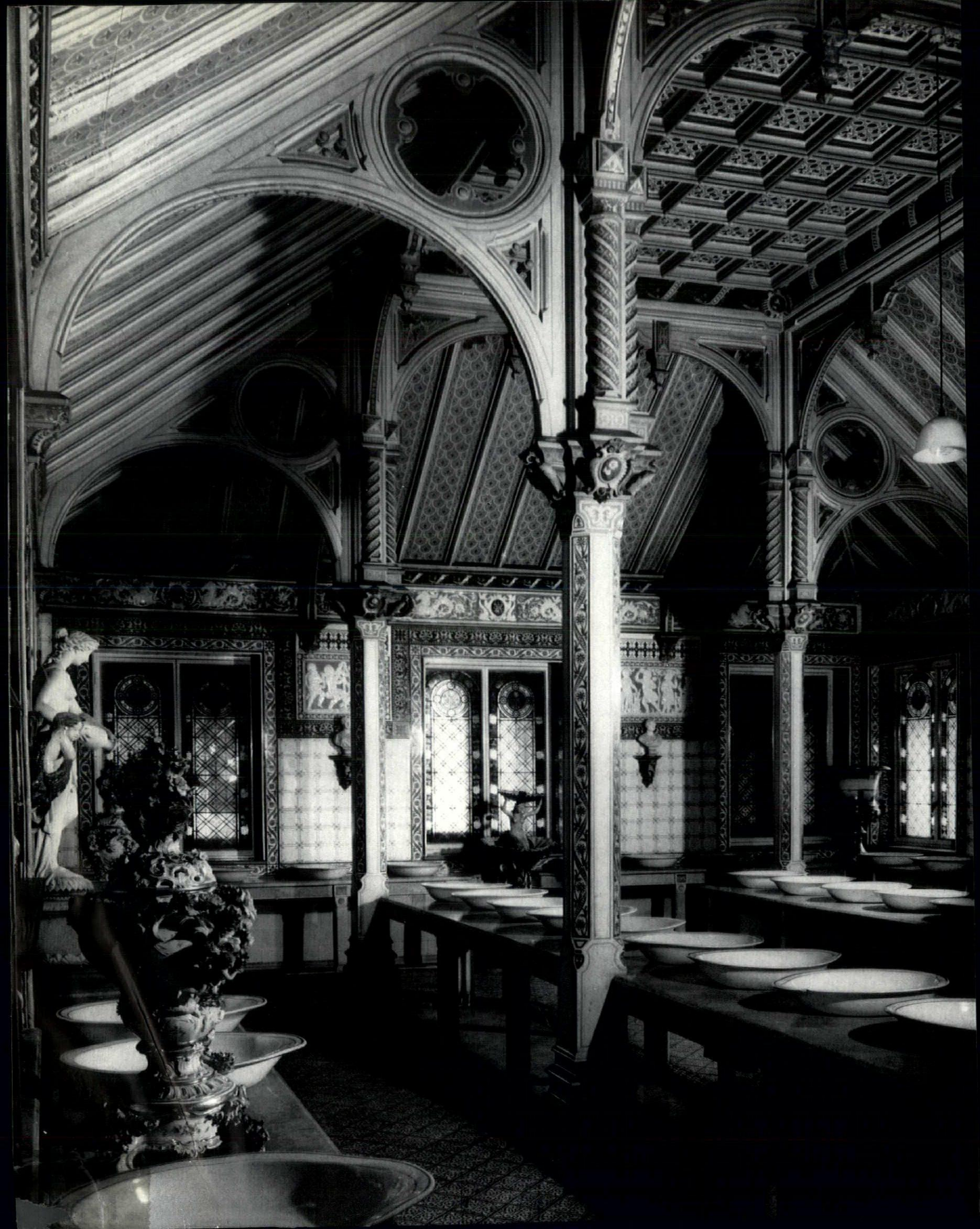


The creamery in the Royal Dairy at Frogmore, Windsor, which was the last building to be designed under Prince Albert's personal direction. It is illustrated here to mark the 150th anniversary of his birth. The photograph opposite (and the others on pages 414-416) were specially taken for the REVIEW *by Eric de Maré by gracious permission of the Queen.*

CONSERVATION INTERNATIONAL

The conservation of historic buildings and towns lends itself to international cooperation. The problem everywhere is the same or similar, and the exchange of technical knowledge and experience is an obvious necessity. Nevertheless, although Unesco has always taken an interest in the subject, there was no regular machinery for international cooperation until the formation of ICOMOS (International Council on Monuments and Sites) following a conference held at Venice in May, 1964.

Now an important further step is being taken: ICOMOS is to have a permanent headquarters in Paris. This is to be most appropriately situated in the Hotel St. Aignan, in the Marais quarter, where impressive conservation projects have been going forward for some years. It will include an international documentation centre, which will be of great value in view of the present fragmented nature of knowledge about conservation.

The new headquarters is expected to open at the end of this year, and when the executive committee of ICOMOS meets in Paris this month one of its tasks will be to appoint a director. The French Government is spending $250,000 on the necessary conversion work at the Hotel St. Aignan and is also giving $14,000 a year towards the cost of the secretariat. The Belgian, Dutch and Danish Governments are also making contributions. It is to be hoped that the British will do the same, especially in view of the urgent need in Britain for a coordinated conservation policy.

Britain is already actively involved. The news of the setting up of the Paris headquarters was given to members at the second ICOMOS assembly, which was held at Oxford in July, and was followed by a highly successful conference. It was opened by Lord Kennet, Parliamentary Secretary to the Minister of Housing, and closed by Mr. John Silkin, Minister of Public Building and Works, and Britain has a representative on the executive committee of ICOMOS in the person of Lord Euston,

chairman of the Society for the Protection of Ancient Buildings. The committee numbers 21, each from a different country. The president is Signor Piero Gazzola of Italy and the secretary-general, Professor Raymond Lemaire of Belgium.

One aspect of the work of ICOMOS to which Britain is particularly well equipped to contribute is the relation of conservation policies to town development. In the past, conservationists all over the world have perhaps given too much of their attention to individual monuments and the means of preserving them, and too little to their settings and the part they play in the towns to which they belong. This has lately become better understood in Britain, where the means of redressing the balance exists, at least in theory, in Britain's highly organized system of planning control. These controls are not always as constructively applied as they should be, and it is difficult, with our decentralized system of local government, to interest councillors, committed to keeping down the rates, in conservation programmes of national significance. However, the encouragement the Government has given to local authorities, in its most recent legislation, to designate conservation areas and to schedule historic buildings for their value as groups, represents a significant step in the right direction.

The Government itself made of course an important contribution when it sponsored the four pilot studies of historic towns—on York, Chester, Bath and Chichester—of which the results have been published during the last few months, and which have had plenty of attention as theoretical excercises but not as yet much effect in practice. Perhaps it is too early, but it is not encouraging that the city council of York, which city is likely to provide the test case of whether local authorities as well as the Government can be persuaded to take urban conservation seriously, have not backed the report on their city—a most distinguished, but at the same time practical, document, prepared by Lord Esher—in the way it deserves and their responsibilities require. Indeed at the end of October they published their own officials' somewhat disparaging comments on it in a report that was ill informed, misleading and tendentious.

Whatever their treatment at home, these four reports have aroused great interest abroad and the implementation of the ideas they put forward will be closely watched by the national committees of ICOMOS, which is already active in the same field; witness the conference organized by ICOMOS in October, in Graz, Austria, on the subject of traffic circulation in the historic centres of towns. ICOMOS also now issues, from Belgium, a useful periodical entitled Monumentum.

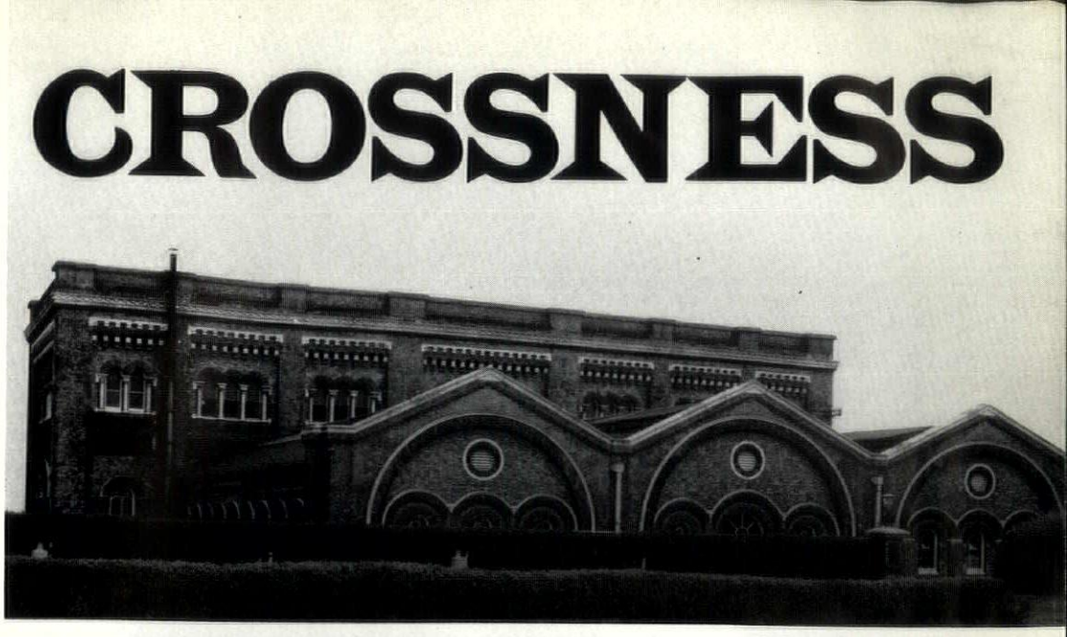
Another topic with which ICOMOS will have to concern itself is the education of architects, engineers and others in conservation techniques. Just before the Oxford conference met in July, the Institute of Archaeology of London University issued a report on the subject which underlined the growing need for specially trained conservation experts. The report suggested the setting up of a national conservation centre, based on the Institute, which already conducts courses of this kind. These are the only regular courses in Britain, and one of the most useful parts of the report was an analysis of the curricula of the three other such courses that exist in Europe: at the University of Rome, at the Ecole des Beaux Arts in Paris and at the Middle East Technical University, Ankara.

International exchange, of the kind that ICOMOS has initiated in the technical and legislative field, is clearly desirable in education, and the expanded conservation courses required in Britain could usefully be organized under the authority of ICOMOS on an international basis. The suggestion has been made that York would be an alternative and highly suitable site for a British conservation centre. Already established in York, as part of the university, is the highly respected Institute of Advanced Architectural Studies, where short courses in conservation techniques have been held in the past. In York, education could suitably be coordinated with historical research and with the practice of urban conservation on which York ought forthwith be embarking.

CROSSNESS

Close to award winning Thamesmead, on the river bank at Crossness, are the Southern Outfall Works to London's vast sewerage system, and just as Thamesmead represents a fine achievement of the 1960's, so the original buildings at Crossness, which in the most part survive, form an important reminder of one of the finest engineering feats of a century ago. Dominating this group of buildings is the splendid beam-engine house, which contains most of its original machinery. Its future is now in doubt, but it will be a sad loss to the nation, and to London in particular, if it is destroyed or allowed to deteriorate beyond repair.

With the rapid growth of London's population during the first half of the nineteenth century, the problem of the adequate disposal of sewage increased in magnitude. Epidemics like cholera grew in frequency until, towards the mid 1850's, a single epidemic could claim 30,000 deaths out of a



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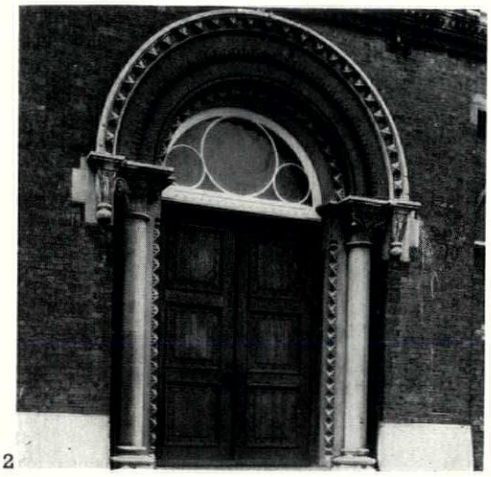

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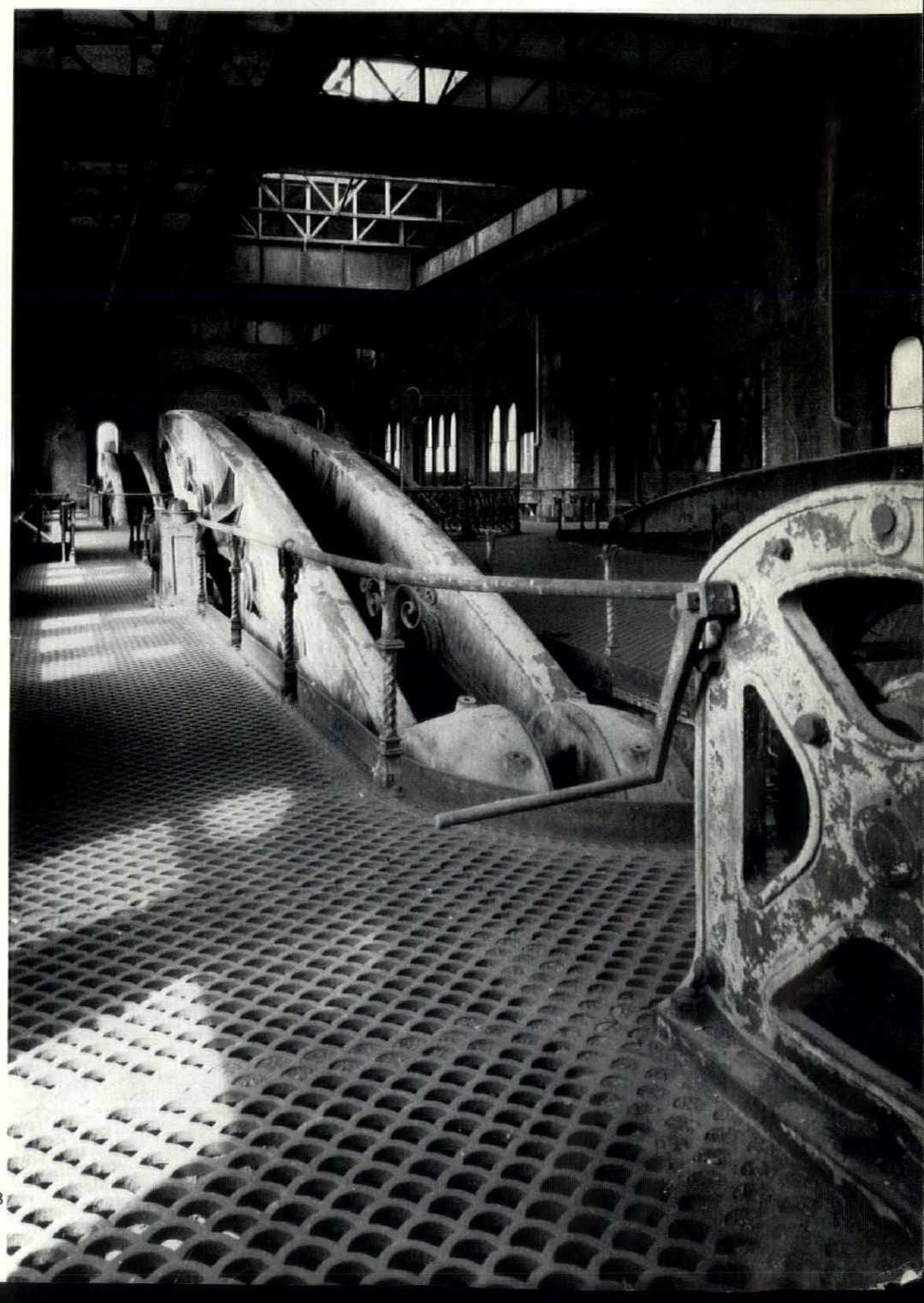

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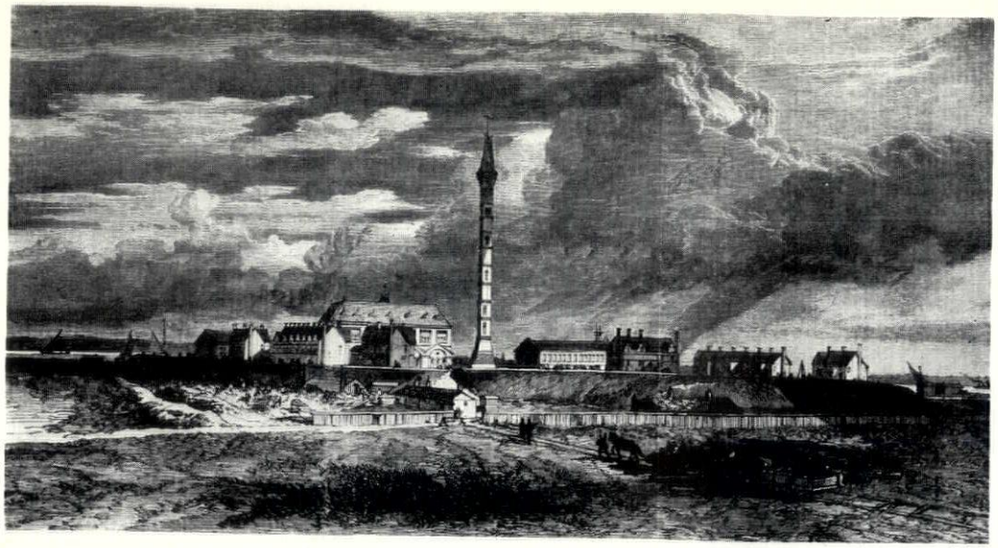
1, the engine house, with the boiler house in the foreground (both of 1865), seen from the top of the reservoir. The original mansard roof was removed in 1927. 2 (above), west entrance to the beam engine house. 3, the beam engines at first floor level.

population of two million. In 1856, seeking a solution to this problem, the newly formed Metropolitan Board of Works, the predecessor of the LCC and GLC, instructed their chief engineer, Joseph Bazalgette, to prepare a suitable scheme. They could hardly have chosen a better man for this exacting task, for Bazalgette (1819-91), subsequently knighted, was a pupil of McNeill, one of Telford's assistants. He was a man of great vision, and one capable of translating his ideas into reality.

Bazalgette's scheme, implemented by the Board, involved over 100 miles of large-diameter sewers, together with four pumping stations, at Pimlico, Abbey Mills, Deptford and Crossness. The project, completed in 1875, was a major triumph of Victorian engineering, and within a relatively short period the death-rate had fallen dramatically. Although much improved and extended since Bazalgette's day, the system still serves the major part of London, with a population infinitely greater than was foreseen when the scheme was first conceived.

Of the buildings Bazalgette erected, the engine house at Crossness is unique in that it still contains the original massive beam-engines. Both the building and its engines form a single entity, and neither the shell nor its contents can be considered in isolation. As such it remains an impressive





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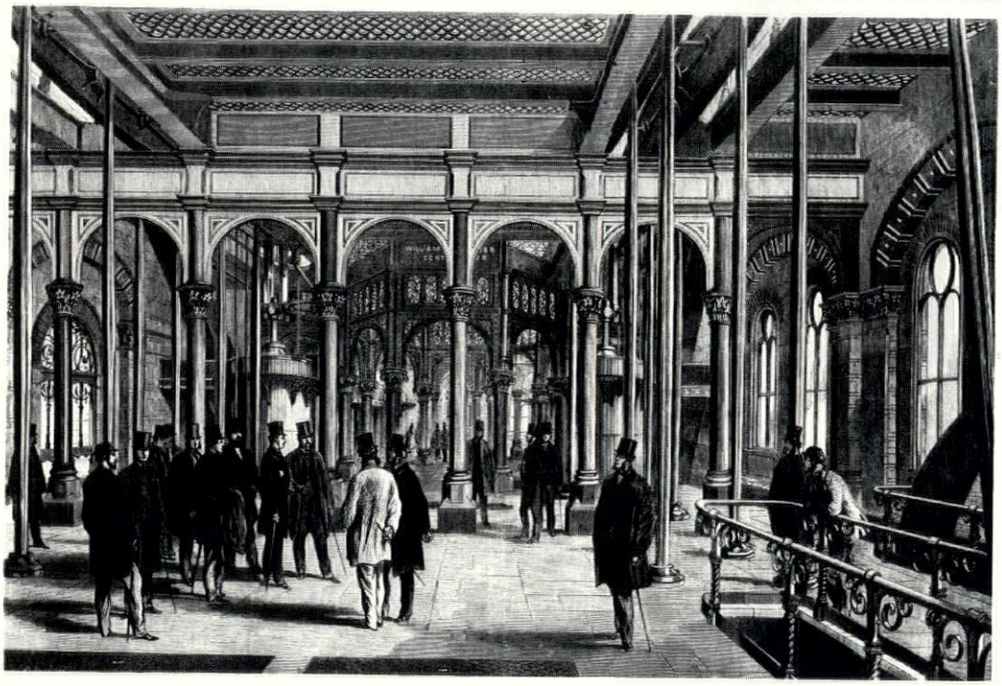

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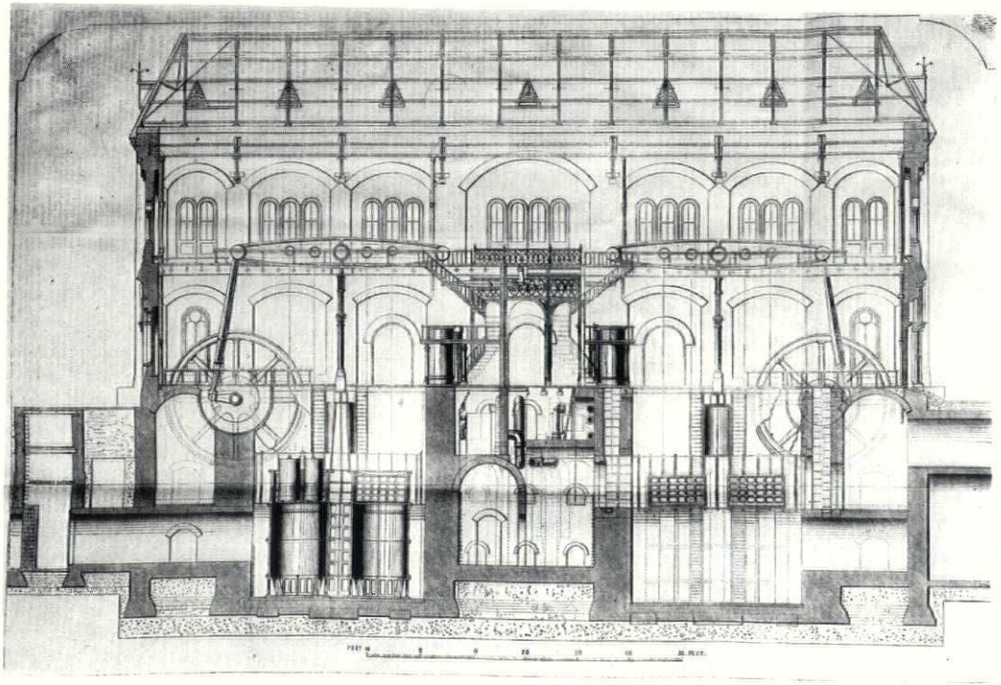
4 (facing page), ground floor of the engine house looking towards the central octagon. 5, the Crossness works as originally built. 6, the interior on the day of the official opening by the Prince of Wales. 7, section through the engine house; engravings are from the Illustrated London News. *8, original main entrance on the river front, now enclosed by the 'new' enginehouse of* 1899.



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monument to a great engineer's genius.

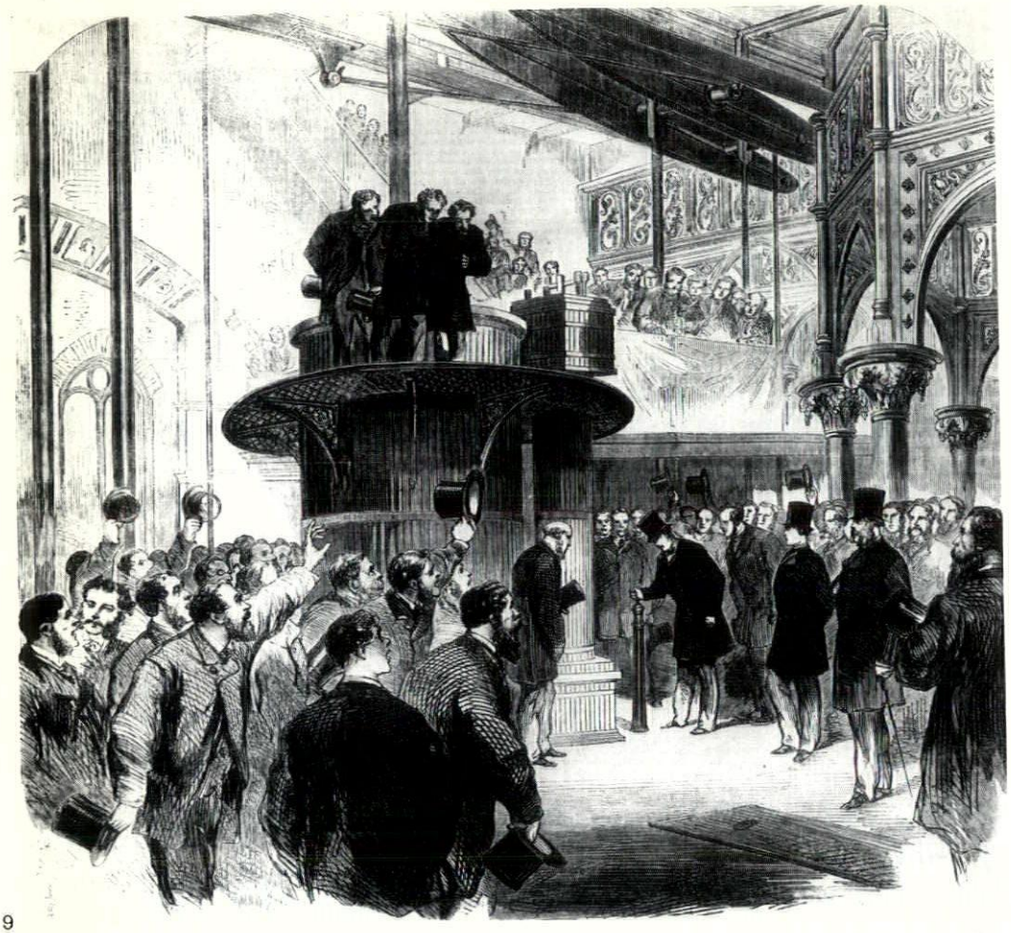
When opened by the Prince of Wales on 4 April 1865, the buildings at Crossness provided an impressive spectacle, particularly as the royal party arrived by boat from Westminster. The great beam-engine house formed the centrepiece, being flanked by a towering 178-ft campanile-like chimney, and with various ancillary buildings carefully laid out in landscaped grounds. A contemporary issue of *The Builder* aptly described the design as being 'Medieval with Byzantine and Norman features', and with 'an amount of decoration in carved stone to doorways and other parts, that may be deemed great, considering the situation of the building'. The four beam-engines, by James Watt and Co., were each of a nominal 125 horse power, yet capable of double that performance, and with flywheels 28-ft in diameter. Appropriately, they were named



8

Victoria, Prince Consort, Alexandra and Albert Edward. With an interior intricately worked out and meticulously decorated, the colour-scheme in the manner of the 1851 Great Exhibition, the engine house provided a princely setting for the royal occasion.

In the straightforward rectangular plan of the main building the four huge engines are symmetrically placed in the corners, the machinery penetrating through the basement, ground and first floor levels. A central octagon forms a lightwell to the ground floor, and here the design shows particular ingenuity. Robust iron columns with foliated capitals support the first floor, whilst between the columns, and just below the upper level, there is a high frieze of intricately worked iron panels. Elaborate iron grilles screen four sides of the octagon at ground floor level. A centrally placed iron spiral stair provides access to the basement. Elsewhere, other iron staircases, both spiral and straight, connect the three floors, in each case being positioned skilfully in relation to the machinery. Although the decorative work is flamboyant, it blends harmoniously with the massive components of the engines. Clearly, from a study of the original drawings still in the GLC archive, Bazalgette's draughtsmen m[illegible]



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9, *Crossness beam-engine house: The Prince of Wales starting the engines on 4 April, 1865. From the* Illustrated London News.

contemporary pattern-sheets, but they did so with consummate skill. The Abbey Mills engine house, built two years later, shows similar detailing. Further buildings were added to the Crossness works later, the most significant of these being the 'new' engine house of 1899, which was built adjoining the front of the beam-engine house facing the river. This housed two vertical steam engines that have since been removed. Although this addition undoubtedly spoilt the simple majesty of the main building, sealing off the original splendid entrance, it was nonetheless designed in the same style, as were the other buildings erected previously in 1888, and later in 1915.

In 1909 the original beam-engines were compounded to improve their efficiency, but by 1934 experts considered they were nearing the end of their useful life. With the bringing into commission of the full set of engines in a separate building constructed in 1915, the need for the original engines declined, although two of them were kept in working order throughout the war years of 1939-45 for use in an emergency. In 1953 the last of these fine engines was abandoned, coincident with further major extensions to the works. In the same year, because it was no longer required and needed extensive repairs, the magnificent original chimney was demolished. Previously, in 1927, the characteristic mansard roof of the beam-engine house had been taken down, because of maintenance difficulties, and replaced with a flat roof of unenterprising design. But in spite of these alterations the early buildings have retained a certain dignity, set as they are in well maintained grounds.

The beam engine house and its fine machinery are now in a sad state of disrepair, yet they are by no means derelict. Whilst the GLC have shown concern over the future of the building and its engines, and are sympathetic to the idea of their preservation, they are finding it difficult to allocate funds for this purpose. Somehow the necessary money should be found.

JOHN SMITH

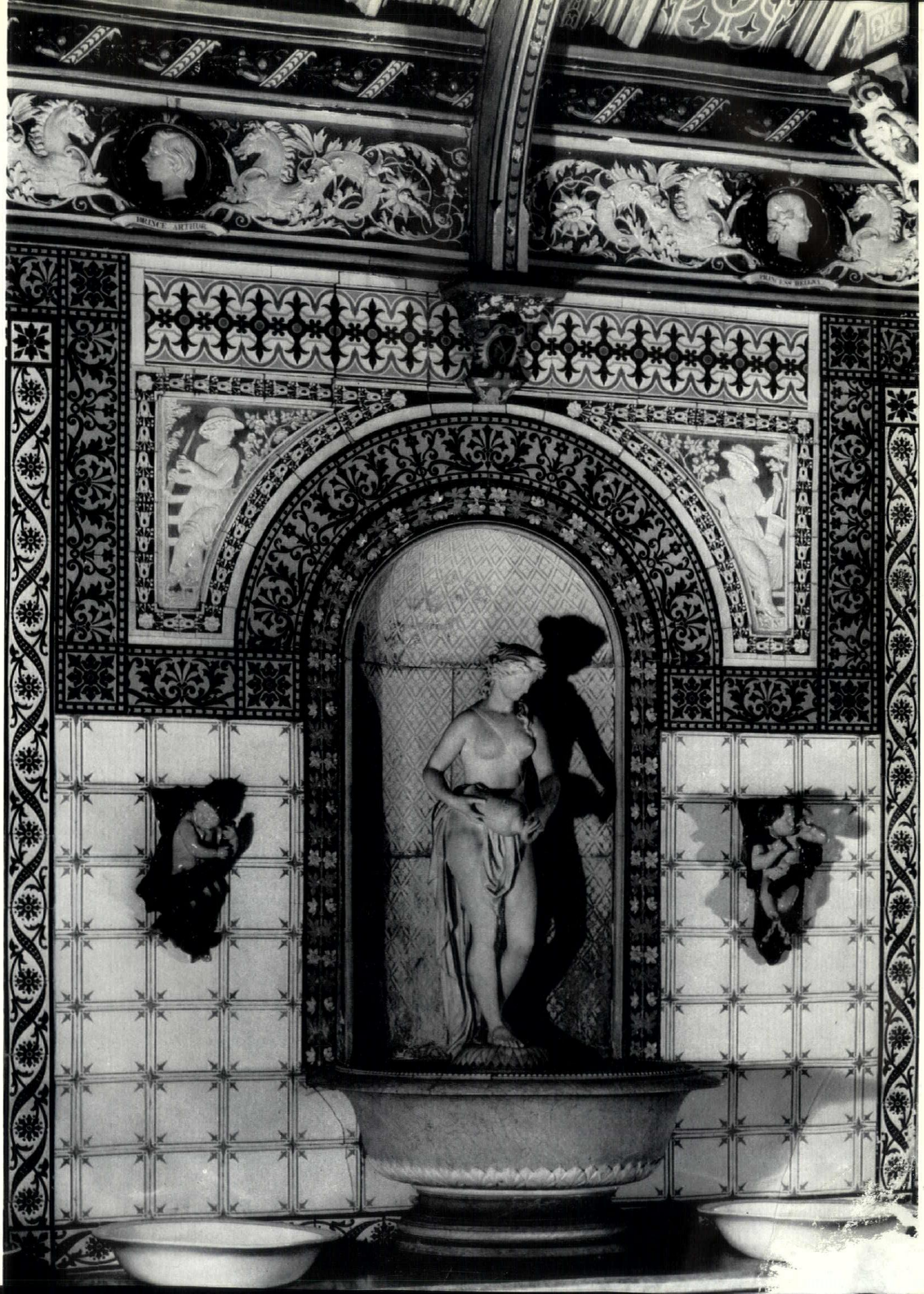
photographs by Eric de Maré

PRINCE ALBERT'S DAIRY

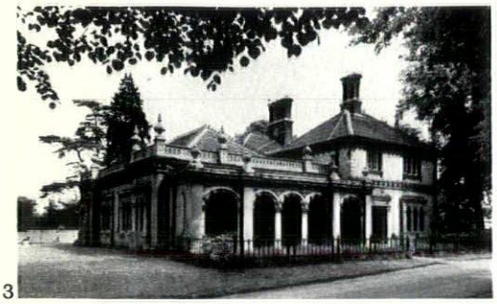


The Prince Consort, whose 150th birthday is being celebrated this year (see frontispiece, page 408) had a hand in several building projects, including the model working-class houses erected for the 1851 exhibition and the rebuilding of Osborne and Balmoral. But the model dairy attached to the home farm at Frogmore, Windsor, built near the end of his life, was probably the one that best represents his personal response to contemporary taste.

The executive architect, who worked under Prince Albert's close direction, was John Thomas and the date of construction was 1858. But Mr. Charles Handley-Read, in a most scholarly article on the dairy that he contributed to *Country Life* in June 1961 (on the centenary of Prince Albert's death) suggested that the remarkable ceramic decorations may not have been completed until a few years later. The 'perfect gem of taste and art' was referred to in the *Illustrated London News* of 27 July, 1861, as having been 'just completed'. This was five months


PRINCE ARTHUR

before the Prince Consort's death. The dairy (3 is an exterior view) consists of a two-storey residence, offices and—beyond a small courtyard—the creamery, which is the subject of the remainder of these photographs as well as of the frontispiece. The creamery, 4, is a room 40 ft. long and over 20 ft. wide, with a sloping timber roof supported on six columns and a painted



3



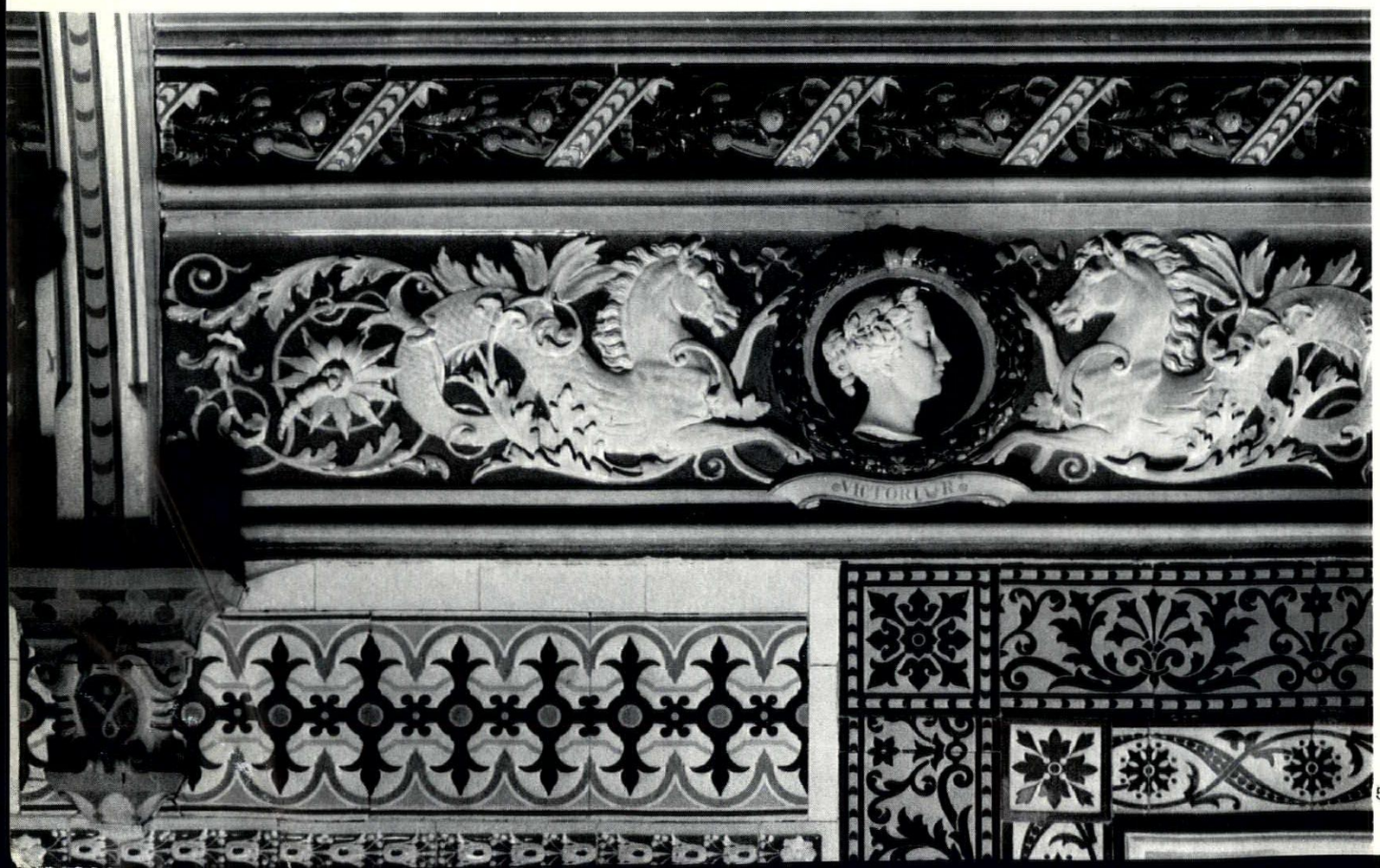
4

ceiling. Along the walls, windows alternate with niches, 2 (preceding page), and marble slabs running the length of the room carry the separating basins.

For a description of the decorations Mr. Handley-Read's words cannot be improved upon: 'The creamery tiles are arresting in their rich brilliance and variety of colour, although the design of some of the decorative details is not particularly original. The profile portraits in relief of all the Royal children, for instance, white against dark blue, presumably derive from *quattrocento* examples, familiar then as now, associated with members of the della Robbia family. No doubt the background colour was here applied by hand. These portrait roundels punctuate the frieze' (5 shows the portrait of Queen Victoria herself) 'and are supported by sea-horses, white against pale blue, crisply and gracefully modelled in fairly high relief: another attractive but derivative detail.

'Block printed border-tiles of five different patterns, in pale green, dark red and with touches of other colours, are laid in strips to frame the windows, the niches and the pictorial reliefs. At close range these varied patterns, with their very different designs and rhythms, do not always lie comfortably against one another. It is almost as though the interior had been designed as a sampler of specimens. Yet attempts were made to unify the overall appearance, for the diaper pattern on the tiles in the rectangular recesses is precisely echoed in the painted decoration of the window glass. It has not been possible to trace the originals from which the portrait heads of the Royal children were modelled—it is unlikely that Thomas himself would have been granted sittings for this purpose—and whether he drew out the designs for the tiles, as Pugin seems to have done when he worked with Herbert Minton, is something we may never know'.

1 shows the portrait plaque of the Prince Consort in the tympanum of the arched doorway. The Frogmore dairy is still in daily use. The residential part of the building houses the dairy maid and her husband (who drives the dairy van), and between them they bottle Jersey milk, separate cream and make cream cheese for the Royal Household in London and Windsor. The tiled creamery illustrated here is not however now regularly used.



5

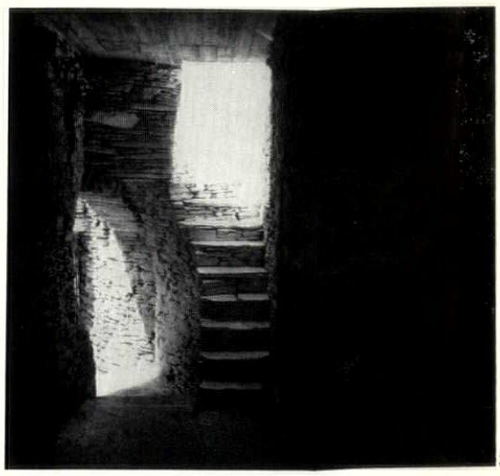
TINOS

photographs by Margaret Tallet



1

The houses in the hillside villages of the Greek island of Tinos are built out from the rockface and their terraces are either formed by the roof of the house below or else they bridge the street. At street level the houses



3



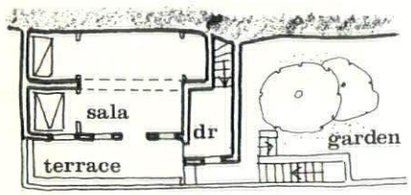
2

are constructed of unrendered schist and are used now mostly for storage and less for housing animals; the upper levels are rendered and whitewashed. The two levels are connected by freestanding, enclosed, outside stairs which lead to the access terraces above and cast pools of light into the street; secondary, inside stairs were often built as an escape route.

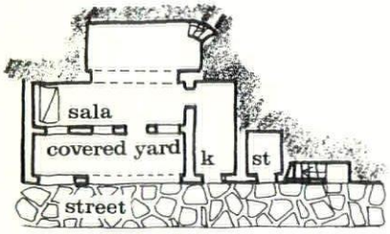
Generally the plan is one level of living



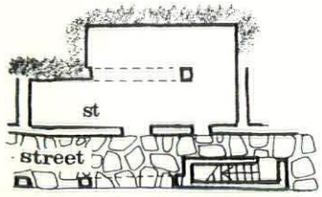
accomodation, often with one generation of a family living above another, but the larger houses are two storeys high with the ground floor used as a living area. The house plans are variants of one simple form. The central space is the large, cavelike *sala* backing on to the rockface, spanned by lowsprung stone arches and opening on to the terrace. To each side are sleeping alcoves;



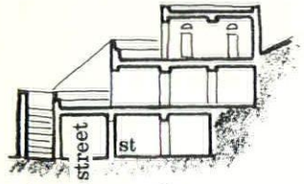
large house: first floor plan



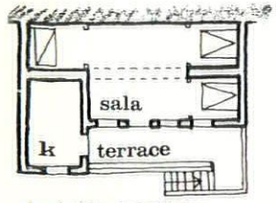
large house: ground floor plan



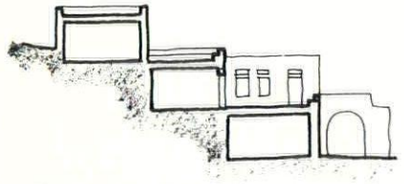
alternative ground floor plan

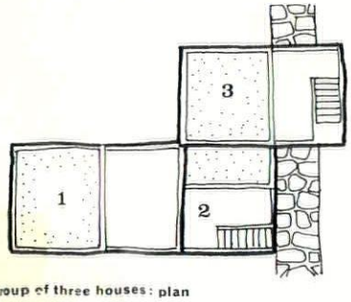


typical house section



typical house section

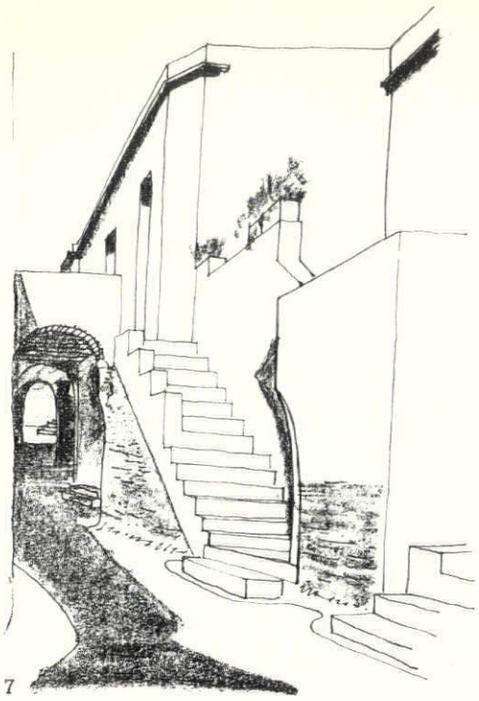

group of three houses: section



group of three houses: plan


5


6



7

the kitchen usually projects out on to the terrace.

The streets are patterned by a play of light and shade, the enclosed staircases acting as light shafts. Where the street is covered the stone arches of The *sala* and store are repeated to support the terrace, and a feature of many villages is these arcaded streets following the contours of the hillsides.

MARGARET TALLET

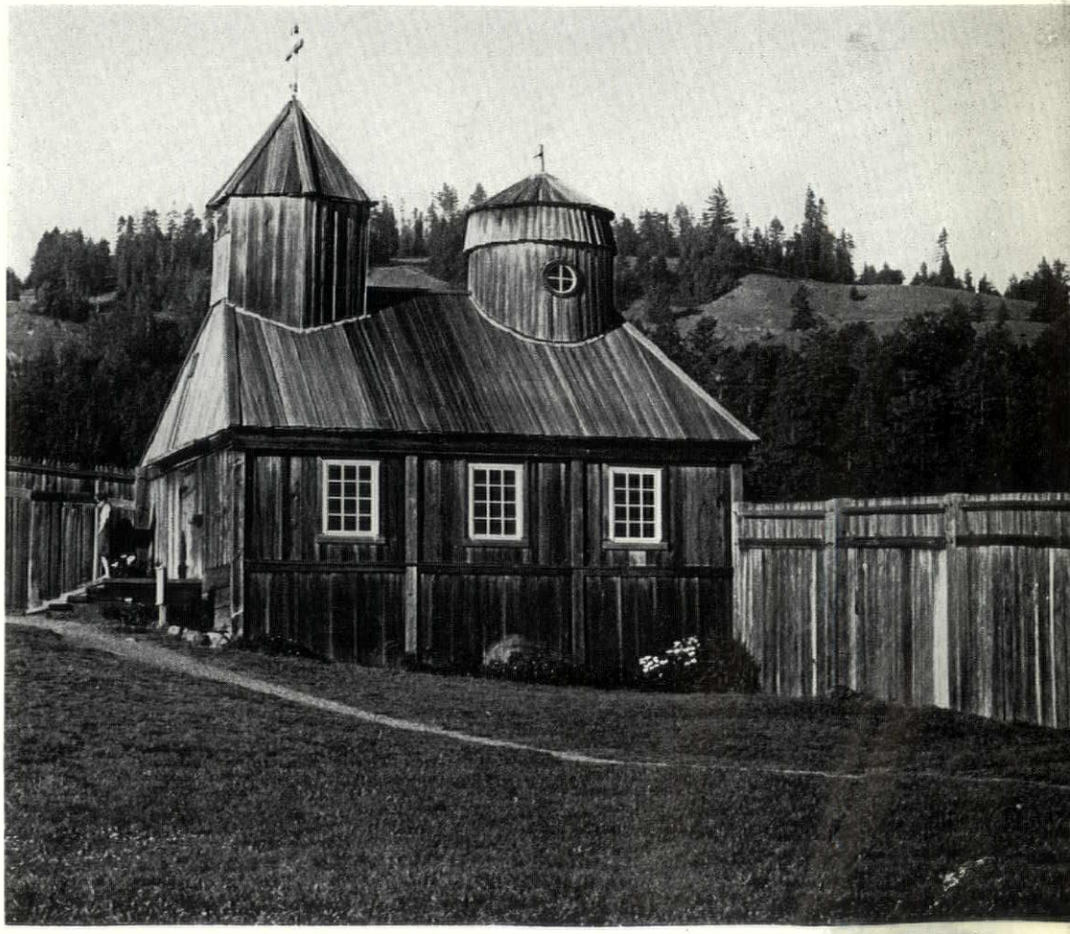


8

RUSSIAN FORT IN CALIFORNIA

On a windy headland forty miles north of San Francisco stands Fort Ross, Russia's southernmost outpost on the North American continent—in the 1800's. At the beginning of the nineteenth century Russian hunters from Alaska frequently sailed down the North Coast of California in pursuit of the valued pelts of the California sea otter. The base they established at Fort Ross soon became an important agricultural, fishing, and trading centre, providing winter supplies for Russian settlements in Alaska. After some thirty years of prosperity, however, the community fell on hard times and was finally sold to an American, John Sutter (of gold-rush fame). After nearly a century of neglect the wooden stockade and principal buildings—most notably the Orthodox church shown in this photograph by David Trevor Hicks—were restored, and the site is now a US National Monument.

CAROL AGEE





LAW COURTS DONCASTER

ARCHITECTS: FREDERICK GIBBERD AND PARTNERS (IN ASSOCIATION WITH L J TUCKER BOROUGH ARCHITECT)

These law courts and the adjacent police headquarters are a part of Doncaster's new civic centre which is being built on the site of the old Paddocks adjoining the shopping centre. When the town hall is built the group will form an architectural composition enclosed on either side by the existing technical college and Coal Board offices and extending into the shopping precincts on the north. A series of pedestrian squares will then be formed between the buildings without rigid demarcation between civic, business and social activities.

The law courts are for two authorities, county and borough, each with its own administration, and there is also a self-contained probation service.

The accommodation is arranged round a large, rectangular top-lit public concourse and central staircase, with the general accommodation at ground level and seven courts on the first floor. A semi-basement accommodates holding cells, with an underground connection from the police headquarters and plant rooms. The courts are placed as seven detached units ranged round the public gallery, with local waiting spaces and interview rooms between them. Surrounding the courts and completing the rectangular plan-form of the building are the magistrates' and the jury retiring rooms and other accommodation not accessible to the the general public.

All the courts are air-conditioned and have sufficient natural top-light to avoid the dullness of a completely artificial environment. The two larger courts are Quarter Session courts and have public galleries, and share prisoners' stairs with the adjacent smaller magistrates' courts. The magistrates' courts are used for juvenile cases on certain days. The informal atmosphere and different procedure demanded considerable flexibility: fixed furniture is reduced to a minimum and loose tables and chairs provided to allow for re-arrangement. The ground floor accommodates the two groups of magistrates' clerks' offices, and there are separate entrances for the public, for the magistrates, and for the probation officers. The magistrates' entrance leads by a private stair to first floor level. In addition there are solicitors' consultation rooms, public lavatories and a buffet.

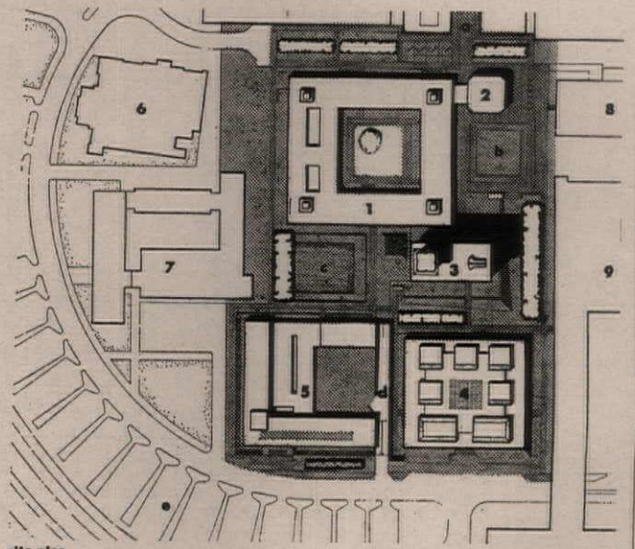
Since the existing surrounding development has considerable diversity of form, colour and texture, the external materials are limited to grit-blasted concrete, polished precast panels with a Capstone aggregate and aluminium entrance screens and windows. The panels which form the external walls of the building are structural for the full two-storey height above ground. The courtrooms themselves rise above the general roof level of the building to gain additional height internally and provide external identification. The building is surrounded by a sloping plinth faced with granite setts, which accommodates a crawlway duct distributing the district heating mains and also affords a measure of privacy for the ground-floor offices. This is reinforced by setting their windows back behind the external wall. Since the court walls projecting into the upper concourse are virtually the external walls, they are faced with the same polished Capstone, thus helping to identify the main elements in the building. The waiting recesses are panelled in afromosia and the floors of both the upper and lower concourse with riven slate.

The structure is reinforced concrete, and the external panels which form the external walls are also loadbearing. The panels are set out on a 9 ft. grid and are precast for the two-storey height.

The seven courts form in effect load-bearing towers of reinforced concrete; the *in-situ* floors and roof span between these towers and the external wall panels. Erection of the panels commenced when the structure had reached first floor level. Each panel was lifted into place and levelled and plumbed on screwed inserts cast into its base, after which the horizontal joint was dry-packed. The *in-situ* first-floor slab was then extended to link with the back of the panel. Vertical joints between the panels were designed on the 'drained' principle; neoprene baffle was inserted into a vertical chase formed into the sides of the panels, and a bitumenised foamed polyurethane sealing strip was inserted at the inner face of the joint.

Internally the upper courtroom walls are lined with panelling of varying thickness and absorbtion qualities to provide acoustical correction. The panelling is finished with natural hessian to present a uniform appearance to the many planes and textures. Afromosia is used throughout the courts for panelling and for both loose and fixed furniture.

Structural consultants, Harris & Sutherland.
Mechanical and electrical consultants, A. J. Smith.
Quantity surveyors, John Watson & Carter.



site plan

key

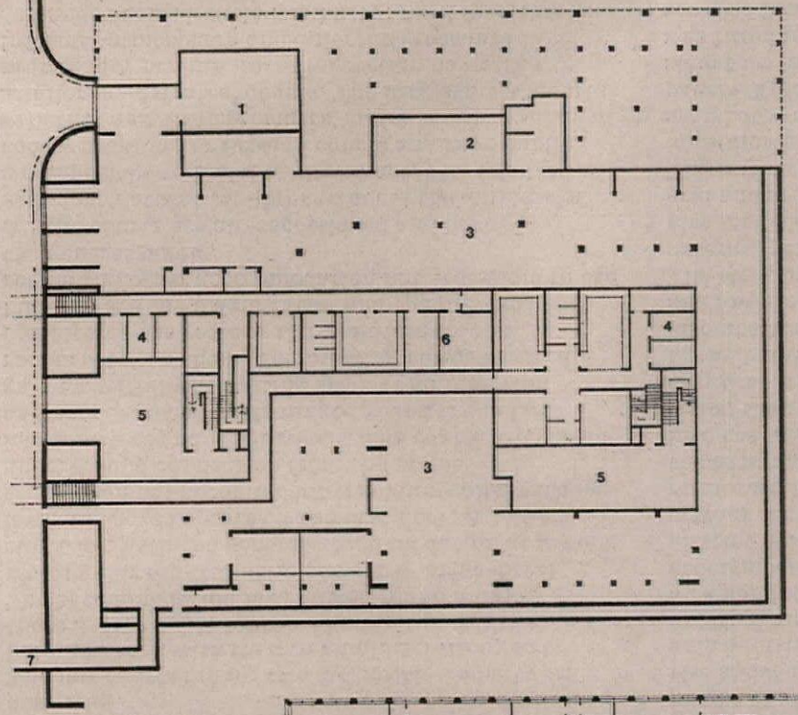
1, proposed town hall
2, proposed council chamber
3, proposed town hall, tower block
4, law courts
5, police headquarters
6, baths
7, national coal board
8, library
9, technical college
a, shopping precinct
b, north square
c, south square
d, service road
e, car park

1 (facing page), looking north-east, with police headquarters to the left.

basement plan

key

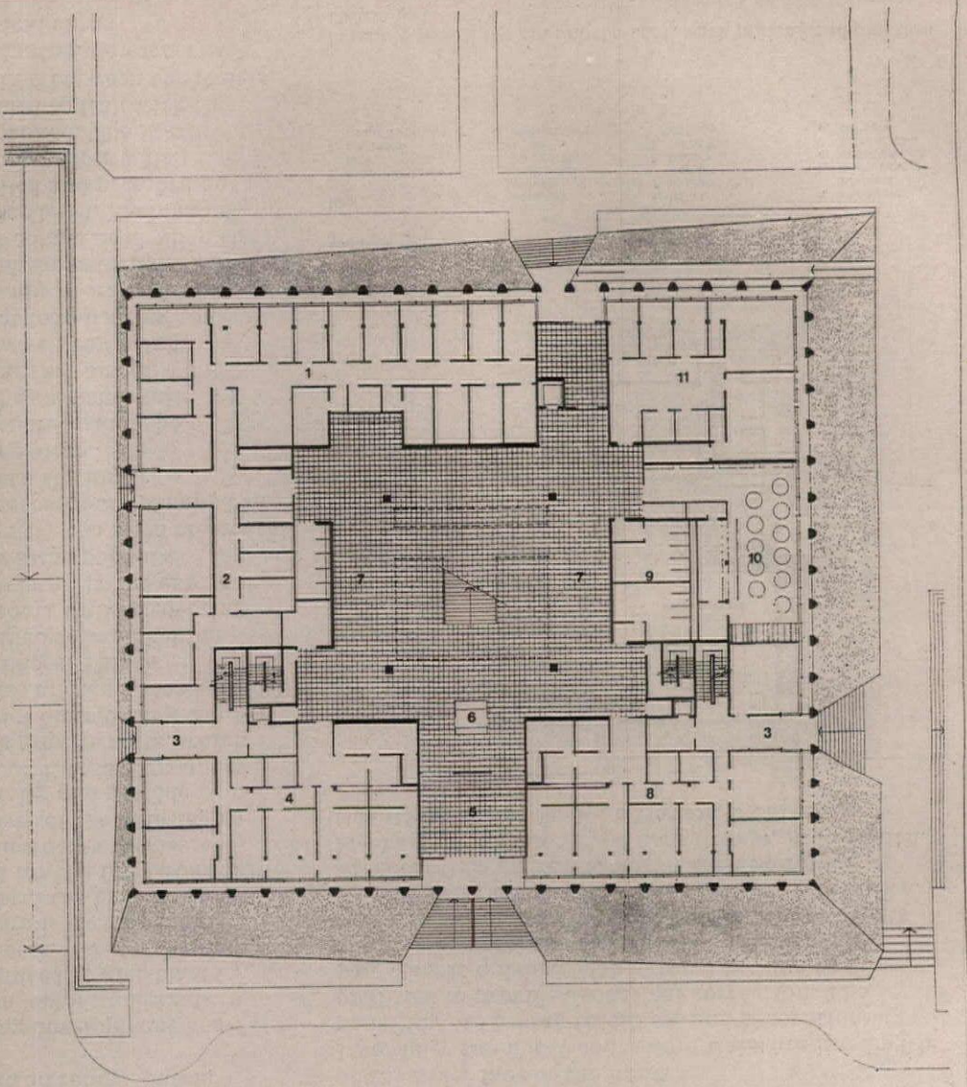
1, electrical
2, switch rooms
3, plant
4, interview rooms
5, storage
6, holding cells
7, group heating duct



ground floor plan

key

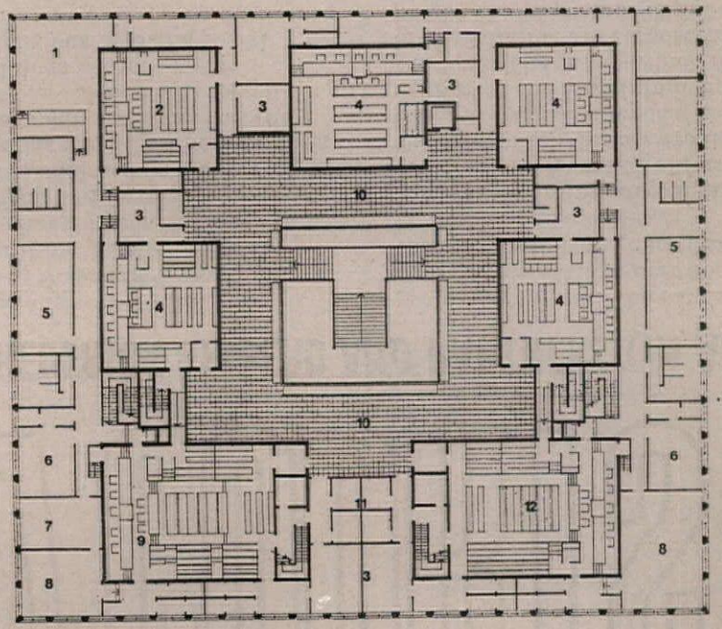
1, male probation
2, female probation
3, magistrates' entrance
4, Doncaster justices, clerks
5, entrance hall
6, enquiries
7, public concourse
8, West Riding justices, clerks
9, wc
10, buffet
11, solicitors



first floor plan

key

1, domestic court
2, coroner's court
3, witnesses
4, magistrates' court
5, magistrates' retiring rooms
6, recorder
7, robing room
8, jury retiring room
9, quarter sessions court
10, public concourse
11, interview rooms
12, Brewster sessions court



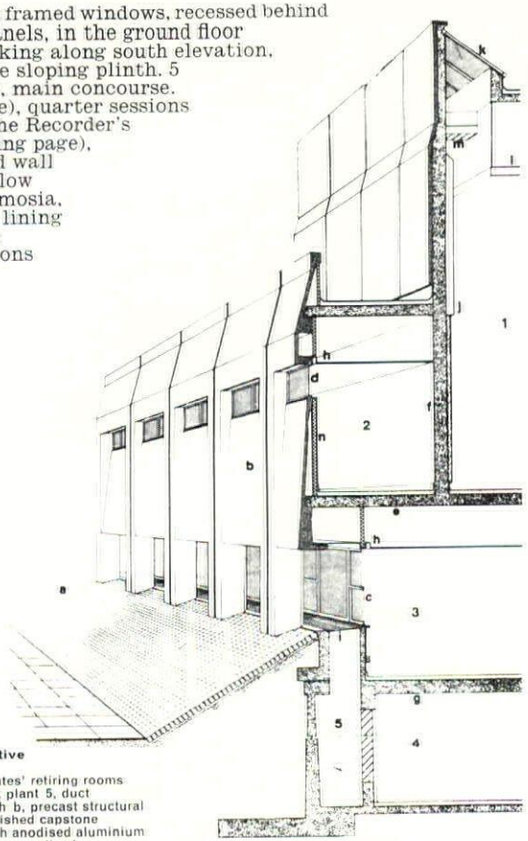
LAW COURTS, DONCASTER
PHOTOGRAPHS BY HENK SNOEK

2 (facing page), south elevation, showing main entrance and the two large courts rising above the overall roof level.

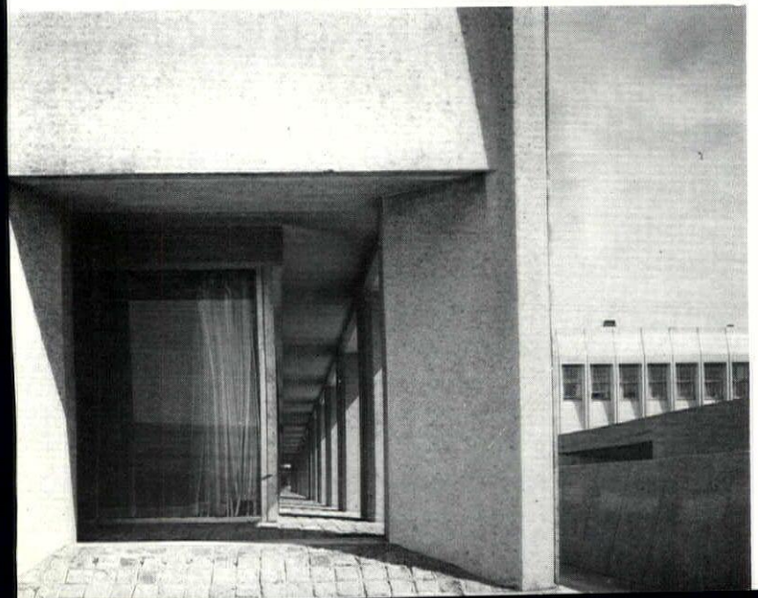


LAW COURTS DONCASTER

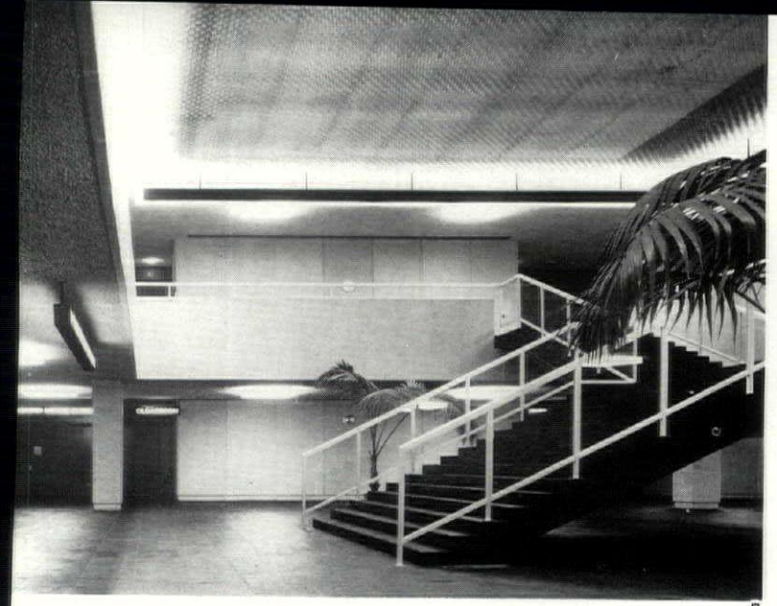
3, aluminium framed windows, recessed behind structural panels, in the ground floor offices. 4, looking along south elevation, showing large sloping plinth. 5 (facing page), main concourse. 6 (facing page), quarter sessions court from the Recorder's bench. 7 (facing page), furniture and wall panelling at low level, in afromosia, with hessian lining above, in the quarter sessions court.



cut-away perspective key
1, court 2, magistrates' retiring rooms 3, administration 4, plant 5, duct a, granite sett plinth b, precast structural concrete units; polished capstone c, double hung sash anodised aluminium windows d, tap hung anodised aluminium windows e, in-situ concrete floors spanning between external precast units and internal in-situ columns f, in-situ concrete continuous walls g, in-situ concrete floor spanning between in-situ basement walls h, perforated aluminium suspended ceiling and pressed metal blind box i, galvanised steel grille j, built-up acoustic lining, hessian covered k, double, sound resisting glazing l, suspended ceiling concealing air-conditioning duct m, supplementary fluorescent underbeam lighting n, lightweight concrete block lining







5



7

6





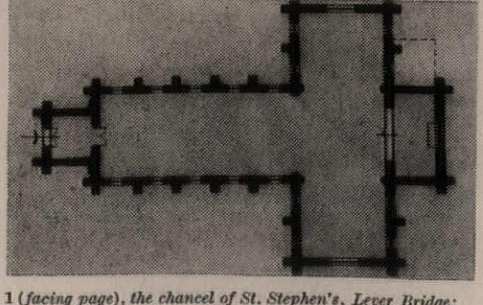
EDMUND SHARPE AND THE 'POT' CHURCHES

Robert Jolley

The churches of St. Stephen and All Martyrs, Lever Bridge, Bolton, Holy Trinity, Platt, Manchester, and St. Paul, Scotforth, Lancaster, are of considerable interest to the architectural historian; for in all of them terra-cotta was widely used for both constructional and decorative purposes. Indeed, the Lever Bridge church, begun in 1842, is the first work of the nineteenth century, in this country at any rate, in which terra-cotta was used on a large scale. Apart from the foundations and the rubble between the inner and outer skins of the walls, neither stone nor brick was allowed in the construction.

The chief promoter of the Lever Bridge scheme was Colonel John Fletcher, owner of the Ladyshore Colliery at nearby Little Lever. The discovery of deposits of fireclay there first gave him the idea of building the new church entirely of this material, and he commissioned his future son-in-law Edmund Sharpe, architect of Lancaster[1], to prepare the designs. Terra-cotta possessed many advantages; it was strong, light, easily worked, relatively non-absorbent and above all economical, but Sharpe had no illusions about the problems involved, and referred to them some thirty years later in the following words: 'The experiment was a bold, not to say a hazardous one, and its realization was an extremely arduous affair. Kilns had to be built, and other necessary premises to be constructed; experienced work-men had to be engaged, and above all, a competent and able modeller to be secured. It was, in fact, the creation of a new enterprise'[2] There was also of course the inevitable opposition of the reactionary element who held up the whole scheme for 'the pot church' to ridicule, but Fletcher and his supporters had their way, work began in 1842 and the church was completed and opened in 1844.

St. Stephen, Lever Bridge, is small and cruciform, with seating for 350. The aisleless nave and extremely shallow chancel render the plan suspect ecclesiologically, but there are north and south transepts and a fine west tower and spire.



1 (*facing page*), *the chancel of St. Stephen's, Lever Bridge: detail of niches in the upper wall. This and the photographs that follow are by D. M. Wrightson.* 2, *plan of the church.*

The rather florid style is the 'Curvilinear'[3] of the early fourteenth century, with crocketed pinnacles, deeply-moulded door- and window jambs, parapet of open tracery, traceried windows and all other detail characteristic of the period.

The interior is simply organized. Ornament is used sparingly and concentrated on the shallow chancel, which has a trefoiled arcade round the three sides below, and a series of crocketed niches intended for memorial brasses in the north and south walls above, all in terra-cotta, the walls themselves being faced with blocks in 5 in. courses. Even the pews have tracerised terra-cotta panels to the backs and ends, the pulpit and organ-case were similarly treated and so was the original font which has since been replaced by a simpler one in stone. Sharpe's initial enthusiasm also led him to design the communion table in terra-cotta, but this was soon objected to as uncanonical and it was replaced by a wooden table.

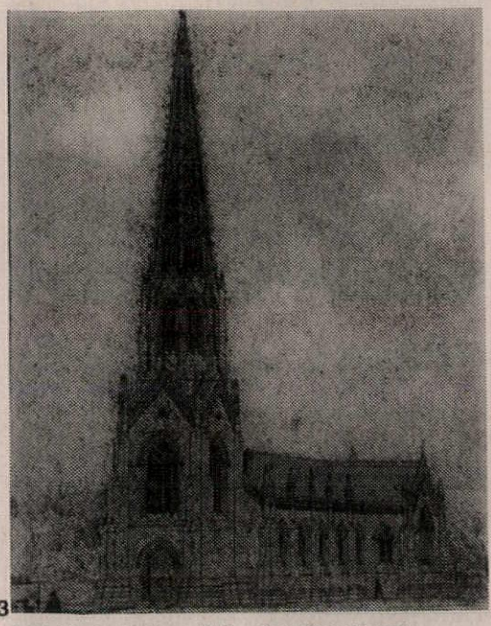
It is not surprising to learn that the *Ecclesiologist* found '. . . grave faults in the plan. The church, judging from the broad roof, has no aisles; there is no south porch or even door; and the arrangement of the lower part of the Tower is, we apprehend, entirely without authority for a church of these dimensions.' The most scathing criticisms were, however, reserved for the material of which the church was constructed: '. . . a new church at LEVER BRIDGE . . . exhibits a showy, cruciform structure . . . At first sight the Critick . . . finds bold basement mouldings, rich parapets and pinnacles, and a most elaborate spire, not ungraceful in its contour. But on closer inspection it will be seen that the chief characteristicks of the design are pretence and affected decoration. The whole secret is disclosed, when it is learnt that the church is built of fireclay, cut in moulds.'

The writer then proceeded to comment ironically and at some length on the economical repetition of window and other details, pleading '. . . guilty to considerable admiration of the ingenuity which has made an ambitious church out of so few moulds. One large window, one small window, one pinnacle, one yard of parapet, one sexfoil gable-light, one set-off, one yard of string-course: behold nearly all that is necessary for the exterior at least of an elaborately enriched cast-clay church! For an octagonal pierced spire to set on top of the eight lantern windows take two sorts of panelling by way of variety and one mould for crocketed ribs, and you will want nothing but a finial for the top.' Grave doubts were entertained as to the durability of 'this earthenware material,' but the real core of the objection was contained in the following passage: 'Seriously we must protest against adopting such a material as cast-clay for a church. Whatever objection has been raised to cast-iron or to stamped wood applies also to this. Such a material is not even *cheap*, except by a device of repeating parts and details which is entirely subversive of the variety and originality necessary for true art. . . . we should almost prefer the honest ugliness of a red-brick building to the yards and scores of cast mouldings and crockets which compose the still cheaper and not really more worthy offering to the glory of GOD, the church of Lever Bridge'[4].

Sharpe did not of course see eye to eye with the critic of the *Ecclesiologist*, either as to the durability of terra-cotta or its suitability for church work generally, but there is no doubt that he had to overcome considerable technical difficulties, chiefly concerned with the warping, shrinkage and amount of firing required by each piece. Later on, when the use of terra-cotta became more widespread, manufacturers such as Doulton, Blashfield and Cliff managed to reduce these problems to a matter of certainty and could guarantee the true execution of an architect's designs to the exact scale shown; but in 1842 many experiments were necessary.

Sharpe described the problem thus: '. . . Take, for example, the lower portion of one of the aisle buttresses, it was easy enough to know the probable shrinkage of the coursed blocks of its masonry, but who was to predict beforehand the amount to which the upper and lower members of its base-mould would shrink? Experiments had therefore to be made which involved the preparation of moulds, and the forming, drying, and burning of the pieces before any degree of certainty could be obtained; and much was the work of this experimental nature that had to be gone through and thrown aside, before the true scale to which this detail work had to be designed could be accurately determined'[2] The problem was intensified if the blocks were solid throughout, and in the door and window jambs, arches, sills, buttress offsets, pinnacles and base-course, the warping of the moulded lines and the difficulty of thoroughly burning solid pieces of so great a size obliged Sharpe, against his wishes, to hollow out the blocks. The hollow portions were later filled in with concrete so that the whole was perfectly solid and structurally sound . . . 'And here I may tell you at the outset, what is the real danger and objection to the use of terra-cotta. It may be said of fireclay what has been said of fire itself,

namely, that it is a very good servant, but a very bad master. It is the natural tendency of terra-cotta to become *pottery*, and the natural tendency of terra-cotta manufacturers to cause it to become such: the obvious duty of the architect in his



3

3, St. Stephen's, Lever Bridge, from the south-west: perspective drawing showing the spire, which was subsequently dismantled. 4 (right), plan of Sharpe's second church, Holy Trinity, Platt.

treatment of it is so to deal with it as to preclude the possibility of this reproach. And although I will not go so far as to say that there is no part of this church where terra-cotta is used that is not of the nature of stonework; yet I will at least affirm, that where it is artificially used, so as to resemble stonework, it has been so treated that the work is as solid as if stone itself has been used'[2].

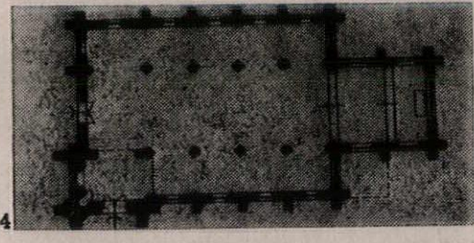
Such defects as have developed in the fabric of the church are due in large part to neglect, since for many years a considerable portion of the building was covered with ivy. The south side of the tower is affected particularly badly in this respect, but it has also been found necessary to replace blocks elsewhere which have disintegrated due to insufficient burning. The spire, an open-work octagonal structure in the German style, was built completely of terra-cotta and fastened together with dowels of the same material. Sharpe rejected iron as being less durable and copper as being too costly, claiming that dowels of terra-cotta were cheap to produce and were for all practical purposes imperishable. Nevertheless in 1937 the spire was declared unsafe and taken down, but because of the cost involved was unfortunately never rebuilt.

Shortly after the completion of St. Stephen in 1844, Sharpe was called upon by Thomas Worsley, of Platt Hall, near Manchester, to design another church using terra-cotta as the main material. Holy Trinity, Platt, is more correct in plan than Lever Bridge, with a fairly deep chancel and wide aisles. Sharpe referred to it as being '. . . of a more Mediaeval type than that of Lever Bridge . . . a genuine example of the true Lincolnshire type of the fourteenth century'[2] It was also much larger with seating for 650.

Profiting by his experiences at Bolton, Sharpe chose, doubtless for technical reasons, a far simpler form of Curvilinear. The whole exterior is of terra-cotta with coursed walling of five-inch blocks as at Lever Bridge, but the backing of the walls is of brickwork plastered. Ornament is used sparingly, the clustered piers, floriated capitals and moulded nave arches adding sparkle to a somewhat austere but finely proportioned interior.

Other features are a large five-light east window of flowing tracery, a diapered parapet to the aisle and clerestory walls and a west tower and spire over 150 ft. high. Generally speaking the church has weathered extremely well and is in good condition, but the spire was taken down and rebuilt in 1911.

As at Lever Bridge, Sharpe came in for a certain amount of rough treatment at the hands of the *Ecclesiologist*, which felt that these '. . . two experiments . . . of the practicability of building in terra-cotta . . . must set the question at rest for ever, as far at least as Mr. Sharpe's process is



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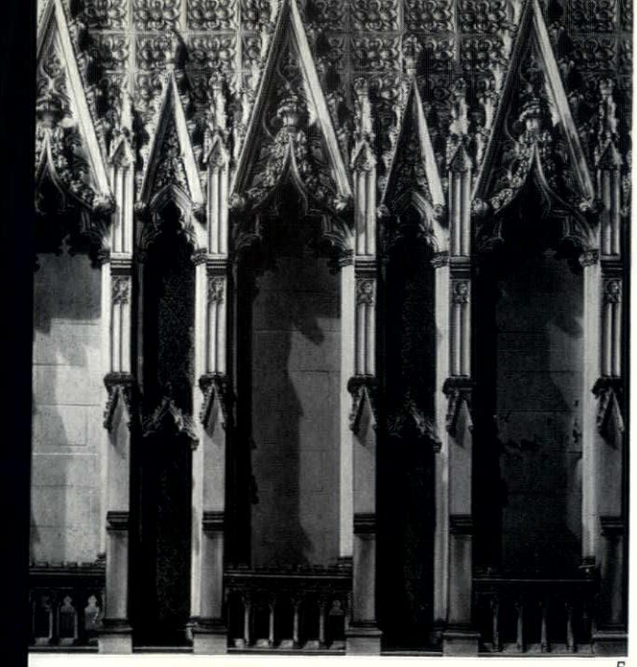
concerned. . . . The precise faults which were likely, a priori, to have been committed with this material have been committed, and the work unites thinness with over-ornament. . . . Terra-cotta is not in our mind a legitimate material for such details as in the church before us; but at least if it is right to sham stone, which we deny, it ought to sham it successfully, which in this case it does not. We are sorry to see the question of building in brick (for terra-cotta is but a sort of brick) prejudiced by such an unsatisfactory experiment.'

One of Sharpe's chief arguments in favour of terra-cotta was its durability: '. . . of all materials, natural or manufactured, there are few that are so durable as terra-cotta; the examples of it, some thousands of years old, that have turned up in Egypt, Assyria and elsewhere, prove this beyond a doubt. But it is so on one condition only; namely, that it be . . . thoroughly "fired" '[2]. Although fully aware of this condition when he commenced the work for Lever Bridge, he was hardly aware at first of the much larger proportionate increase of time in burning to be given to the larger pieces in order to ensure that they were completely hardened. As a result the defect only became apparent after the material had been built into the work, and a considerable number of blocks had to be taken out and replaced.

At Platt on the other hand, where in consequence of these failures the whole work was much more thoroughly burned, a much more satisfactory result was obtained. Hollowing out the blocks would of course diminish the length of burning required, '. . . but here we fall upon another evil almost greater than the first, for it is pre-eminently unsatisfactory to reduce the ornamental part, or show-side, so to speak, of the block to the condition of a shell, whilst honest concrete or stone does duty at the back as the real masonry of the building. I need scarcely say that this is not the manner in which the terra-cotta used in these two churches has been treated; still there must always be the tendency on the part of the manufacturer to ensure the durability of his material by lessening the amount of its solidity, a result which goes far to prove that to employ this material in large masses is a use which is in a direction and of a nature opposed to its natural capabilities'[2].

This last consideration determined Sharpe that, should he ever have occasion to use terra-cotta again, he would so use it as to ensure the complete burning of the whole work, with only a moderate amount of firing. This meant that only small pieces would be used throughout the building, and that they would be limited to the following dimensions: '. . . for the ordinary walling blocks, 9 in. by 4½ in., giving a cubical content of 162 in.; and for the largest pieces of ornamental work a maximum of 400 cubic inches; and thus, instead of obliging the terra-cotta to suit the design, so to prepare the design as to suit the terra-cotta.' This decision would, he felt, have an important corollary: "Now it is obvious that this limitation in the size of the blocks to be used is inconsistent with Gothic work of the kind that was prevalent in this country in the 13th and subsequent centuries. Indeed, the massive effects that we see realized in Norman work were produced by stones much smaller in size than those which were used in certain situations in Gothic work. But still better adapted to the condition which I have just ventured to lay down is the work of that period to which I have endeavoured in my recent publications to call special attention, and which occupied the latter half of the 12th century. For in this Transitional work, especially in that lighter description of it which was executed towards the close of the Period, we find in its mechanical ornamentation, and in the repetition of parts in its moulded and carved work, exactly those conditions which adapt themselves to the . . . use of terra-cotta'[2].



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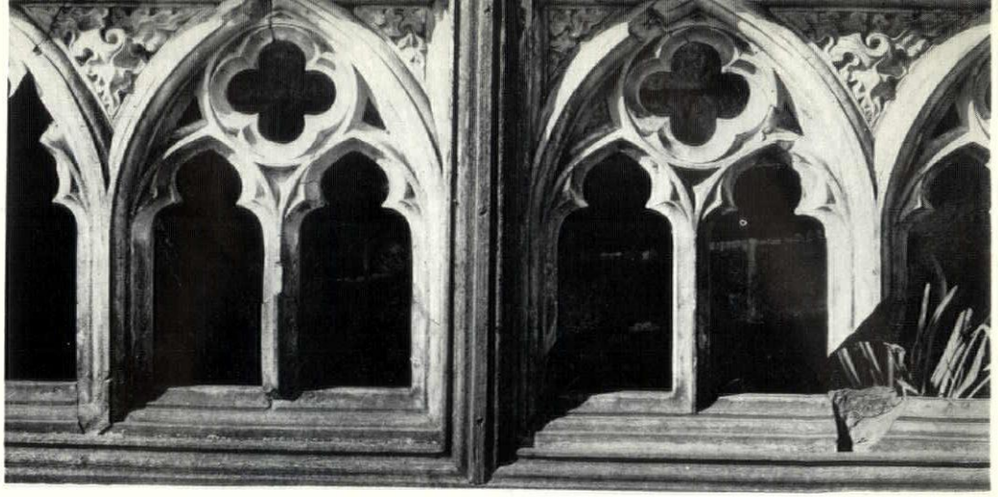

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5, niches in the upper wall of left-hand side of chancel at Stephen's, Lever Bridge (also shown in 1). *6, wooden model of the tower and spire originally designed for St. Stephen's. 7, part of a terra-cotta pew back. 8, detail of the main entrance porch.*

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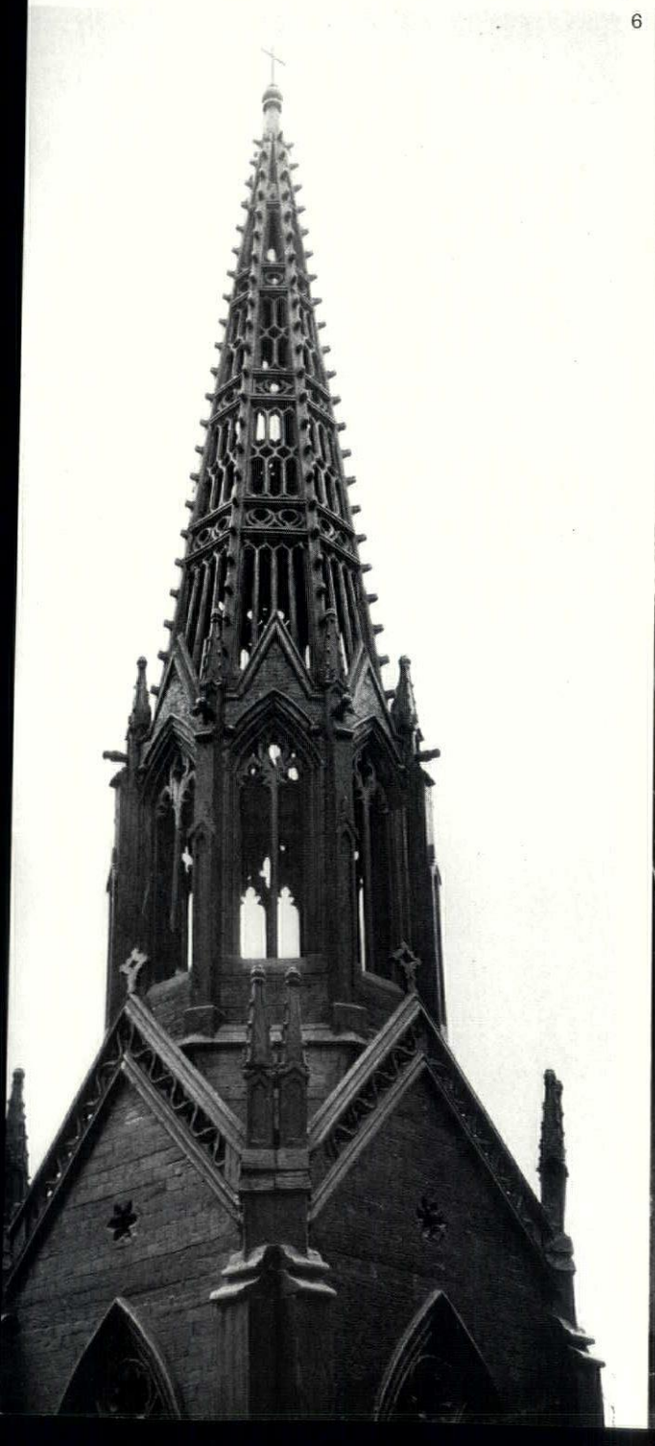

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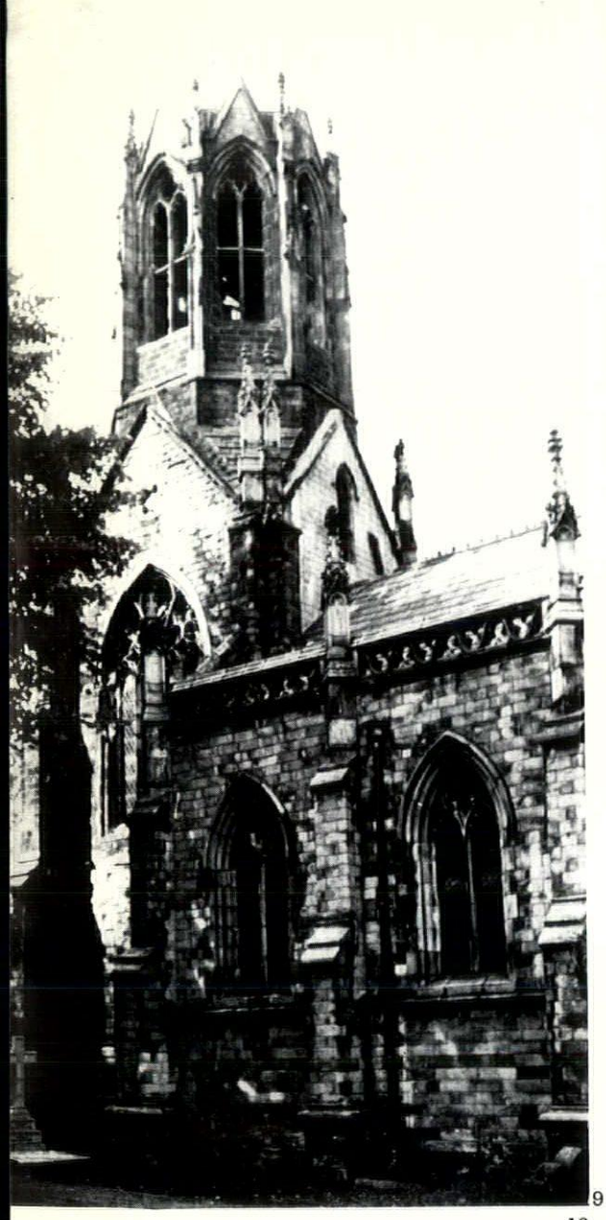

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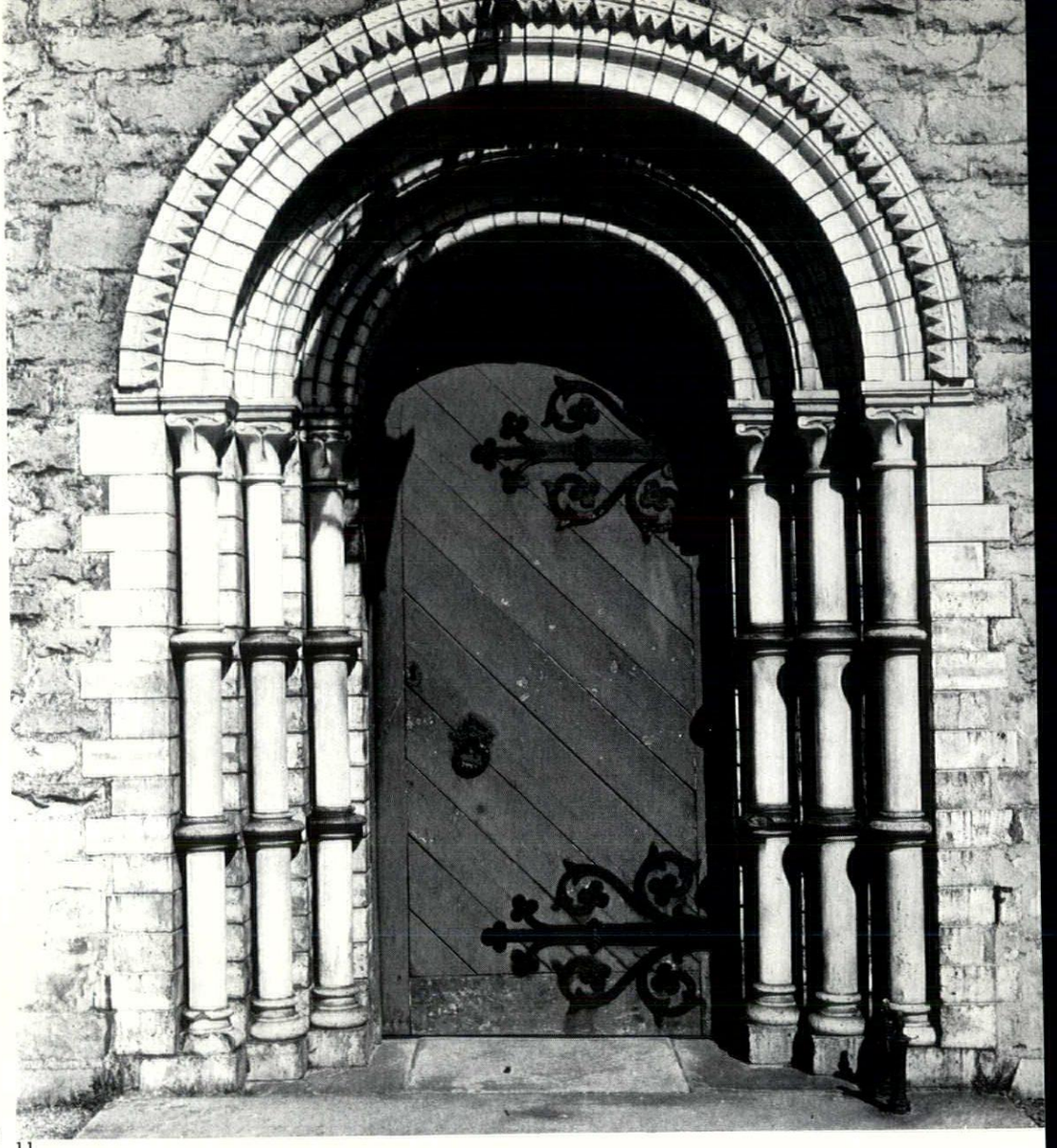

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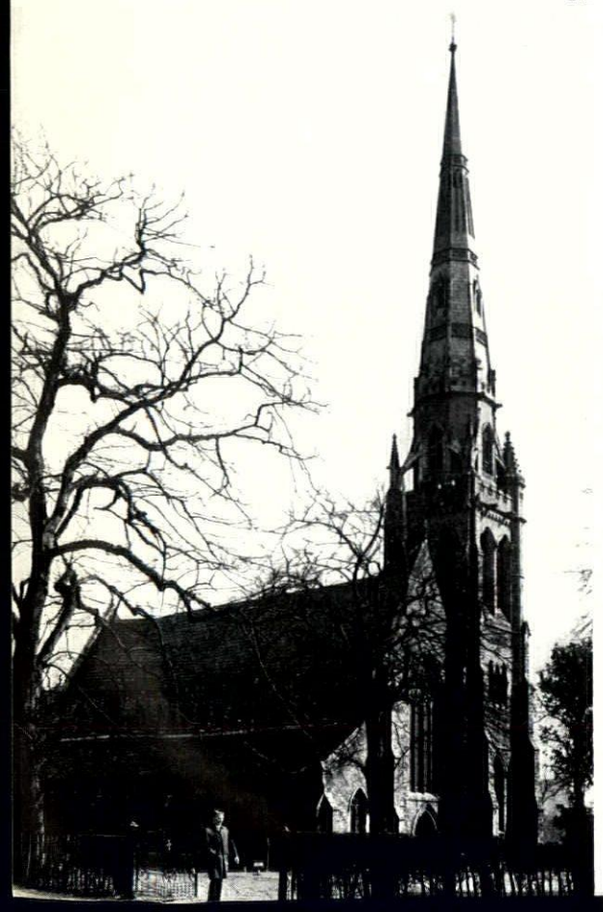
10

9, *St. Stephen's, Lever Bridge: condition of tower between* 1937 *and* 1967 *after the spire had been taken down. Since this article was written the tower has been dismantled also, only the porch remaining.* 10, *Holy Trinity, Platt, from the north-west.* 11, *St. Paul's, Scotforth: main entrance doorway.* 12, *St. Paul's, Scotforth: from the north-east.*



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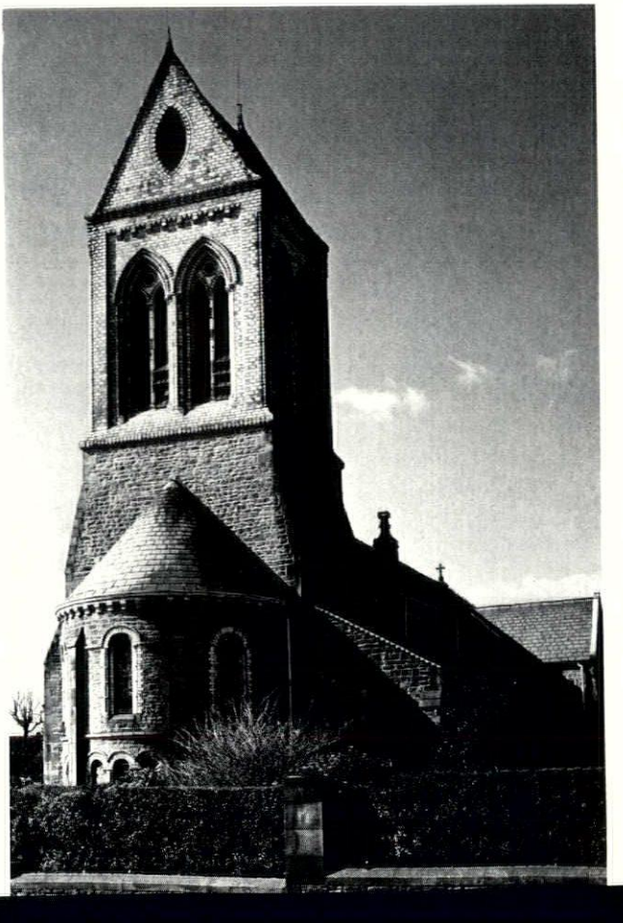
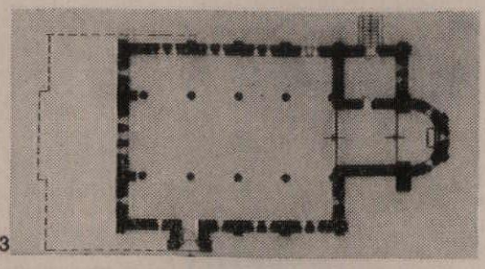


This repetition of mouldings and ornaments as mere mechanical adjuncts tending to debase art was one of the chief objections raised by the opponents of terra-cotta in building work. Sharpe met it by stating that in his churches every detail was well thought out and carefully modelled; and this being the case he could think of no reason why there should be a prejudice against cast decorative work. It necessitated a repetition of parts and details, it is true, but to his mind one of the most interesting points in the examination of Gothic work was to trace out the idea of proportion which, repeated again and again, gave the key to the whole composition. Furthermore from a practical point of view facilities for mechanical repetition of design were the more needed, as the British workman was regrettably becoming less skilled, less careful, and less industrious every year, and any means by which responsibility could be transferred from his hands to those of the modeller would be to the architect's advantage.

Sharpe had to wait almost thirty years for the next opportunity to use terra-cotta. He had retired from practice as an architect as far back as 1851 to devote his time to writing and his many business interests, but in 1874 he became one of the chief subscribers to the church of St. Paul to be built within a few hundred yards of his home at Scotforth, Lancaster, and he therefore considered himself '. . . justified under these circumstances, not only in preparing the designs of this church, as an amateur, but also in attempting to realize the idea I had conceived thirty years ago, by the help of which we might hope, with our limited means, to produce a structure of greater comeliness and ecclesiastical character than we could expect to accomplish were we to use exclusively the gritstone of the neighbourhood'[2].

St. Paul, Scotforth, is a small church with seating for 300, of the usual plan with nave (extended by 24 ft. in 1891) and aisles, clerestorey, south porch, chancel and semicircular apse. The most unusual feature is the placing of the tower over the chancel—a position more French than English. Except for the use which was made of terra-cotta, and which might on that account prove instructive to others, Sharpe claimed little for '. . . a design which, au reste, is sufficiently modest'[5]. The style is that of the latter part of the Transitional period, about 1170, and the church is built in flat-faced rubble walling with terra-cotta dressings of a matching colour. The use of terra-cotta is otherwise restricted to parts of the interior and exterior, including the doorway of the south porch and the whole of the upper part of the tower with its saddleback roof. The terra-cotta did not come from Ladyshore but was manufactured by Messrs. Cliff & Son, of Wortley, near Leeds. Sharpe himself prepared all the drawings[6]



13, *plan of St. Paul's, Scotforth, Sharpe's third and last terra-cotta church.*

and supervised the modelling, thus ensuring that no piece exceeded the maximum size determined by him. As a result all the terra-cotta work is solid and solidly built into the walls; there is no hollow work of any kind. The external walling of the tower is of 9 in. by 4 in. by 4½ in. blocks backed by, and securely bonded to, ordinary brickwork set on edge.

Sharpe was particularly well pleased with the terra-cotta work at Scotforth and had this to say about it: 'The material, as regards colour, is unexceptionable; of a warm colour, of the very best stone colour; and this is not only on the surface, but throughout. Burning does not darken or change the colour of the block internally as is the case with some fireclay. It requires no special preparation other than that to which all other brick clay is subjected. It will carry a great amount of heat in burning, and possess, when burnt, all those proofs of durability which well-burnt fireclay ought to exhibit; it rings well, is extremely hard, and resists both the chisel and the penknife . . . Its texture is one that is agreeable to the eye, and which takes mortar well, and is therefore well suited to architectural purposes'[2]. These comments were written in 1876 shortly after completion of the church, but they are still valid today, as the building is in excellent condition, its tower a landmark to the speeding traveller on the M6. Sharpe had put forward in defence of his system many strong arguments in favour of terra-cotta as a building material. He was on shaky ground however when he claimed with some pride, of Lever Bridge, that 'Looked at as a piece of ordinary mason's work, it would be difficult to find a fault with it; nor would a stranger, seeing it for the first time, deem it, either from the appearance of its colour[8] or its workmanship to be anything else'. And again of Platt: 'The whole work has been treated, as will be seen, as a work in masonry, and I believe very few of those who live in the populous neighbourhood in which it stands are aware that it is not so'[2].

This attempt to make terra-cotta resemble stone was considered to be entirely reprehensible by most critics of the time and formed the substance of their objections to the two churches. The same objection was raised by George Gilbert Scott, not usually the most scrupulous of architects, in his *Remarks on Secular and Domestic Architecture* (1858)[9]. Most of his argument would find ready acceptance today. It ran as follows: 'Terra-cotta seems the natural accompaniment of brick, but it should not be used as an artificial stone. It is merely the highest development of brick . . . No attempt should be made to assimilate its colour to that of stone . . . Terra-cotta should always be *constructively* made, and *constructively* used; not in great blocks like stone,—in which case it is always a mere sham,—but made of the dimensions most suitable to the nature of its manufacture, and the design made suitable to those dimensions;—thus treating it honourably as a genuine and acknowledged material not insulting and degrading it by making it a mere pretender, appearing in borrowed feathers . . . To take full advantage of the material, enamelled enrichments might with great advantage be used in it. Thus by the judicious use of brick (moulded as well as plain), encaustic tile, and terra-cotta, we might develop a variety of constructive decoration peculiarly our own.'

It is extremely difficult to assess the full extent of the influence of the Lever Bridge and Platt churches on the development of terra-cotta work in this country in the nineteenth century. A similar wholehearted use of clay does not appear to have been repeated anywhere else—the formidable disapproval of the Ecclesiological Society would be sufficient to prevent that—but the two churches represent a genuine, enthusiastic, though possibly in some respects misguided, effort to explore the full potentialities of the material.

NOTES

[1] Edmund Sharpe, born Knutsford 1809. In practice as architect, Lancaster, from 1836. Partnership with E. G. Paley from 1845 and official withdrawal from practice 1851. Sharpe then devoted his time to various business interests, railway engineering and to writing about mediaeval architecture. Books included *The Seven Periods of English Architecture; Architectural Parallels; Decorated Windows*, etc. Received RIBA Gold Medal 1875. Died in Milan 1877.

[2] *Builder*, Vol. 34, 1876. Pp. 553-4. Article 'On the Adaptability of Terra-Cotta to Modern Church Work: its Use and Abuse,' by Mr. Edmund Sharpe, M.A. taken from a Memoir which was to have been read on 29 May 1876 to the RIBA.

[3] Sharpe's own term for early fourteenth century Gothic taken from his book *The Seven Periods of English Architecture*. These he proposed should be named as follows: Saxon, Norman, Transitional, Lancet, Geometrical, Curvilinear and Rectilinear.

[4] *Ecclesiologist*. Vol. 3 Feb. 1844. Pp. 86-7.

[5] *Ecclesiologist*. Vol. 9 Oct. 1848. P. 37.

[6] Concerning the preparation of drawings, Sharpe had this to say in an article in the *Building News* Vol. 30 1876, pp 618-9: '. . . In designing my first churches I forwarded detailed drawings to the terra-cotta manufacturers of correct size, leaving them to discover the shrinkage allowance, but, guided by experience, I now make this correction for them . . . my draughtsmen use a rule, on one side of which are marked ordinary feet and inches, and on the other side, the foot was equal to 13½ inches.'
In a paper read at the RIBA on 22 June 1868 (Transactions of the RIBA 1867-68), entitled 'Some descriptive memoranda on the works executed in terra-cotta at New Alleyn's College, Dulwich, by Mr. Blashfield, of Stamford, from the designs and under the superintendence of Charles Barry, Architect.' Charles Barry (Junior) extolled the virtues of terra-cotta, but said that it made extra work for the architect, as two scales had to be used, one in ordinary feet and inches, and the other with 13 inches made to represent one foot and divided up into twelve equal parts.

[7] Cost of churches given in *Builder* Vol. 34 as follows: Lever Bridge, £2,600, Platt, £4,000, Scotforth, £2,800. In his talk at the AA, (see *Building News* Vol. 30 1876, pp. 618-9) Sharpe estimated that the latter would probably have cost about £4,000 in local stone.
Charles Barry, Junior (see note 2 above) said that terra-cotta was on the average 35 per cent to 40 per cent cheaper per ft. cu. than Portland stone.

[8] Described by Sharpe, in the above article, as a 'ruddy buff' and by P. A. Whittle in *A History of Bolton*, 1855, p. 114, as 'a rich cream colour'.

[9] See also article in *Builder* Vol. 8, 1850, p. 305, 'Some Remarks on Terra-Cotta and Artificial Stone, from a paper read at the Institute of Architects by Mr. Charles Fowler, V.P., 10 June 1850. In the course of the discussion which followed, Scott made substantially the same points quoted here.

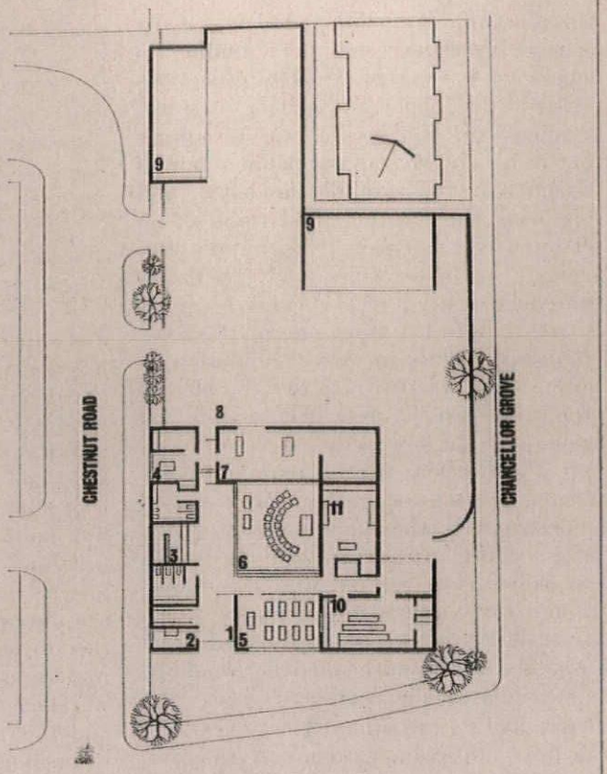
COMMUNITY AND TRAINING CENTRE, LAMBETH

Architect: E Hollamby (borough architect)

This single-storey building, sited between Chancellor Grove and Chestnut Road, West Norwood, was designed to function jointly as a civil defence training centre and as a community centre. The two plans, A and B, show alternative arrangements of moving partitions and furniture to suit these two uses. Since the completion of the building, however, the civil defence service has been disbanded, and it is now used as a community centre and as a rehabilitation centre for the disabled. To serve this new use better an extension has been planned. This is shown in plan C.
The main building, and the yard, between it and the two garage blocks, occupy the whole site except for a brick-paved forecourt. It has been possible, however, to retain a number of existing trees. Construction is load-bearing brick, with timber roof-decking covered with asphalt. The garage roofs are sheet metal on purlins. Light coloured facing bricks are used, and the timber fascias are softwood with a dark preservative stain. The same facing bricks are exposed internally. Ceilings are boarded, and they and the pine windows, screens and joinery have a varnished finish. The main rooms have hardwood strip flooring; elsewhere the floors are brown quarry-tiles. Block storage off-peak heaters give background heating which can be raised during occupation periods by radiators.

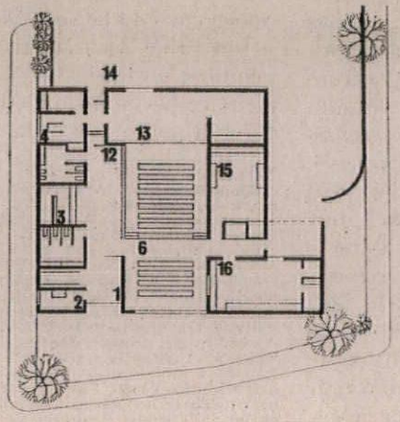
plan A
civil defence training centre

key
1, entrance
2, office
3, bar
4, staff room
5, general purpose room
6, hall
7, rescue operations room
8, training and vehicle maintenance yard
9, garages
10, welfare training room and kitchen
11, signals and wireless room



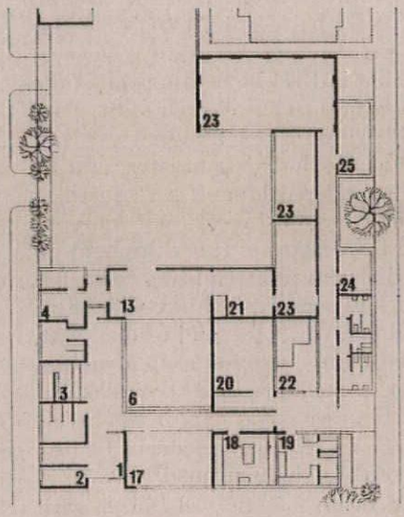
plan B
stage performance for community centre

key
1, entrance
2, office
3, bar
4, staff room
6, hall
12, foyer
13, stage
14, car park
15, signals and wireless room
16, welfare training room and kitchen



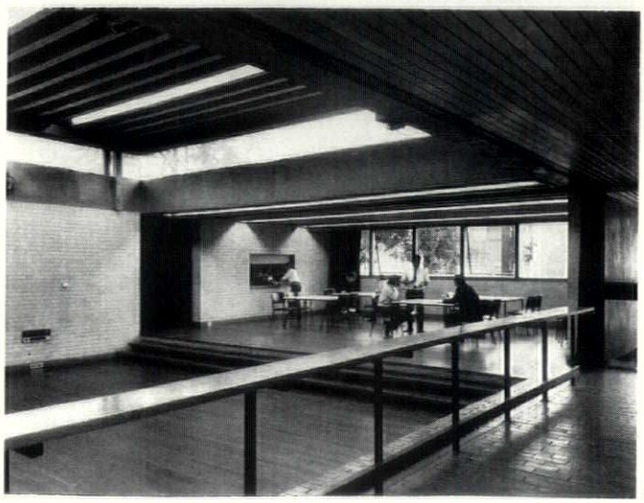
plan C
rehabilitation centre for the disabled

key
1, entrance
2, office
3, bar
4, staff room
6, hall
13, stage
17, dining/class room
18, community kitchen
19, welfare kitchen
20, craftroom 4
21, green room
22, open air court
23, craftrooms 1, 2 and 3
24, hairdressing and chiropody
25, woodwork



1

1, south east corner, with main entrance to the left. 2, main hall, with south end, forming a general purpose room, in use as a coffee lounge. 3, foyer area by the side of the hall, showing boarded ceiling and exposed brickwork.



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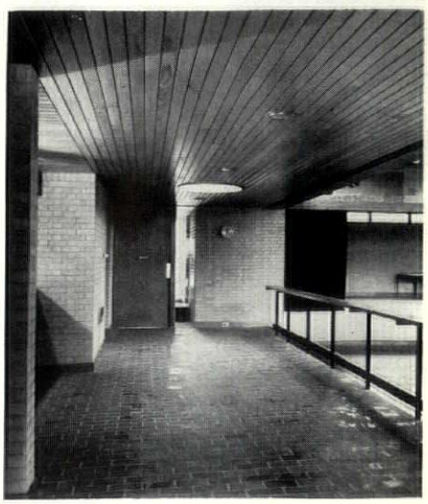

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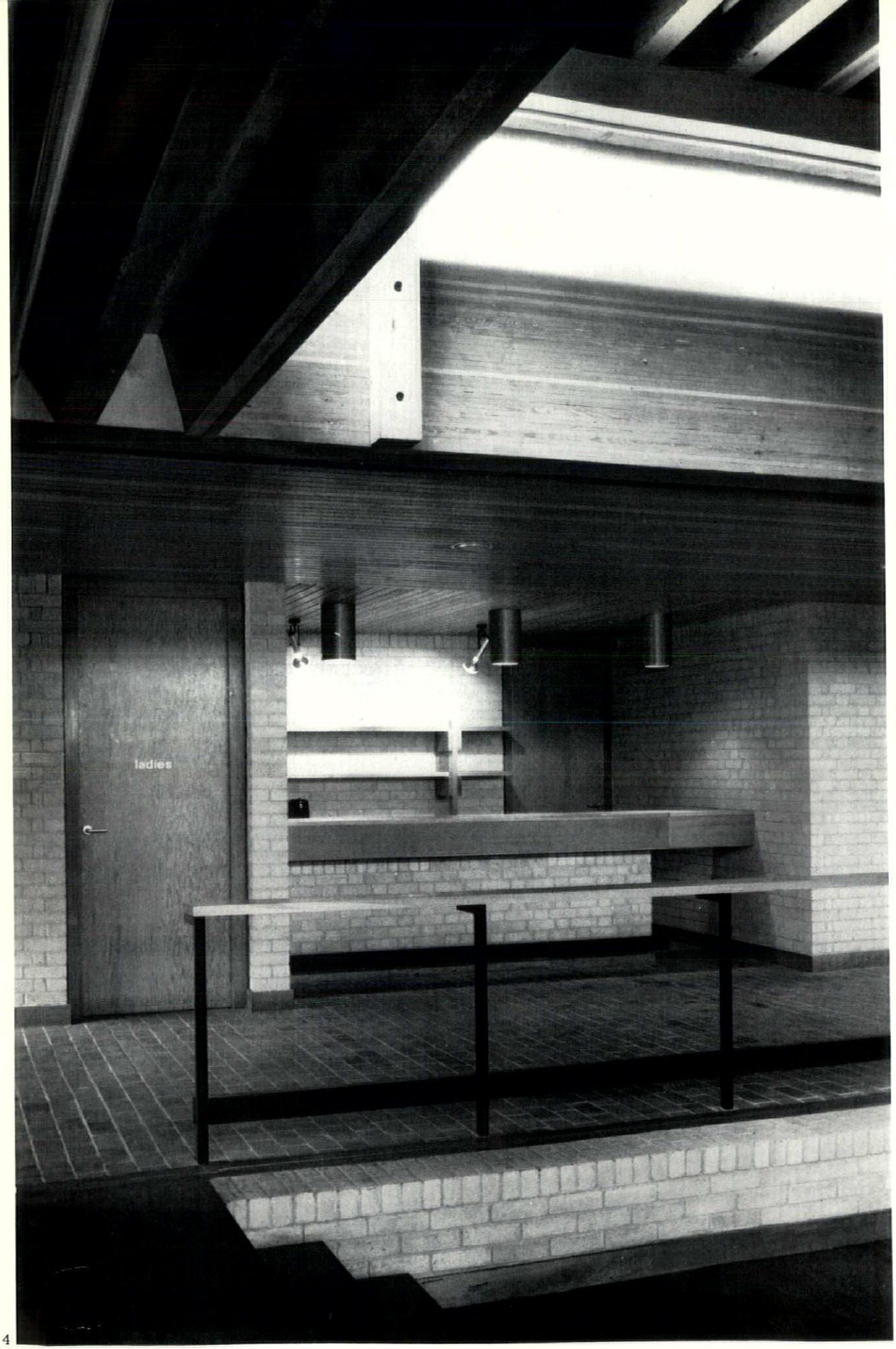


4

4, bar facilities off the raised foyer at the west side of the hall.

COMMUNITY AND TRAINING CENTRE, LAMBETH

Photographs by Sydney W Newbery

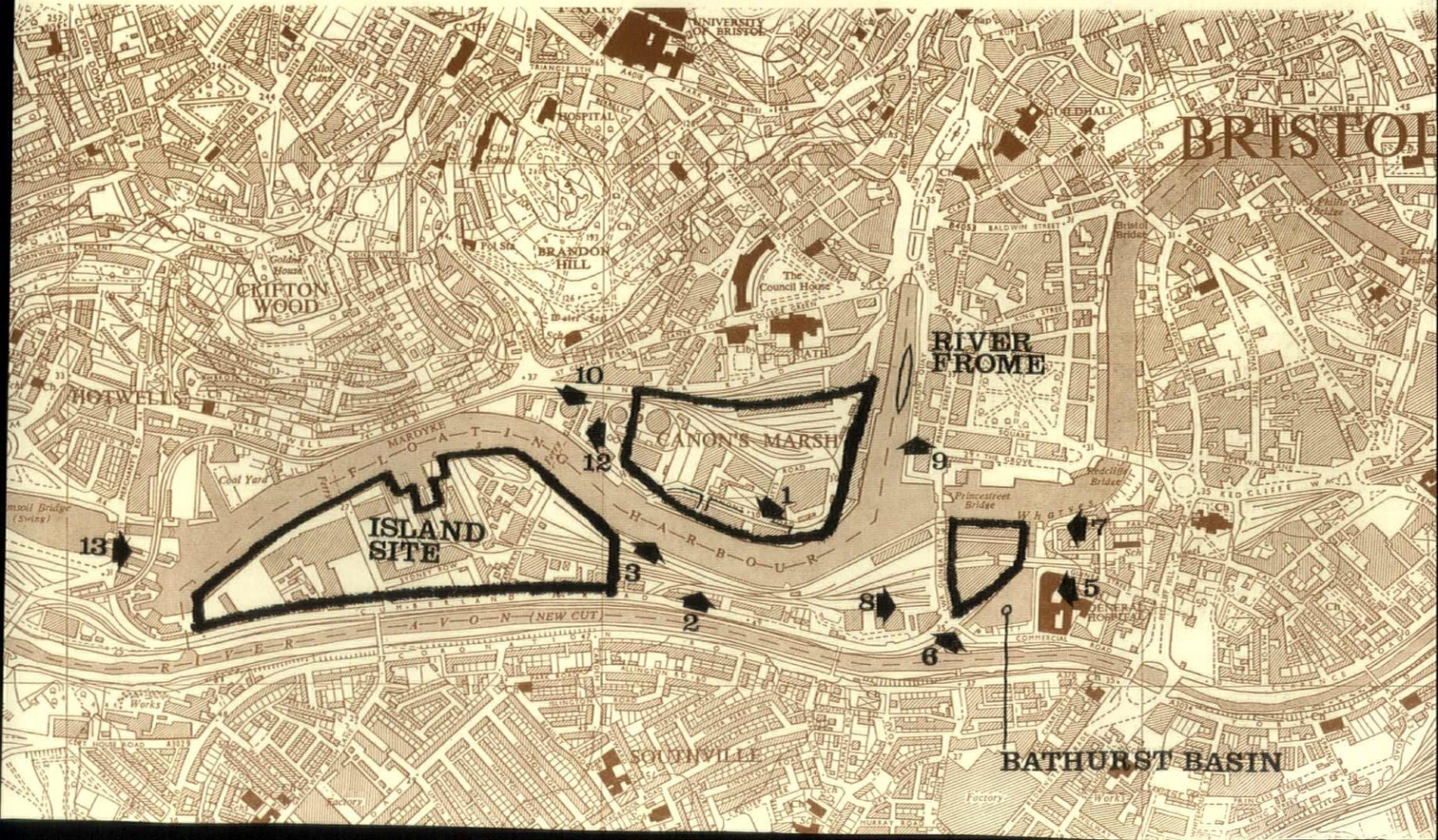
TOWNSCAPE

BRISTOL DOCKS

Brian Carter

Following the preparation, and submission to the Minister, of the 1966 Bristol development plan, the corporation has announced its intention to close the old city docks.
This decision, following the pattern of London and Liverpool, prompts a series of important questions:
What new uses are to be considered for the land and water at present used by the docks?
Is the recent development plan flexible enough to accommodate the possible significant changes of use of the large areas of land so near to the centre of the city?
Will existing and proposed plans for new roadways be amended and re-examined to meet this new situation, and if so how?
Today there are strong visual and physical links between the city and the harbour, and the excitement and activity of the quayside, water and shipping are dominant elements in the townscape of Bristol. It is important then that any change of use of the docks should reinforce this interaction and, wherever possible, intensify contact between the waterfront and the city.
Of a total of about 130 acres of land associated with the docks and their workings, approximately 70 acres will be made

Map A: Bristol Docks, with areas marked for possible development and viewpoints of illustrations indicated by arrows and numerals.

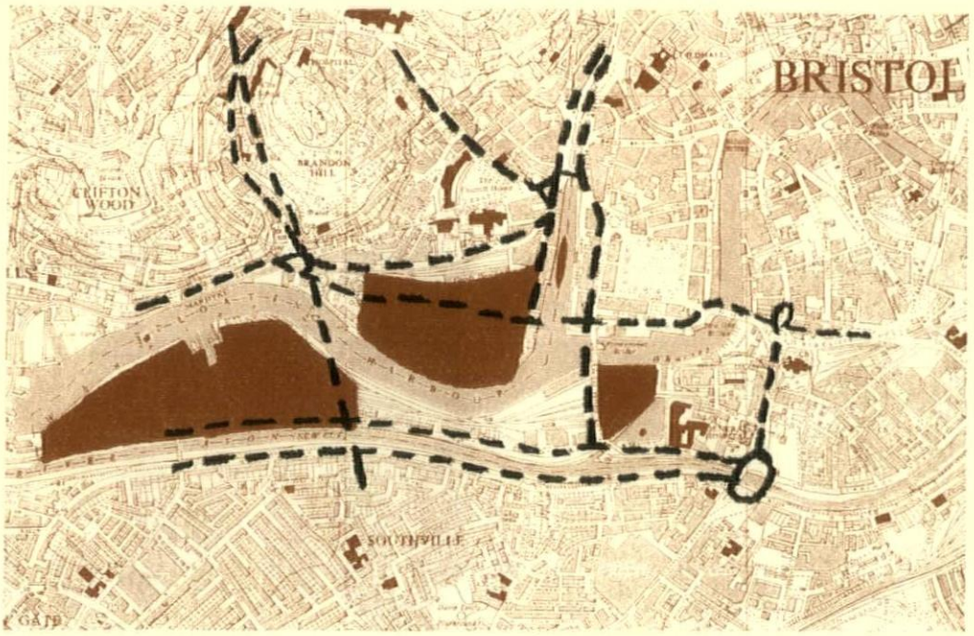


available by the closure. Of this total 15 acres are located in Canon's Marsh, 45 acres on the island site between the Cumberland and Bathurst Basins and a further 10 acres comprising narrow waterside strips on the north bank of the Floating Harbour (see map A).

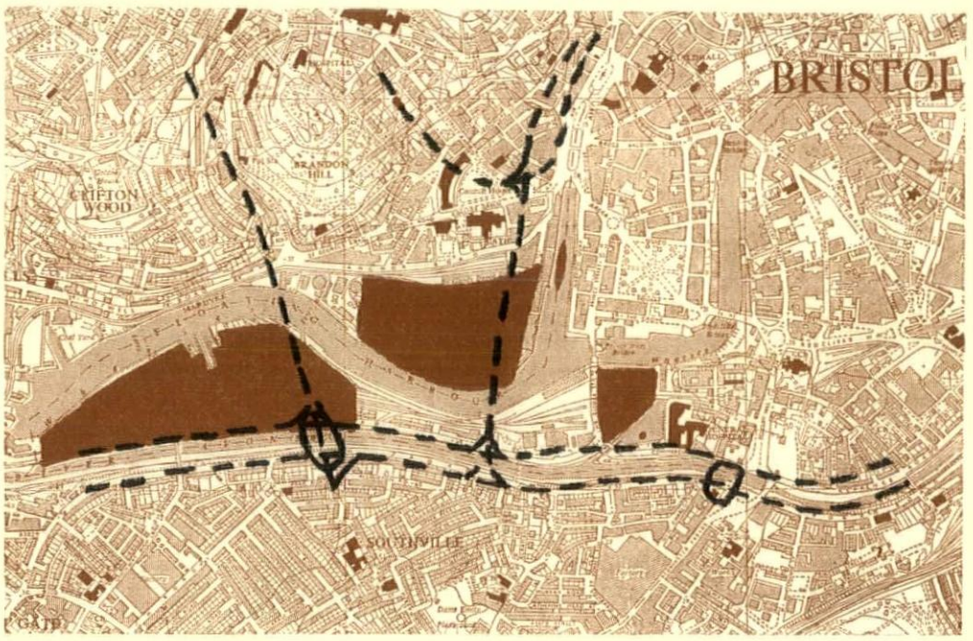
Canon's Marsh, at present occupied by dock installations, a car park and bonded warehouses, with its central location and proximity to the university, central library, commerce and industry, is surely an ideal site for the proposed Bristol Polytechnic. The Polytechnic, formed by the amalgamation of the College of Commerce, Bristol Technical College and the West of England College of Art, is at present scheduled for construction on a site at the edge of the city 7 miles away from the recently completed College of Art. The advantages of an in-city site like this would however be both numerous and diverse, and would infuse new life into the waterfront.
The development of Canon's Marsh, 1, might well take the form initially of a low investment programme centred on the existing dockyard buildings (these waterfront transit sheds, large-volume buildings with roof-top crane-runs, are all in good condition, as are the large bonded warehouses, 2. Subsequent phased programming would introduce horizontal decks linking the transit sheds and waterfront to the bonded warehouses and providing large and flexible covered work spaces capable of extension vertically and horizontally. The eventual extension of the deck system to Anchor Road, at the northern boundary of the site and on three levels, would permit the provision of equivalent accommodation to that envisaged in the proposed new Polytechnic, together with high level pedestrian links through Trinity Street and the Abbey Gate into College Green and the main public transportation routes, 3. All vehicular access and service to the teaching spaces would be via Anchor Road, with large parking spaces provided at that level. Such a proposal would enable the large free areas for workshops and laboratory activities on the lower floors to be extensively serviced by road from the north and by water (using barges) to the south, with fully operational research units, laboratory cells and teaching carrels housed within container units. The smaller, more static, teaching spaces required by the College of Commerce could be housed in the existing warehouses and around new courtyards within the connecting deck structure, 4.

Bathurst Basin. Across the floating harbour, to the south of the Canons Marsh development, and connecting the River Avon New Cut with the floating harbour, is the Bathurst Basin. The dock warehouses which at present front on to the basin, and to Bathurst Wharf on the north side, are scheduled for demolition in the coporation plan and the site earmarked for car parking.
At the moment the basin is a wedge of water, enclosed by the hospital on one side and the warehouses on the other, used as a mooring for leisure boats and as the permanent berth of the Sea Cadet HQ ship. It provides an in-city location for people to repair and sail small craft, and is a valuable space well worth retaining. Its present activities should be encouraged.
This site could be developed as student (or local authority) housing, serving the nearby polytechnic. With the provision of pubs, coffee bars and chandlers' stores, besides space for car parking within the building, it is easy to see the Bathurst Parade frontage becoming a lively space with pedestrian links to the Polytechnic and also to the proposed marine complex on Welsh Back, 5, 6, 7, 8.

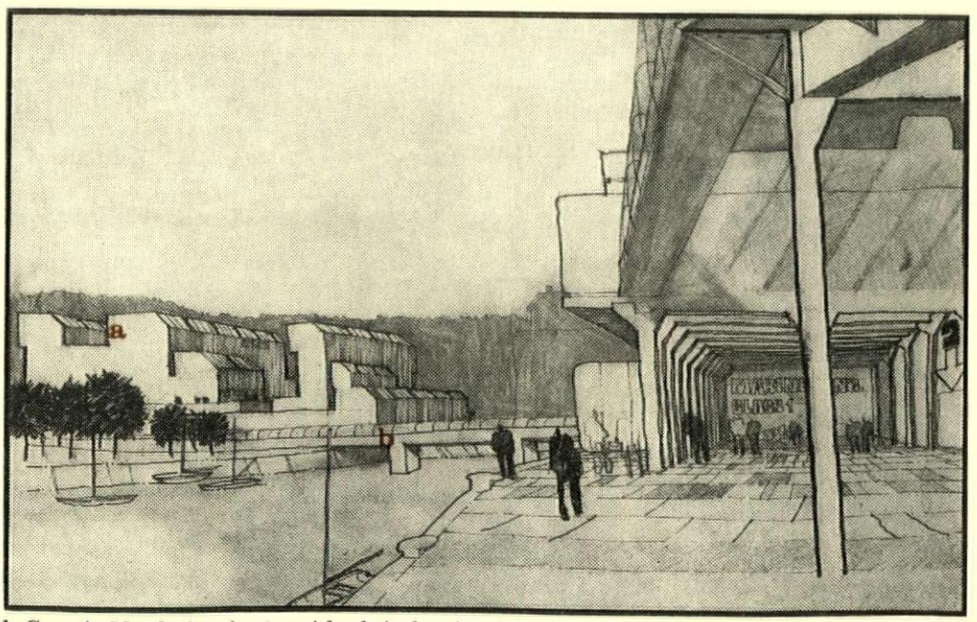
River Frome. Today the Frome flows under the city centre and joins the floating harbour at Princes Wharf. (In the 1930s part of it was bridged over to form the present centre). It is important that any



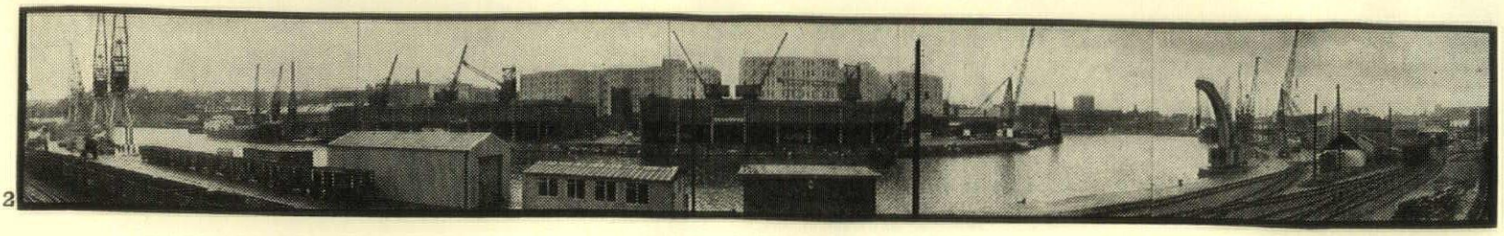
Map B: road plan proposed in the Bristol Corporation Development Plan.



Map C: road plan suggested by the Bristol Planning Group



1, *Canon's Marsh river front: a, island site housing; b, new bridge over floating harbour.*



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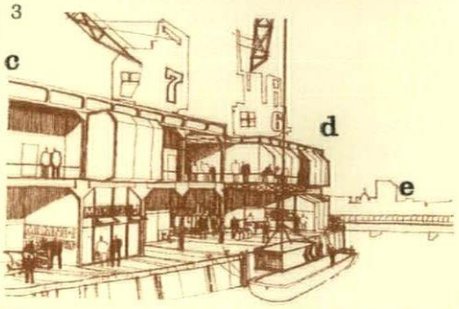

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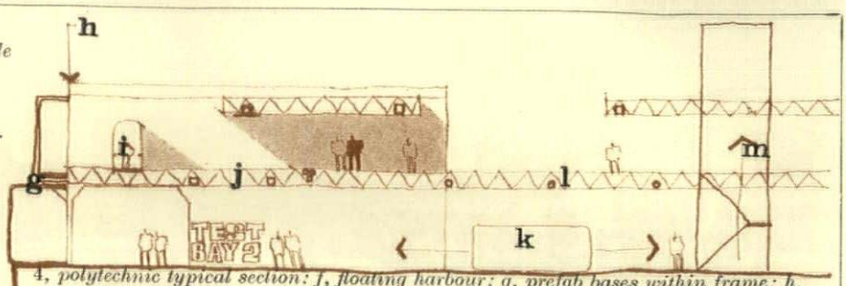
2 (*above*), *existing dockside buildings looking north towards Canon's Marsh.* 3, *Canon's Marsh: c, existing sheds reused for polytechnic; d teaching cells; e, link bridge.*



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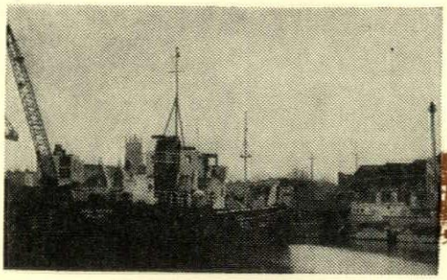
4, *polytechnic typical section: f, floating harbour; g, prefab bases within frame; h, existing transit sheds; i, high level movement platforms; j, space dock cover; k, movable prefab boxes; l, gradual vertical expansion; m, vertical circulation towers.*



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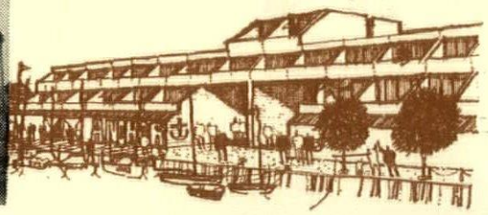
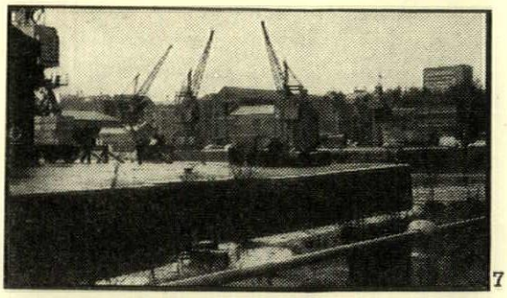


5, *looking west into Bathurst Basin: photograph showing existing waterfront.*



7

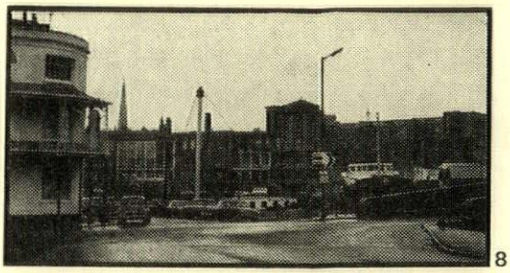
7, *looking north-west across wharves on north side of Bathurst Basin.*





6

6, *student housing at Bathurst Basin, and parade; n, access to student quadrangle, with parking under. o, existing hospital.*



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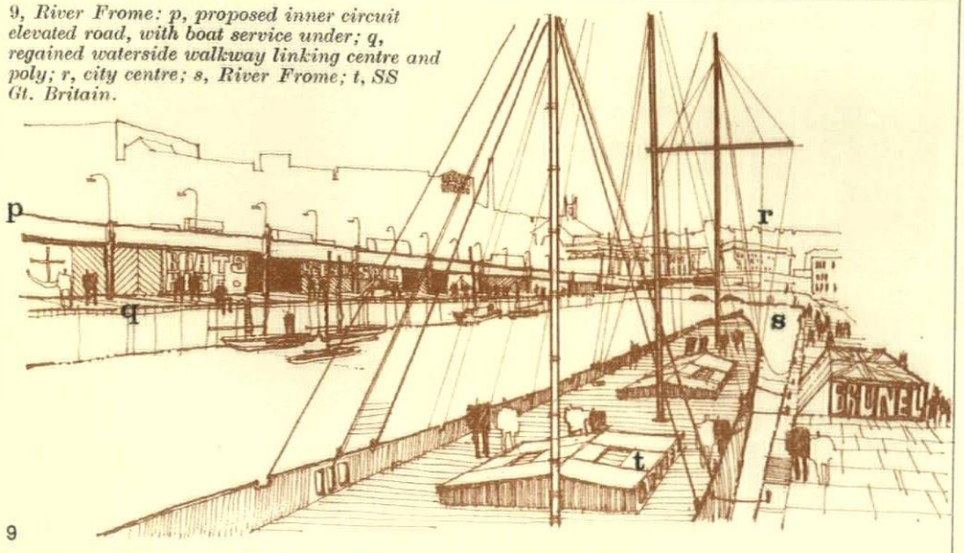
8, *looking east, with hospital, already seen in 6, in the distance.*

9, *River Frome: p, proposed inner circuit elevated road, with boat service under; q, regained waterside walkway linking centre and poly; r, city centre; s, River Frome; t, SS Gt. Britain.*



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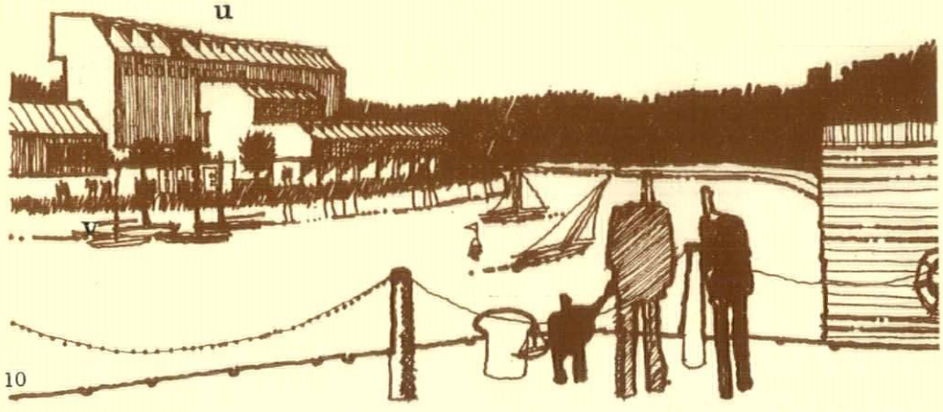
proposals for the Bristol city docks should carefully consider the remaining stretch of water as perhaps the most important connection between the town and the harbour areas (see map A). On the corporation development plan (map B) roadways are planned along both sides of the Frome, but the Bristol Planning Group proposes an alternative scheme (map C) which would enable the east side (including the historic Bush warehouse (see AR Outrage issue, June 1955) to remain intact and the Inner Circuit roadway to be aligned on the west side of the Frome. This stretch of water would be an ideal mooring place for the refurbished SS Great Britain, designed by Brunel in the mid nineteenth century and built in the Bristol city docks. The ship has been offered to the city on its return from the Falkland Islands and would indeed be a fitting landmark and focus to both pedestrians and motorists in the city, 9.

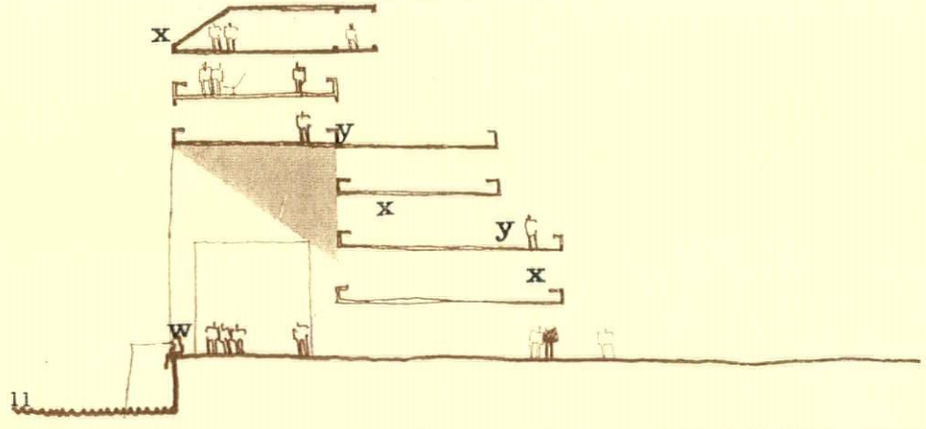
Island Site. **An island of 45 acres surrounded on one side by the River Avon New Cut and on the other by the Floating Harbour, presents an obvious opportunity for Bristol to develop further its policy of encouraging people to live near the centre of the city. A high density, medium rise, linear development could provide housing for**

between 3,000 and 4,000 people with a primary school and shopping centre. Such a scheme, utilising existing heavy dockyard plant installations, could be constructed as a large-unit prefabricated pilot project like Montreal's Habitat (and incidentally occupies a very similar location), 1, 10, 11, 12, 13. The housing would be linked to the city via the Polytechnic decks, and to the neighbouring Redcliffe communities by pedestrian parkways and waterside promenades, whilst vehicular traffic access to the city would be by the nearby New Cut routes.

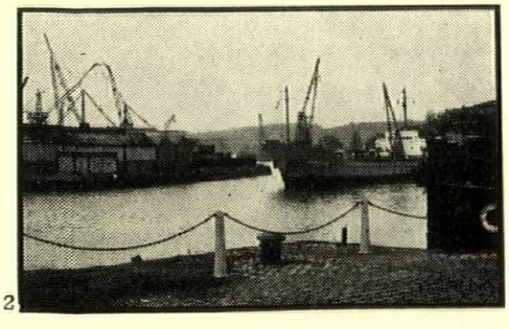
Although large scale commercial shipping in the old city docks will cease, the waterways and harbours can still be an important and vital element in the imagery of Bristol. With the introduction of leisure sailing in the harbour, a Polytechnic serviced in part from the water and itself teaching marine skills, waterfront walkways, (at present discontinuous and neglected) and enlivened by a new island community, Bristol and its docks could once more combine to create a unique urban environment.



10, *proposed housing from north bank floating harbour; v, waterside walkway; u, island site housing.*



11, *docks housing section: w, waterside walkway; x, living units; y, decks.* 12, *looking west around the curve of the harbour, with present island site on the far, left bank.* 13, *island site housing from Nova Scotia Yard: z, waterside walkway.*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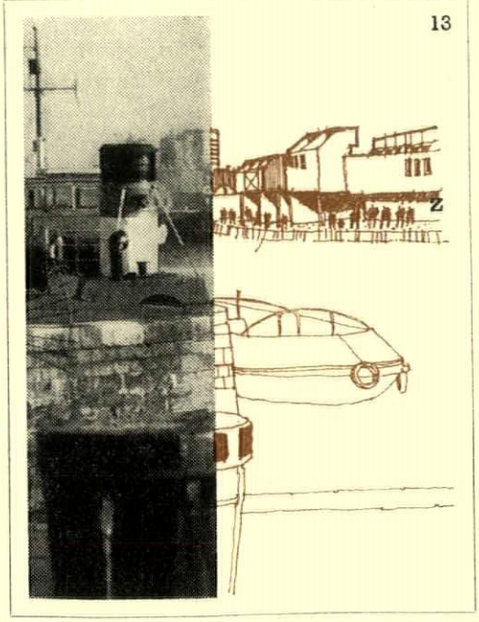
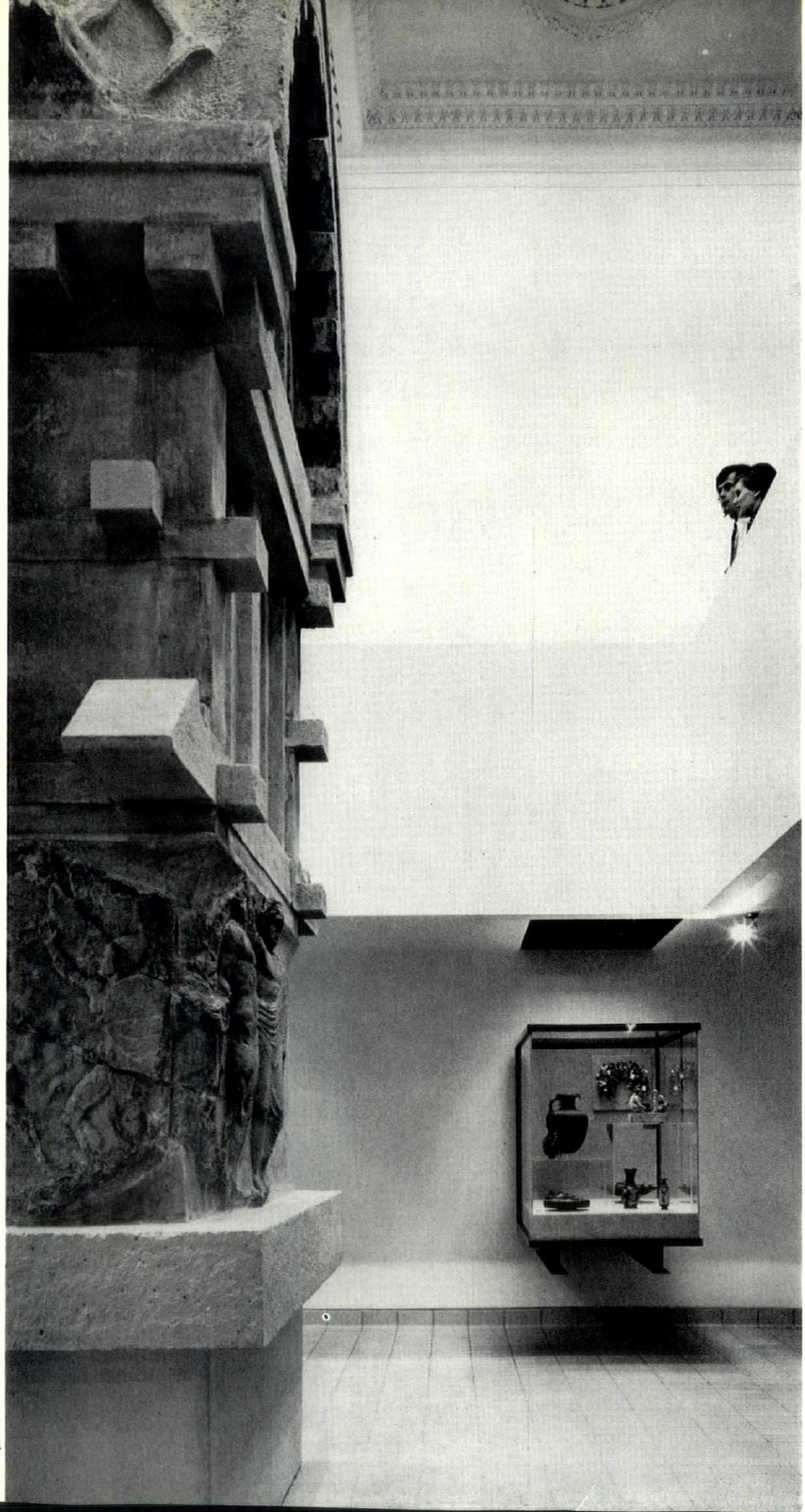


This article is indebted to 'Bristol: The Central Area and its Waterways', a report produced by the Bristol Planning Group, for much of its basic data. Its proposals are based on alternative road layouts put forward and substantiated in that publication.



1

ID
INTERIOR DESIGN

439 Western Sculpture Rooms, British Museum, London
Designers: R D Russell and R Y Goodden

444 Library conversion, Trinity College, Dublin
Architects: Ahrends, Burton and Koralek

447 The Uschakoff Building, Helsinki
Architect: Aarno Ruusuvuori

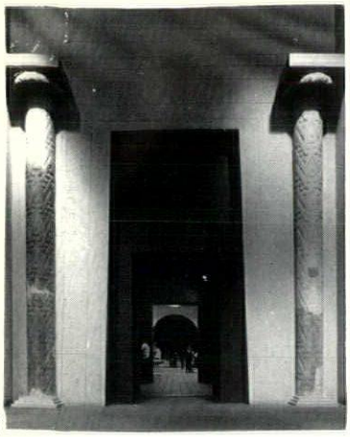
449 Banking experiment: Branch bank, Loughton
Senior architect, Midland Bank: John Wilson

Western Sculpture Rooms, British Museum, London

Designers: R D Russell and R Y Goodden
Associate: Robin Wade

1, the third Classical room with the tomb of Payava in the foreground. The gallery is for viewing the finely carved roof of the tomb (see also 8 and 10). It leads to an area for changing exhibitions over the second Classical room from which the architrave and capital of the column from the north porch of the Erechtheum can be seen close-to.

Photographs by Richard Einzig



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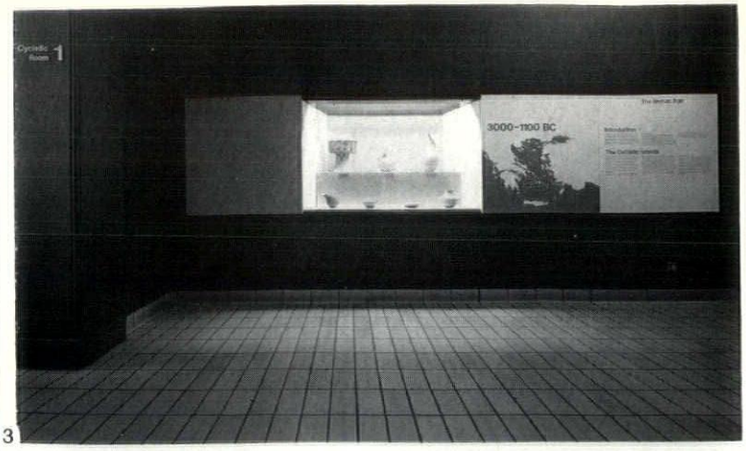

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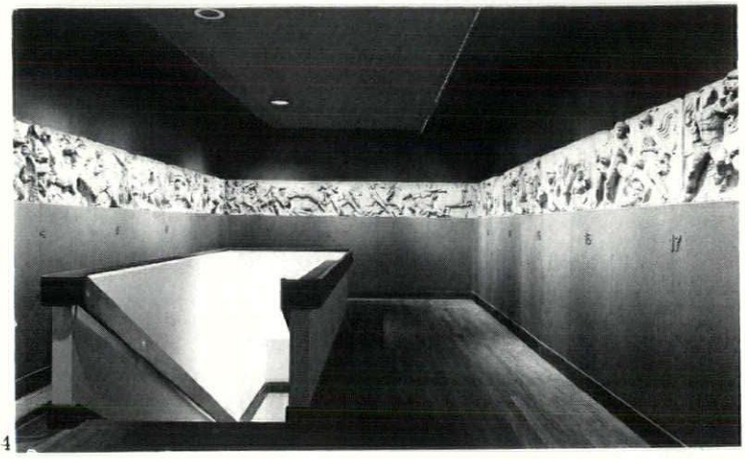

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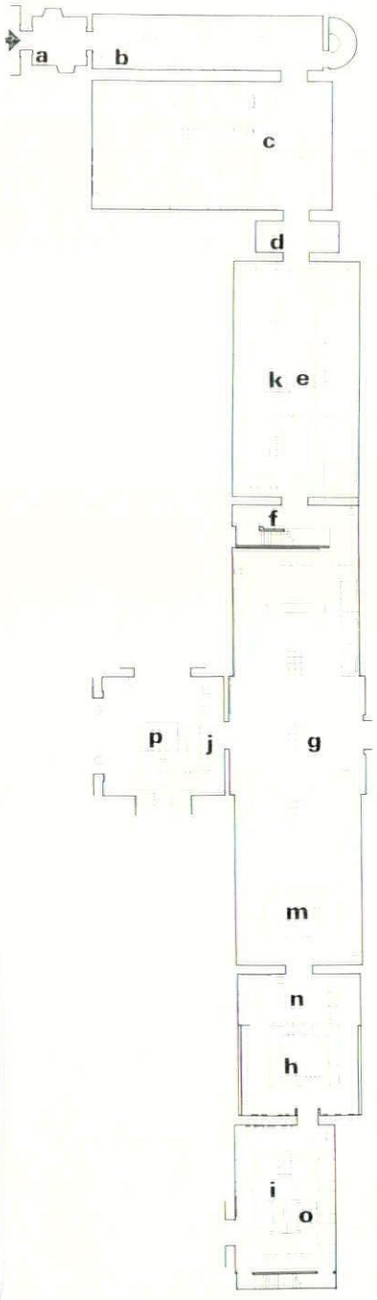
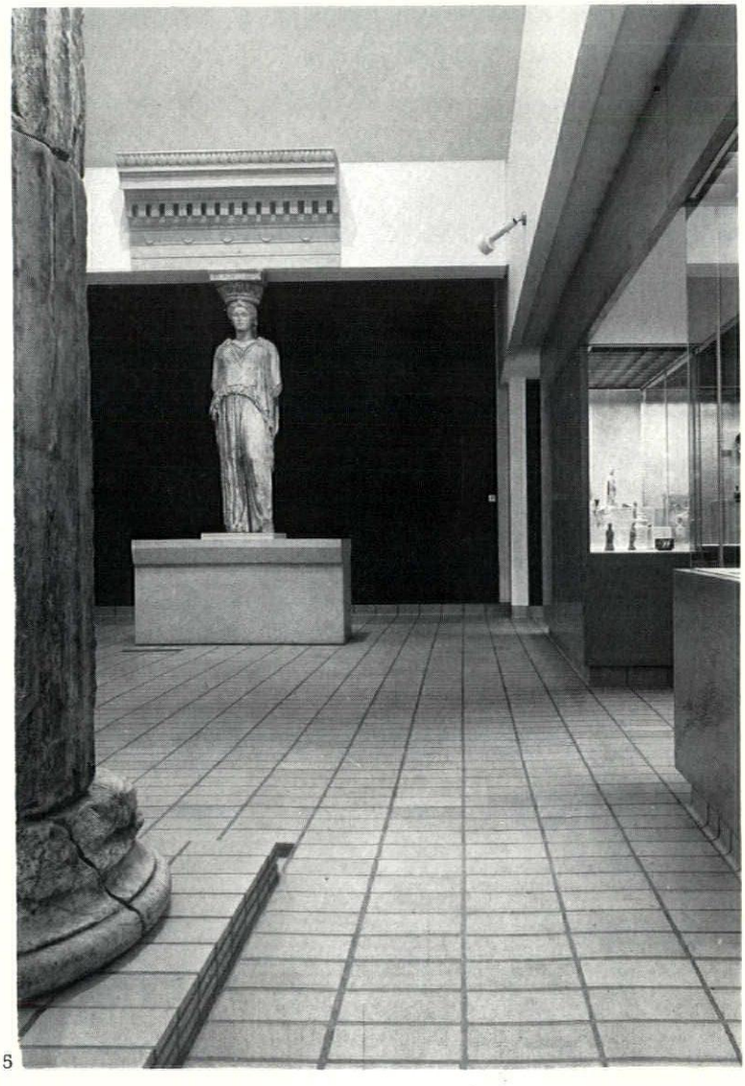


plan: key

a. Cycladic room
b. Minoan and Mycenaean room
c. first Archaic room
d. second Archaic room
e. first Classical room
f. Bassae room
g. Nereid room
h. second Classical room
i. third Classical room
j. second Roman room
k. Harpy tomb
m. Nereid Monument
n. Erectheum display
o. tomb of Payava
p. Roman mosaic under water



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2. the entrance to the Western Sculpture Rooms is through the doorway of the Treasury of Atreus at Mycenae—only a basic suggestion to incorporate the original engaged columns.
3. the small Cycladic Room. The space of the old apses has been used for recessing the display cases.
4. the Bassae frieze above the Bassae room. Being complete, four-sided and internal, it was important to provide access without interruption to its continuity, and the only practicable way of achieving this was to come up from below.
5. the second Classical room with the Caryatid and column from the Erechtheum.
6. (opposite, top) the first Archaic room with seated figures and lions from Branchidae. Suspended screens and fascias carry adjustable spotlights on tracks.
7 (opposite, bottom), the Nereid room with the reconstructed main façade of the Nereid monument as principal exhibit. Mr. Anthony Hunt, the consultant engineer for the reconstruction, devised an ingenious cantilever structure for the roof so that the outside columns should bear no weight.

The eighteenth-century concept of a museum as a temple dedicated to art and learning has survived in a moribund form at many museums, and not least at the British Museum. Whatever its absolute value, its usefulness was bound to decline under the pressures of a much more widely held, but also much more diluted, culture. In the reorganization of the Western Sculpture Rooms, the display is now chronological and selective. It follows the principle, pioneered by the Victoria and Albert Museum after the war, of having primary galleries in which the best sculptures, bronzes, vases, etc. of one period are shown together, with the bulk of each collection remaining in secondary galleries for the use of students and scholars. Whilst it may be objected that this kind of display induces laziness, that it



6



7

appeals to the senses at the expense of the mind, or that it can lead to excess such as the over-dramatic lighting of the Bassae frieze, 4, there is absolutely no doubt about the great visual gain, itself an important factor in the understanding and appreciation of a work of art. In addition to this reorganisation of display, the Smirke interiors have been completely redesigned, while a new cleaning process (a mud-poultice method developed by the Victoria and Albert Museum) and the fact that a number of important works now on display have not been seen since 1939, add greatly to the excitement of the new galleries.

The designers were fortunate in having in Mr. Denys Haynes, Keeper of the Department of Greek and Roman Antiquities, an enthusiastic client who was also able to provide a brief which was intelligent and congenial. A list of exhibits graded into three categories of importance relieved the designers of the need to advise against the visual confusion which would have resulted from putting too many things into the space available. Of the larger pieces the Department provided scale plasticine models which proved invaluable to the designers when deciding upon the placing of exhibits that would have been too heavy to experiment with on site. Four of the largest works, two of which are illustrated in 7 and 8, demanded individual consideration, each one playing a decisive role in its relation to the exhibits around it. The designers also benefited from Smirke's fine sequence of rooms, which are nicely varied in shape and size. They were never seriously tempted to mask the ceilings, and have contented themselves with painting them white like the walls, and with suspending screens here and there which interrupt the view of too insistent architectural detail and provide a fixing for spotlights.

The Ministry of Public Building and Works made themselves responsible for the design of the three rooms (not shown on the plan) between the third Classical room and the second Roman room. Although they went some way to adopting a similar treatment by the use of the same materials and colours, the discipline is less vigorous —a change in the direction of the floor tiles, for instance— and the differences are sufficient to be disturbing and above all to break the continuity.

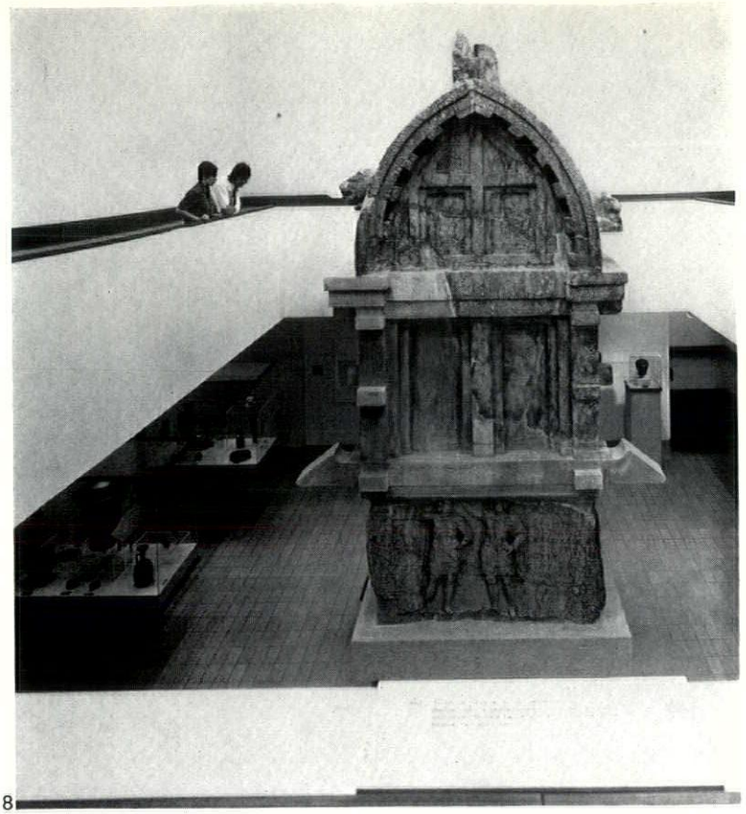
The effect of the transformation is not easy to describe adequately. It is better to visit some of the old galleries to remind oneself that these are the finest collections in the world, exhibited there in the most dismal manner. The designers of the rooms illustrated here rightly decided to concentrate on the lighting, and on those areas, as they themselves have put it, 'over which the eye must inevitably travel in looking at the things displayed'—that is to say the floors and the lower half of the walls. The old lighting consisted of rows of suspended fluorescent fittings, while the floors were an appalling mixture of rubber, slate, York stone, granolithic and cast iron heating-grilles. This distracting surface has been replaced by a uniform one of rectangular ochre industrial paviors, which are all the more effective for extending everywhere up to the walls under cantilevered wall cases. The new lighting is a combination of fluorescents and spots, some of which are concealed behind discreet fascias. Without in any way attempting to reproduce the original background, the designers have nevertheless succeeded in suggesting a Mediterranean setting, by the earthy looking floor, by the general use of white, and by such special features as the pale blue cyclorama behind the reconstructed Nereid monument. 7.

A few other problems deserve a mention, First, there was before, to quote the designers once again, 'the strong competition between the reproduced classical detail in the architecture of the building and the authentic but weathered, and often damaged, forms and details of the exhibits'. This problem has largely been resolved by the new cleaning process which has made it easier to integrate new with old yet maintain a clear difference between them. Second, the problem of reconciling the disparities of scale between, say, jewellery and architectural fragments has been resolved by the use of a bold design for the display fittings. The materials are blackened steel and natural timber for the cases, and a sand-blasted concrete with Derby Dale aggregate for the plinths. On the whole this idea works well, though there are places where one becomes conscious of the design at the expense of the exhibits, and where, as in the linked row of cases in the first Classical room, 9, the forthright quality of the design becomes somewhat forbidding. Lastly, there is the admirable typographical work by Mr. Jock Kinneir which explains the whole collection. So often in museums descriptions are both inadequate and distracting. Here the legends have been embodied in the materials or display fittings— with the minimum of fuss and the maximum of clarity. Some are inlaid into the grid of the floor tiles, others are displayed on screen-printed panels which form an extension of the wall displays.

After this first major success, it is encouraging to hear that the same firm have been asked to redesign the Print Room. One would indeed welcome this wind of change on an even larger scale if only the Ministry of Works would adopt a more consistent design policy in the appointment of outside designers.

Their own architects' department have too often in the past—the musical instruments gallery in the Victoria and Albert Museum is an example—failed to meet the challenge of a particular problem.

SHERBAN CANTACUZINO



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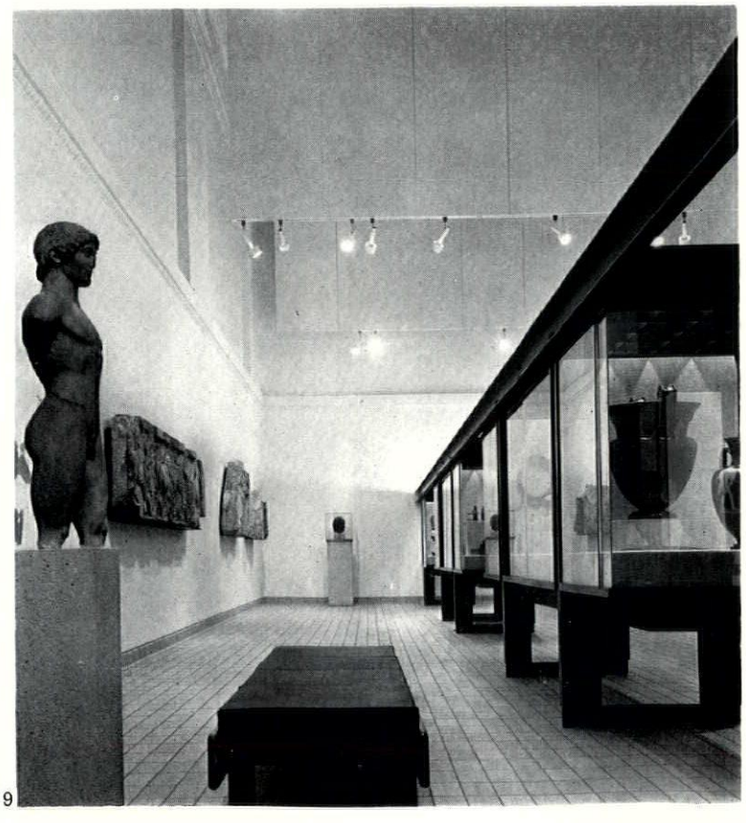

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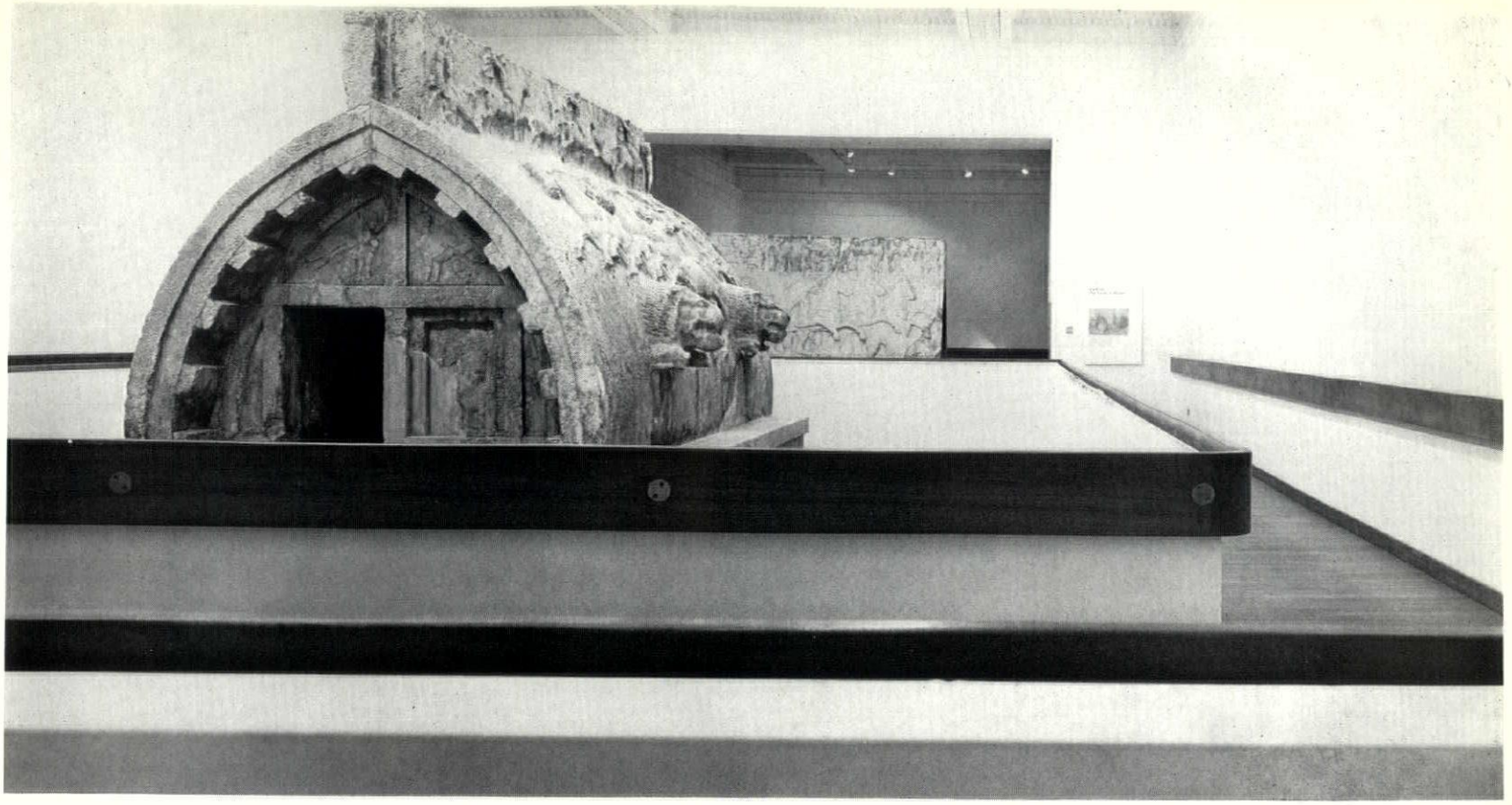
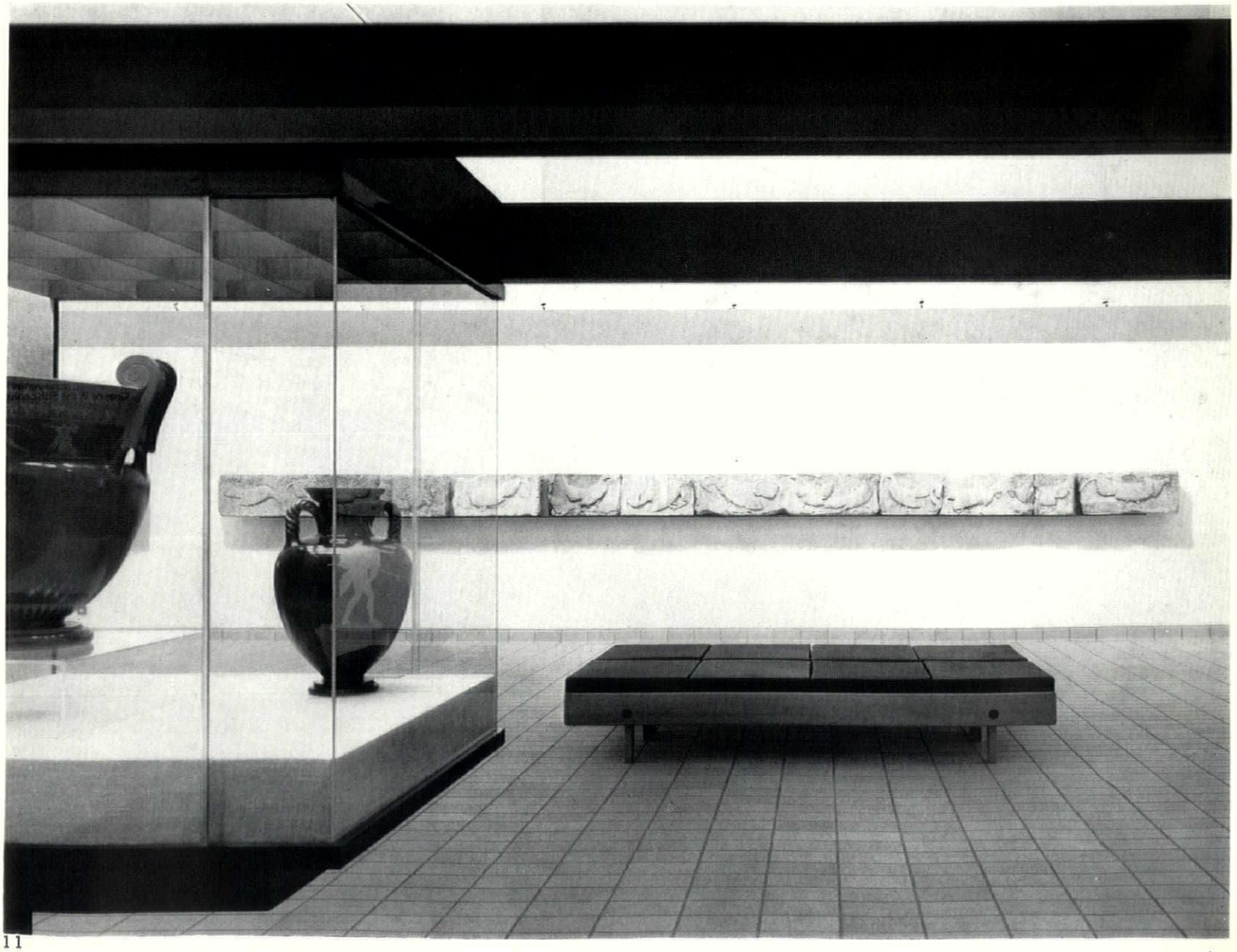
8, 10 (opposite, top), the tomb of Payava from the gallery. 9, 11 (opposite, bottom), the first Classical room with the long row of display cases linked by steel joists painted black.

10





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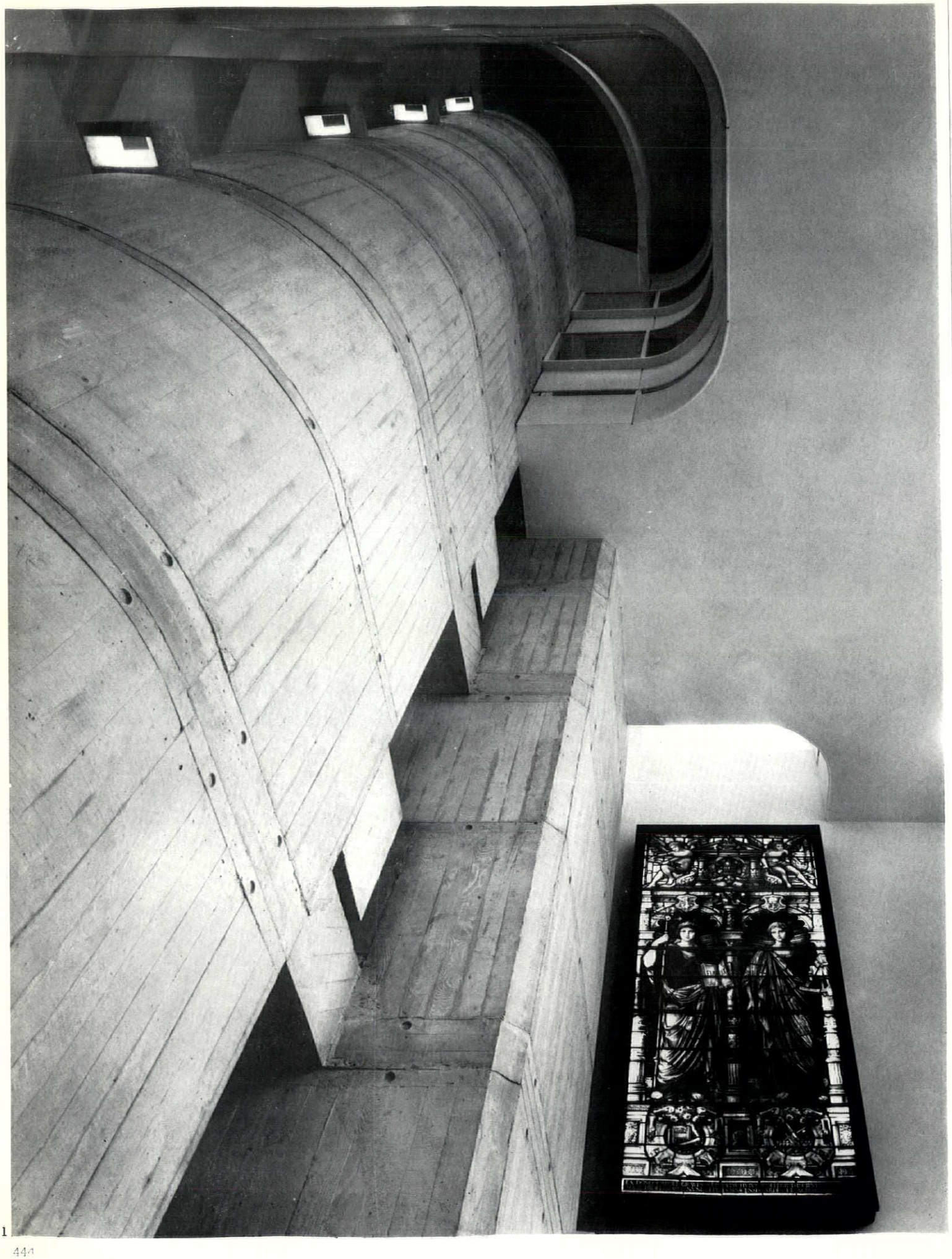

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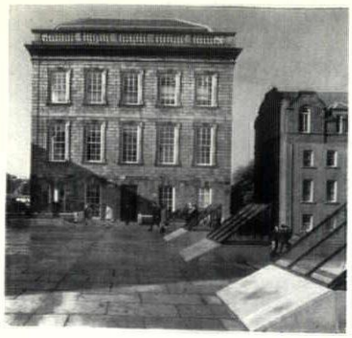
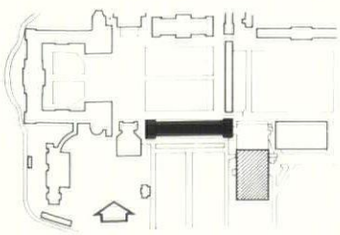


2

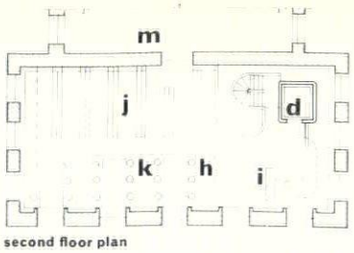
Library conversion, Trinity College, Dublin

Architects: Ahrends, Burton and Koralek

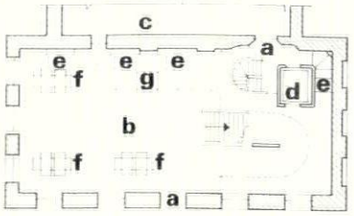
The East Pavilion forms one end of the old library, an early eighteenth-century building by the Chief Engineer and Surveyor General to His Majesty's Fortifications in Ireland, Thomas Burgh. Its conversion is part of a large Library expansion programme, the main part of which was the building of the new library (see AR October 1967). Work had already started when it was found that the main timber beams, lintols and wall ties were rotten. It was decided to gut the building and reconstruct its interior entirely. A basement was formed under part of the Pavilion for the tunnel which connects the old with the new library. Stair and lift connections to all floor levels were provided, and a new entrance was formed off the forecourt to the new library. The lift and stairs are conceived as free-standing elements, entirely independent of the external shell, which has been restored to its original state and supports the floors and roof. The ground floor consists of an entrance hall in the form of a library shop. A public staircase leads to the Fagel Library, part of which has been retained on the first floor. The second floor contains the rare books department and, because of its great height, consists of two mezzanine galleries (in addition to the main floor) suspended by steel hangers from the main roof trusses. The area is used as a reading room with workrooms on the mezzanine galleries. The attic has been converted into a store. Walls are generally plastered and painted white. Stairs and lift tower are in fairfaced concrete. The ground floor is paved with granite slabs and other floors are softwood boards, plywood or rubber.



site plan (old library solid, new library hatched)



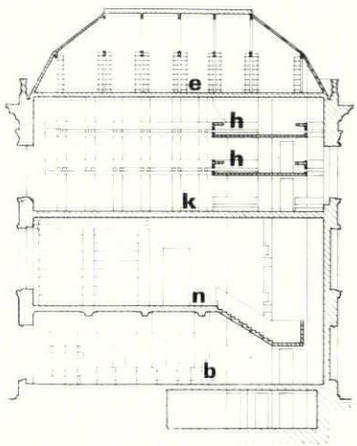
second floor plan



ground floor plan

key

a, entrance
b, shop
c, colonnade
d, lift
e, store
f, display cabinet
g, counter
h, mezzanine galleries
i, control counter
j, bookstack
k, rare books reading room
m, Long Room gallery
n, Fagel Library



section

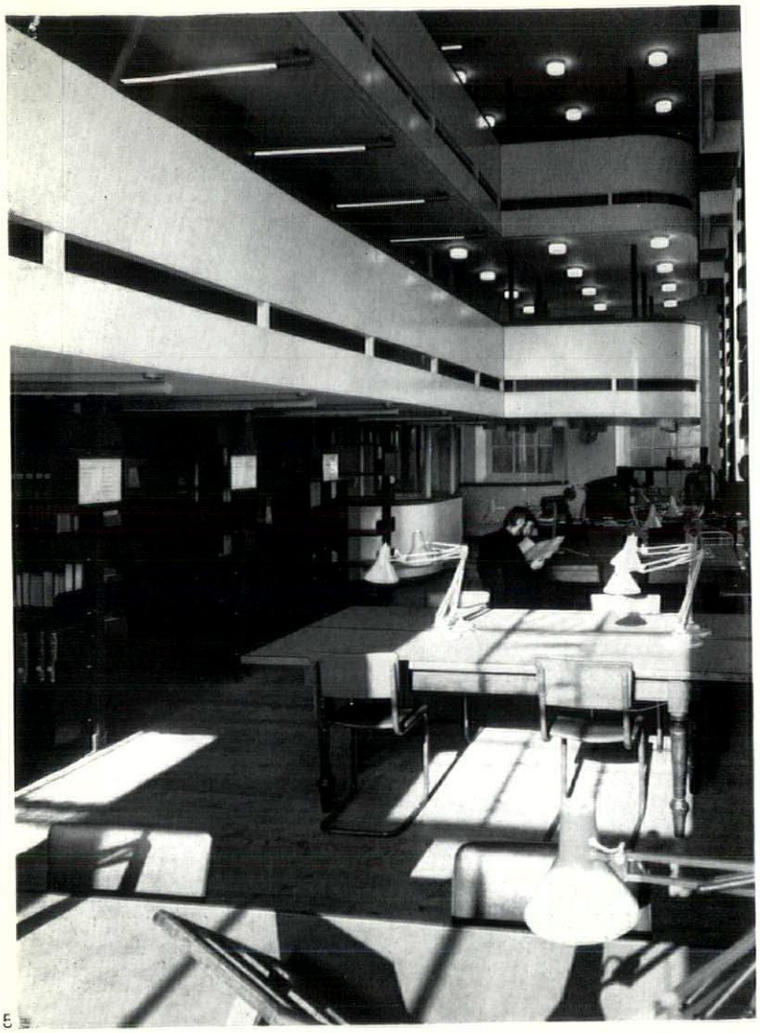


3

1 (opposite), the stairs and lift towers, in fairfaced concrete, are conceived as free-standing elements.
2, the external eighteenth century shell of the East Pavilion has been restored to its original state, with the exception of new entrance doors which have been inserted in a ground floor window opening.
3, the library shop on the ground floor with desks and display fittings designed by the architects. The walls are painted white and the floor is paved in granite slabs.
4, the first flight of steps from the library shop—a public staircase which leads to the Fagel Library on the first floor.



4



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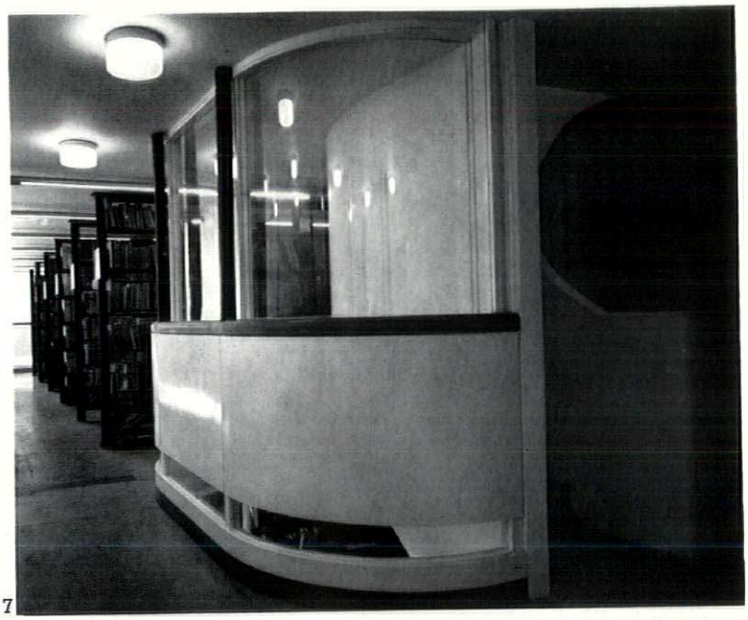
5, the reading room and rare books department on the second floor, with its two mezzanine galleries suspended from steel hangers. The floor is softwood boards, and the walls are painted white.
6, 7, the mezzanine galleries with their bookstacks and work spaces. The floors are finished in plywood.

Photographs by Norman McGrath



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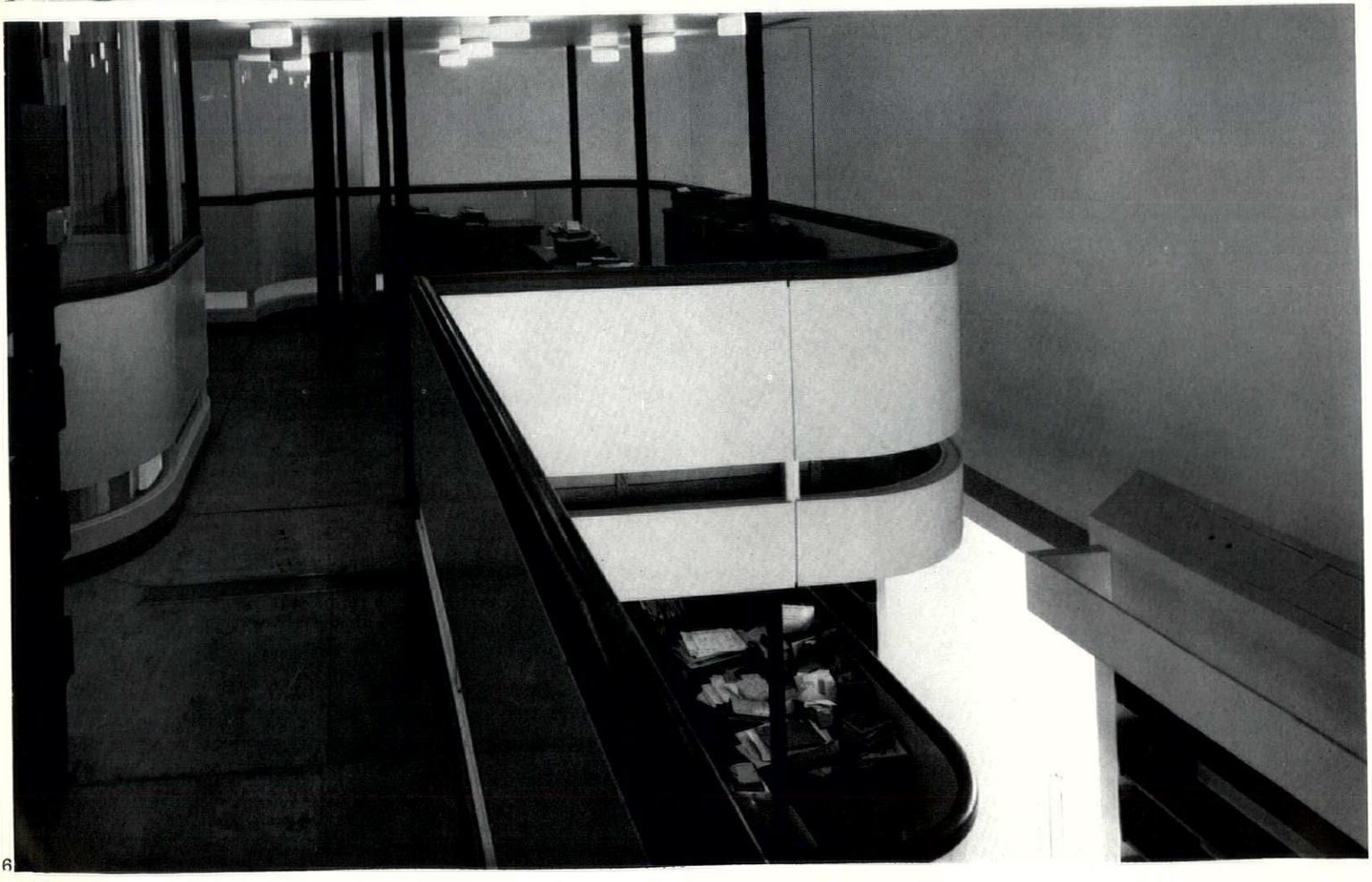


6

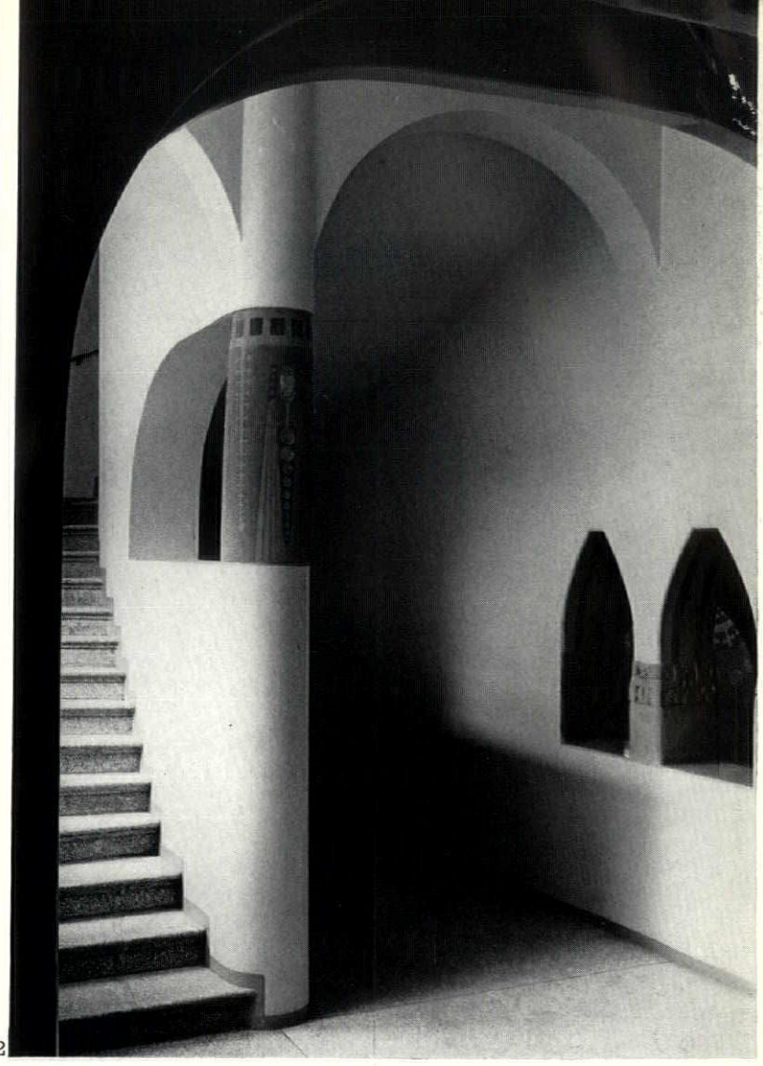


1

The Uschakoff Building, Helsinki

Architect: Aarno Ruusuvuori
Assistant architects: K Mikkolo, M Annila and J Mannula

At a time when a threat of widespread demolition hangs over Whitehall, the rehabilitation of large building complexes in the centre of another capital city offers considerable interest. Sensibly, the policy in Helsinki has been to make the buildings enliven an old part of the city which was in danger of becoming sterile by converting them to mixed use and not just to offices. Of interest, too, is the fact that the work, which in the case of the larger City Hall block will be taking no less than 15 years, is in the hands of one of Finland's most distinguished architects. The Uschakoff building, 1, on the corner of the Esplanade and Union Street, dates from the years when Helsinki was being turned into a capital city. The homogeneous neoclassical block, built in 1815-1816 for the Russian-born merchant, Jegor Uschakoff, was designed by the director of works for the city, Pehr Grandstedt, the only architect of real talent in Helsinki before the arrival of Carl Ludvig Engel. The original plan consisted of four apartments and an entire ground floor of shops and warehouses, spread around a courtyard at the back of which was an out-building for servants and animals. When the Senate moved from Turku to Helsinki in 1819, the Uschakoff building housed its legal department and the supreme military court and commissariat until the completion of the Senate House in the early 1820s. In 1827-1828 and again in 1832 the building was extended on the north side along Union Street. No further major changes took place until 1896 when the building was taken over by a bank who commissioned Waldemar Aspelin to redesign some of the interior in Art Nouveau style. Far more important was Lars Sonck's new banking hall of 1906, one of the finest examples of National Romantic architecture, which filled the whole courtyard. The interior had stucco ornament by Carl Slotte, stained glass by Walter



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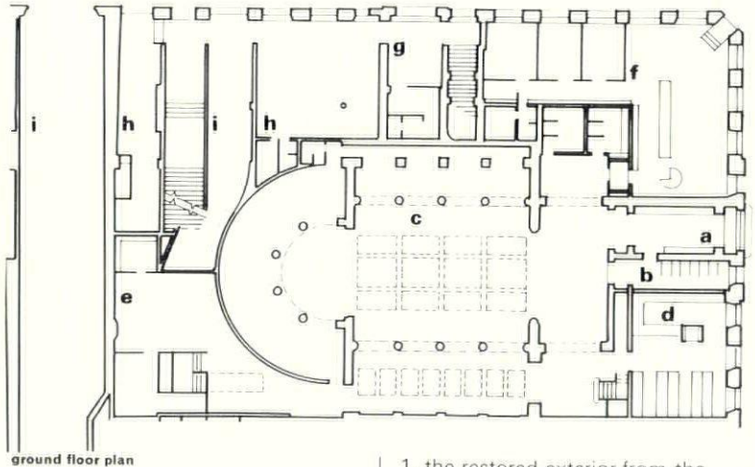
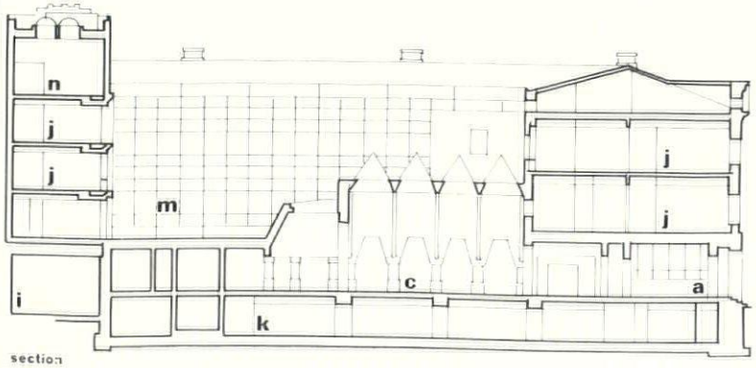


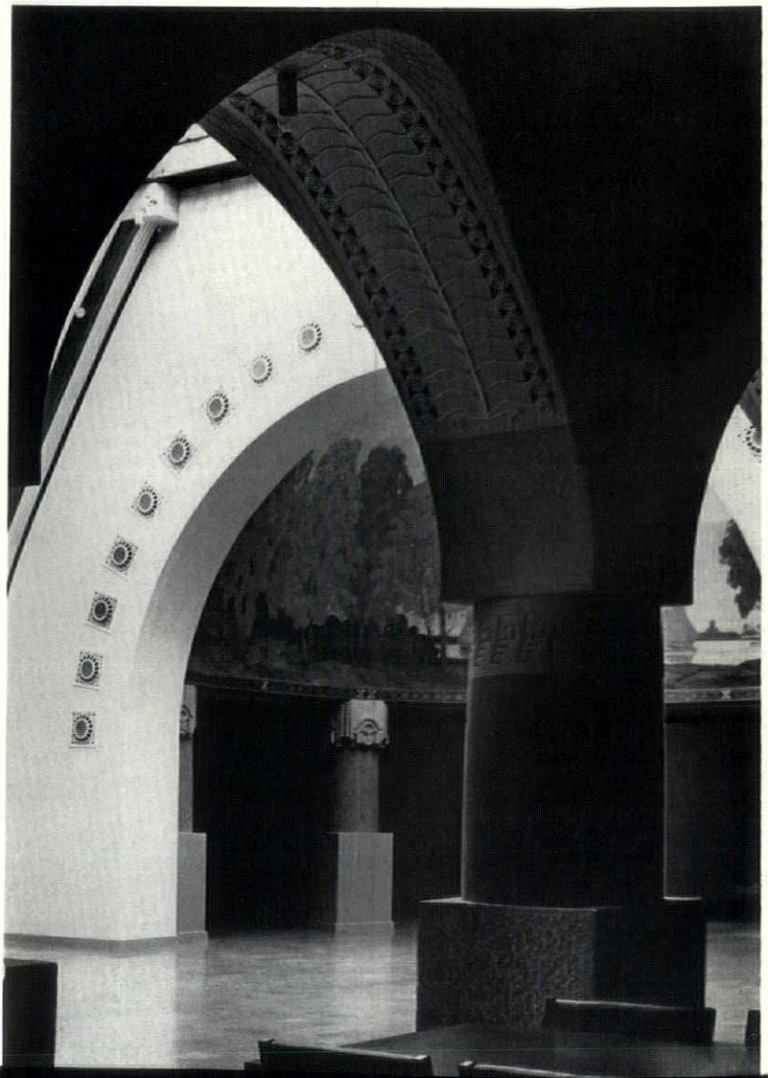
ground floor plan

key
a, entrance from Esplanade
b, cloaks
c, banking hall
d, kitchen
e, chair store
f, travel bureau
g, entrance from Union Street
h, shop
i, ramp to basement
j, offices
k, garage
m, courtyard
n, exhibition suite



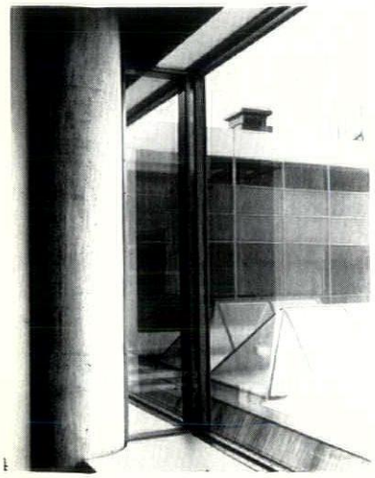
section

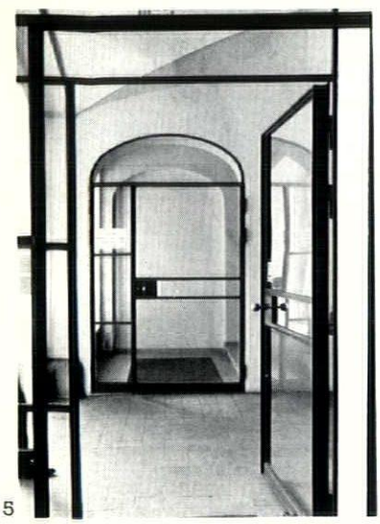
1, the restored exterior from the Esplanade.
2, Aspelin's Art Nouveau staircase (1896) at first floor level.
3, Lars Sonck's banking hall (1906) with stucco ornament by Carl Slotte.

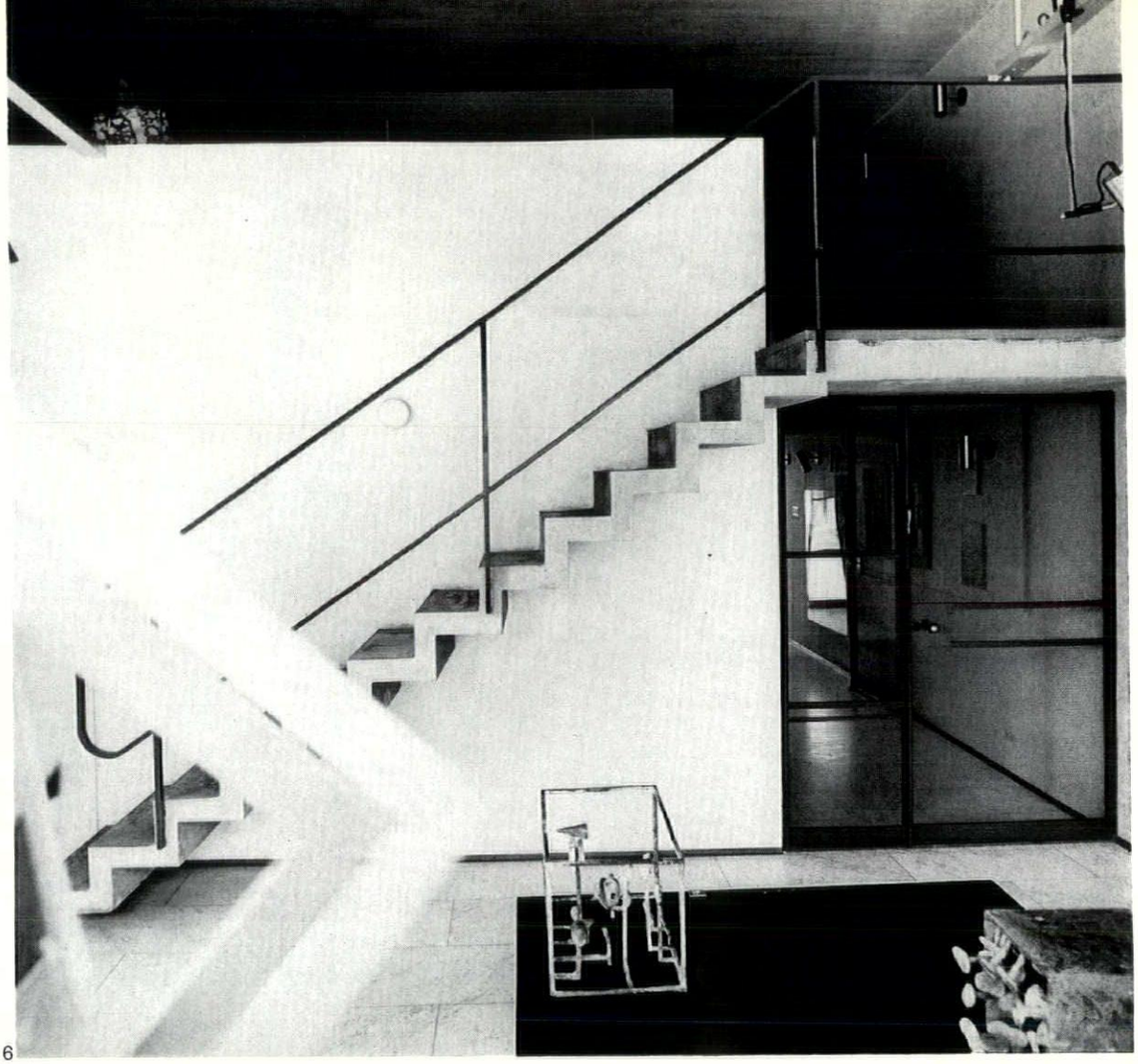


3

Jung and frescoes (in an apse added in 1916) by Wilho Sjöström.
In Ruusuvuori's reconstruction Sonck's banking hall, 3 and 7, and Aspelin's staircase, 2, have been preserved and brilliantly restored by Bruno Tuukkanen. The street façades have also been preserved, the window pattern being restored to its original form. Otherwise everything has been rebuilt in a light structure of reinforced concrete and glass curtain walling, 4, which stands in complete contrast to the massive character of the old walls and pillars. Besides the large hall already mentioned and the inevitable rows of offices, there are shops on the ground floor, a travel bureau on the ground and first floor, and an exhibition suite,









6, on the upper floors of the north wing, which lies over the ramp leading down to the basement car park (see plan). The plain interior finishes of the new work are greatly enhanced by Anitra Lucander's restrained and elegant colour schemes. S.C.

4. The roof lanterns in the courtyard light the banking hall.
5. new doors to the shop and Art Nouveau staircase from the entrance in Union Street.
6. the main hall of the exhibition suite on the upper floors of the north wing.
7. Sonck's banking hall with the later apse of 1916.

Banking experiment: branch bank, Loughton, Essex

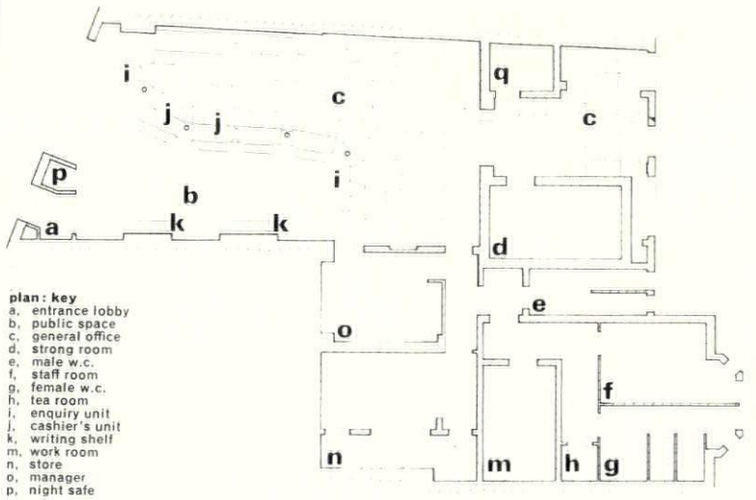
Senior architect, Midland Bank: John Wilson
Assistant architects S Mandoki and P Wilde

In branch banks the barrier between servant and served has always been formidable; and it has tended to become more so with the need for greater security. Add to that the traditional screen dividing cashiers from clerks, and the result is the almost total separation of bank staff from customer.
The Martins Banks illustrated in the AR for November 1968, although visually treated as one space, maintained these time-honoured features. Only Tayler and Green's bank for Barclays at Lowestoft (illustrated in the same issue but designed some time before the introduction of anti-bandit screens) achieved a convincing degree of spatial unity by removing the clerks altogether from the banking hall. Now the Midland Bank, after a research period led by a team of architects, have introduced three pilot schemes, one of which at Loughton is illustrated here. It is the second part of a programme instituted in 1964 by the bank's design panel intended 'to initiate and maintain a consistent corporate image', the first part having consisted of redesigning all printed communications and branch signs.
The research had made it clear that branch banks were subject to frequent, often minor, changes, and that the imminent introduction of the terminal computer would make these changes even more widespread, while at the same time remove one of the main objections to open planning—the noise of machines. The aim, therefore, was to provide complete flexibility so that both minor and major changes could be carried out quickly and with the minimum of disturbance. The concept is a very simple one: a flexible chain of counter units in a single air-conditioned space where the finishes on both sides of the units are the same. The units are standard and prefabricated, while the space



1

1, formerly most of the frontage was taken up with the manager's office, now relegated somewhat ignominiously to an internal room at the back. The new window is of bronze-tinted glass and the surrounds have been faced with travertine.



plan: key
a, entrance lobby
b, public space
c, general office
d, strong room
e, male w.c.
f, staff room
g, female w.c.
h, tea room
i, enquiry unit
j, cashier's unit
k, writing shelf
m, work room
n, store
o, manager
p, night safe



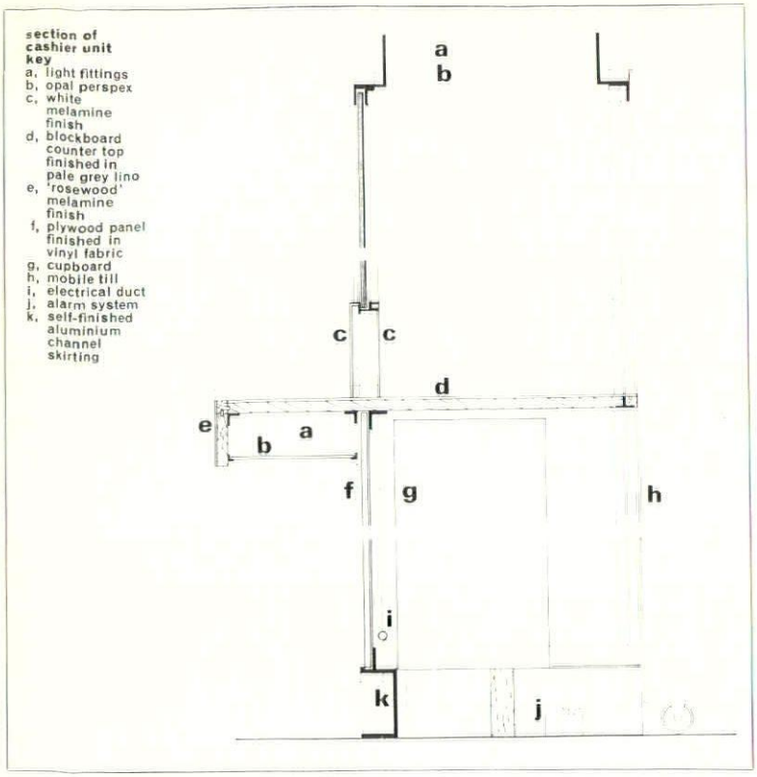
2

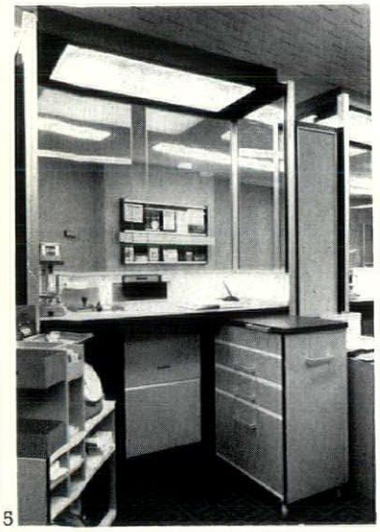
2, the public area. The open plan is stressed by the use of the same finishes for the floor, walls and ceiling on both sides of the counter. The division between customer and staff has become a flexible chain of counter units which can be expanded, reduced or altered in shape in a matter of hours. The one conspicuous failure at Loughton is the ceiling treatment—an aggressive pattern in parallel lines of light fittings and acoustic gypsum panels (chosen because their small slots provide an even distribution for the air-conditioning) which is visually at loggerheads with the curving line of counter units, themselves integrally lit. The Wilton carpet has a black key pattern on a dark green background and the walls are finished in a light brown vinyl paper.



3

3, the specialized enquiry unit is of the same construction and finishes as the cashier unit (see overleaf section), but has in addition a sliding sash window for deed boxes. The linking units, which can be fixed or hinged to form a door, have been designed in standard widths based on a 4in. module.



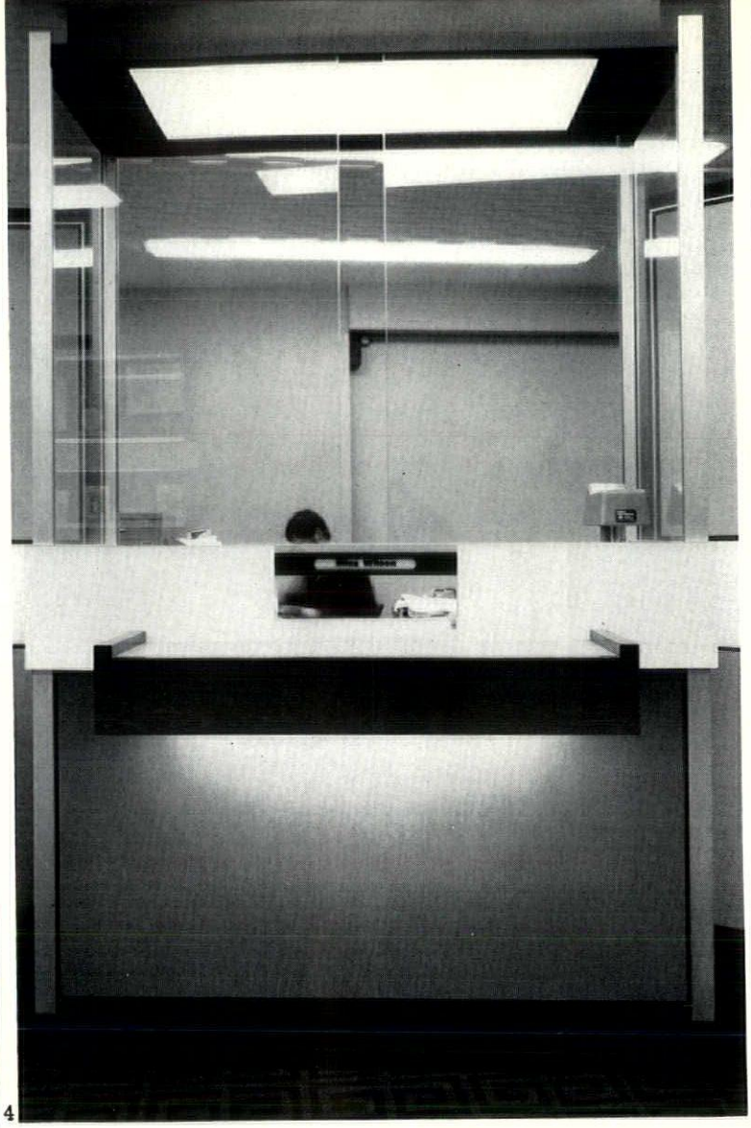


5

is allowed a choice of finishes appropriate to each branch. The separate functions of a banking hall have been defined in the design of the units, of which there are basically two kinds, one for cashiers and the other for specialized enquiries. There is also a separate writing shelf combined with a display rack and notice board. Loughton, with a staff of fifteen, is the largest of the initial experiments. The next stage will be to extend the experiment to a branch at Cambridge with a staff of forty-five. On those results will depend the bank's future commitment to the system. Obviously everything depends on quantity. Although not official bank policy yet, it is obviously a fact that economies derived from mass-production would result in a relatively short life for the units and so enable them to be updated by taking full advantage of new materials and production techniques as these become available. S.C.

Photographs by Bill Toomey

4. the cashier units incorporate anti-bandit screens and a complete electrical system taking power from a duct which links the units. The trough lighting above the bandit screens and below the counter is intended to indicate whether a till is open or not, but ought to be controlled automatically by the opening and closing of the till, and not manually by the cashier as it now is. During peak hours one of these units becomes a quick-service counter. All branch banks and post offices please emulate.
5. the back of the cashier unit showing the two mobile units which are still subject to redesign, the till which is chained to the floor, and the stationery cupboard.
6. to speed up service customers are encouraged to do their writing on a special shelf away from the counter units where writing facilities have deliberately been made inadequate. The writing shelf is constructed of timber and blockboard, and finished in pale grey lino and 'rosewood' melamine. The display rack and notice board are also framed in timber and have a dark brown backing panel, paint on plywood for the rack and felt for the notice board. The lighting trough is concealed with timber faced in aluminium sheet.



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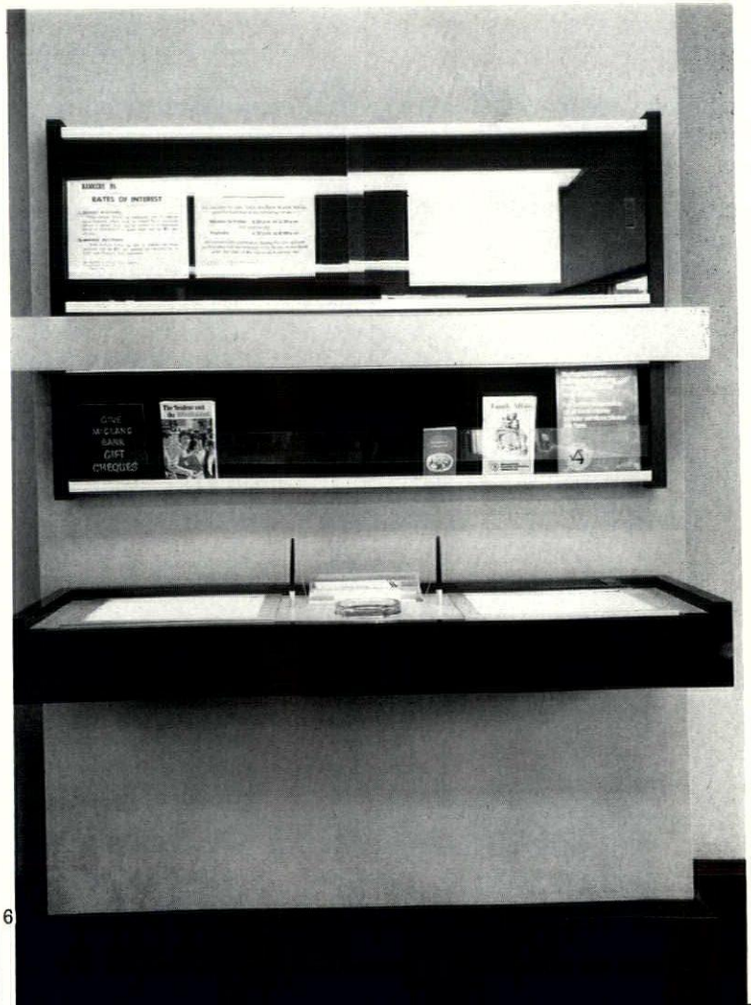


6

Charles C Brauner

THE FIRST PROBE

This is a report, written by Dr. Brauner of the College of Education, University of British Columbia, describing a fascinating experimental preliminary course—referred to here as a pre-session workshop—introduced at the university's school of architecture for first-year students. The purpose, the outcome and the relevance to architectural education emerge clearly as the story unfolds. The director of the school of architecture is Professor Henry Elder.

Rain and mystery opened and closed the pre-session workshop for students entering architecture at the University of British Columbia. Foul weather and wonder about what was to come provided the only obvious threads linking three weeks of activities that ran from foraging to feast, Spartanism to splendour, privation to saturation. Shrouded in rumours as thick as the clouds overhead, fifty-five students from all over Canada and several distant countries gathered together for the first time in mid-August on a dock opposite Vancouver's Stanley Park. As college graduates with a common interest in architecture they had no trouble combining into spontaneous conversation groups. When the six members of staff arrived a sense of relief rippled through the crowd as they quieted to hear where they were going. Disappointed at not being told, they managed to load their camping equipment on one of the boats and divide themselves into two parties for boarding. All the way out to Horshoe Bay and up Howe Sound they speculated. After two hours of sailing through ever thickening fog they no longer knew whether they were travelling north or south. When the boats dropped anchor at a small island a few miles off Britannia Beach they had no way of knowing where they were. Small boats took them ashore on Defense Island in groups of six. Densely forested, and guarded by an Indian mask carved in a drift log at the landing, the island was deserted. Being no more than three-quarters of a mile long and a quarter of a mile wide, with a backbone of rock that ran its length, it seemed to offer a minimum challenge. By the time the last boat landed the two girls and the main party had a fire going in the opening on the crest. Since it was noon, everyone stood around waiting to be fed. Wet, having nothing but what they wore and carried in their pockets, but reassured by seeing the staff similarly unequipped, they did not take alarm when the boats sounded their horns and pulled away.

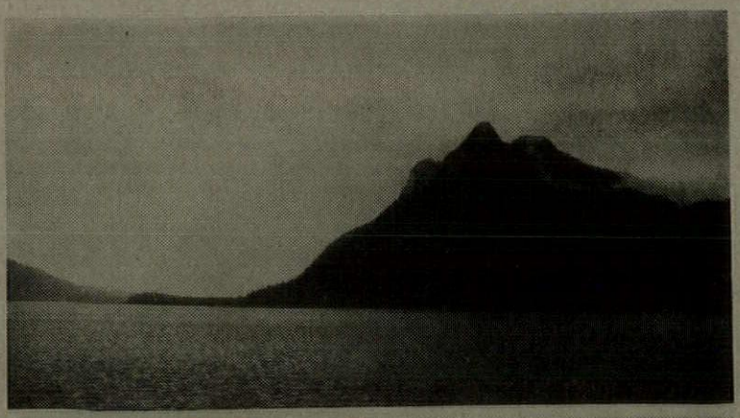
After a half hour of exploration, John Gaitanakis, a co-director, called the students together and explained that the boat would return in forty-eight hours.

Meanwhile, there was no food, no shelter and no equipment. The time was theirs to use as they saw fit. The first reaction was disbelief. Having found an axe and some nails on their brief tour, a small group insisted other necessities only awaited discovery. The fact that two five-gallon coffee urns of water had been brought ashore from the boats convinced others that food was there for the finding. A general unwillingness to accept the likelihood of deprivation sent everyone on an hour of fruitless searching. Reassembling with nothing new to report, they conjured up their first fears of famine. They all knew that man could do quite well without food so long as he had water, and fresh water was plentiful both from rain and springs. Nevertheless, half-a-dozen individuals insisted they would succumb to nausea and disability at the very least. Those most fearful set out to forage for edibles. We warned them that a recent red tide had made the shellfish temporarily poisonous. This came as a blow. The gloom did not persist, however. Soon half the group was busy gathering salal berries and toasting sea kelp. No other edibles could be found. By mid-afternoon a dozen self-selected groups were busy building shelters and gathering wood for night fires.

Having coalesced into personality groups of three to five, the shelter parties remained intact as living units for the rest of the time on the island. Confronted with the basic choice of whether to improve and inhabit existing shelters from half-formed caves to semi-tunnels formed by overturned trees, or to cut and interweave cedar branches, the majority shied away from using the existing natural cover. However, their finished dwellings distinguished them far less than the characteristics that drew them into alliance. To the staff they became known as the hoarders, the sharers, the defilers, the isolaters, the raiders, the excluders, the worriers, the trusters and the grumblers. Those who found no common cause in personality, location, habitat or conversation remained around the fire on the crest.

Since this cluster-by-default was three times as large as any of the separate living units, their clearing served as a common ground. A more barren commons would be hard to imagine. Once fire and rude shelter were assured the group found it had absolutely nothing to do but pass time. No game of matchsticks or burning of twigs was too trivial. There was not even enough common concern for anyone to do more than note that one of the groups had made off with half the reserve water-supply. Efforts to open discussion on why they were there or what they might do proved so fruitless that the dozen who started the talks could not sustain them for half an hour. In the evening a longer chat on 'What is architecture' was started. With the downpour and darkness punctuated only by massive tree-trunks and widely spaced fires, boredom dictated the effort at conversation. Unable to develop a cohesive thread, the only thing that sparked interest was why the staff was made up of only two members of the architecture faculty, the rest being a visitor from Outward Bound, a specialist in contemporary dance, a sociologist and an educational philosopher. The thing that seemed to impress the students most was that the staff saw fit to share their discomfort on equal terms, though they had foreknowledge of what was to come. Again, all question about future events went unanswered. When it became clear no profitable discussion would develop, the staff withdrew to the semi-shelter of a huge cedar tree and bedded down around a fire.

Wetter and colder, only four things distinguished the second day: the end of the berries, the building of a raft, the appearance of a boat, and underground fires that threatened to burn the island down. What had been planned as minimal existence experience turned out to be no existence to speak of at all. The hope had been that by being freed of cooking, eating, preparation, clean up, and denied the opportunity to lavish time on such mindless occupations, the students might try to make something special of their stay. Instead they lavished all their time on the mindless activities left them: buttressing shelters, improving fireplaces, gathering





Defense Island, the scene of the students' first pre-session experience, and a group of the students waiting to disembark on the island.

wood. Beyond that, they were determined simply to sit out their time like convicts awaiting parole. Some spent hours just cleaning their fingernails. Even the making of the raft was undertaken with half an eye to floating somewhere to get food. When a boat came in a group tried to signal their need for supplies. Informed that just three weeks before the Provincial Department of Correction had put some hard cases ashore for survival training, those on the boat did not linger. Surviving their fast in good health but low spirits, the several groups greeted the last night with huge fires. These burned through the ground-cover of rotten needles and branches to ignite the dry mulch that coated the ground to a depth of twelve feet in places. A group in a cave on a rock ledge burned themselves out entirely when a covering tree went up in flames taking two more with it. Three other groups had runaway fires during the night, and the *Lord of the Flies* bunch who took the communal water supply had to use more than forty buckets of the water to damp underground fires which they insisted that, as experienced woodsmen, they had under control at all times. When it was time to leave, the staff spent three hours doing nothing but uprooting underground fires that had been left as extinguished. If it had not been for heavy and continuous rain the island would have become an inferno.

By far the most interesting thing to be seen during the island experience was the students' behaviour toward food when it arrived. Before taking us off, the captain of the Columbia landed oranges, apples, and bread. The 'marooned' were told that there was enough for each to have a fruit and two slices of bread. The *Lord of the Flies* group was the first to the food, followed by several kindred parties. They raided the stores like seasoned pirates. Half the loaves of bread disappeared inside jackets, only because pockets were filled to bursting with fruit. Eight people got more than half the supplies for sixty-one people. The pattern of resentment among those who went without was remarkable. No one could be heard blaming the gluttons, though they were known to most. First the captain became the villain for landing so little. Secondly, there was general resentment that they had not been given a feast. Finally, annoyance focused on the staff for not anticipating the raiders and deterring them. This settled down to a criticism of a more general nature. Somehow the staff had failed to make the experience meaningful. What happened with the food became symbolic of that failure.

When the boat landed everyone at Brittannia Beach, there was a station wagon waiting with enough bread, sliced meat, fruit, cookies and candy bars for all. Or so it seemed. But again the mighty eight plundered the stores They made sandwiches with more than an inch of meat. Not one, but four and six apiece. Even so, the meat and the bread held out. Everyone, except one girl who could hardly eat, overate. The raiders took whole packages of ten chocolate bars or thirty-six cookies against future uncertainties. Again, nothing was said. Interesting in itself, what makes it significant is that, except for the girl, no one had suffered severe hunger past the slight pangs of the second day. There was a general feeling of having been physically cleansed. The unanimous overeating and the special greed of a few seemed more a ritual atonement for failure or a common urge to make up for the empty hours by stuffing their bodies. Overeating remained a characteristic of the group throughout, students and staff alike.

A mystery in itself, this hangover from the island cloaked an even deeper feeling. Before going, several students had known the forest on intimate working terms. Others from cities and foreign countries had heard of it in terms that mixed awe and grandeur. Yet the wood-wise had been as unable to face the challenge of the forest-island as the forest unfamiliars. Both had been equally helpless against what neither had expected to encounter—Time. Having brought almost nothing ashore they found themselves stranded with even less than they imagined. Had they been truly marooned, desperation would have given them common cause that would have filled every moment. Denied even that last resort, they encountered themselves as truly useless. Each one was, harrowingly, alone. Only for two days; but that mystery became the yeast that leavened all that followed. However slight, all had suffered a common adversity. However profound, all had faced a common humiliation. In just forty-eight hours the props of a quarter-century of customary daily activity had been knocked flat. They were ready for a new beginning. It was, as it turned out, a workshop of beginnings.

Dawn broke clear at 5,300 feet revealing snow-caps surrounding the camp in Garibaldi meadow. Warmed by cooked food and rations of rum, everyone slept half-dry in sleeping bags sheltered by stretches of plastic. Grouped in seven-man teams for the stay on the glacier, some bathed and shaved in mountain streams while others packed for the trip to the top. Rain settled in and efforts to keep dry failed. The question became 'Will the weather break long enough for a helicopter to drop in and make eighteen lifts from the meadow to the broad back of the glacier?' By mid-afternoon the enveloping mist thinned. Heather, high up the hills, showed magenta against wet grass as if struggling to serve as tiny beacons. From over the ridge the beat of rotors chopped away at the remaining mist. As sky opened the turbo-jet copter swung in, trailing a fifty-five gallon drum of fuel at the end of a long line. It set the drum between two logs as neatly as a woman might place a vase. The lift was on.

In groups of four, and three, lifts of twenty backpacks hung in a cargo net beneath the machine, the base camp went to the glacier. The flight up became a personal experience from the moment of lift-off. Skimming off the meadow, the machine circled inside the basin and darted through a gap in the peaks. The lush Alpine meadow dropped away into rock canyon stripped of vegetation. With the five hundred-foot face of the glacier coming up at a hundred and twenty miles an hour, the machine slipped between clouds and ice like a razor parting tissue. Racing across the frozen ridges of snow that spread like a still ocean all around brought the full fascination of speed up through the glass bubble. As if about to topple over a crest that dropped half a mile, the machine floated into a stall and touched to a stop. Set down at 6,500 feet, each new arrival looked from the rough crown of encircling peaks into the abyss. A mile across the valley trees disappeared into blue-black on the mountainside. Printed in a solid wash, the stone seemed a clear crystal darkened only by the blue air between. Some took running slides down steep slopes. Others raced away to the highest ledge they could find. Groups held brief skirmishes in the snow. Still others just sat and looked.

Andrew Gruft and two friends experienced in climbing took charge. Safety guidelines were set forth and the pre-arranged groups were set the task of building shelter. A third of the parties chose to use the snow to their advantage. The rest decided to build their camps on the clear outcropping of rock around the main field. With cooking and shelter under way, half the company set out to use the remaining light to climb by. Curving past blue-green crevasses toward a crest two miles away and 2,000 ft. above, they strung out like ski-troops on manoeuvres. Those who stayed behind drank, cooked, joked, built fires from mountain driftwood, improved shelters and attended to idle busywork. Though the rain came back, the mood was as opposite from the island as the surroundings. Cold, wet, getting hungry, tired, no one was bored. The new groupings jelled around work, chatter, pranks and meals. The real chance of a thunder-storm on the glacier, rumoured to be capable of making experienced climbers panic, held no fear. The known difficulty of climbing down through fog that hid all bearings posed no concern beyond the challenge. The outside chance

of severe cold at night worried no one. Where 48 hours on the island had seemed interminable, 36 hours on the glacier seemed no time at all.

Where the dense stand of evergreens reaching up out of sight had hemmed everyone in until each became trapped in some barren patch of self, the broad expanse with nothing on all sides and above became truly timeless. Drawn out from the cramped quarters of self, as vapour must expand in a vacuum, their spirits bubbled to the surface. For the first time there was singing. Who could help but sing on the top of the world? There was play. Joy. Reborn on the glacier while chaffing under unexpected discipline, they surged back to life. The island, not the want of food, the gloom of the forest, not the rain, the self inflicted isolation, not the division into camps, had made them old. On the island they behaved like retired folks so old that all they had left was to await their final departure. On the glacier they became young again. But the growth they found, like the agedness they settled into when most lost, came from psychological depths none had ever plumbed. Indeed, on the glacier and all through the trip, only a few ever sensed that the territory covered during the workshop paralleled the topography of their spirit. Like animals in a maze they were much too busy reacting to stimuli to analyze, or even to formulate, their responses. That would come later.

The climb down the glacier and back to base camp was their first small test of physical endurance. Seven miles over the ice field, down the face, into the valley and up four thousand feet, confronted them with the task of covering in each hour what they had flown over in a minute. Sixty-pound backpacks and fog thick enough to limit vision to fifty feet made it a challenge. Divided into three teams of twenty joined by a long stretch of rope, they set out over waist-high ridges of soft snow. The experienced climbers led each unit to the face of the glacier. In a running, tumbling, sliding, skidding, free-for-all, each person balanced his pack as best he could and slid down the forty-five degree slope. Once down in the valley on an unmistakable trail they were left to make their way up and back to the meadow like draft-horses free to find the barn. Those who faced it as a show of strength made it in less than three hours. Others who found it an enjoyable if demanding stroll took as long as five. Saddled with a pack and confronting an unavoidable two-and-a-half mile climb up a twenty-degree slope, each one had to balance energy against endurance, progress against tedium, interest against fatigue.

Eventually they had to settle down to some common denominator for completing the task. In a narrow, special, private and very physical way each one had to work out his own "one best means". Some rushed and rested every hundred yards. Others plodded. Many forgot they were climbing at all for as much as a half-mile, caught by the change in perspective that rising above the valley brought. A few cursed almost every step. One by one they settled into what Jacques Ellul calls a 'technique'. They came up against what freedom was left them within the rigid limits of physiological ability and physical conditions. For that brief passage each one worked out his personal style under a special condition of stress. That style told those around him volumes. It was a story that did not take long to tell. Yet it was the style of others that remained most apparent. Even so, without knowing accurately, fully, or coherently *what* he had exposed, each one sensed *that* he had exposed himself in some important way. The climb back to the meadow made it clear why certain groups had grown spontaneously on the island, and why other combinations of people would not naturally occur. The return from the glacier marked the emergence of an awarenesss of individual techniques for achieving ends and styles-in-means previously unnoticed.

The new awareness came at the best possible time. Having first been plucked from society and comfort and held in contact with nature for five days, the students were plunged back into the system and surrounded with conveniences. Comfort was a modern motel that provided all facilities and good food and the freedom to roam Port Alberni every evening. Twice each day they would tour a different aspect of the lumber industry. Reborn as social beings, they noticed not only the emperor's nakedness but the alleged cut and fabric of his imaginary gown.

A satrapy of MacMillan Bloedel in the middle of Vancouver Island, this company town, left over from an earlier century, enjoys polluted streams, hepatitis, noxious air, odours that would stun a horse, soot, fumes, loud traffic, periodic layoffs, alcoholism and treeless hills as side benefits of having but one major employer. Yet the effects of industrial technique on the life-style of the town were trivial compared to their influence on the men at work. In three days the students saw modern industrial technique at work in fire-fighting, paper manufacture, logging, cutting lumber, and plywood production. Everywhere the most modern equipment stood out as the only evidence of the twentieth century. The two surviving Martin Mars were kept ready as water bombers. The largest planes to see active service in World War II, they pick up 6,000 gallons of water in a twenty-two second sweep across the surface of a lake. The pulp and paper mill was as fully automated as possible. Gigantic vats collect, grind, soak, stew and feed a sticky juice into a block-long oven of drums that press, stretch, dry, bake and roll up finished newsprint. The nattering of powerful chain saws throughout the forest made it sound as though the whole mountain was host to a swarm of mechanical locusts that would eat it bare.

Where the crews had left, the mile-square stands made a cut-over wheatfield look scraggly. Everything was down. At China Lake the water scooters cut logs from the dumping pools more efficiently than a trained quarter-horse culls a herd. In the sawmill, blades man-high made beams from trees in two cuts. The plywood factory had presses three storeys high. Everywhere one technique stood out: enlarge the machine. Each replacement was more gigantic than its predecessor. Gradually, the attendant technique became apparent: rationalize the internal steps of each separate process until that stage is automated. Only then did the discontinuity between gigantic machines begin to make sense. Specialists had automated isolated processes separately, and that separation set the task for human labour.



Helicopter preparing to lift students up to the Garibaldi glacier.

Men did not work so much on, as between, machines. Whenever one complex of machinery finished a set of tasks, and another assemblage waited to take it another stage, there was a flurry of human activity. Men rushed pell-mell to fill the gap between two independent mechanical processes.

Unique, specialized, temperamental, costly and irreplacable, the machines received irreproachable care. Indeed, the machinery was the only thing unique in any of the operations. The company could no more use a six million dollar paper dryer to put out forest fires than it could dry paper with the Hawaii Mars.

Only the men were standardized, interchangeable, expendable and indistinguishable.

Posted everywhere, the signs announced the daily life-style for workers. Like front line troops they had learned to live in the company of constant danger. The numbers themselves gave a precise arithmetic index of danger, job by job. They announced that the machinery could not be made man-safe. 'No matter what you do the machine will get you. It's just a matter of time'; 'Look, so and so has escaped injury for 283 days'. Yet when you are hurt, 'It's your fault'; 'Men *make* accidents'. Whenever anyone was asked about the company's concern for the workers, the safety signs were pointed out. After the second day no one asked. Discussion with management provoked hostility. The very thought that unintended psychological and social contaminants might develop as side effects of company policy came as an unpardonable insult. The safety-game stood out as symbolic of a fundamental absurdity. Practical businessmen regarding themselves as deeply involved in the basic struggle to provide necessary commodities were more prisoners of their own fantasies than the students had been on the island. Practical labourers committed to bread and butter wage earning were more lost than they would have been on the glacier when the fog closed in. Worse, both groups believed they were 'communicating'. Neither suggested its isolation from the other. A huge industrial complex had grown up between them and yet it remained invisible.

The result of this mutual blindness was Port Alberni, a peculiar but somehow typical wasteland. For all the devastation of physical resources for the production of commercial exports, they came to little by comparison to the degradation of human resources. The forests, the streams and the air could still replenish themselves. The people had been used beyond any point of return.

Having seen *how* industrial technique devastates a population, the students went on to follow up that human devastation in a more advanced stage. Their next

stop was Skid Row in downtown Vancouver.

Arriving in the usual downpour, everyone checked into the West Hotel at Carrol and Pender Streets just off Chinatown. With two students to a room at $1.50 each per night, they had the next four days to explore eight square blocks. Before turning them loose, Bud Wood, the other co-director, gave each one his five-dollar-a-day allotment of cash. Dressed in boots, camping clothes, beards and untrimmed hair growth, they had only manners, speech and curiosity to separate them from the native inhabitants. The hotel's bar served as base camp, refresher station, rest home, take off point, runway, rally ground and seminar room. Low slung, huge, noisy, pillared, blue, black ceilinged, gilded, mirrored, busy, threadbare and orderly, it catered to a cross section of the population two beers at a time. It came as a surprise that there was nothing especially bawdy, frantic, violent, boistrous or hostile about the patrons. A gravel-voiced citizen entertained each newcomer with the offer of a diamond from 'the crown jewels of Czechoslovakia' smuggled on the last plane out of Prague. A few lads lent themselves to the embraces of an Indian girl happy to give them vivid details of her decline and fall. Others received fatherly advice from pensioners about keeping their cash in a side pocket and not flashing anything bigger than a two-dollar bill. They saw and heard drunks, but found the vast majority quite content to drink well within their budget and limit. After buying a few rounds they found themselves treated in return.

Even before they ventured out on the streets they knew a good deal about the community. Most of all, they knew it was a community. The people they had expected to find broken and in a continuous stupor had a spirit and individuality not to be found in Port Alberni. They reflected, without having heard, Camus' dictum in *The Myth of Sisyphus:* 'There is no fate that cannot be surmounted by scorn'. These survivors of industrial displacement had many battle scars. Yet herded together in a ghetto left over as an ommission in city planning, they retained a certain small measure of independence from commercial-industrial technique. By working little, unsteadily, or not at all, they avoided having to stay in anyone's 'good grace'. They were, in a most limited way, being themselves. The limitation was that by the time they got there, not much of the 'self' was left intact. Contrary to expectation, these people had not given up. They laughed, drank, hoped, fought occasionally, talked endlessly, listened, argued, smiled, dreamed, sang, cried, visited, made friends and worried. The notable difference was that they had no assigned places in which to do these things. They were 'at home' on the street or in an alley, in a bar or a temporary room. They were at home in their bodies instead of in some set space; and it soon became clear that this was not a matter of choice but of necessity.



The base camp in an Alpine meadow below the Garibaldi glacier.

Being architecture students they soon noted how little space existed to serve Skid Row's inhabitants. By day and early evening businessmen came in to open shops for customers who came from outside. Only when the outsiders withdrew, and the stores and offices were dark and padlocked, did the indigenous facilities stand out. There were small restaurants offering cheap food in quantity for every ethnic group from Greek to Polish, Hungarian to Swedish. Cutting across ethnic lines, bars catered to special social tastes. The mixed couples did not mingle with the transvestites. The solitary drinkers stayed away from the party bars. Less clearly, the hotels and rooming houses polarized around yet different groupings. The sailor did not register where the salesmen gathered. Though the illegal activities went out to wherever demand promised patronage, each had its centre of gravity. Prostitution did not interfere with gambling. Dope peddling did not compete with bootlegging. Once it became clear what the boundaries were, it took just six minutes by actual timing to find a 'kit' that someone had stashed for mixing, heating and injecting heroin. A serious customer never had to wait more than a quarter-hour to make contact, whatever might be his needs. Service was far better than the check-out line at any supermarket. Yet the traffic was quite small compared to the size of the population.

Gradually, the students grasped one of the basic facts of life on Skid Row. The restaurants, the bars, the streets, the alleys, the porches of tenements, and one thirty by forty foot triangular 'park', were the only social centres available. Wherever they might go to sleep, they had to come to one of these places to socialize. This was known and accepted. The great majority did not drink to become convivial; they gathered together to relieve each other's boredom, and rather than cast a man out in the rain because he couldn't afford to buy a drink, someone would order him a beer so he could stay. For a group of people who literally lived in their social centres and only slept or recuperated in their rooms, the guarantee of being welcome was essential. Unfortunately, they had to convert the few facilities left them, by an unconcerned city, with no help. They had to make social centres out of places least amenable to that function, and they did it with nothing but their own depleted personal resources. However limited, warped, undeveloped, starved, or out of kilter, all they had was their own humanity, and because they brought all of it wherever they went they were, in their own special way, more wholly and fully present, wherever they went, than most men.

They left nothing behind, kept nothing hidden. Carrying the whole of what was left them as selves, they often enough exhibited parts not customarily seen in public, and that, not the people themselves, was the basis for disapproval. The occupants of Skid Row, the students eventually discovered, lived all too public lives. At least, they did in company what the general public regarded as only fit to be done in private. From urinating to making love, from vomiting to sleeping, from dressing to tending wounds, from taking medicine to resting, could all be seen; and those who lived in more compartmentalized ways found such a blend offensive. Having just come away from an island and a glacier where just such a blend had been a communal and environmental necessity, the students could accept it quite easily. They were surprised to see that the basic pattern of living on Skid Row differed very little from their own style of camping. The trees had given way to high buildings, the icefield had been replaced by pavement, but the ways of coping with a great deal of time and not very much to do remained the same. Like themselves, these folks were the sole occupants of an island. Their little enclosure was threatened by an ever rising tide of commercial and industrial development that encroached from all sides. Unlike the students, no one had arranged for their departure that silent morning.

Loaded with camping gear, everyone trudged up a mud road through the rain on Sunday afternoon. All they knew was that they had entered the state of Washington and come to Friday Creek, about twenty miles south of Bellingham. From the distance they heard a Gregorian chant coming through the trees. Turning a bend they came upon what could have been a Roman ruin. Aged, overlaid with twenty foot high trees growing out of the roof, abounding in symmetrical arches, the circular brick building arched up into a perfect dome. From the inside, the abandoned bee-hive brick kiln curved around and around in layers that drew the eye out of the hole on top. The deep tones of the Gregorian chant mixed with the candle-light to create a mood of reverence. Moss and moisture filled the dome with a musty incense. A dozen low arches evenly spaced all around opened to the fading daylight as altars of invitation.

Moors coming upon a mosque in an alien land could not have been

more awestruck. Silence admitted the sound of a running stream. As eyes grew more accustomed to the dim light, details became more evident. Throughout the dome bricks were set on edge against each other without mortar. Sounds worked across the dome to drop intact at full volume precisely on their nodal points. The scars of intense heat worked up in carbon streaks as shadows of long extinguished flames, as if to provide the building with memories. One great room softly lit, so the glow faded gradually to a deep red, nearly as dark as claret. Simple, strong, and so boldly clear in design and construction, it bespoke its very nature. It was as natural as the island forest or the glacial snow. It belonged. Only the rubble of broken brick piled all over where the floor had been detracted. Turned up, scattered, and left by thieves in their search for marketable bricks, the mounds of trash, much more than the structure, showed the hand of men. That dirty smudge had to be erased. In two days the work parties cleared out all the rubble and rebuilt the floor with brick taken from the false roof. Stripped of all the growth that threatened to crumble the dome, re-inforced by welding that strengthened the steel bands holding it together, covered with clear plastic that waterproofed it, cleared of rubble and trash inside and out, sporting a floor of clean brick packed on sand, equipped with electricity but not lighted by it, the kiln was ready for use. There was a sense of having restored a monument to its original splendour. It came as a shock to find that the kiln was only ten years old.

Delighted to have a task, the students did the basic renovation in two days. Unwilling to relinquish their work, they improved it each day thereafter. As it became the social centre, fewer people slept inside. The attendant building provided shelter for sleeping and storage, a catering service supplied hot meals. A barrel of beer went on tap every evening. Each day a few new members of the architecture staff arrived. With five days left to go the students felt that finally they had about all they wanted. They had no suspicion that work, shelter, food and drink was the least of what they were about to get.

The cultural program came on slowly. On the evening of the third day at the kiln they all gathered in the dome at dusk. A solo oboist played an hour of modern music before the beer arrived. After refreshments he came back and discussed the notions of sound, space, harmony, rhythm, atonality, improvisation, and composition underlying the works he had played. Then he gave an impromptu accompaniment to the reading of an original poem. That was followed by the reading of a chapter from a novel underway. A bit startled by the exposure, the students set up a couple of Congo drums and beat their way through half the night until the beer was gone.

That evening a solo cellist played, talked, joked and worked her way through a night of music appreciation that extended from Brahms to nursery rhymes by way of viola and violin. The second artist established the pattern of the performances beyond their special cultural merits. The students realized that they were encountering people who had spent most of a lifetime mastering some of the most difficult skills ever undertaken by man; but there was something more. By coming to the students and opening themselves to any questions they were providing an invitation. In a groping way the questioning began to focus on what they had to give of themselves and find in themselves to rise to the level of artistry.

The impact of the artists began to show in the students' daytime work. A portion of the floor that had been laid down imperfectly was torn up and redone. Unattended damage to the kiln that had not been noticed was repaired. Shelters, walkways around the adjacent buildings, sheds, a crude drinking station called '*The Plastic Pub*' were all repaired. Even personal care improved. The dam down the creek had a waterfall that became a shower. Some shaved. Without being fastidious the students began to restore themselves back from the dishevelment that had gone unchecked from the island through Skid Row. That day an officer from the Immigration Service arrived. He was under the impression that the community was a religious cult. The fact that the students had turned their hand at building 'found sculpture' from machines parts laying all around tended to confirm his suspicion. His concern was very specific. In the most courteous way, he inquired whether there were women present. At that point it came as a shock to everyone to realize that sex differences mattered. After assuring himself that they were not being held by force or the threat of force he took a considerable interest in the improvements.

In the evening a troupe of three actors from Western Washington University put on a one-act performance drawn from a segment of a poem by Koch. After analysing and reconstructing their moods they drew several 'volunteers' into the centre of the dome and went through a verbal charade called Coil Supreme. Carrying over into a second keg of beer the drummers and those who worked over the rented piano partied their way into dawn. By night and by day the groups worked out their special style and technique. Quite at home with themselves and each other they played as hard as they worked.

Entirely at ease with the staff, they sought advice when it suited them and ignored it on the same basis. The spirit first sampled on the glacier returned in much amplified strength. None of the gloom or *Lord of the Flies* position so evident on the island reappeared. Midway through their stay at the kiln they found themselves as a fully developed and emotionally self-sufficient community. Selves that had remained hidden all that time emerged. Discussion, argument, and debate abounded on everything from adultery to Zen. Life histories were revealed. Philosophies exposed. Attitudes attacked. Values endorsed. Without guessing they were doing anything more than restoring an abandoned kiln and having a good time drinking, they began to make unexamined parts of themselves evident. By bringing them out in the open they took the first step toward building new selves. Their style became fraternal; they took an interest in each other far beyond the usual. When one lad was refused passage on a bus because of long hair and bare feet it hit them all. When another was caught by the Conservation Officer with two twenty-five pound salmon he had just killed for a barbecue, he had more volunteer 'lawyers' than anyone could use.

And their technique became 'stumbling Cartesian'. Though not fully aware of the extent to which doubt might reach, when nothing was taken for granted, they started along the road. The seventeen acres they occupied were no longer an abandoned brick kiln on Friday Creek. It became a modern Benedictine Monastery in which work and meditation mixed with an exploration of the arts and, albeit, beer. Yet it remained in no danger of becoming a cult. Joined in a common though undefined exploration, they gradually became aware of how different they really were. Fortunately, they had learned that they did not have to become ostriches to protect the differences. These were the differences that exposure could cultivate just as the performances of the artists contributed to their special uniqueness.

The recital by the University of British Columbia string quartet brought the collaborative dimension of artistic excellence to the fore. For two hours the dome rang with the sound of strings tuned and played in harmony. After the performance it came as a surprise to find that the local constabulary and several citizens had come to listen. Having known the place as an abandoned ruin good for several loads of brick, and having heard all kinds of stories about the weird rites being performed, they had trouble believing their eyes and ears. Again and again they marvelled at the transformation, and remarked that there had never been anything like the performance anywhere in the area before. From them, the word spread that the Canadians were a breed unknown in those parts; hard working, constructive, fun loving, cultured, friendly, open, creative, intelligent, moral and somehow too good to be true. Alarmed at what seemed to them the decline and decay of their own youth, they showered the visitors with all the virtues they admired but found lacking. So the counter-myth went around as an antidote to the initial accusations.

The following night many returned and brought friends to hear a basso from the San Francisco Opera and to watch his wife do interpretive dancing. Their amazement grew. Promises to preserve the kiln and continue to use and improve it abounded. Men swore to protect it against brick thieves and destruction. Local politicos vowed to use all their influence to further what had been started. Regardless of practical limitations that might keep them from accomplishing their ends, the expression of concern was absolutely genuine. A certain hidden passion for improvement had been touched. Though it might be only an emotional outburst, it represented an awakening they would not soon forget. And it augmented the same feeling for preservation and continued use of the facilities that living in and around the kiln had stirred in the students. The guests and the host citizenry who had come to find out what was going on were in perfect accord. Having developed a facility entirely for their own use, the students were able to be fully and wholly themselves in a more expanded and complete sense than would ever be possible for anyone on Skid Row. Yet they could open up into the kiln, the grounds, the countryside, the work, the appreciation and the sharing without keeping parts of themselves compartmentalized.

In just one week they had put together a whole that exceeded the sum of its parts. Without quite knowing what they were doing they built themselves a vision. The kiln, the bricklaying, the artistic performances, the drinking, the communual living, the geographic isolation and the continuous discussion, were only elements of technique for making it possible. However dim or fleeting, vague or contradictory, spotty or insubstantial, they had caught a glimpse. And the glimpse, not the activities, had fired their imaginations. In a hermitage of their own making they had seen the skeleton of Shang-ri-la. They had dabbled

on the outskirts of Utopia. However soon they might forget it under the press of ordinary affairs, it would not be lost. They had touched on a new dimension.

Preparation for the last night began in a downpour before dawn. A pit was dug, coals were laid, a spit was built, and a huge leg of beef was started. All through the day plastic was hung to provide shelter for the guests who would arrive at dusk. Wives, girl friends, local citizens, professors, architects, artists, and scientists were invited from half a dozen places between Seattle and Vancouver. Broken brick was dumped into muddy spots down the road so vehicles would not bog down. A fire was built in the dome to dry it out and a clean-up squad brought the interior and the grounds to their peak of cleanliness. Everyone worked full tilt arranging food, lighting, access, extra accommodation and special effects. Before the staff withdrew, everyone was told to be in the dome, seated and waiting, by six-thirty. As was customary, the students did not know what they would be waiting for. Not prone to let a mystery go unexamined, they gathered.

The staff drove to a residence in Bellingham to put on Restoration period costumes from the university's drama department. The drive back took them through the town of Alger, about two miles from the kiln. Knowing that a dozen local citizens would be in the crossroads bar, they stopped in. The customers saw a Jesuit priest, a Dominican brother, a nun, two squires in velvet great-coats, a buccaneer, an Indian woman in a sari and a girl in a purple page-boy outfit come in. For the first few minutes they were awestruck. All the men had beards. The women were immaculate. And everyone was barefoot or in hiking boots. Looking from the brown wool of the religious costumes to the blue, purple, and butterscotch velvet great-coats, they gathered their wits. The owner hurried to get a camera. A couple concluded the costuming had to do with the kiln. Toasts and congratulations were offered from all sides. And the group left to meet several dozen guests who were timing their arrival at the property so everyone could enter together. Principal amongst the guests was Henry Elder, director of the school of architecture, in the full ceremonial dress of a bishop.

Carrying candles and stepping to a chant, the procession strode up the path, through the trees, and into the dome. All attendants and ladies-in-waiting went to the centre and stood around the bishop. The staff members in religious and court dress went around the inside edge and stopped at different low arches. For three-quarters of an hour they performed a one-act Existential play that had been written the day before. With lines written on anything that could be concealed, the outer ring looked through their openings to describe different worlds. Each report they gave to the bishop was explained and distorted by his chief administrator. The bishop was asked to decide which world would survive. His answer was relayed back by the administrator as meaning none should survive. As each one around the outside blew out his candle, the bishop grew more worried. By extinguishing his aide's candle before all were out he allowed all the others to relight theirs, Having begun with a three-minute oration of Pericles's funeral speech in Greek it ended with the priest chanting a mass in Latin. All the players withdrew as a soprano sang a soft but bright solo. For several minutes no one spoke.

Just as applause began to ring through the dome, half a dozen girls came in wearing shapely togas and carrying bowls of fruit and jars of wine. Two students in loin cloths carried a barbecued leg of beef on their shoulders. More serving girls came in with wicker trays. Loaves of bread were passed around and everyone broke off what he wanted, light, dark, french, sour dough. Large cheeses, hard and soft, sharp and mild, pungent and creamy appeared. Whole roast chickens were broken apart and passed along. A dozen varieties of salami came from everywhere. Platters of beef dripping with natural juices passed from hand to hand. Grapes, nuts, oranges, bananas, plums and apples came along. And after every mouthful there was wine, heavy, light, dry, sweet, rose, chablis, claret and zinfandel. Hand to mouth and hand to hand; there was no china or silver to be seen. Each person was his own portable larder with supply stations never more than a few steps away. Eating and drinking in Roman fashion encouraged mobility.

Two drummers set up a wild beat on the tom-toms. Chains formed and circled. The dancing began. Shouts of *olé* mixed with toasts and the room began to rock.

When it seemed the dancing could not get wilder nor the chorus louder a Greek bazouki band struck out. Beginning with their amplified versions of Western songs evocative of the Mediterranean, they worked into their native music, mixing the Greek strings with Turkish woodwinds. In Zorba fashion the revellers jumped, whirled, stepped, stopped, sprang and slapped their heels. Driven to new heights of energy, they welcomed the chance to sit and watch when the belly-dancer appeared. Beginning with the dance of the veils, she introduced a new motion each time she peeled off a layer. Revealed under the last layer of thinnest gauze, she gyrated in seven separate directions at once, all the while maintaining a thumping beat with her whole midriff that would have done credit to the native girls of Bora Bora. As she went into her last number a young architect burst into the dome clad in nothing but a few vines appropriately draped. In a wild duet of Nature Boy and the Snake of Eden they stimulated the audience into a frenzy of gymnastics it did not know it could even attempt.

Quite beyond themselves the crowd did not notice the next stage until the strobe lights set out a pattern of flashes that resembled the cannon-blasts at the seige of Sevastopol. All motion was frozen into a series of disjointed stills, and the roar of artillery came over the powerful amplifier. A rock-and-roll band of amplified guitars and rim-rattling drums opened the light show. On a parachute held up to the curve of the dome projectors flashed subliminal images in quick succession and overlay. Colour blazed through the smoke and splashed along the silk like dry dust cast by a contemporary Jackson Pollock. The blinding flashes of light slowed the gyrations of the dancers into a slow-motion satire of a Chaplin film. And throughout the dome the ear-splitting roar of the band pressed as thick as an invisible fog suddenly turned harder than steel. Frozen in frantic postures by the flashes of bright and black they were held there motionless by noise so stunning it solidified the very blood in their veins. It was the light, the black, the blindness, the deafness, the start, the stop, the roar, the numbness of Creation. And it went on until dawn.

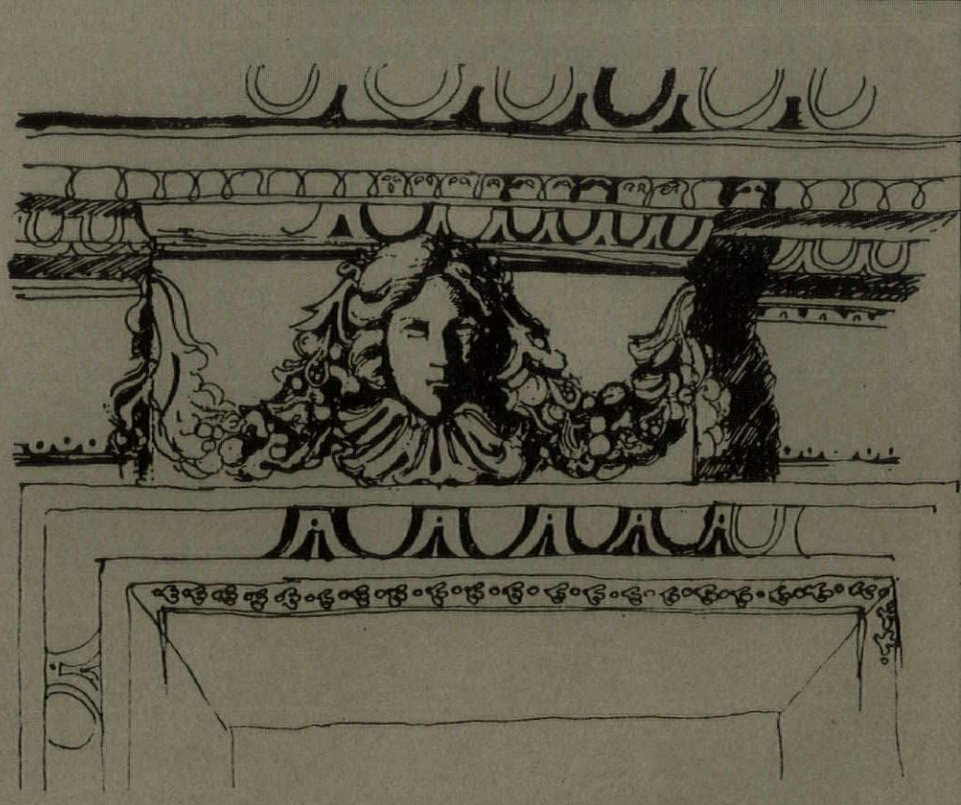
Somewhere in the rain and the mystery of that night of thoughtless noise the end came. When they saw the debris by daylight the workshop was already over. The cleanup was silent. They were going home. Or were they? Something seemed to bar the way. A question? A small doubt? Some wonder? They could not stay, but no one was happy to leave. There was a sense of a vision fading. The trace of a ghost. When would there be another night like that? Yet beneath that selfish question another concern began to stir. Somehow it had been more than just another workshop. Defense Island, Garibaldi Glacier, Port Alberni, Skid Row and the brick kiln at Friday Creek had been stages in a launching. They had broken away from a tight confinement in a narrowly constricted sense of self. If they were not yet free, at least the bonds of a constraining psychological and social gravity had been weakened. Even though they might never find a self-sustaining orbit they had made a good start. They had begun a first probe toward relevance.

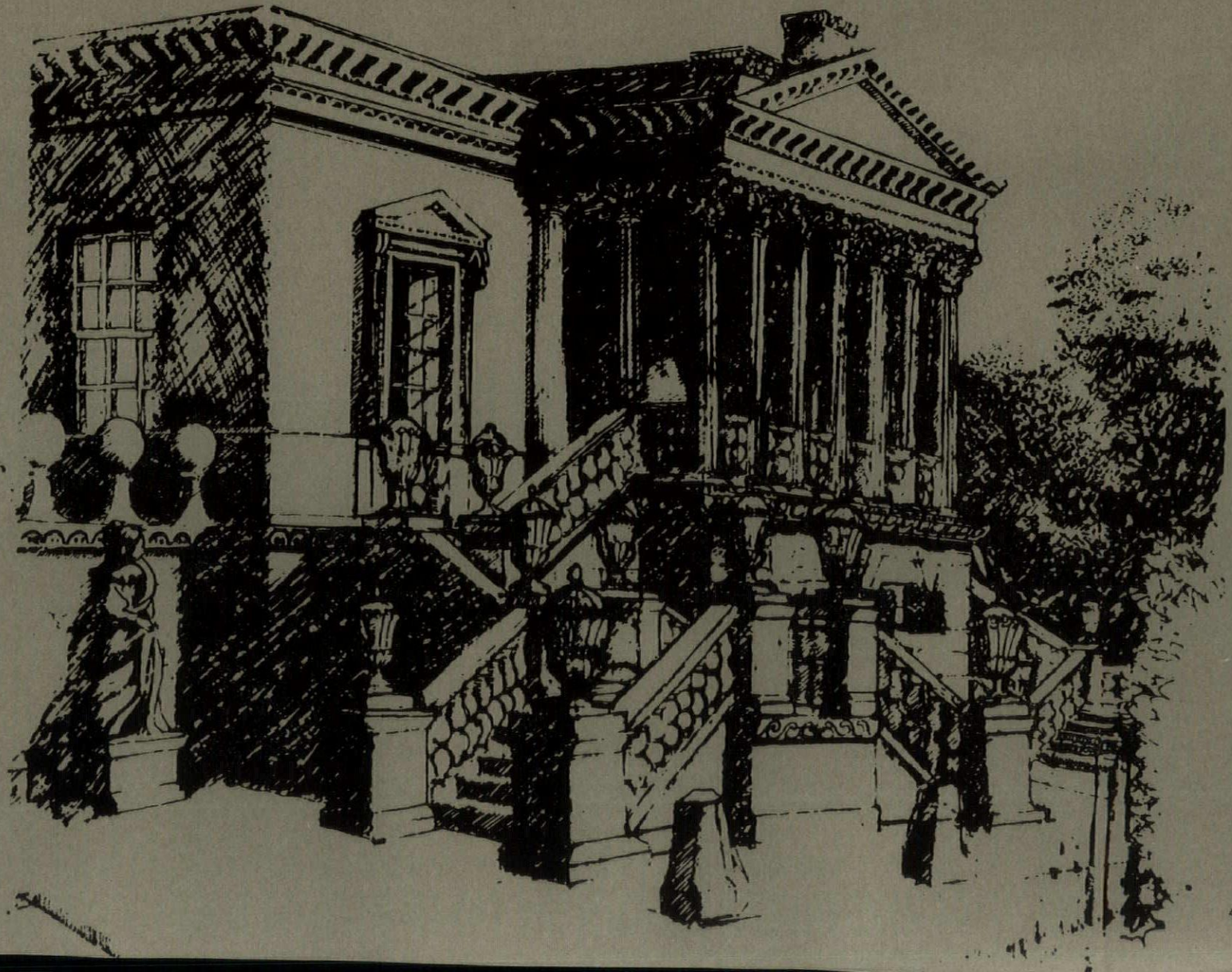


CONTEMPORARY DRAUGHTSMEN

25

Anthony Phillips, who did the drawings of Chiswick House on this page and the landscapes overleaf, was born in Bournemouth in 1945 and was educated at Latymer Upper School, Hammersmith. He studied at the Chelsea School of Art for four years and is now working as a freelance illustrator and designer.

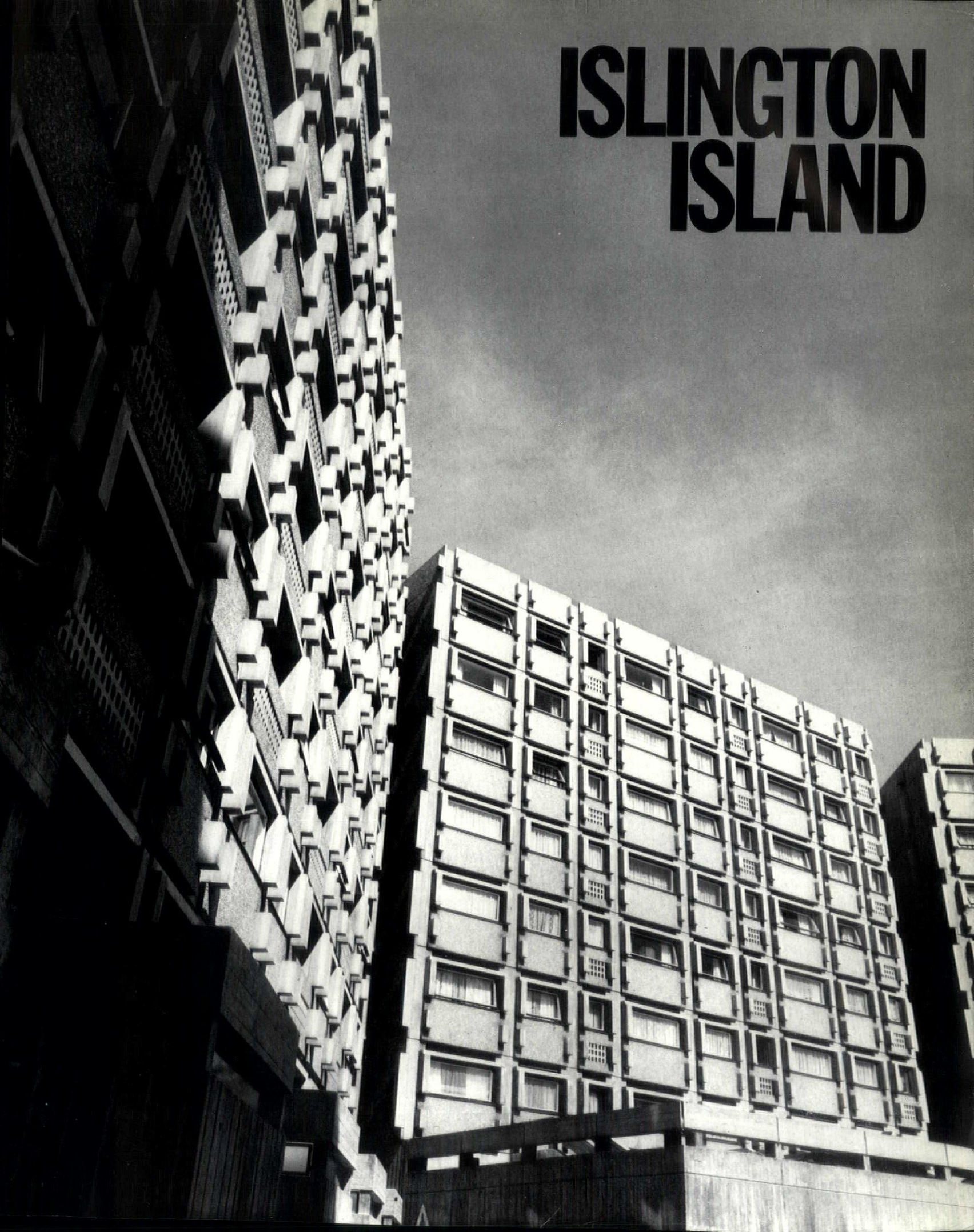




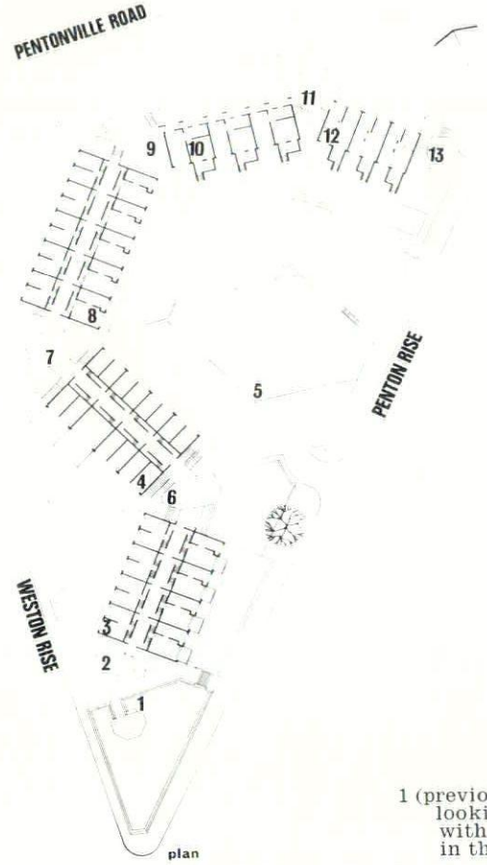


CONTEMPORARY DRAUGHTSMEN: 25 ANTHONY PHILLIPS




ISLINGTON
ISLAND

HOUSING AT ISLINGTON ARCHITECTS: HOWELL, KILLICK, PARTRIDGE AND AMIS



key
1, toddler's play space
2, tower 1
3, block A
4, block B
5, kick-about with garaging under
6, tower 2
7, tower 3
8, block C
9, tower 4
10, block D
11, tower 5
12, block E
13, tower 6

plan

1 (previous page), looking north with block D, in the centre.

Weston Rise housing estate has been built for the Greater London Council and occupies an island site, triangular in shape, with its base line on the southern side of Pentonville Road opposite St. James's Church. It is bounded on the east by Penton Rise and on the west by Weston Rise. The site rises some 50 ft. from the junction of these two roads with King's Cross road at the southernmost corner.

All the surrounding roads are at present one-way streets, and Pentonville Road and Penton Rise are designed for 4-lane traffic. Both these roads pose problems related to traffic noise, but Weston Rise itself is relatively quiet, the bottling factory on its west side having now been closed down.

The council, who commissioned the scheme early in 1963, required the site to be developed at a density of 200 persons to the acre, and also wished for a full range of family dwellings with a higher than usual percentage of one- and two-room flats for old persons. Because of the method of calculating density by including a proportion of the surrounding roads, an island site such as this one has a real density much higher than its calculation suggests. In this case the real density is over 270.

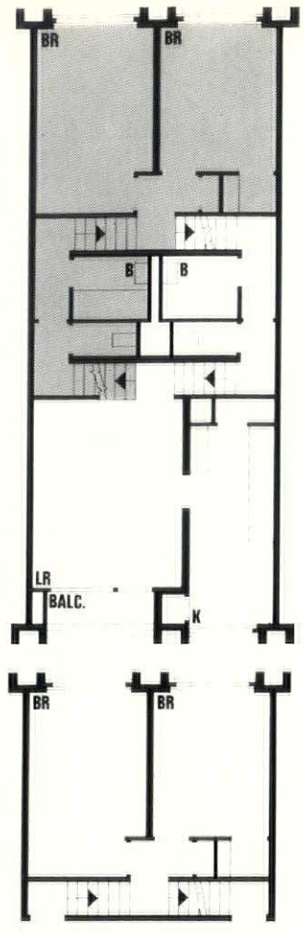
Town-planning restrictions ruled out the use of high buildings, and because of this and the high density it was decided to use narrow-fronted scissor-type maisonettes in combination with access-gallery flats. The scissor-type had the added advantage that similar dwellings could be used on a wide range of aspects and this enabled a free arrangement of permitted linked blocks. The main line of these blocks is biased to the quieter road, Weston Rise, and two linked access-gallery blocks containing one- and two-room flats face south across the site and back on to Pentonville Road. The access galleries, which have only kitchens and bathrooms looking on to them, act as a buffer for the noise of Pentonville Road. Raised terraces for the old people look out over the site to the south.

In all there are five blocks, linked together by towers which contain lifts, staircases, laundry rooms, drying rooms and refuse chutes. The highest block is at the lowest part of the site, and the



2





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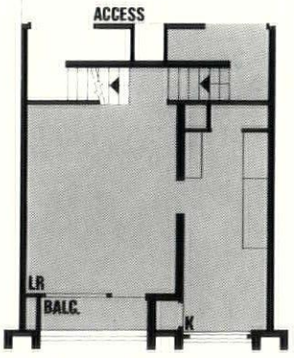


5

plans of typical interlocking flats: (top) upper level, with bathrooms, living room, kitchen and bedrooms and lower level (above) with access corridor, living room, kitchen and bedrooms; tinted areas belong to same flat.



HOUSING AT ISLINGTON PHOTOGRAPHS BY SNOEK-WESTWOOD

4, Penton Rise bounds the east side of the group. 5, junction of two blocks, showing projecting vertical cladding support units.

heights of successive blocks are reduced as the ground rises, creating a level roof-line. Linking the blocks together enables old people coming from King's Cross Road to enter at the lower end of the estate, take a lift to their floor and then walk through to their flat, under cover and on the level, without having to climb the steep hill.

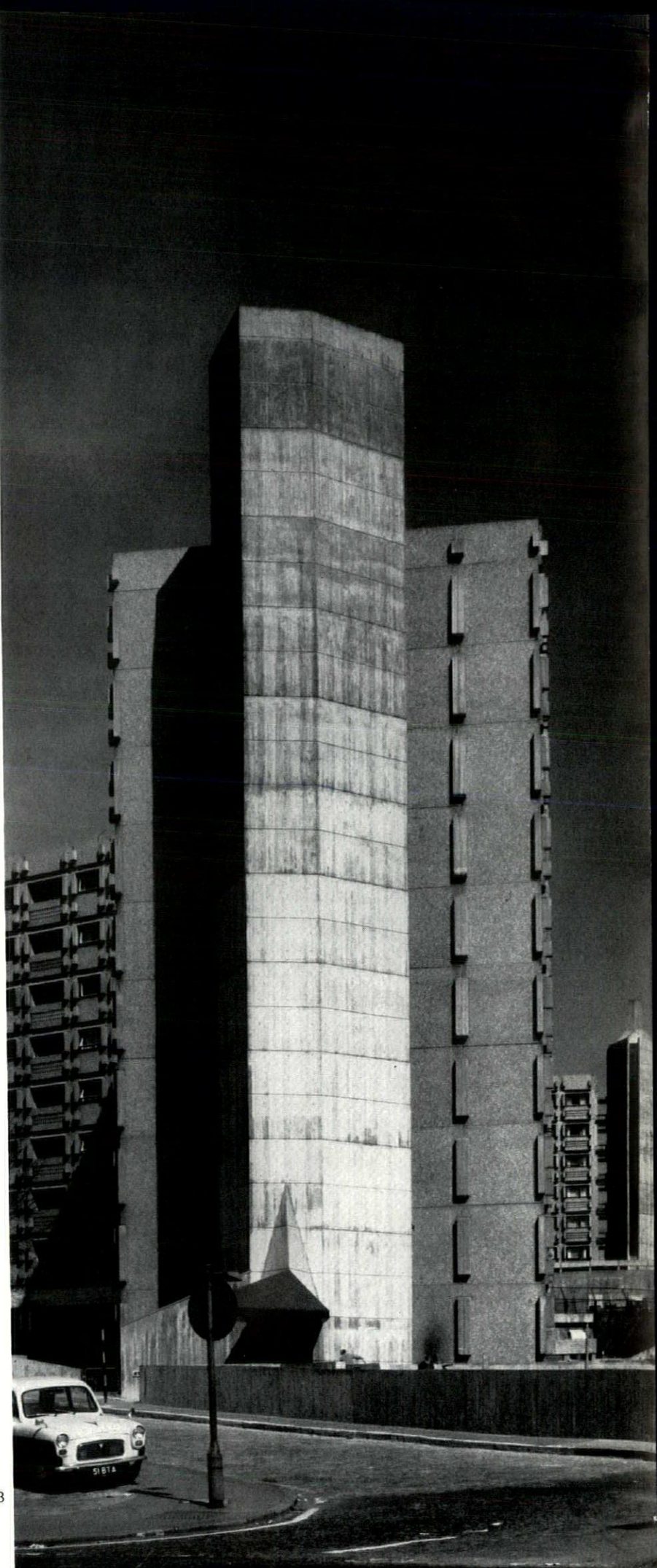
In the central space of the scheme a kick-about area for older children has been provided on the roof of an underground car park. This car park has been designed so that a further floor can be added in the area now occupied by the playground to give ultimately 100 per cent car provision for the family flats. The playground will then move up one floor. Another playground with fitted equipment has been provided immediately to the south of the garage, and this will be used by younger children. Toddlers have been catered for in another enclosed playground next to the southern entrance to the estate.

Each of the main blocks has a structure of in situ concrete floors and loadbearing brick walls, using Calculon brickwork. Vertical cladding support units, which are precast in storey heights, form virtual columns at the outside ends of each brick cross-wall and are tied into the floor slabs with projecting bars. They are also connected to each other vertically by reinforcement grouted into holes in adjoining units. Although not designed to support the floors, which span between the brick cross-walls, the cladding support units give additional stability to the structure and would support the building above should a section of cross-wall be blown out. Similarly, at the gable ends the precast concrete support units for the large cladding panels were not planned to carry the floor loads, but would be able to do so should the brickwork to the gable walls be dislodged.

The cladding system was designed to take account of the various situations of each block without a change of scale and without inconsistent elements. Scissor blocks tend to have one side entirely of bedroom windows and the other a mixture of living-room balconies and kitchen windows. Access-gallery blocks have continuous balconies on one side and living-room and bedroom windows on the other. There were therefore four principal situations, and these have been catered for by using a standard-height precast panel with an exposed granite aggregate finish for both the underwindow structure and the balcony situations. In the latter case the panel is perforated by a close pattern of small holes. In addition to this a precast transome member runs through to give clerestory ventilation to windows and more enclosure to the balconies. Both the transomes and the under-window panels are supported on corbels formed on precast concrete vertical members at the ends of the cross walls.

The towers, links and the site retaining walls are formed of in situ reinforced concrete left with boardmarks from the shutter.

All the dwellings are centrally heated from a boiler house at the high end of the site and the flue is carried up as a continuation of the last staircase tower. Forced warm air convector units are used in the living-rooms and unassisted convectors in the bedrooms. Domestic hot water is supplied by calorifiers in each dwelling and these are fitted with electric immersion heaters.



2 (facing page), the whole group seen from municipal gardens on the other side of Penton Rise.
3, southern end of site.

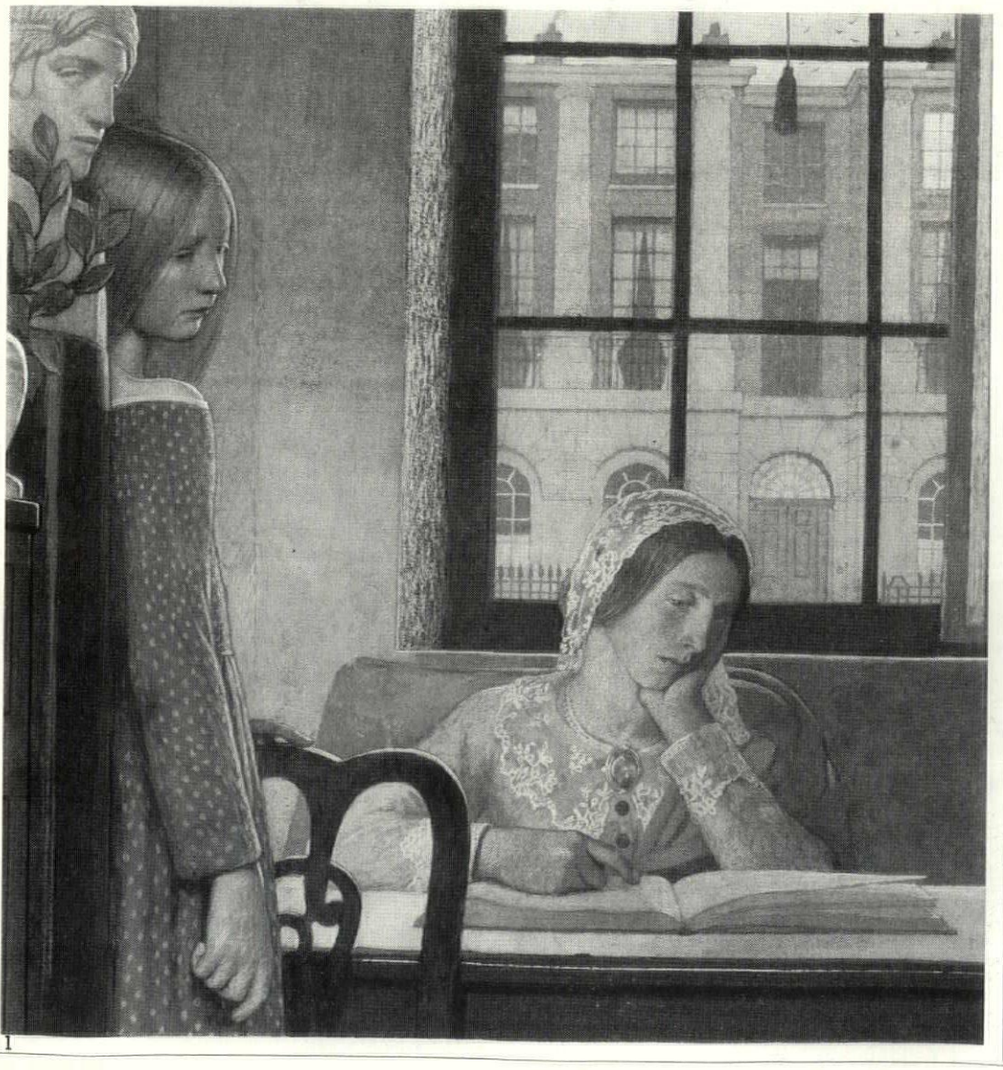
SENTIMENT SET FREE

Robert Melville

When I wrote about the Bicentenary Exhibition of the Royal Academy earlier this year (AR March 1969) I included a note on Frederick Cayley Robinson's *In Depth of Winter* and reproduced the picture. I mentioned that it was probably painted in 1900, that it reduced four young ladies to a state bordering on hibernation and suggested that it brought Victorian painting to a sad, quiet, neurotic close. Actually, Cayley Robinson went on painting in more or less the same vein for another twenty-seven years. I don't know to what extent his reappearance in the Academy show was responsible for the revival of interest in Cayley Robinson, but suddenly during the summer his paintings were an outstanding feature of exhibitions at two London galleries. In June, eight of his works were in an exhibition of drawings and paintings by English book illustrators held at the Hartnoll and Eyre gallery in Duke Street, St. James's, and in July thirty-four works, including the Academy picture, were in an exhibition at the Fine Art Society which was given the covering title of 'The Earthly Paradise.'

The atmosphere of poetic melancholy got out of hand when he painted *In Depth of Winter*, and the result was a bit absurd but curiously impressive. The droop of the four girls suggested play-acting—a charade of despair—yet at the same time they seemed to be in a genuine state of torpor, and reminded me of nothing so much as the description in Herman Melville's *Redburn* of a respectably dressed woman and her daughters quietly dying of starvation in a Liverpool basement. *Evening in London*, 1, painted twenty years later, is very similar in spirit and technique, but achieves the brooding sadness which seems to have been the painter's intention in the earlier picture. The stillness and silence is effective; the young girl responds in terms of a sympathetic dejection to the woman's sad reverie and is fully aware of its cause. It's an illustration of a psychological situation, made at a time when the main stream of painting had long since gone in a totally different direction. If we are now less inclined to treat such works with the contempt they never deserved, it's probably because some of our younger artists are rediscovering the poetry of modest subject-matter.

There were examples of Cayley Robinson's work in Birmingham City Art Gallery when, many years ago, I was a regular visitor there. I don't recall ever seeing them, but no one who frequented the gallery at that time could fail to be aware of Joseph Southall, the Birmingham artist whose large tempera painting of Corporation Street stood at the head of the main staircase; and when I saw Robinson's *The Long Journey*, 2, at the Fine Art Society, the careful drawing, the everyday subject-matter and the clear, pale, transparent colour reminded me vividly of the Southall picture. Southall's *Fishermen and Boat*, 3, discloses the relationship whilst pointing up the differences. Southall's realism is very close to that of Holman Hunt, and, as in the painting of the crowd in Corporation Street, the attempt to depict figures in movement is wooden and implausible. Robinson's realism is more poetic and introvert, and although the figures and the



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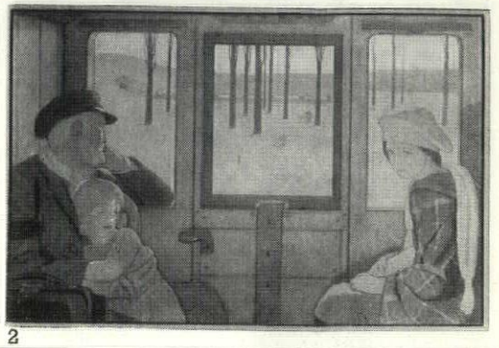
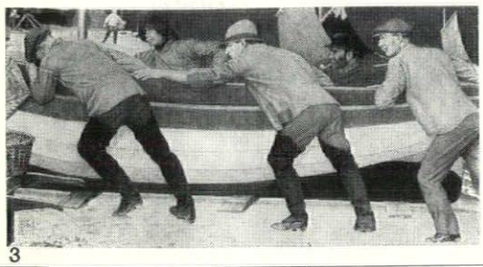


2

Frederick Cayley Robinson: 1, '*Evening in London*' 2, '*The Long Journey*'

details of the railway carriage are scarcely less meticulously observed that the figures and gear in the Southall, the landscape seen through the carriage window is an Art Nouveau invention.



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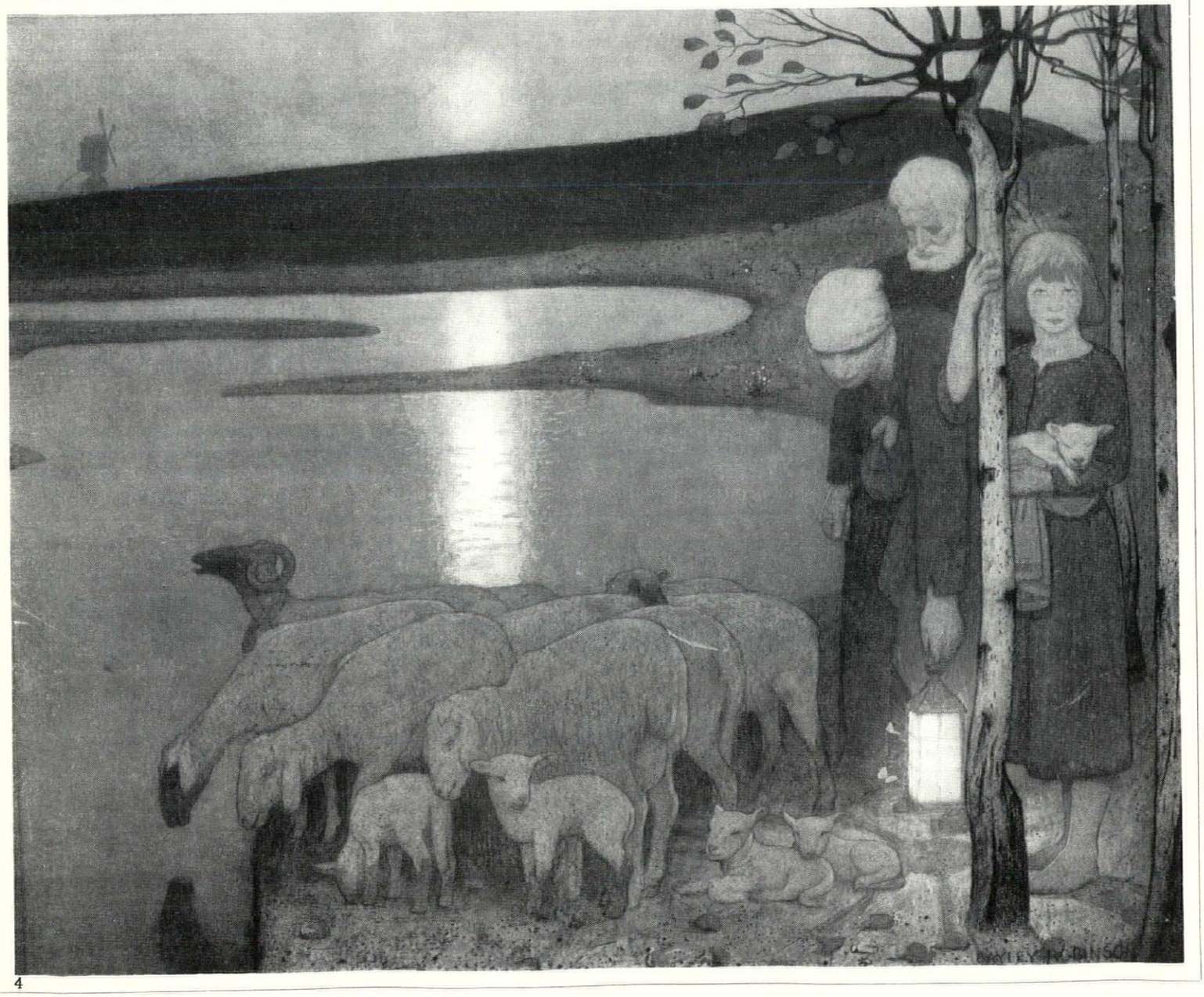
Charlotte Gear wrote a fascinating account of the Birmingham Group, active in the first quarter of the century, for the exhibition at the Fine Art Society, which was largely devoted to the work of its members but included Maxwell Armfield, who exhibited with the group in 1907, and Cayley Robinson, who was connected with it through his membership of the Society of Tempera Painters. Southall, who led the tempera revival, was a founder member of the Society.

Mrs. Gear states that Robinson studied for a time at the Académie Julian under Bouguereau, and that his stay in Paris brought him into contact with the work of Puvis de Chavannes, 'one of the few artists to whom he owes an obvious debt.' I think she is right to stress the special quality of his quietistic domestic scenes and to claim for him an intensely personal vision. Nevertheless his work seems full of faint echoes, reminding one of the Pre-Raphaelites, of the pastoralism of Blake's followers, of the Italian primitives. The child in *The Long Journey* who has tucked her hand into the sleeve of the old sailor to keep it warm and to enable the painter to avoid the task of drawing it (he was weak on hands), suggests

Joseph Edward Southall: 3, '*Fishermen and Boat*'. *Frederick Cayley Robinson:* 4, '*Pastoral*'



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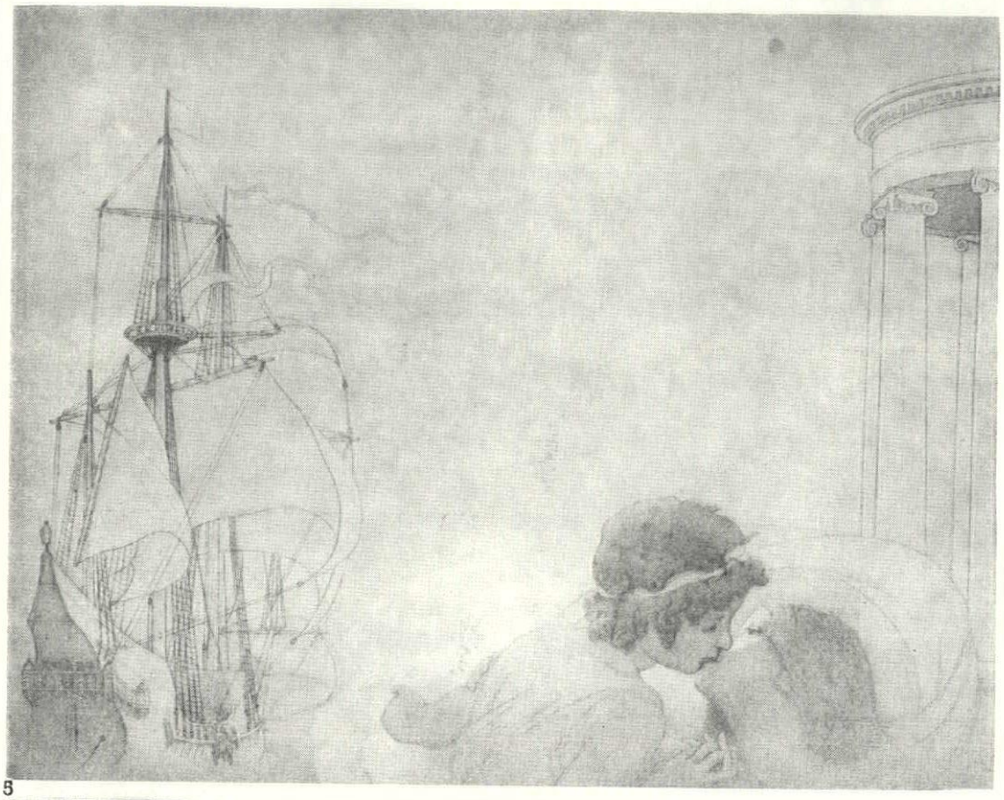
that he had a good look at early Renaissance angels. The moon and its column-like reflection in water in *Pastoral—June* 1923, 4, brings to mind Munch's striking use of the same phenomenon; but the dainty peaceableness and the date are indicative of his utter remoteness from the major schools of the time. It represents a small personal development of Pre-Raphaelitism aided by Art Nouveau trimmings. Incidentally, the



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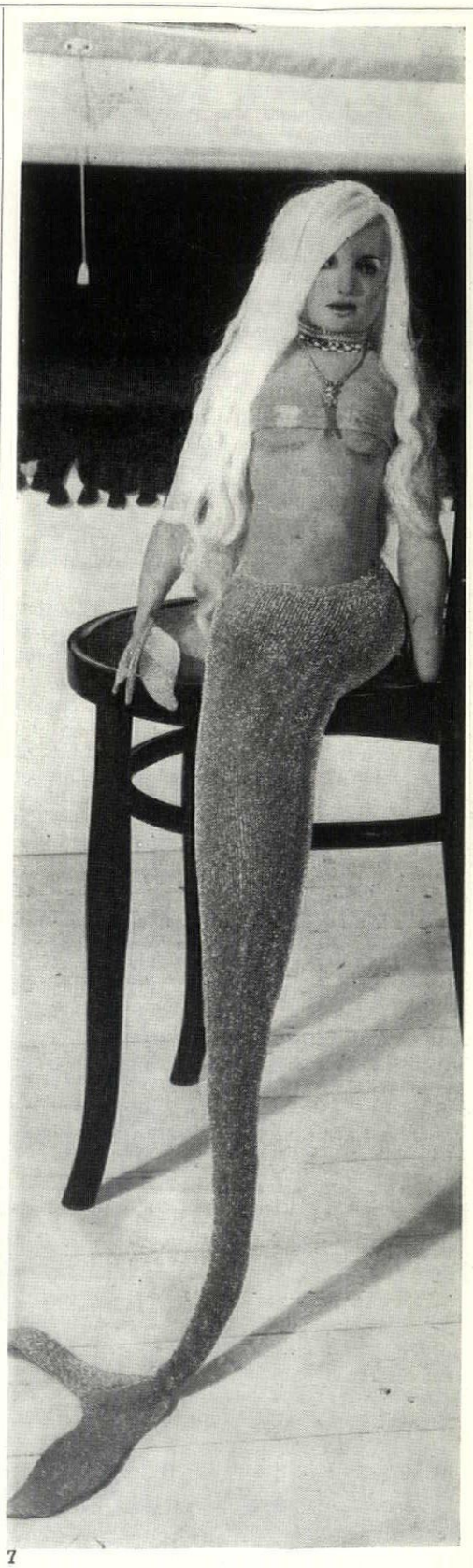


7

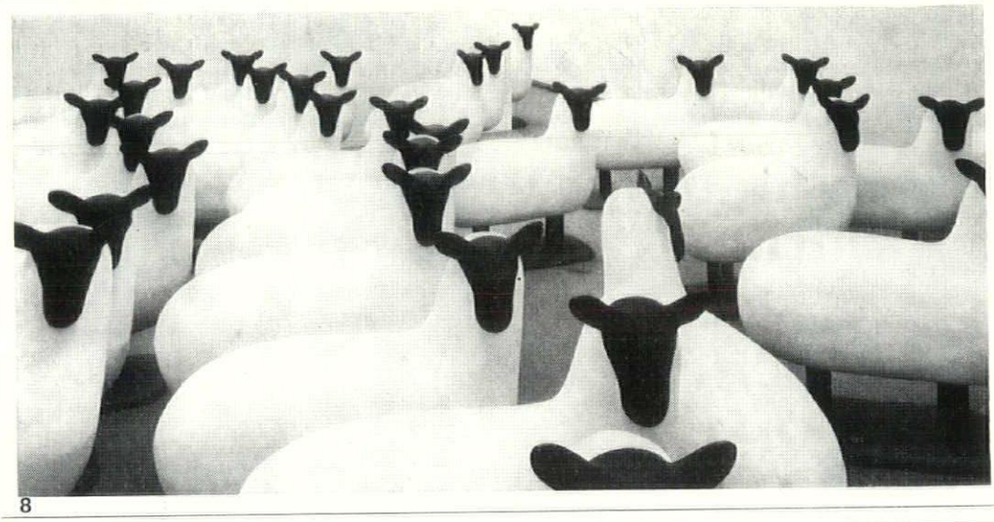
Frederick Cayley Robinson: 5, *'The Blue Bird'*, 6: *'The Capture'*. *Jann Haworth*: 7, *'Small Mermaid'*

shore line and the dark hill are identical with the background of another painting in the same show—an example of Cayley Robinson's rather extraordinary way of using the same motif again and again, sometimes over a period of many years. If he hasn't put a date on the picture it's practically impossible to tell when it was done.

His illustration for Maeterlinck's *The Blue Bird*, 5, is shockingly pretty, and *The Capture*, 6, is rather too sweet and gentle for our time. All the same, it's very well composed, and he uses close-ups of domestic objects with something of the aplomb of the Nicholsons (William and Ben). The girl glancing through the window to catch the eye of someone in the room and exhibit the reluctant pet she has rounded up, is a charming conception, and the economy with which an autumn gale is evoked is quite exemplary.

For many years, this world of sentiment, mild lyricism, gentle fairy tale, melancholy dream and vestigial pastoral went underground, but there are signs that it is coming to the surface again, transformed by artists with sharper eyes, cooler sentiments, different anxieties and more urgent appetites. With her effigies, Jann Haworth is casting a spell over some of the untouchables of fairyland and legend, 7, and provoking shudders of admiration for her remorseless visions of sweetness. Nicholas Monro's notorious flock of fibreglass sheep, 8, is an ironical renewal of an image firmly implanted in the English conception of an earthly paradise, which arouses laughter without eradicating the sense of loss. Peter Blake's superb portrait *Boy (Greystoke) and Palm Tree*, 9, encompasses an adolescent dream of love as economically as Robinson's evocation of an autumn gale; and his night sky acknowledges the sumptuous use of blue in Maxwell Armfield's almost forgotten temperas. The paintings of E. Box, as haunting as the poetry of Walter de la Mare, turn the memory of another England into a suddenly deserted garden, ominously alluring, 10.

8, *Nicholas Monro's flock of sheep. Peter Blake:* 9, *'Boy (Greystoke) and Palm Tree'. E. Box:* 10, *'Deserted Garden'*



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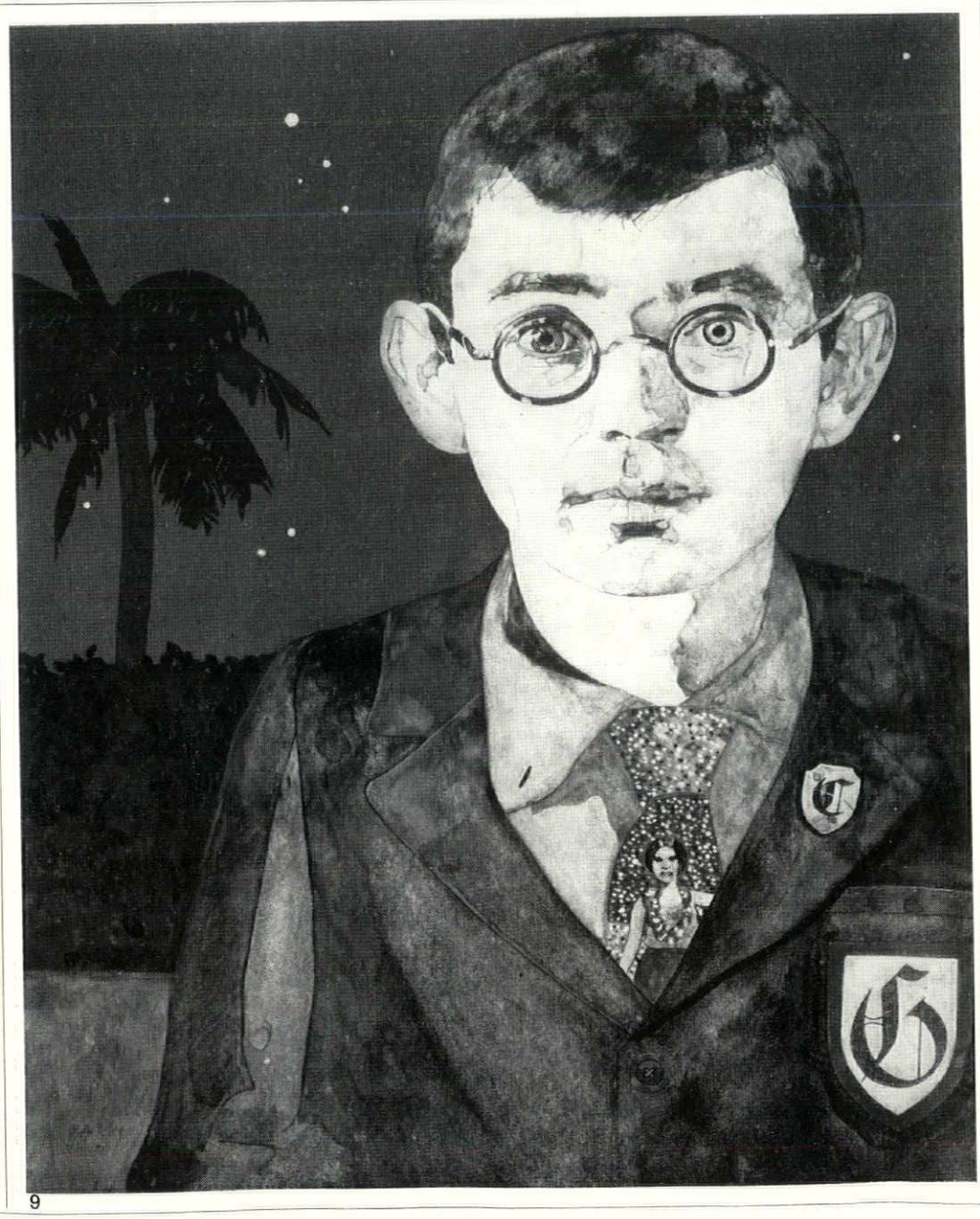

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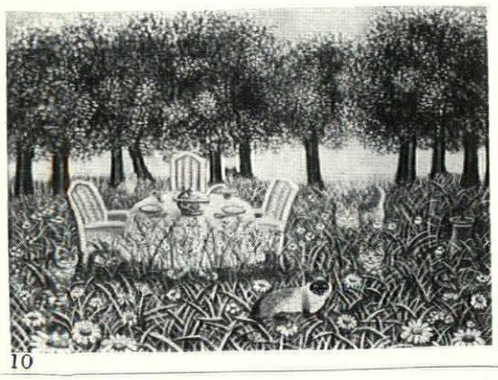


10

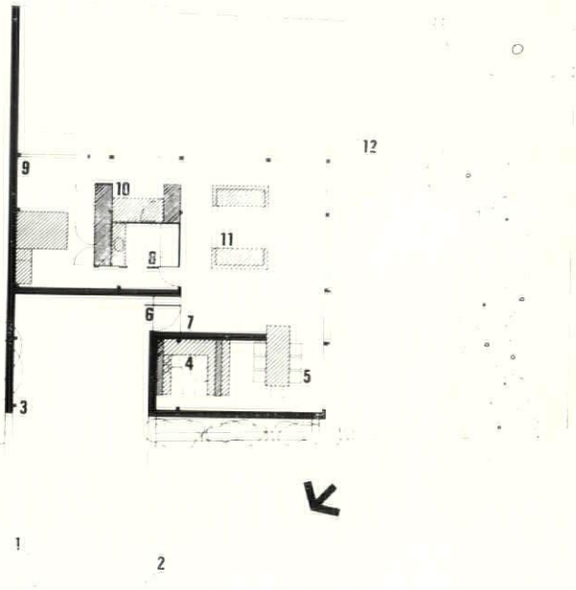
BARNES HOUSE

HOUSE AT BARNES, LONDON
ARCHITECT: TIMOTHY RENDLE

This is a low-cost house for a bachelor business-man who had acquired half of the long garden of an older house. A new access to the site had to be made by forming a bridge (of pre-stressed concrete beams) over Beverley Brook which borders the site. The accommodation comprises living-room, dining area, kitchen with sit-up bar, main and guest sleeping areas and bathroom, and has been planned openly with views through the maximum length and breadth of the house, but with some doors that swing out from flush recesses when required.

The construction is timber frame with laminated timber main beams and plain exposed joist and boarded ceilings. 7 ft. high brick walls screen the north-east and north-west elevations where there is no view. Electric off-peak under-floor heating is provided throughout.

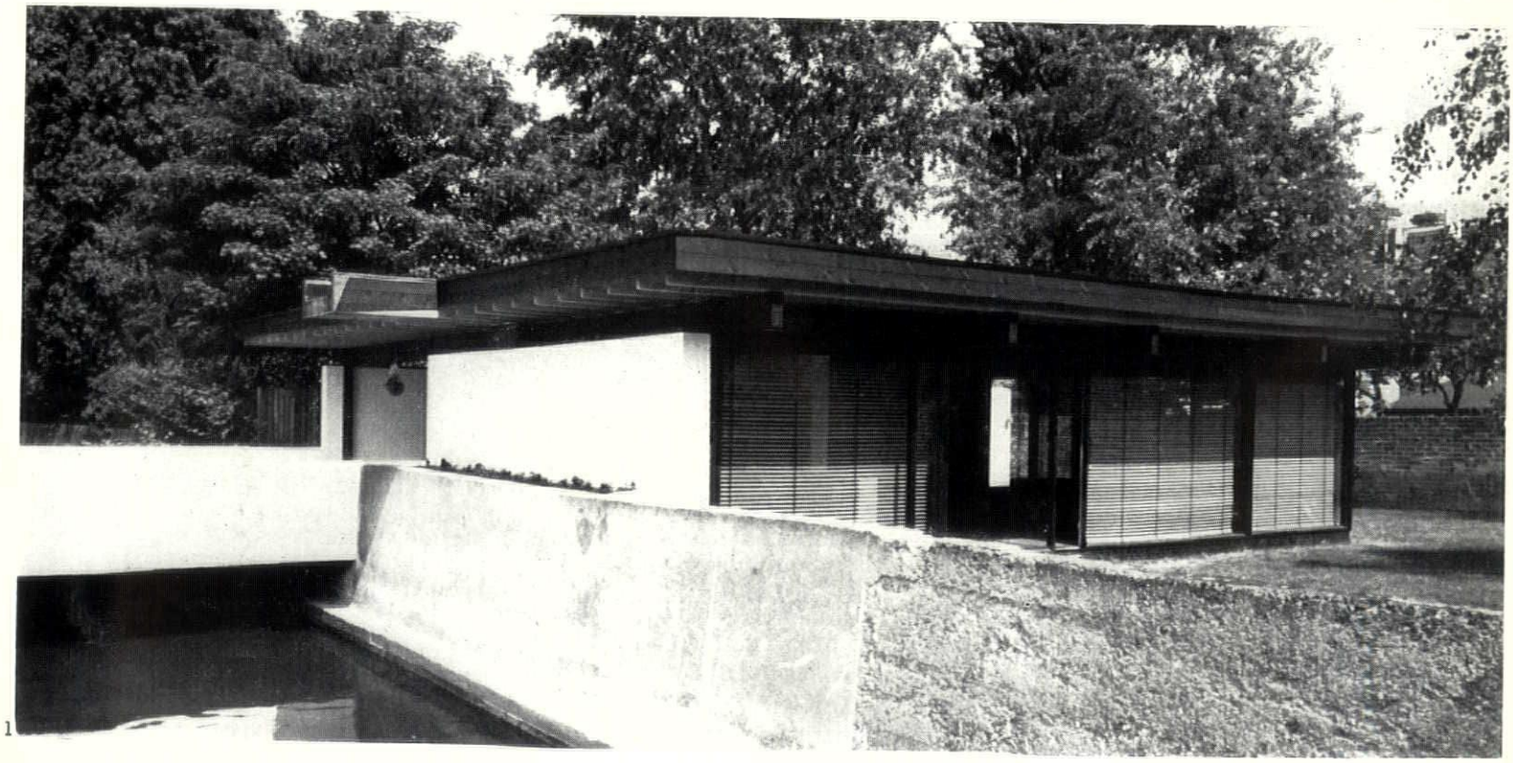
The interior finishes are black stained timber for the basic structure, natural sealed softwood joist and boarded ceiling and plywood partitions, oiled beech kitchen work tops and golden brown 9 in. by 4½ in. quarry-tile floors, except in the sitting area which is sunk two steps down and has a long-pile white rug designed and made by Peter Collingwood.



plan

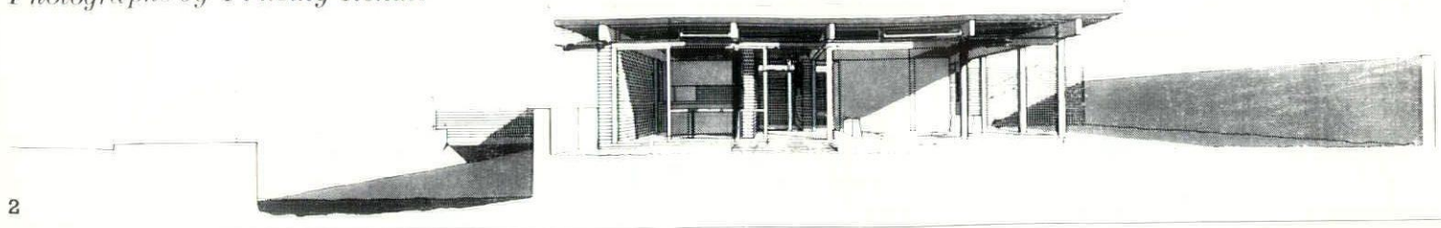
key
1, approach bridge
2, Beverley Brook
3, car port
4, kitchen
5, dining
6, entrance
7, lining
8, bathroom
9, main bedroom
10, guest bedroom
11, sunken seating
12, garden

1, looking from west with entrance bridge over Beverley Brook.



HOUSE AT BARNES, LONDON

Photographs by Timothy Rendle



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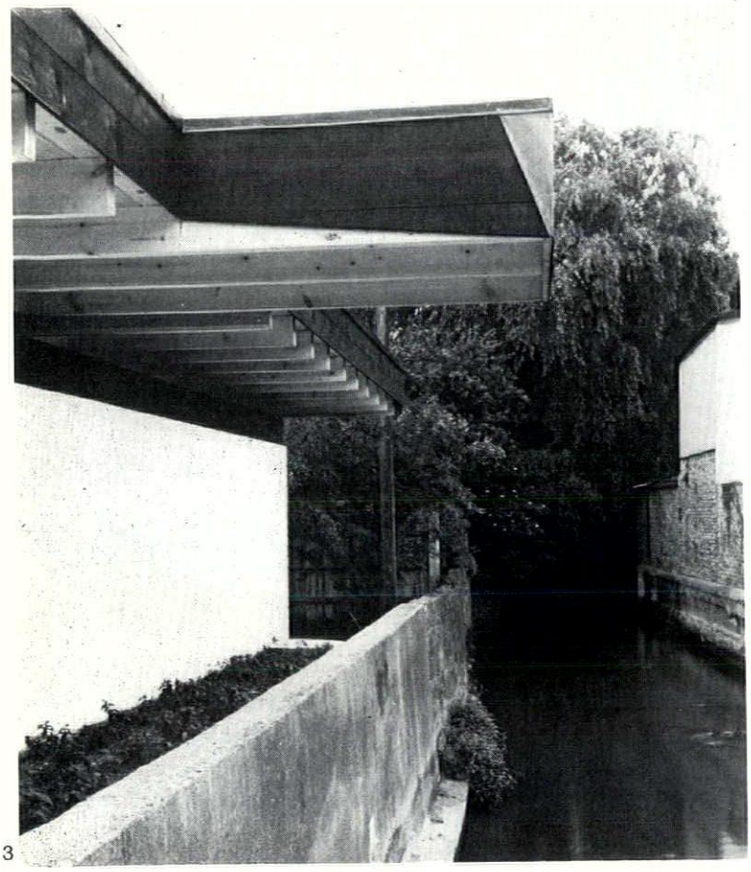

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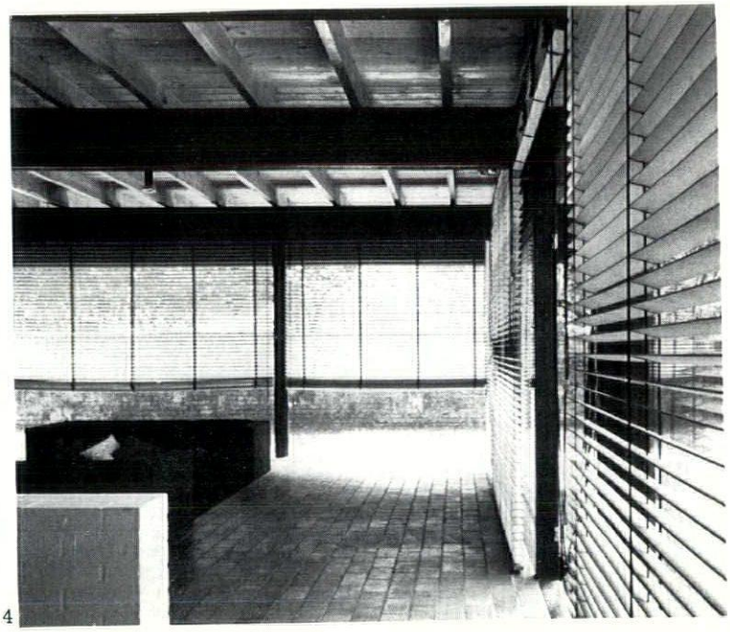
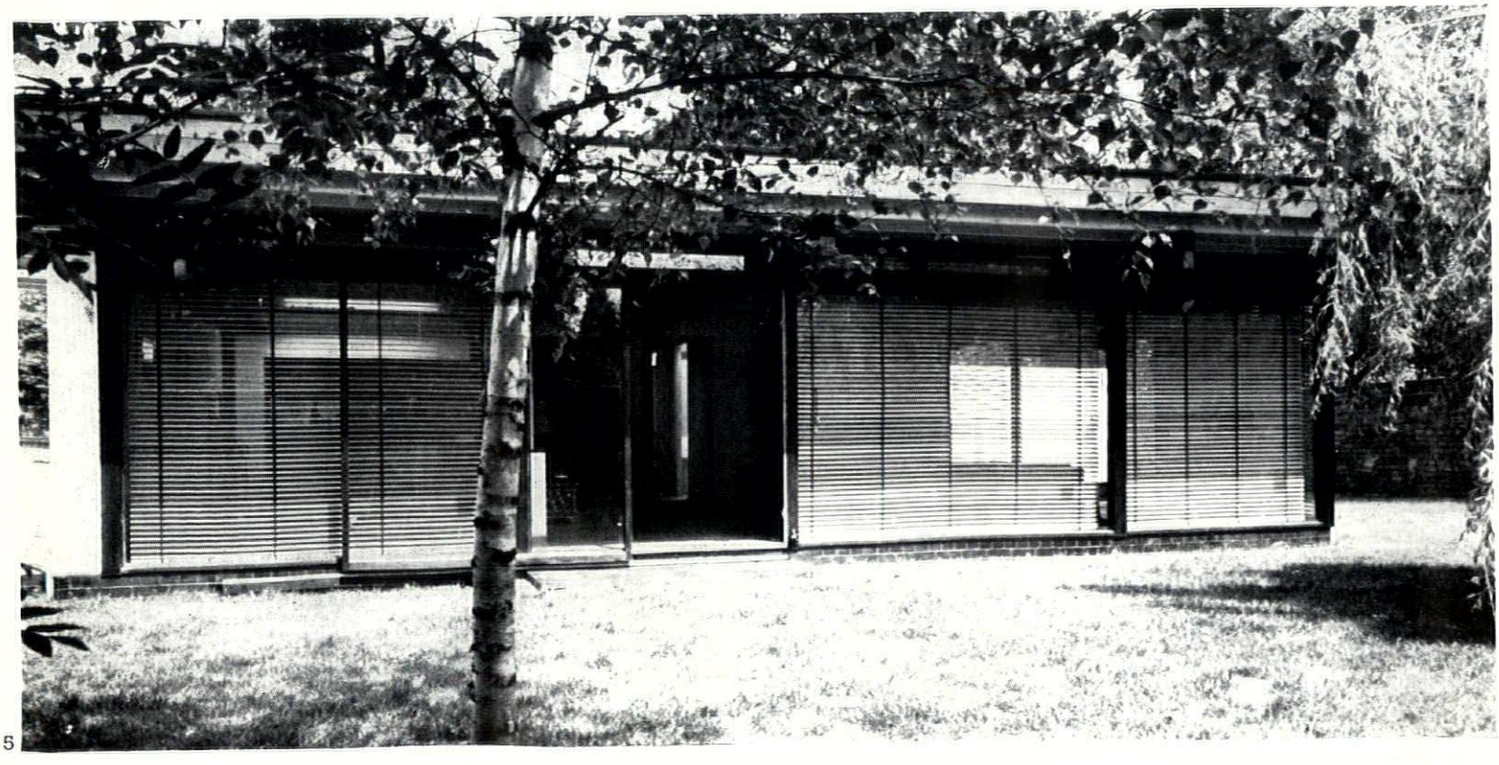


4

2, cut-away perspective from the south-west. 3, from the entrance bridge, showing the rain-water spout over Beverley Brook. 4, main living area with sunken seating on the left. 5, south-west elevation, from the garden.



5

AN UNKNOWN ALBERT MEMORIAL

The following note introduces readers to two architects: Professor Donaldson of London and J. I. Hittorf of Paris. They were friends, and when Hittorf died in 1867 Donaldson wrote his obituary for the *Transactions* of the RIBA. Donaldson was a learned architect. Kerr in 1883 praised his 'lofty character' and named him, together with Cockerell and Basevi, as the true archeologist-architect. Hence *The Ecclesiologist* called him a 'practitioner in heathen edifices'. But he was an organizer more than a practising architect, and also a writer and lecturer more than an architect, though he built Dr. Williams's Library, Holy Trinity church, Brompton, and part of University College. The Prince of Wales called him 'father of the Institute and of the profession' for the decisive share he had in the building up of the Institute. He was one of the regional secretaries and later secretary for foreign relations. He had much to do with the pompous, domed pre-Paxton design for the palace of the 1851 exhibition, and he was also closely connected with the Albert Memorial.

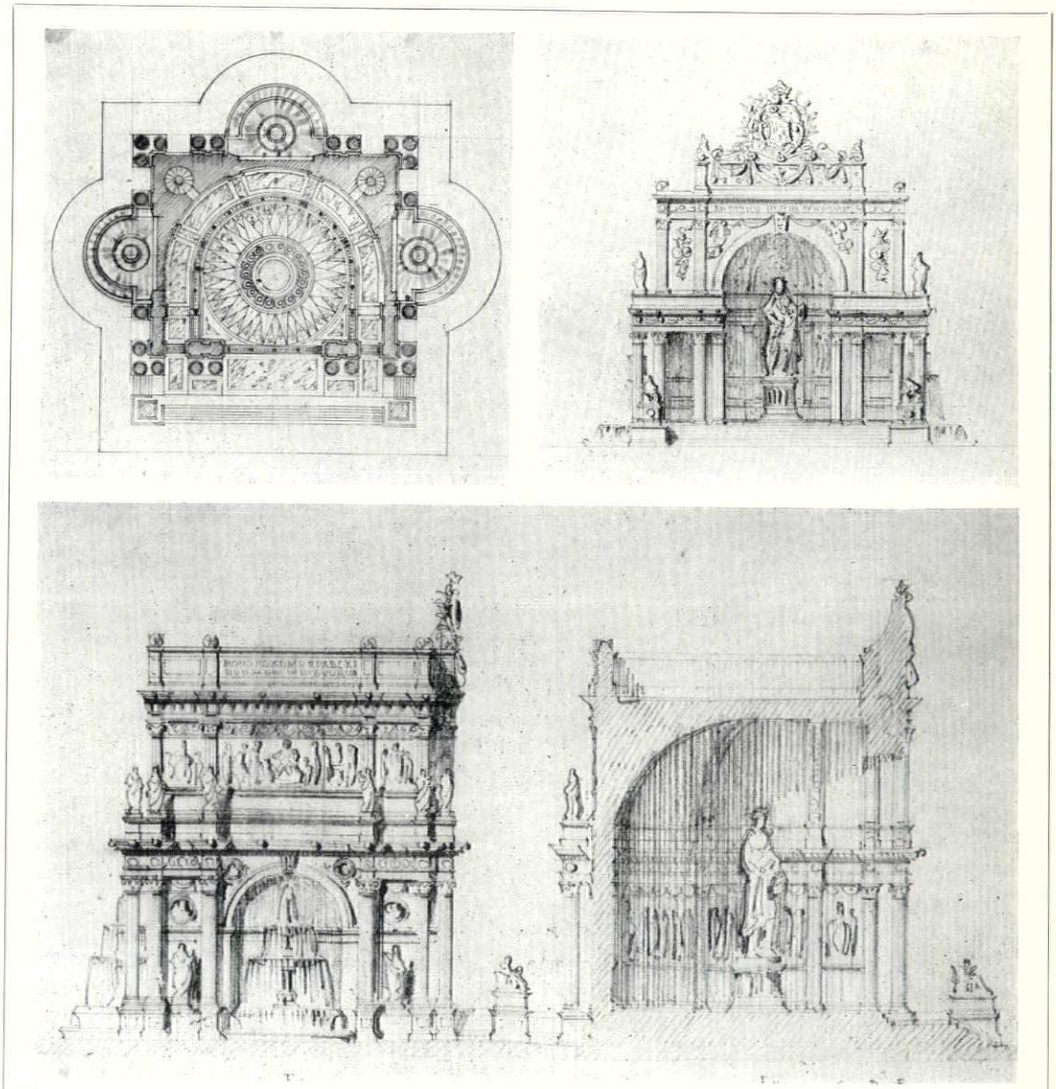
The original committee asked seven architects for advice about the Albert Memorial. Donaldson was one of them, and he, together with four others of the seven, submitted designs. Scott's was chosen.

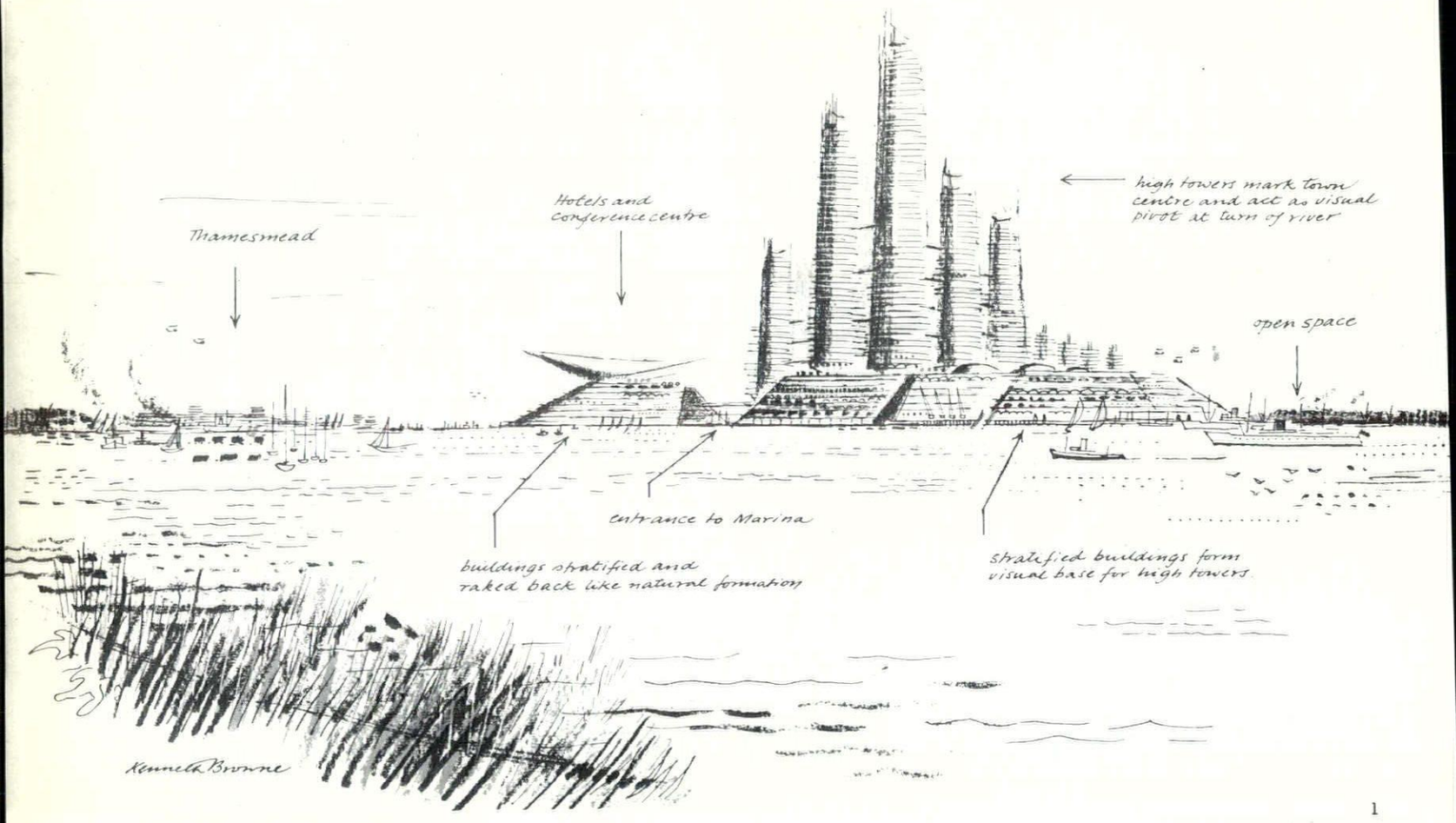
Hittorf was three years older than Donaldson He was born at Cologne, but attended the École des Beaux Arts and settled down in Paris. He travelled in Italy and Sicily in 1822–3, and in Sicily discovered the polychromy of ancient Greek architecture and sculpture. Donaldson had seen remains of colour yet earlier—on the so-called Theseum at Athens. Hittorf married the daughter of Lepère and completed his father-in-law's Notre Dame de Lorette with a new design of his own. His style was classical-cum-Italian, like Donaldson's, but his most interesting buildings are those in which iron is made use of, such as the Cirque des Champs Elysées of 1840–7 and the Gare du Nord of 1859–61.

The Hittorf archives at Cologne, recently examined by Dr. Karl Hammer for his comprehensive monograph on Hittorf (Stuttgart 1968), contain among many other interesting things drawings of engineering works in England seen by Hittorf on a journey in 1820 and also—a great surprise indeed—drawings for the Albert Memorial dated 1862. These are dedicated to: 'A T. L. Donaldson, *son ancien et devoué ami*'.

Dr. Hammer in a letter drew my attention to them, and I had them photographed. This is an appropriate time to make them public since in 1969 we are celebrating the 150th anniversary of Prince Albert's birth. Hittorf's designs were not commissioned, as far as we know, and so must be regarded as a *jeu d'esprit*. They are in a rich Cinquecento style not distant from that of the Gare du Nord. In detail the drawings show a number of variants, but they all have a front with columns and an apsed interior. Only the arrangement of the columns on the façade differs. The sides have fountains with different details, and the back in just one scheme has attached columns. In the elevation all the schemes have the essentials in common.

N. PEVSNER





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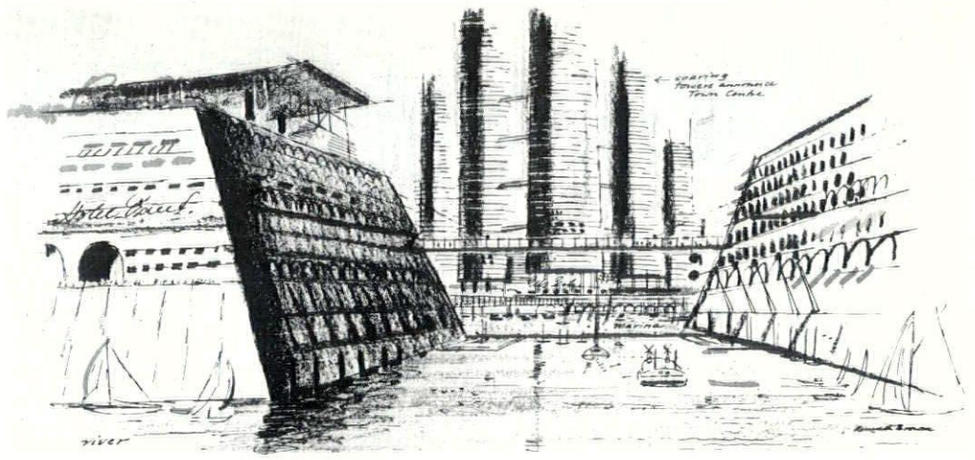
WATER CITY



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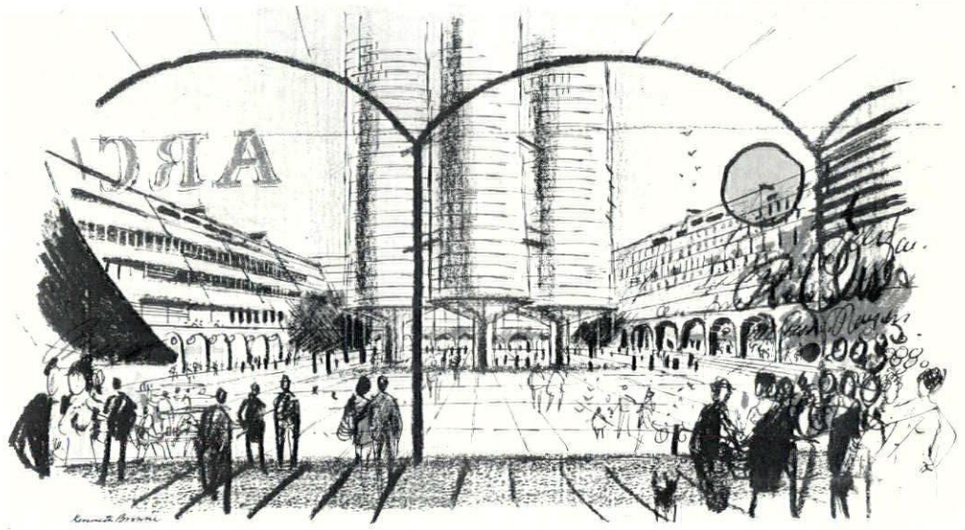


3

Any visitor who makes the journey up river from the Thames Estuary to London must feel that it is everything the approach to a great city should not be: dreary, derelict, flat as mud. This situation could be significantly changed if the scheme for a riverside city published earlier this year* were implemented.

Taking Rainham Marshes and the adjacent mud flats—the ultimate in depressing environment—the scheme shows how, from this semi-derelict place now used as a small-arms range by the Ministry of Defence and as a tip by the Greater London Council and the Port of London Authority, a new and exciting city could arise. On the north bank, and slightly down river from Thamesmead (the new GLC town under construc-

* *Water City on Rainham Marshes. By Derek Lovejoy & Partners in association with Kenneth Browne. May* 1969.

tion), the proposed city would combine with it to form just the sort of gateway to London which the capital needs; something to lift the spirits, not depress them.

The idea of using the site constructively originated from Allan Lee Williams, MP for Hornchurch, and from the Brixton School of Building. Subsequently the present highly imaginative scheme was prepared by Derek Lovejoy and Partners in association with Kenneth Browne who, as townscape consultant, explored the visual opportunities in a series of design sketches, some of which are shown here.

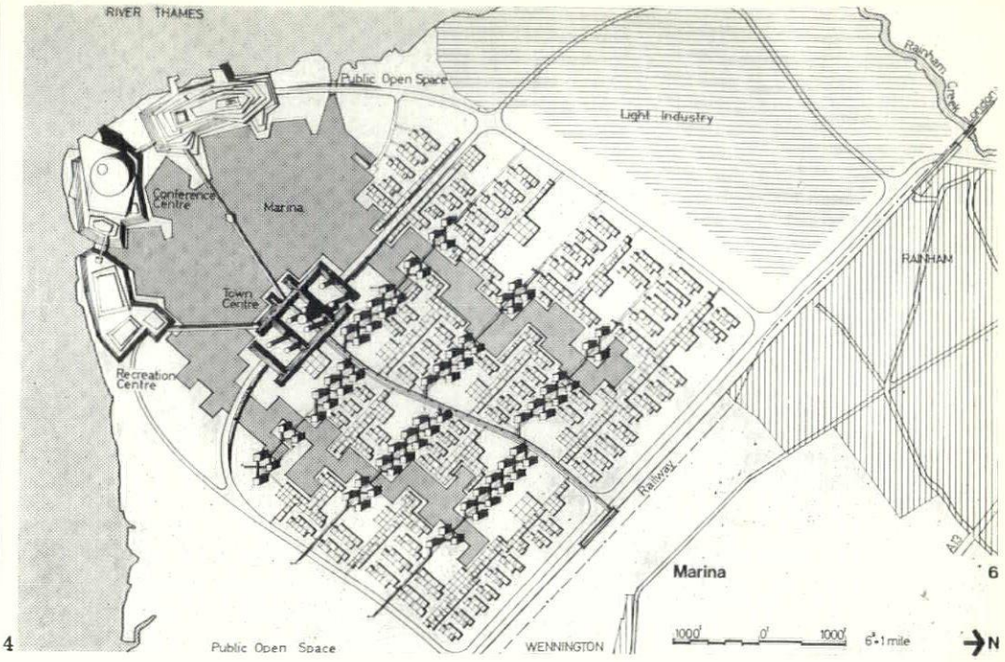
The riverside city, covering approximately 1,800 acres and housing 50,000, would be 15 miles from London and well situated for transport with the A13 and the Southend-Tilbury-London line adjacent; likewise the possibility of a mono-rail system between the capital and Thames Estuary terminals. There would also be an opportunity here for mass transportation by water—on a large scale (hydrofoil, hovercraft etc)—to central London, the Thames Estuary transport terminals and the Continent, and locally by waterbuses and taxis within the development itself. There would be helicopter landing platforms at the town centre.

The most striking feature of the scheme, of which a plan is shown in 4, is the extensive use of water, some 250 acres, including the excavation of a large marina to take seagoing yachts, plentiful mooring for small boats and a sheltered sailing basin with all maintenance facilities. Situated on a sharp bend in the river, the new city is envisaged as a sculptural entity dominated by the high towers of the town centre, which would act as a visual pivot at the turn of the river and be seen over a curving wall of stratified buildings raked back like a natural formation, 1 (facing page).

The entry to the marina, 2, would be highly dramatic, while in the adjacent city centre high office towers (with flats at the top) would rise from enclosed squares, 3. This centre, complete with entertainment and cultural facilities, would be traffic-free with the roads running beneath it. Housing would be related to a series of water squares with tunnels under the buildings acting as links between one kind of environment and another and framing the views. Spoil from excavation of the lakes would be used to raise the general level and to create artificial hills, giving a contrast between hard architecture and soft landscape.

As the plan shows, the marina would be enclosed on the river side by a crescent-shaped island containing a conference complex, large hotels and an international trade centre, linked to the city-centre by travalator. Adjacent would be a regional recreation centre. A certain amount of carefully designed and landscaped light industry would be sited to the west, an extension and tidying-up of existing industry and an adjunct to the proposed residential development.

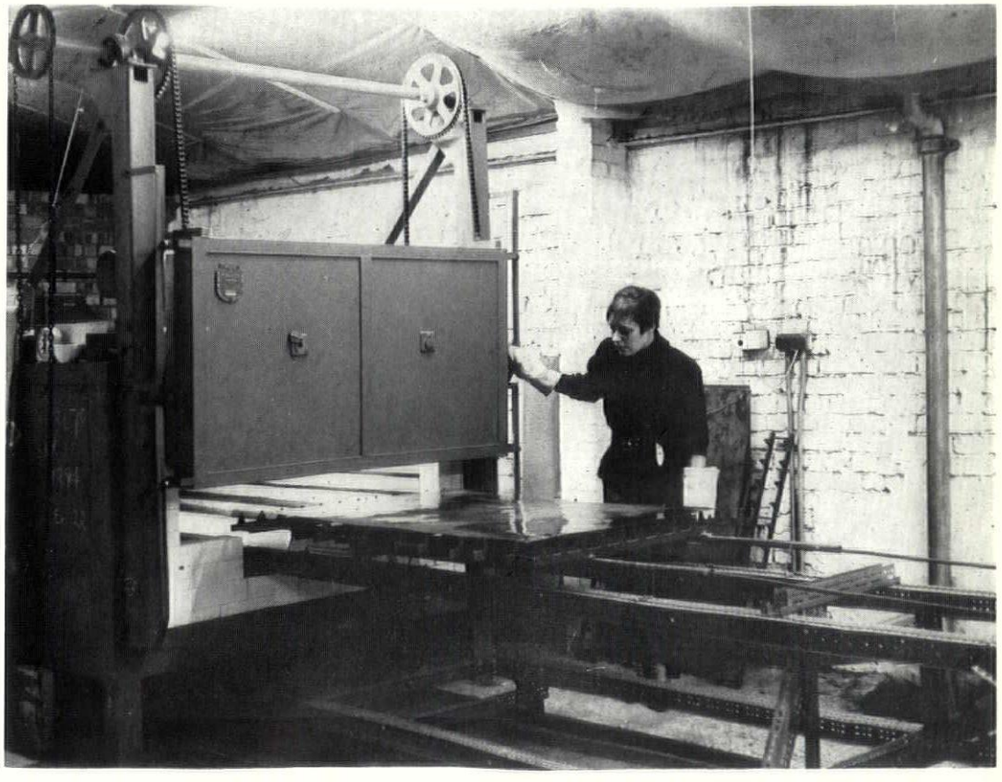
The next step is a detailed feasibility study and this requires public support. For it is only by following up schemes such as this, which capture the imagination and are townscaped from the outset, that we can hope to raise the present dreary level of new urban environments.



4

A SPECIALIST IN ENAMELLING

The term 'enamelling' means the decoration or colouring of metal by means of fusing on to it a layer of glass, applied in the form of a powder and melted into a uniform glossy surface. The association of this form of decoration with jewellery goes back in time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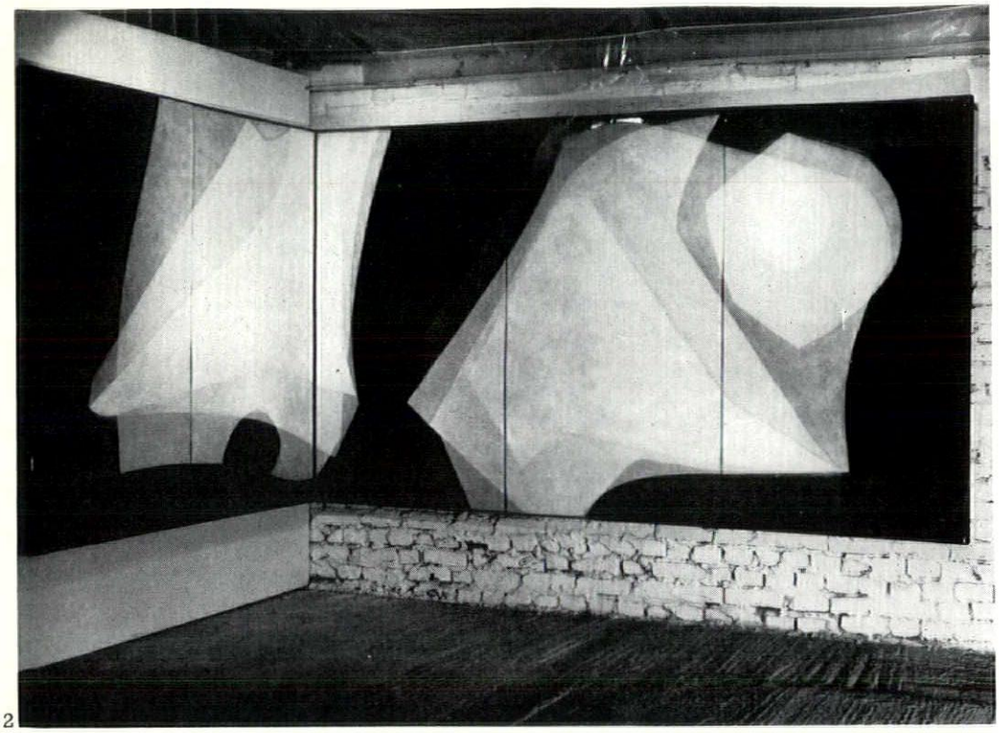
thousands of years, is generally well known and is recognizable for what it is even by those who are not particularly informed about the method by which the effect is produced. Within the last century, the theory of enamelling has been reconsidered,



2

and used in a completely different way, to produce a finish for kitchen equipment, screen-printed and stencilled signs and advertisements and, more lately still, for the exterior cladding of modern buildings in the form of panels, usually in single colours, and occasionally with a matt or semi-matt surface. The fact that this development of the material is basically the same as the original process used for jewellery is less well known, and the issue is confused by the word 'enamel' which has been so misused by manufacturers of paint. The definitions 'vitreous enamel' and 'porcelain enamel' have helped to convey the idea of glass.

Only in very rare cases is copper used as the basis for industrial enamelling. Modern enamel is nearly always on an iron base, the iron being of a special grade for the purpose. Aluminium is also being used, although the glass for this metal is necessarily of a low melting temperature and presents certain problems. The usual temperature range for fusing enamel to iron or copper is from 750 to 850 deg. C, which keeps the heat of the metal well below its melting-point.

These two approaches to the process—on the one hand, small objects highly decorated, on the other, many thousands of square feet in a single colour with an almost equally beautiful surface, have produced further ideas on the subject; murals in enamel have been used as decorations for the exteriors or interiors of new buildings. Miss Robin Banks, an artist specializing in this technique, some of whose work is shown here, obtained her own early experience in a factory which processed sinks, washing-machine bowls, and building panels amongst other things. Although she was concerned with the general production in the enamel works, she had her own small furnace, and the use of the industrial furnaces for bigger work.

'For an artist,' she says, 'there are very few ways, and none better, to learn the process; the setting up of one's own workshop is an expensive business, and furthermore the full information which can be given by experts both working and visiting the factory is invaluable. Having my own workshop now, however, has its own special advantages, one of them being that I am free to experiment and reject much more than when I was interrupting production to do so.'

During the four years of having her own workshop (in Fulham, 1) Robin Banks has made two very large murals, and a good many smaller ones for private houses. The first large one was made in conjunction with Sidney Nolan, the Australian painter, and is now in the Reserve Bank of Australia in Melbourne. It measures 66 ft. in length by 12 ft., and the design is a huge narrative drawing, the lines being enamelled in a kind of milky white on the dark burnt colour of the background. Only four colours were used to gain the effect of many, and from that time she has used a limited range of colours for each piece of work, with copper as the base metal.

Each of the firms which supply the enamel glazes—most of them are in the Potteries—give a choice of perhaps two thousand colours. This she finds too much to cope with, both visually and technically, a choice which is cut down to very few being preferable in every way. Using transparent enamels, and possibly a number of firings for each panel (three is more or less the minimum) two colours can be fired one over the other to give a third colour, and if the range is increased by only one or two more, a complex scale is built up.

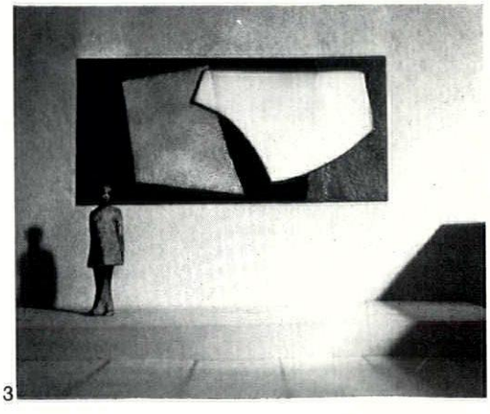
The second large enamel is in the City of London, in the hallway of Woolgate House in Basinghall Street. The interior of the hall is by Design Research Unit, and the developers are the Hammerson Group of Companies. Again, the basis is copper, and the panels come near to the maximum size which she can handle, which is 7 ft. by 3ft. 6in. They are un-flanged panels, bonded to blockboard for convenience of fixing. The copper is 14 guage, (0.080 in.) which, when enamelled, weighs approximately 4lbs per sq. ft. The material is therefore heavy, but not enough so to present a weight problem in most cases.

During the summer of 1968, following the erection of the Woolgate House mural, Robin Banks became engaged in the formulation of a matt-surfaced enamel, the industrially-produced matt enamel not being found entirely suitable. The result was a fine grainy surface, which was very good used in conjunction with the inevitably glossy surface of the traditional colours. The white and grey forms in the small mural shown in 2 are in this matt enamel. The mural occupies a corner position, so that two-fifths of it are at right-angles to the rest. This has created an interesting series of reflections—the white floating shapes, being reflected in the dark smooth areas of the adjoining plane, add another dimension to the design without confusing it.

'Having achieved this matt enamel', says the artist, 'which I found to be so essential as a foil for the glossy surfaces, the next logical step is, I think, to create shapes which are actually in relief of the wall surface, rather than the sort of *trompe l'oeil* relief which uses the interplay between different textures. Shapes cut from metal, and welded to spacing-pieces which hold them silghtly in front of the same shining dark background, have shown me, now that I have tried them in miniature, other exciting, unexpected reflections. If the back of the shape which is in relief is enamelled in a light colour, it will be reflected in the darkness behind at the same time as throwing a shadow, controllable of course by means of lighting.

'The possibilities are endless. Sculptured shapes could be enamelled, although these flat relief pieces placed in front of a background are very nearly sculpture in themselves. The experiments with texture, colour, and their relationships are absorbing. At the next stage, I think the reliefs could be brought out from their wall, and become screens formed of different planes, in a large open space. Enamel means colour, and in my case colour often means the amazing rich blacks and pure whites and greys which are available to the enameller.'

This most recent, and more sculptural phase of her work is illustrated by 3, a sketch for a mural which will measure about 10ft. by 5ft. 6in.



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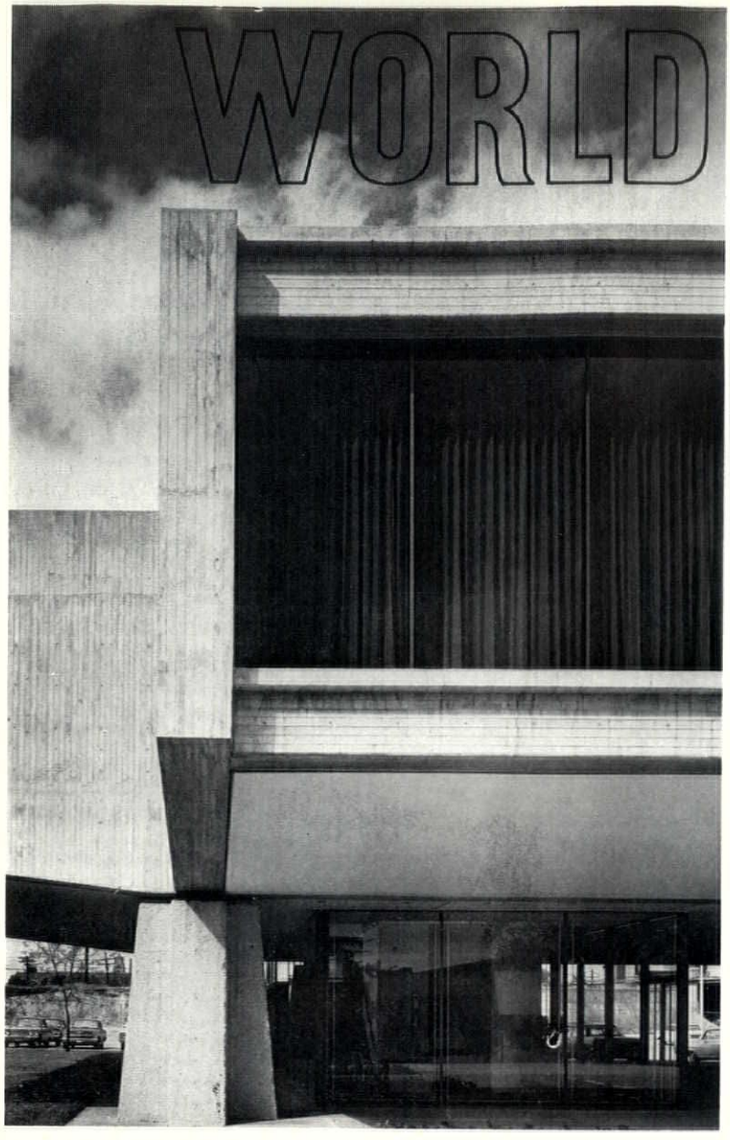
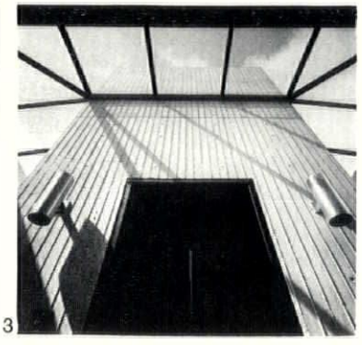
WORLD



1

ARVEY'S CROSS

Structure plays a dominating role in the Arvey Corporation office building in Chicago, I. Fridstein and Fitch conceived the design as four interlocking reinforced concrete Vierendeel trusses supported at the four junctions on battered concrete piers. A problematic site, overshadowed on one side by a railway embankment, determined a main office floor raised on stilts with a glazed entrance underneath the building, 2, and a basement containing the mechanical equipment in the podium. The plan of the main floor is a truncated cross with offices and data processing on the perimeter served by a central personnel pool. A delightful detail inside the building is the skylight which wraps round the top of the lift shaft, 3.



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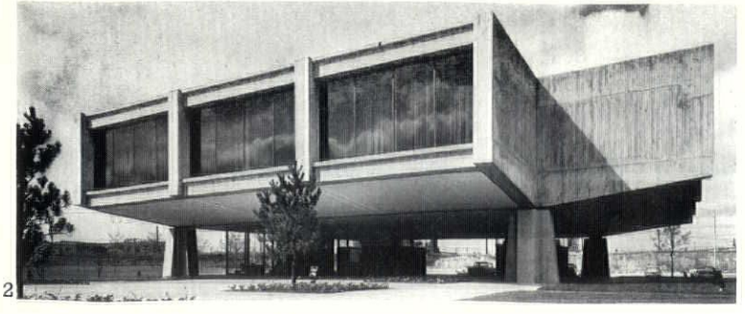


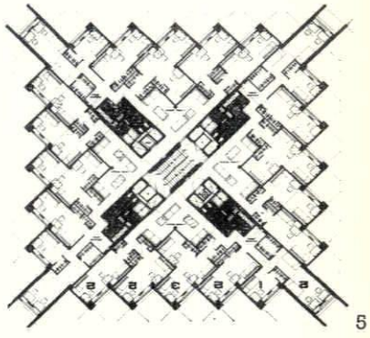
2

WATTERSON WARREN

The same architects are responsible for the Watterson Towers, 4, study-bedrooms for over 2,000 students, at Illinois State University. The design is intended to provide personal identity, though this is most apparent in the section, 6. Each 'house' consists of five floors with the entrance from a central lift tower on the middle floor. The entrance floor contains a common room and a large flat for the house director. The other floors succeed in eliminating almost all circulation space, but are rather like warrens, 5, with access to single, double and triple study-bedrooms from an internal living room. The students by the windows are lucky, though the others have been carefully placed to get a view out, however oblique. The serrated form of the façades provides privacy, breaks down the bulk and creates a much needed silhouette.



4



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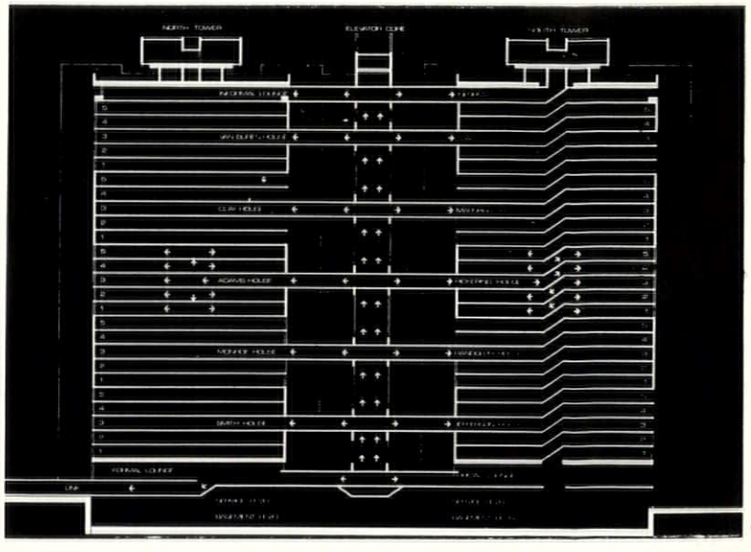

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7

FRY IN MAURITIUS

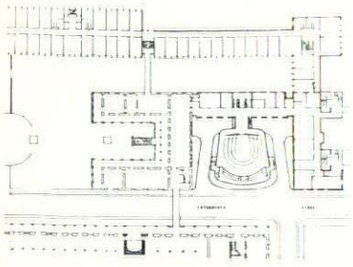
A successful example of slotting new work into old is Fry, Drew and Partners' Legislative Assembly Chamber and offices at Port Louis, Mauritius, 7. The work preserves and rejuvenates the beautiful old French Government house, 8, joins up a number of existing



8

FRY IN MAURITIUS

buildings to provide an efficient administrative centre, 9 and saved the Government of the island a good deal of money. The virtues of the whole are greater than individual shortcomings such as the forced monumentality of the Assembly Chamber exterior, a concrete shell clad in a greenish Indian semi-marble. The interior, 10, is acoustically perfect for speech, something which fire regulations in England would prohibit.



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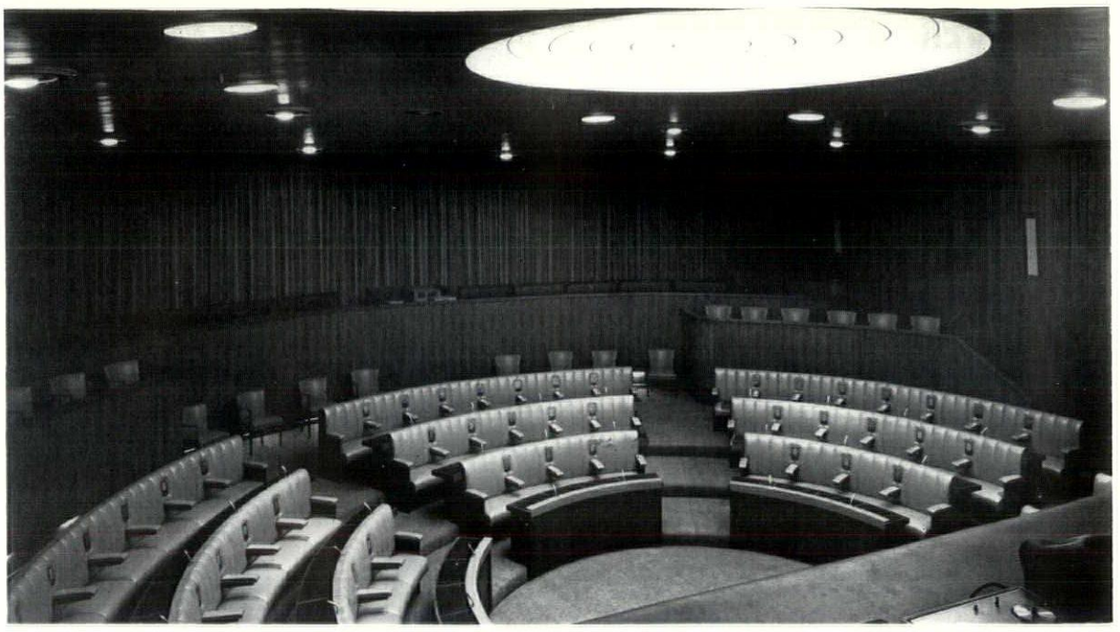
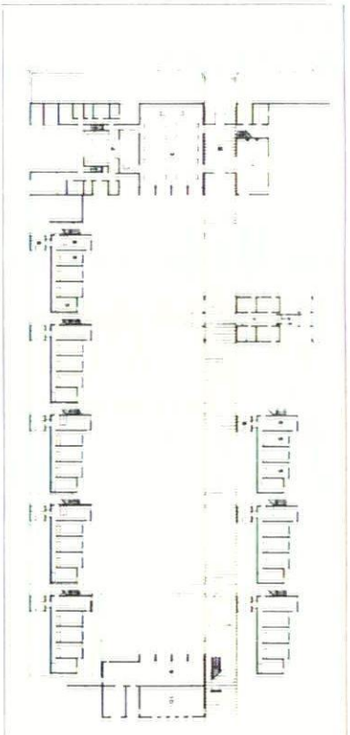


10

NZ GOLD

At Christchurch in New Zealand, Warren and Mahoney have followed up their admirable Students Union at the University of Canterbury (see World, AR March 1969) with a new theological college, 11. Christchurch college is a quadrangle, 12, consisting of two long sides of students' rooms with a free-standing chapel on the north, a group of communal spaces dominated by the double-height dining room on the west, 13, and a lecture hall and recreation room (not yet built) on the east. The students are housed on the Oxbridge principle in eight three-storied buildings, each of 15 students, mostly in single rooms and each served by one staircase. All the rooms face north and services are isolated in projecting tower blocks on the south side, 14. A broad walk extends from the street, past the dining room and under the chapel which is on the first floor. The use of materials is forthright—concrete blocks inside and out, and exposed roof trusses in the main communal areas, 15.



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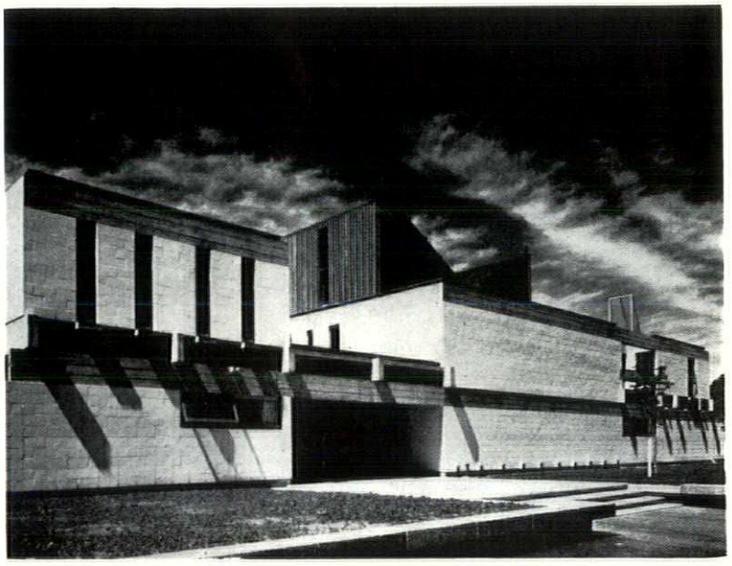

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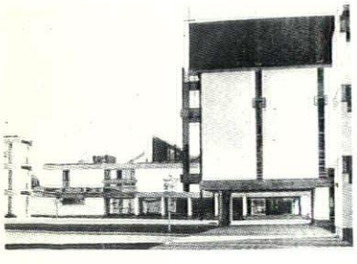
The buildings were awarded the 1969 Gold Medal of the New Zealand Institute of Architects for their quality of total design, 'where everything from the structural form down to the furniture and light fittings was an expression of the nature of the college'.



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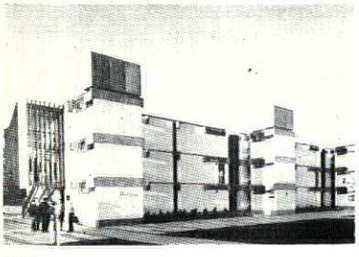

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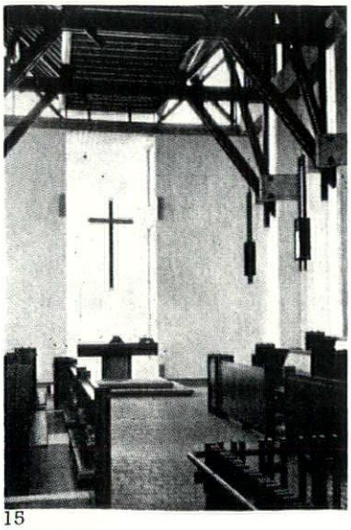

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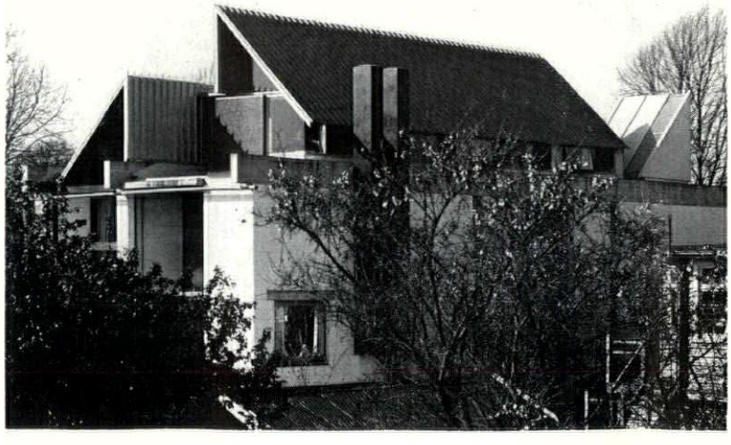
NZ SILVER

Warren and Mahoney collected a silver medal for their own office and flat (for Miles Warren) in Christchurch, 16, a building immedi-



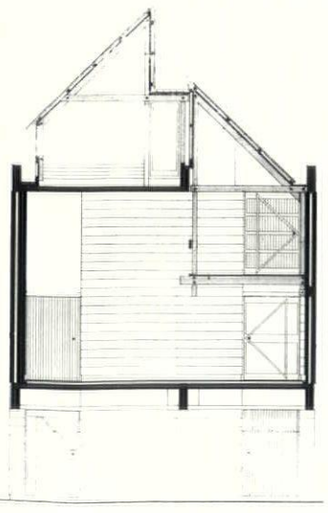
16

NZ SILVER

ately recognizable as the work of this firm by the characteristic high-pitched roofs and by the use of painted concrete block walls. It sits on a deep and narrow plot, 17, and consists of two double-height boxes (yet another personal characteristic), placed one behind the other and served by a central staircase. One box sits propped up over a car port containing the draughting room, and faces south: the other, the owner's living room and private office, sits over what is now the office (formerly the private dining-room and kitchen) and gets all the sun. Each box has a timber-framed suspended mezzanine gallery, 18, which pokes through the rectilinear structure with its triangular roof. An interesting detail (seen in 16) is the half-round gutter suspended from the three projecting longitudinal beams on the gabled sides.



17



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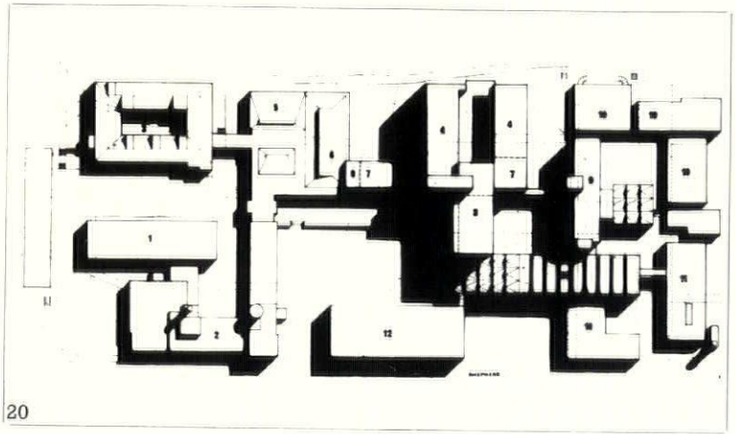

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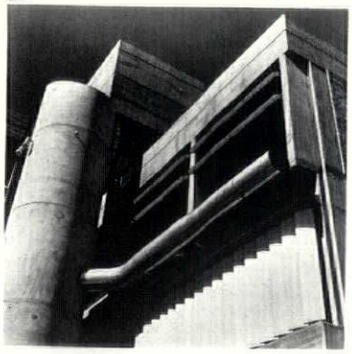

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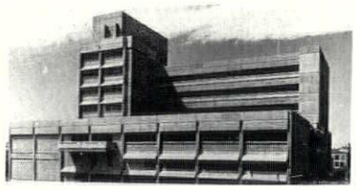




24



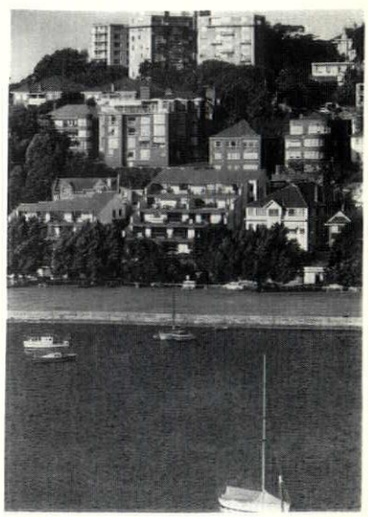
23

STARK IN SYDNEY

After the broken outline and the traditional materials of their Union Building for the University of Newcastle (see World, AR February 1969), Ancher, Mortlock, Murray and Wolley's work for the engineering precinct at Sydney University seems stark and forbidding with its unrelieved *brut* concrete and manganese bricks, 19. A twenty-year project constantly subject to revision, 20, incomplete quadrangles because one or two sides may form part of a later phase, and the impossibility for the time being of proceeding with the planting programme, make it difficult to comment. The electrical engineering building, 22, has a central nine-storey block of staff rooms and laboratories, with access galleries on the north allowing lighting and ventilation from both ends. It is flanked by three-storey blocks containing lecture rooms, student accommodation and special laboratories, the gap between the central and northern block providing a multi-level concourse and main approach to the building, 23. Sun control is expressed in strong architectural forms—precast concrete hoods and louvres, 21. The same strength of form seems to be absent in the civil engineering building, with its long flat north façade of unprotected windows, 24.

PENTHOUSE DARLING

Wholly delightful are the same architects' penthouses stepping down the hillside at Darling Point, Sydney, 25. Sympathetic materials —terracotta roof tiles, white-painted



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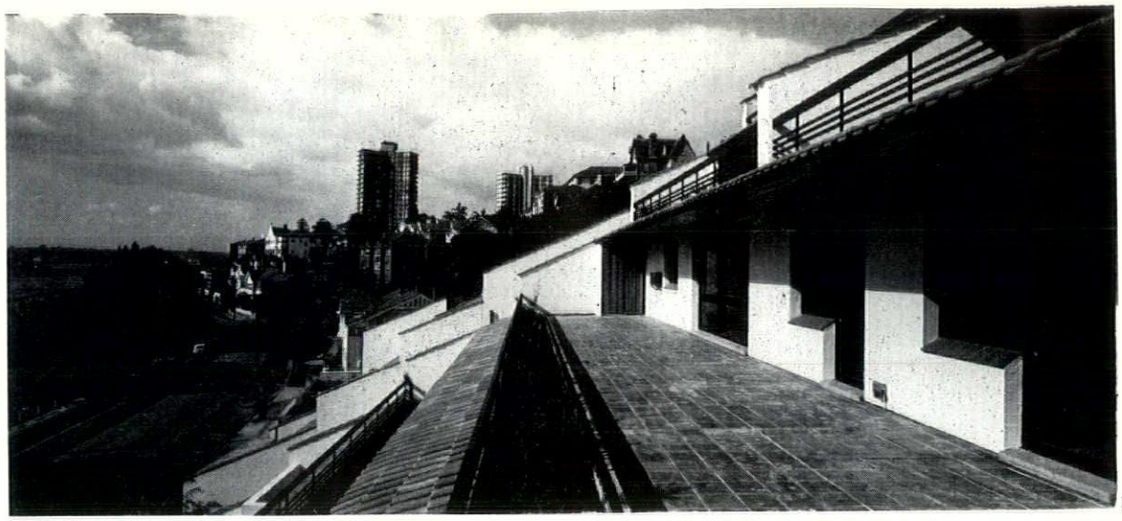
PENTHOUSE DARLING

brickwork and timber balcony rails — mingle with the ample landscaping of the terraces, 26. Privacy is maintained between one level and another by an ingenious section at the edge, 28, which consists of a flower bed and a tiled overhang to the windows below. Car access at several levels was made possible by the existing profile of the hill (already excavated for the original louvres) and by using the slope of the access road at the back. The scheme consists of eleven single-storey flats on six levels and one two-storey house, 27. It is divided in the middle by a pedestrian way which leads down to the shore road and provides side entries to some of the flats.



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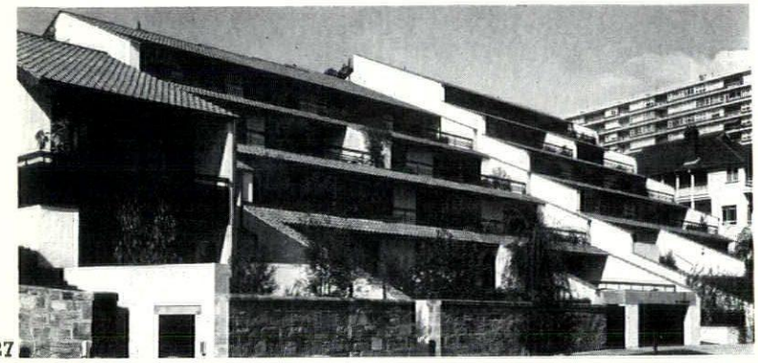

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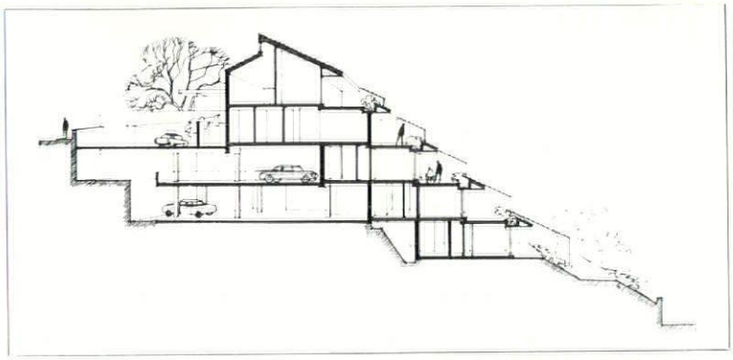

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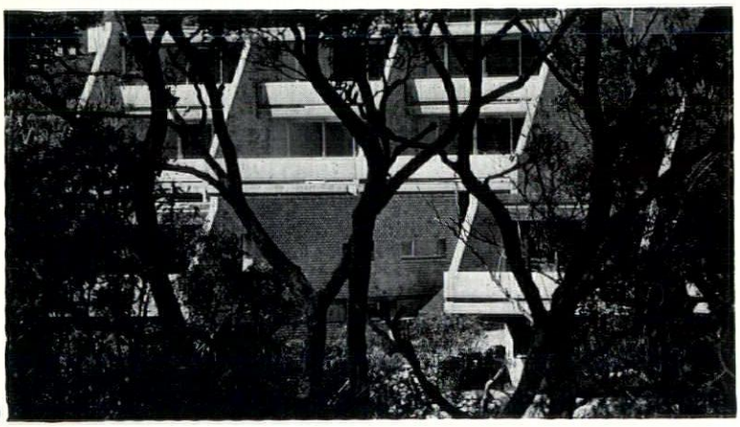
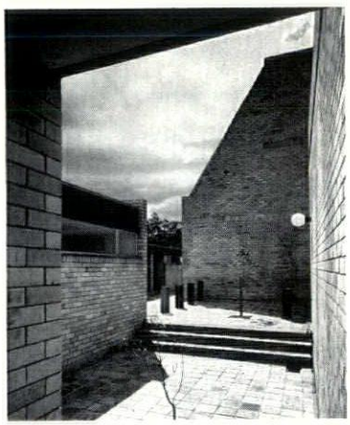


29

Compare Clarke, Gazzard and Partners' solution on a similar site at Wollstonecraft outside Sydney, 29. Ten houses are grouped into three clusters of two-storey buildings, 30, the upper five houses being entered through private courtyards facing the street, and the lower five from a pedestrian path, 31. The upper five are raised one storey above ground level, 32, to provide car parking underneath (accessible from a central drive, 33) and to allow a view over the roof of the lower five. All the houses have large private balconies outside living rooms and bedrooms, but the lower five have no courtyard gardens.



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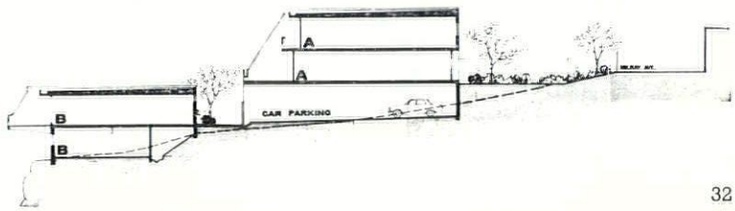
WOLLSTONECRAFT CLUSTERS



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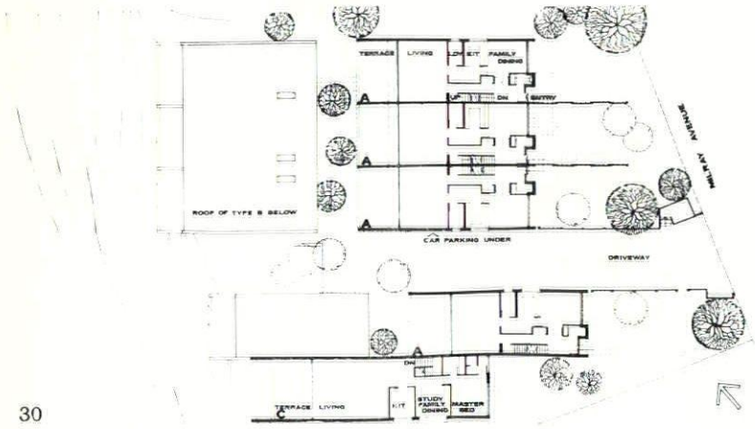

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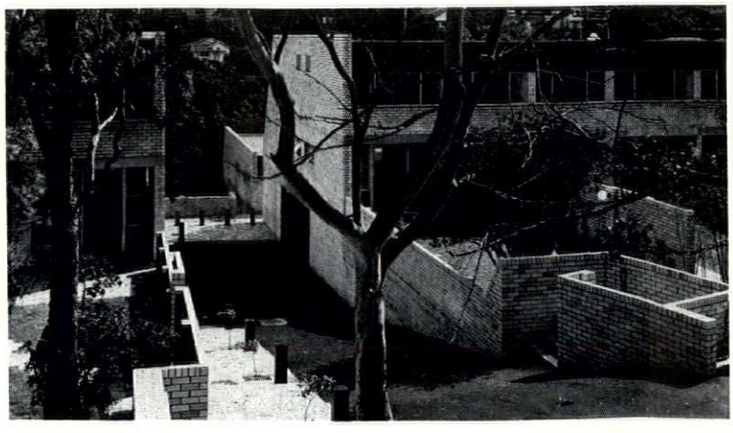

33

Announcing concentrated carpet



It could even carpet an office car park

It's time you stopped thinking of carpets in a conventional way. Carpets have been revolutionised. By Gilt Edge Carpets and ICI. ICI's fibre research laboratories invented Tultrim, a new kind of pure nylon carpet. Gilt Edge Carpets—who make Britain's finest Axminsters and Wiltons—applied their know-how to its development.

Through a unique concentration process, it was transformed into a carpet of incomparable quality. Colourful, economical, durable, it makes carpeting a practical proposition where you've never dreamt of specifying carpet before.

This new carpet is called Endura concentrated carpet. Here are the details—and remember, it's a carpet we're talking about.

1. Endura concentrated carpet has outstanding durability, proven by extensive abrasion tests. Endura withstood 100,000 revolutions on the WIRA machine. An average AO wool/nylon Axminster will normally withstand 20-25,000 revolutions.

2. Endura is 100% synthetic and, consequently, damp- and rot-proof.

3. Endura concentrated carpet is easier to clean and maintain. Its unique texture makes it highly resistant to dirt and staining. There is a significant reduction in maintenance costs compared with hard floor coverings.

4. Endura has exceptional dimensional stability.

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VIEWS AND REVIEWS

marginalia

MORE THREATS TO DUBLIN

It is a continuing puzzle that the governmental authorities in Ireland do not seem to care more deeply about the Georgian architecture in which Dublin was once so rich and which is still the city's greatest treasure. There is a long history of wanton destruction and insensitive restoration, but the situation has recently looked, however late in the day, a bit more promising. In 1966, *An Taisce* (the National Trust for Ireland) had made a survey of Dublin and declared the necessity of preserving at all costs a 'small irreducible core' of Georgian Dublin, and in 1968 the Dublin Corporation, in its draft development plan, took a similar view.

The area that *An Taisce* regarded as essential was only 1 per cent of the city. It included Merrion Square, Fitzwilliam Street, Pembroke Street and the other unspoilt Georgian streets in the neighbourhood, and Hume Street, running east from St. Stephen's Green. This street the survey describes as 'the last remaining example of a small 18th century street of pleasant scale, varied in detail but with an over-all unity'. Hume Street is also included in the Corporations List B, and the development plan says 'it is an objective of the Planning Authority in the interests of amenity to secure the preservation of the buildings or other structures and of the groups of buildings specified in List B.'

Moreover the Dublin Corporation had already turned down a planning application for the erection of speculative office blocks at both corners of Hume Street and St. Stephen's Green, in order to preserve the Georgian architecture. This year however the Minister for Local Government reversed the Corporation's decision and gave outline approval to the developers' project for office blocks. The ironical thing is that some of the houses the developers want to demolish, including those at the corners of Hume Street, belong to the Government, who will have to part with them before the project can go through.

If the Government do part with them they will be conniving at the destruction of one of their greatest assets as well as going back on earlier promises. The project is being fought by *An Taisce*, the Arts Council and other amenity bodies—a fight in which every Irish voter ought to join.

EXTENSIONS TO ABBOTSINCH

The October (Manplan 2) issue of the AR included some pictures of Abbotsinch airport, Glasgow (by Sir Basil Spence, Glover and Ferguson), and described it as the best looking British airport outside London. The AR commented however on the congestion at present to be found in the building which will inevitably become more of a problem as air travel increases.

Information has since been received from the architects that they have prepared plans for extending the airport, which are now with Glasgow Corporation. They are confident that, if this further development is agreed to, the disadvantages of the present crowding will be overcome.

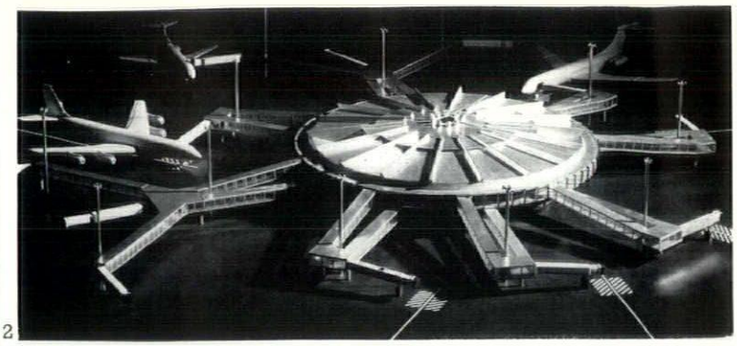
Their plan provides aircraft handling facilities designed to cope with all known types of aircraft. A third, or satellite, pier, taking the form of a large forward assembly hall 200 ft. in diameter, is linked at first floor level to aircraft stands round its perimeter—see model, 2. The stands are interchangeable, allowing the aircraft to be flexibly grouped, and the building spaces are designed to cope with the consequent passenger movements. The existing car-park is extended and enlarged and is linked to the building at first floor level under cover—the AR commented on the absence of such a link. Arriving and departing passengers will be separated before they enter the main building—the AR commented on the present congestion at the head of the stairs leading direct to the arrival and departure gates. In the proposed satellite pier, which will be for international passengers, the two flows will at no time cross or mix. In the extension, departing passengers will check in in a new and larger hall with escalator and stair connection to the first-floor concourse.

A hotel, designed by the hotel company's own architects, is now under construction to the south of the terminal building and this, like the car-park, will be connected to it by covered way.

1. *Hume Street, Dublin, from St. Stephen's Green. See 'More Threats to Dublin'.*



2



2. *model of the new forward assembly hall to be constructed at Abbotsinch airport, Glasgow.*

ROMAN REPORTER

Of all the etchers and engravers of the eighteenth century, Piranesi is the most facinating, for purely visual reasons as well as for the ambiguity of his intentions. Does he belong to the Enlightenment or to the Rococo, or is he the first of the Romantics?

Piranesi was a reporter first of all, but when, at the end of his stay in Rome, the *milord inglese*—or such a travelling bourgeois as Goethe's father—bought as a souvenir one of Piranesi's *vedute di Roma* (as we buy photographs now), what he took home was not merely a record: Piranesi subtly transforms what he sees, by the *espirit* of his needle and also by tricks of scale.

Architecture in the *vedute* is immense, because human beings are puny; this is the rule. But the plate reproduced on this month's cover (which is taken from Mario Praz's *On Neo-Classicism*, reviewed on page 482) is a purely technical subject—grappling hooks used by the Romans for lifting stones—and achieves the sinister quality of Piranesi's fantastic gaols by leaving out any comparison with the human scale. Any object in a picture looks larger than life if it fills the frame from top to bottom—see Michelangelo's God the Father in *The Creation of Eve*. So here the hooks convey a sense of enormity. As Professor Praz says, Piranesi has 'drawn them up in orderly terrible rows . . . with the voluptuous pleasure of a surgeon.'

MIES RETROSPECTIVE

The large retrospective exhibion of Mies van der Rohe's work, organised in 1968 by the Art Institute of Chicago, in collaboration with the Graham Foundation for Advanced Studies in the Fine Arts, was still travelling around the USA when Mies died. The handsome catalogue by A. James Speyer (a former pupil of Mies and now Curator of Twentieth Century Art at the Institute) and Frederick Koeper (Associate Professor of Architecture at the University of Illinois and author of a recent book on Illinois architecture) makes a valuable contribution to the bibliography on Mies. Besides providing illustrations of some of the later buildings, the catalogue also springs one or two suprises, for example the project for a drive-in restaurant at Indianapolis of 1945.

Unfortunately the opportunity was missed of providing a comprehensive bibliography. Max Bill's, Ludwig Hilberseimer's, Peter Blake's and Arthur Drexler's monographs are all omitted, and so is, even more curiously, the most recent and most extensive work by Werner Blaser (1965), which was supposedly prepared in close collaboration with Mies himself.

HISTORY AS IT IS WRITTEN

In an entertaining article that appeared in the first 1969 number of the American *Journal of the Society of Architectural Historians*, Mr. John Maass of Philadelphia took his fellow contributors severely to task for their myopic view of architecture and their lack of interest in its relationship to real life.

Since it is not often that historians themselves become the subject of historical study, Mr. Maass's diligent investigation deserves wider currency. He based it on a methodical analysis of the last ten years of the SAH *Journal*—forty numbers—in which, he found, 461 articles and book-reviews had been printed. Six of these, incidentally had been written by architects, of whom two were retired.

Mr. Maass re-read all 461 articles—a feat in itself—and found the following (the quoted words are his). Only 13 articles dealt with vernacular architecture ('The archi-



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continued from page 478

tectural historians do not yet pay attention to the anonymous architecture of early and rural societies'). Only 11 dealt with non-Western architecture, the entire field of Far Eastern architecture being represented by one article about two buildings in Honolulu ('There can be no doubt that the assumption of white supremacy forms the basis of this unbalanced view of the globe'.)

Of the 450 articles on Western architecture, all but 18 dealt with the United States or Europe, and of these 18, 11 were no more than book-reviews, including the only items concerned with Mexico and South America. Of the 168 articles or book-reviews on European subjects, all but 42 were about Britain, France or Italy. ('It is evident that the architectural historians follow the well-worn path of the eighteenth-century Grand Tour . . . . Germany and Spain are seriously under-represented. All smaller nations are badly neglected or wholly ignored. Russia does not exist'.)

Of the total number of 257 articles —as distinct from book-reviews—3 dealt with industrial building. ('Forty-five years have passed since the publication of *Vers Une Architecture* with its praise for American factories and grain elevators, but American architectural historians still consider industrial architecture a negligible subject'.) 30 articles discussed the technical aspects of building. ('Scholars usually deprecate the "facadism" of popularizing writers on architecture whose books are innocent of plans and sections. However, the architectural historians do not always practise what they preach'.) Mr. Maass counted every article dealing with 'the architecture of a street, square, neighbourhood, campus, village, town, city, and region'. The total was 17 out of 257. ('The historians of architecture still have not absorbed the fact that . . . . "no building exists in a void." This lesson has, however, since* been learned by architects and critics who now think in terms of "environment" and "townscape" as a matter of course . . . . Articles about separate buildings rarely project any "sense of place"; usually there is no reference to town or country, landscape or climate; the buildings are described as if they stood on a library shelf . . . . It is time for the architectural historians to close the generation gap which now separates them from the architects and from other scholors who study communities rather than isolated buildings').

The temptation cannot be resisted to add that Mr. Maas courteously sent the Editors of the ARCHITECTURAL REVIEW an offprint of his article, on the front of which he had inscribed: 'I have always found the AR's articles on architectural history free of these sins.'

*That is, since Mumford used the expression in *Sticks and Stones* in 1955.

obituary

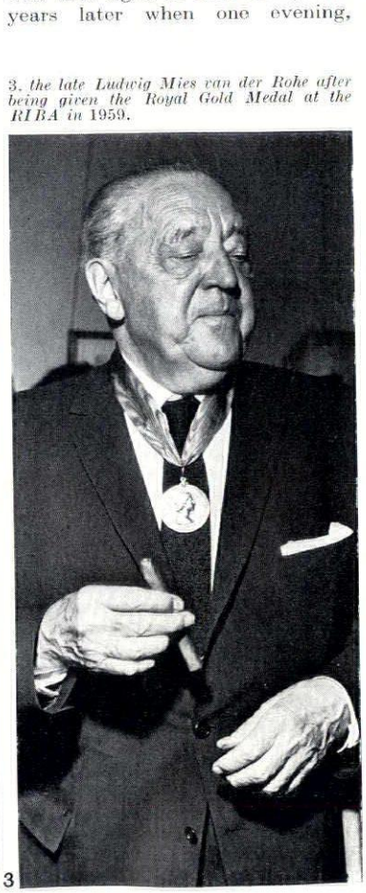
MIES VAN DER ROHE: 1886-1969

I like particularly to remember the first time I saw Mies van der Rohe. It was in the spring of 1933. I had admired an apartment interior he had designed for Philip Johnson, then a young man who had recently settled in New York. I was on my way to Europe and Germany on a business trip. Philip Johnson suggested that I call on Mies. I wrote to him. He invited me to his office. When my wife and I entered we both saw at once the answer to a question which had been troubling us for some time: why was the Barcelona chair so wide? As we opened the door we realized. Mies was seated on one and it just comfortably accommodated his breadth.

Perhaps 'amply' would be a more accurate word then comfortably. For we recognized something ample about Mies at that first glimpse, a quality which seemed related to everything about him, everything he admired and everything he did. The suit he was wearing was ample, well-cut to be sure but easy on him, and of a sober, rich material. The cigars he offered me and smoked one after another were likewise ample, of the finest Havana leaf. The glass-and-metal table near which he was seated, which we had always previously thought strangely high in proportion to its width, now seemed perfectly in scale with its designer.

Even on that first visit I felt Mies's love of space, scale and quality of material. And I was reminded of that first sight of Mies thirty-four years later when one evening,

3. the late Ludwig Mies van der Rohe after being given the Royal Gold Medal at the RIBA in 1959.



3

looking for him after Museum hours, I happened into his Cullinan Hall of the Museum of Fine Arts in Houston, and found him alone in that sparsely hung, white gallery, 100 ft. by 95 ft. with a ceiling 32 ft. high, once again on a Barcelona chair, again smoking a cigar, quietly studying that space he had so sensitively proportioned.

Another incident I like to remember was a telephone call I made to Mies in his Chicago apartment before rushing to a 'plane. I had been in Chicago for the day to give a lecture and was on my way back to New York. In my apologies for not reaching him earlier I mentioned something of the general subject of my talk, order and form. 'Ah, yes,' he said, 'St. Augustine.' Nothing more.

And I recall one Saturday afternoon during the war when I happened to drop in at the Nierendorf Gallery in New York. An exhibition was scheduled to be on view. To my surprise on arriving I found the gallery dismantled. Or rather, in the process of being dismantled. Mies was in town. And frequently, he and his friend Karl Nierendorf used to take advantage of the weekend to clear the gallery walls of whatever was on view and amuse themselves in arranging a special private collection of whatever they liked or wanted to see together from Nierendorf's stock. It might be a large selection from Nierendorf's best Paul Klees, of his Die Brücke pictures or a single picture on an otherwise empty wall, which so much appealed to Mies.

Mies enjoyed this. He found it one of the happiest ways to spend a quiet weekend in New York. He loved Klee's paintings, as he had liked Klee personally. He knew, perhaps better than anyone else, how to choose a Klee painting of quality. And it was from Nierendorf's stock that he built up the brilliant group of Klees he had in his apartment at 200 East Pearson Street in Chicago—Klees, Schwitters and, what was always a surprise, a large Max Beckmann nude in his bedroom!

It is easy to see from Mies's handsome 1942 drawing-and-collage designs for 'a museum for a small city' the pleasure he took in paintings and sculpture and his respect for them. In these projects one is hardly aware of the architecture; the emphasis is placed on the paintings and sculptures displayed. Where the presentation of works of art was involved he felt they should have complete priority. Architectural details, fantasies in installation or in lighting that might distract the observer's attention from the works of art were inadmissable. The only features he allowed major demands were open space and a sensibility of proportion in its divisions.

I remember his escape to New York ten days before his Cullinan Hall in Houston was inaugurated, distressed by the preparations for the first exhibition which were crowding the space he had envisaged for that hall. And I recall his request for photographs of an installation of the same gallery some time later when only three large Miro paintings were hung, a large Picasso oil with a monumental Chillida sculpture. He wanted to send it to Berlin with his project for the Berlin National Gallery. And he did so.

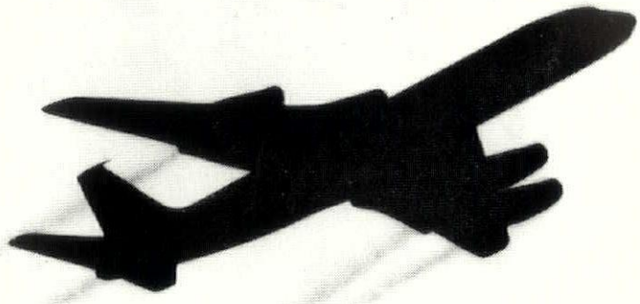
And how troubled he was when he heard that it was planned to hold a retrospective showing of paintings of small format in the huge space of that Gallery, as its inaugural Exhibition, even though the paintings were Mondrians which he greatly admired. Space, amplitude and a comfortable relationship among the parts—unity, order, form—were his basic requirements. A lack of order in any part hurt him. I recall his irritation over the untidy appearance which a haphazard drawing of blinds gave his Chicago Lake Shore Drive Apartments at night, when they were first occupied; and how in his New York Seagram Plaza he provided against a similar disruption of visual order by designing venetian blinds for that building which would assume only three positions: all the way up, all the way down, or at half-mast.

Finally, perhaps thoroughness—with sensibility—was his strength. Everyone speaks of his care for detail. For example, in the Seagram Building where 'no doorknob, no lavatory or tap, no sign, no mail-chute was left to accident'. All were scrupulously designed to make the building a unified whole. And his office in Chicago was a comprehensive display of scale models, fullsize mock-ups of building parts —every building wall studied in full size mock-up: all the work he and his associates had in hand at the time. And this thoroughness was possibly what saved the Illinois Institute of Technology campus.

After my call at his office in Berlin I did not see Mies again until his 1937 visit to the United States to study the site for the Resor house in Wyoming he had been asked to design. A year later he emigrated to the United States and settled in Chicago. That same year he was appointed Director of Architecture at the Armour Institute and shortly afterwards President Henry T. Herald awarded him the commission to design the new IIT campus.

In the first campus scheme, begun in 1939, Mies planned to remove the long centre street from the rectangular site in order to afford an open plaza around which a unified group of buildings might be disposed. A year later it was decided by the Institute authorities that this was not feasible. Mies was approached with the decision and asked how long it would take him and his associates to redesign the campus for the new site. Without any hesitation Mies replied, 'Two weeks.' When asked how that could be since he had taken more than a year for the first design, he replied that all the serious problems had been studied in that first year and that now all that was necessary was to redraw the plans for the new site.

JAMES JOHNSON SWEENEY



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book reviews

CONTROVERSIAL PRAZ

ON NEO-CLASSICISM. *By Mario Praz. Thames & Hudson,* 105*s.*

Professor Praz is a law unto himself, whether he writes on the Romantics (*The Romantic Agony;* in Italian, 1930) or on Neo-Classicism (*Il Gusto neo-classico;* in Italian, 1940). He writes about himself, the furniture he collects, the other collectors he met, his wide reading in many fields. *On Neo-Classicism* reads like a Sitwell book, only it is far more learned, though Professor Praz hides much of his learning in the way polite society does. He writes splendidly, in the great tradition of *Elia*, and one must not expect a definition of neo-classicism or more than very occasional references to the literature of the last ten or fifteen years, or even a consistent narrative. He quotes widely and unexpectedly and is always ready for provocative asides and digressions—on Valéry, the *Roman de la Rose* and Marlowe, for instance, in his essay on Winckelmann.

'Spirited and controversial' Mr. Honour in his excellent recent Pelican on Neo-Classicism calls him. Should Piranesi be in a book on neo-classicism; for is not his placing of puny figures against gigantic architecture pure romanticism? This is just one example of Praz the controversial. Praz the spirited is at his best in the beautiful chapter on Foscolo's unfinished *Le Grazie* and the comparisons with the architects who scarely built but confined their dreams to paper: Gilly and again Piranesi. Keats's *Hyperion* of course appears too.

Professor Praz is Professor of English in Rome, but he taught Italian literature at Liverpool and Manchester from 1924 to 1934, and his paragraphs on Liverpool, including a long quotation from Carlo Gastone della Torre di Rezzonico's *Viaggio d'Inghilterra* of 1787, will be new to most of his readers. Equally knowledgeable is his description of reduced life in Palladian mansions:

'The park at Brexham Hall was of great size: in view of the house with its long wings, at the foot of sloping lawns, stretched the customary serpentine lake, and beyond, amongst the trees, rose the no less indispensable classical temple. There were glimpses of fallow deer in the deer park; and as we approached, pheasants rose in flight, squawking like hens. But Lord Vauxe must now be content merely to look at all these things: the park had been leased to a Wolverhampton industrialist, and it was he, not the owner, who now shot there. The Palladian house, too, one may say, had ceased to be their home, except for a few months in spring and summer. Who could afford the luxury of heating it in winter, and furthermore, how to find servants and, if they were found, how were they to be paid? Taxation obliged the lord of this noble estate to live for a great part of the year in a Cheltenham hotel full of superannuated officials who have returned from India with ruined livers and disordered bladders; and as for Lady Vauxe, far from allowing herself the luxury of collecting first editions, she had not even the time to read. When she was not busy with housekeeping, she was making her own clothes or darning His Lordship's socks. And hearing such words uttered, with a thin, deliberately nonchalant smile, by the curving lips of this disintegrated angel, one had the impression of something immensely iniquitous.'

N. PEVSNER

BRITISH BRASSES

THE CRAFT AND DESIGN OF MONUMENTAL BRASSES. *By Henry H. Trivick. John Baker.* 10 *gns.*

Even those who have often ignored the monumental brasses which are a characteristic feature of many English churches, should find, in this finely produced and sumptuously illustrated volume, a new revelation of their beauty. Many of the brasses are here reproduced in gilt, with their linear details in black, a form of positive rubbing, perfected by the author, which is both truer to their original appearance and more revealing of the subtleties of drapery and portraiture than the usual negative rubbings. The growing number of people who already study brasses, making their own rubbings, will find in the text interesting comments on technical aspects of the medieval craftsmen's work and an artist's analysis of the development of their designs. Mr. Trivick rightly claims that the finer brasses should be given their proper status in relation to contemporary works of art in other media and illustrates some interesting parallels.

His chapters on the different types of monument: brasses of ecclesiastics, knights in armour, members of the learned professions, women and children, are not intended to equal the full historical discussion given in some other books, but rather stress the importance of the brasses as records, not only of heraldry, costume and armour, but of various aspects of social history. Unfortunately, in these chapters he sometimes makes unqualified assertions without sufficient proof and wastes some of his severely restricted space on casual guesses. His assumption (page 47) that because two alabastermen agreed in 1510 to make an alabaster tomb topped with a brass, the same craftsman would be likely to incise a brass and carve an effigy, seems most precarious, while his statement, on page 61, that women are represented on brasses in everyday clothes because finery on tombs was thought to be in bad taste, is flatly contradicted by the sumptuous clothing of many carved effigies. Although the tradition that the flesh of peacocks was incorruptible persisted in medieval Bestiaries, the Peacock Feast on the Braunche brass at King's Lynn is more likely to record the part played by Robert Braunche in the entertainment given to Edward III when he visited that town, than to refer to the rites of Juno (page 30). On page 87 he seems to suggest that, because Winchcombe church has *forty* gargoyles, and no brasses to wool merchants, it may have been partly built by John Fortey whose brass at Northleach recalls his benefactions to that church. Such a guess does not inspire the reader's confidence in other, no doubt much better grounded, suppositions. The final chapters, dealing with various methods of brass-rubbing, impart the wise counsels of an expert practitioner, and the selected list of British brasses illustrates points of unusual interest. The examples are widely distributed. There is also a useful list of Continental brasses, with associated illustrations.

M. D. ANDERSON

Contractors

Law Courts, Doncaster. *Architects:* Frederick Gibberd & Partners, in association with L. J. Tucker, Borough Architect. *General contractor:* Shepherd Construction Ltd. *Sub-contractors: Mechanical:* Hope's Heating & Engineering Ltd. *Court furniture:* Pedley Equipment Ltd. *Shutters:* Syston Rolling Shutters. *Gates:* Bolton Gate Co. *Leaf-lite ceiling:* Isora Integrated Ceilings Ltd. *Balustrads:* Safety Tread Ltd. *Entrace doors and screens:* Thos. Bennett & Sons (Leeds) Ltd. *Aluminium windows:* Crittall Hope Ltd. *Lifts:* Otis Elevator Co. *Precast structural panels:* Empire Stone Co. *Loose furniture:* Druce & Co. *Cell doors, grilles etc:* Potter & Rax Ltd. *Sanitary fitting:* Adamsez Ltd. *Steel shelving:* Sankey Sheldon Ltd. *Terrazzo:* O. Toffolo & Sons.

Community & Training Centre Lambeth: *Architect:* E. Hollamby Borough Architect. *General contractor:* S. F. Jeffries & Co. *Sub-contractors: Underfloor heating:* Calidec Ltd. *Sliding partitions:* British Werno Ltd.

Western Sculpture Rooms, British Museum, London. *Designers:* R. D. Russell & R. Y. Goodden. *General contractor:* James Carmichael (Contractors) Ltd. *Concrete plinths etc:* Empire Stone Co. *Display slabs and loose furniture:* George Parnall & Co; Gordon Russell Ltd. *Information panels:* Derek Freeborn. *Light fittings:* C. M. Churchouse Ltd; Rotaflex (Great Britain) Ltd. *Showcases:* A. Edmonds & Co; William Nicholls Ltd: Frederick Sage & Co; Smith & Jewell Ltd.

Housing at Islington. *Architects:* Howell, Killick, Partridge & Amis. *Contractors: precast concrete cladding:* Trent Concrete Ltd. *Insitu concrete:* Bradfords & Co. *Plumbing:* G. N. Haden & Sons. *Heating and ventilating:* Comyn Ching. *Asphalte:* Limmer & Trinidad Co. *Glazing:* Aygee. *Piling:* Cementation Co. *Sprinklers:* Mather & Platt. *Tiling* Marley Tile Co. *Fencing:* Durafencing. *Lifts:* Express Lift Co.

House in Barnes. *Architect:* Timothy Rendle. *General contractor:* T. Wilson (Shoreditch) Ltd. *Laminated timber beams:* Rainham Timber Engineering Co.

Acknowledgments

FRONTISPIECE, page 408: Eric de Maré. CROSSNESS, pages 411–414: 1–5, 7, 8, GLC; 6, 9, *Illustrated London News.* PRINCE ALBERT'S DIARY, pages 414–416: Eric de Maré. TINOS: pages 417–419: Margaret Tallett RUSSIAN FORT IN CALIFORNIA, page 419: David T. Hicks. LAW COURTS, DONCASTER, pages 420–423: Henk Snoek. EDMUND SHARPE AND THE 'POT' CHURCHES, pages 426–431: 1, 5–8, 10–12, D. M. Wrightson; 9, R. Jolley. COMMUNITY AND TRAINING CENTRE, LAMBETH, pages 432–434: Sydney W. Newbery. TOWNSCAPE, pages 435–438: Brian Carter. INTERIOR DESIGN, pages 439–450: Western Sculpture Rooms, British Museum, Richard Einzig; Library conversion, Trinity College, Dublin, Norman McGrath; Uschakoff Building, Helsinki, 1–5, R. Kamunen; Branch bank, Loughton, Essex, Toomey Arphot. HOUSING AT ISLINGTON, pages 459–462: Snoek-Westwood. GALLERY, pages 463–466: 7, John Webb. HOUSE AT BARNES, LONDON, pages 467–468: Timothy Rendle. MISCELLANY, pages 469–472: An Unknown Albert Memorial, Reinisches Bildarchiv, Cologne; A Specialist in Enamelling, 1, E. Huxtable, D. C. Thompson & Co. WORLD, pages 473–476: 1–3, Orlando R. Cabanban; 11–15, *NZIA Journal*; 16, 17, Mannering & Associates; 19, 21–23, Harry Sowden; 24–27, Max Dupain; 29, 31, 33, David Moore. VIEWS AND REVIEWS, pages 478–482: 1, The Green Studio; 3, Sam Lambert; 4, Henk Snoek. STOP PRESS, pages 483–484: 2, 4–10, Peter Burton; 3, Reid Arphot; 11–13, Nairn Arphot; 14, David Wiltshire.

Ian Nairn

STOP PRESS

S.O.S.

ORDSALL HALL, SALFORD
An amazing survival in one of the worst slum areas in Britain, disused and slowly decaying, 1. A notice outside says that after renovation it will become a museum—but the notice is old and decaying too. The whole of Ordsall is being cleared now: it would be good if the Hall was restored at the same time. Too many buildings near Manchester have disappeared in just this way.

HOWDEN, YORKS E.R.
Cottages in decay around the churchyard of Howden Priory, 2: the kind of site which most planning authorities would be conserving as fast as they could. But does anyone care, over there in that cut-off part of Britain?

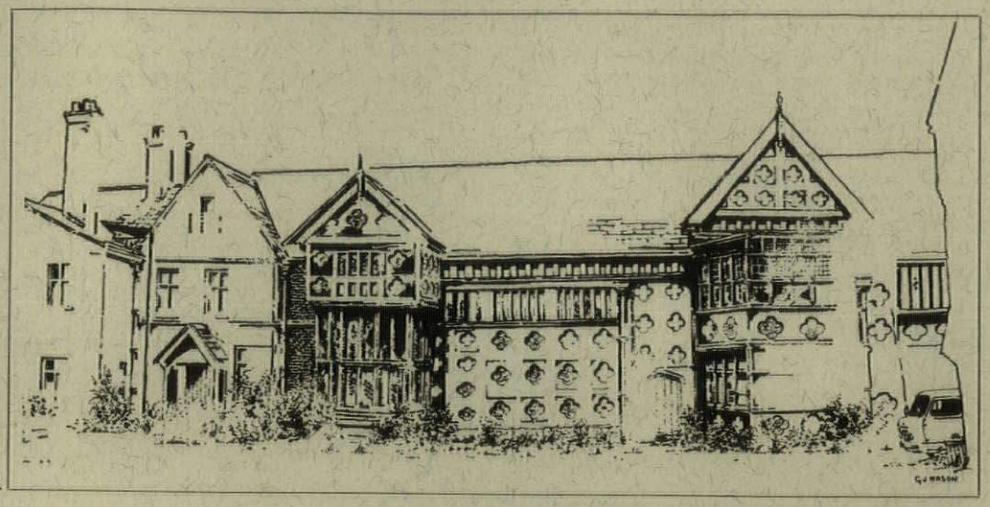
CREDIT

NEW CROSS, LONDON
For once it is not demolition, near the Old Kent Road. This splendid terrace, 3, will shortly be looking better than new. And what a pity that it is an exception that has to be noticed specially.

OUTRAGE

GUISBOROUGH, YORKS N.R.
A mindless splatter of new houses on the edge of an attractive town, 4, and in a superb setting, next to the Priory ruins (arrowed in 5) and immediately under the escarpment of the North Yorkshire moors.

HULL, YORKS E.R.
Epitome of all Britain's run-down towns, Hull seems finally headed for disaster. The city plans to fill in its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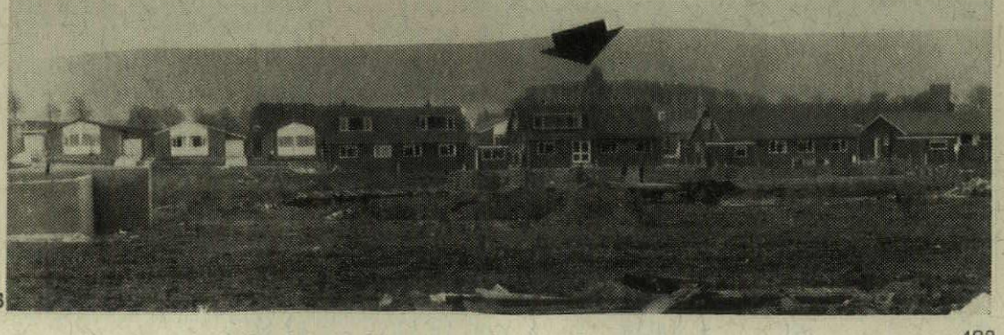
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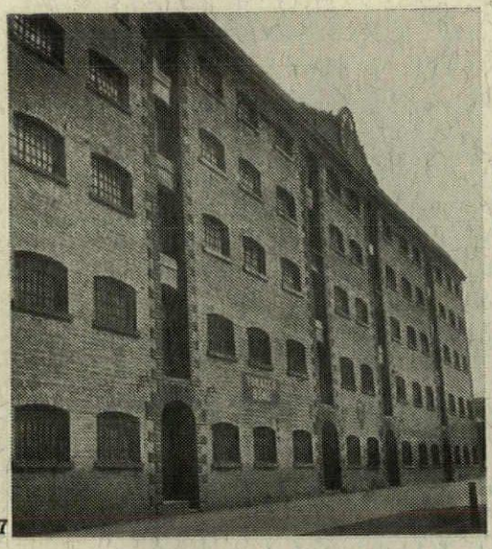
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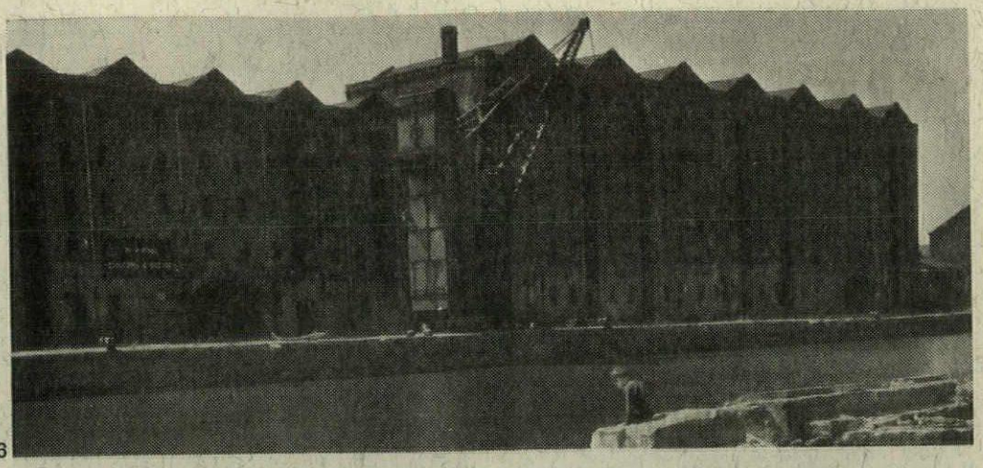
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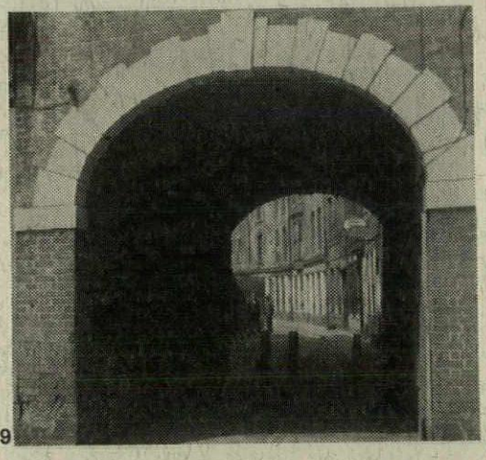
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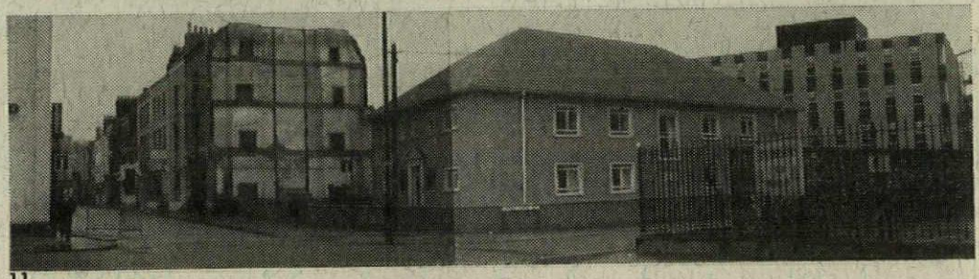
docks, 6, and demolish the warehouses, 7, whilst the eighteenth-century streets near Holy Trinity church slip deeper and deeper into decay, 8; the arch on the left leads to Prince Street, 9 and 10. It's no fun to be perpetually crying 'Woe, Woe' but what else is there to do?

BRISTOL
With the centre still not repaired from the blitz, Bristol continues to diminish its splendid stock of Georgian buildings. Two views of replacements in St. Paul's Square, in Bristol's unfashionable east end: anonymous offices, 12, and a truly scarifying new building for the church, 11. The houses in 13 seem headed for demolition too.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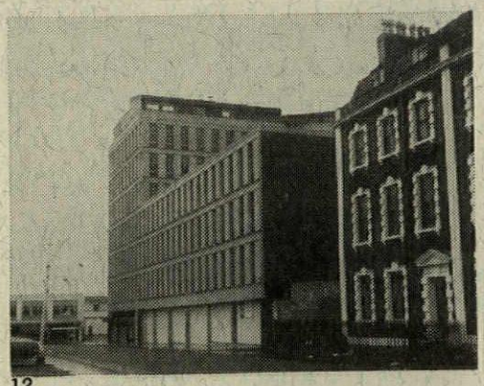
R.I.P.

BRADFORD-ON-AVON, WILTS
The Wesleyan Methodist church at the end of its life, 14. Permission for it to be demolished was given some time ago, work started and then stopped. Now an application has been made to build a house on the site. It seems a pity that this building, with a fine façade which plays an important part in the Bradford townscape, could not have been saved. Imaginative use might have turned it into an exhibition gallery, or a museum illustrating the history of the Wiltshire woollen industry. (Information from David Wiltshire.)

This is the last Stop Press, for the time being at any rate. I hope it may have done some slight good despite its gadfly technique; and I would like to thank everyone who has sent in details of Outrages, Credits, SOS's and Obituaries, especially Geoffrey Gale and Peter Burton (some of whose photographs appear above), and Gerald Nason for the drawings.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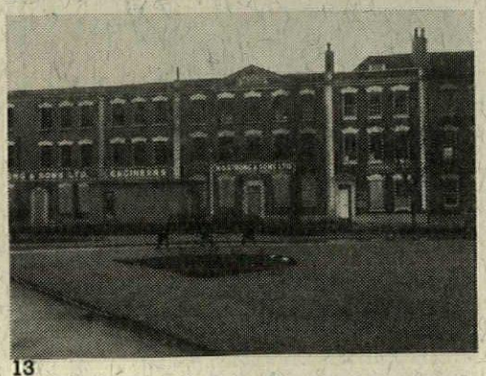
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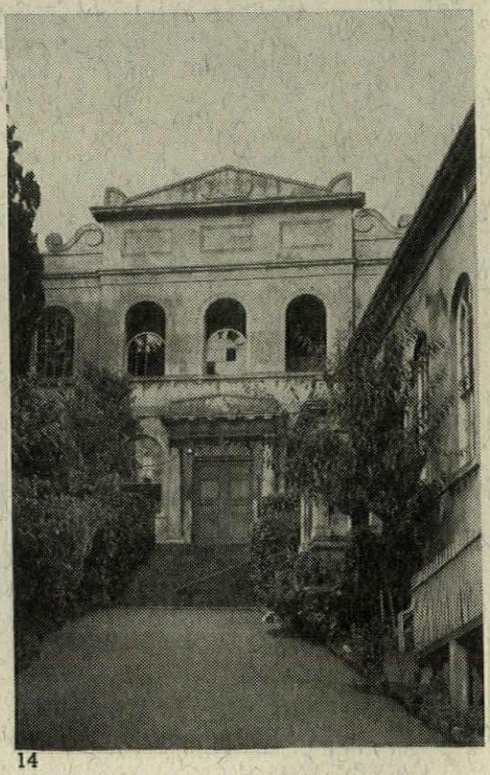
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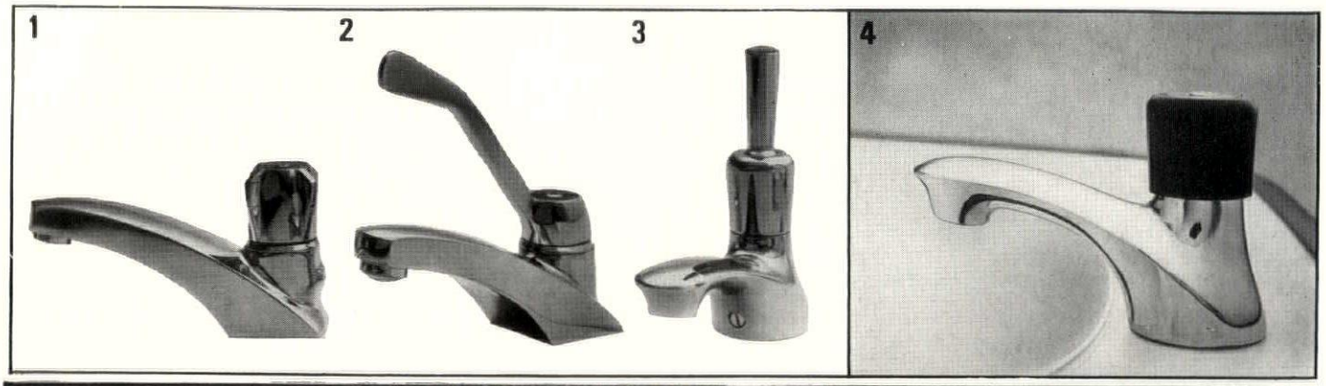

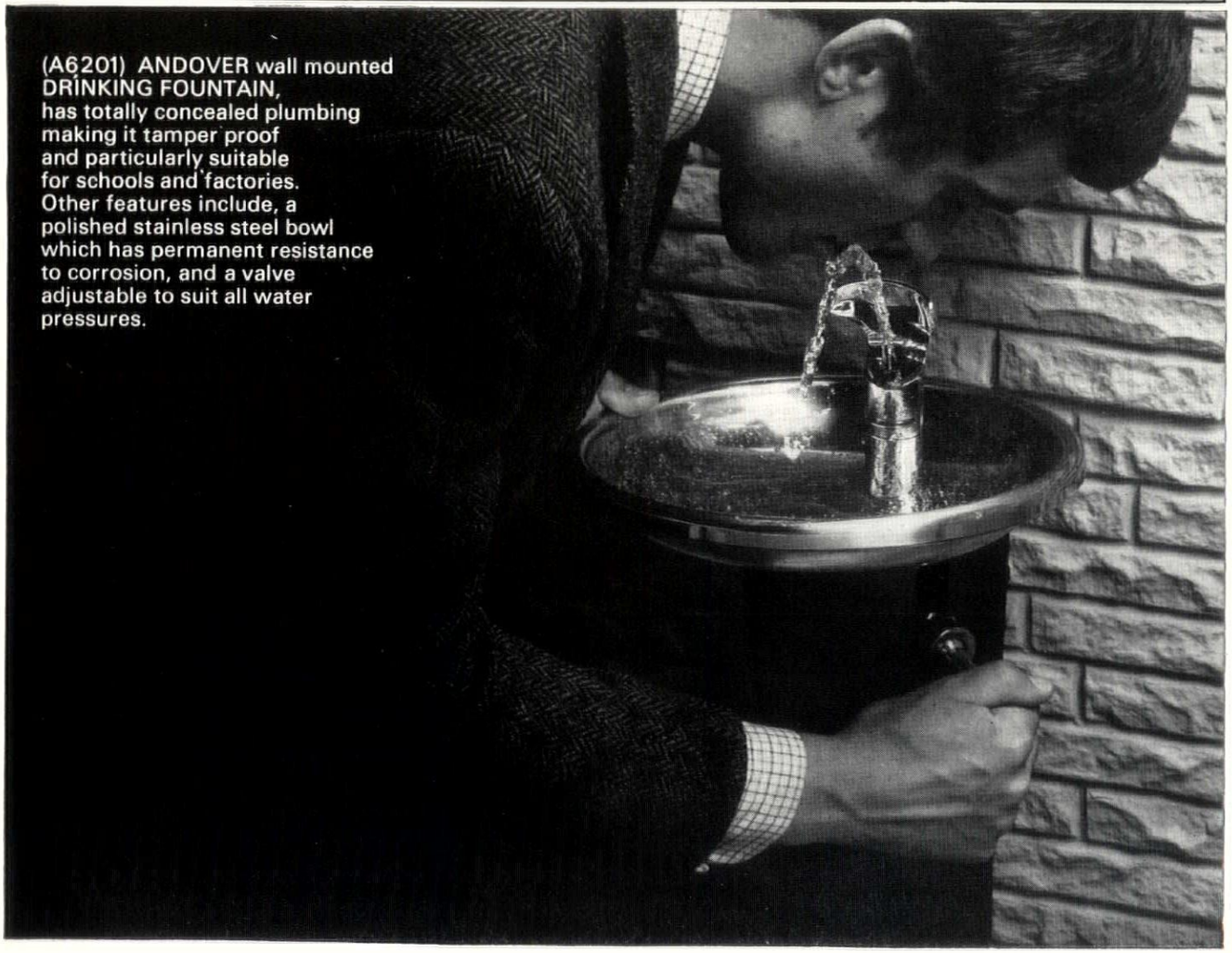

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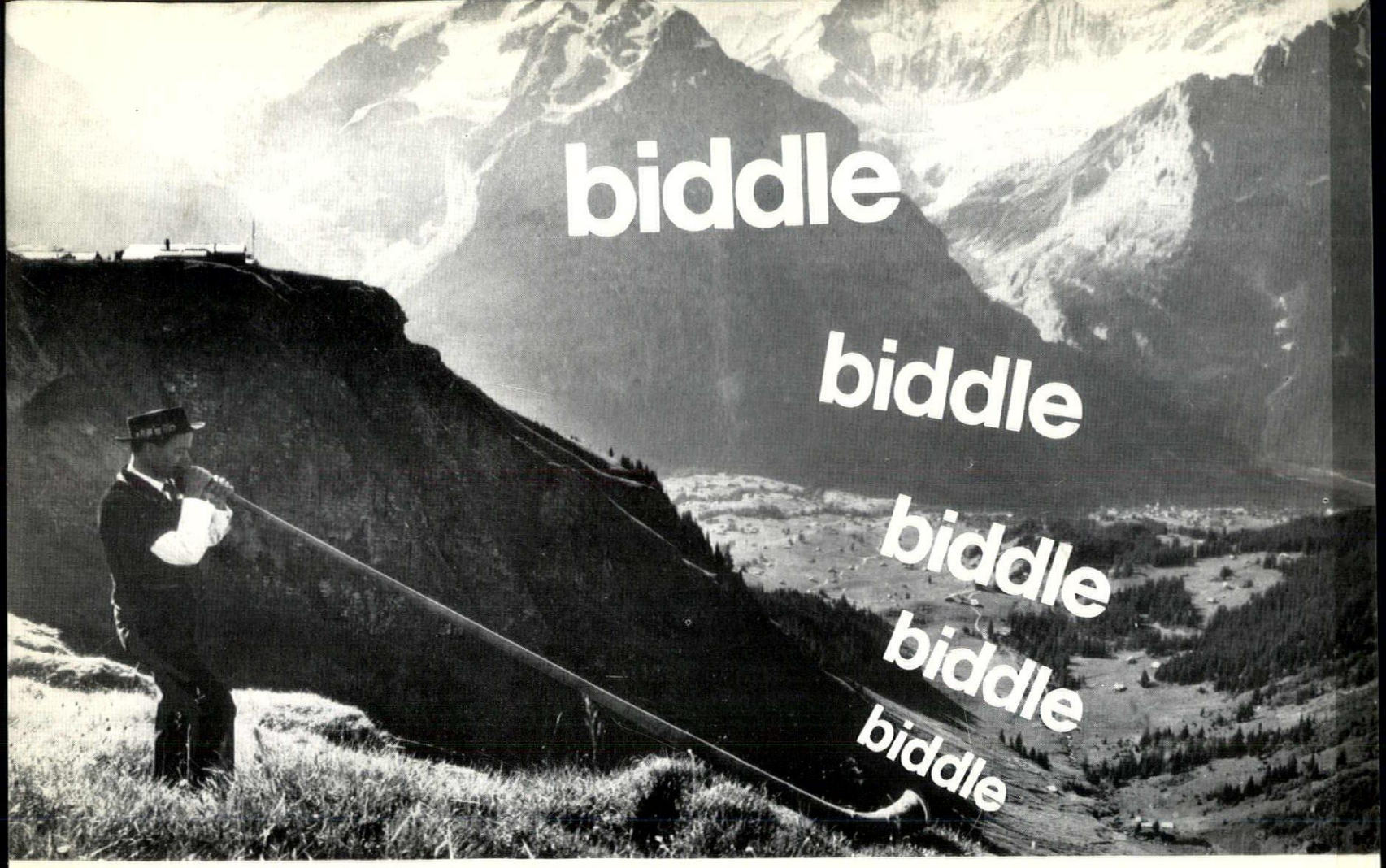

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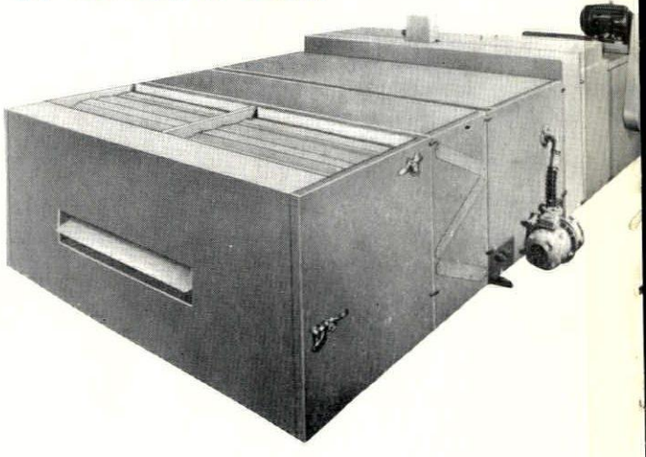

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