THE ARCHITECTURAL REVIEW VOLUME CXLII NUMBER 845 JULY 1967 FIVE SHILLINGS

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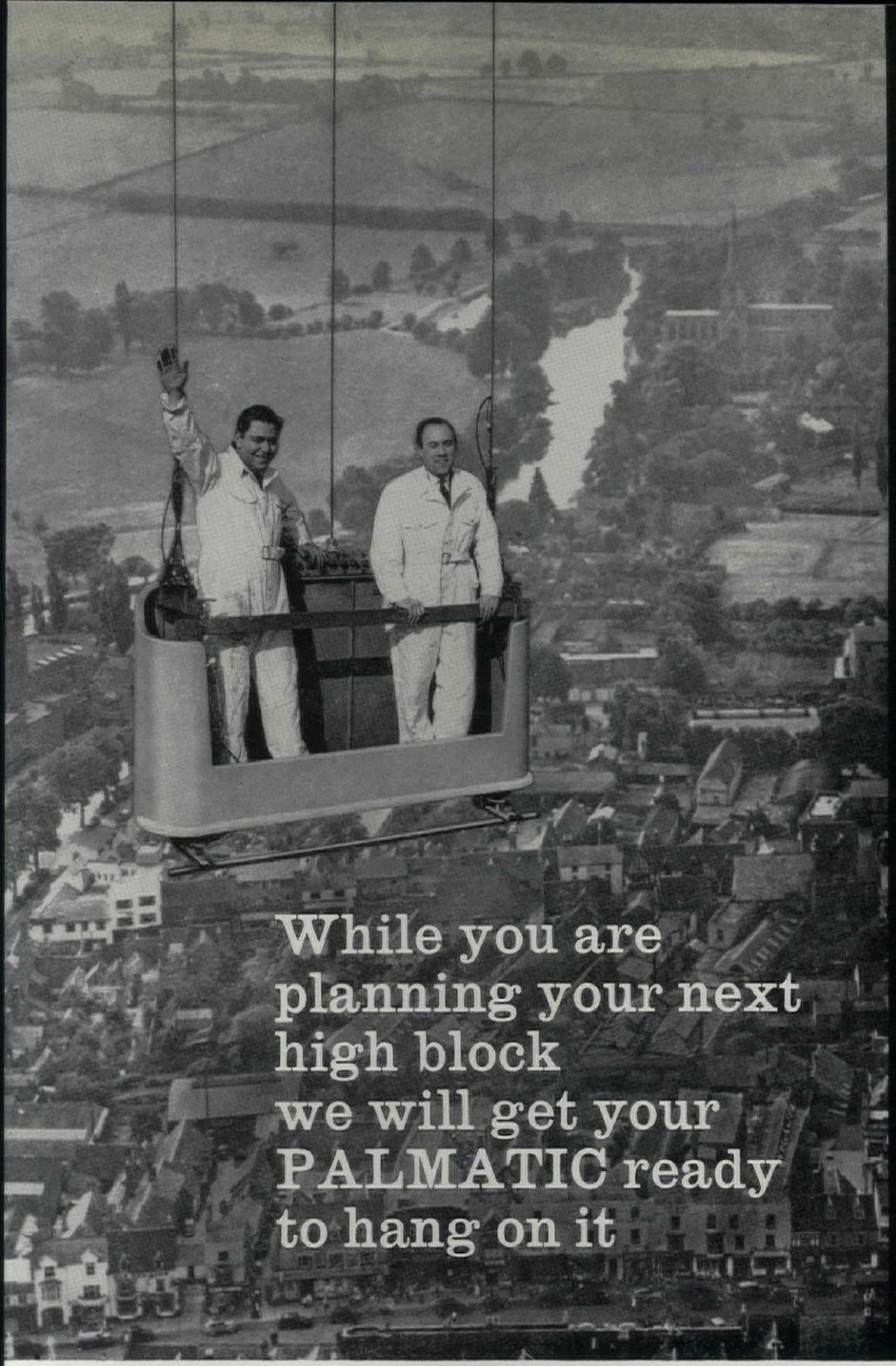

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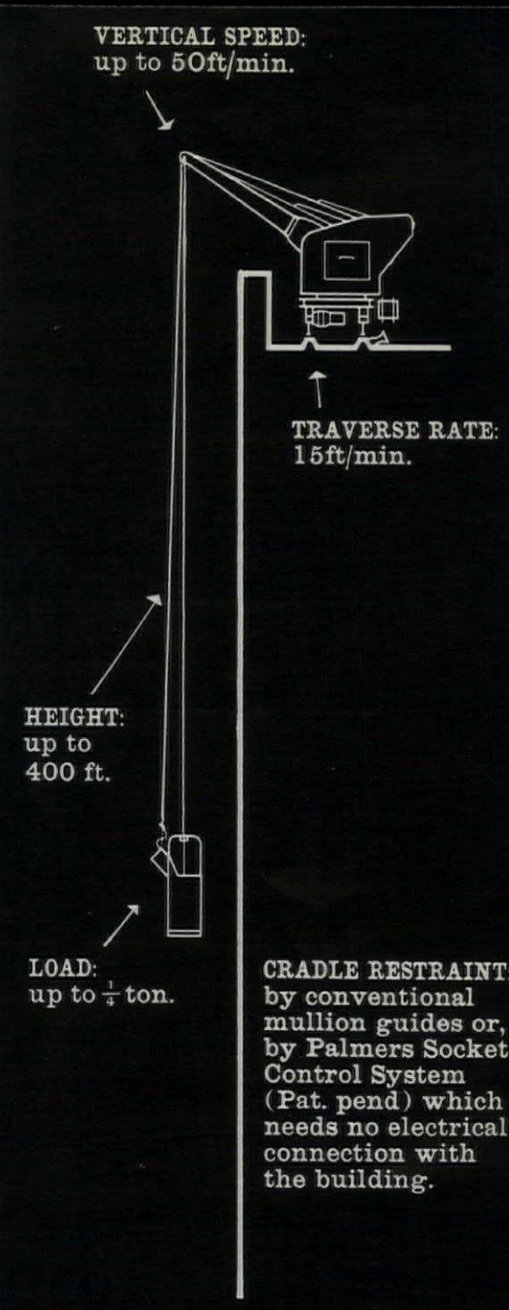

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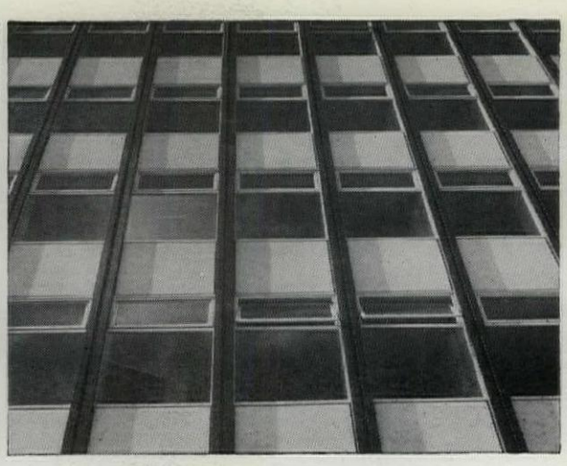

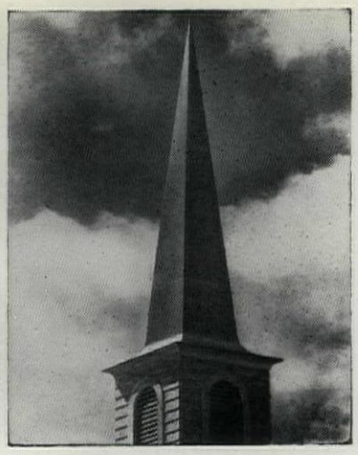

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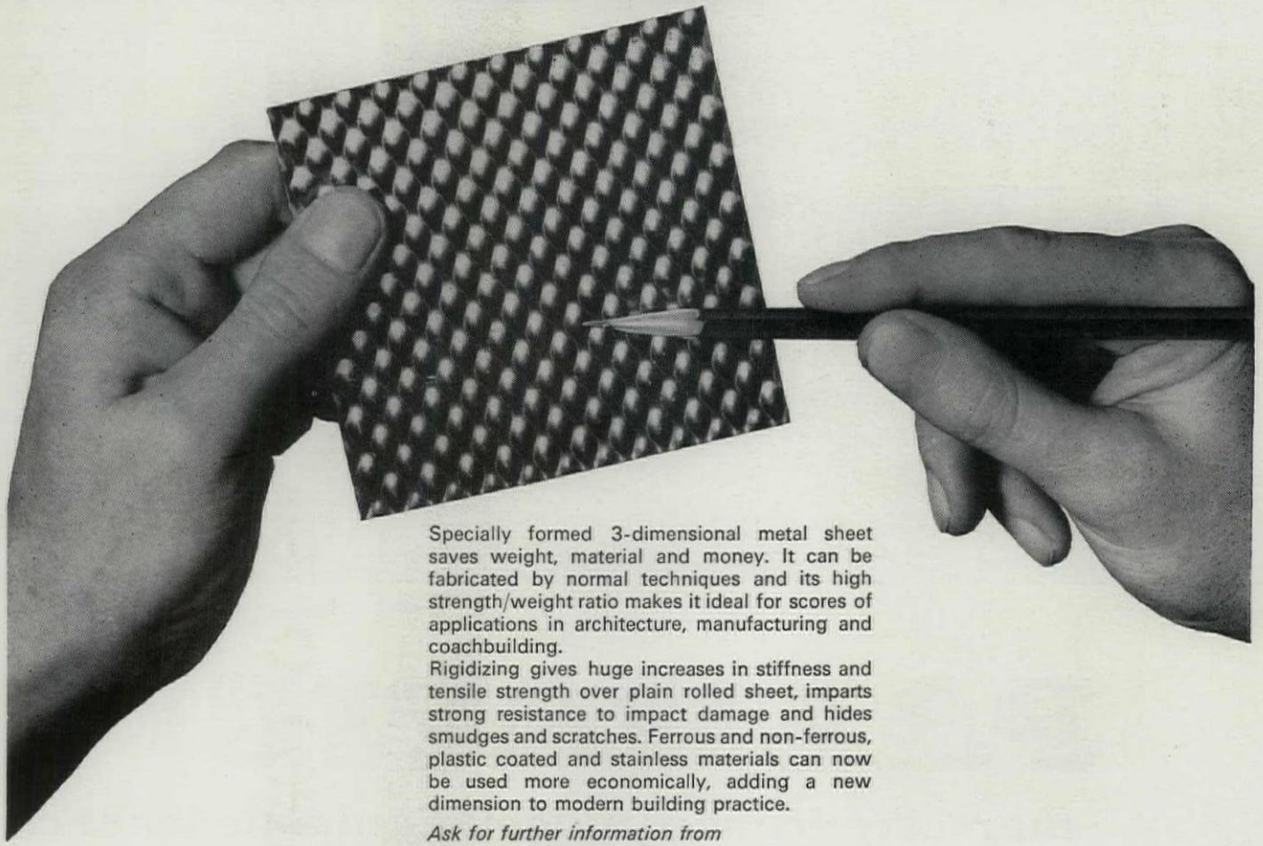

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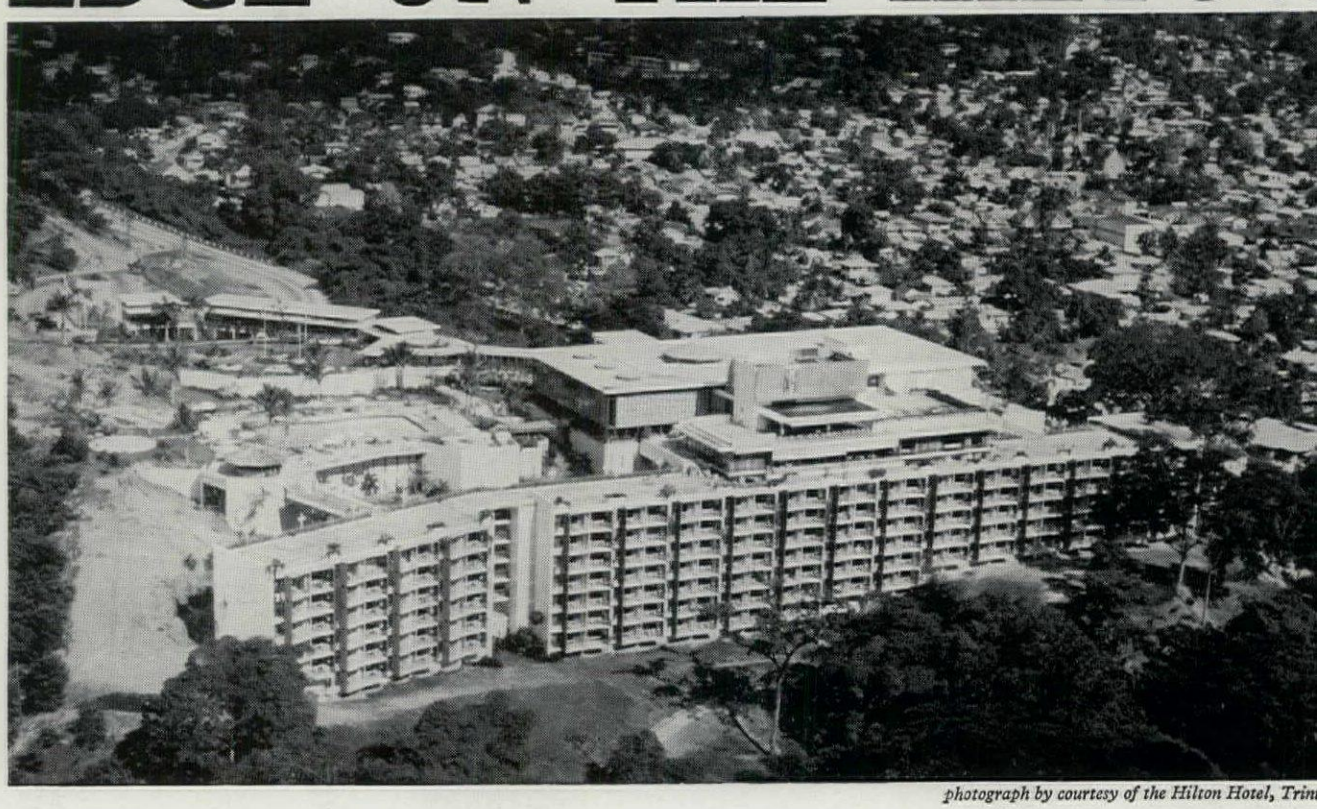

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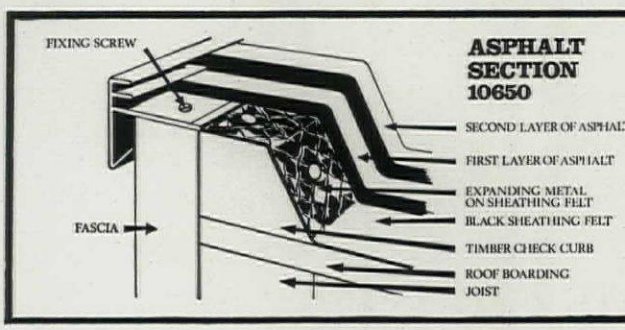

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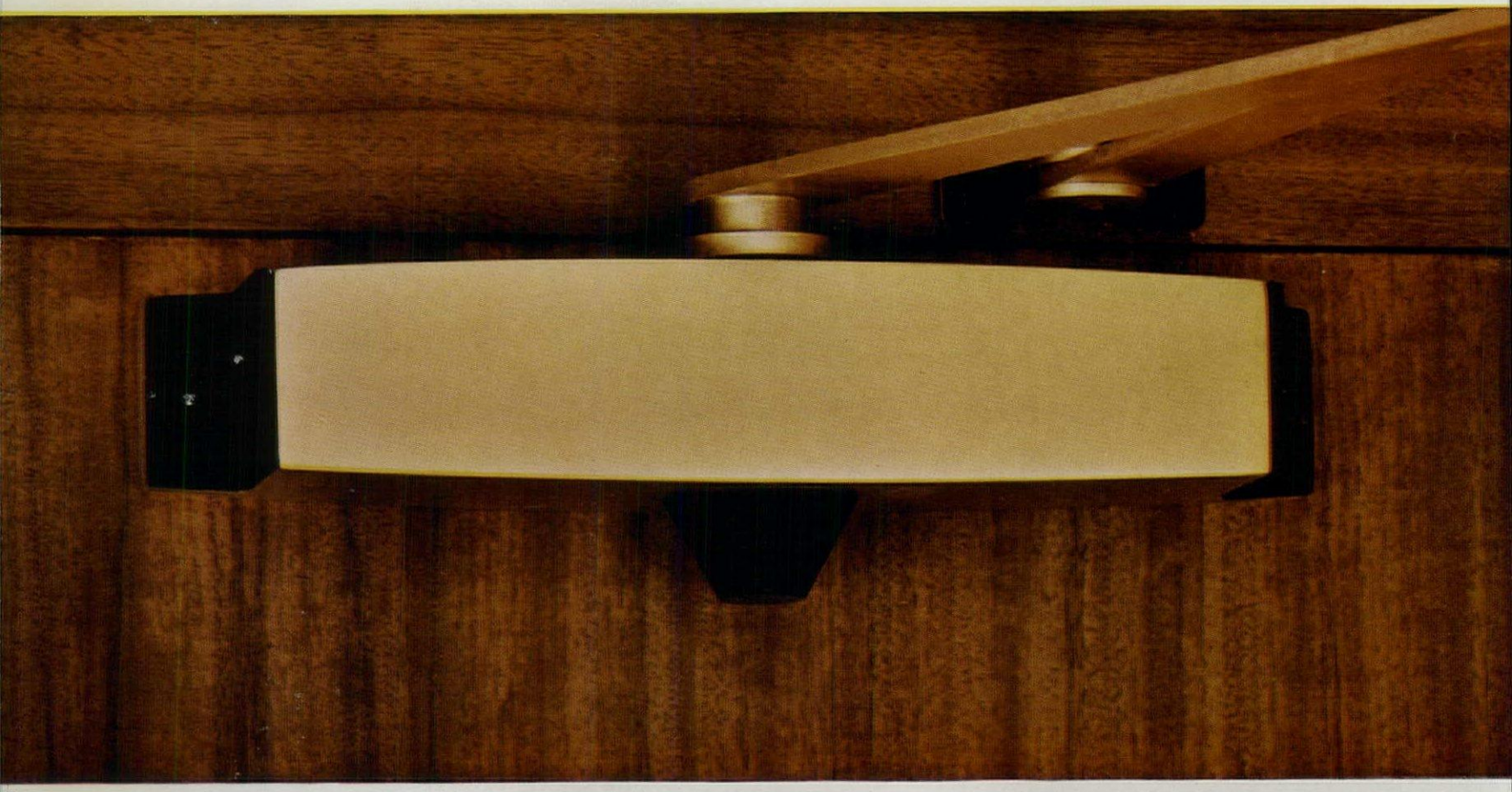

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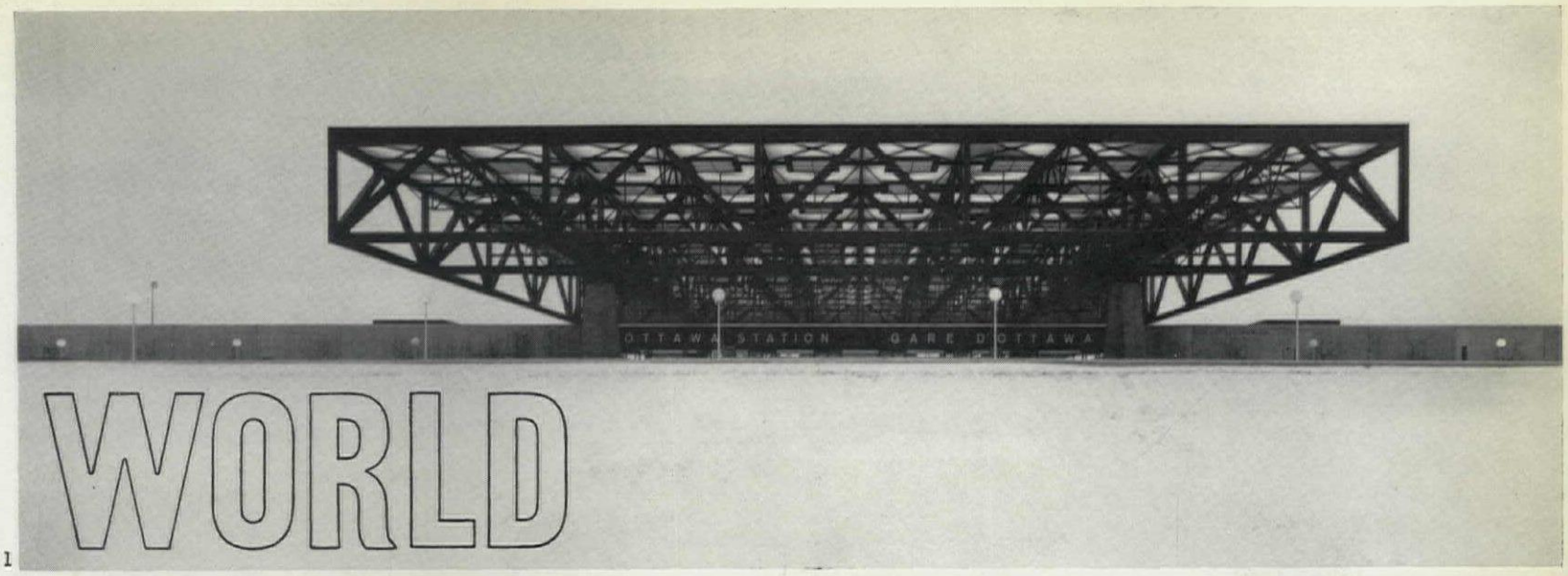


WORLD

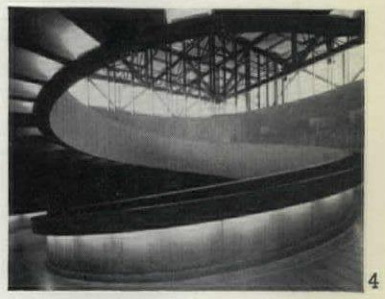
1

2

PARKIN STN.

Site works have started for a second rotunda at John B. Parkin Associates' masterly Toronto Airport (AR World, September 1964). At Ottawa the same architects have proved themselves equally expert in a more traditional form of interchange, the railway station, 1. The snowy wastes of its new site lie two miles from the city centre, well connected to arterial roads. The enormous canopy over the passenger concourse hovers on only eight columns, with 90 ft. spans each way. Visually there is an hiatus between canopy and platforms, 2, the reason being that from the centre of the concourse, 3, a broad spiral ramp descends, 4, to a spacious underground mall.

3



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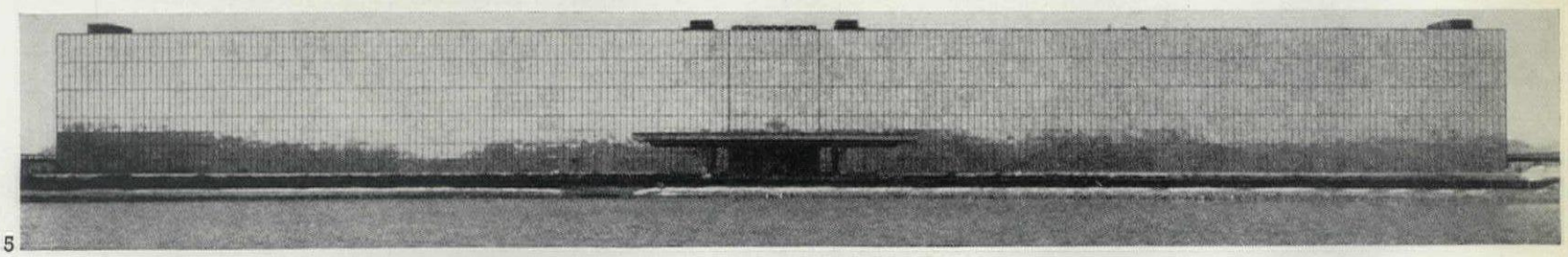

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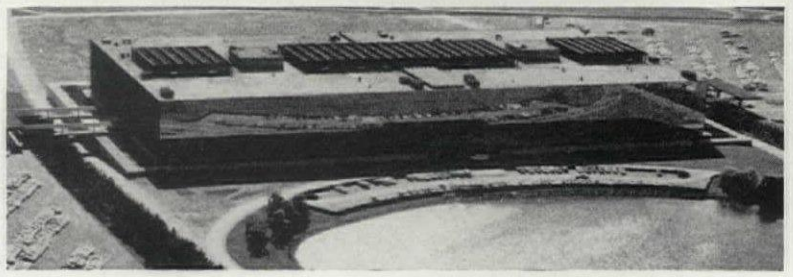

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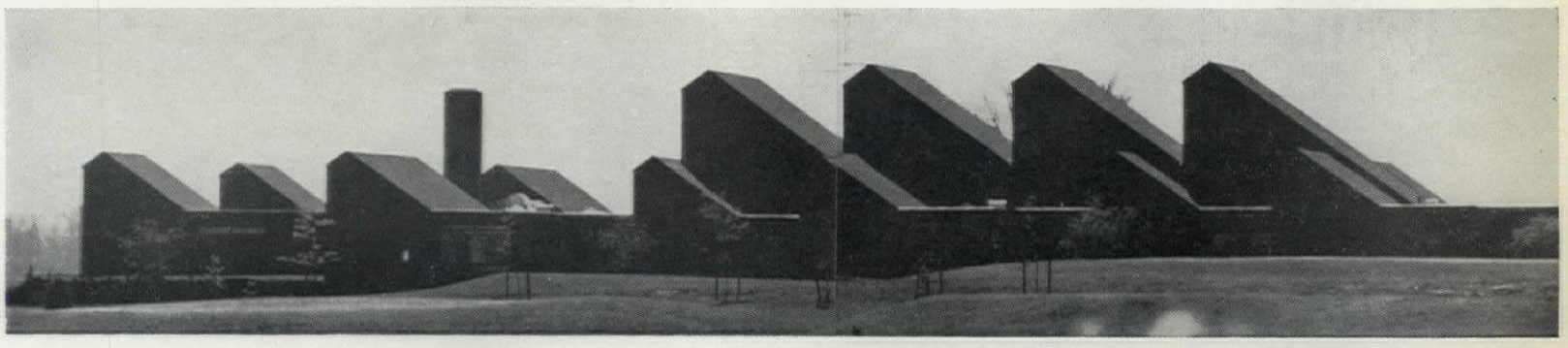
COLLECTING LANDMARKS

Eero Saarinen's 'last works' are more numerous than Frank Lloyd Wright's, and much more interesting. Bell Telephone's out-of-town laboratories at Holmdel, New Jersey—first stage built 1961-2—have at last received their cruciform concourse internally and their 'endless' glazing externally, 5. The facades are clad in one-way mirror glass, reflecting 'mural landscape' on the grand scale, 6.

A more important legacy from Saarinen for the environment is his part in establishing a special client-architect relationship at Columbus, Indiana. Edward Larrabee Barnes's



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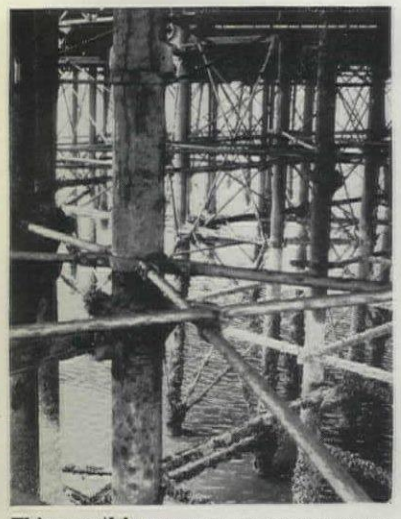

This month's cover *has a seasonable holiday-time subject. It shows the forest of ironwork that forms the underside of Blackpool pier. Photograph by N. Groves-Raines.*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

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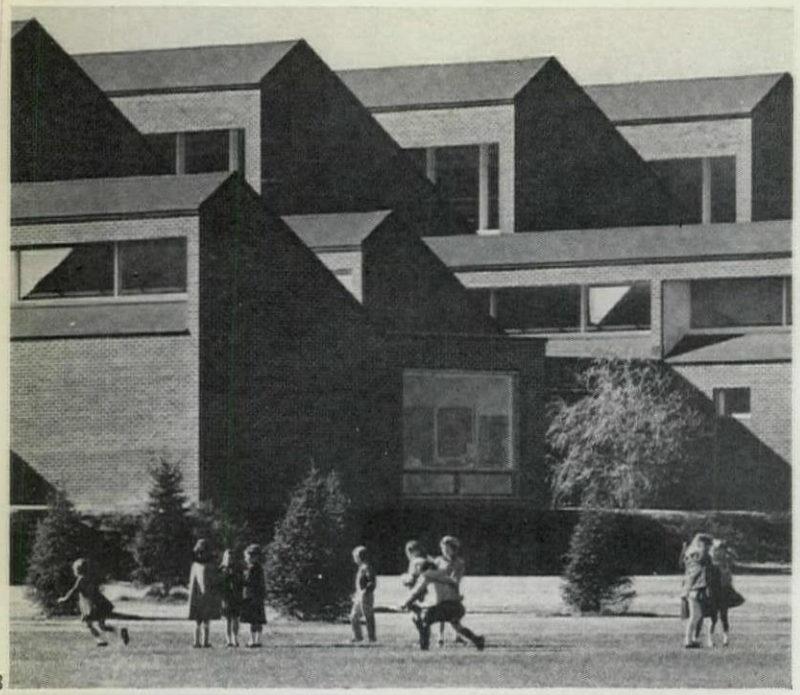

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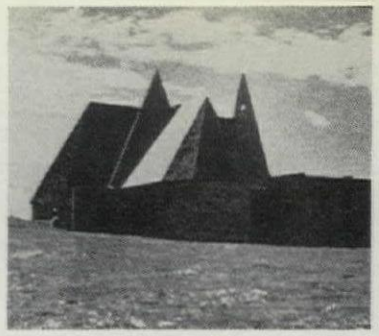
COLUMBUS

herd of baby bison charging across the plain, 7, known as the W. D. Richards Elementary School, is only the latest exhibit in America's greatest private collection of architecture. The patron is Irwin Miller; he is chairman of the world's largest diesel manufacturers, the Cummins Engine Co., whose headquarters are at Columbus—and whose superb English plant, by Saarinen's successor Kevin Roche, is illustrated on pages 12-17 of this issue. Barnes's school is typical of Miller's more obvious art-collecting: *scuola di Team X* would be the catalogue label. The classrooms are cleverly arranged in groups of three with garden courts, on either side of a central spine of special rooms. But what visually matters is the grouping of those assertive rooflights, 8, with the twin bellcotes and apses of Harry Weese's equally expressionist First Baptist Church, 11; according to Barnes's design associate, Jacque Robertson (reported in *Forum*), they give a sprawling suburb 'the structure of an ancient town. You see the institutions on the skyline.' The North Christian Church, another of Saarinen's 'last works,' rears itself over a similar landscape of bypass and shack, 9.

Saarinen was the first architectural 'name' Miller knew, when in 1940 Eliel and Eero together designed the superb First Christian Church, 12, in the heart of Columbus's downtown. Not until 1955 was Miller's own first building opened—the delicately glazed and domed pavilion of the Irwin Union Bank, 13, designed by his friend Eero Saarinen. Realising it was as easy to employ a good architect as a bad one, Miller approached the town's school board, offering to pay the architectural fees of all future schools if the board agreed to select its architect from a short list drawn up for each school by two architect-assessors appointed by Miller himself. The result has been schools by Harry Weese (twice), John Carl Warnecke, TAC and Edward L. Barnes. Weese's 'early industrial' Northside Junior High School is particularly attractive, 14, as is his Eastbrook branch of the Irwin Union Bank, 15 (both built in 1961).

But isolated monuments do not make a town—as *Forum's* excellent article on Columbus (December 1965) trenchantly indicated. Miller gradually became conscious of his responsibility for the casual bric-à-brac which envelops the principal landmarks of downtown Columbus—the Saarinens' church, left in 17, and the tower of the county courthouse, right. The downtown was economically rundown, being stuck in a corner, with flood-plains on two sides, 16 (the plan shows proposals for traffic segregation and urban renewal by Illinois University students). Three types of urban renewal are being tried officially. A street repainting scheme is being carried out to designs by Alexander Girard; his colours are much gayer and his signs much more genuinely pop-commercial, 10, than anything our own Civic Trust would sponsor. Secondly, the flood-plain end of downtown—within the dotted line in 16—is being redeveloped with Federal



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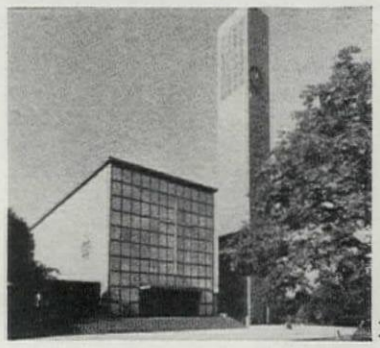

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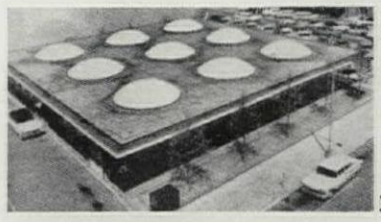

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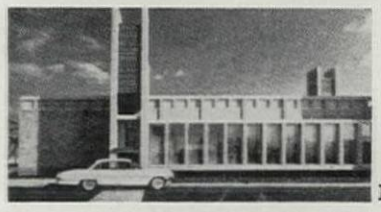

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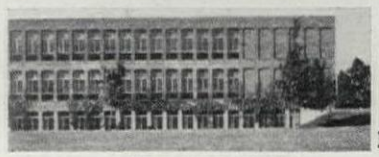


15

16

key
a, county courthouse
b, First Christian Church
c, Irwin Union Bank
d, county library
e, Irwin mansion
f, school

17

ALUMINIUM ALLOY FABRICATIONS LTD ALIFABS

STANDARD ALUMINIUM EXPANSION JOINTS

Satisfactory assemblies of all types of expansion joint covers on larger buildings of today have been a problem. The assemblies shown in this pamphlet using special extruded members with "wedge-tite" anchor construction supply the best possible answer to this problem. They are versatile in application and may be used with any type floor, any combination of floors, at floor and wall junctions with 1" expansion joint.

These assemblies have approached the problem from an architectural, mechanical and economical viewpoint. Smooth flowing and clean line appearance is achieved by the use of $\frac{1}{4}$" rubber cork strip 1" wide with smooth suede surface on top side and pressure sensitive on the opposite for easy application to the metal. Aluminium wall and ceiling covers are supplied anodised, all other sections being mill finish.

MATERIAL. The sections are extruded in aluminium alloy HE9P. The standard length is 12'0", other lengths can be supplied at small extra cost.

FIXING METHODS. "Wedge tite" anchors should be fitted on all types 3" from each end and at approximately 18" centres. All joins on sections where multiple lengths are used should be fitted with standard jointing spigot. Types EJFW3, and EJW5 are fixed to wall using $\frac{3}{16}$" "Rawltamps".

PROTECTION. All surfaces in contact with concrete or masonry will have one coat zinc chromate primer.

STANDARD ALUMINIUM ROOF EXPANSION JOINTS

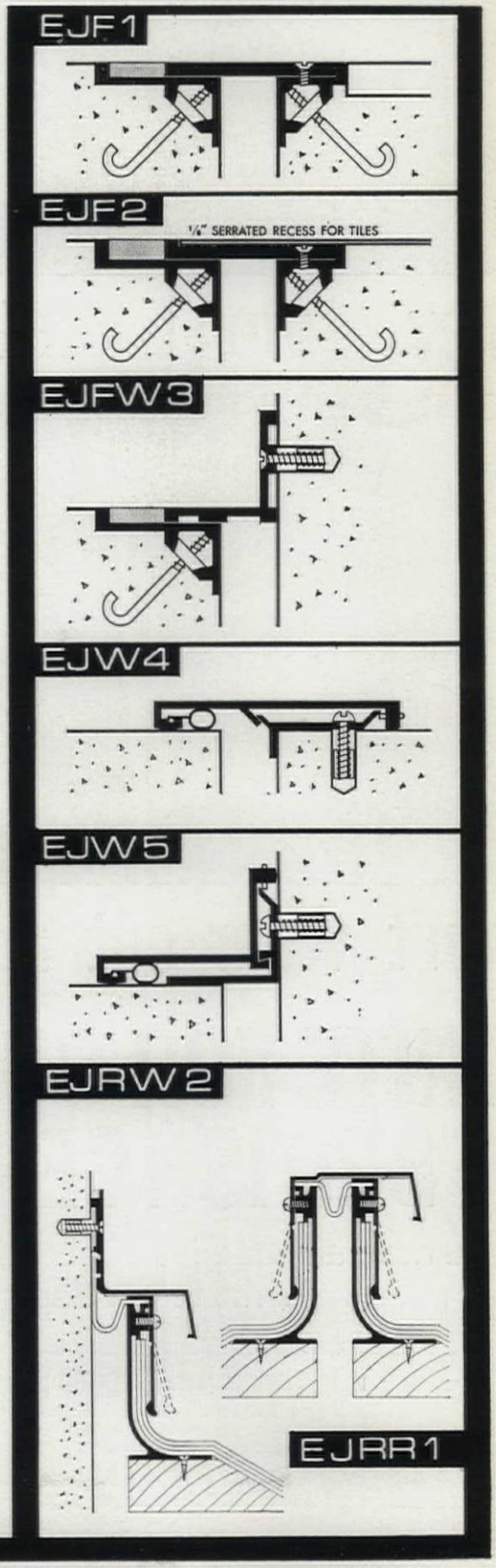
A mechanically sound roof expansion cover system for the general construction field has been a prime requisite for many years. We have solved many of these problems in the design of a functional Aluminium Expansion Assembly as illustrated on this page. The roof expansion assemblies are adaptable to a flat roof area or junction of roof to wall and can, also be used in combination with Type EJW4 shown overleaf. All assemblies are designed to span a 1" roof control joint.

MATERIAL. The sections are extruded in aluminium alloy HE9P. A continuous vinyl strip (80 Durometer Hardness) is used to ensure a non leak joint at the end of the assembly.

The standard length of aluminium is 12'0", other lengths can be supplied at extra cost. The vinyl strip is available in 70'0" lengths.

FIXING METHODS. The main upright sections should be secured as indicated with No. 10 Woodscrews at 1'0" centres. Sheet metal covers 1'0" long are used at joint breaks and fitted with suitable mastic compound. On type EJRW2 the top of the wall angle should be caulked using the nib provided, angle fixed to wall by $\frac{3}{16}$" "Rawltamps".

PROTECTION. All surfaces in contact with concrete or masonry will have one coat zinc chromate primer.



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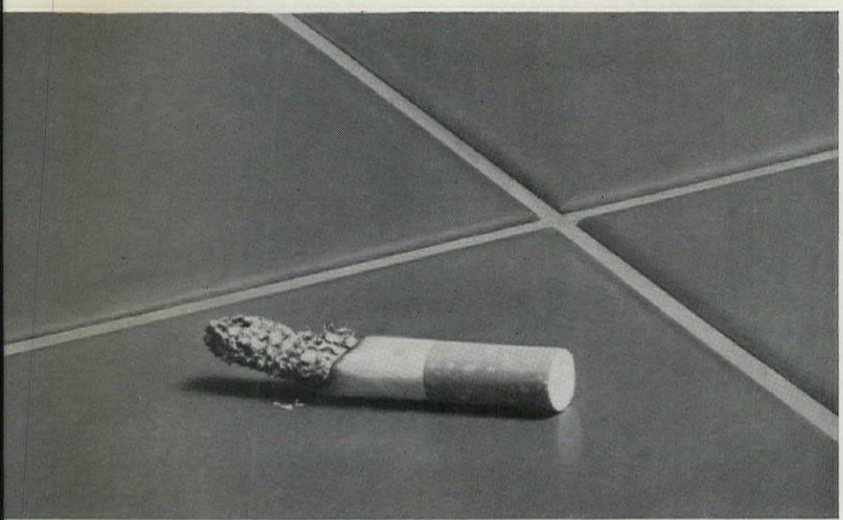

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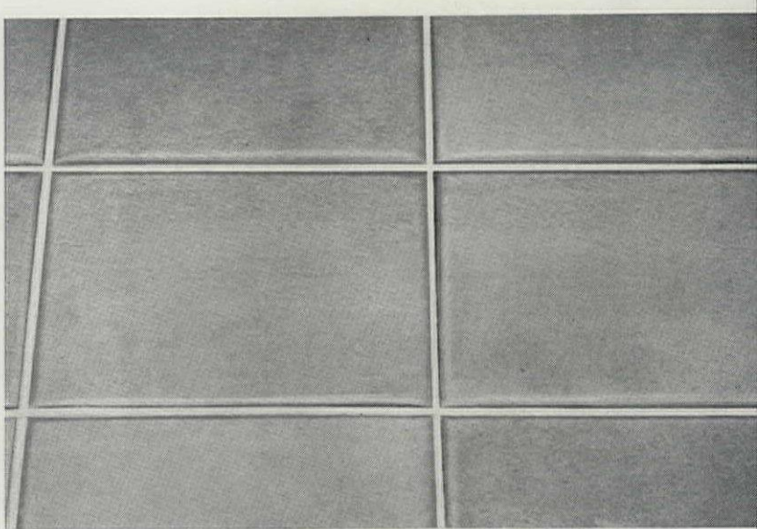

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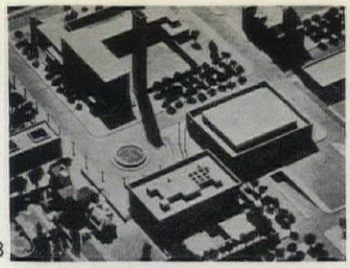

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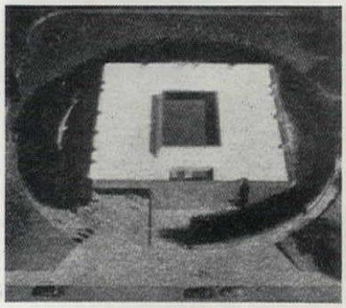
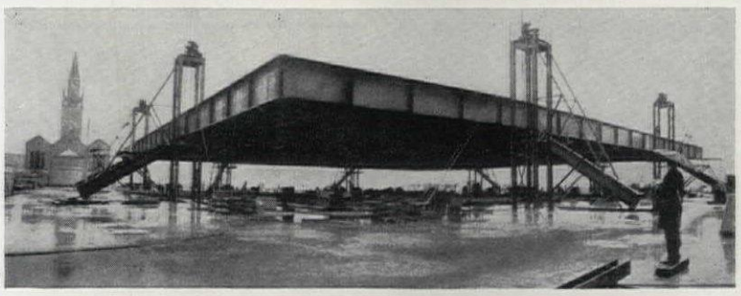


19

COLUMBUS

aid to take advantage of the unusual opportunity of a downtown with open countryside immediately next to it; Kevin Roche's sub-regional post office is to be one of its first buildings. Miller is carrying on the work of opening up public spaces within the street grid, which was begun by the Saarinens' church; across the road from it, 18, I.M.Pei & Associates have designed a county library with a small plaza; next to that will be a civic auditorium, and on the fourth side of the plaza the old Irwin mansion is likely to be dedicated to some public use. In the block beyond the mansion will be a new downtown school by Gunnar Birkerts, 19; his design, with its high earth banks and stockade of trees, emphasises the difficulty of creating any kind of openness without controlling traffic.



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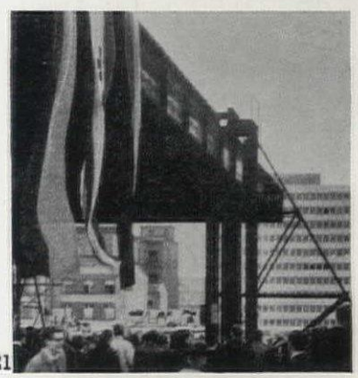

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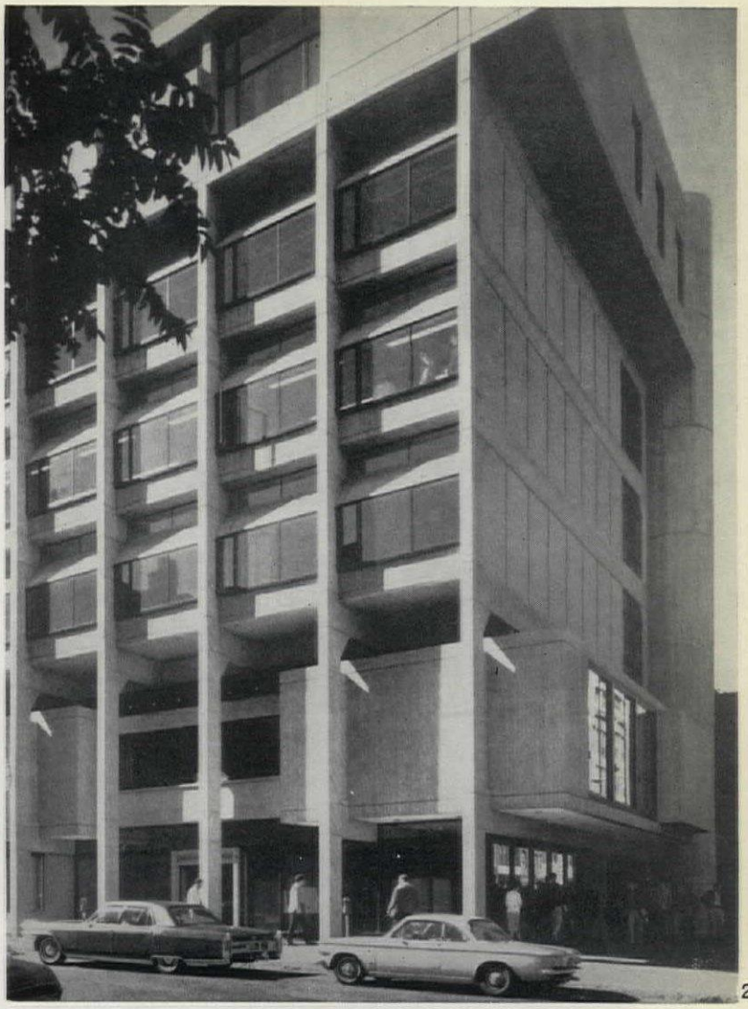
RAISING THE ROOF

Mies van der Rohe, in his 81st year, was present when the entire roof of his Gallery of the Twentieth Century at Berlin was lifted into place in one piece, 20. It is too early, 21, to judge the final effect of the structure, but elevationally it is very similar to the abortive Bacardi building in Cuba (1958).



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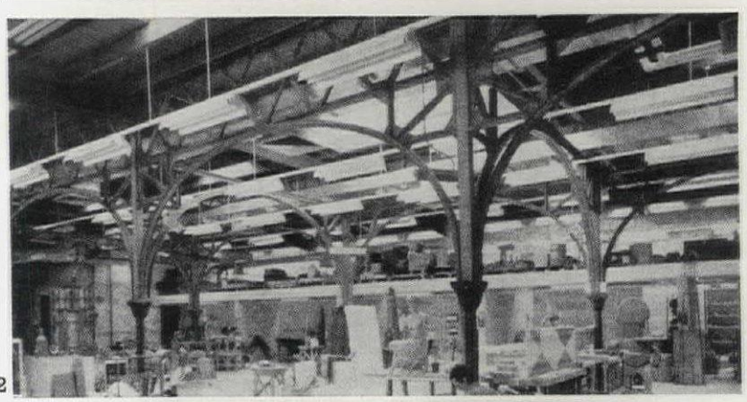
THE BAC

Round the corner from Charles Luckman & Associates' gimmick-strewn Prudential Center in Boston's Back Bay area stands the excellent new building of the Boston Architectural Center, 25—an institution which combines both club and school *à la* AA, but only for evening classes. Ashley, Myer & Associates, winners of the 1963-4 competition, have crisply hung the different parts of their building within an exposed concrete frame, four floors of studios being differentiated from the lower two floors of exhibition and meeting rooms. The windowless back, 26, is just as carefully thought out.



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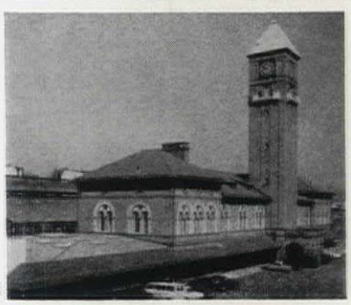
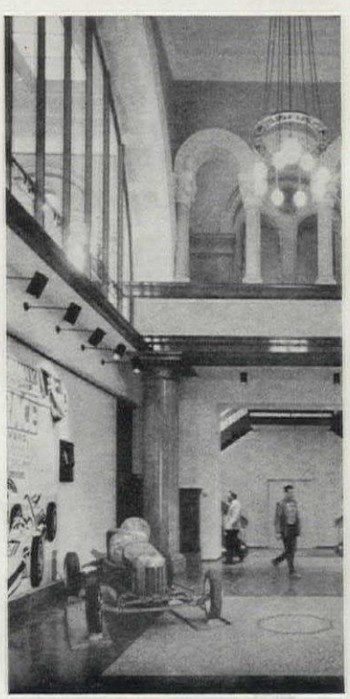


23

STEAM ART

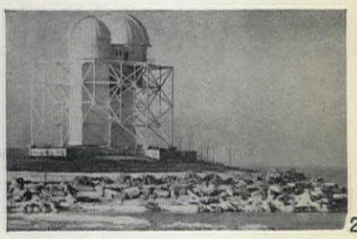
This school of sculpture, 22, in a former railway baggage hall is part of Baltimore's former Mount Royal Station (Baldwin & Pennington, 1894), 23, which has been excellently converted into the Maryland Institute College of Art by Cochran, Stephenson & Donkervoet. The centre of the waiting room remains to its full height as the entrance lobby, 24. Cost of conversion: $600,000.



24

SOM DOMES

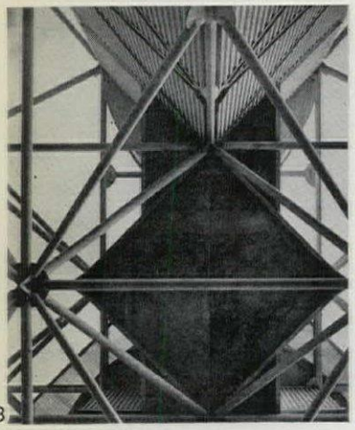
Looking like an Expo pavilion on the loose, Skidmore, Owings & Merrill's new observatory for North-western University, 27—on part of a 75-acre lake infill at Evanston, outside Chicago—has an elegant framework of



27

SOM DOMES

tetrahedrons in tubular steel, 28. Separate domed observation rooms, 36 ft. and 24 ft. in diameter, each housing a telescope, are clad in corrugated steel.



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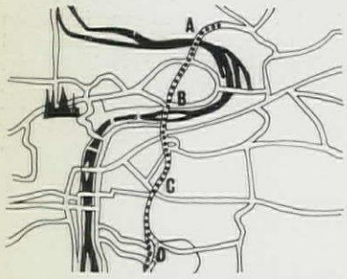
30

PRAGER'S PRAGUE

Urban renewal in Prague, where the IUA is about to hold its Ninth Congress, is concentrated along the line of the new north-south main road, 29. For each major site a competition has been held and each time first prize has gone to a group led by Karel Prager. His particular brand of efficiency shows most positive inspiration in his design, 30, for extending the Parliament Building (C), stripped classical of 1936. Prager, with Jirka Albrecht and Jiri Kaderabek, was one of only two competitors to suggest building a new courtyard *over the top* of the present building at cornice level, 31, instead of alongside.



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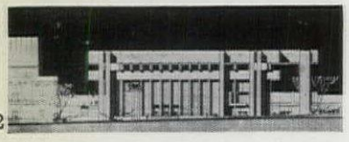
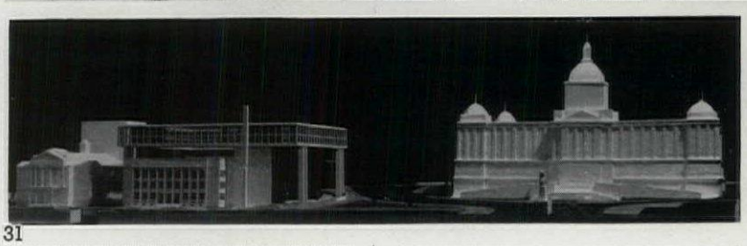
V. Machonin, and his wife suggested a similar solution, 32, but with a more overtly Constructivist reminiscence of El Lissitzky's Prouns, 33.

For the Mathematics and Physics buildings of Charles University (A), Prager proposes a repetitive use of components suitable for other Czech



32

universities, 34. A similar arrangement of high and low blocks, 35, is used (with Jiri Kaderabek) for housing the technical departments of Prague city council (B) and (this time with Jirka Albrecht) for the Czechoslovak Academy of Sciences (D).



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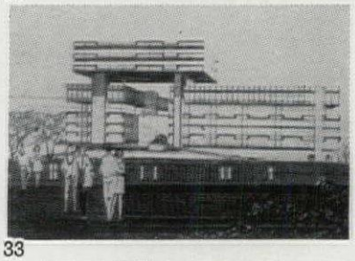

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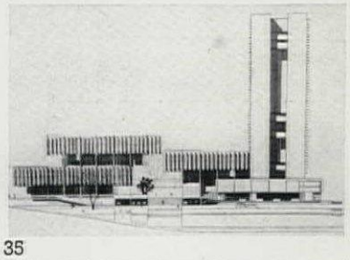

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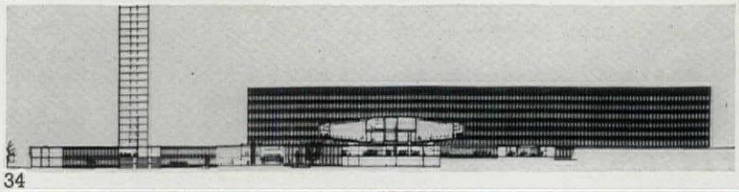

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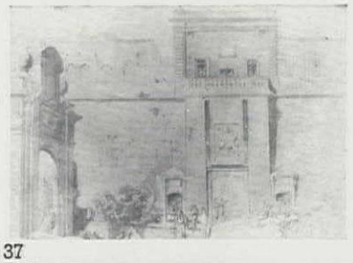

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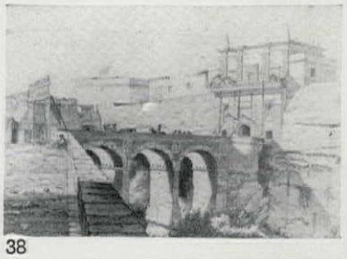

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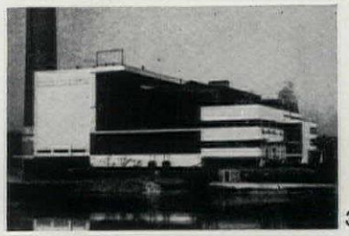
40

FRAGNER

Among the many functionalist pioneers whose work was recorded in *Architektura CSSR's* excellent special issue



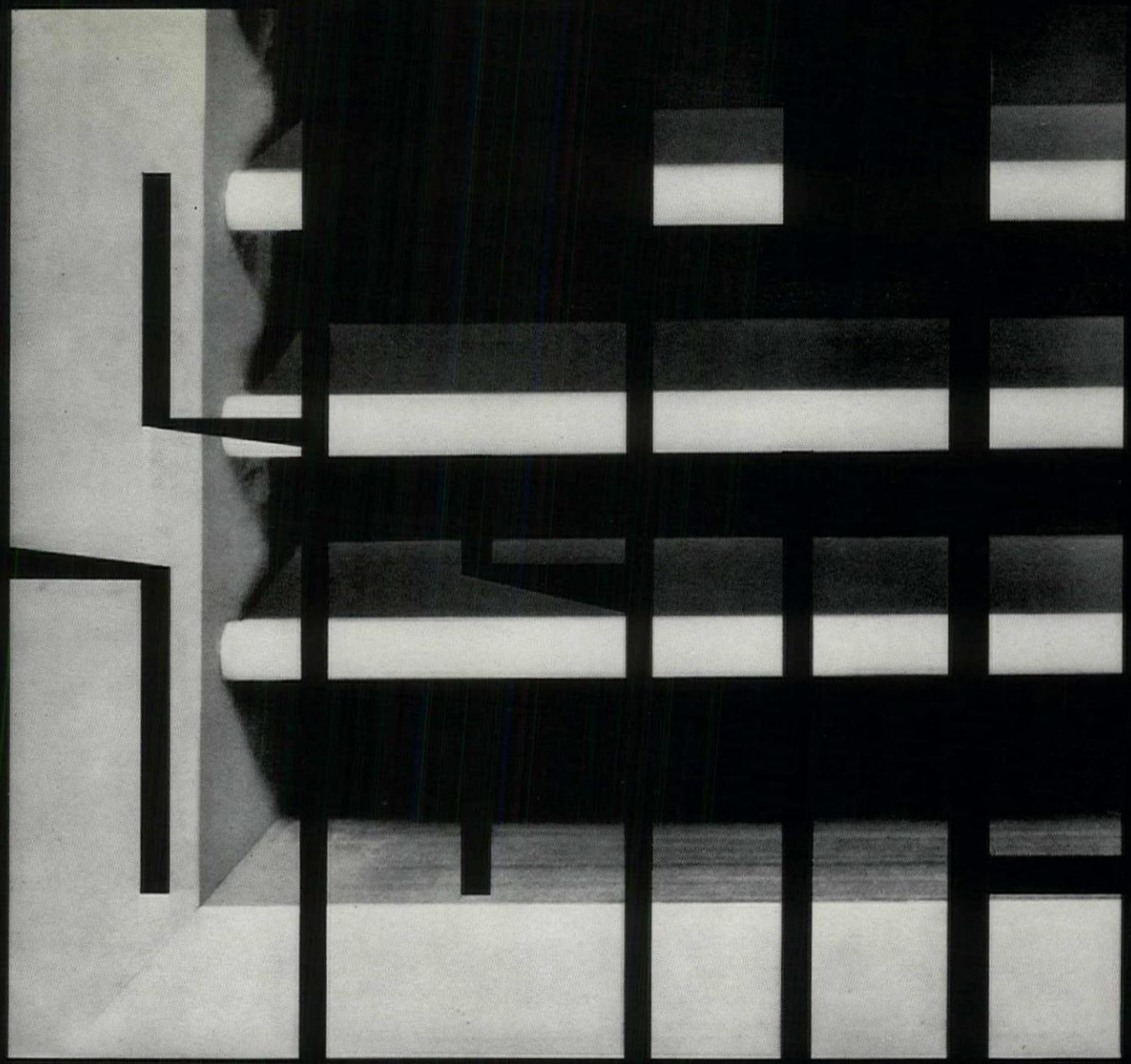
36

on Czech architectural history (9-10, 1966) was Jaroslav Fragner, who died in January. One of a group known as the 'Purist Four' in the early 'twenties, his finest building was the power station of 1935 at Kolin near Prague, 36, an excellent example of Constructivist influence.

GATE'S PROGRESS

39

The Porta Reale was originally the only landward entrance to the Maltese capital, Valletta. These pictures show: 37, the original plain gate built by the Knights; 38, the ornate eighteenth century remodelling; 39, the Victorian rebuilding by the British, still in a robust Baroque tradition; 40, the present Maltese Government's rebuilding to the design of an Italian architect, completed in 1966. So that's where the subsidies go.



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VIEWS AND REVIEWS

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BM MARK ONE

In 'The Genesis of the Museum' (AR, February, 1967) Helmut Seling referred to the British Museum's early pre-eminence as a collection but late emergence in a purpose-designed building. During the seventy years in Montague House from 1753, the Trustees were not wholly idle, however, at least on paper. John Vardy, Kent's successor in designing the Horse Guards, is known to have exhibited in 1761 at the Society of Artists a design commissioned by the Trustees; and it is this, 1, dated 1754, that has turned up recently in the collection of the late Sir Albert Richardson. His grandson, Simon Houfe, included it among 42 designs and three albums from the collection which were expertly displayed on 4–27 February at the Cecil Higgins Art Gallery, Bedford.

Vardy's use of two rotundas, with screened exedras, is an exploitation of the circular form even earlier than the Vatican's Museo Pio-Clementino of 1773; but in spite of his Palladian trim, Vardy's design is not in the least neo-classical. The varied rhythm of small pediments and differently sized windows shows the kind of flirtation at a distance with the Rococo which Dr. Girouard recently diagnosed in James Paine.

Other highlights of the Richardson collection are the Goodchild album of C. R. Cockerell's work, drawings by the Russo-Italian Giacomo Quarenghi of Tsarskoe Seloe and Peterhof, and the splendid library ceiling at Woburn, 2, designed by Sir William Chambers in 1770 (John Harris identified it). It survived less than a generation before Holland's remodelling. Mr. Houfe's catalogue is available from him at Avenue House, Ampthill, Beds. N.T.

GREAT LITTLE G

As part of an imaginative series of selected reprints and full indexes from 'Great Little Magazines,' the third issue of the new quarterly *Form* has reproduced in translation, with the appropriate illustrations, Mies van der Rohe's prophetic statements on 'Industrialized Building' and 'The Office Block' from the famous Berlin magazine *G*. *Form* also takes from *G* articles on 'Logically Consistent Poetry' by Kurt Schwitters and on 'Elemental Formation' by Theo van Doesburg. The three editors, Philip Steadman, Mike Weaver and Stephen Bann, apart from special interests in Constructivism and in Concrete Poetry (see Bann's article in AR, April, 1966), are principally concerned to ferret out the literary spoor of the early years of Internationalism. *Form 1* reprinted van Doesburg on 'Film as Pure Form' and *Form 2* Gillo Dorfles on 'For or Against a Structuralist Aesthetic?' The magazine is obtainable at 3s. 6d. a copy from Philip Steadman at 8 Duck End, Girton, Cambridge.

AMERICAN ENVIRONMENT

Last February the Smithsonian Institution in Washington held its second symposium (with Jennie Lee in the chair) devoted this year to 'The Quality of Man's Environment.' The reasons for the choice of subject were officially defined as follows: 'This theme is in part an expression of the Smithsonian's interest in environmental biology, anthropology and the history of art and architecture. It marks the belief that approaches to urban planning, art history, environmental medicine and land use have in recent years displayed incoherence and lack of co-ordination to a degree that has resulted in an unacceptable decline in the quality of man's environment.'

With this nice understatement as their starting-point, the symposium's twelve speakers filled in the background or attacked the problems according to their very varied disciplines. As an archaeologist Robert McC. Adams traced the origins of the city from the first beginnings of architecture in the early post-Pleistocene period. His conclusions were nevertheless very much of the present: 'Our task is to save our cities, not to resign ourselves to their defects and passively deplore them.'

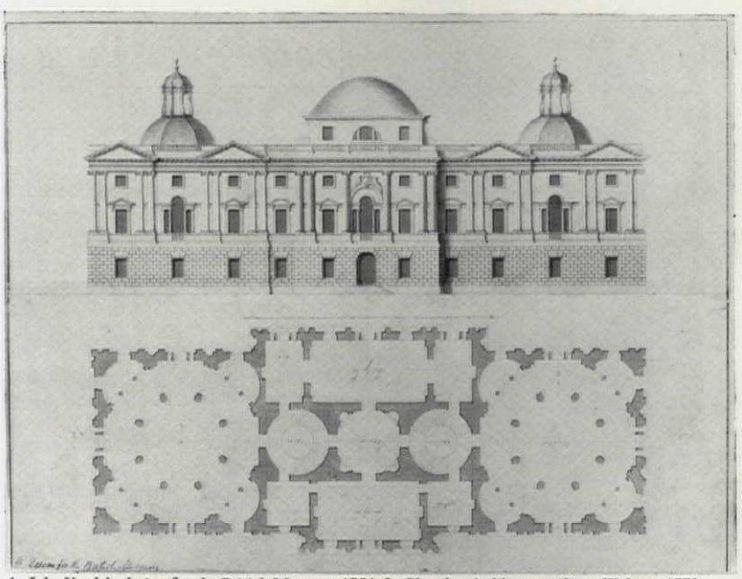
Although he described himself simply as an economist, Bertrand de Jouvenel, in his address on 'The Stewardship of The Earth,' took more of an aesthetic standpoint. Defining beauty as 'Man's only lasting achievement,' he cited as an object-lesson 'When Italy was the richest country in the late Middle Ages and at the Renaissance, she gave the world what is still our richest patrimony.'

'Institutions and Their Corresponding Ideals' was the subject chosen by the next speaker, Professor Wolfgang Braunfels. As an art historian he also selected two Italian examples—Siena at the close of the thirteenth century and the Palazzo Farnese in Rome—as outstanding among the five famous historical instances which he used to illustrate his theme. Professor Braunfels concluded that 'good architecture can only be created within the framework of an institution' and that 'it is a visible symbol of the ideals on which the institution depends.'

In a pungent attack upon his own country's shortcomings, entitled 'Why We Want Our Cities Ugly,' Philip Johnson deplored the decline of American architecture since the days of Jefferson and even the railway barons of the last century. This he attributed chiefly to the substitution of utility as an aim rather than monumentality. Like Wolfgang Braunfels, Mr. Johnson also believed that to be effective architecture must be inspired by ideas or an ideal. In support of this he quoted two modern instances, the first—Russia's immediate post-war contribution to East Berlin and her war cemetery there; although he admitted the defects of the former, of the latter he said 'As a Westerner I came away with the feeling that the Russians had suffered and that they cared to honour the sacrifices of their sons.' His other example was British imperialist New Delhi, 'built in 1911 but adequate for generations to come. Alas, England is not about to conquer us!' He concluded by quoting M. de Jouvenel's tribute to Renaissance Italy, adding 'Is it not time to emulate her?'

Among the next four speakers, Professor Leo Marx, of Amherst College, described 'Pastoral Ideals and City Troubles' as illustrated by American literature, and Hiroshi Daifuku, UNESCO Programme Specialist for the Conservation of Cultural Property, outlined UNESCO's activities in this field. Ian McHarg, Chairman of the Department of Landscape Architecture and Regional Planning of the University of Pennsylvania, in an address entitled 'Value, Process and Form,' made an impassioned plea that the rape of the earth should cease. Although some of his assertions were questioned at that evening's seminar and his use of the word humanism certainly did not correspond to any definition to be found in the Oxford Dictionary, few would quarrel with Mr. McHarg's conclusion that 'the greatest failure of western society, in particular the post-industrial period, is the despoilation of the natural world and the inhibition to life which is represented by modern cities.' Paul Goodman, author of 'Growing Up Absurd,' 'Communitas' and 'Utopian Essays and Practical Proposals,' also made some challenging criticisms, particularly of American education and welfare, which were delivered with a pungency equalling that of Philip Johnson.

The last four speakers were Professor Edward T. Hall, of Illinois Institute of Technology, Professor René Dubos, of Rockefeller University, Asa Briggs, Vice-Chancellor designate of Sussex University, and Robert C. Wood, Under Secretary, Department of Housing. In his paper on 'The Environment —Are We Planning for Man or His Extensions?' Professor Hall did not spare architects. In his view their education 'is with few exceptions extraordinarily limited.' He also complained that during the last seven years, in which he had had many contacts with architects and contributed to architectural journals, he had 'failed to find a single instance of systematic feed-back from the individuals using a building that could later be reflected in the programme or design of a new building.' He considered that studies rather on these lines but on a much larger scale involving whole cities, which would afford information as to what actually goes on in them, would enable cities



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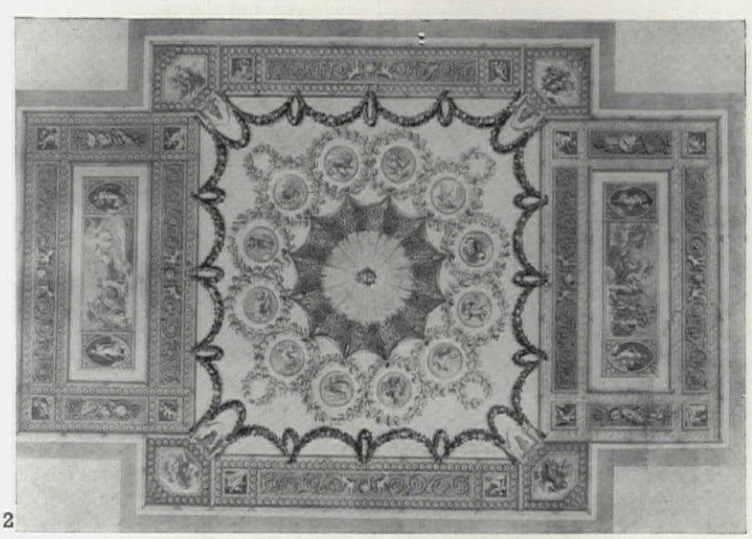
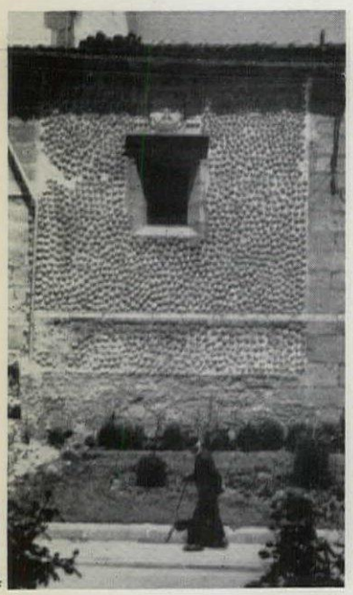


2

1, *John Vardy's design for the British Museum*, 1754. 2, *Chambers's library ceiling, Woburn*, 1770.

3



4

5

Three illustrations from Carlcs Flores' Townscape Espaſiol *(see note below): 3, the Paseo de la Marina, La Coruña (from the section of the book entitled Unity); 4, a wallscape at Béjar, Salamanca (from the section entitled Textures); 5, a street corner in Madrid (from the section entitled Light and Shade).*

to be planned for the life of their inhabitants: 'for man should be the focus of our design efforts rather than his extensions.'

Although Professor René Dubos is a microbiologist and experimental pathologist, he tempered science with humanism in his address on the 'Destructive and Creative Consequences of Adaptation,' which was perhaps the most constructive and apposite of the whole series. He warned that the chief dangers of air pollution 'are the culminative effects of continuous exposure to low levels of pollutents . . . and that this may lead to chronic pulmonary disease and other forms of disability in late adulthood and old age.' He also said that environment and ways of life determine in fact not only the manner in which men function but also the kind of persons their descendants will become.' Even more, that 'Social standardization and regimentation resulting from the creeping monotony of technological culture, patterns of education and mass communication will make it progressively more difficult to exploit fully the biological richness of man . . . diversity of social environment constitutes a crucial aspect of functionalism, whether in the planning of cities, the design of dwellings and the management of life.' And finally, that 'It is not unlikely that the accelerating "take-over" of today's stark technological philosphy will lead man unknowingly into a catastrophic situation.'

It was doubly unfortunate that owing to faulty timing Professor Dubos was only able to deliver a short summary of his paper, and for the same reason M. de Jouvenel had also to curtail his. It is to be hoped that in future symposiums the Smithsonian will adopt some system of time warnings so that speakers do not exceed their own time limit to the detriment of others—with its vastly greater number of speakers the Vatican achieved an effective system of this kind in the recent Œcumenical Council. All the papers read at the Smithsonian symposium will, however, be published (also in paper-back) later this year.

GEORGINA MASSON

TOWNSCAPE IN SPAIN

Carlos Flores is one of the leading modern architects of Madrid. This being so, it is gratifying to see him take so lively an interest in townscape that he devotes a whole book to it and calls it *Townscape Espanol*. The photographs are his as well as the text, and many of the sections into which the book is very informally divided will sound familiar to readers of THE ARCHITECTURAL REVIEW: the urban fabric, variety, light and shade, fluid space, textures, holes, scale, levels, contrasts and so on to what he admirably calls Popscape. Interspersed with such paragraphs are others on history, on that untranslatable Spanish quality *casticismo* (indigenousness, genuineness), and on new scopes for old buildings. There is also a two-page walking sequence. In short the AR has made a very worthwhile convert in a country much in need of a townscape reappraisal.

STOCKHOLM STABLE

Because of a regrettable transposition of two items sent to the AR from Sweden, the article entitled 'Stockholm Stable' in the 'World' section of the April AR was almost wholly inaccurate. Only the names of the 'stable,' the Teknorama exhibition and conference building and of its architects, Britta and Kjell Abramson, were correct; it is in fact an extension to the National Museum of Technology at Stockholm (it is not at Baron von Essen's Skokloster castle), having been converted from a former dragoons' riding-house of 1860. The illustrations showed: 1, the exhibition hall, with an early Volvo car in the foreground; 2, the foyer, with its concrete staircase and standard light fittings (these were not specially designed); 3, the upper floor, with stucco finishes to the staircase; 4, the restored facade; 5, the plan. We apologise to the architects and to our Swedish correspondent for this confusion.

SWIMMING BATHS

The ceiling of the swimming bath at Weinheim, Germany, which was among those illustrated in the May AR, is not of plastic, as stated in the caption, but of aluminium alloy, acoustically treated.

correspondence

POP

To the Editors.

sirs: Am I right in thinking that Reyner Banham's impenetrable prose (May AR) just fails to conceal an assumption that we all think Las Vegas is wonderful because (if I'm not a jump ahead) its *real*, and really reflects what real live people like best?

It's the same Pop taste as makes my Islington neighbours tear out their well-made, well-designed 1830 doors and windows and stuff the holes full of tangerine-flake plywood abortions. Except that the motive in Las Vegas is the American sacred cow: they (the perpetrators of the sky-signs) are trying to flog something.

If architects are to resign their judgement to what the ignorant mass of the public thinks is pretty, let the sick take over and run the hospitals. We are educated in order to know more and be able to judge better.

Yours, etc.,

HUGH JOHNSON

London, N.1.

book reviews

SOHO SURVEYED

SURVEY OF LONDON. *F. H. W. Sheppard, General Editor. Vols. XXXIII and XXXIV, The Parish of St. Anne, Soho. Athlone Press for the Greater London Council*, 1966. 12 *guineas the set.*

In the famous line from *Tipperary*, 'Leicester Square' summed up all the First War nostalgia for Edwardian London. 'Soho'—whether celebrated in (respectable) song or not—evoked Bohemia for the generation of the Second War. Yet both parts of St. Anne's parish are richly, if almost

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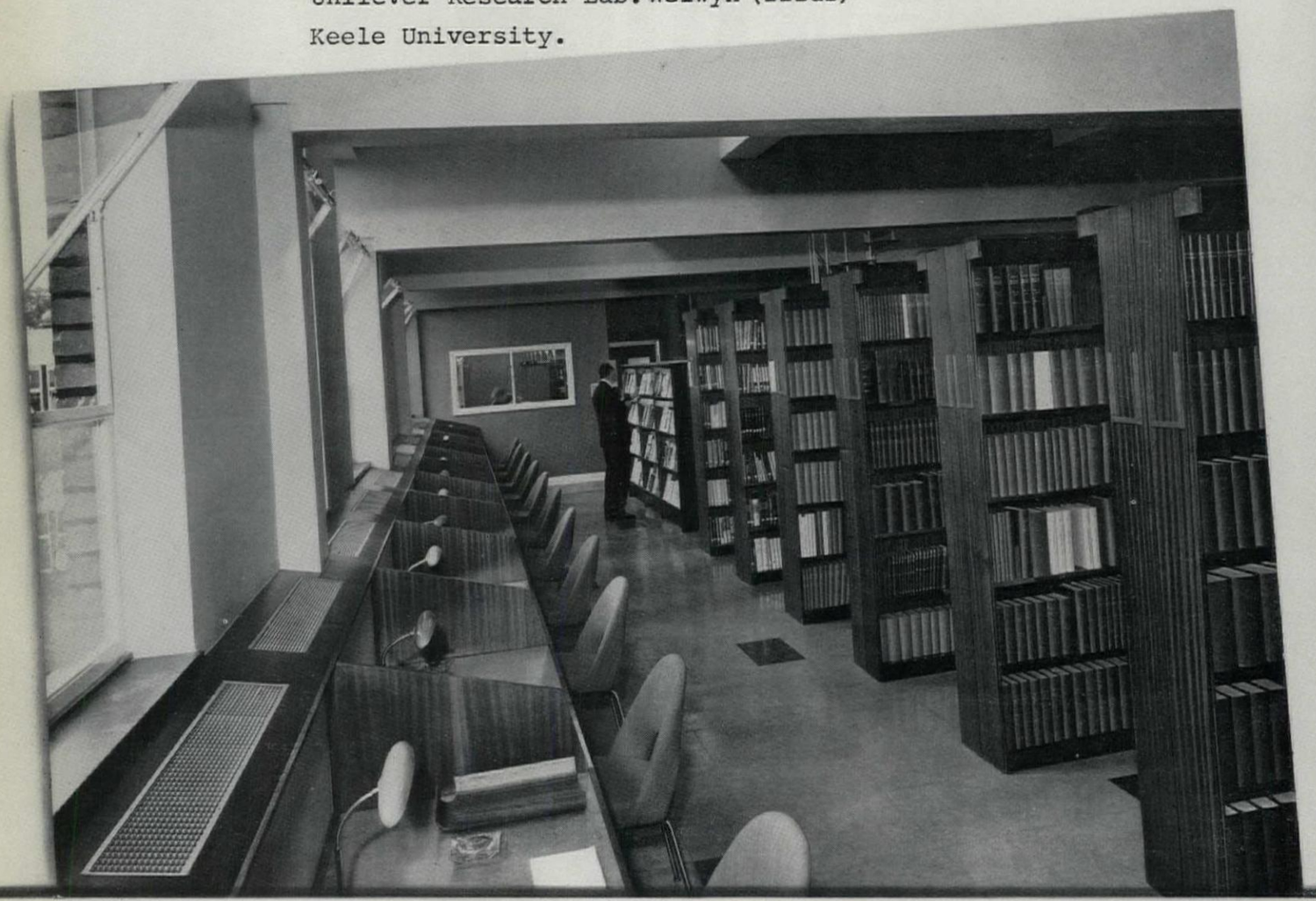

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ESAVIAN

invisibly, cumbered with pasts reaching back three centuries, rather like an especially redolent compost pile in the centre of London, with more exotic ingredients than the usual London mixture. Naturally, a good deal of rubbish has been written about Soho; it was high time for a factual history of the fabric of the place, and now we have one.

The first of these two volumes starts off with a general introduction summarizing both the history of the area and the description of its buildings, and with an opening chapter on the parish as a whole and the estates composing it. This is followed by twelve chapters on the portion north of Shaftesbury Avenue, the Soho Square area, much of which belonged to the Portland Estate from 1698 until the early nineteenth century.

The second volume contains eight chapters on the portion of St. Anne's south of Shaftesbury Avenue; that is, the Gerrard Street and Leicester Square area, including enough of St. Martin's parish to give us the whole Square, which is divided between the two. There are also two interesting appendices, one on the Soho tapestry makers, and one on an abortive town-planning scheme *c.* 1766, attributed to the architect James Paine, inspired by the prescient John Gwynn. This volume also contains the plates, a superb collection of material, using many previously unpublished old photographs and little-known drawings of vanished buildings.

One improvement over earlier volumes of this series, immediately perceptible to hand and eye, is the quality of the paper, now better suited to the delicate lines of the beautiful drawings in the text and increasing the readability of text type as well. Another pragmatical improvement is the straight-alphabetical treatment of the index, no more hunt-the-subhead, a restful change.

Historians of the foreign population of this haunt of refugees and artists will find that it left its mark on building history early: the story of the Greek church in what is now Charing Cross Road started in 1674. For architectural historians, indeed, this is a mine of newly and firmly established information. It is now known that William Talman was executive architect for the church of St. Anne, his only known parish church. We have at last a clear account of Monmouth House on the south side of Soho Square, left unfinished in the 1680's, gorgeously remodelled by Thomas Archer (presumably) a generation later, demolished in 1773. The splendid and happily still existing interior of No. 1 Greek Street is fully recorded in drawings and photographs, as is the unhappily vanished interior of No. 75 Dean Street: with this we are given the full and melancholy story of the first Preservation Order to be made under the Ancient Monuments Act of 1913. (At least Preservation Orders no longer have to be confirmed by the House of Lords.) We are shown Adam designs for No. 20 Soho Square and for Gerrard House, as well as Soane's grandiose Opera House design (the whole story of this project is interesting) for the site of Leicester House, itself a problem in ingenious reconstruction on the basis of available evidence.

For theatre history, of course, these volumes are full of interest. The Empire's main entrance front is still the width of the five-window house-front built there in 1684, and the goings-on on the expanding site behind it since that date are fascinating. It would have been fun to see a photograph of the 1927 facade (by T. W. Lamb, of New York) that still lurks behind the neon lights. The permutations of the Panopticon-Alhambra-Odeon site, including an earlier house by James Gibbs, on the east side of Leicester Square are described and fully illustrated (except for the enormous ridge-and-furrow glass dome shown in *The Builder* in 1851, unbuilt with no room on the site to buttress it). Historians of panoramas will find the shape of one of the earliest panoramas preserved in the ground-plan of the French church in Leicester Place. Historians of Wedgwood-ware should see the account of the premises in Greek Street occupied by that firm 1774–97. Historians of shop-fronts might like to have heard more about Charles Mayhew's proto-Selfridge's elevation that formed the south side of New Coventry Street from the 1840's, but Hitchcock has already marvelled at this, and illustrated it.

Legal historians will find the whole story behind that precedent-creating case, Tulk *v.* Moxhay. The hold of the numerous family of Tulks over Leicester Square garden continued until it was rescued from deadlock and dead cats by that tremendous fraud 'Baron' Grant and presented to the public as the good deed of his life. Shakespeare, deliberating over Grant's fountain, had the last word. The scroll in his hand—although the Survey doesn't mention it and although no longer visible to the passer-by—is said to have borne the words from *Twelfth Night*, 'There is no darkness but ignorance,' rather than Prospero's lines misquoted on his scroll in the Abbey. Cold comfort for Grant's victims later on.

This is probably the best pair of Survey of London volumes yet.

PRISCILLA METCALF

6

No reader of the AR has to be reminded that the control of traffic in city centres is not necessarily a question of underpasses, fly-overs, multi-storey garages and architectural butchery. The will to act, a splendidly firm decision and a few cans of yellow paint will accomplish miracles. This has been fully understood, and the principle successfully applied, by the city authorities in Bath, as these 'before' and 'after' pictures, 6, 7, of the double yellow line treatment applied to Abbey Green, clearly demonstrate. The improvement elsewhere in traffic flow throughout the city has been equally marked, the initial grumblings of the shopkeepers have died away, and the cars have vanished, who knows where. Once again the centre of Bath is a civilized place to walk about in. Let other authorities do the same.

7

OSCILLATIONS OF ALBERTI

LEON BATTISTA ALBERTI: L'ARCHITETTURA. *Translation by Giovanni Orlandi: introduction and notes by Paolo Portoghesi. Edizioni Il Polifilo, Milan*, 1966.

Alberti is more quoted than read. And no wonder; for what has one got, if one wants to read his *De Re edificatoria*? In England just Leoni's translation, not reliable, and in Professor Rykwert's edition of 1955 not treated critically nor annotated adequately. Max Theuer's Vienna edition is excellently annotated, but it is in German. Now here, as the first publication of a new series, is a good working Alberti, though admittedly not in English but Italian. The series is called Classics of Science, Technology and the Arts, and further volumes are promised for Filarete, Francesco di Giorgio and others, Serlio, Vignola, Cataneo and the commentators of Vitruvius, Palladio, Carlo Borromeo, Domenico Fontana, Pellegrino Pellegrini, Pirro Ligorio, Scamozzi and on to the Baroque and to Piranesi and the early nineteenth century.

The arrangement in the Alberti volume is that the Latin text with textual footnotes is on the right-hand pages; the Italian translation with explanatory footnotes on the left-hand pages. The notes are full and up to date, and there is an equally up-to-date bibliography. The Latin text is collated from two manuscripts; notes on further manuscripts came in too late. What a re-reading of the text and also Professor Portoghesi's introduction bring out impressively, is the oscillation between theory and sound common sense, and within theory, between the results of personal speculation and of the interpretation of Vitruvius. Alberti had no illusions about Vitruvius. He says that Vitruvius's way of writing is such that the Romans thought he wanted to appear Greek, the Greeks Roman. Nor is Alberti's respect for Roman Antiquity entirely uncritical. He believes in the architectural remains and assures his readers that he has 'incessantly scrutinized, measured and drawn everything' he could; yet he is quite ready to joke about mythology and transmitted history. In one case at the end of a story he says: 'And the moment that we have started to report the silliness of others, we get a little silly ourselves, and so we shall for the sake of laughter, tell another little story.'

Alberti's book contains much more for the reader of today than the celebrated definition of beauty as that from which nothing can be taken away and to which nothing can be added without changing it for the worse, and the celebrated emphasis on *mediocritas* as poise in the middle between extremes and the quality which is 'the friend of quietude, the little corner of peace, the nurse of happy tranquillity of the mind and blissful repose for all our lives'.

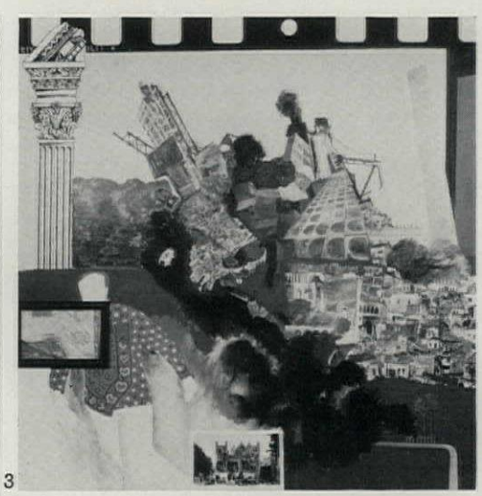
There is for instance the recommendation of winding streets in small towns, because they reveal 'at nearly every step, new vistas of buildings,' there is the concept of architectural development from the necessary gradually to the pleasing, there is the distinction between architectural beauty as the intrinsic, almost natural, quality of a whole building, and the merely accessory beauty of decoration (*cf.* Wren); and there are, to finish with, two thoughts for the day. On the one hand: 'Let your judgement on what you have designed not be influenced by the love of invention but dictated by calm reasoning,' but on the other: 'When a work is at fault in elegance, the fact that it responds to necessity, is of very little weight.' We have not moved all that much beyond Alberti.

NIKOLAUS PEVSNER

1

George Jardine's 'Tower of Parakeets,' 1, is seen here as the centre 'frame' in an historical strip cartoon of artists' attitudes to a single subject: Babel. His is an infamous Tower, its outside walls stripped away to reveal the goings-on—old Freudian daydreams and recollections. Around and within perch the sinister bright-plumed parakeets, chattering unbearably, but beyond lies an ordinary patchwork landscape of fields, hedges and trees. Nature appears to have accepted the Tower, quietly building in her own way. It was Breugel the Elder who painted the Tower's beginnings, 2, seeing it as a symptom of the disease of pride. It has pressed through the clouds and subjugated the surrounding countryside to its being. Jardine's landscape suddenly seems by comparison, ominous in its lack of disturbance. Nature on second thoughts is not just passive, but rather she is closing in, gradually reinforcing old claims, waiting for the day when she destroys the Tower. The third frame in the strip, Gerald Nason's 'Souvenirs from a Lost City,' 3, records this latter day. The clouds have collapsed in smoke and dust, the building has fallen, few records remain; a charred letter, a postcard, a single frame from an odd scrap of film.

2



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(Jardines' 'Tower of Parakeets' was recently exhibited at the Portal Gallery, and is reproduced here by permission of the owner, John Metcalf.)

Robin Boyd

THE SAD END OF NEW BRUTALISM

The Second World War, which should have made the world safe for that one great architecture, true to the twentieth century, only made it cosy for the pragmatic development and commercial exploitation of the ideas for which two generations of pioneers had fought. In many parts of the world after 1945 various regional, related offspring of the central movement went through a similar life-cycle, though not quite simultaneously. Scattered pockets of believers engaged in brief and not very violent skirmishes with public taste to establish or re-establish the tenets of modern architecture. Impatience for a quick decision led to some concessions being made, both consciously and unconsciously. Then the believers were joined by many others and in no time formal recognition was gained. Almost immediately an unexpected wave of popularity carried modern architecture to heights of worldly success undreamed of in pre-war Europe.

However, it was no longer the same thing. The purity was gone. The principles were one by one set aside and practice quickly declined into relative decadence of various kinds: in the USA to an effete arcaded prettiness, in Scandinavia and England to picturesque cottage-mongering, in many other places to tasteless featuristic ornamentation. Success spoiled modern architecture. But not completely. Even in the darkest hours the spirit of the real architecture, true to its new social attitudes and new technological methods, never really died. It was kept alive in the side channels away from the mainstream, in earnest talk and little publications, and in drawings for competitions or other dream projects that would never be built.

In this sort of night studio life the spirit flickered on. A fairly inevitable reaction to the weakness of all the watering-down set in, and the true spirit flared up again. The different blazes which ignited around the world about the same time—it was the middle of the 1950's—showed rather different sparks and colours. Yet, unalike as they looked, they were strongly linked by motive. Kenzo Tange reacting against modern *shibui*, Paul Rudolph or Louis Kahn reacting against the growth of which Yamasaki is the blossom, the Smithsons reacting against early Roehampton, and other links of the chain-reaction in many places, all produced works which had in common at least one thing: the quality of aggressive candour.

It was no coincidence, of course, that this was precisely the quality with which Le Corbusier, just a decade earlier, had reacted against the most tiresomely elegant of all European cultures. All these architects wanted to emphasize, with the assurance of mass, their new stand against compromise and any kind of pandering to popular aesthetic conventions. Le Corbusier took obvious pleasure in rubbing the smug taste of Parisians with rough, raw concrete and pouring pots of his hideous off-primary paints into the wounds. Not really sadistically; only to make absolutely certain that everyone got his message.

The exciting story of this revival of the rebellious spirit of early modern architecture may either be taken chronologically, or dissected by regions or personalities or visual sub-fashions, or sub-divided into personal intellectual theories. Whichever standpoint is taken, the same people, events and buildings inevitably will be cited again and again to show a different aspect of the development. If for instance one wants to make the point that regionalism lingers on despite the levelling influences of this century, then quite a number of interesting observations can be made about the points where British, Continental, Japanese and American works, all in this same genre, depart from one another. Or if one cares to take a stand on the most thoroughly discussed and documented of the theories associated with this return to strength, then those same buildings may suddenly seem all of a kind. All will look to be New Brutalist.

Dr. Reyner Banham, taking a steady central position on this stand in his book,* sees evidence of the English section of this movement radiating influence out to at least three corners of the earth. Not that his is a boisterous book, bragging about the extent of the influence of the peculiarly English thing called New Brutalism; on the contrary, in the end it leaves behind a wistful, almost haunting sense of sadness. Nevertheless, Dr. Banham wanted, as well as to tell a chapter of recent history, to establish a point without which the chapter might seem unworthy of a full-dress book. The point was, of course, that the impact of this one regional phenomenon was world-wide. That he submits his case with skill goes without saying, and if it was an impossible task it was still well worth the try. For the New Brutalism was certainly the most articulate of all the attempts to re-establish the original integrity and strength of modern architecture that occurred after the soft decade following the war. Yet it cannot be inflated more than that.

*_The New Brutalism_ By Reyner Banham. London. 1966: The Architectural Press. 80s

Dr. Banham's book is sub-titled *Ethic or Aesthetic?* with a question-mark that warns of indecision and remains in the air till the end. Necessarily so, for the movement was both, but separately. As an ethic New Brutalism was, however valid, only one of the strongest links in a chain; as an aesthetic it was, however refreshing, only an indefinite indication of honest goodness. It was not extreme. Compared with the triumphant redundancy of the Japanese development, British New Brutalism was positively timid. To try to define it any further is to destroy its individuality, for it did not even claim originality. Most of the buildings that are called New Brutalist are, proudly, derivatives of either the Maisons Jaoul or the Unité d'Habitation, or both. Dr. Banham's selection is by no means arbitrary but is extremely personal. To represent Japan he illustrates only Maekawa. Certainly he indicates in the text that Kenzo Tange was somehow peripherally involved, yet the fact that not one of Tange's buildings seems quite to qualify for the Brutalist fold indicates the finesse of the argument. Dr. Banham explains that several Brutalist buildings have elevated pedestrian 'streets' or decks, and bridges through space ('. . . one of the few Brutalist thumbprints that is not directly derived from Le Corbusier,' he notes, '. . . an important tell-tale'). Yet even this idiosyncrasy cannot be taken as conclusive evidence of membership; otherwise Paul Rudolph's building for Yale Arts and Architecture, with its internal death-drop gangway, would have had an honoured place. Instead it is mentioned in a way that suggests it was blackballed. Scarborough College by John Andrews near Toronto would also seem to qualify by virtue of its multi-level internal streets, stripped concrete, and most memorable image. Other omissions add to the indefinition: there is in Dr. Banham's book no mention of vast areas of the globe, including all America outside the USA. There is no reference to any timber building. Yet at the same time in the examples shown there is so much diversity of visual style that one is led finally to the suspicion that the aesthetic of New Brutalism can be found in anything that was built by Alison and Peter Smithson or in anything that in Dr. Banham's opinion looks as if it might have been built by Alison and Peter Smithson in circumstances other than their own.

It could even mean a Cadillac, *c.* 1954 vintage, seen in a cutting from an American glossy magazine. (The reader is shown this historic pin-up. It depicts the attenuated object of desire being gazed upon by a socially rising young couple who are thinking, 'Maybe this will be the year.' Admirers will have noted that another Cadillac, still of the tail-fin era of the 1950's, figures quite largely in Alison Smithson's first novel, which was published almost simultaneously with Dr. Banham's book). This Cadillac cult was, or is, only a sort of masochistic, ironically anti-brutal, pop deviation of New Brutalist interests; half-joking yet with a degree of genuine admiration. However, if the scope of the movement is to be considered broad enough to include cars, it is odd that Dr. Banham's account spurns that most basic of all vehicles, the Citroen *Deux Chevaux*, which does in fact enjoy the formal recognition of the Smithsons. Four or five of these little brute cars appear in one of the most engaging pictures in the book. They are nuzzling up like puppies against their spiritual master, the Unité d'Habitation, but their presence is not noted.

The definition of the New Brutalist ethic appears much clearer than that of the aesthetic. It had almost nothing to do with being brutal. It was a revival and a tightening up of the code of early functional-structural morals. Its success was in its timing and in the catchy name. 'The New Brutalism' unquestionably carried meaning in the dispiritedly busy drawing offices of the late 1950's. It meant more than just 'Brutus' and more than 'brutal' or 'brutalist'—words that linger on today as clichés associated with any dull reproduction of *béton brut* or any bad carpentry. It was the adjective that gave the name its special force. The noun was bold and powerful yet the 'new' relieved it with a slightly ironic twist. One understood that the brute force was to be applied in this movement at the intellectual level. Here was a challenge to all that was pretty and weak, a fierce fight back to first principles of twentieth-century building for use. Yet the resulting architecture was not to be necessarily physically brutal. It had only to be basic. It could employ any methods and materials, even plastics and polished metal, if they were used basically. This meant freedom from all aesthetic inhibitions, yet the discipline of a virtually religious respect for the nature of methods and materials, and for the realities of functional parts. None of this was new, and the unoriginality is of course the weakness of the argument for New Brutalism as an independent movement. Even in most matters of detail it relied heavily on Le Corbusier dogma, and its attitude to him was doting rather than constructive. Anything he built after 1945, even if not illustrated, may be considered as belonging within the New Brutalist movement—and yet not categorically of it, for he, as master, was exempt from classification. New Brutalism could even swallow his Modulor and his use, when it suited him, of the exceptionally anti-brutal, and not at all basic, Golden Section. The relevance of such aesthetic notions, often so romantically and irrationally advocated, is not explained, and one is led back to the suspicion that the only straightforward and consistent rule followed by Dr. Banham was that New Brutalism was anything the Smithsons permitted. In any event, his official if unauthorized history is essentially, despite the guest appearances by a galaxy of international stars, an oblique view of an episode in the life of the Smithsons. And it is with this pointedly personal note that the element of sadness enters, for it is a story of outstanding architectural talent frustrated or frozen by social conditions.

Dr. Banham makes a good deal of the Smithsons' pretty ordinary Sugden house built at Watford in 1956, but in fact the evidence of absolutely authentic, categorical New Brutalist work is confined to one ageing building, the Hunstanton school, which was an exception anyway since it followed Mies rather than Le Corbusier. There were also some drawings that, on the evidence submitted, would have been in any good world translatable into very good architecture. However, as this book fails to acknowledge, though the epilogue perhaps hints at it, this is not a good world in which architecture can flourish by goodness alone. It is only a reasonable world for traditions and a marvellous world for visual fads. The real problem

facing the Brutalists and their colleagues round the world was not ethical or aesthetical so much as practical. Paper dreams never make good architectural history. When faced with the workaday politics connected with a building in the West End, the Smithsons bent their principles too far to keep Banham with them. But they got something built. They knew that the heroic 'swagger' of Brutalism which was good for the lecture platform, or for a competition entry or for a small house, had to be modified slightly for a school, more for a public building, and almost completely rewritten for St. James's Street, where stuck-on stone was better appreciated.

So it happened that the day on which the Smithsons achieved a worldly success with a fine piece of practical professional architecture, New Brutalism died. The building was just a 'craftsmanly exercise within the great tradition' as Banham rightly observes. It was the end of their personal stand for absolute basic architecture. It was a retreat, as Banham sees it, to art of some sort, and that is a pretty serious accusation coming from him. Thus the author who foster-fathered New Brutalism and without whom its message would never have spread even half as far as he proposes it did, finally kills it with his own hand on page 134 in the year 1964.

The sadness of this was underlined by the Smithsons' reply to the book, which appeared promptly in *The Architects' Journal*. The Smithsons were understandably hurt that a full-dress account of their movement should be written without their sanction and should be in one sense premature yet at the same time so final. So they felt obliged to dissect it and record 'errors of fact' of private significance. For example, they wrote: 'The history of the "street deck" is wrong in important details in this book. . . . The word "deck" appears for the first time anywhere (outside a boat) on our Golden Lane competition drawings of 1952. . . .' Apparently the Brutalist studies of American pop magazines did not extend beyond the Cadillac advertisements to the well-worn sun deck of the homemaker pages. They also contributed a touch of further confusion to the definition of the style by calling, in effect, the back of Alvar Aalto's dormitory at the Massachusetts Institute of Technology (1947–8) 'probably the first true Brutalist building,' while ignoring the same building's *Art Nouveau* front. Yet they did not dispute the Banham thesis that a real New Brutalism, or an ethic of building technology, must exclude art, and they seemed ready to agree that the New Brutalism was dead.

If the movement ever had a tentative claim to an independent aesthetic, the Banham book, by attempting to inflate that too far, exploded it. The formal announcement of the death at the end of the book really meant only the abandonment of the argument. Yet the other part of Brutalism, the ethic, was happily independent, and had no need to die along with the over-strained aesthetic argument. Between 1953 and about 1963 there was 'a sense of certainty about what to do,' wrote the Smithsons in italics in their answer to Banham; but after 1963 'all problems seemed to take further depth and a period of conscious personal retraining set in. . . .' In other words, perhaps, innocent confidence was broken by confrontation with the politics of building. However, there is no suggestion of disillusionment with, or abandonment of, the ethic. Dr. Banham blames architects, with their narrow, restricting traditions of artistic creation, for the non-appearance still of a real architecture based—to take his penultimate words—on 'a working morality' of 'the relationship of the parts and materials of a building.' Yet the buildings and events in his book, and their failure to conquer the world, may be interpreted in another way. In the period under consideration the principles and spirit of architecture—the real thing—were re-established, so that by about 1963 there was no serious disagreement in all circles where architecture was taken seriously. It is true that the evidence all around us might seem to argue the contrary. Our period is marked by many buildings which are superficially based on (Miesian) technology but are garnished with anonymous neo-ornamentation. It also supports a more photographed, smaller number of buildings which are Expressionistic monuments to their architects. Between these extremes there are countless shades and deviations. Yet I am convinced that the shortcomings and the variety result from the insensitivity of many architects and the wilfulness of a few others, rather than from a fundamental split in ideology.

The overwhelming majority of architects throughout the world still ostensibly and sincerely subscribe to a code which characterizes what still may be described as the modern movement. However incompetent architects may be in converting this code into solutions to practical problems, and however convenient it may be at times to forget it, or whimsically renounce it, the code is ingrained in the twentieth century and its calls to conscience persist: fulfil the function of the building within itself and within society; respect the nature of materials and structural realities; press technology and methodology into higher efficiency; renounce all historic allusions and irrelevant beautification. It is a call to basic building goodness, and it is not calculated to stifle the art or expression of architecture. On the contrary it provides an intellectual basis for work of widely divergent emotional character: clean or complex, reposeful or exciting, genteel or brutal. Nevertheless, the final article of the code requires that the thing being expressed should be the true nature of the building, not the ego of the architect.

Yet although all this was tacitly accepted again in the 1960s, the code was still hard to live up to, and its translation into building was still limited by lack of popular understanding. It had not been demonstrated well enough or often enough to have the confidence of the non-architects of this world who commission most architecture. The greatest hope of every architectural evangelical movement like New Brutalism is that it will lead the world away from seductive aesthetic pleasures to the pure intelligence of building. The failure of New Brutalism, along with all other parallel ambitious efforts to this date, was that it preached almost exclusively to the converted. It was a would-be 'sort of social dialogue' (the Smithson phrase) that remained an architectural monologue. The problem still with us is to build our accepted ethics into that 'working morality' for day to day building. Then many kinds of architecture, including the Smithsons' art and that anti-artistic other architecture of Reyner Banham, might flourish.

criticism

MADE IN MID-ATLANTIC

While the British peasant-craftsman lives on in the potting sheds of suburban gardens, the British industrialist tends to clothe his processes merely with outsize versions of the same shacks in the civic back gardens known as industrial estates. Yet the linear relationships of mass production, of people, machines and the spaces between them, can be used architecturally to express the corporate identity of social behaviour in each particular firm—of team work, as the public schools used to call it—which is something quite different from the wilful individuality of the artist-craftsman. Of the four factories illustrated here which have this identity, two were designed by famous American architects for all-American firms and the other two were designed by English architects who received an important part of their training or office experience in America. Each of them is a single linear container of broad flexible spaces within an exposed steel frame. Office areas and production areas are designed ultimately to be interchangeable, and there is no class distinction between manual and white-collar; such flexibility may incidentally make each plant more easily saleable, if the firm decides to move.

The Cummins Engine Company's plant at Darlington is perhaps the most professionally conceived building put up in Britain since the war. Under its chairman, Irwin Miller, this diesel manufacturer has made itself a spectacular patron of modern architecture (see World, pages 1-2); and Eero Saarinen's close personal relationship with Miller has been continued by his successor, Kevin Roche. The firm's twin factories at Darlington are deposited on open fields beyond the fringes of suburbia, with the minimum of fencing and maximum of smooth grass emphasizing the virgin prairie. The blue brick Cummins-Chrysler (see AR October, 1965) is an exceedingly good building; but responsibility was divided between the two clients and between two architects (Saarinen and Cubitt). There are no such doubts at Cummins Engines: personal design by Roche and personal control through his site architect, John Calvert (similar in his role to Jacobsen's assistant, Knud Holscher, at St. Catherine's College, Oxford), were matched by an insistence on excellence from Cummins's then Manager of International Facilities, Guy Martin, who acted as the 'corporate client'. The professional client is firmly established in Britain only in educational building—Sir John Newsom as education officer of Hertfordshire, for example, or John West-Taylor as registrar of York University. In industrial buildings he barely exists as yet.

Kevin Roche, who incidentally was born in Ireland and trained in London, has concentrated at Darlington on three materials: oxidizing (i.e. intentionally rusty) steel of a rich copper-brown colour, all-over glazing grey-tinted to keep out the sun's glare, and neoprene plastic gaskets for the thin black joints. Rusting steel of the Cor-Ten type is new to Britain and so are structural neoprene gaskets, let alone on this scale; and the use of the same materials consistently throughout the internal partitioning (except for the walls of the mechanical core and testing area, which are in the same blue brindle brick as Cummins-Chrysler) is unique in the world. Internal steel is painted the same chocolate colour to which the external oxidizing will eventually weather. The main reason why it has proved possible to build such a design is that the client himself supported the architect in insisting on an absolute quality being maintained at every stage by contractor, sub-contractors and suppliers. The building is relatively inexpensive at £5 15s. per sq. ft. and construction time had to be fast, but the client was prepared to jeopardize the starting date of production in order to achieve the ultimate environment he wanted. The steelwork was admirably made and perfectly welded; but the grey glass, made by Pilkington's 'for export only', had to be imported from St. Helens via Belgium; and after 75 per cent of the English-made neoprene gaskets had been rejected as insufficiently precise, those for the internal partitions had to be imported from America. The small Finnish firm who made the office chairs was punctual and prepared to modify his product to suit Cummins, whereas the English manufacturer of the desks could not supply them in sufficient quantity on time; so the client had others of the same quality knocked up by local cabinet-makers.

The same office chair and desk is used in every office; the same cheap grey sisal carpet runs throughout the office area without any distinctions of rank. It is remarkable that an American capitalist can insist on real equality where a Socialist civil servant might still retain the status symbols of differently sized chairs, desks and carpets. Every worker enters at the same entrance. Faced with almost totally glazed partitions, with hardly any of what the Americans call 'modesty panels', the English visitor may at first feel almost a voyeur. Certainly if the directors can keep an eye on the typists, the typists can equally guarantee that the directors are not putting their feet up. In the machine shop—a magnificent space—all the machines are painted gloss-white, so that every speck of dust shows; and every machine has on it a metal plate giving its exact cost, so that each worker knows the value of that for which he is responsible. Strip lighting, evenly spaced, is kept full on throughout working hours. The weak-kneed may quail at the self-assurance of all this. Nothing like it has been seen in Darlington since the cast-iron arcades of William Bell's railway station (see AR, February 1966) and Waterhouse's market.

Team 4's factory for Reliance Controls at Swindon is by contrast a tiny and delicate thing. As at Cummins, the client-director from Booker-Bowmar, Peter Paul-Huhne, was determined to have a building of quality which would embody the kind of corporate identity which he had experienced in America. Initially the firm did the usual British (and usual American) thing: they approached package-dealers, design-and-build firms specializing in standardized factories. They did this not as philistines, but because they wanted to start actual production in less than a year; and architects have a notorious reputation for their inability to control such a tight programme, within the budget and on time. It is also easier for the client to deal with one firm (fees included) than to parley with individual consultants. Team 4's success in persuading the client to commission them was partly the result of establishing a fully integrated team of consultants from the start (all information being circulated, whether directly relevant or not). Apart from an attempt by the first manager to superimpose 'prestige' on equality—hence the false ceiling in his office—the building was carried out with remarkable clarity and purity. The panoramic view on entering the foyer, the whole building being visible from end to end over the 7 ft. 6 in. 'islands' for the private areas, establishes immediately the unity between the assembly workers (mostly women) and the other staff. Instead of the massive dignity of Cummins, Reliance's frame is tight and fragile, exposing the delicate constructivism of its corrugated cladding and diagonal wall bracing. People and tools stand out as random specks of colour against the white paint and aluminium glazing. The continuous sequence of flexible servicing required has been expressed at Darlington neo-classically by the 'attic storey' and 'cornice' above the main frame; at Swindon by contrast there is a central underfloor trench, thoroughly efficient but undramatized. The peculiar humanity of Reliance will become more apparent still in the second phase, when internal glazed courts will be created — scooped out from within the windowless external envelope—which will recall Norman Foster's study at Yale under Chermayeff: 'community and privacy' in terms of the factory.

Such minor faults as exist at Reliance are the result of inexperience (apart from the rock-bottom budget of less than £3 10s. per sq. ft.): acoustical control is not good; the front doors were badly fixed; the neoprene-jointed glazing over the private enclosures had to be reframed in timber; and the heating was inadequate next to the temporary glazed wall on the west side. Unfortunately, Team 4 have not been able to benefit from this experience, except in one small office job at Derby (see AR Preview, 1967), as they have received not one factory commission since. The Torrington factory across the road, by contrast, is the seventh that Marcel Breuer has done for this one client, and it is, not surprisingly, superbly efficient. If Team 4's building were not opposite, Breuer's, his first in Britain since the Angmering house of 1936, would be a jewel in the ragged industrial estate surrounding it. As it is, one notices inconsistencies: four types of floor finish within a few feet of the entrance (note the arty rainwater basin) and the way in which the scarlet-painted frame is exposed as a facade to the road but concealed on the side elevations—except that a column can accidentally be seen obliquely through each side door. The most pleasing aspect of the interior is the client's own colour code: white for working areas, black for pipes and conduits, red for electricals, grey for the frames of machines and yellow for the movable parts. In the display room are examples of the totem-like wire-pulling and spring-making machines manufactured by the firm in America.

The great potential of Anglo-American factory design—and the easy failures that management can allow by the normal channels—can well be judged in Commercial Plastics at Cramlington. The architect has here had to persuade from the start: that one building was better than thirteen; that big flexible spaces suited the process; that clarity and consistency would help to create a trouble-free plant. The partner-in-charge, Max Gordon, and most of his assistants had experience with architects such as Mies and SOM—and their approach was a cool one: a dark bronze-brick exterior matching the functional tradition of Tyneside and an interior of white brick and grey paint. Perhaps they were too cool for their client. The spaces are there, superb when uncluttered by use but tending to be overwhelmed by unrelated machinery. The exterior is there, dignified and grandly scaled but marred by notices and light fittings slapped on without architectural control. It is only mutual self-discipline—unaccustomed efficiency on the part of the architect, unaccustomed consistency on the part of the client—that will maintain British factories up to the best American standards.

N. T.

ENGINEERING FACTORY, DARLINGTON, CO. DURHAM

photographs by Balthazar Korab

architects **KEVIN ROCHE, JOHN DINKELOO AND ASSOCIATES**

formerly Eero Saarinen and Associates

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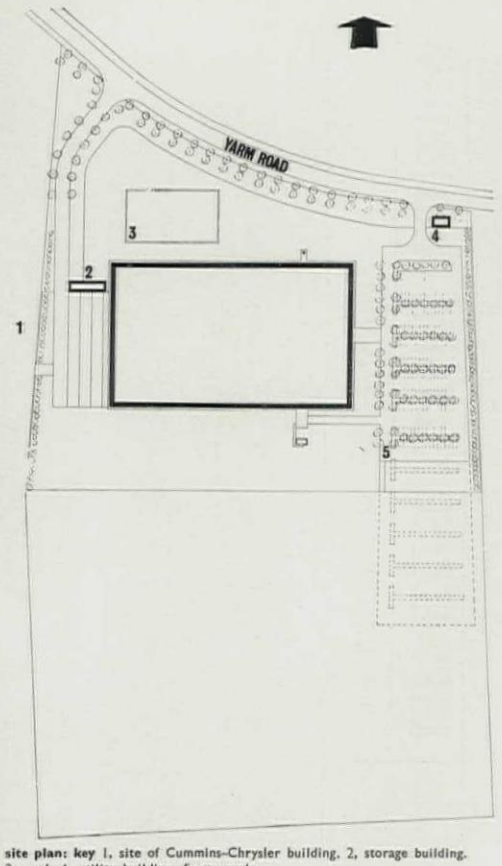
2

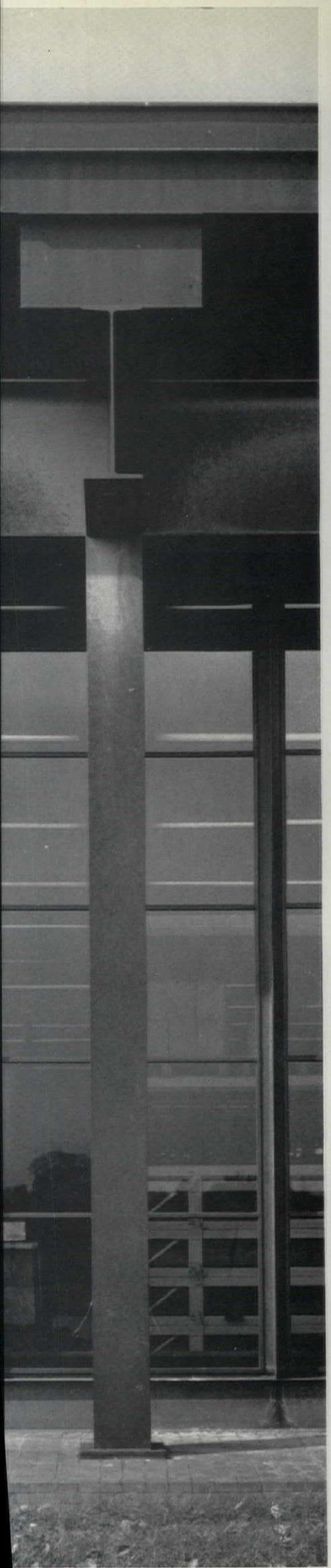
ENGINEERING FACTORY, DARLINGTON

3

1 (previous page), the main entrance of the Cummins Engines plant, showing the standard 60ft. structural bay in copper-coloured oxidizing steel; set back within it is the consistent cladding of grey-tinted glass set in neoprene gaskets. The factory is sited in an open prairie-like landscape, 2, with the minimum of visual interruption, the boundary fence being partly sunk in a moat; the main entrance is on the right (east). 3, a detail of the equally consistent internal partitioning of steel, painted chocolate to match the ultimate weathering of the exterior; the glazing is again tinted and set in neoprene, and the grey sisal carpeting extends uniformly through the office areas. 4, detail of an external column, showing the 18 in. gap between the main girders and the roof purlins which accommodates the services. 5, detail of the south-east corner, resting on a continuous plinth of blue brindle engineering bricks. 6 (overleaf), general view of office areas.



site plan: key 1, site of Cummins-Chrysler building. 2, storage building. 3, pool. 4, utility building. 5, car park



ENGINEERING FACTORY, DARLINGTON

The Cummins Engine Company, from Columbus, Indiana, is the leading American manufacturer of diesel engines. Their new factory, on a 30-acre site, stands next to that owned jointly by them and Chrysler and partly designed by the same architects (see AR October 1965). It is intended primarily to manufacture the four key components of a Cummins engine: fuel injector, fuel pump, air compressor and vibration damper (these can then be made up into engines for particular vehicles in joint enterprises such as Cummins-Chrysler). Other functions include: a pilot installation centre, where engines can be tested in prototype vehicles; a reconditioning centre; a service school, for training maintenance engineers; and office facilities for Cummins's expanding European activities. All these are brought into a single flexible building, intended to expand threefold to the south but on the north (road) side carefully related to Cummins-Chrysler in mass and materials. The open grassland, just beyond suburbia, is broken only by a brown steel fence, partially hidden in a green moat, and some newly planted trees.

The factory is a rectangular box 510 ft. by 300 ft. by 72 ft. high. There is no distinction between clerical and manual, except that between them is the enclosed line of services and training school, with the 90 ft. chimney freestanding on the road side. From the landscaped car park the main entrance leads into the executive and drawing offices, with the managerial suite, personnel department and canteen. The production process begins at the opposite end, with the receiving bay and warehouse, from which the main machining area is reached. Round this are grouped the smaller departments, such as the tool room, the laboratories, the assembly and test area and the packaging space, from which the despatch bay completes the process.

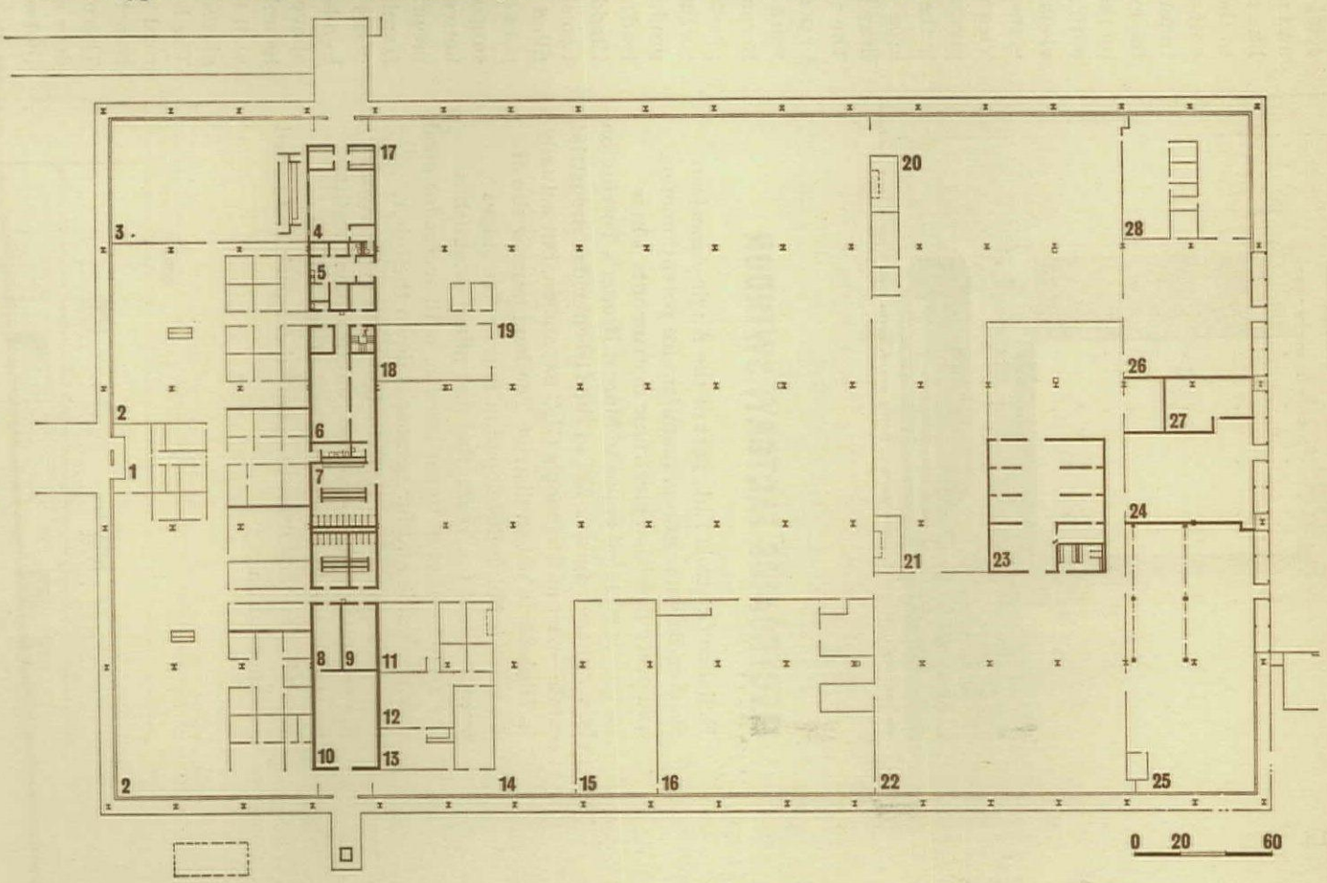
The structure, an overall grid of 30 ft. by 60 ft. bays, consists throughout of exposed oxidizing steelwork—the first building in England to use unpainted steel of the Cor-Ten type which rusts to a controlled depth to give a rich dark brown finish. The external walls are fully glazed with grey-tinted glass, which cuts off the sun's glare, and this is set in structural neoprene gaskets, which have never before been used in England on this scale. Never before has any building, even in America, had this same system of exposed steel and neoprene gaskets carried through into the entire internal partitioning system, which is also largely glazed. The service core and a few walls round the testing area at the despatch end are faced in the same blue brindle engineering bricks as Cummins-Chrysler. Above the main horizontal girders is a continuous gap made by mounting each roof purlin on an 18 in. deep wide-flange steel plinth which in turn rests on the main girder. This arrangement gives a 36 in. clear space between the top of the girder and the underside of the roof deck between purlins for installing all the main service runs, including steam, compressed air and electric power. The 18 in. space under the purlins themselves is sufficient for branch services. Moreover this arrangement gives complete manufacturing flexibility as cranes can be installed to the full height under girders without any interference with services. The entire roof structure was designed for a 2-ton point load at any part. Heating and air conditioning is provided from the roof by an individual unit for every six bays; this allows incremental expansion without a major change in the system. The strip lighting, kept on throughout working hours, provides 50 lumens for the production areas and 80 lumens for the offices. The boiler is oil-fired; the chimney is a space-framed obelisk clad in the same oxidizing steel.

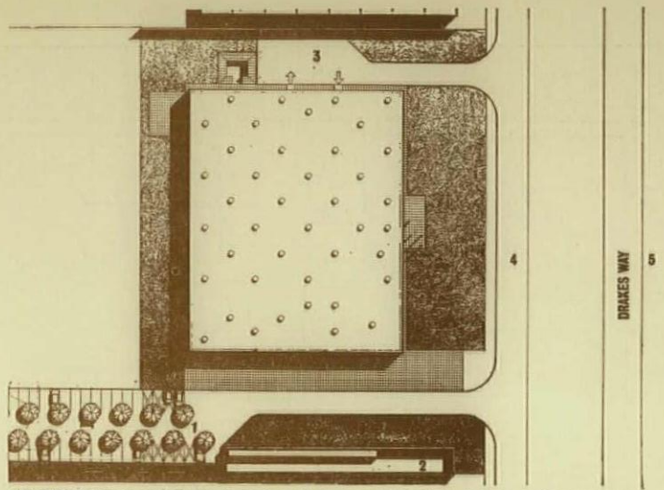
First stage labour force, 650-700. Construction time, 14 months. Floor area, 158,000 sq. ft. including offices, 27,000 sq. ft. and manufacturing, 117,000 sq. ft. Cost, £4 5s. per sq. ft. The contract was on the American negotiated lump sum basis.

Associate designer, David Powrie. Structural engineer, Henry Pfisterer. Services engineers, Cosentini Associates. Landscape architects, Office of Dan Kiley.

For contractors see page 76.

plan: key
1. entry and waiting
2. office area
3. canteen
4. kitchen
5. first aid
6. training school
7. washroom
8. sub-station
9. mechanical room
10. boiler room
11. gauge room
12. metallurgy laboratory
13. chemistry laboratory
14. maintenance
15. assembly parts storage
16. assembly
17. tool room
18. tool crib
19. machining
20. rough storage
21. service parts storage
22. finished storage
23. test cells
24. pilot installation
25. export
26. receiving
27. dynomometer
28. bought-out inspection

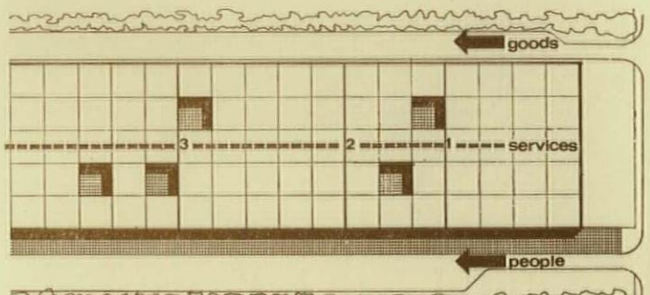




site plan: key 1, car park. 2, bicycle stands. 3, loading area. 4, service road. 5, site of Torrington factory

ELECTRONICS FACTORY, SWINDON

Reliance Controls Ltd., part of the Anglo-American Booker-Bowmar group, manufacture potentiometers and other precision electronic instruments. Their factory is situated opposite Marcel Breuer's Torrington factory (see pages 22-23), in the Greenbridge industrial estate—part of Swindon's GLC expansion, but actually in Highworth urban district. The long narrow site of six acres is being developed in four or five stages over the next ten years; this first phase establishes the guiding lines of linear growth, with access for goods down one side and for personnel down the other. Economies even on a tight budget have made possible the erection of black-painted concrete block walling to enclose the bicycle stands and screen off the adjoining factory from the planted car park and paved entrance apron.



growth diagram showing separation of traffic and future phases, which will include internal courtyards

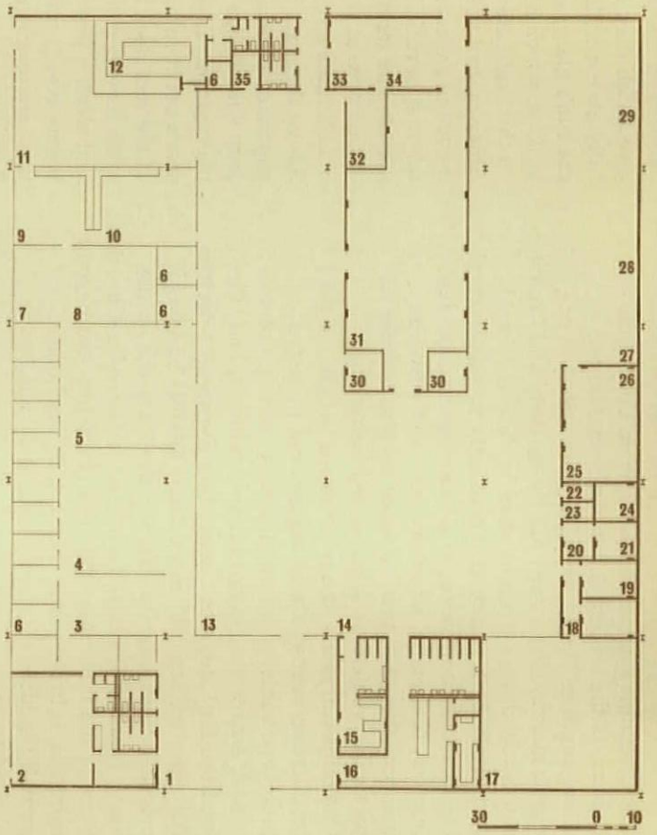
The building is laid out as a grid of 40 ft. square bays forming a single space with isolated blocks of semi-permanent services (toilets, kitchen, plant room) and moveable partitions elsewhere. The production line runs from the receiving bay to assembly to winding to the machine shop and finally to packing. The main entrance—used by all personnel, whatever their function—leads into a broad hall, which can be used for exhibitions mounted on stands specially designed by the architects. From the entrance hall the entire factory, offices as well as production, can be visually comprehended in a single view. To the right is the main cloakroom and toilets; behind them is the 'clean room' for dust-free work on the more delicate precision work. To the left, beyond some more toilets, is the semi-private conference and executive office area. Down this side run continuous office and drawing-office areas, ending in the canteen.

The steel columns have 8 ft. cross heads shop-welded in position; the centre sections, temporarily bolted, were site welded to produce continuous beams. Secondary beams were site welded at supports and pre-cambered against dead-load deflection. The corrugated steel deck roof, which has fastenings to produce a stiff diaphragm, is braced against wind loads by diagonal tubes set vertically in perimeter bays. Cladding is in exactly similar corrugated steel, the two skins being coated with plastic externally and filled with polystyrene insulation; it spans 12 ft. between top and bottom rails without intermediate supports. Internal partitioning for public spaces (as between the assembly and office areas) is in a proprietary system of floor-to-ceiling aluminium framing fully glazed. Private areas are enclosed by walls of blockwork, plastered and painted white, up to a height of 7 ft. 6in., the glazing being continuous above that height. Eventually all external walls will be unbroken except for entrances; the present glazed wall to the offices is temporary and will give way to glazed internal courts at a later stage.

The boiler house chimney and water tank on the road side mark the terminal of a centralized service trench, with a plant room designed to expand later. There is a secondary distribution system within the floor screed, which contains underfloor heating coils (hot water), telephone and electric power ducts, compressed air and gas—distributed to allow any area to be used for any company activity. The double-skin walls form a continuous vertical perimeter duct. Fluorescent tubes, giving 36-40 lumens of background lighting, and power feeds to motorized ventilators are carried in the troughs of the roof decking; all switching and controls are centralized in the entrance hall. The architects have designed the canteen tables, conference furniture, the table in the entrance hall and some of the assembly benches—all except benches were illustrated, along with exhibition stands, in the AR's Interior Design section last month.

First stage labour force, 250. Construction time, nine months (10½ months from architects' brief to first production). First stage floor area, 32,000 sq. ft. Cost just under £3 10s. per sq. ft., not including site works.

Quantity surveyors, G. A. Hanscomb Partnership.
Structural engineers, Anthony Hunt and Partners.
Services engineers, G. N. Haden and Sons Ltd.
For contractors see page 76.



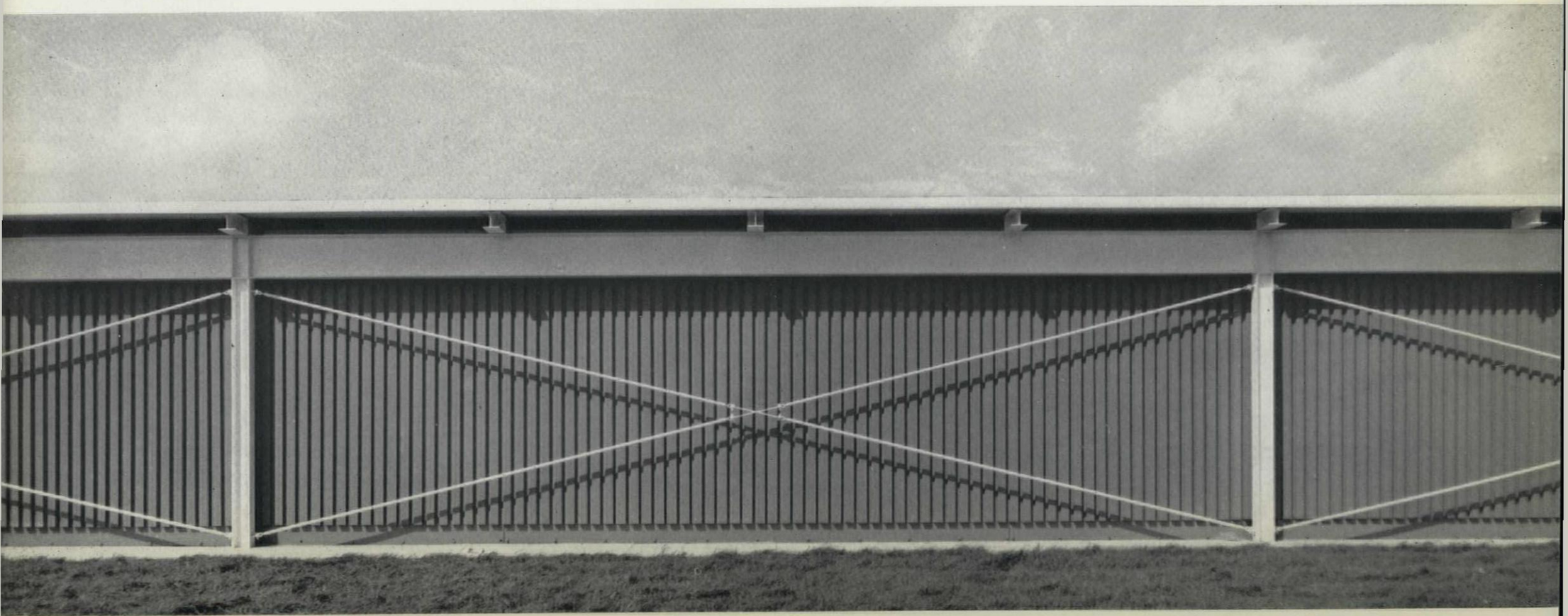
plan: key
1, entrance hall
2, conference and managing director
3, accounts
4, general office
5, technical offices
6, offices
7, print room
8, model shop
9, standards, laboratories
10, environmental
11, dining room
12, kitchen
13, assembly
14, winding
15, men's w.c.
16, women's w.c.
17, clean room
18, air lock
19, ultrasonic cleaning
20, maintenance engineer
21, record room
22, spray booth
23, varnish booth
24, telephone
25, switch room, compressor room
26, boilers, stage one
27, boilers, stage two
28, machine tool room
29, moulding
30, foremen
31, stores
32, standards
33, packing
34, goods in and scrap
35, first aid

1

ELECTRONICS FACTORY, SWINDON, WILTS

architects **TEAM 4** (*Norman Foster, Wendy Foster, Richard Rogers*)

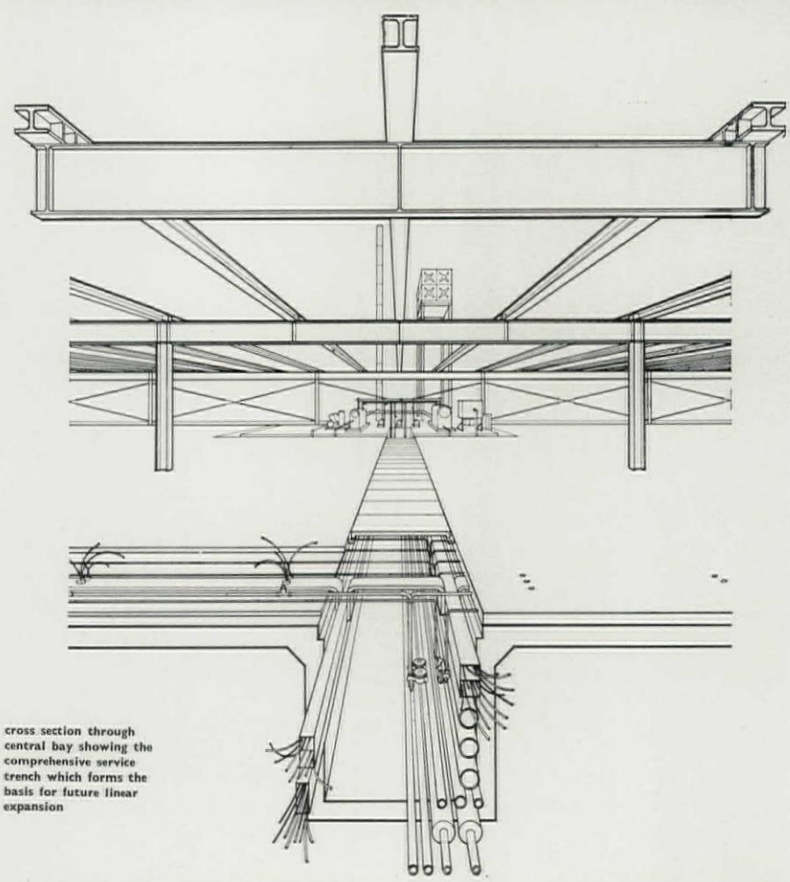
1, the factory at night, seen on the one glazed side (west), which is designed for rapid expansion. The other three sides, 2, form a fully enclosed pavilion of white-painted steel on 40-ft. square bays, with prominent wind bracing; the cladding is also in steel, corrugated and plastic-coated.



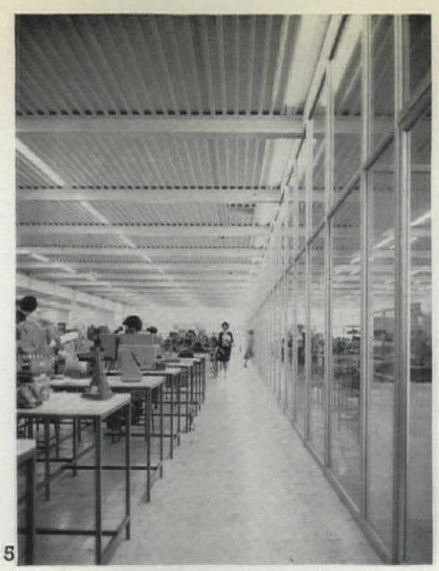
2

3

4



cross section through central bay showing the comprehensive service trench which forms the basis for future linear expansion



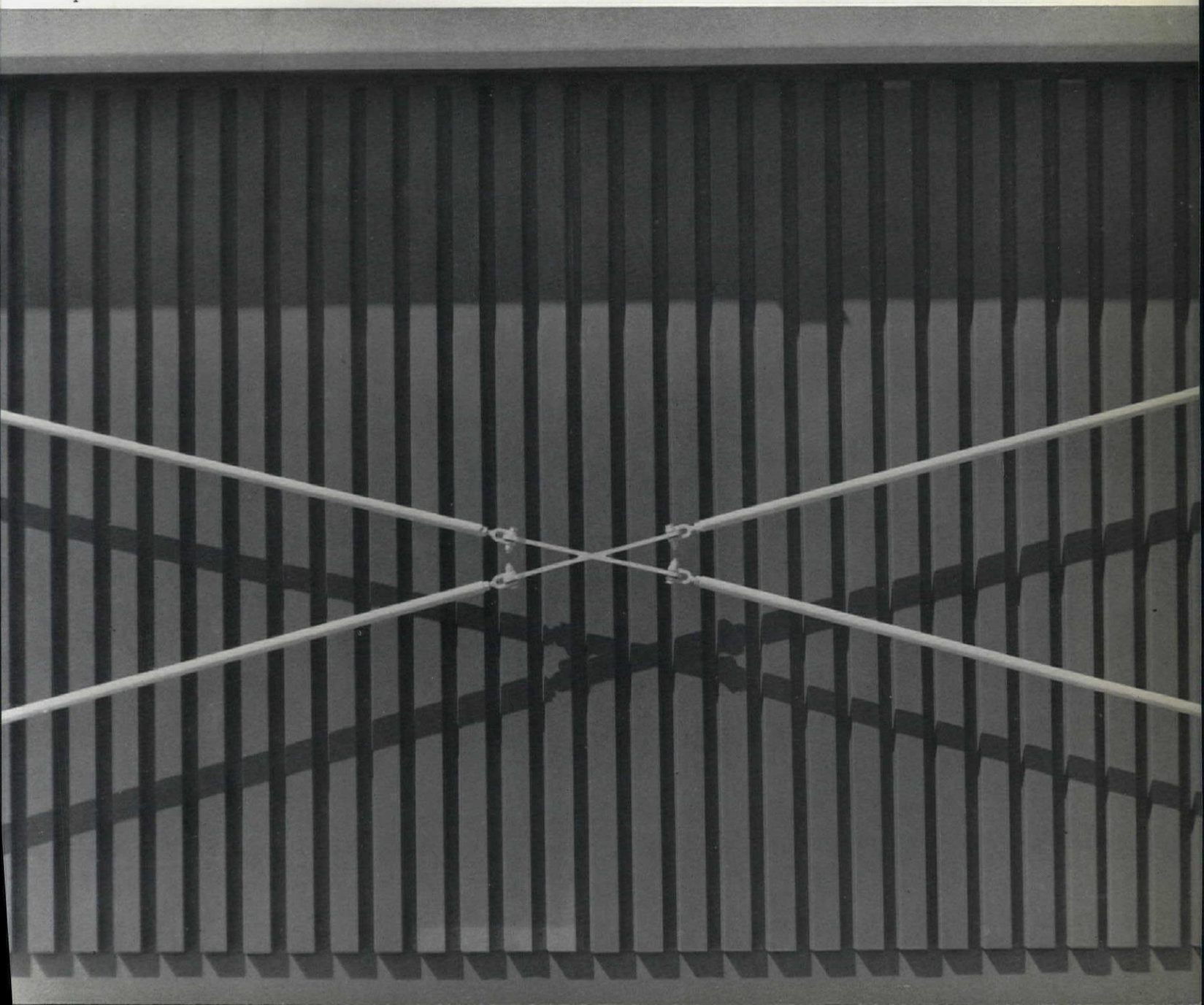
5

6

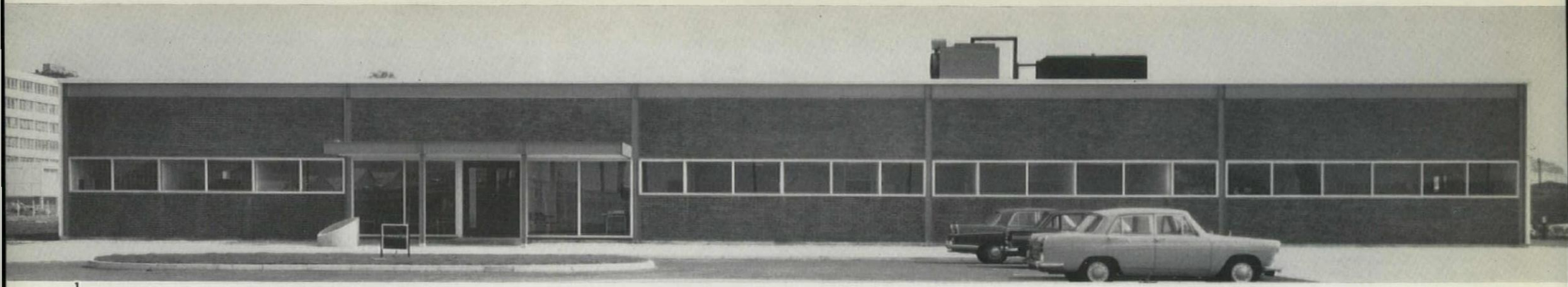
ELECTRONICS FACTORY, SWINDON

3, detail of external corner jointing. 4, view along east side facing Drakes Way, showing the clear separation of parts; chimney and water tank are painted black. 5, general view of assembly area (with work benches designed by the architects), showing on the right the fully-glazed aluminium partitioning between it and the office area. The employees have recently demanded more colour, and the architects have been commissioned to supply it, by painting the solid partitions of the private areas. 6, the panorama of the whole interior from the entrance foyer, the structure and glazing being visually continuous over the 7 ft. 6 in. walls of the private 'islands' (extreme left and extreme right). 7, detail of external cladding and wind bracing.

7



ENGINEERING FACTORY, SWINDON, WILTS | *architects* MARCEL BREUER AND ROBERT F. GATJE | *photographs by W J Toomey*



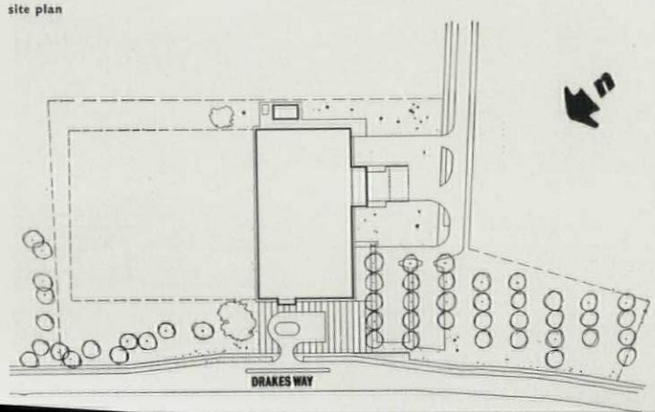
1

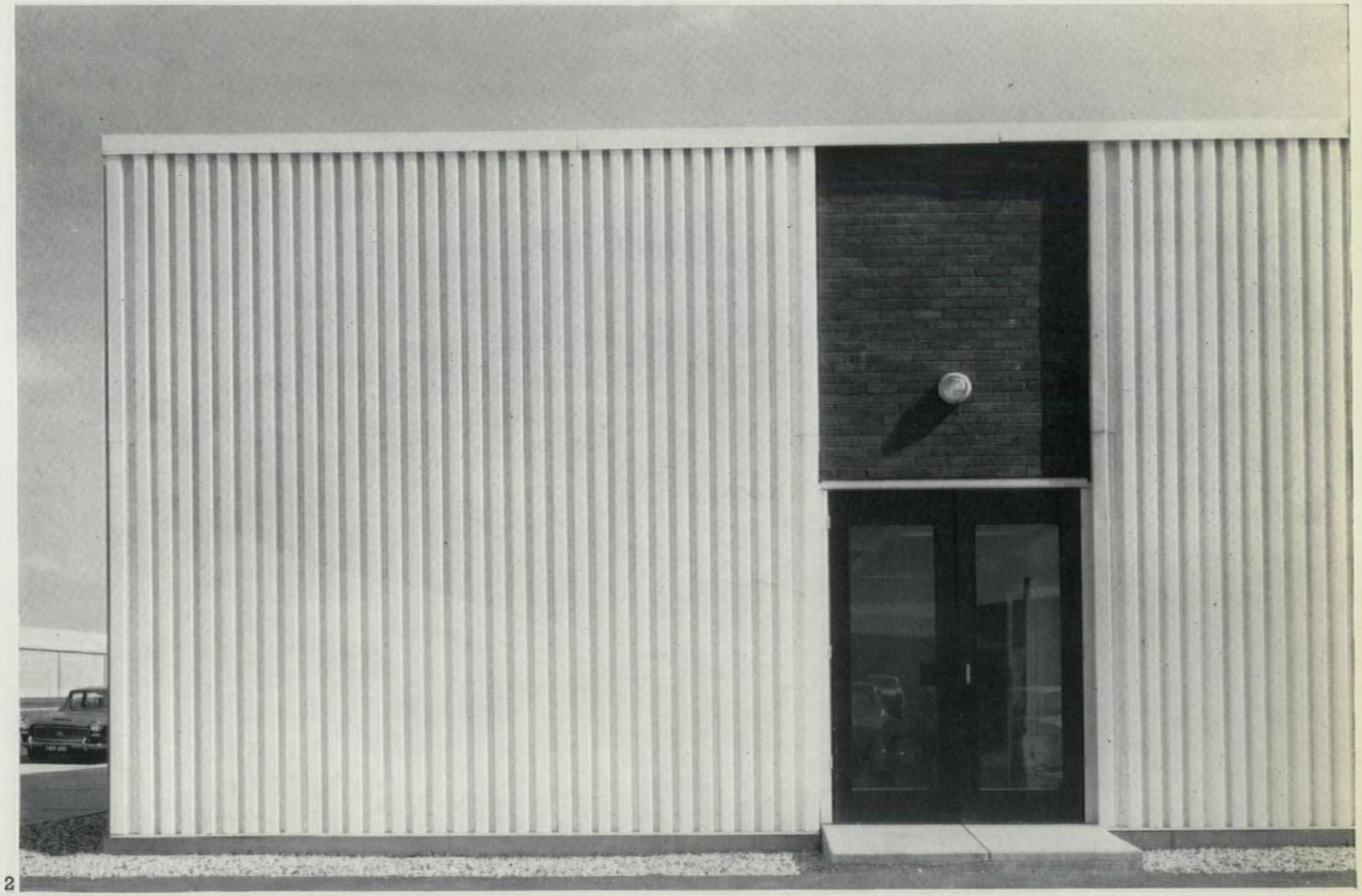
The Torrington Manufacturing Company from Torrington, Connecticut, produces air-moving equipment (fans and blowers) and machines which process wire and strip. The Swindon factory, the seventh designed for the company by Marcel Breuer, also includes offices, laboratory and a reverberant sound room.

The seven-acre site in the Greenbridge industrial estate lies directly opposite that of Team 4's Reliance Controls factory (see previous pages). General access for goods and factory staff is from a service road at the side, with limited access, for VIP cars only, to the main (office) entrance on the Drakes Way frontage. Apart from paving slabs and strips of granite setts at the main entrance, there is simple grassed landscaping, without fences.

This first phase, which contains services and plant for an eventual expansion of twice the present area, establishes a linear pattern along Drakes Way of three areas: offices and services, which have structural bays of 25 ft. by 30 ft., and the factory itself, which

site plan





2

1, entrance elevation to Drakes Way. Steelwork is painted red, with infill panels of dark grey brick and fixed windows to offices.
2, detail of side elevation, clad in white-enamelled channel-section aluminium.

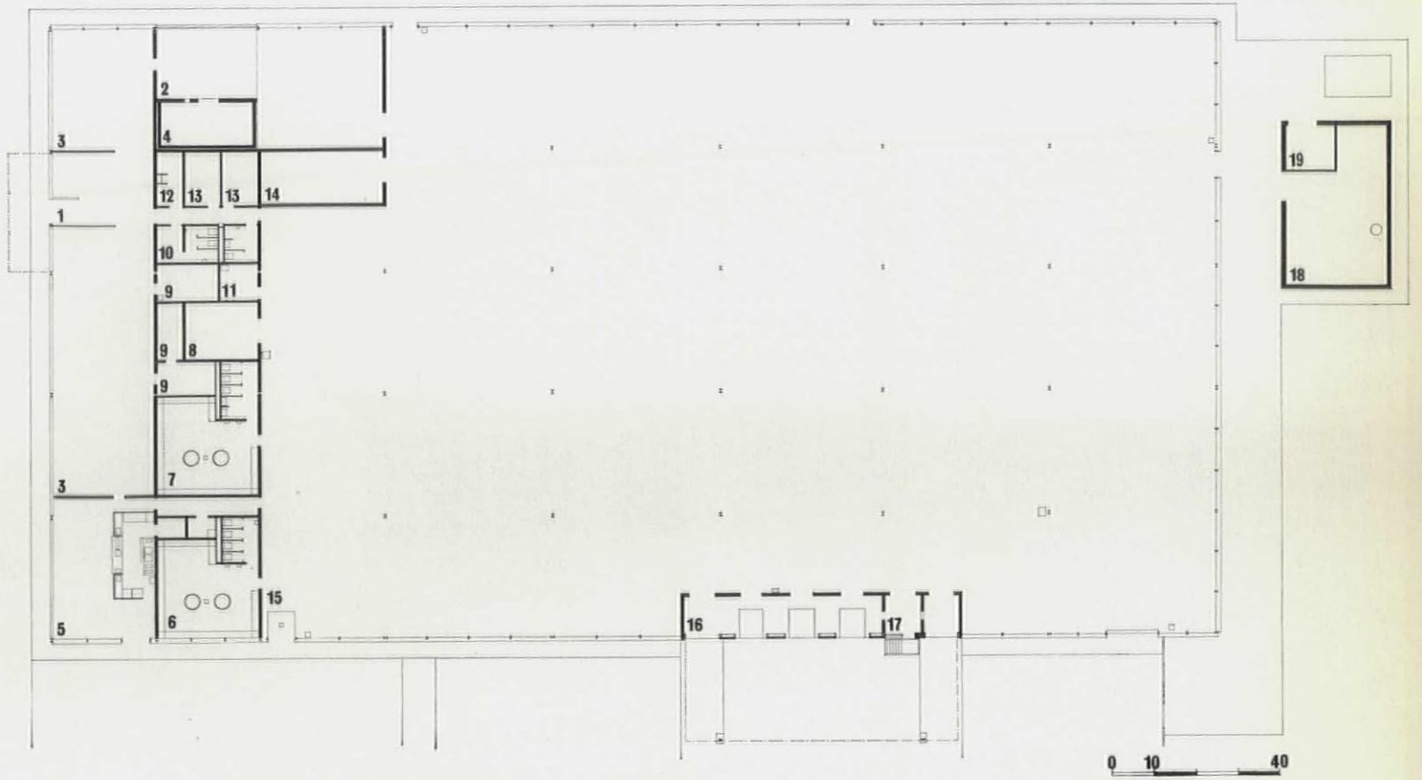
3, interior of factory, showing steel bays of 40 ft. by 30 ft., within which fittings are clarified (far more than in this photograph) by the firm's own colour code, described in the criticism article on page 12.

has bays of 40 ft. by 30 ft. The manufacturing process is concerned mainly with the pressing and stamping of light sheet metal and the assembly and painting of the fans. The largest item is the paint processing plant, which is linked to an overhead conveyor. About one-tenth of the total floor area is used for storage of raw material, components and finished products. The boiler house is a separate structure at the rear

The steel frame, giving the required internal height of 14 ft., supports a roof of 2 in. channel reinforced woodwool decking, pre-screeded, finished with three layers of felt and chippings. Cladding is of white enamelled channel-section aluminium, with galvanized steel tray panels internally and polystyrene insulating fill. The steel frame, painted red, is exposed on the office elevation, with infill panels of dark grey flint lime brick and aluminium fixed windows. The floor of in situ concrete has fair-faced edge beams forming a plinth. The offices have timber-framed partitions, faced with hardboard and glazed; an open ceiling grid of timber carries the lighting, with surfaces above painted black. Other internal partitions are of concrete blockwork, fairfaced and painted. Factory and service areas are artificially ventilated; offices and canteen are fully air conditioned. The boiler is oil-fired.

Construction time, 12 months. Total floor area, 45,000 sq. ft.

Executive architects, Frishman Spyer Associates.
Quantity surveyors, Raymond J. Playle & Partners.
Structural engineers, R. J. Crocker & Associates.
Services engineers, Kenneth Stead & Partners. For contractors see page 76.



plan: key
1, entrance
2, laboratory
3, office
4, soundproof room
5, cafeteria
6, women's lockers
7, men's lockers
8, mechanical equipment
9 ,store
10, women's lounge
11, first aid
12, coats
13, conference
14, display
15, factory
16, loading docks
17, shipping office
18, boiler house
19, switch room

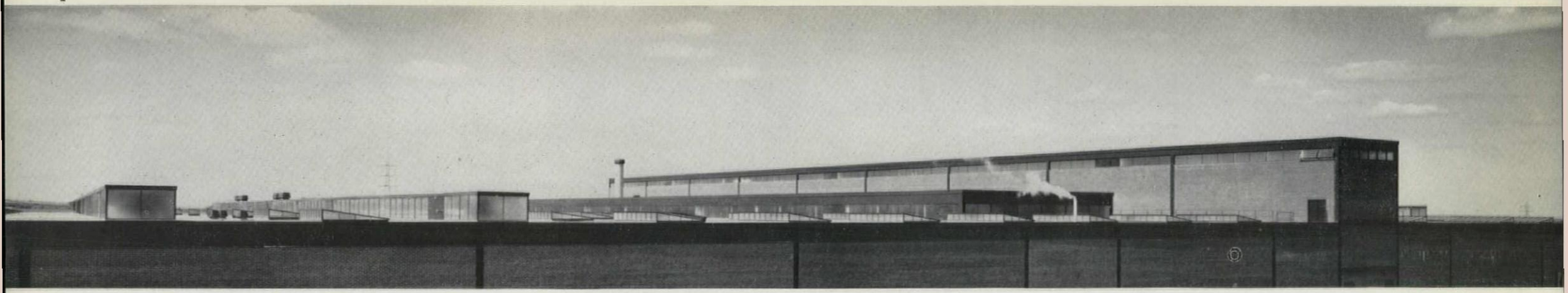
4, detail of red-painted entrance porch, with rainwater basin of rough-shuttered concrete. 5, entrance foyer, with office area beyond.

4

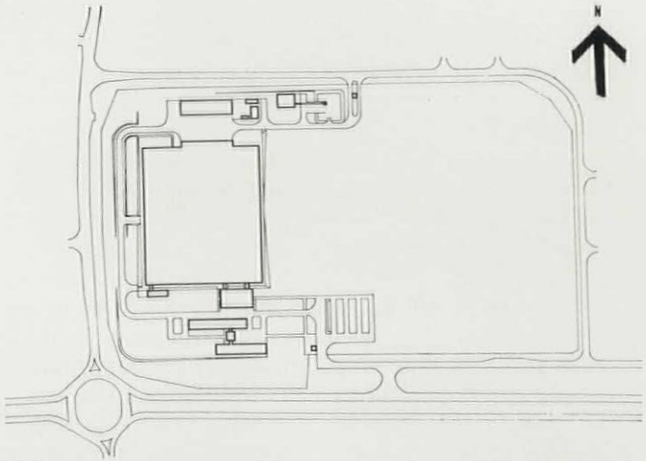
5

PLASTICS FACTORY, CRAMLINGTON, NORTHUMBERLAND | *architects* CHAPMAN, TAYLOR, PARTNERS | *photographs by Phillipson*

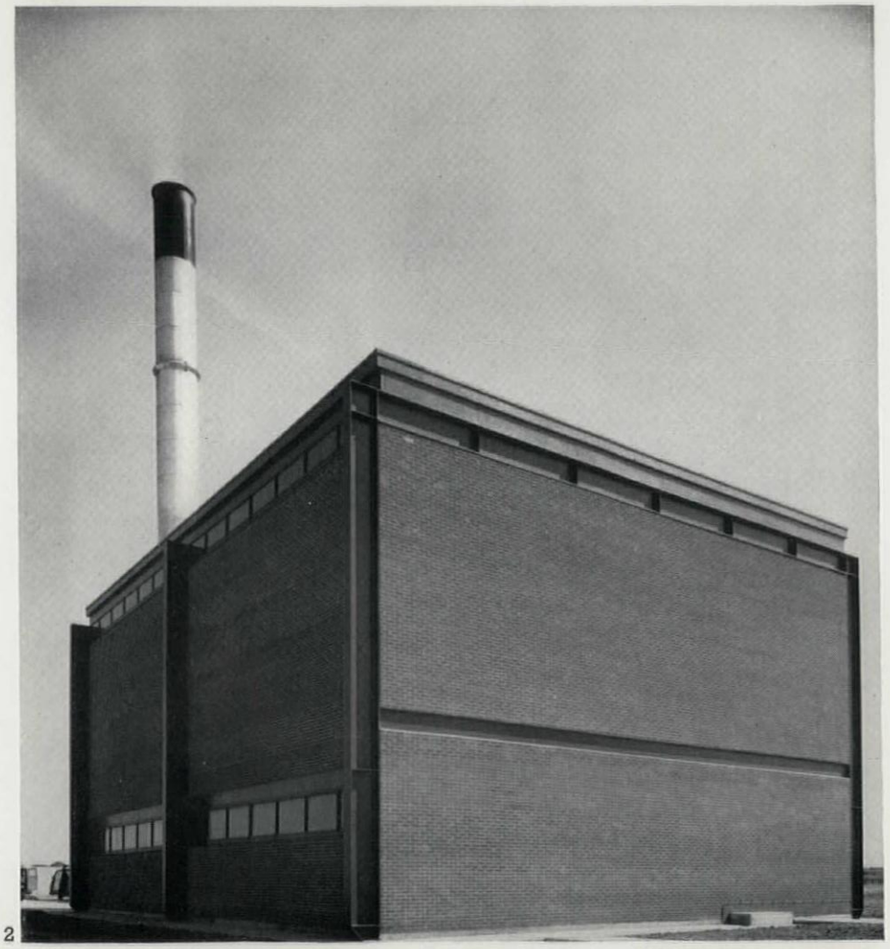
1



Commercial Plastics Ltd. manufacture plastic materials, Fablon sheeting in particular. Their factory is one of the first major structures in the industrial zone of the new town of Cramlington, promoted by Northumberland county council, eight miles north of Newcastle-upon-Tyne. The 41.6-acre site slopes from south to north, across the factory's axis of linear expansion; circulation is arranged to provide access for goods and services to the north and access for personnel, with extensive car parking, to the south. The first stage production area is rather more than a third of its eventual size. Because of the experimental nature of many of the processes and the variety of 'cross-feeding' from one department to another, a structural bay size of 60 ft. by 50 ft. has been adopted,

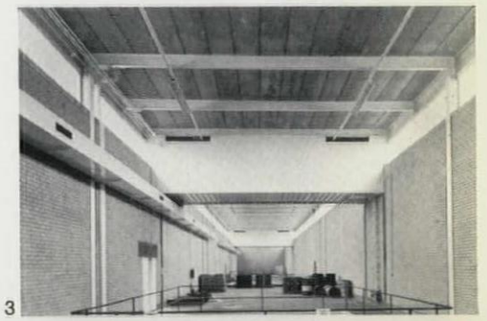


site plan



2

1, general view of factory from east. There is an extra storey for the 'premix floor' (right) and a system of monitor lights and rooflights elsewhere. 2, the consistent use of bronze-coloured bricks and chocolate-painted steelwork is shown here in detail in the detached boiler house. 3, interior of premix floor. 4, general view of production area, showing 60 ft. by 50 ft. bays of white-painted steelwork, infilled with light grey brickwork.



3

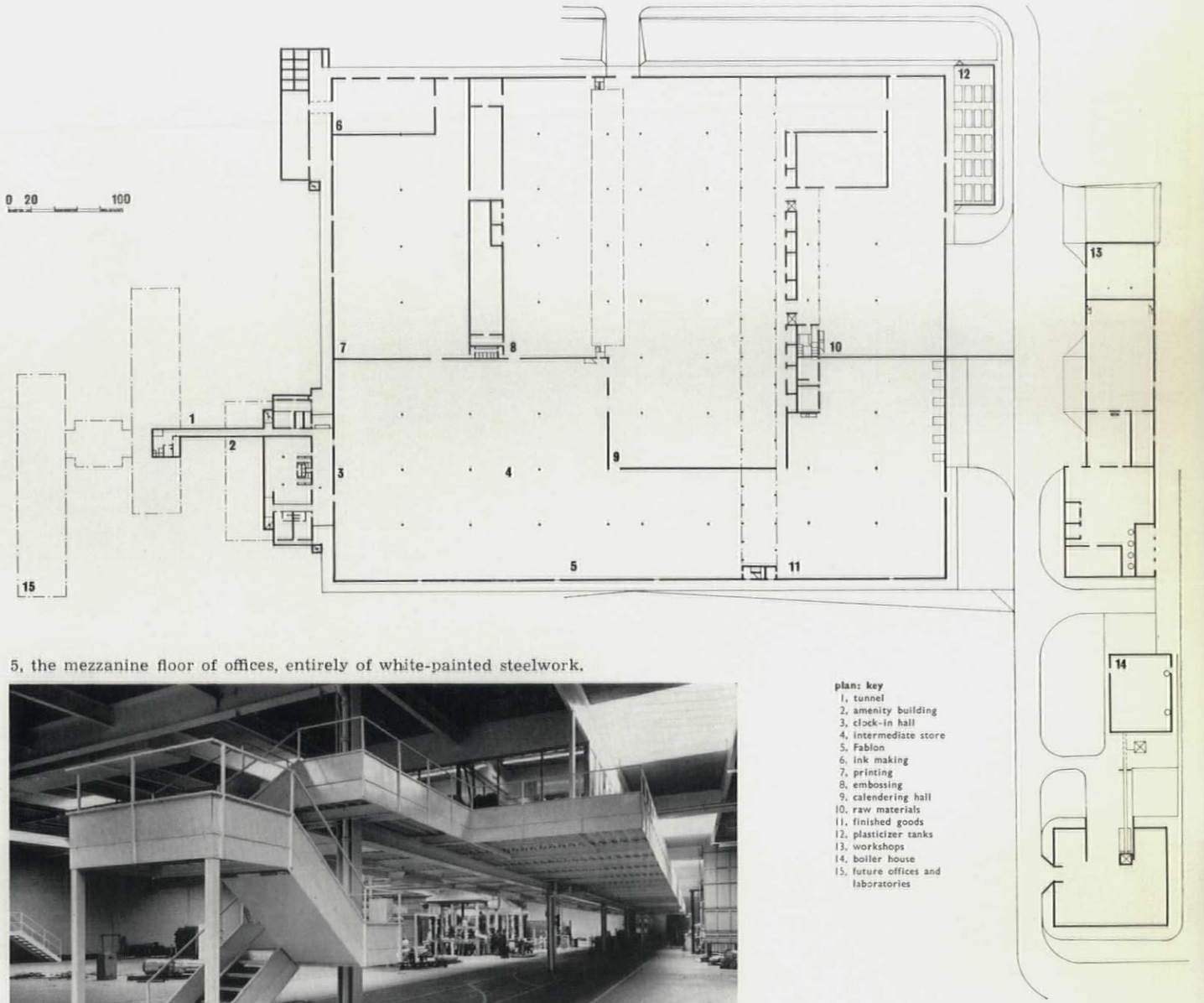
4

which subdivides into a 10 ft. grid internally, thus allowing maximum flexibility. From the unloading bays the raw materials are carried through mixing processes which require an extra floor in one bay, called the premix floor, which has its ceiling 50 ft. above ground level; internal height otherwise is 20 ft. clear below the main beams. Calendering machines, of which the one so far installed is the largest in Europe, then roll out the sheeting. Areas for embossing and printing follow, with an enclosed ink store beyond the perimeter of the main building. The Fablon department and the intermediate store lead northwards again to the finished goods warehouse and the despatch bays. Alongside the service access are separate structures for engineering workshops and boiler-house. At the opposite end, beyond a low entrance concourse, are stairs up to the amenity building, with canteen and washing facilities. Beyond this again two linked three-storey wings of offices and laboratories (42,500 sq. ft.) will be built in the second phase.

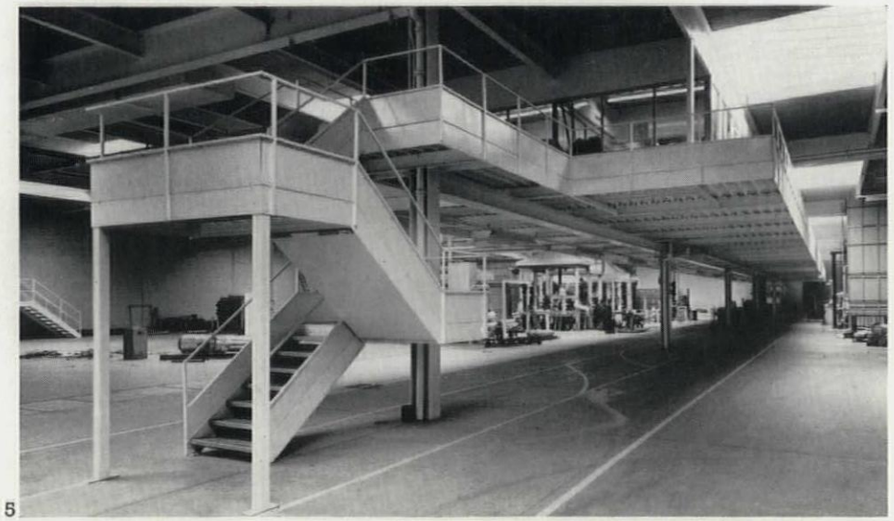
The structure throughout (except for the concrete frame of the future offices) is an exposed steel frame, painted dark brown externally and white internally. Infill panels are faced externally with antique fine sanded facing bricks, bronze in colour, and internally with light grey sand-lime bricks. Internal walls are generally of light grey brickwork. Within the production area is a freestanding wing of ancillary offices at mezzanine level, steel-framed and painted white, with proprietary steel partitioning. There is also a mezzanine floor for the colour laboratory across the calendering hall.

Natural lighting is by monopitch rooflights, monitor lights and clerestory lighting in the premix floor. Mechanical ventilation throughout gives a dust-free condition. Coal for the boiler is contained in bunkers of rough-shuttered concrete; the mechanical conveyor has not yet received its permanent housing. First-stage labour force, 500. Construction time, 26 months. Floor area so far built, 318,145 sq. ft., including main production building 270,000 sq. ft. Cost £3 per sq. ft., including services.

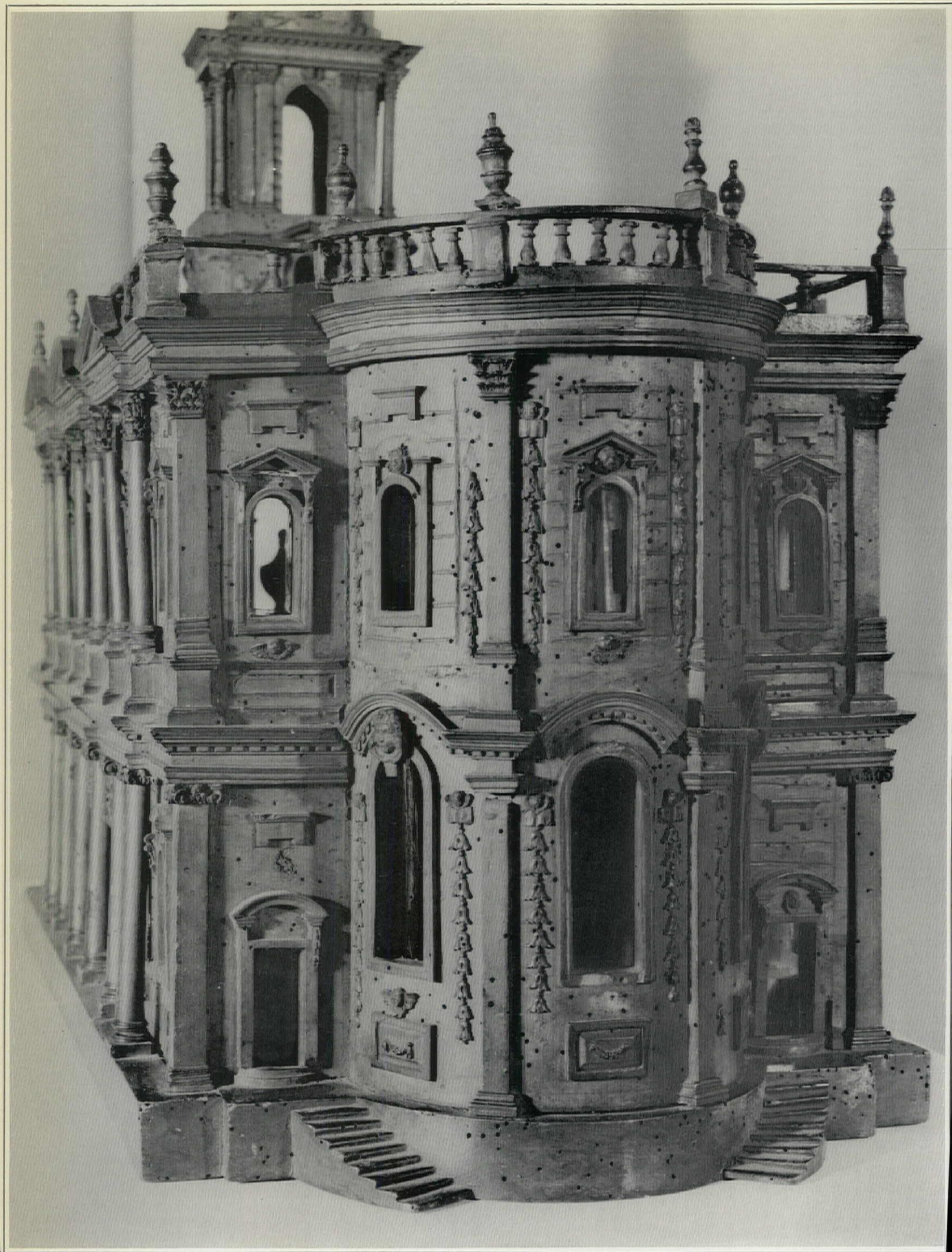
Quantity surveyors, Gardiner & Theobald. Consulting engineers, Bylander, Waddell & Partners. For contractors see page 76.



5, the mezzanine floor of offices, entirely of white-painted steelwork.

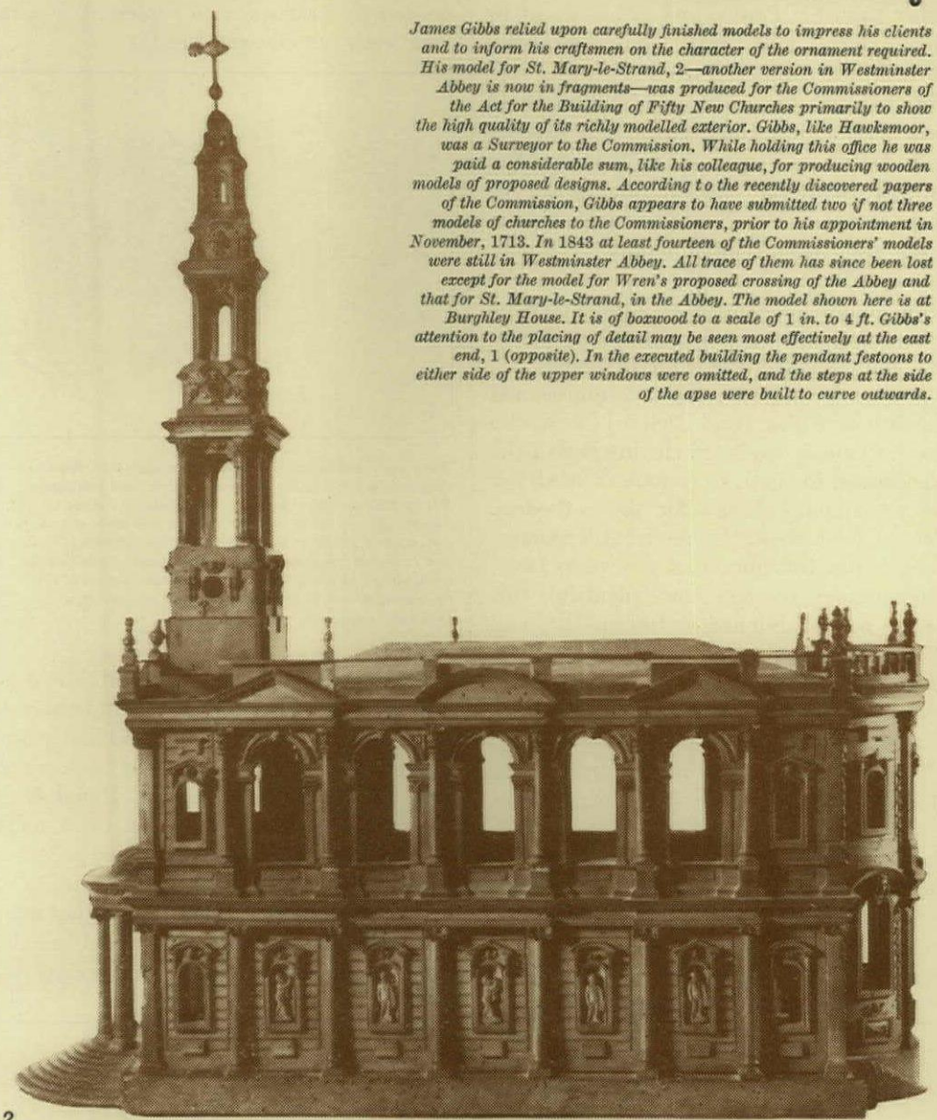


plan: key
1. tunnel
2. amenity building
3. clock-in hall
4. intermediate store
5. Fablon
6. ink making
7. printing
8. embossing
9. calendering hall
10. raw materials
11. finished goods
12. plasticizer tanks
13. workshops
14. boiler house
15. future offices and laboratories



1

John Wilton-Ely



James Gibbs relied upon carefully finished models to impress his clients and to inform his craftsmen on the character of the ornament required. His model for St. Mary-le-Strand, 2—another version in Westminster Abbey is now in fragments—was produced for the Commissioners of the Act for the Building of Fifty New Churches primarily to show the high quality of its richly modelled exterior. Gibbs, like Hawksmoor, was a Surveyor to the Commission. While holding this office he was paid a considerable sum, like his colleague, for producing wooden models of proposed designs. According to the recently discovered papers of the Commission, Gibbs appears to have submitted two if not three models of churches to the Commissioners, prior to his appointment in November, 1713. In 1843 at least fourteen of the Commissioners' models were still in Westminster Abbey. All trace of them has since been lost except for the model for Wren's proposed crossing of the Abbey and that for St. Mary-le-Strand, in the Abbey. The model shown here is at Burghley House. It is of boxwood to a scale of 1 in. to 4 ft. Gibbs's attention to the placing of detail may be seen most effectively at the east end, 1 (opposite). In the executed building the pendant festoons to either side of the upper windows were omitted, and the steps at the side of the apse were built to curve outwards.

2

THE ARCHITECTURAL MODEL

The immediate cause of this article was an exhibition held in the department of Fine Art of Nottingham University and organized by Mr. Wilton Ely. He is now pursuing the subject of architectural models further.

References to the use of models in architectural design can be traced back to ancient Egypt and Greece, and models undoubtedly played an important role in medieval building, but they acquired a fresh significance during the Italian Renaissance. With that revival of antique classical forms of building and of the conception of architecture as a discipline of mathematically determined shapes and proportions, the model provided a unique facility for developing design in terms of enclosed space and the formal relationships governing it. Moreover, during a period of searching enquiry into the properties of the physical world, as was the early Renaissance, the model became an essential tool in the investigation of such phenomena as structure, light, and the movement of man within architectural space. Above all, the model enabled the architect to demonstrate his design to the layman, whether a wealthy merchant or a member of the building committee of a trade guild; it also helped to clarify technical aspects of the building to the masons and craftsmen erecting it.

Giotto is said to have produced a model for his campanile in Florence in the 1330s, and Brunelleschi employed models extensively. Alberti, in his *De Re Aedificatoria* (1485) laid considerable emphasis on their value, but added the reservation: 'I would not have the model too exactly finished, nor too delicate and neat, but plain and simple, more to be admired for the contrivance of the inventor than the hand of the workmen.'[1]

In the sixteenth century models played a considerable part throughout the history of the building of St. Peter's in Rome. Sangallo's large 1/24 model is familiar. It was commissioned in 1539, took several years to make and cost almost as much as a small church.[2] At least as familiar is Michelangelo's model for the dome. Michelangelo used models for most of his architectural works. He appears to have considered them as aids towards formal composition rather than devices for structural experiment. Such was the intention behind his wooden model for the façade of San Lorenzo. Clay models also helped him to design the celebrated steps of the Laurentian Library and to develop the remarkable spatial composition of San Giovanni dei Fiorentini.[3]

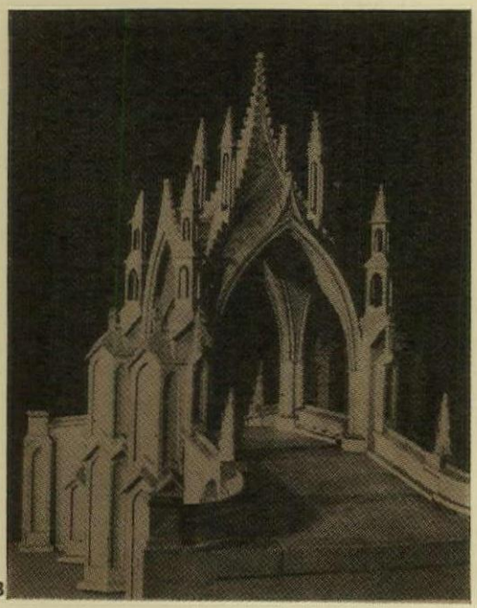
Inevitably, the use of models accompanied the spread of Renaissance Architecture to northern Europe, especially in France and England. Domenico da Cortona, a pupil of Giuliano da Sangallo, is recorded as making models of a number of châteaux, notably Chambord,[4] and it is appropriate that one of the earliest references to models in England should be in connection with the earliest building of the Elizabethan Renaissance, Longleat. In 1567 a model of the new design was made by the French joiner Adrian Gaunt.[5]

But it is during the early part of the next century, when Inigo Jones was introducing the mature language of classical architecture to this country, that references to models become more frequent. One is faced, however, with a major problem of interpretation, since 'model,' as related to the Italian 'modello,' often meant in the sixteenth and seventeenth centuries a drawing. Such in fact is the nature of the 'models' of the Star Chamber and Banqueting House for which payment is recorded to Inigo Jones in 1619.

Sir Henry Wotton, paraphrasing Alberti in his *Elements of Architecture* of 1624, impressed upon the enlightened country gentleman of the time the value of models in averting costly alterations for, as he quaintly expressed it, 'a little misery in the Premises may easily breed some absurdity of greater charge in the Conclusion.'[6] The advantages of this advice were borne out in the case of Sir William Townshend who halted building operations at an early stage on his house at Rainham in Norfolk, in 1632, while a mason, Thomas Moore, produced a model for him.[7] It appears that Townshend had been so impressed by various buildings in the classical style which he had seen on recent travels in England and abroad, that he resolved to have his house redesigned according to the new taste.

In the mid-seventeenth century models

THE ARCHITECTURAL MODEL



3

The use of architectural models declined towards the middle of the eighteenth century in England except for such unusual commissions as this project, 3, for a gothic bridge at Boughton, Northants, designed by William Stukeley in 1744. *The maker of this* 35 *in.-high model in pinewood was Thomas Eayre, builder and bell-founder. In a letter* (Surtees Society, *I* 368) *he called the bridge 'a prodiguous, curious and fine thing,' but pronounced doubts whether it would bear the weight of the central mass when built.*

seem to have become more frequent in England—examples are Melton Constable, *c.* 1664, and the King's House at Newmarket, by William Samwell, *c.* 1668.[8] The development of the model is a convincing parallel to the development of enquiries into the nature of the physical world. Thus it is significant that Sir Christopher Wren, scientist and architect during the years of the scientific revolution in Europe, used models to the full extent of their experimental and explanatory capacities.

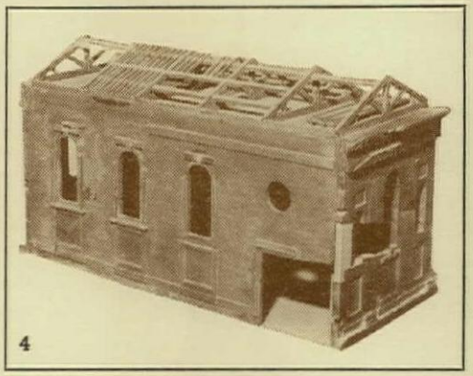
During his early career as a mathematician and astronomer at Oxford, Wren had frequently devised models to solve or to expound scientific problems. In 1663, when engaged upon his first architectural commission, the Sheldonian Theatre, he demonstrated an ingenious solution of its structural problems to the Royal Society by this means. At about the same time, his uncle, the Bishop of Ely, asked him to design a chapel for Pembroke College in Cambridge, and it was natural that he should have produced a model, 4, to instruct the workmen on the precise nature of the roof structure. Moreover, since the chapel was to be the first religious building in either University to be built in a purely classical style, the unfamiliar details of mouldings and ornament were also carefully represented. The pediment on the west front, missing in the model, may not have been fully indicated, since recent restoration work in the College has revealed, behind some panelling, full-scale outlines of the tympanum sculpture and of an urn, drawn there for the benefit of the masons.

Within three years, Wren was involved in the design of a far larger church, none other than St. Paul's, and in his report to the Commissioners for the rebuilding of the cathedral he proposed that:

'for the encouragement and satisfaction of benefactors that comprehend not designs and drafts on paper as well as for the inferior artificers clearer intelligence of their business, it will not be amiss that a good and careful large model be made, which will also have the use that if the work should happen to be interrupted or retarded, posterity will go on where it was left, pursuing still the same designs.'[9]

Accordingly, in 1669, Wren commissioned the firm of William and Richard Cleer, who had previously executed the interior of the Sheldonian for him, to produce a model of his preliminary design for the cathedral. Part of the nave of this model still remains in the cathedral library. A few years later, when money became more plentiful, this design was abandoned as too modest, and Wren was commanded by Charles II to produce a large wooden model of his revised design following the precedent of Sangallo's giant model.

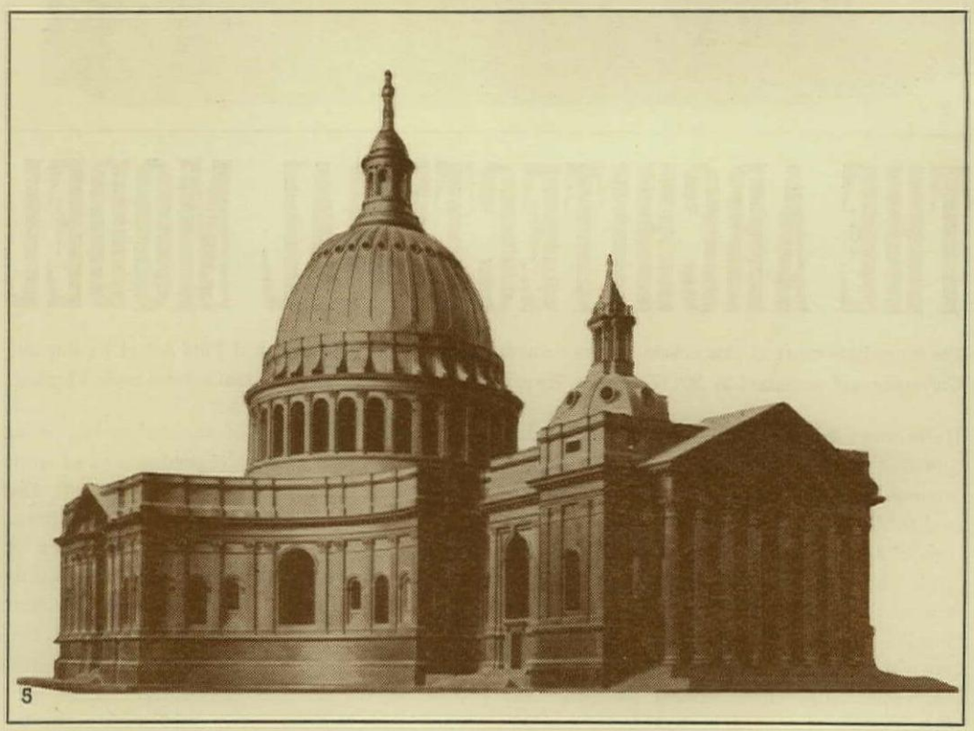
The Great Model, 5—unquestionably one of the finest models ever made—was created to impress the Commissioners with the grandeur of its classical forms and the richness of its decoration rather than to demonstrate the technicalities of its construction. Once Wren and his assistant Woodroffe had traced the outline of the design upon oak boards to a scale of 1 in. to 1½ ft., it took a dozen joiners under the two Cleers about six months to construct the model. Thereafter, they were succeeded by craftsmen to represent decorative work outside and inside.



4

Wren used models extensively to demonstrate the formal and structural aspects of his designs to patrons and craftsmen. His earliest surviving model, 4, for Pembroke College Chapel, Cambridge, was made in cedar and oak to a scale of 1 *in. to* 3 *ft. approx., prior to the chapel's erection between* 1663-5, *and indicates full details of the roof structure including the metal straps securing the rafters and the king posts to the tie-beams, as well as the classical ornament then unfamiliar to the average mason.*

Whereas the cathedrals of the Middle Ages had been the products of comparatively long periods of construction and had grown out of the contributions of succeeding generations, St. Paul's, as a Renaissance building, was the conception of a single designer, being composed of a predetermined number of strictly related units on a given scale. The model demonstrated that conception in miniature and enabled both architect and builders to relate the



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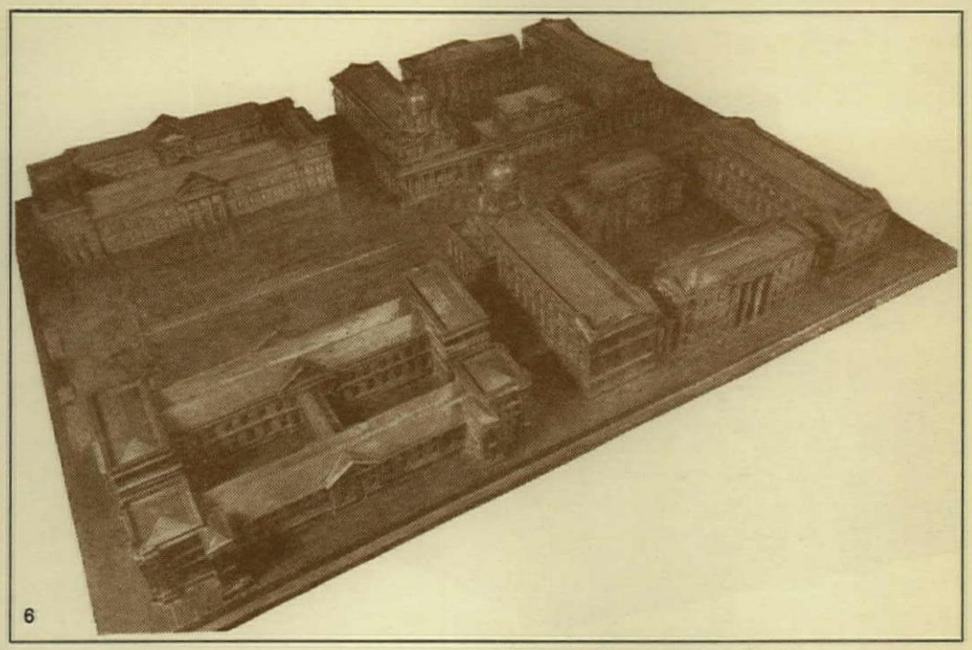
The Royal Commission for the rebuilding of St. Paul's Cathedral in November 1673 commanded a model thereof to be made after so large and exact a manner that it may remain a perpetual unchangeable rule and direction for the conduct of the whole work. (Wren Society, *Vol. XIII, p.* 27). *The Great Model,* 5, *was made by William and Richard Cleer between* 1673-4 *at a total cost of* £600. *Executed with great accuracy to a scale of* 1 *in. to* 1½ *ft. this* 18 *ft.-high model in oak is as highly detailed within as without. The floor of the model could be lowered to enable a spectator to stand waist-high within. The interior was fully represented down to the carving of the capitals, swags and urns by Richard Cleer, the plaster vaulting by John Grove, and the gilded decoration by Robert Streeter. Wren also produced models for specific parts of the executed building to guide the workmen, such as the upper stage of the west front, the pediment of which was carved by Francis Bird.*

execution of the individual elements to the overall design. That Wren did not succeed in convincing the chapter of the central composition of the model is well known. The executed building lacks the daring of the Great Model. Wren refrained from making further models of the entire cathedral, since he desired to maintain a certain secrecy about his ultimate intentions, but he produced many specialized models for the guidance of the craftsmen during its construction. Among them are models for the baldacchino over the high altar, the organ case and the choir stalls and also for the upper stage of the west front and of the roofs of the west towers. Finally, during the construction of the dome, Wren used a number of detailed models, including two of the lantern indicating its structural and decorative aspects.

During the latter part of his office as Surveyor-General, Wren was concerned with another undertaking in which models were required to demonstrate a complex design to laymen and to enable decisions of a far-reaching nature to be made. In 1699 Nicholas Hawksmoor, then recently appointed Clerk of the Works at Greenwich, was paid for three models of the Royal Naval Hospital.[10] The first represented the principal buildings and the other two, which were evidently intended to be attached to the first, showed alternative proposals for additional buildings to the south. It is likely that the model, now in the Maritime Museum, 6, was the main one of the set. The originality of this work, which is one of the earliest known site models, lies in its capacity to present the architect's conception of the entire project while allowing for individual elements to be altered at the requirement of the Fabric Committee. In fact, this is likely to be the model mentioned by Evelyn as having been taken by Wren to London to augment his drawings at a meeting of the Committee in 1700.[11]

Hawksmoor, as the heir to Wren, further developed the role of the model in the process of design. Wren had used models in a supplementary capacity to manipulate geometrically precise shapes and volumes in relation to structures to be built or actually building. Hawksmoor placed a greater reliance upon them in the evolution of a composition, especially in exploring the sculptural properties of mass and light; a distinction similar to that between the attitudes to models of Brunelleschi and Michelangelo. In addition, Hawksmoor employed models to determine the relationship between the external forms and the internal arrangements of his buildings, particularly where light was to be used with dramatic effect. Models survive of his designs for King's College, Cambridge, and the Radcliffe Library, Oxford, and those documented for Vanbrugh's Castle Howard and Blenheim were probably made at his direction. However, it is the model for his only country house, Easton Neston in Northamptonshire, 7, that shows best the value of this three-dimensional aid.

Following the advice of Alberti and Wotton, the model is relatively plain in appearance, and was evidently produced to study the distribution of light and communication throughout a building with an exceptional number of mezzanine floors. This becomes particularly apparent at the sides, especially on the north, where the



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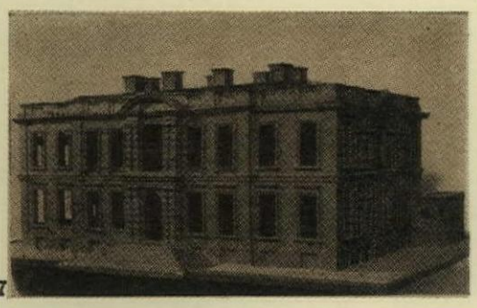
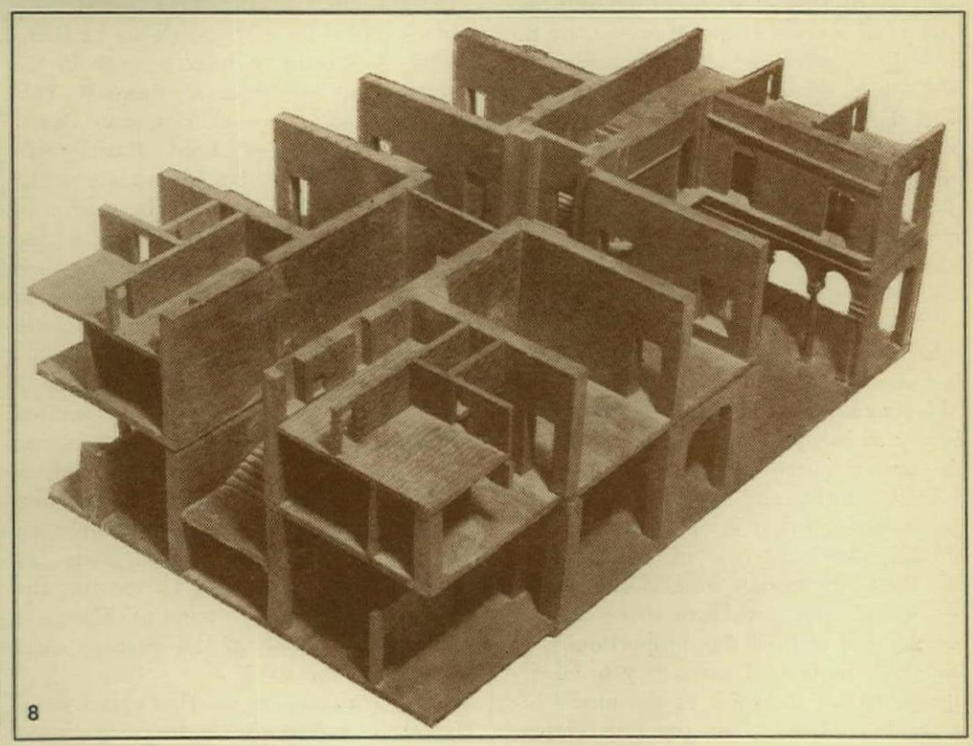


7

When Wren was engaged in erecting the Naval Hospital at Greenwich, his Clerk of Works, Hawksmoor, was paid £52 in June 1699 for causing three models to be made. The main model of wood blocks with incised and applied detail, 6, shows the hospital to a scale of 1 in. to 28 ft. It represents Wren's revised scheme, i.e. two courts with domed structures containing the chapel and hall—to the east and west of a central vista—instead of his initial design for a large domed building on the main axis. There are, however, substantial differences between the model and the hospital as executed; e.g. the two officers' pavilions adjoining the colonnades of the upper court, which were abandoned after their foundations had been prepared in 1702; and the pavilions flanking the main blocks on the river front which were erected to a different design. Hawksmoor employed models to greater advantage than any other contemporary architect, not only as explanatory devices, but also as working tools in the development of his designs. His earliest model, 7, for Easton Neston, Northants (shown from the north-east), was made of oak to a scale of 1 in. to 5 ft. and represents an early stage in the design. A contrast to the two-storey main facade is provided by the complex fenestration of the side elevations, especially on the north, where an ingenious arrangement of windows represents the two mezzanine floors housing servants' quarters. The internal arrangement responsible for this effect is best seen by removing the entire floor structure (8, shown from the north-west). The northern half of the house is divided into two groups of four storeys (two lower mezzanine floors here removed) by the main staircase. A gallery, running the full width of the upper floor, is dramatically lit at either end by the central windows of the main facades. In the south-west corner the main body of the hall, flanked by arcades on the first floor, rises the full height of the house.



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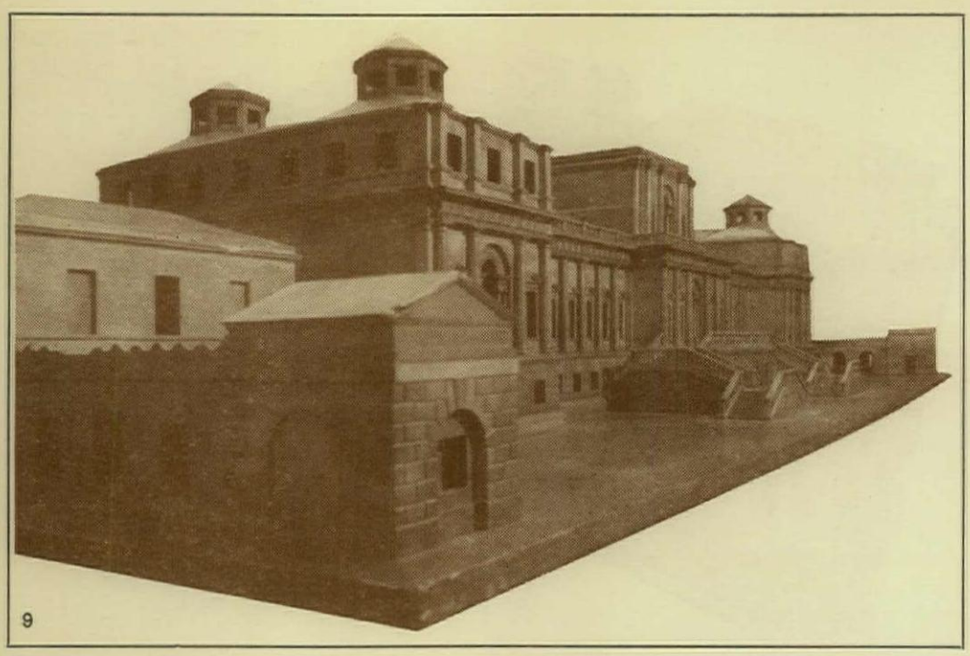
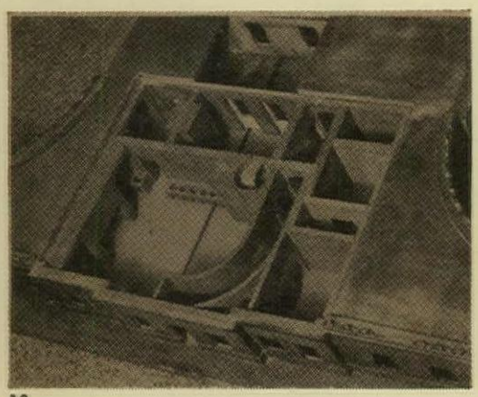


9

William Kent, as a leading official in the office of Works in the 1730's, designed a Royal Palace for Richmond in the 'correct' Palladian taste, represented by this impressive model, 9, over 7 ft. 6 in. long, of pearwood—now at Hampton Court. The upper storey of the left-hand pavilion can be removed to disclose the kitchens, 10.



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regular two-storey fenestration of the main façade has been transposed into a highly complex rhythm of windows lighting four storeys of service rooms. However, by the time the house came to be built around the mid-1690's, Hawksmoor was dissatisfied with the form of the exterior and made a considerable change in emphasis by replacing the two-storey astylar facade with a giant order, while preserving the interior arrangement. One can best appreciate the way this model enabled the architect to distinguish between the external form and its functional content by removing the entire floor structure, 8. As Sir Roger Pratt had observed a generation earlier:

'Whereas all the other drafts do only superficially and disjointedly represent unto us the several parts of a building, a model does it jointly, and according to all its dimensions. So that in one rightly framed all things both external and internal with all their divisions, connexions, vanes, ornaments, etc., are there to be seen as exactly and in their due proportions, . . . but that the inward parts may so clearly appear to us, the sides of the model are so to be ordered, that the four corners remaining always firm, as to the rest, they may be pulled up as occasion shall require.'[12]

Although a number of outstanding models survive from the early part of the eighteenth century, few of them reveal this quality of development in design to anything like the same extent. In most instances they are highly finished works made after the main form of the building had been resolved, and they were produced for the benefit of prospective clients or committees as much as for the builders and craftsmen. Moreover, with few exceptions, they were made to represent the external features of the design rather than to demonstrate the internal function or the structural nature of the work.

For example, the more one explores the spatial organization of the Easton Neston model and the way light is introduced with dramatic effect inside, the more William Kent's model for a Royal Palace at Richmond, 9, appears as mere exercise in the arrangement of external forms.[13] This sizeable model, now at Hampton Court, was a product of Lord Burlington's mission to establish Palladian taste at the highest levels of national life by a series of exemplary public buildings. Kent, as the Earl's protégé, was successfully installed in the Office of Works, and by 1735 held the posts of Master Carpenter, Master Mason and Deputy Surveyor. In this official capacity he designed a Houses of Parliament and a Palace. The learned array of pavilions, columns, aedicules and balustrades of the pearwood model fail to convince until they are viewed from ground level, when the composition assumes an unexpected grandeur. It also comes as something of a surprise to remove the upper storey of the left-hand pavilion, and find the full details of the kitchens carefully considered, 10.

Besides Hawksmoor, another architect of the early eighteenth century who used models to considerable advantage was James Gibbs. Like Wren he possessed an exceptional capacity for detail, and his surviving models for St. Mary-le-Strand and St. Martin-in-the-Fields display a quality of finish and attention to particulars which place them in the tradition of the Great Model rather than that of Hawksmoor's empirical aids. The model of St. Mary-le-Strand, 2, now belonging to the Marquess of Exeter whose family owned the site, was probably made to demonstrate the elaborate character of the external design, since the church was to occupy a prominent site in the Strand, where its richly modelled facade would be seen to great effect. Using motifs from a variety of sources, such as Palladio, Borromini, Inigo Jones and Wren, the architect enclosed the simple 'auditory' within a fabric of finely wrought forms which carried the eye effortlessly round the building. Furthermore, with an unequalled sensitivity to interval and carefully placed ornament, Gibbs designed a tower to replace the bell-turret originally intended with the same fluency of transition from one stage to another. The interior of the model, however, apart from indicating such basic spatial divisions as the vestries to either side of the apse, was not carried out in such detail. When St. Mary's was erected between 1714 and 1717, the building followed this model closely (except for certain passages of ornament and for the steps around the exterior of the apse, 1), duly assuming something of the compactness and perfection of its miniature prototype.

When, in 1720, Gibbs was chosen to rebuild St. Martin-in-the-Fields he was concerned with a far more elaborate building whose ultimate cost of £30,000 was to make it one of the most expensive post-medieval churches in England. The model, 11, which remains in the church, is a superlative example of the cabinet-maker's skill, showing every detail of the exterior down to the individual balusters and urns. Moreover, when the two principal parts of the roof are removed, 12, the interior is found to be carried out with the same degree of finish, complete with columns, galleries, seating, vaulting and the elaborate 'boxes' provided on either side of the sanctuary for the Crown and the Lords of the Admiralty. At the north-east corner of the model another part of the roof can be removed to show a staircase extending from gallery level to the crypt, which is itself fully represented throughout.

Unlike the model for St. Mary's, which concentrated upon the external design, this one was clearly intended to represent every conceivable aspect of the building for the consideration of the architect and his clients, before the costly building programme was set in motion. Quite apart from reflecting Gibbs's stylistic development away from the sculptural conception

THE ARCHITECTURAL MODEL

of St. Mary towards the more synthetic composition of the Palladian style, this model reveals the architect's concern with the problems of enclosing a group of specific requirements, such as an auditorium, staircases and belfry, within a series of classical forms. This approach to design, through an assembly of distinct elements in the model, is particularly evident in the way Gibbs was able to insert extra columns on either side of the portico, when the church was erected between 1722 and 1726, and to compensate for the additional cost by converting the engaged columns at the east end to pilasters without seriously affecting the unity of the design. Likewise, the upper stages of the steeple differ from that executed, as well as from the six versions illustrated in Gibbs's *Book of Architecture* of 1728 (Plates 29 and 30), and, since the tower can be detached from the model, it is quite possible that alternative versions were prepared for the consideration of the Commissioners for Rebuilding.

With the emergence of an architectural profession during the course of the eighteenth century, together with an increase in skill of a building trade conversant with the correct canon of Palladian taste, the practice of using models to develop and to explain designs noticeably declined. The majority of examples surviving from the middle and latter part of the century are significantly related to projects of an unusual nature, or which presented specialized problems of lighting and interior decoration. For instance, during that refreshing interlude in taste between the doctrinaire movements of Palladianism and Neoclassicism, a variety of architectural experiments were undertaken in the exotic styles of the Gothic and the Chinese. A unique survival from these excursions into fantasy is the model for a gothic bridge, 3, designed by William Stukeley the antiquary in 1744 for the Duke of Montague's estate at Boughton in Northamptonshire. Here the sobriety of a Palladian bridge has been transposed into a delightful confection of ogee arches, finials and crockets, anticipating by a decade the Picturesque of Strawberry Hill.

An exception for its date is the last model here to be illustrated, that of Ickworth, designed by Francis Sandys in the 1790's under the direction of his client, the Earl Bishop of Derry. The model, 13, which was made specially light in order to be sent to Italy for the client's approval before building commenced, is an outstanding example of an aesthetic ideal governing both the exterior form and the internal planning of a building. The design consists of a rotunda containing the main accommodation round a central staircase, which

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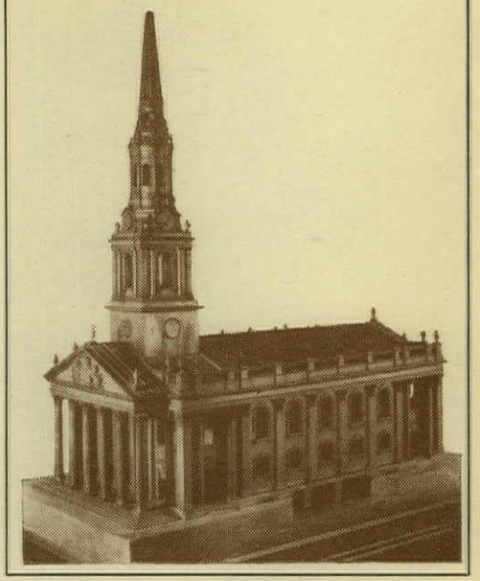
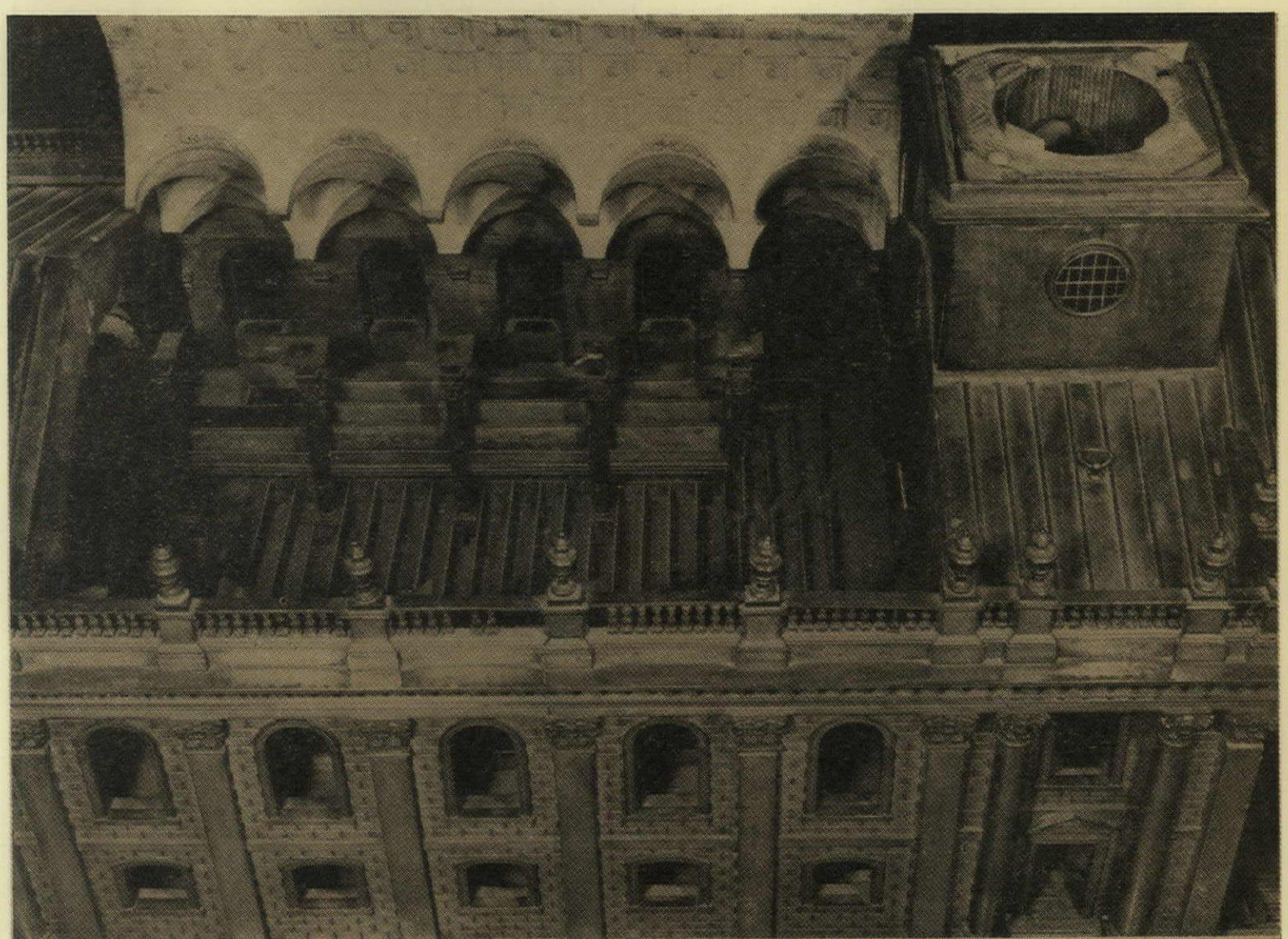
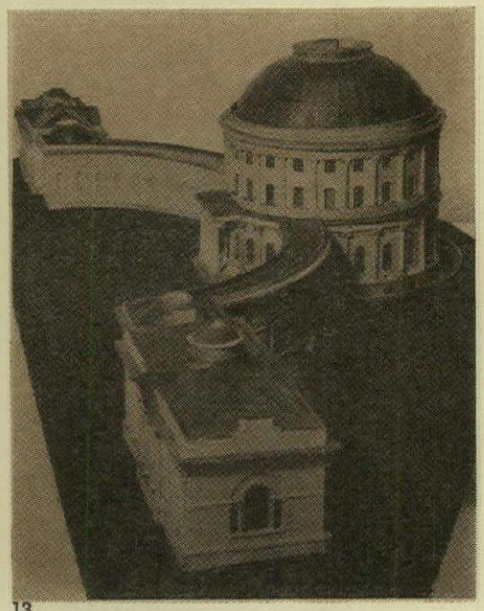


11, *this model for St. Martin-in-the-Fields (erected between* 1722-6) *is the most elaborate example in England next to the Great Model. Made of pine and mahogany to a scale of* 1 *in. to* 4 *ft. for* £71, *it represented every aspect of the design for the consideration of the Commissioners. When the two parts of the roof are removed,* 12, *the complete features of the interior are revealed, even to the proposed form of plaster decoration for the vault. The right-hand part of the roof can be removed to show one of the four staircases extending from gallery level to the crypt.*

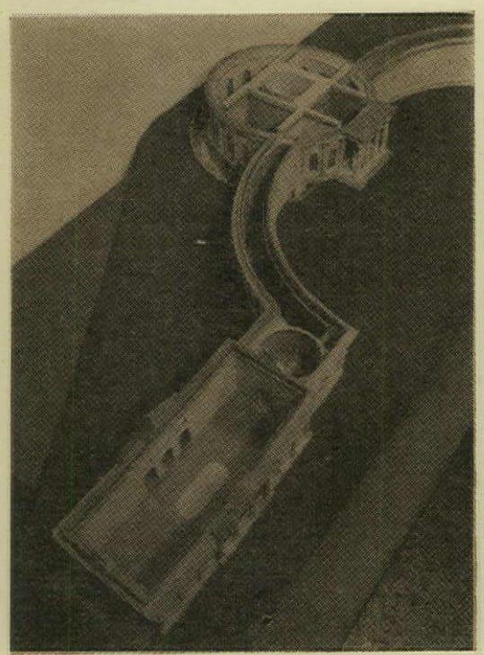


THE ARCHITECTURAL MODEL



13

The highly unusual design for Ickworth House, Suffolk, produced by Francis Sandys, is preserved in this model, 13, *still in the house. It was made by the architect's brother, the Rev. Joseph Sandys, to a scale of* 1 *in. to* 12 *ft. By removing the dome and upper storeys,* 14, *one can appreciate the use of colour and light within. Grouped around the main staircase, are the principal rooms—the hall, the library, the dining room, and the drawing room (whose colour schemes are indicated as brown, cream, green and pink). Following the corridor (brown), lit only to the south, one reaches the circular sculpture gallery (green), lit from above, and then finally enters the picture gallery (pink), lit from three sides and the cupola.*



14

rises under top-lighting introduced through an oculus in the dome. To east and west quadrant corridors connect the rotunda with wings intended to house the collections of sculpture and painting which the Earl Bishop was assembling on his travels. The general appearance suggests an obsession with the shapes of pure geometry—rectangles, segments, cylinders and hemispheres—and is reminiscent of the fantastic projects of Boullée and Ledoux in Revolutionary France. The design is also highly characteristic of the new freedom in handling the elements of classical architecture during the age of Neo-classicism, which rarely proved successful in the work of architects less imaginative than Adam or Soane. For in the absence of the rigorous discipline of Palladian taste the scaling of the ornamental friezes at Ickworth and the general proportions of the main parts of the composition, although less noticeable in the model, were to prove most unsatisfactory when the house came to be built.

But it is the interior of the model, 14, that remains the most remarkable part. By removing the dome and the upper storeys, together with the roofs of the eastern corridor and wing, one can examine the imaginative use of colour and light as they condition the character of the interior. Not only are all the sources of light scrupulously represented down to the glazing bars painted on the glass, but the décor of the principal rooms is indicated by four different colour schemes of terra-cotta brown, cream, green and pink. Unfortunately the clarity of this internal system was never fully realized in the actual building. Shortly after work had begun on the rotunda in 1796, the art collection intended for the house was confiscated by the French Revolutionary forces in Rome, and from then onwards the Earl Bishop lost interest in the project. He spent the remainder of his life in Italy, and his successor completed the house to other designs.

By the turn of the century, few English architects appear to have relied upon models either in the process of design or for demonstration to clients and builders. Sir John Soane is a notable exception, and it is understandable that his preoccupation with unusual structures and singular effects of lighting found its expression in such a model as survives for Tyringham. His models for the Tivoli Corner of the Bank of England, also in the Soane Museum, were unquestionably valuable for deciding upon the respective merits of alternative compositions in which the properties of mass and light were essential to the monumental effect.

The reasons for the decline in the use of models in architectural practice during the nineteenth century are unquestionably related to the extremely high standards of draughtsmanship and technical expertise of an established profession in which specialized drawings had replaced many of the functions previously fulfilled by models. Similarly, a building industry fully conversant with the accurate directions of architectural drawings no longer required the explicit instruction provided by detailed models. Moreover, from an aesthetic point of view, architects had become less concerned with the sculptural qualities of mass and space and with the relation of internal function to external form, rather tending to compose in terms of the pictorial qualities of façade and silhouette. This shift in emphasis was reflected in the presentation of designs to the client, where the place of the model was taken by the seductive charms of the architect's coloured impression, with its emotive devices of romantic settings and contrived perspectives.

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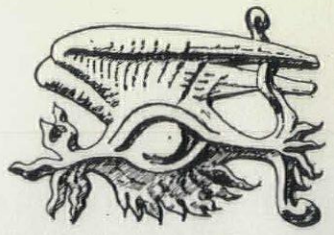
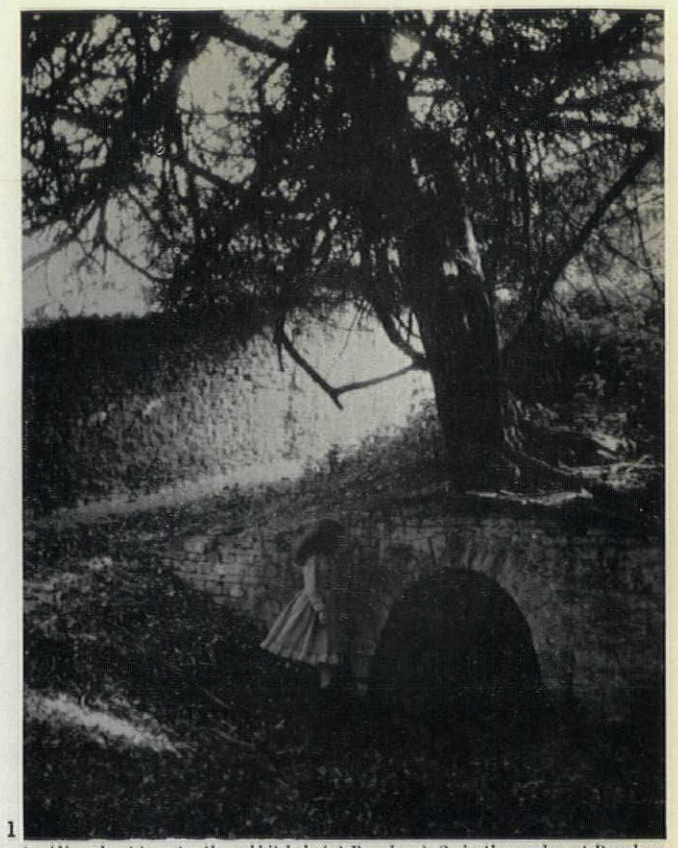
[9] *Wren Society*, Vol. XIII, p. 17.
[10] See K. Downes, *Hawksmoor*, London, 1959, p. 87.
[11] J. Evelyn, *Diary* (ed. 1955), Vol. V, p. 399.
[12] R. T. Gunther, *The Architecture of Sir Roger Pratt*, Oxford, 1928, p. 22.
[13] The site intended for the Palace, formerly thought to have been Hyde Park, has now been established as Richmond. I am most indebted to Mr. John Harris for drawing my attention to an entry to this effect in the *Minutes and Proceedings of the Works* for October 1, 1773.

Acknowledgement is made to the following owners for permission to illustrate the models concerned: The Duke of Buccleuch (Stukeley's Gothic Bridge); The Master and Fellows of Pembroke College, Cambridge; The Dean and Chapter, St. Paul's Cathedral; The National Maritime Museum; Lady Hesketh (Easton Neston); The Ministry of Public Buildings and Works (Kent's Palace); The Marquess of Exeter (St. Mary-le-Strand). The Vicar and PCC of St. Martin-in-the-Fields; The National Trust (Ickworth).



the exploring eye

The much-talked-of BBC film of 'Alice in Wonderland', directed by Jonathan Miller and shown earlier this year, was full of visual surprises and delights. The sets were the work of Julia Trevelyan Oman and on these pages are some of her own photographs taken on the set while film-making was in progress. The set used for some of the most dream-like interior sequences was the Royal Victoria Military Hospital at Netley (1856-63), now empty and soon to be demolished. Other locations were the grounds of Rousham in Oxfordshire, and Castle Donington in Leicestershire.



1

1, *Alice about to enter the rabbit-hole (at Rousham).* 2, *in the garden at Rousham (Mad Hatter's tea-party sequence).*

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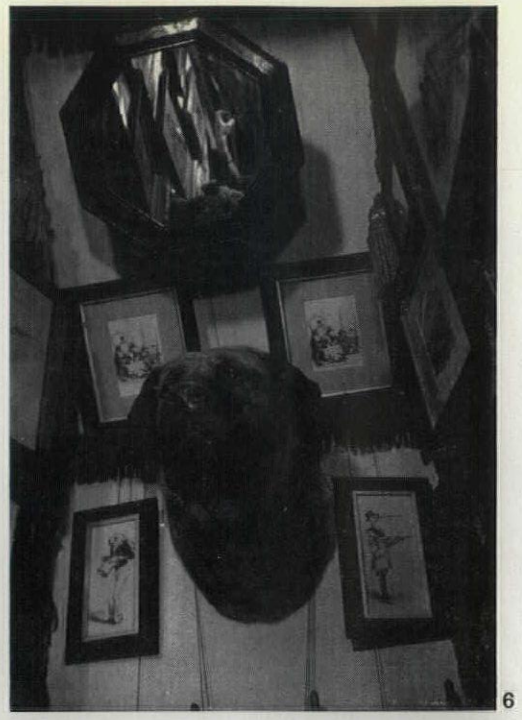

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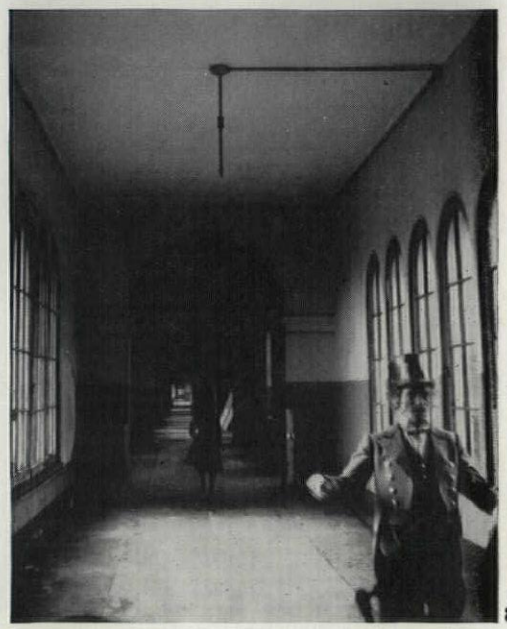

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'Alice' sets 5, *Alice and her sister Emma at the start of the film.* 6, *White Rabbit's staircase.* 7, *corridor with doors (Ealing Studios set).* 8, *Alice and the White Rabbit (Netley Hospital).* 9, *Alice outside the White Rabbit's cottage.* 10, *Alice and Dodo (the chapel at Castle Donington).*

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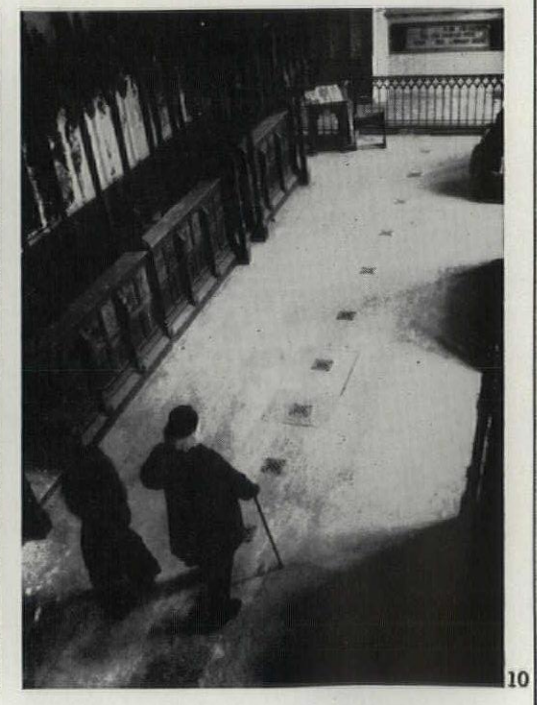

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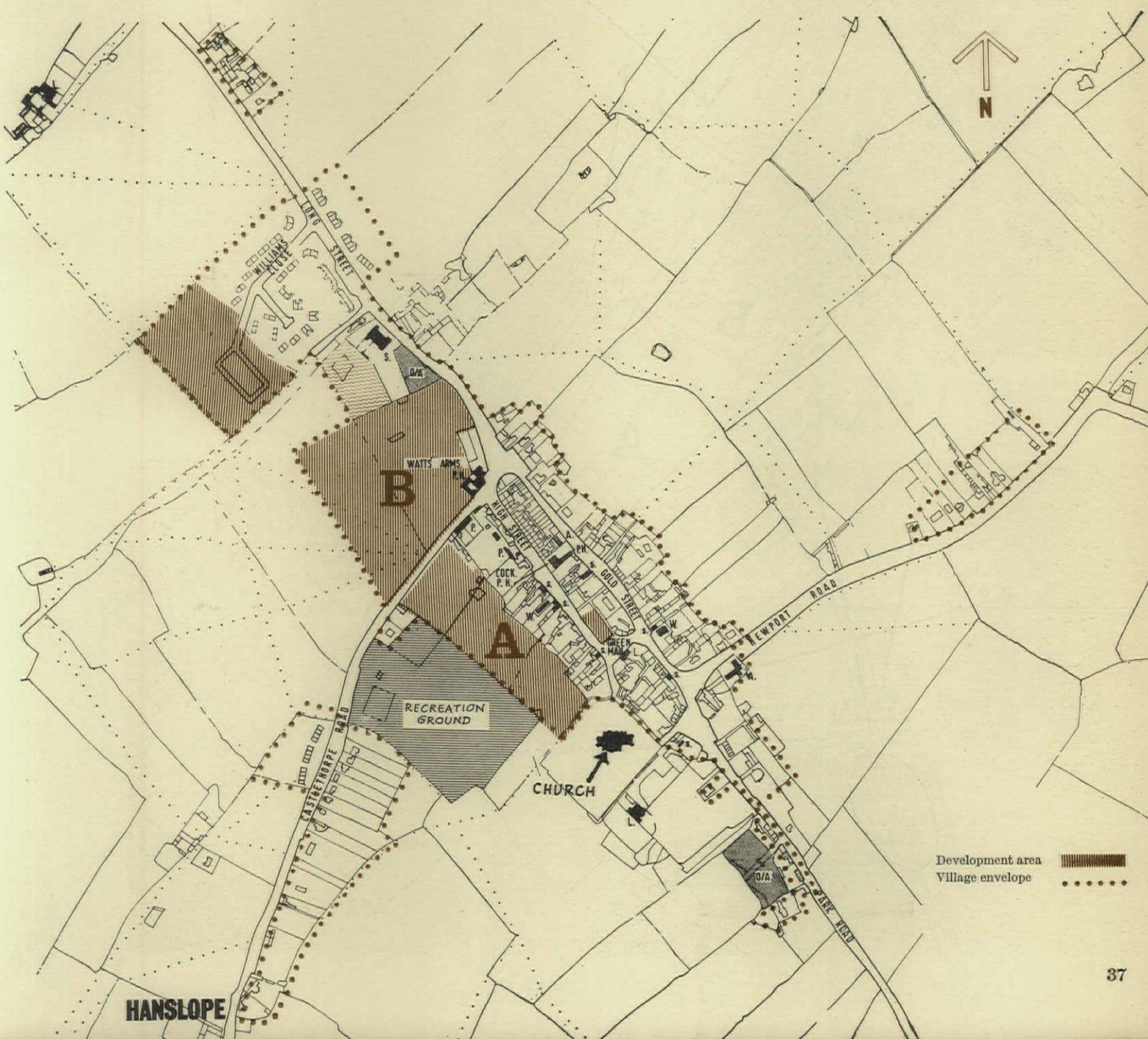
3, *Alice and anatomical charts (Netley Hospital).* 4, *Alice and rocking-horse (The Chase).*

Village Planning

Since the village is such a recurrent element in the English landscape, its problems become very important. A first opportunity to look at some of them is offered by the work recently done by Bucks county council. In a commendable effort to find out how village character can hope to survive in the face of development pressures, the Bucks planning department under F. B. Pooley recently produced a number of studies and plans of selected villages. Four were commissioned from private consultants, and two carried out by the county itself (Penn and Wingrave, by Casson, Conder and Partners: Steeple Claydon, by Brett and Pollen: Hanslope, by Gordon Cullen: Weedon and Wing, by Bucks departments of architecture and planning). This kind of co-operation with outside consultants is becoming increasingly necessary since local authorities are so understaffed with planners that they have no hope of keeping even half an eye on every village. These are village plans of a new kind, giving positive lead to the form that new building should take, and before being published or becoming part of the county planning policy they are sent to the rural district councils concerned for comment. There is then a continuing contact between planner and planned with applications for development as they occur sent to the consultants for their views as to whether or not they fit the desired pattern—whether they should be accepted or rejected. The reports so far produced vary greatly, as do the villages, but Gordon Cullen's study of Hanslope is perhaps the most rewarding to examine here for it tackles the problem in a particularly organic and imaginative way. We are familiar enough with studies which set down in great detail everything from local history



plan 1: Hanslope village today *The subject of Gordon Cullen's study which is summarized here. A and B indicate the two main areas considered suitable for development.*

to dry rot, and they have their uses. But the reader tends to get bogged down in a mass of detail and cannot see wood for trees. Relevant? Yes, in a preservationist sense, but signpost? No. By contrast the Hanslope report, while undertaking the necessary survey of what exists, does not just leave things at that, but uses it creatively as the basis from which to show what could happen. Instead of imposing a solution, the author shows how the village can become more itself rather than less—concentrated rather than diluted. No rules of thumb, no forcing into grids.

The author starts by stalking the place, first examining the entrances to the village and showing how they could be improved, by such measures as planting and infilling. He comes to the conclusion, for instance, that 'remedial development' is called for on the north and west approaches of Hanslope, today confused by ribbon building. On the west approach he adds terraces at right angles to the road to contain the space and effect a closure (see 2 and 3 on plan 2 below) from which the eye will then escape to views of the village proper.

Next he looks at the individual buildings and describes the important groups, finding five distinct 'places.' In this way he begins to construct an idea of the village. K.B.

Some of the main points of Gordon Cullen's report:

HANSLOPE VILLAGE

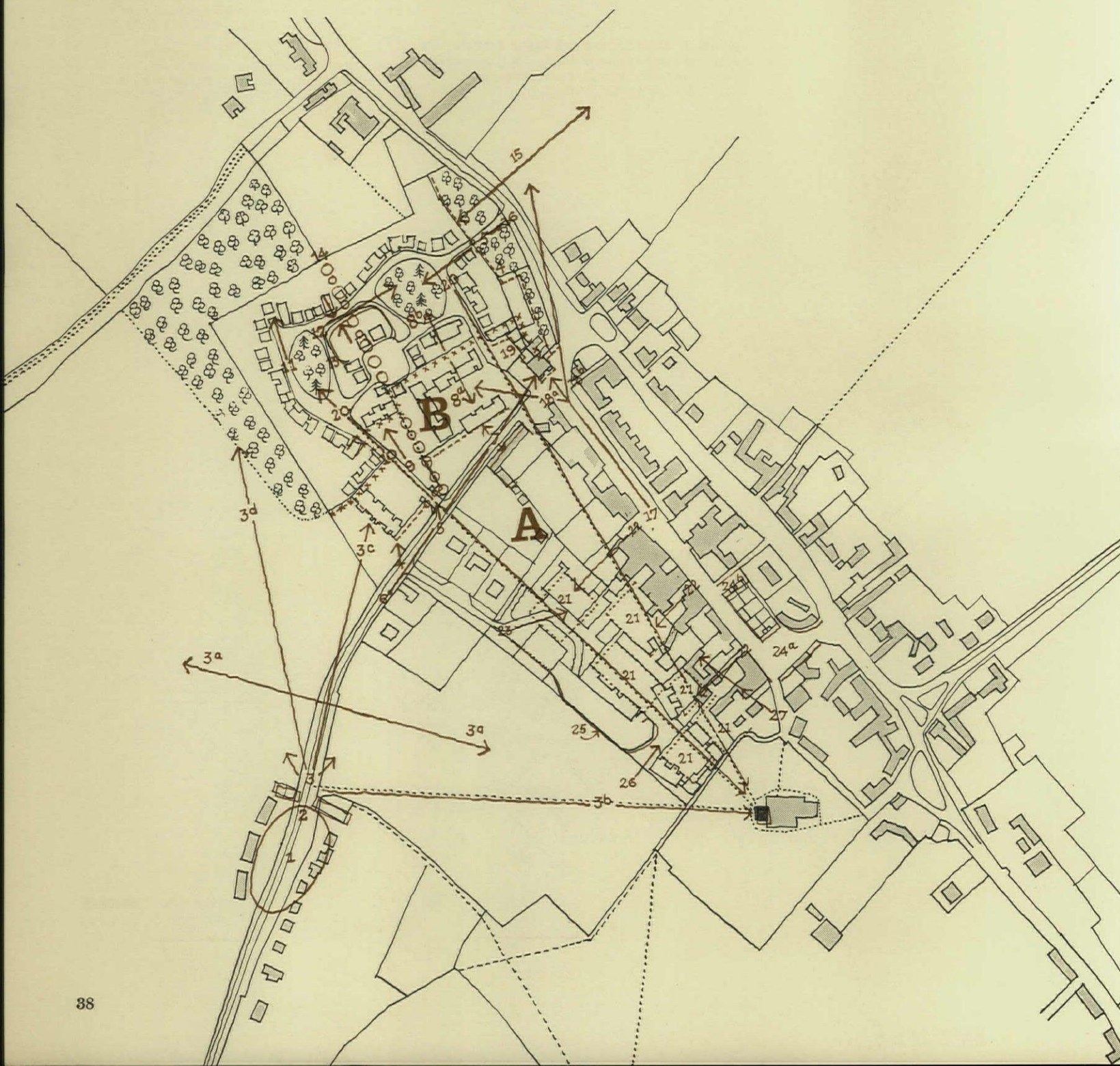
The oustanding feature is the 200-foot Perpendicular church tower, the finest steeple in the county according to Pevsner, which is seen from far off across the wide fields. In the nineteenth century the village developed parallel main streets. One, High Street, seems unsure now whether it is residential or not, but due to its offset nature it is provided with an excellent built-in by-pass by the other, Gold Street. The places considered suitable for development are shown on plan 1 with two main areas for new housing, the area of backland A between the High Street and the recreation ground and the land adjoining the Watts Arms public house B.

AREA B (WATTS ARMS SITE)

The intention here would be to break down this large site into two allegiances, the first linked to the village and therefore built-up and urban, the second linked to the countryside and arcadian in character, houses in a green setting.

A sharp edge of continuous building would be provided and entrance would be through a wall and thickly planted trees. On the west approach a triangular stretch of green sward and trees would be formed in front of this wall and narrowing towards the village (7 on plan 2) to intensify the feeling of concentration.

plan 2: Hanslope village as it could be *showing, in conjunction with the notes opposite and the sketches on the next two pages, Gordon Cullen's proposals and what they would achieve.*



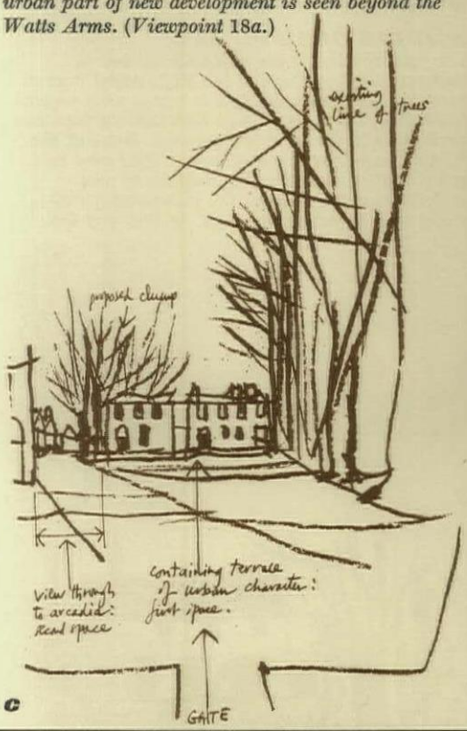
a *Approach from the west. Village proper would start with a defined edge formed by a new terrace set on a rough green. Trees planted on left would screen back gardens of new housing estate. (Viewpoints 3c, d.)*

b *Space opens out to a typical tree-planted green-sward. Gradually constricts as the Watts Arms and High Street are approached, thus heightening the sense of occasion in entering a village. Existing houses on right make this possible and should be retained. (Viewpoint 6.)*

c *Vistas in new development restricted so as not to compete with the High Street. Nearer part of development made urban in character, but opening on left indicates curvilinear arcadian part beyond. Important to keep trees on right. (Viewpoint 9.)*

d *Rural feeling of northern part of the site accentuated by focusing entrance on existing clump of trees. (Viewpoint 16.)*

e *Views revealed at end of High Street as the urban part of new development is seen beyond the Watts Arms. (Viewpoint 18a.)*



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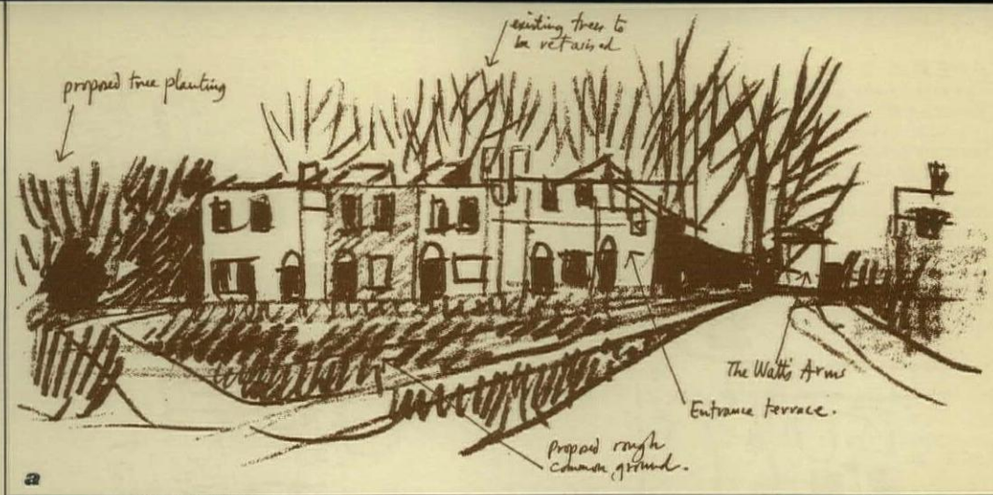

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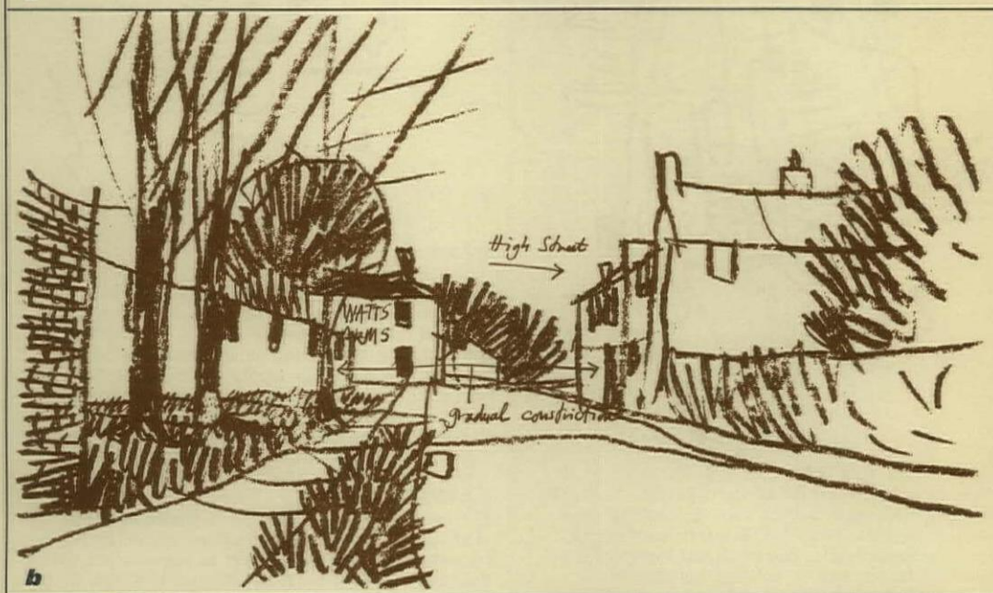

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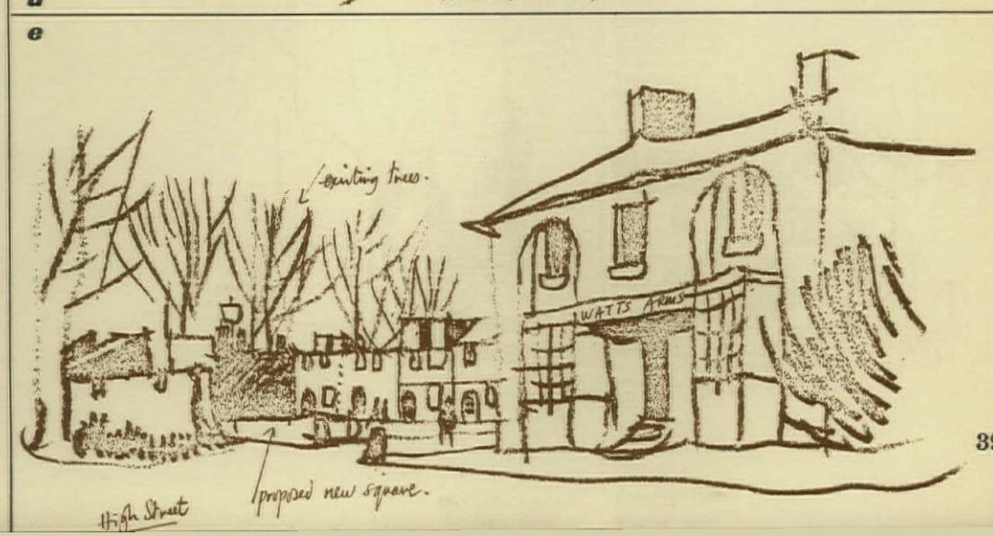


e

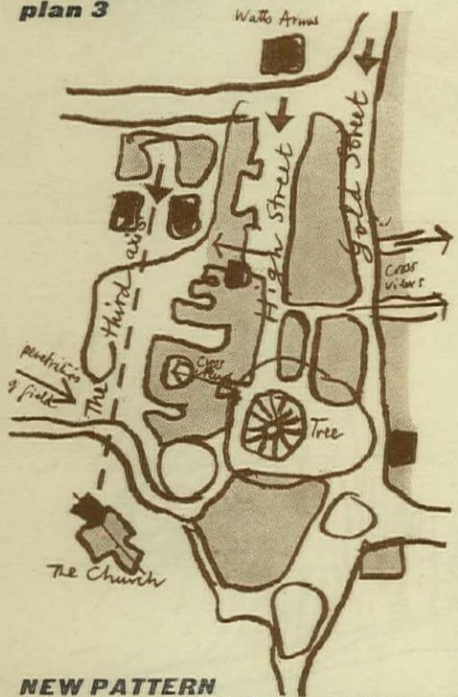
Notes relating to plan 2 on facing page

1. Small, defined settlement outside the village. Pretty planting of small scale.
2. Closure: houses and possible new buildings for the recreation ground (not little huts in the middle of the view).
3. Bursting out:
   (*a*) Agriculture and recreation 'green belt.'
   (*b*) Fine prospect of church (only axial view).
   (*c*) Village proper commences with defined edge (see sketch **a**).
   (*d*) Belt of large scale trees to screen backs.
4. Wall: edge to development.
5. Gateway into development emphasizes public and private.
6. View through to Watts Arms to be retained (see sketch **b**).
7. Green sward and trees. Constriction towards village. 19th C. brick terrace important to achieve this.
8. Site broken down in two allegiencies along dotted line:
   (*a*) Linked to village, built-up and urban.
   (*b*) Linked to countryside, arcadian.
9. Big site broken down into village scale spaces (see sketch **c**).
10. Revelation of rural or arcadian development around clump beyond the urban closure.
11. One-off building to break the monopoly of housing.
12. Narrows giving a glimpse from clump to clump.
13. Wall.
14. Line of trees to be kept.
15. Green gap between farm and village.
16. Entrance focused on existing clump of trees. Park (see sketch **d**).
17. Watts Arms closes vista.
18. Vista gives way to revelation at end of street:
   (*a*) Into localized urban character court (see sketch **e**).
   (*b*) Out to green countryside.
19. Local centre composed of library, shops and public house.
20. Vista of church spire from two clumps (local centres).
21. System of courts based on view of spire (see sketch **h**).
22. Pedestrian links through to High Street (see sketch **n**).
23. Circulation brought on to axis before dispersing to garage (i.e. entrance to development implies appreciation of layout).
24. Building lines important to preserve the two enclosures.
25. Wall (see sketches **j**, **k**).
26. Grass to flow into development.
27. New buildings to be carefully grafted on to village.

AREA A

The key to any development is the church. Though seen magnificently over the fields, only at one point is it seen as part of the village. This suggests the need to create a third village axis, parallel to the first two but focused this time on the spire. The space exists and bounded on all four sides (the fourth side being the recreation ground) it is finite, giving the opportunity for a single conception (plan 3).

plan 3

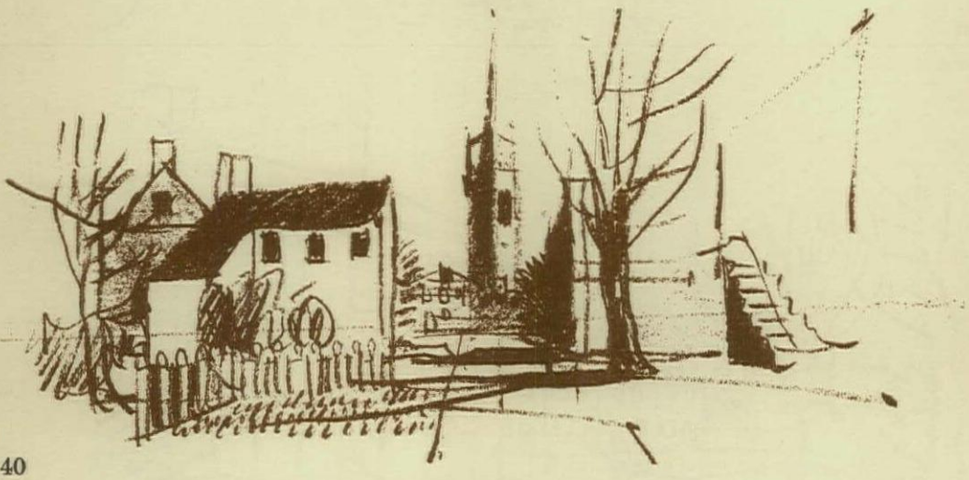


NEW PATTERN

This would now consist of three parallel lines, the first Gold Street ***f*** (taking through traffic), the second High Street ***g*** (with pedestrian priority and terminated by a fine tree) and the third a new pedestrian axis ***h*** knitting together the suggested development. A simple axis would thus be formed from the church spire to a couple of

f

g



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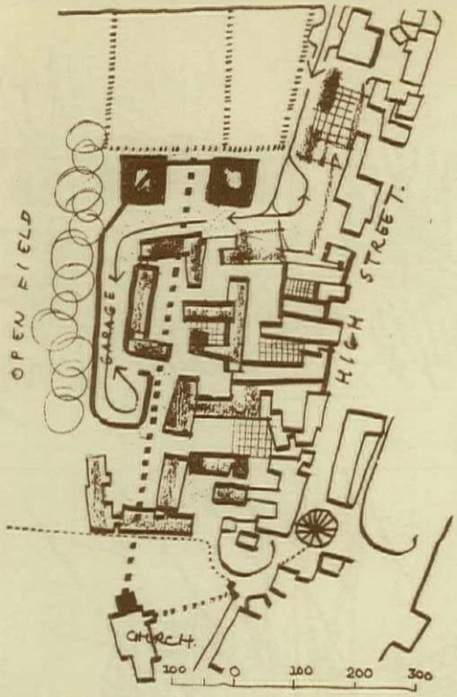
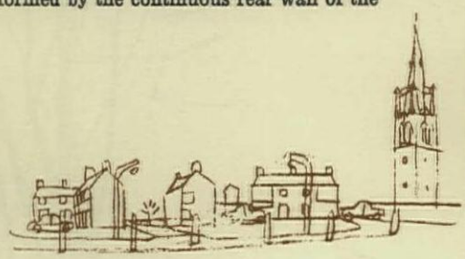


plan 4

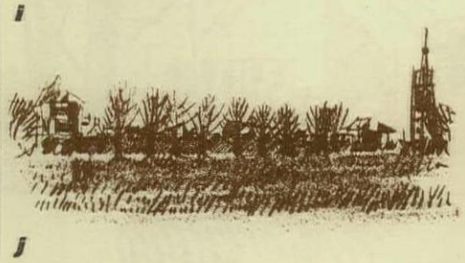
residential blocks at the north end of the site with an irregular system of linked enclosures in between (plan 4). Being so close to the heart of the village, a fairly high density could be assumed and the new buildings would become an integral part of the village, at the same time creating an edge to it overlooking the recreation ground. Cross paths and vistas would link all three lines together in an east-west direction.

LANDSCAPE

The new development described would be seen most clearly from the open space formed by the recreation ground and always in conjunction with the church. What must not happen is shown in ***i***. Instead, a long, low, blank wall is suggested (formed by the continuous rear wall of the



i



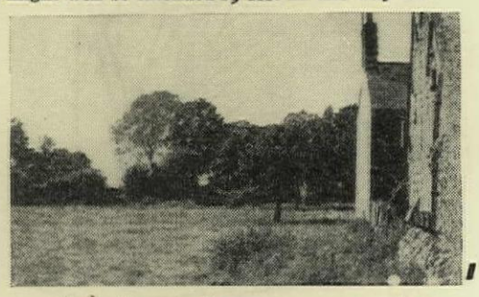
j

k

garages) which could stretch along most of this edge. Such an extended wall would be in scale with the 200-foot church spire and should be of the same stone. A sense of unity and harmony could then be created, in key with the wide landscape. In front of this wall a line of large trees should be planted ***j*** helping to link the development to the church. Roofs and penthouses would be seen over the wall but the intimate gardens and enclosures, the inner life, would still be sheltered and private ***k***.

JOINING OLD AND NEW

The present edge to the village is formed by backyards and gardens of the High Street houses. Already there are small spaces which with careful dovetailing could be incorporated into gardens and courtyards in the new development. Some of the existing buildings are excellent in their own right and could be made the key features in new enclosures while some of the blank-ended gables might well be extended ***l***, ***m***. In this way the



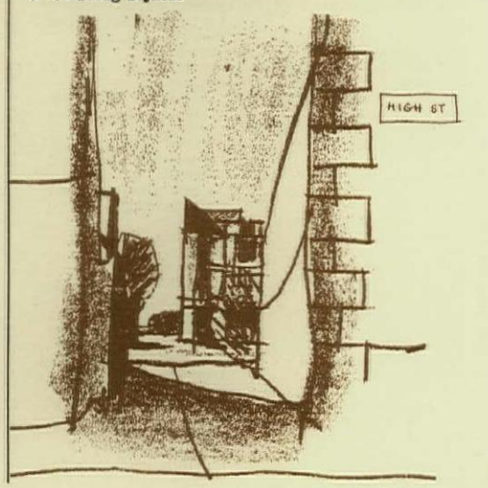
l

m

village would seem to grow naturally, the new development blending imperceptibly with the old. In addition, penetrations should be made from the High Street into the new development at two or three points allowing the occasional view through so that there would be a real correspondence between the two places ***n***.

MATERIALS

Concrete, limestone, red brick, with no imitation of existing styles.

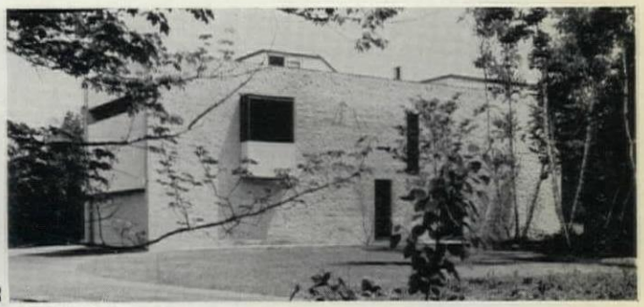


n

NEW ENGLAND DOMESTIC

HOUSE, HAMDEN, CONNECTICUT | *architect* KING-LUI WU

1



2

1, northernmost end of house, showing 10 ft. by 20 ft. living-room window at first-floor level. 2, south-east elevation. 3, garage end with entrance walk at side.

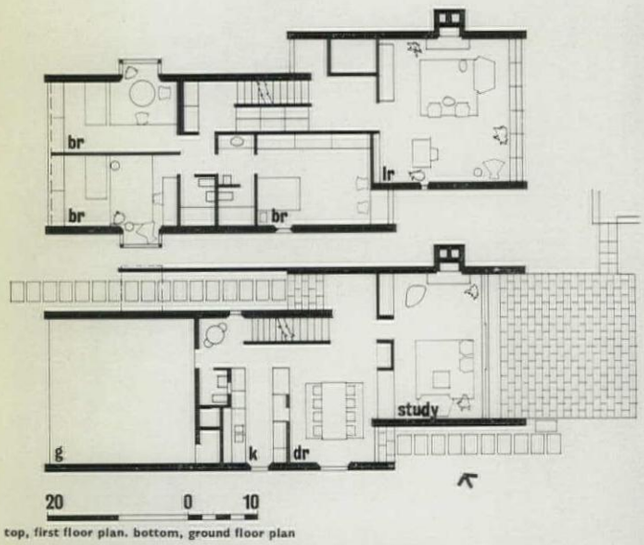
3

HOUSE, HAMDEN, CONNECTICUT

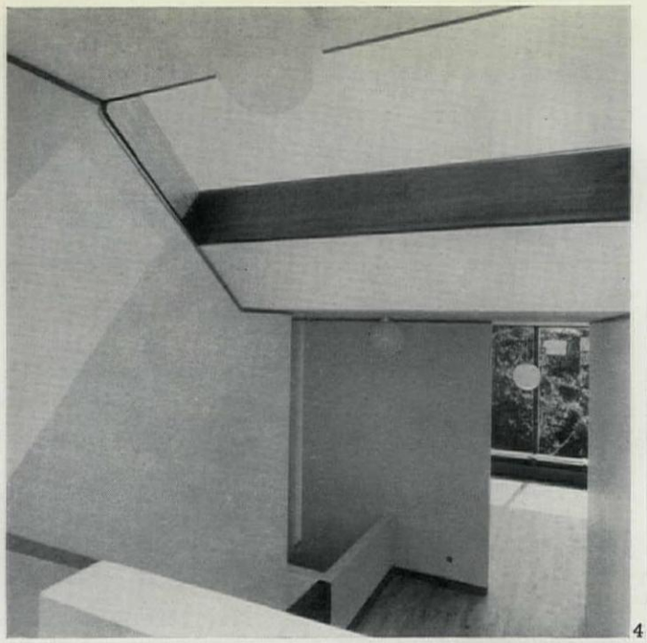
The house was designed for a medical doctor and his family. His wife is a social worker and their two daughters are away at university. A basic requirement was that the living room and the bedrooms be on the upper floor, one to capture the view and the other to secure privacy. The site is a little over three acres, partly wooded and flat, overlooking the town of Hamden and including a distant view of another town, Wallingford.

The entrance walk, sheltered by a projecting balcony, lies between an 8 ft. wall and the house wall. Inside the entrance hall, a well opens to the upper floor. The hall, the study or sitting room and the dining room open to each other with contrasting ceiling heights, lighting and orientations. The study faces east where a large stone terrace, bordering a walled-in swimming pool, leads a few steps down to the north—set at right-angles to the house for composition and privacy. A hallway past the dining-room, which faces south and east, and the kitchen and breakfast nook, continues to the garage or to a large room downstairs for dancing. The open stair leads up to a landing which is lighted by a two-storey space with a glass opening above the roof garden and opens to a private suite of bedrooms and baths. Up three more steps is another hallway with a well opening to the entrance hall below. Another open stair at the end goes to the roof garden and, finally, to the high-ceilinged living room with its distant view.

The 10 ft. by 20 ft. window of the living room is vented on the cill by six horizontal plate glass slides, a method that eliminates both screen blockage of vision and possible damage from rain or snow. Bronze-tinted $\frac{3}{8}$ in. plate glass is used throughout the house and all the interior doors have piano hinges. The colour comes from natural means except in the case of the plaster walls and ceilings which are painted white. The bricks of the external structural walls were made of white, waterproof cement and marble chips.



top, first floor plan. bottom, ground floor plan



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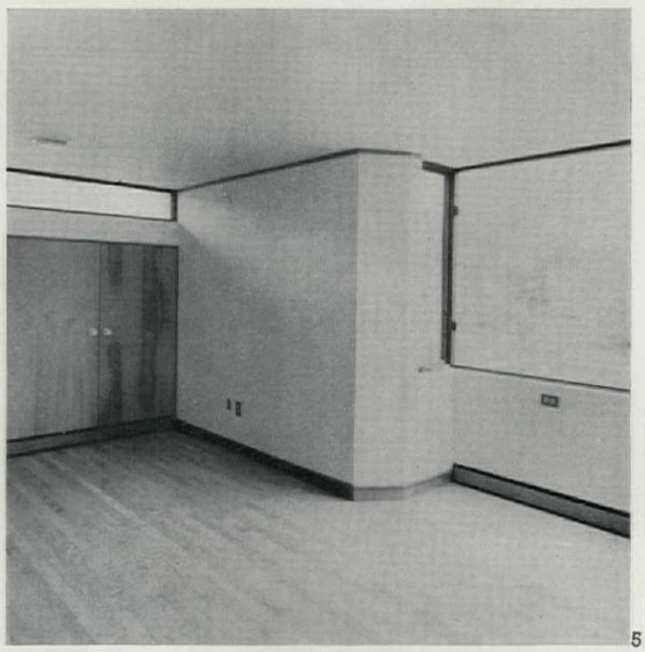

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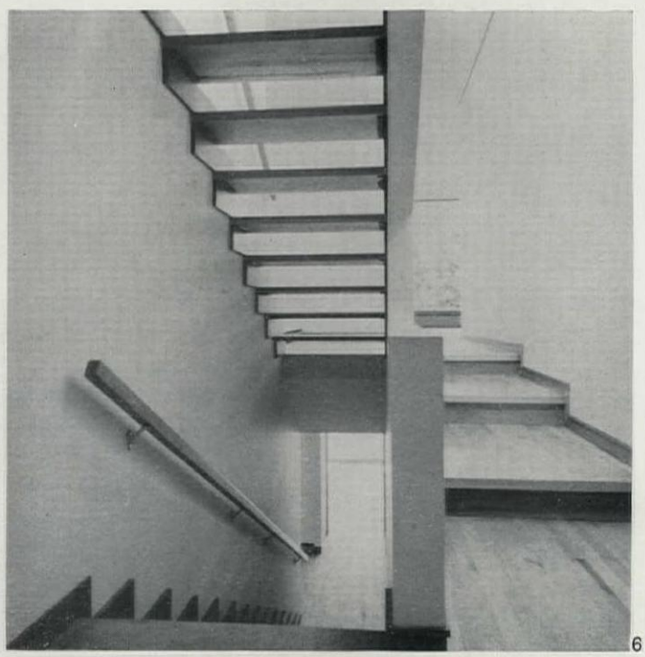


6

4, view down stair well looking towards living-room. 5, one of the smaller bedrooms. 6, detail of stairway at intermediate level.

HOUSE, LYME, CONNECTICUT | *architect* KING-LUI WU

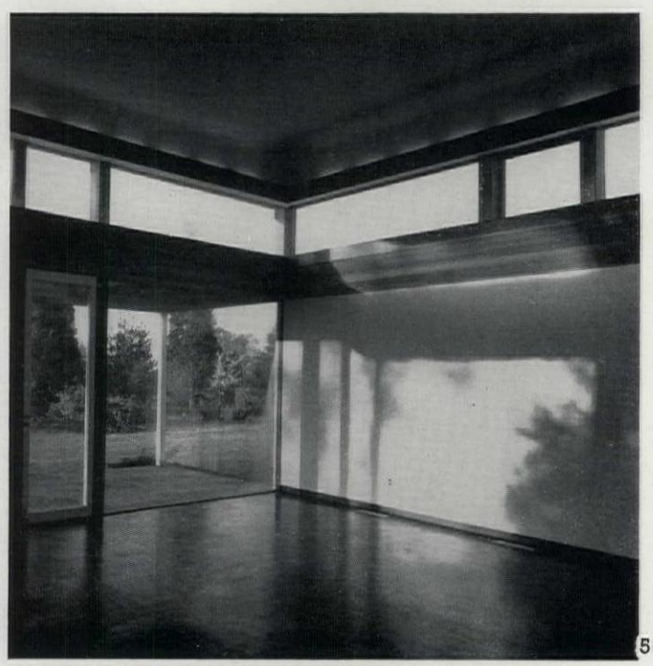
1, southernmost corner of house. 2, view from living room across Connecticut River.

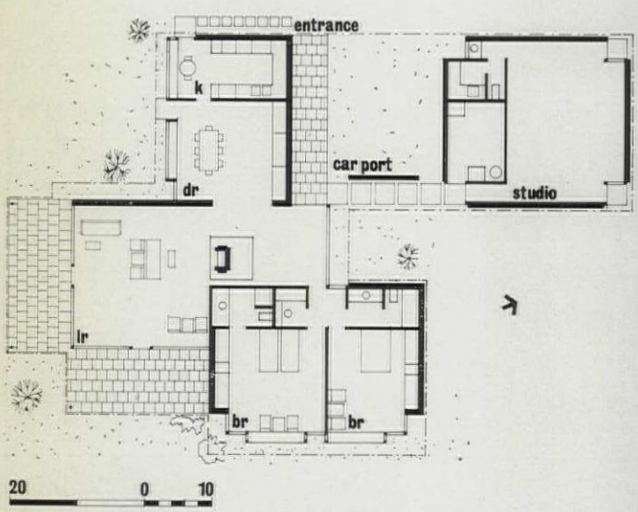
1

2

HOUSE, LYME, CONNECTICUT

Lyme is a quiet New England town about 120 miles eastward along the coast from New York. The house was designed for Mr. Frank B. Stephenson, a New York art director and his wife, an advertising executive. It is situated on high ground above the Connecticut River, facing the town of Essex. Approaching the house, one sees only the parking area and carport, solid masonry walls and the entrance doors. It is from the entrance hall that the plan of the house first begins to reveal itself. The living room opens to the south, the dining room and kitchen to the west, the bedrooms to the east and the studio to the north. Distant hills are visible beyond the small garden just outside the entrance hall on the north, but the panoramic south-eastern view, partly blocked from the entrance by a freestanding marble fireplace set in a reflecting pool in the living room, does not open up until one is within the living room. The glass walls here are shielded from direct sunlight by two large porches. Both the dining room and the kitchen face south toward a wooded area and part of the river, while the bedrooms look down directly to the water. The studio and heater room, detached from the main house to the north of the carport, are reached by an outdoor covered walk. Another structure was added on the lower ground, north of the studio, to house a workshop, a garage and a storage room. On the roof, which is about the same level as the upper ground, stand a greenhouse and a redwood deck. There are no conventional windows in the house, all openings being either doors or a special window projected beyond the wall to allow venting on the cill Above the four walls of the living room stands a roof separated from the walls by a 3 ft. band of glass which filters sunlight into the room and on to the ceilings by day, and by night becomes a growing ring of indirect light 'floating' the roof above. The outside walls are of warm, grey brick and all wood trim is covered with extruded aluminium to reduce maintenance. Floors are walnut parquet, marble and carpet, while walls and ceilings are of plaster painted white except for the walnut panels in the dining room and for the cypress-boarded ceilings in the living room, porches and carport.





plan

3, living room, view towards north-east. 4, master bedroom. 5, west corner of living-room.

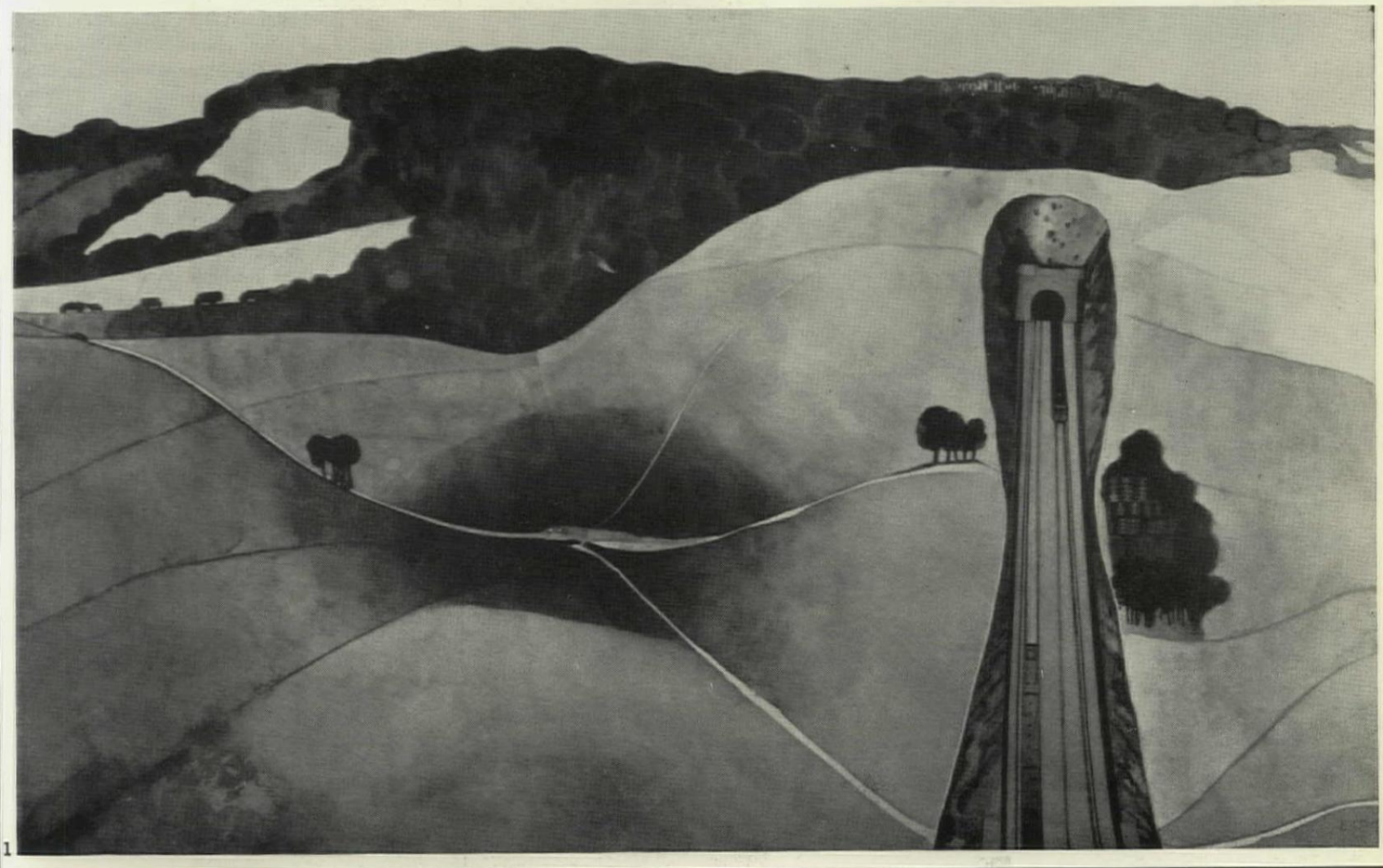
SURREALIST CONNECTIONS

Robert Melville

Edward Burra has the peculiar faculty of being able to paint a landscape as if he were about to record a striking incident. He doesn't look at a landscape; he watches it. He watches and waits, well-hidden. Hard staring makes the familiar unfamiliar; even Burra's study of the bridges over the Arno looks like something out of Fritz Lang's *Metropolis*, and in one of the English landscapes his head-on stare at a railway cutting which ends at the mouth of a tunnel stands it upright like a tower or totem pole, 1. It wouldn't be surprising if the plus sign of his telescopic sights appeared, moving slowly back and forth across the area where the roads meet. He takes a look at his watch. Any moment now. But the moment he usually shares with us is the final moment of expectancy. Something is bound to happen, but we shall never know what it is.

This is not always the case. Occasionally we are allowed to be witnesses of the event itself, and I've often thought that Burra could make a delicious picture of the scene in one of the 007 stories where a roll of newsprint is pitched off a lorry at the top of a hill and unwinds itself in a long white ribbon down to the valley. There is a much odder happening in one of the big watercolours he recently exhibited at the Lefevre Gallery. Called 'After the Market Closed,' 2, it's an elaborate genre painting invaded by phantoms. The last of the barrows are being wheeled away, and the vendors have left behind them a long, fascinating trail of broken crates, screwed-up tissue paper and squashed fruit. The men wheeling the barrow in the foreground are quite unaware of the grey, semi-transparent female figures that have appeared beside them. These ghostly figures are evidently dead shoppers who come out of limbo for a look round their old haunts most days at about this time—after the living shoppers have departed and before the dustmen take away the leavings. Perhaps it's a comment on how the modern world treats its dead? Lévi-Strauss has pointed out that it's because primitive philosophy is on the side of the living that it stipulates that the dead must be propitiated with regular offerings of food, and although Burra makes the carpet of trodden cabbage leaves and the bruised and broken fruit a little feast for the eyes of the living, it's no sort of offering to the dead, and it's not surprising if his ghosts look somewhat malevolent. It must make them feel like scavengers. One presumes the naked female with the hairy face to be a hybrid formed out of a dead woman and her pet dog.

Burra's anecdotal approach to Surrealism makes him the Alexander Selkirk of contemporary English painting. He is on an island that no other painter visits. Younger English painters have acknowledged Surrealism in less overt ways. Bryan Robertson, in his introduction to the John Hoyland retrospective exhibition at Whitechapel Art Gallery, describes Hoyland's use of 'optical tensions' in his large abstracts as a 'barely concealed allegiance to Surrealistic disturbance,' and it may well be so. He is certainly in conscious pursuit of the marvellous, which was Surrealism's main objective. He paints in acrylic on huge sheets of cotton duck, and has been



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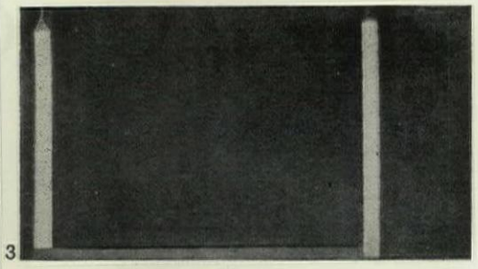

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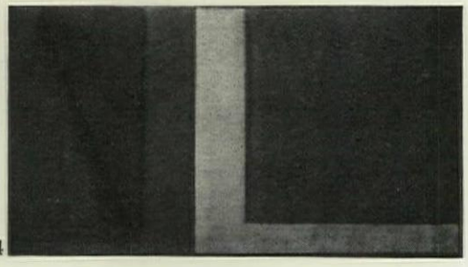

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influenced by the scale and some of the conceptual implications of artists like Rothko and Newman, but his finest paintings—which I am very pleased to note are all dated either 1966 or 1967—are characterized by a highly personal and brilliantly judicious use of the most obvious of the complementary colours, red and green. The juxtaposition of more or less equal quantities of red and green provides the simplest and crudest way of obtaining optical flicker; but Hoyland isn't out for blinding effects. Subtleties of ratio, sensitive execution and a feeling for a sort of dark radiance in his choice of hues give his recent paintings great dignity. The schema is simple: an overall field of one colour is invaded by its complementary in the form of simple vertical bars or wedges or capital Ls (more complicated shapes don't seem to work); the edges are blurred to smother the optical flash where the complementaries meet, and the shock wave spreads diffidently, so to speak, across the entire canvas. There is no flicker, but a kind of stirring. The field of colour darkens, then clears, then darkens again in a slow rhythm, and a waviness in the application of the main field of colour appears to be in deliberate collusion with the optical phenomenon. Small black-and-white reproductions convey no sense whatsoever of the spectacle presented by the actual works, and I reproduce two of them only to illustrate the diagrammatic aspect. One has a dark green field, 3. The two verticals are an effulgent orange, and they look as if they have not managed to reach the top edge of the canvas because they're melting in their own heat. Red afterimages of these orange verticals come and go in the dark green field. The other painting has a rich red field, 4. The big 'L' is grey and the triangle is dark green. The treatment of the triangle is not typical in that it is outlined and given a shadow which creates the illusion —in the actual painting—that it is suspended in front of the canvas, instead of settling into it.

The paintings by William Nicholson which

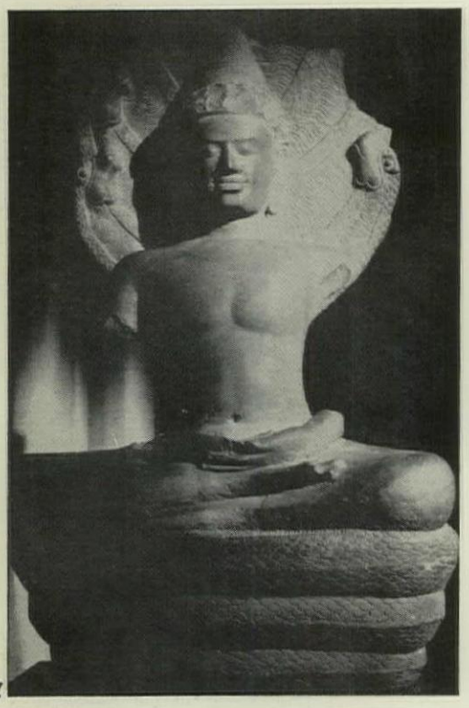
5

6

were brought together by Marlborough Fine Art for a small exhibition were sensitive but unadventurous. The still lifes painted in light colours in the 'twenties are very refined in tone and bear a certain resemblance to the earliest still lifes of Ben Nicholson, but it has always been evident that his son has a cooler, sharper talent and a much firmer grasp of structure. Perhaps there was one painting which didn't deserve to be called unadventurous. It was the large, absurd and slightly eerie 'The Hundred Jugs,' borrowed from the Walker Art Gallery, Liverpool. I didn't check on the number, but had the impression that there might be considerably more than a hundred of them glimmering away in the dimness of a big, raftered attic, each with its own highlight worn like a badge. Nicholson didn't go in much for imaginary scenes, nor does his other work suggest that he was obsessed by water jugs, and I think he might have seen them in the attic of some huge country mansion; they could have been retired from service when plumbing was installed. But in that case there would have been a profusion of washing bowls and chamber pots as well. Were they kept apart in another attic or did the painter, for reasons of delicacy, do the sorting himself? The best of a nice group of portraits was the 'Déjeuner de Marie,' 5, painted in 1911. I understand that Marie was his housekeeper. He made an affectionate and wonderfully observant portrait of her.

I remember seeing two paintings by Léonor Fini in the International Surrealist exhibition held in London thirty-one years ago. They were paintings of girls wrestling rather perfunctorily in very tight tights, and I seem to recall that here and there the tights were neatly torn. Her work was so obviously *chic* that some of the other Surrealists were a bit suspicious of her. Afterwards she became well known for her paintings of passionate sphinxes, but her things were bought chiefly, I think, by café society types. Some of her more recent works deserve a better fate, especially the painting of two girls in a railway carriage which was included in a mixed show at the Hanover Gallery last year. Beautifully painted, it's as fine in its way as the famous painting by Augustus Egg and may have been inspired by it. Like the Egg, it's the picture by which she will probably be most frequently represented in future anthologies. The Hanover Gallery has now given her a one-man show, and although nothing is quite as memorable as the Fini Egg some of her recent paintings are extremely charming, including 'Les Mitres Permanentes,' 6, which is undeniably *chic*, with its carefully calculated *soupçons* of Lesbianism and Surrealism. Nevertheless, it lends a certain lustre to a familiar sight—familiar, that is, apart from the figure at the far end of the row, who has been denied ordination.

The fact that Cambodia and Thailand both verge on Vietnam gave the very distinguished exhibition of Khmer and Thai sculpture at



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Roland, Browse and Delbanco a weird topicality and aroused emotions which effectively blocked a calm consideration of their aesthetic qualities. Several styles and periods were represented, but the most profoundly affecting works were the Khmer stone carvings of the tenth to twelfth centuries, from the region of Angkor Wat. In spite of the remote serenity of 'The Image of the Buddha seated on the Naga,' 7, the posture reminded one of those yellow-robed priests who set fire to themselves in Vietnam; the exquisite little group of fragments representing the hands of deities holding attributes became emblems of mutilation, and the marvellous triple-headed deity, 8, rust-stained by the iron in the stone, seemed to personify the tribulations of an entire people, transforming a votive image of beneficence into an image of unspeakable martyrdom. Chance has performed a Surrealist operation on these ancient carvings to turn their messages into intimations of disaster.

8

9

PHILADELPHIA LIPCHITZ

In 1959 Philadelphia City Council decreed that one per cent of construction cost of public buildings should be spent on ornamentation of structure with works of fine art. 'Government, of the people', 9, by Lipchitz, has been chosen by architects Vincent G. Kling and Associates, for the new Municipal Services Building. According to the architect the sculpture will be 'highly decorative and highly dynamic,' Lipchitz himself said, 'Surging upward in spiral movement . . . is a young couple—the hope of the future and society. They look to the present adult generation above them . . . who support the symbol and emblem of Government—a bold and turbulent banner of the the City of Philadelphia.' A possible rereading might be, 'Held down in no uncertain manner . . . is a young couple—twentieth-century art and architecture. They struggle beneath the weight of present thinking which sits heavily on them . . . supporting the symbol and emblem of Government—one per cent for ornamentation.'

Interior Design

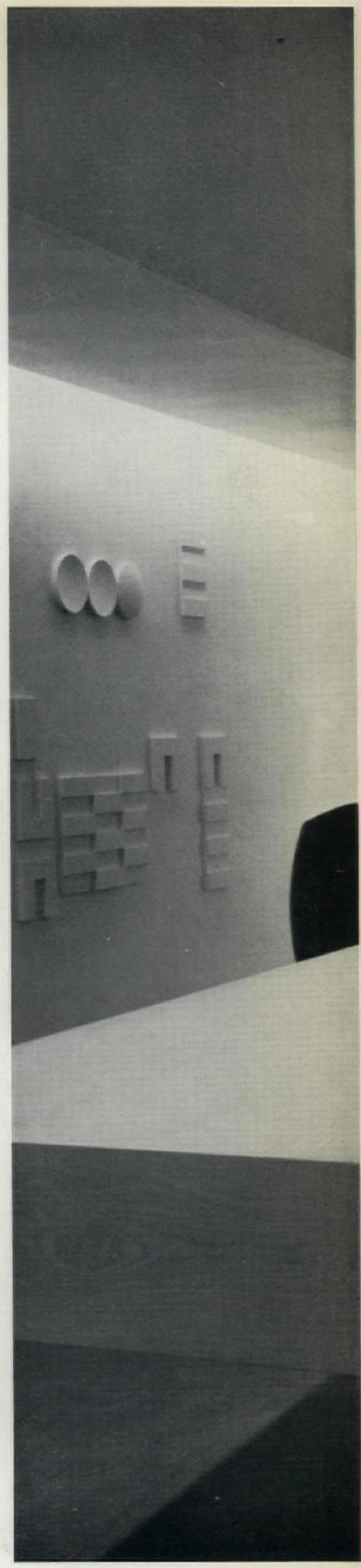
Offices, London

designers: Tandy, Halford and Mills

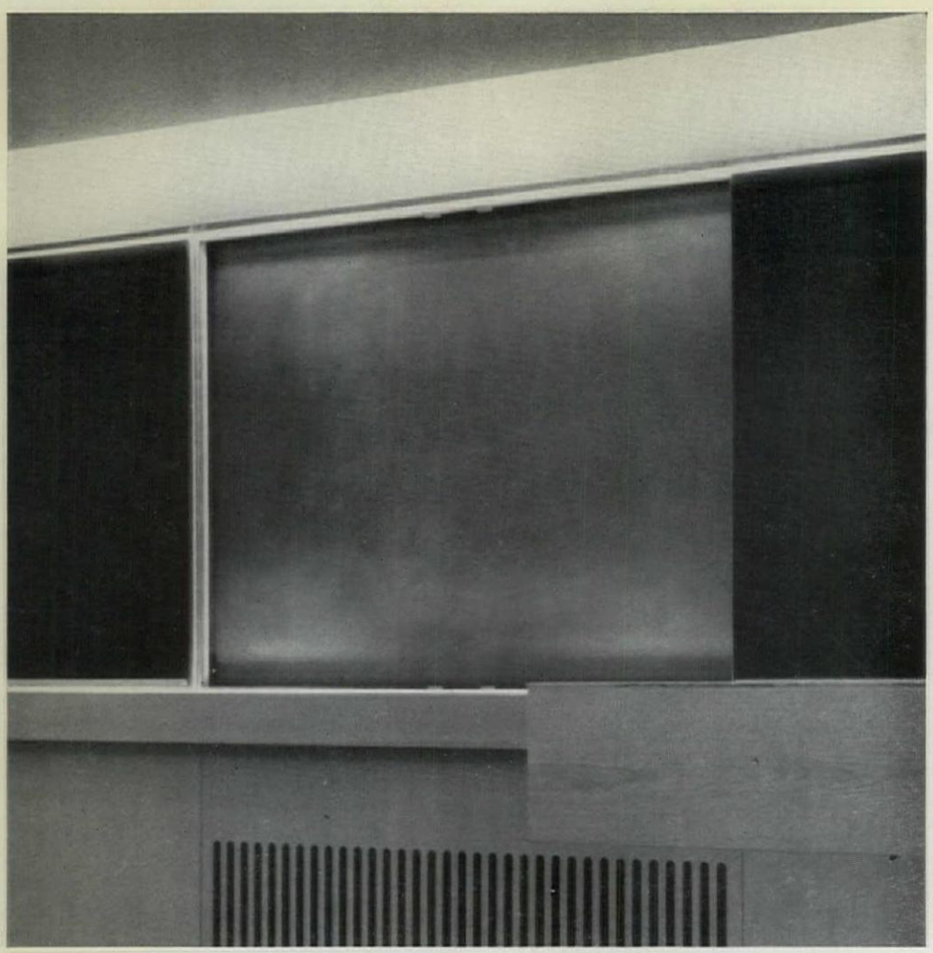
consultant architect: Ronald Cuddon
job designer: George Freedman

photographs by H. de Burgh Galwey

The assignment was to convert some 7,000 sq. ft. on one floor of an office building on the fringe of London, built about forty years ago, into an up-to-date prestige suite of directors' offices for an international company. The existing building contained air-conditioning and double glazing in most areas. A small cinema and projection room was also part of the complex. All the walls were panelled with timber, and the entire area was covered with a mushroom coloured carpet.
THM'S brief called for planning which placed the directors on one side of the building and the secretaries in open planned offices. The cinema and projection room had to be located so that members of the staff other than the directors would have easy access to it. Other requirements were the adaptation of the exisiting air-conditioning, the installation of double glazing everywhere and the provision of under-floor ducts for all wiring. The chairman's office was extended to include a garden room and the garden was re-planned and landscaped. It was also agreed to put coats, files, refrigerators, tapes, etc., into built-in fitments.
The area divided itself into three parts: east side for the directorate offices, the middle area for the service areas, reception and cinema and the west side for other top level staff and their secretaries. All areas are treated similarly, with plaster fins placed between windows; doors, skirtings and windows detailed in a like manner; all windows provided with venetian blinds and curtained. The carpet everywhere, except in the cinema, has narrow stripes of gold and light gold.
Lighting consultant: Derek Phillips.
Air conditioning consultant: R. H. Husband and Partners.

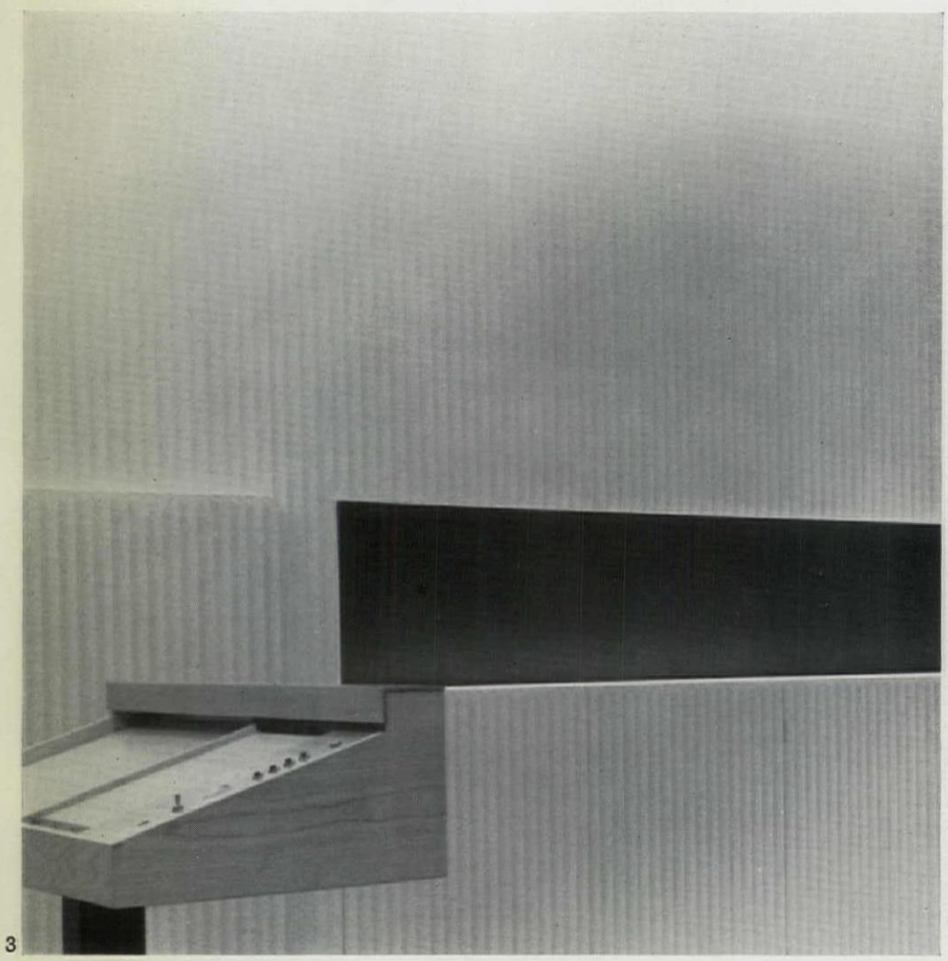


1, *reception area. Desk, blockboard faced with ash veneer. Mural in background, of white fibrous plaster, designed by George Freedman.*



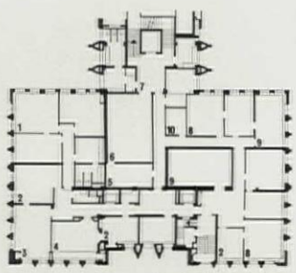
2

2 and 3, cinema. 2, screen wall. The whole screen unit is recessed and ash veneered. Outside panels fold back and are covered in green felt for use as pinning surfaces. Blackboard, acid-etched plastic laminate. 3, view from screen wall showing open display case. Left, lectern which contains intercom, microphone, earphones and lighting controls. 4, 5 and 6 (opposite). 4, filing cabinet (ash veneered) in secretaries' office. Ceiling of alternate fibrous plaster troughs and white plastic egg-crate diffusers. 5, view from office into garden room. White-painted timber folding doors separate the two rooms. Floor, Sicilian marble. 6, secretaries' office. Walls are white-painted plaster, carpet yellow and gold stripes.

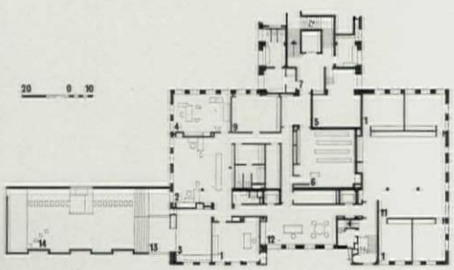


3

key
1. director
2. secretary
3. chairman
4. vice-chairman
5. projection room
6. viewing room
7. lobby
8. general office
9. conference room
10. store
11. open office
12. reception area
13. garden room
14. garden



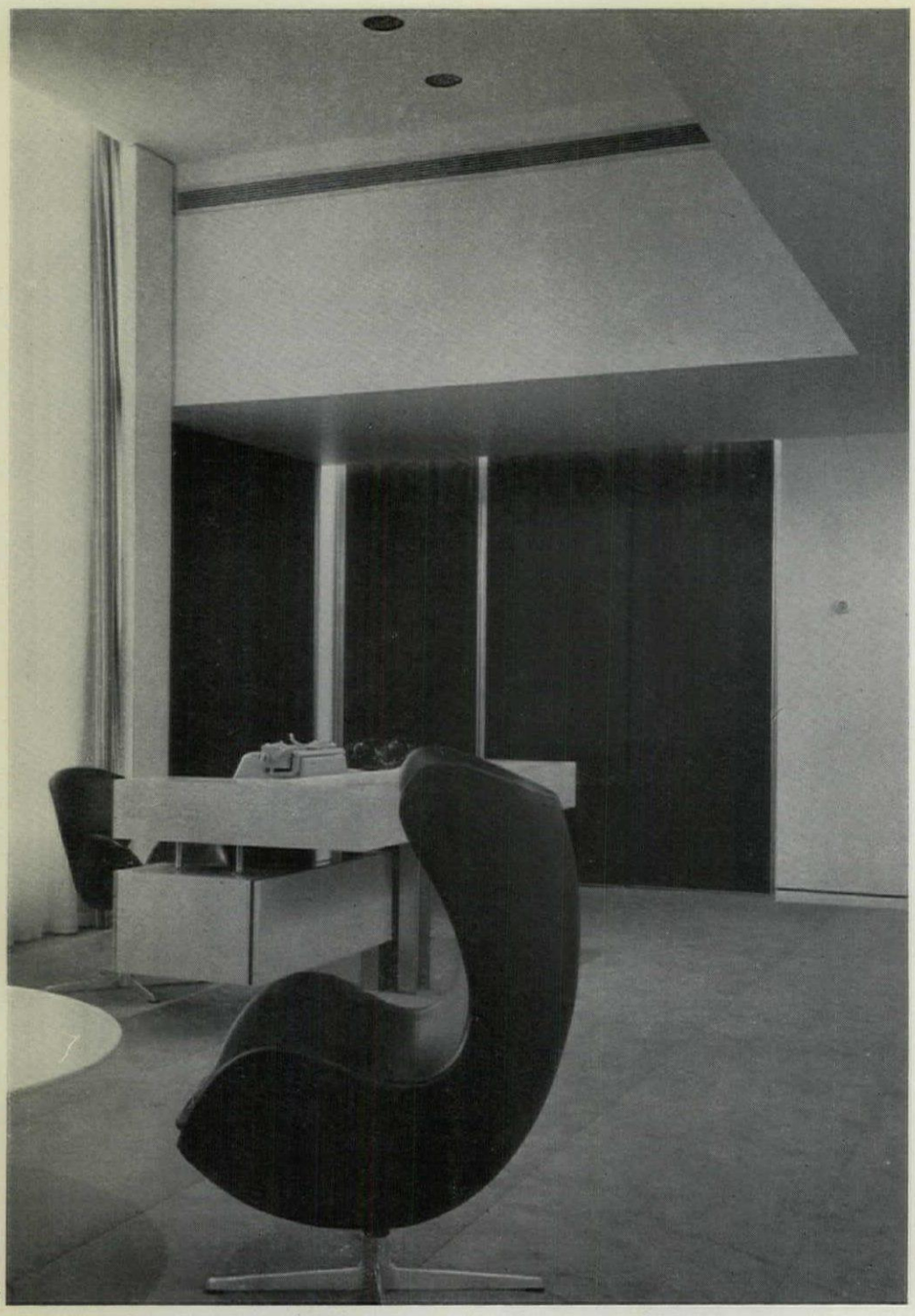
plan: before conversion



plan: after conversion

Offices, London

4,5,6



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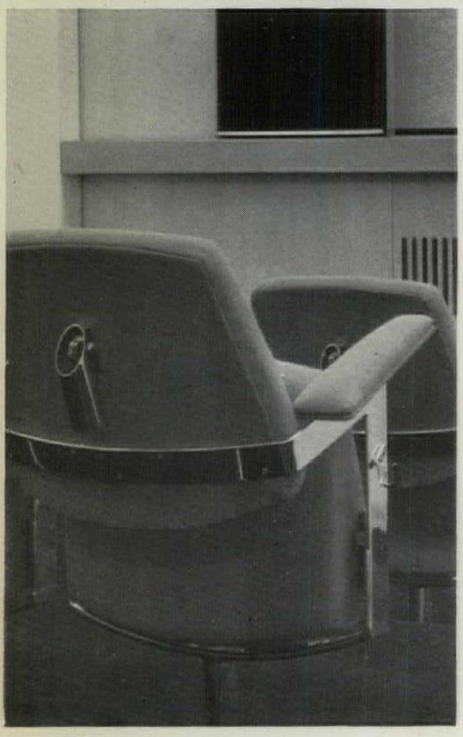

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7. reception area. Sliding doors beyond desk are faced with Rio rosewood. Chairs and marble-topped table by Jacobsen.
8. detail, seating in cinema. Metal-work, bright chrome.

Offices, London

ABANDONED SPAS

A. B. AND M. D. ANDERSON

In the Middle Ages, mineral springs were often regarded as holy, and indeed many or most of them had been holy in pagan times, before the Church adopted them and replaced the names of their original tutelary spirits by those of saints. Drinking or bathing in the waters was a religious exercise, as it still is at Lourdes and other places in Catholic countries. Even in this country, Catholic pilgrims in search of health continue to plunge into the ancient stone bath at Holywell, Flintshire, filled from St. Winifrede's Well, 1, under the church, and overlooked by the little Perpendicular chantry said to have been built by Margaret Beaufort. The decline of the holy wells (sometimes metamorphosed into wishing wells) was accompanied by the rise of the spas, which flourished from the mid-seventeenth century onwards, and acquired the name of Spa from the fashionable watering-place in Belgium.

While the Continental spas, especially in Germany, still enjoy extensive patronage, many spas in this country have fallen into disuse, some during the 1914-18 war, others more recently, and others again at much earlier dates. A few spas remain active both socially and medicinally; such are Bath and Buxton, dating from Roman times; Harrogate and Leamington, from the eighteenth century; Droitwich, Llandrindod Wells and Woodhall Spa, from the nineteenth century. At the bathing establishments of these spas, treatment may be obtained under the National Health scheme, but at some of them it seems that more visitors attend in holiday spirit than to benefit by the waters. Other spas, such as Cheltenham, Tunbridge Wells and Malvern, retain their social and residential advantages, but the waters are now little heeded. It is not, however, with active spas that this article is concerned, but with the disused, abandoned and vanishing spas scattered over the country. In them can be found, in all sizes, styles and states of repair, the relics of their architectural equipment—well-house, spring-house or pump-room, where the waters were drunk; baths, with heating arrangements; assembly-room for social occasions, or for shelter while drinking the waters from an open-air spring; and lodging-houses or hotels. These miscellaneous observations of such relics are given in roughly chronological order, together with a mention of a few neglected buildings at the active spas.

Four famous seventeenth and eighteenth century spas near London are now represented only by monuments at the sites of their wells. At Barnet, fashionable in the second half of the seventeenth century and visited by Pepys,

1, *stone bath, St. Winifrede's Well, Holywell, Flintshire.*

the old 'Physick Well' was covered in the late 1930s by a brick and half-timbered building intended to resemble the original well-house; it is situated in the middle of a housing estate (Well Road and Well Approach). At Epsom, a pillar behind railings in another housing estate bears a tablet recording that: 'The medicinal waters that in the seventeenth century made Epsom a place of great resort and its name known throughout Europe were drawn from this well.' From the waters Epsom salts were prepared. At Hampstead, where the spa flourished throughout the eighteenth century, it is commemorated by a drinking-fountain, 2, (now dry) in Well Walk, erected about 1885, and inscribed:

CHALYBEATE WELL

TO THE MEMORY of the HONble SUSANNA NOEL who with her son Baptist 3rd EARL of GAINSBOROUGH gave this WELL together with 6 ACRES of LAND to the use and BENEFIT of the POOR of HAMPSTEAD 20th Dec. 1698

Drink Traveller and with Strength renewed,
Let a kind thought be given
To Her who has thy thirst subdued,
Then render Thanks to Heaven.

At Streatham, the well frequented by Dr. Johnson survives under a modern wooden canopy in the Rookery Garden at the western end of Streatham Common. A second, later spa at Streatham, 3, has more to show: a modest brick house decorated with a bust of Aesculapius over the door, and an adjoining well-house with disused pump (United Dairies depot, Valley Road). Of another London spa, that at Kilburn, which was popular in the late eighteenth century, the only reminder is a small plaque on the bank building at the corner of Edgware and Belsize Roads, stating that: 'On this site was situated the Kilburn Wells.' The sites of other London spas are recalled in such names as Sydenham Wells Park, Sadler's Wells, and Wells House Road, Acton.

Edinburgh retains a delightful eighteenth-century building over St. Bernard's Well, beside the Water of Leith—a little domed Doric temple, with a statue of Hygeia and mosaic-covered walls, 4, dating from 1789 and designed by Alexander Nasmyth. A rather similar structure covers Tewit Well, out on the grassy Stray at Harrogate, 5, a long way from the massive Royal Baths building of 1897. The Tewit well-house formerly covered the Old Sulphur Well in the centre of the town, to be seen in the basement of the Royal Pump Room (now a museum). Also on the Stray is the little building over St. John's Well. Though Harrogate is an active spa, these two well-houses seem to be

2, *drinking fountain, chalybeate well, Hampstead, London.*

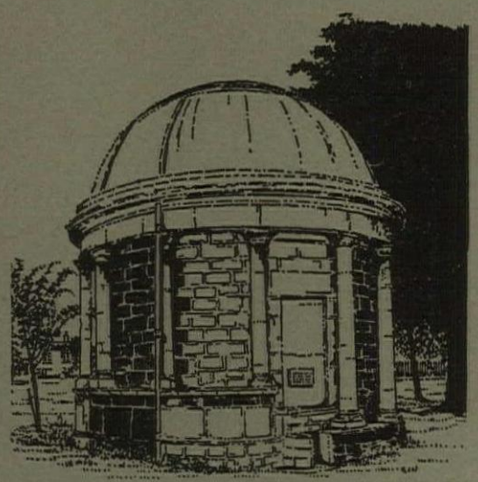
4, *St. Bernard's Well, Water of Leith, Edinburgh.*

unfrequented, if not actually abandoned. An edifice in the Grecian style, known as the Cheltenham Pump Room, later as the Spa Rooms, was demolished at Harrogate in 1939. At Cheltenham itself, John Forbes's domed and colonnaded Pittville Spa (1825-30) has recently been very completely restored as concert and meeting hall; the waters may still be drunk from the classic fountain in an inner room off the main hall.

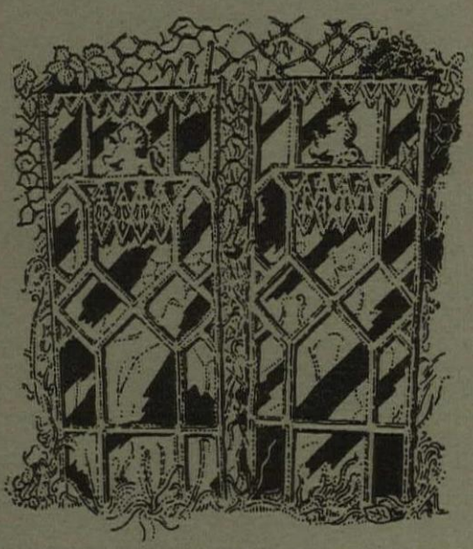
Returning to the eighteenth century, the buildings of this period at Bath are well known and well cared for, but the same cannot be said for another famous eighteenth-century spa—the Hotwells at Clifton, situated on the bank of the Avon at the foot of St. Vincent's Rocks. The spring and pump-room here were swept away when the river was widened for the benefit of Bristol shipping in 1867, and the only relic is part of a small colonnaded terrace of lodging-houses, cramped between the cliff and the main road along the river.* Similarly at Melksham, Wiltshire, the chief remains of the spa are the lodging-houses—tall semi-detached stone buildings, decorated with fluted columns, which stand about a mile outside the town, with a one-storey pump- and bath-house at the further end of the row; this has been made into two dwellings, and the original ornamental window, 6, was recently removed. More houses on the other side of the spring were projected, but never built; the spa's prosperity was brief (1813 to 1822), and the company formed to promote it paid only one dividend. More or less contemporary with Melksham Spa is the octagonal stone spa house, 7, at Nottington, near Weymouth, said to have been built about 1820; it is now occupied as flats, with the well in the basement. Leamington recently lost a spa-house, originally of the same period though later remodelled; in front of the parish church is a stone inscribed with a drawing of the building, and the inscription: 'This stone commemorates the Aylesford Well (also known as Camden's Well) erected in 1813 by the fifth Earl of Aylesford. The building was demolished in 1960. The first record of the spring of curative natural saline water which rose on this site was made by Camden in 1586. Presented by the National Association of Master Monumental Masons in conference at Royal Leamington Spa, September 1963.' The pump-room (with bath-house) overhanging the river Wharfe at Boston Spa, Yorkshire, dates from 1834; the building is now used as a house, but the waters may still be drunk there. Regency or early Victorian Gothic buildings can

*Described in an article by Ralph Fastnedge in *Country Life*, August 19, 1949.

3, *spa house, Valley Road, Streatham, London.*



5, *well-house, Tewit Well, the Stray, Harrogate.*



6, *ornamental window from spa house, Melksham, Wiltshire.*

7, *spa house, Nottington, Weymouth, Dorset.*

8, *Victoria Spa, Stratford-on-Avon, Warwickshire.*

9, *St. Ann's Well, Great Malvern, Worcestershire.*

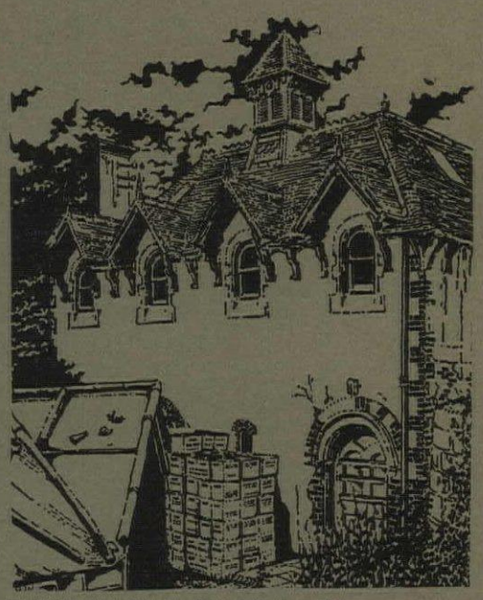
be seen at Victoria Spa, Stratford-on-Avon, 8, opened in 1837, and at Braceborough Spa, near Stamford, both now occupied as houses. These were not pump-rooms; the waters were obtained in the first case from a well a short distance away, and in the second from a stream issuing from under the building, now failing because, it is said, of pumping operations for the supply of water to Peterborough. In similar style is the older part of the building at St. Ann's Well at Great Malvern, 9, which remains as shown in a picture of about 1835*; the square-headed doorway admits to an open shelter in which water falls into a large shell-shaped basin. The adjoining octagonal part of the building must be of later date. The spa building at the Holy Well, Malvern Wells, 10, was erected at a cost of £400 in 1843. Water from both Malvern springs is bottled for sale, but they seem to be disused as spas.

The short-lived spa at Hockley, Essex, dating from about 1840, was equipped with a building in modified Grecian style, perhaps in imitation of the Greek Revival buildings at some of the better-known spas. It now houses a dressing-gown factory, and was previously a chapel. Another Grecian pump-room of much more splendid design, known as the Ivanhoe Baths, existed at Ashby-de-la-Zouch, 11, but was demolished a few years ago because it had become unsafe, and no funds were available for restoration. Its architect, Henry Chaplin, is as little known as John Forbes of Cheltenham. Spring and spa-building have likewise been lost at Askern, near Doncaster, where they were for a while in the ownership of the Miners' Welfare organization before their end.

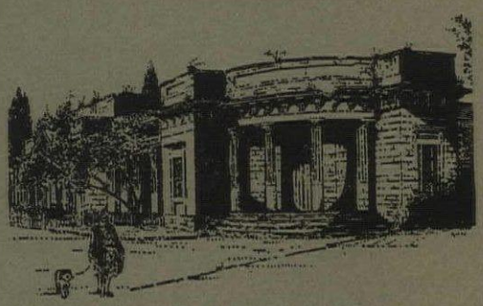
More Victorian buildings can be seen at Dinsdale Spa, County Durham, now altered to become a golf club-house, and at Croft Spa, Yorkshire, now housing a tennis club. At Gilsland and at Shap Wells, both in Cumberland, large hotels were built for the visitors to these remote spas. The Gilsland Hotel, 12, rebuilt after a fire, is now a Co-operative convalescent home; the water of the sulphur spring, in the beautiful valley of the river Irthing below the hotel, has been newly piped to a spout, but the chalybeate spring once arising nearby was lost in a landslip. The hotel at Shap Wells was originally a farmhouse, was enlarged for visitors to the spa in 1820 and again in 1850, and was given a third storey in 1890; the well is a short distance away under a little wooden roof.

The spa building at Tenbury Wells, Worcestershire, 13, is a remarkable architectural freak; the iron foolscap covers the well, with

*See *English Spas*. By William Addison, Batsford, 1951.

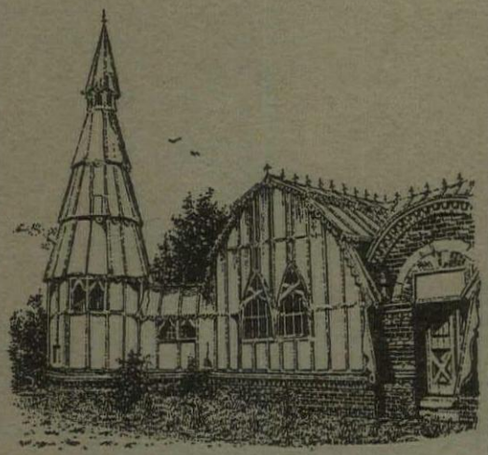


10, *Holy Well, Malvern Wells, Worcestershire.*



11, *Ivanhoe Baths, Ashby-de-la-Zouch, Leicestershire.*

12, *Gilsland Hotel, Gilsland, Cumberland.*



13, *spa building, Tenbury Wells, Worcestershire.*

14, *spa house, Llangammarch Wells, Mid Wales.*

15, *entrance arch to spa building, Caergwrle, North Wales.*

DRAWINGS BY G. J. NASON

assembly-room on one side and baths on the other. The spring was discovered in 1839; in 1871, the town is described as having 'a bath establishment'; in 1911, the Tenbury Baths Co. Ltd. was formed, and 'spent much money on building plunge and shower baths and renovating the pump-room.' The pump is now broken; the building is used by the Women's Institute for their weekly market.

A solid little mid-Victorian spa building survives at Trefriw, North Wales, where the pump-room and baths, built in 1873, are in good condition externally, but are no longer used; the proprietor continues to sell the water in bottles.

The extensive Edwardian half-timbered St. Andrew's Baths at Droitwich have humbler relations in the little black and white buildings of Park and Glanae Wells at Builth, in Breconshire, each accompanied by the remains of a stone bath-house. At Park Well, an octagonal pump-room and oblong assembly-room, the latter dating from the early 1900s, are now used as farm store and battery hen-house. At Glanae Well, the tiny deserted shelter beside the river is hardly bigger than a garden summer-house. A deserted building also represents the spa of Llangammarch Wells,14, where the rapidly decaying wooden structure still bears a printed list of hours of opening (6.30 to 9.0 and 10.0 to 12 in the morning; 3.0 to 4.30 and 5.30 to 6.30 in the afternoon), and of prices for glasses of barium water (2d. each; weekly ticket 3s. 6d.) and baths (4d. each, 3s. 6d. for 12). Also derelict are the buildings at the Dolecoed spring at Llanwrtyd Wells, although both pump and assembly-rooms were restored in 1933; the powerfully sulphurous water bubbles up within a circular terrazzo well-head and was once much visited by miners from South Wales.

Another derelict spa is that at Aldfield, near Ripon, described in a book dated 1907 as having 'a new bath-house.' Now there is only the sulphur spring, under a stone arch, and a ruined building apparently last used as two cottages, but showing traces of having been the bath-house of the spa; these stand in a beautiful empty valley, surrounded by forestry plantations. A group of little white-washed and slated buildings high up on Ilkley Moor was once used by visitors to the White Wells there; one still bears the inscription 'Baths.' Their timeless rural simplicity defies dating.

The most recent spa is perhaps that opened in 1908 at Caergwrle, North Wales, 15, where the castellated red-brick building, labelled 'Natural Waters,' is like a piece of stage scenery in its cardboard insubstantiality.

Design Review

New products chosen and annotated by Ronald Cuddon

DR

Auditorium seating

Elegant design solutions for seating in auditoria and other places of mass assembly have not been abundant. Such seating has an exacting brief: it must be economic in its use of space, of robust construction and provide absolute stability with a high degree of comfort. It should also look good whether the seats are used singly or in rows.

The three auditorium seats shown here have been designed at different times in recent years and all have been used in buildings of distinction. 1 and 2 show the seating in the new Queen Elizabeth Hall and Purcell Room on London's South Bank. Specially designed for these halls, the seats are fixed directly on the stepped floor, the risers of which, containing grilles for extract ducts and other equipment, are high enough to dispense with legs, pedestals or deep supporting frames. The black leather buttoned upholstery is carried by two separate aluminium shell castings, linked by metal brackets, supporting the arm-rests and seat location plates—the total assembly producing an elegant and superbly disciplined profile. The metal shells tend to be sharp on their under edges and fidgety feet could cause lacerations on the concert-goer's shoes. There has also been some criticism of the comfort of this seating on the grounds that the backs are too low and seats too shallow. Whether this is justified is difficult to assess. The designers were aware that ergonomically the seats were a little short in the leg, but this dimension was determined by the rake of the auditorium floor and the front to back width of the stepped platforms on which the seats rest. Since the aluminium shells are identical, the backrest was reduced in height. If these seats were to be used elsewhere adjustments could probably be made to increase the depth of seat and back though clearly the moulds or dies for the aluminium shells would have to be changed. There is a slight incongruity for me in the relationship between the completely technological expression of the seat's structure and the timber platforms on which they are supported. In spite of these criticisms one can only have the deepest respect for the GLC designer and the Vickers Armstrong technicians responsible for this thoughtful and positive contribution.

The fixed-pedestal tip-up seat designed by Peter Dickinson, for which he was given a design award in 1965, is manufactured by Race Furniture Ltd. It has been used to splendid effect in the lecture-theatre of the Royal College of Physicians by Denys Lasdun and Partners, where the black leather upholstery and the precise tailoring of the chairs complements the dignity and quality of the architecture. Exceptionally comfortable, this chair, 3, shown here fixed to a temporary base-board for showroom display, can be obtained with a writing-tablet arm. 4 shows the same seating installed on a stepped dais in a small viewing room, part of a recently completed project by THM Partners. The seats and backs are covered in a woven fabric and the steel frames are finished in polished chrome, but the standard

1

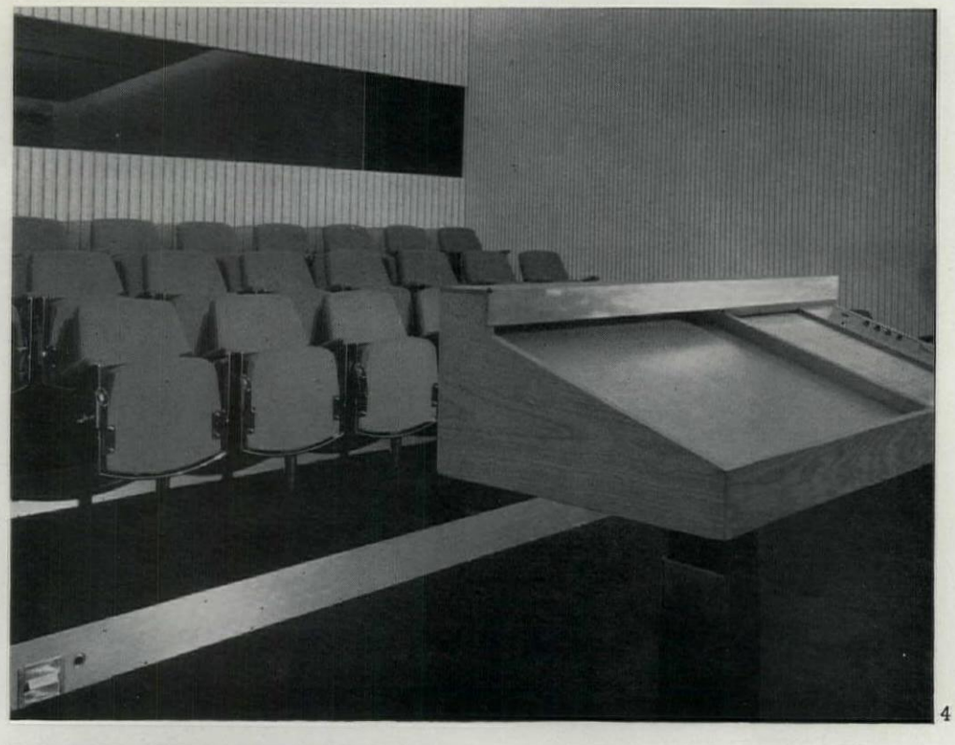
frames are stove enamelled light or dark grey with other British Standard colours available subject to special quotation. The chair is complete in itself and can be installed singly or linked together with armpads in straight or curved rows. It may be fitted to any flat surface or adapted for ramped floors, and is fixed by countersunk wood screws for timber construction or rawlbolts through


2


3

screeds to concrete. It is claimed that the moulded plastic foam cushioning is a good sound-absorbent and can therefore assist acoustic damping where necessary in seats that are unoccupied. Frames have been standardized at 1ft. 9in. in width, and when linked with armpads a ½in. gap is allowed between frames, though these can be made narrower; if more elbow room is required, wider or longer armpads can be supplied. The tablet arm consists of two pads hinged at the front. The bottom section of this folding arm is fixed to both chair frames and the top section when folded forward allows the hinged tablet, which is housed between the seats, to be lowered into a work position, though the gap separating the frames must be increased to a minimum of 1in. This chair has been further developed by Race as a free-standing unit with fixed seat, 5, for use in conjunction with the standard pedestal seating. It has a cruciform base supporting the standard frame seat and back, and can help to maintain visual consistency in situations where additional loose seating is required to supplement fixed seating. A small but nice detail is the swivel-action ash-tray, which can be fixed to the side or rear of the metal frame. Clients have declared that burning cigarette ends dropped into the hollow cylinder refuse to die but if this is true a gimbal gland could perhaps be fitted for stubbing out and for sealing off air.
The third example of auditorium seating shown here was originally designed by Robin Day for Peter Moro's Nottingham Playhouse. Comfortable and handsome, it is particularly effective when ranged in rows as the photograph, 6, of the Playhouse auditorium shows. It has been found that the shaped upholstered element forming back and arms does tend to wear and fray on the more vulnerable parts of the arms unless covered in leather, whereas the more recently designed seats already discussed have independent arm rests and are thus easily removed for re-covering or repair. Otherwise this seating, manufactured by Hille of London, has the same flexibility and many of the excellent characteristics of the Race product.
Mention may also be made here of the stadium seating, 7, developed under Leslie Smith of the Race Design Group and manufactured by Race Furniture. Primarily designed for use in open-fronted stadia and influenced by the manufacturer's past experience in the provision of deck seating for ocean liners, it can be used with an adjusted specification for indoor auditoria. The self-tipping gravity-operated seats and the backrests are of formed plywood with clear or pigmented polyurethane finish or they can be covered with p.v.c. with plastic foam stuffing. The supports are low pressure aluminium die castings stove enamelled or for exacting tropical conditions a fused nylon finish is recommended. The most important virtue of this seating, apart from its relative cheapness, is the method of fixing to platform risers with or without nosings, permitting free uncluttered floor space between rows of seats, giving greater leg room and assisting the cleaning and sweeping after the waste makers have left.

Product: Auditorium seating.
Manufacturers: Vickers Armstrong, Race Furniture Ltd., Hille of London.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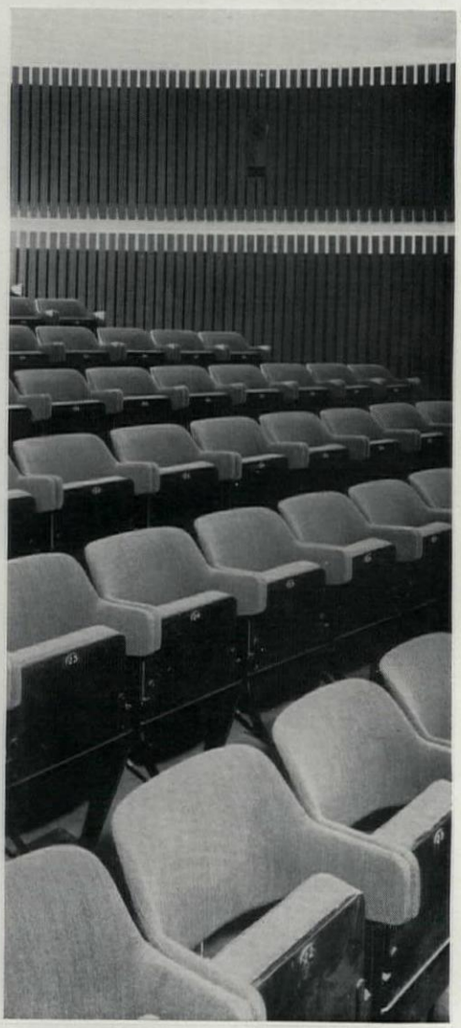
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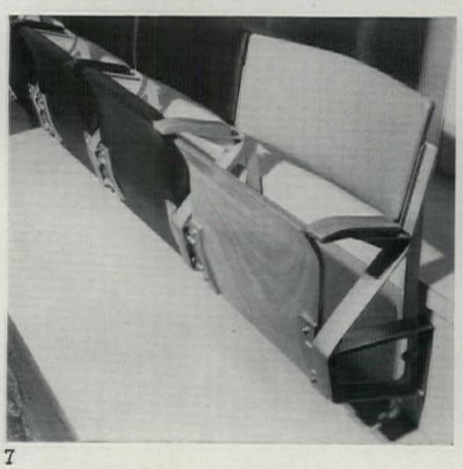
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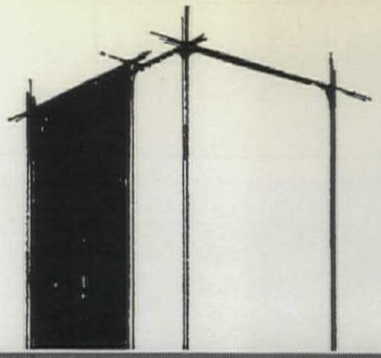

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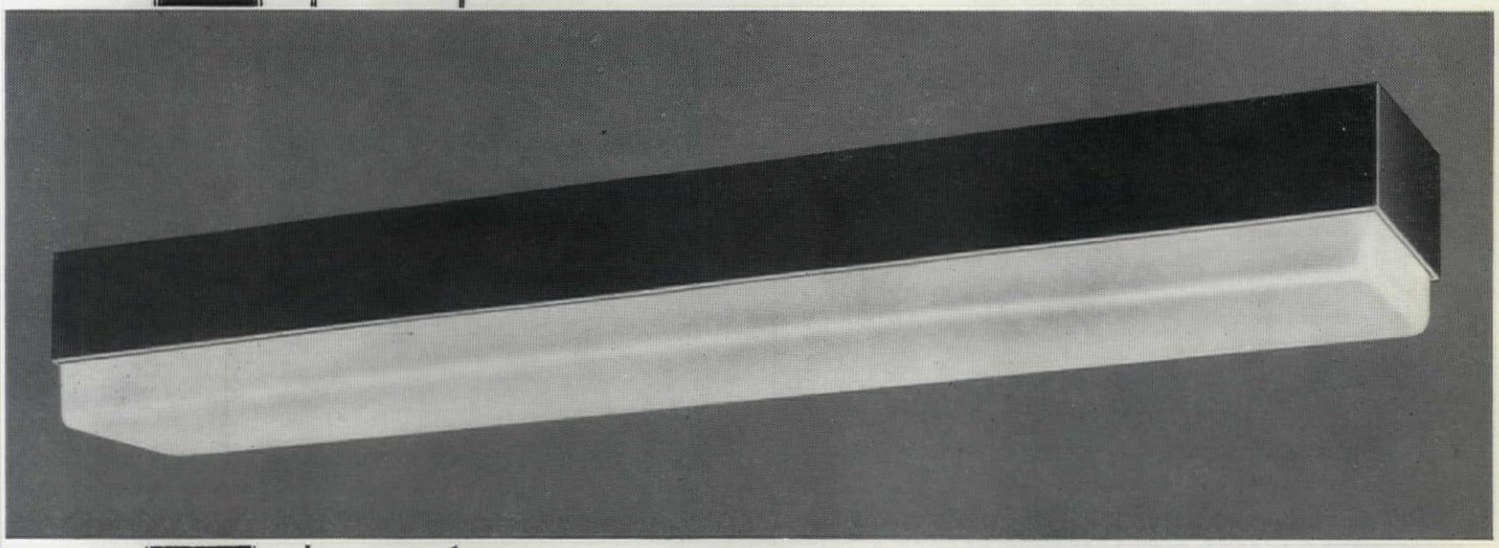

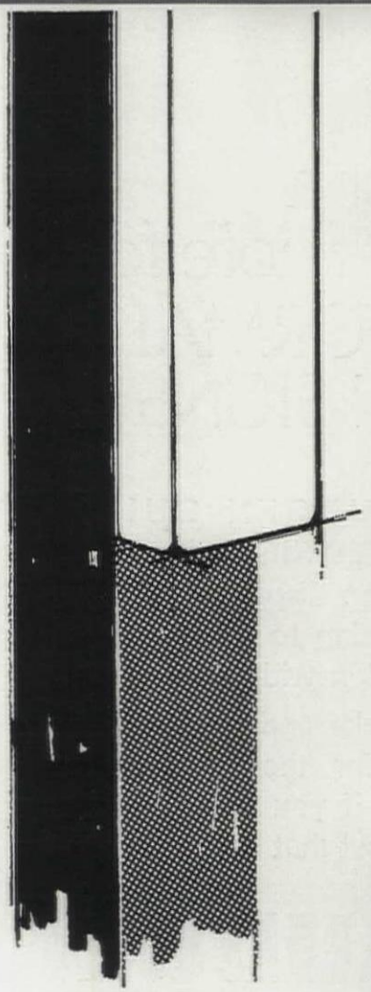

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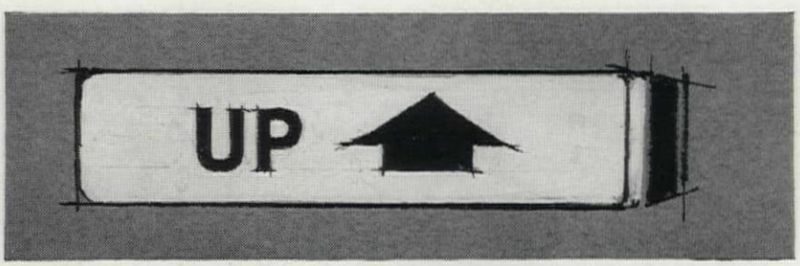

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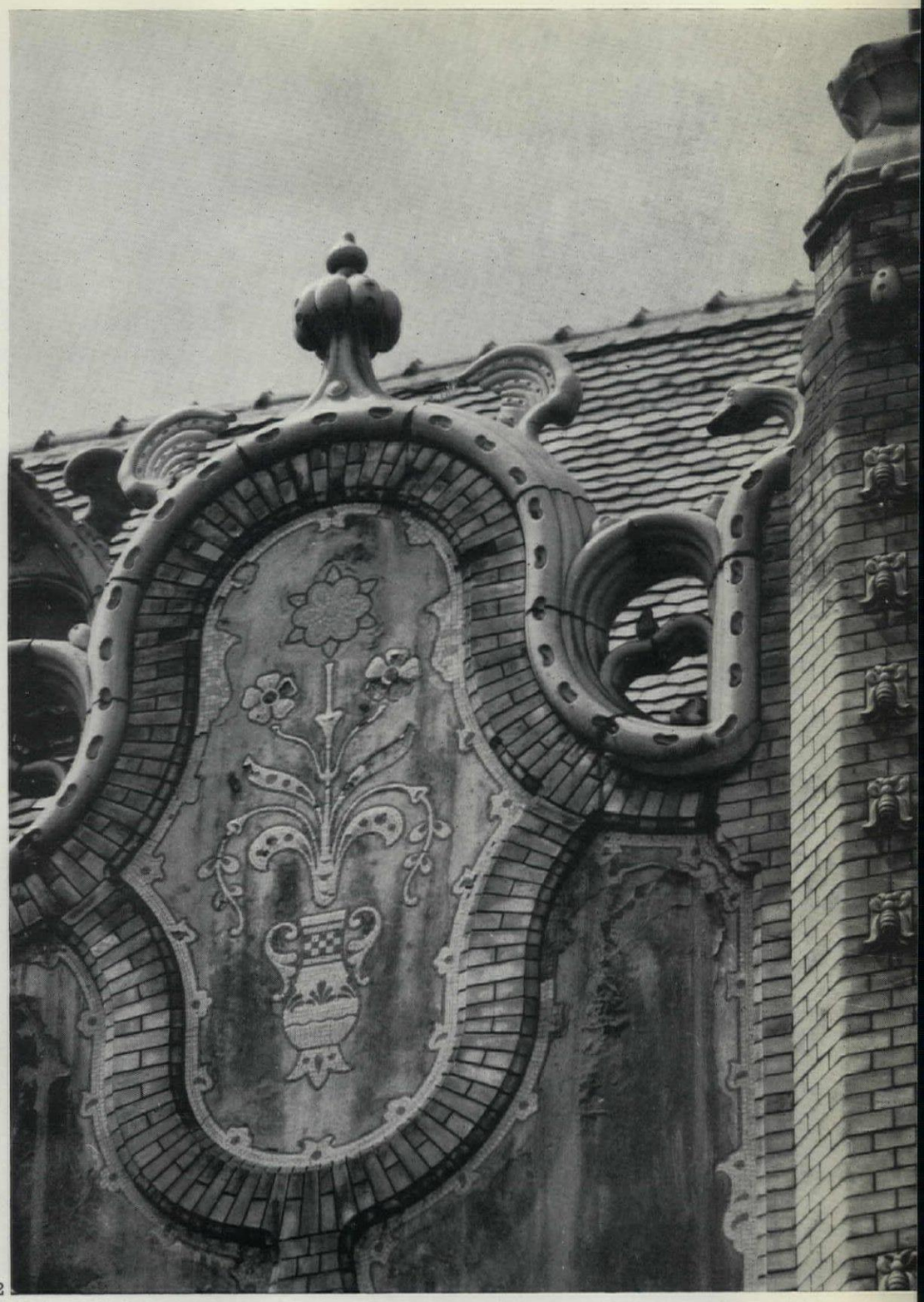


2

LECHNER ÖDÖN

The October 1965 *AR showed some* Jugendstil *buildings at Kecskemét in Hungary, but not the most prominent building in that little town, which is the town-hall built in* 1893 *to the designs of Lechner, the leading Hungarian architect of the day—Hungary's Gaudi, as he has been called—an architect totally unknown in Britain. A major book on him by J. Kismarty-Lechner was published in* 1961, *but only in Magyar; but Mr. Ferenc Vamos had already written on Lechner in* 1927, *and it is he who here introduces him to English-speaking readers.*

Can Odön Lechner, or Lechner Odön as he would be called in Hungary, have seen any work by Gaudí? It is just possible; for Lechner, who was born in 1845 and had gone in 1868 to Berlin to study at the *Bauakademie*, had left there disappointed, and in 1874 had moved to Paris. He returned to Hungary only in 1878, but he was in Paris at the time of the International Exhibition of 1878, and there Gaudí did appear with an exhibit.* Gaudí was at that time still a Gothicist, though in a free, original and fantastic way—and so was Lechner. But whereas Gaudí's father was a small artisan, Lechner's was a high civil servant, and the confidant of the Archduke Joseph, Viceroy of Hungary. Lechner's Kecskemét town-hall, 1, of 1892-3, in spite of

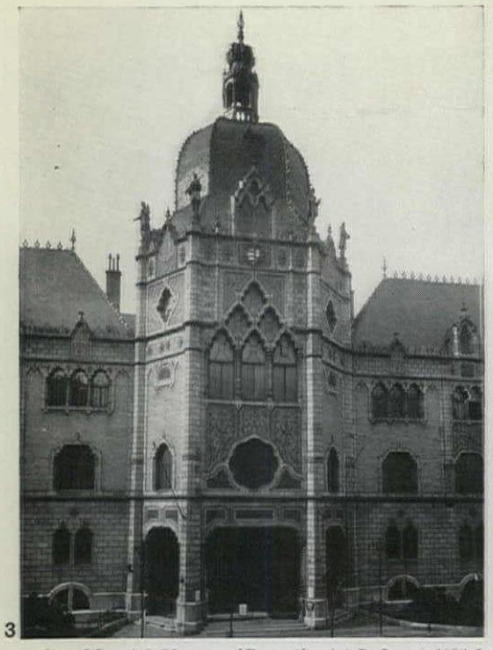
1

1, Kecskemét town hall. 2, detail of Postal Savings Bank, 1901.

its big central Renaissance gable, is Gothic in most of the detail. The same is true on the whole of the exterior of the great Museum of Decorative Art at Budapest, 3, which dates from 1891-6. But here some of the details turn quite fantastic, 4, and the interior, 5, is full of Indian borrowings, inspired by such Anglo-Indian buildings as the Calcutta railway station.† It is interesting to see how, in his next principal work, the Geological Institute of 1896-8, Lechner turns these elements into something entirely his own, 5 and 6. Of outside inspiration one can here sense only a touch of the Baroque, but filtered through the folk-arts of Hungary, textiles as well as carvings. Lechner, though a personal friend of Otto Wagner of Vienna, was critical of the *Sezession* building by Wagner's

*It was a showcase for gloves—see R. Pane Gaudí, p. 13 *Editors*.

†The connexion was indicated by Lechner himself; see an essay of his written in 1892 and published by me in *Művészet* September 1964.



3

Lechner Ödön: 3-5, Museum of Decorative Art, Budapest, 1891-6. 6, 7, Geological Institute, 1896-8.

pupil Olbrich. He said that in it Assyrian forms were made use of, but all consideration of rational or folk elements was lacking.

The Postal Savings Bank, 8, 9 and 10, is the climax of Lechner's work and one of the most resourceful and successful examples of *Art Nouveau* architecture anywhere. The original plans are dated 1900; the inauguration took place in 1901. Inspiration came from diverse sources, but has been merged with Lechner's

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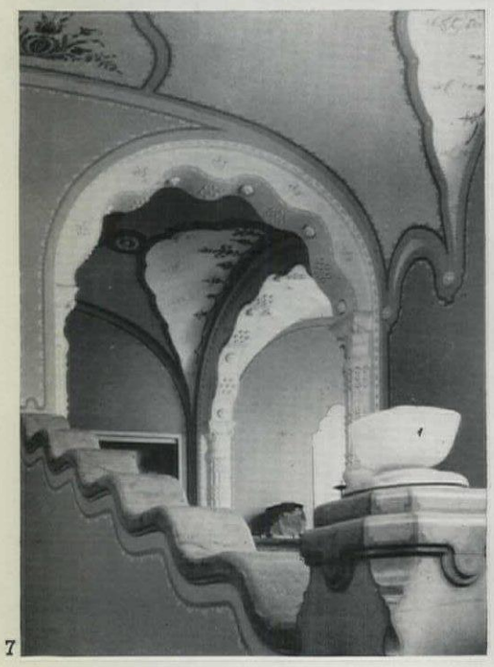

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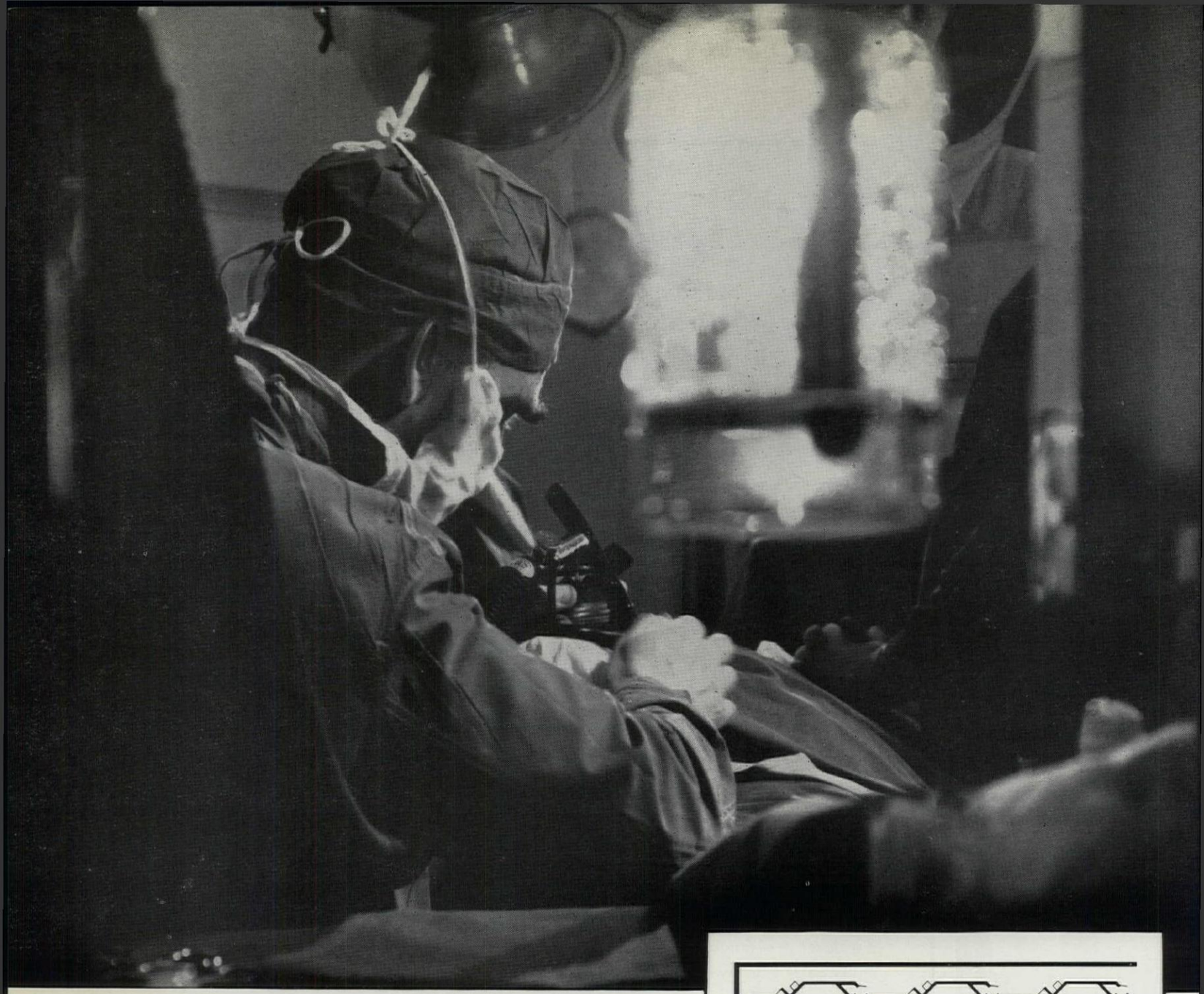

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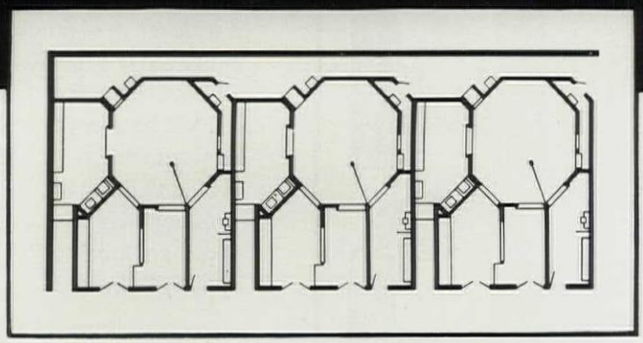

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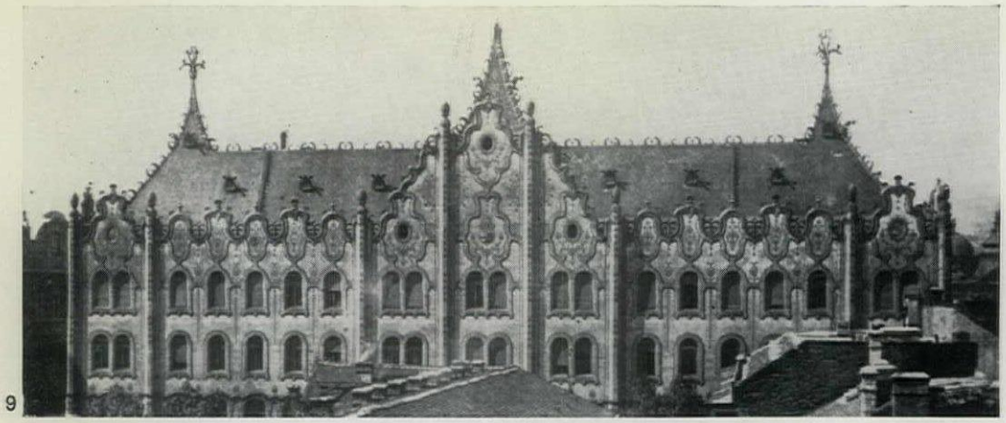
8

Lechner Ödön: 8, Postal Savings Bank, Kecskemét.

own mature style—from Hungarian folk art, and even from the Austro-Hungarian Romanesque (*cf.* the relief above the entrance to the cemetery-church at Mödling). There is also some nice and easy symbolizing, such as the bees, exemplary „savers," at the top, 2. The effect of the façade is determined not only by the curvaceous top cresting but even more by the use of materials, small yellow brick and coloured pirogranite, a very hard artificial cast stone or rather terra-cotta made in Hungary. The whole exterior is gay with strong colours. The interior is symmetrically composed. The centre, just as in Otto Wagner's famous, slightly later, Vienna Postal Savings Bank, is a glazed banking hall, seen in the



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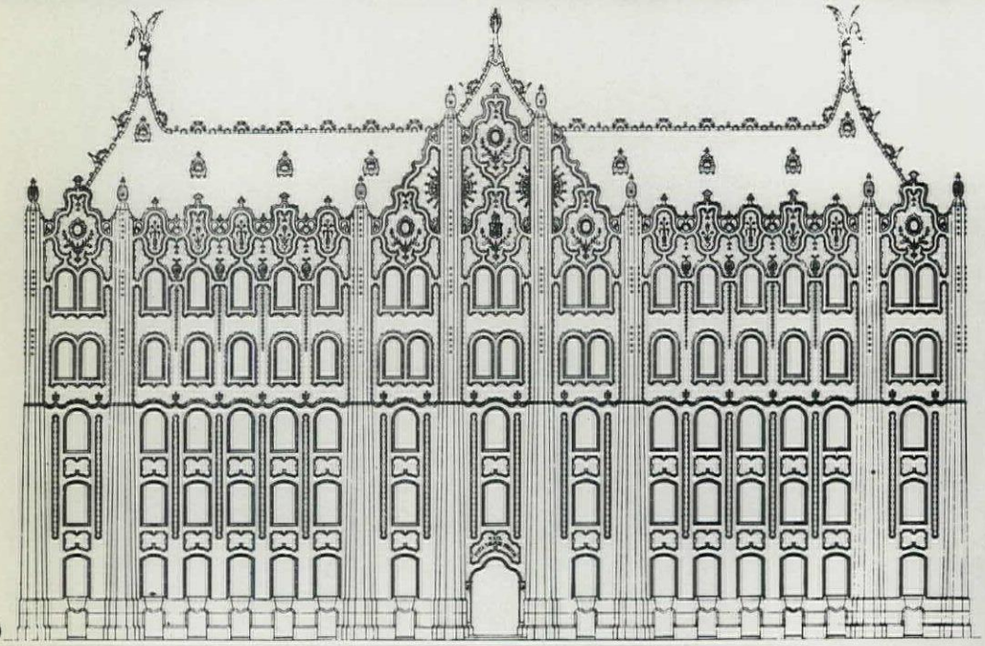

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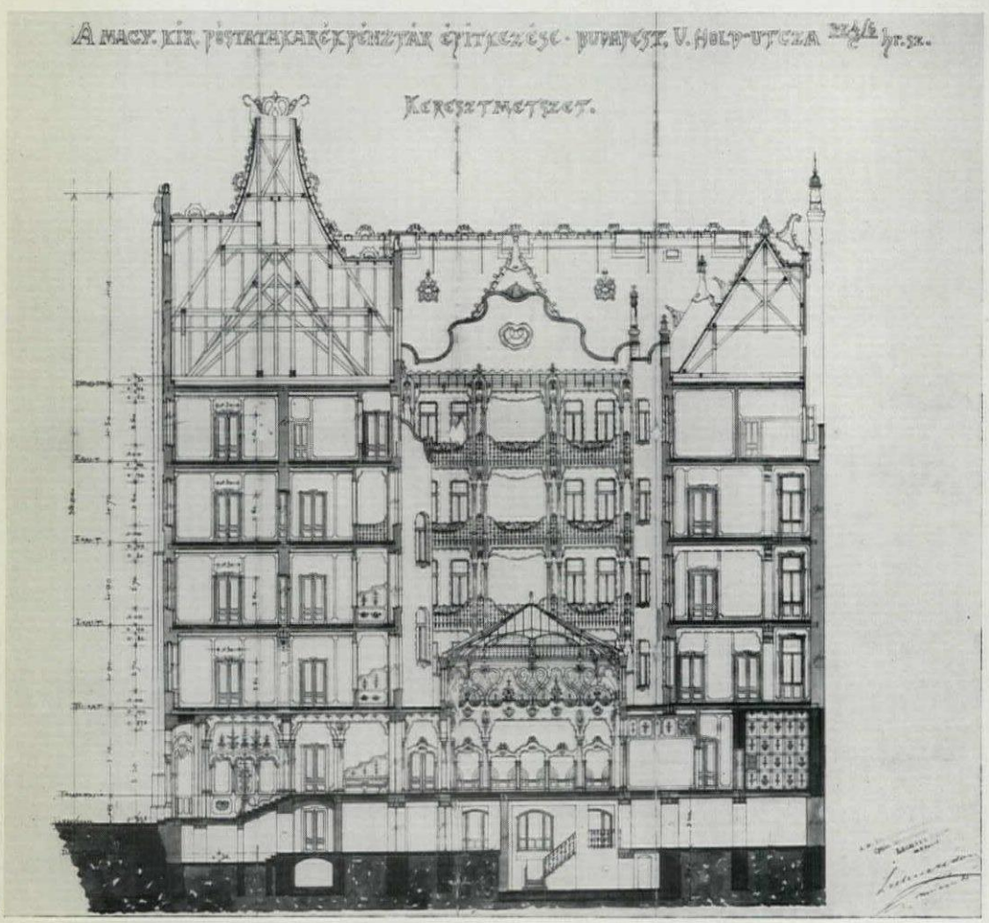
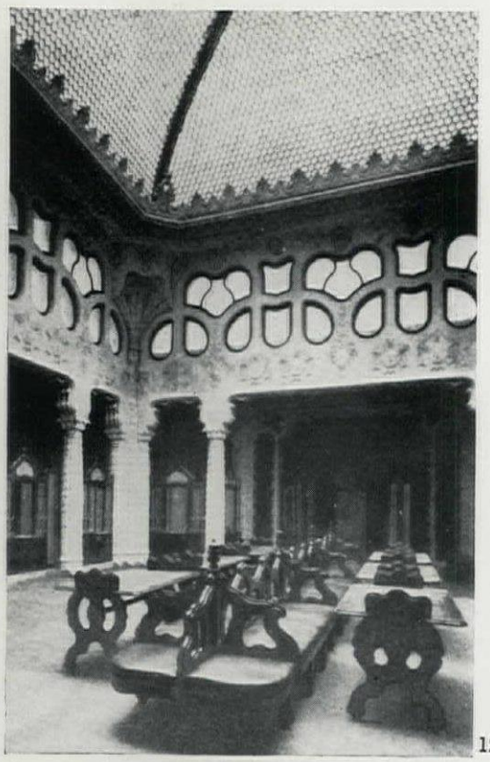


11

section, 11; but whereas Wagner's demonstrates his radical turn away from *Art Nouveau*, Lechner's (as far as it survives; the roof was rebuilt wrongly) is *Art Nouveau* in the extreme, 12.

Yet Lechner was on the way into the twentieth century too. His church of St. Elizabeth at Bratislava, 13, the first projects of which (later altered) date from 1906–8, has concrete vaulting—two cradle vaults one at right angles to the other—and already, in 1902, in an address at Szeged, he had said: 'The fantastic achievements of technology, such as iron construction, have caused a revolution in architecture. The development started in England and spread rapidly to Germany, Austria, and afterwards France. . . The new materials require new forms. . .' Lechner's pupils such as Béla Lajta moved effortlessly into the style of the new century.

F. VAMOS



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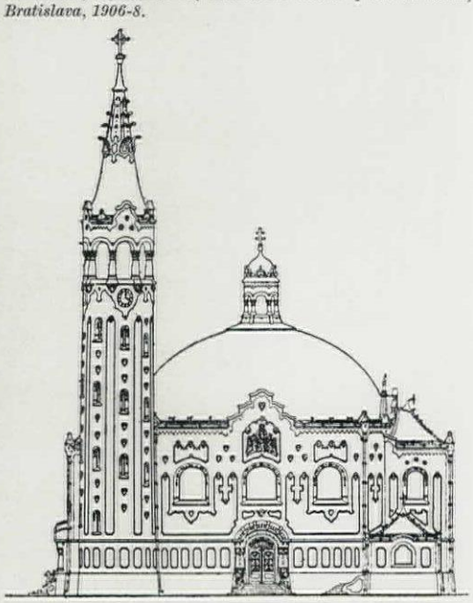
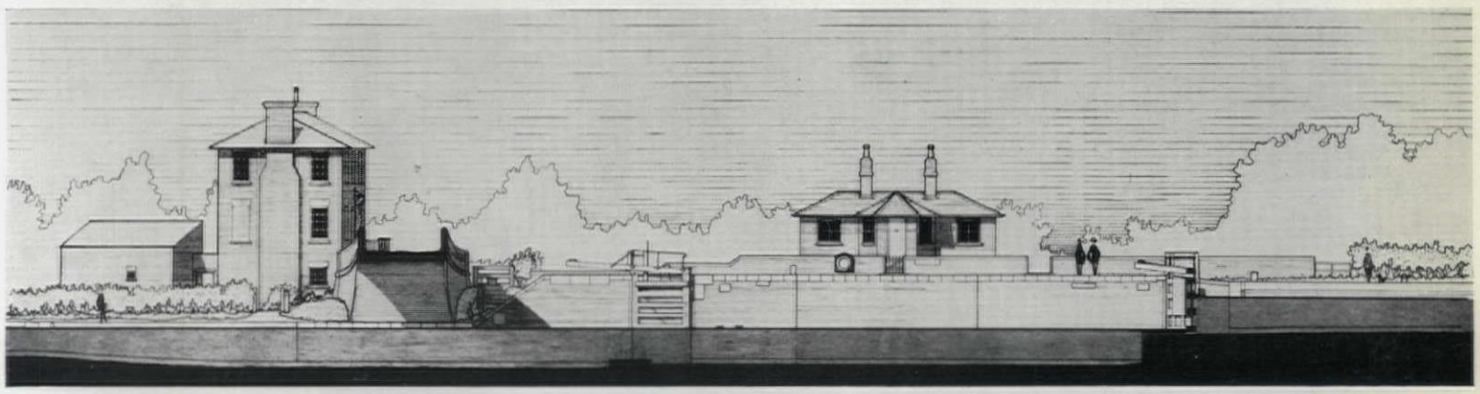
Lechner Odön: 9, 10, main facade of the Postal Savings Bank, Kecskemét, 11, section. 12, interior. 13 church of St. Elizabeth, Bratislava, 1906-8.



13

STOCKERS LOCK

While London's network of inland waterways is at last becoming better known in its inner urban stretches (see 'London's Own Canal,' AR, March 1966), many of the best-preserved examples of buildings and equipment have to be sought out in the less promising suburbs. It is in such little-known groups of buildings as those on the Grand Union Canal at Stockers Lock, a mile south of Rickmansworth in Hertfordshire, that the innovations of canal building can best be appreciated. The longitudinal section, 1, and the cross sections, 2 and 7, establish immediately the strength and clarity of its architectural forms.



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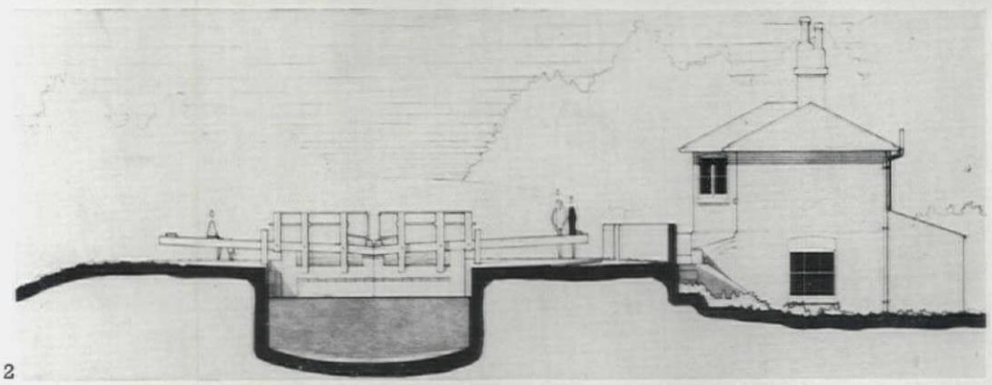

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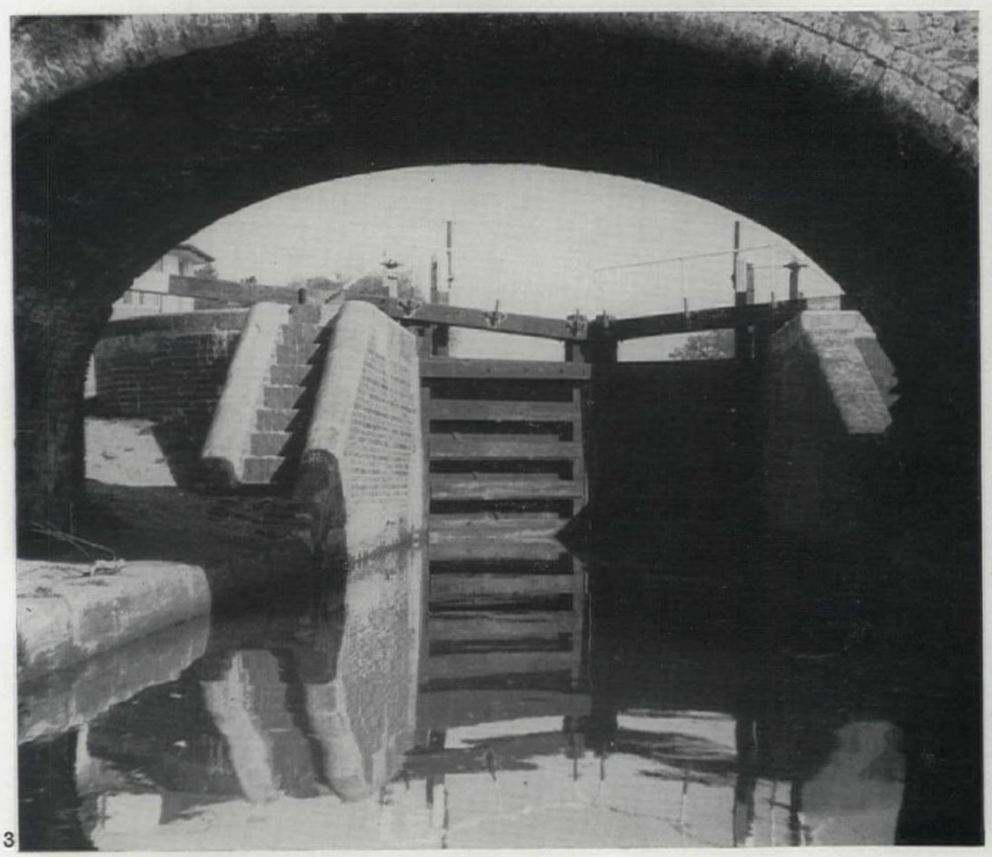

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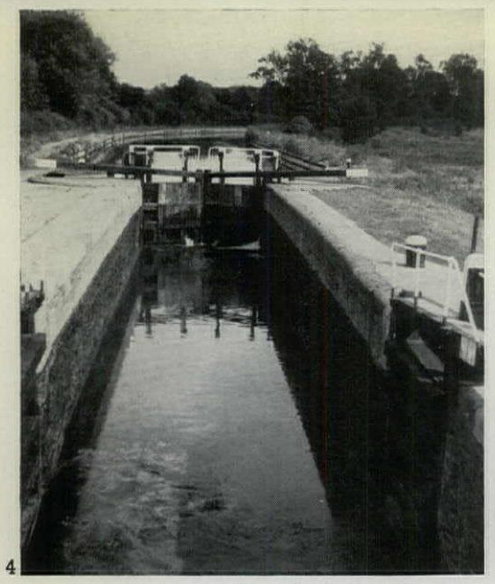
First and foremost, Stockers Lock illustrates the technical innovation of the double pound lock. Previously rivers had been transformed into a series of long reaches or 'pounds' by dams which were fitted with an opening section; in a single operation the water poured from upper to lower pound until a uniform level was reached, often only after several hours. Such locks, known as flash locks, had only one gate; the pound lock by contrast has two or two pairs, which allow a small and controlled volume of water to flow from one pound to another.

The lock itself is just a trough with a curved bottom, 4, executed entirely in brick, with massive bull-nosed parapets. It is one of scores on the Grand Union Canal, which was begun in 1793 and finished after many tribulations seven years later, linking London with the Midlands—Brentford on the Thames with Braunston on the Oxford Canal. This undertaking required one of the first large programmes of repetitive building, at a time when industry was unprepared for variety and speed of casting. So the canal engineers fell back on the oldest of prefabricated building materials, the brick, and exploited its possibilities to the full. Steps and parapets, 3, lead to the climax of the bridge with its virtuoso display of curvature, 6, vertically in the arch and horizontally in the injection of a convex centre between the concave side-wings. The lock-keeper's house bears a more obvious relation to received ideas of architecture; but even here functionalism has had its say in giving the two-storey house its entrance on the first floor, because of the configuration of the site. The second dwelling, Stockers House, erected in 1861–2 by the Corporation of London for its collector of coal dues on the canal, is, as one would expect of the later date, a much more representational job (builder,



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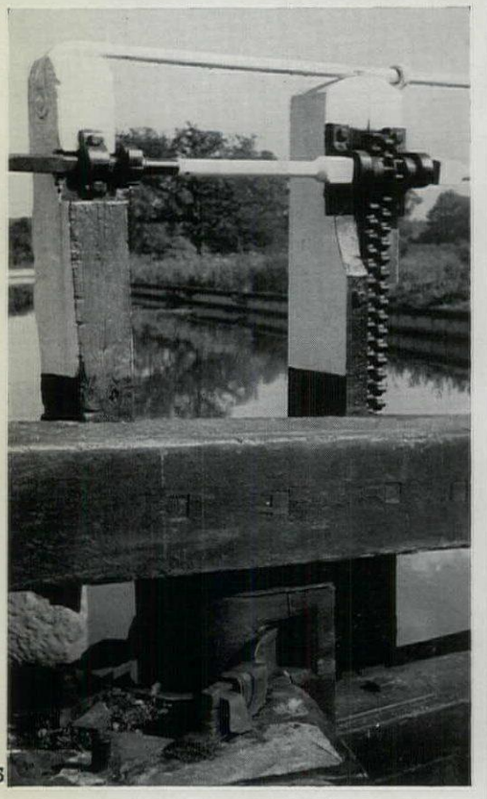

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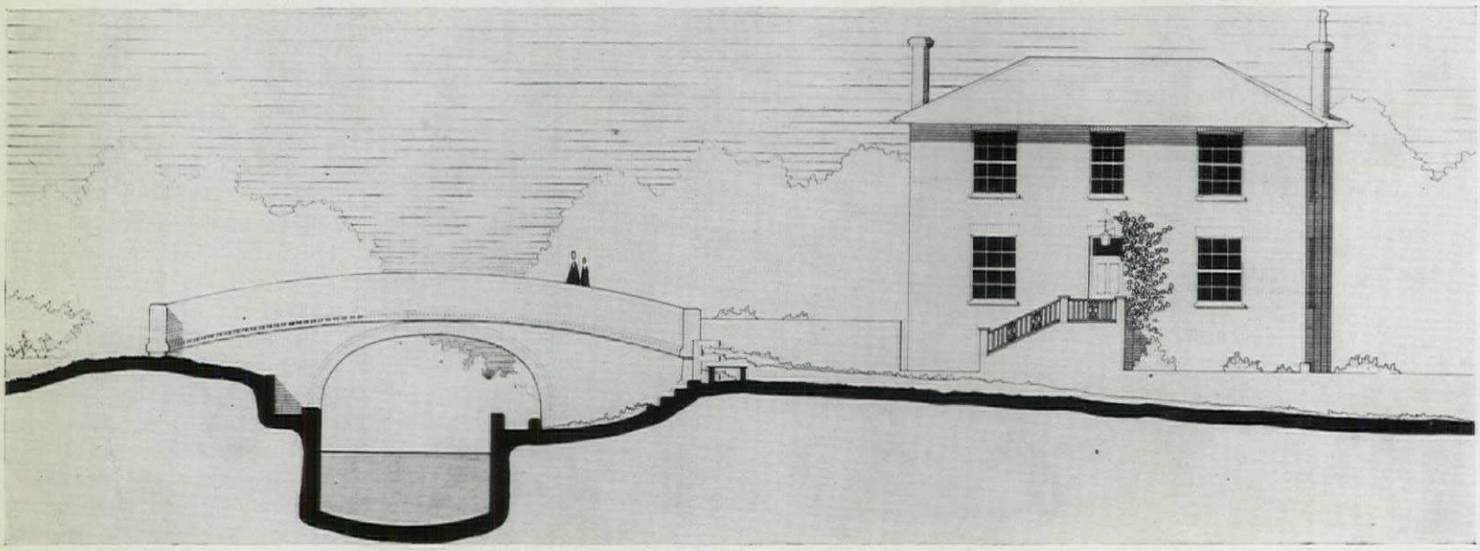
James Browton). It was finished just at the time, ironically, when the railways had successfully undermined the pre-eminence of the canals, and it was sold by the City as early as 1869 because of the scarcity of coal traffic.

If it is fantasy rather than functionalism that the visitor seeks, he will find it at Stockers Lock more profitably in the mechanical sculpture of the cast iron paddle mechanisms, 5, still in working order. There are two types of mechanism (8 and 9 respectively): that for the side paddle at the base of the gate which controls the main operation of the lock, and that for the ground paddle which controls the small sluice penetrating the bank. The



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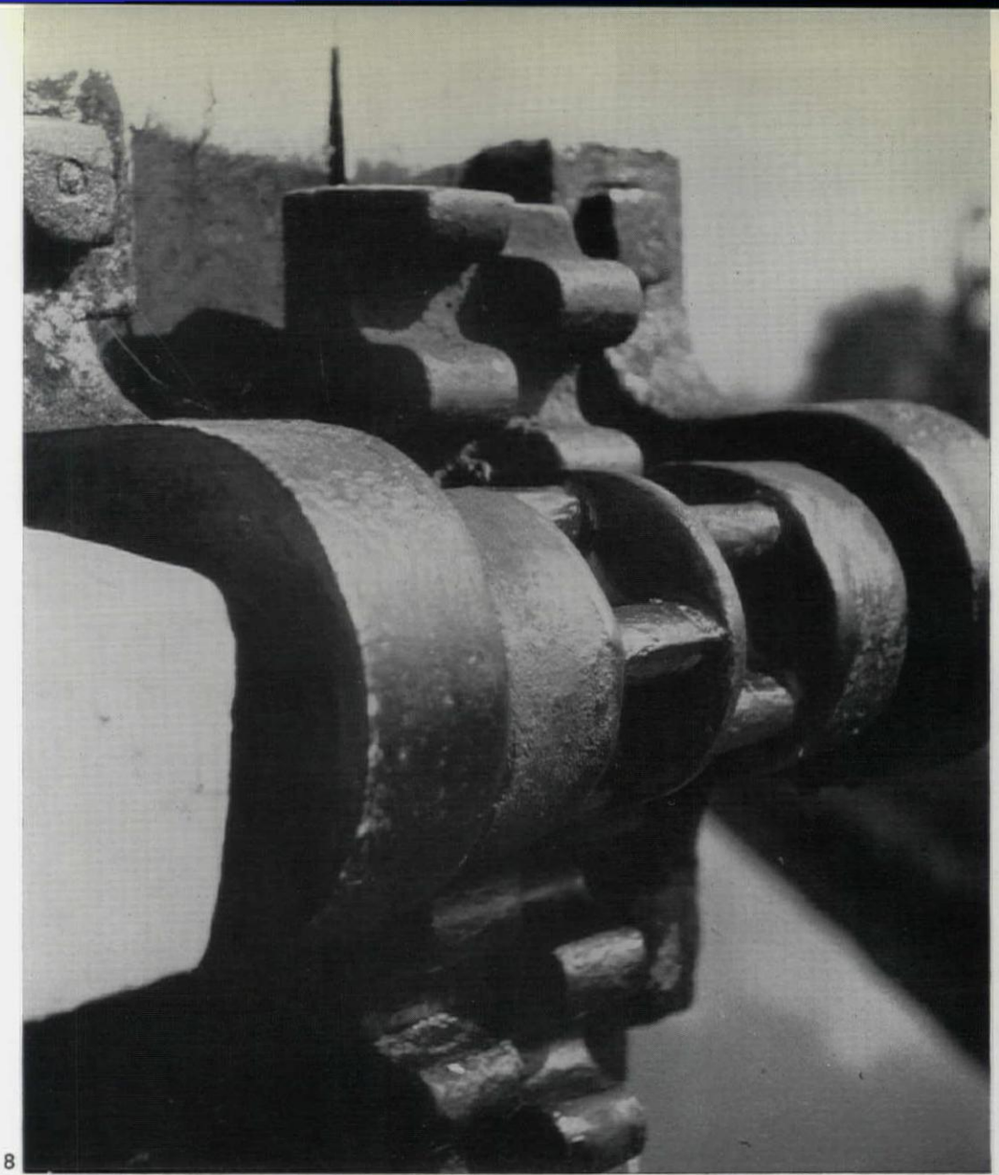

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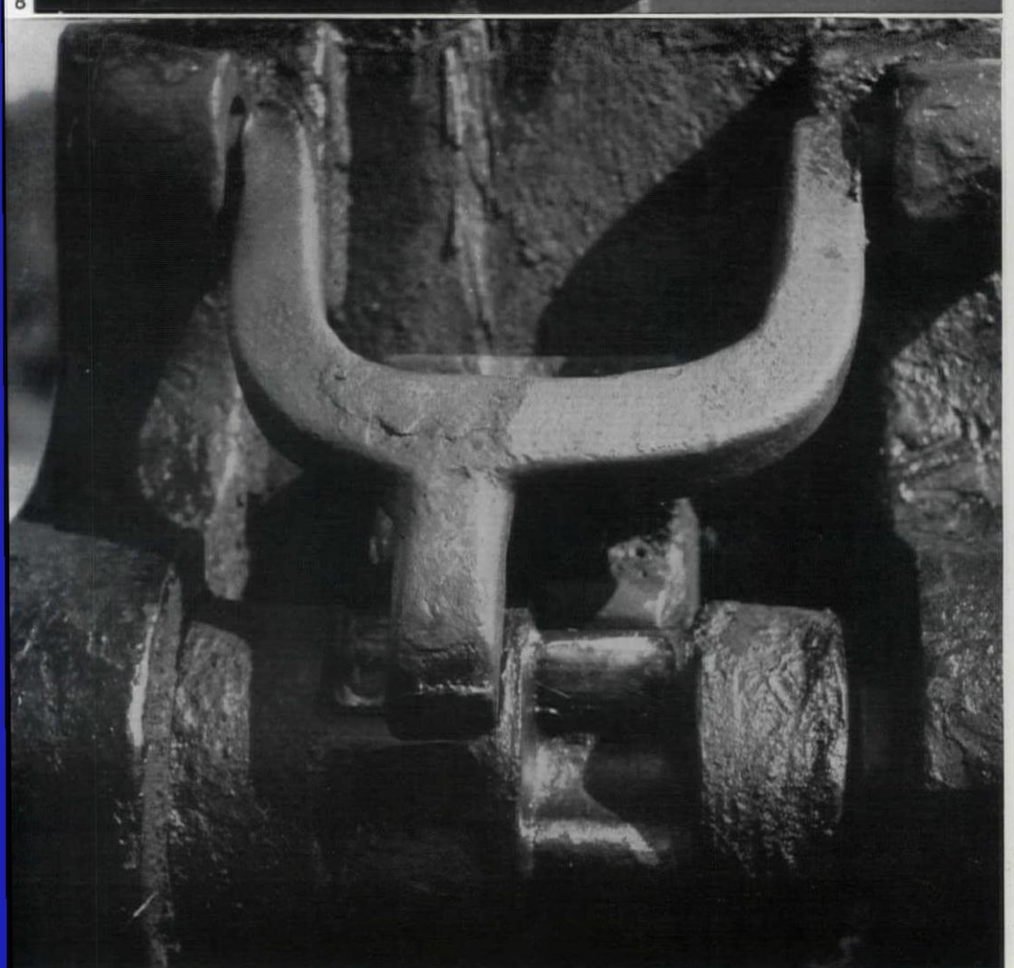

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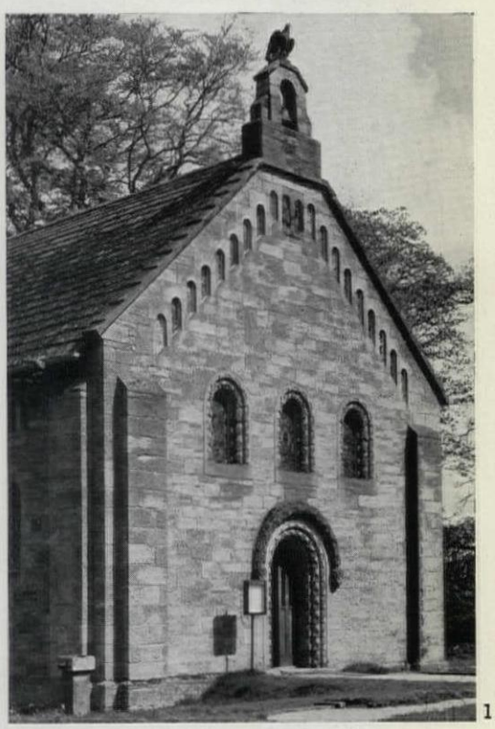
latter allows water to enter the lock slowly at first (use of the much faster side paddles alone would drive the boat back against the first gates). Here in the lovingly textured surfaces of early casting—apparently one-off, though reproduced throughout the length of the canal—are the functional roots of contemporary industrial romanticism, reminiscent of Paolozzi or Bryan Kneale.

CLIVE REEVES
MICHAEL KELLARD

SARA LOSH'S CHURCH

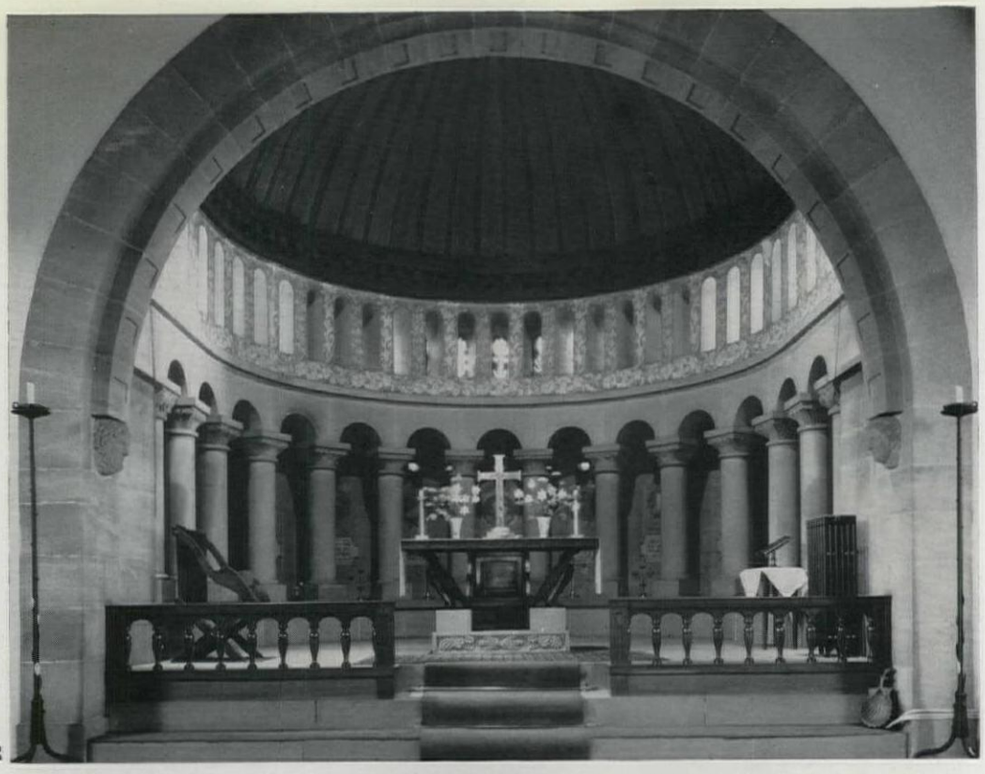


1

John Losh lived at Woodside, a house now mostly demolished. He came from an old Cumberland family (Arlosh), and had been to school at Sedbergh and then at Trinity, Cambridge. He branched out into industry and founded alkali works at Walker near Newcastle. In 1809 he established the Walker Iron Works—'John Walker York' you can read on

the monumental cast-iron railings of the British Museum—and these works were at his death in 1814 inherited by his daughter. Her uncle William managed them and in the end, in 1847, bought them from her. William was a partner and friend of George Stephenson and also something of an inventor. One of his firms was Losh, Wilson and Bell (1827), and this introduces the Bells of Middlesbrough (Sir Lowthian Bell), Philip Webb's much later clients.

The daughter who inherited the Walker Works from John Losh was the elder of two. A son was mentally deficient. The two daughters were Sara and Katherine. Sara Losh was an exceptionally talented girl. She knew French, Latin and Greek and was good at mathematics. Once when she translated pages from the Latin *ex tempore*, a visitor did not realize that she was not simply reading an English text. She was calm, dignified and beautiful. Katherine was lively and hearty. The two sisters were the closest of friends, until Katherine died young, in 1835. Sara, who was unmarried too, decided in her grief to dedicate a memorial to her sister. She was passionately interested in architecture and had travelled in



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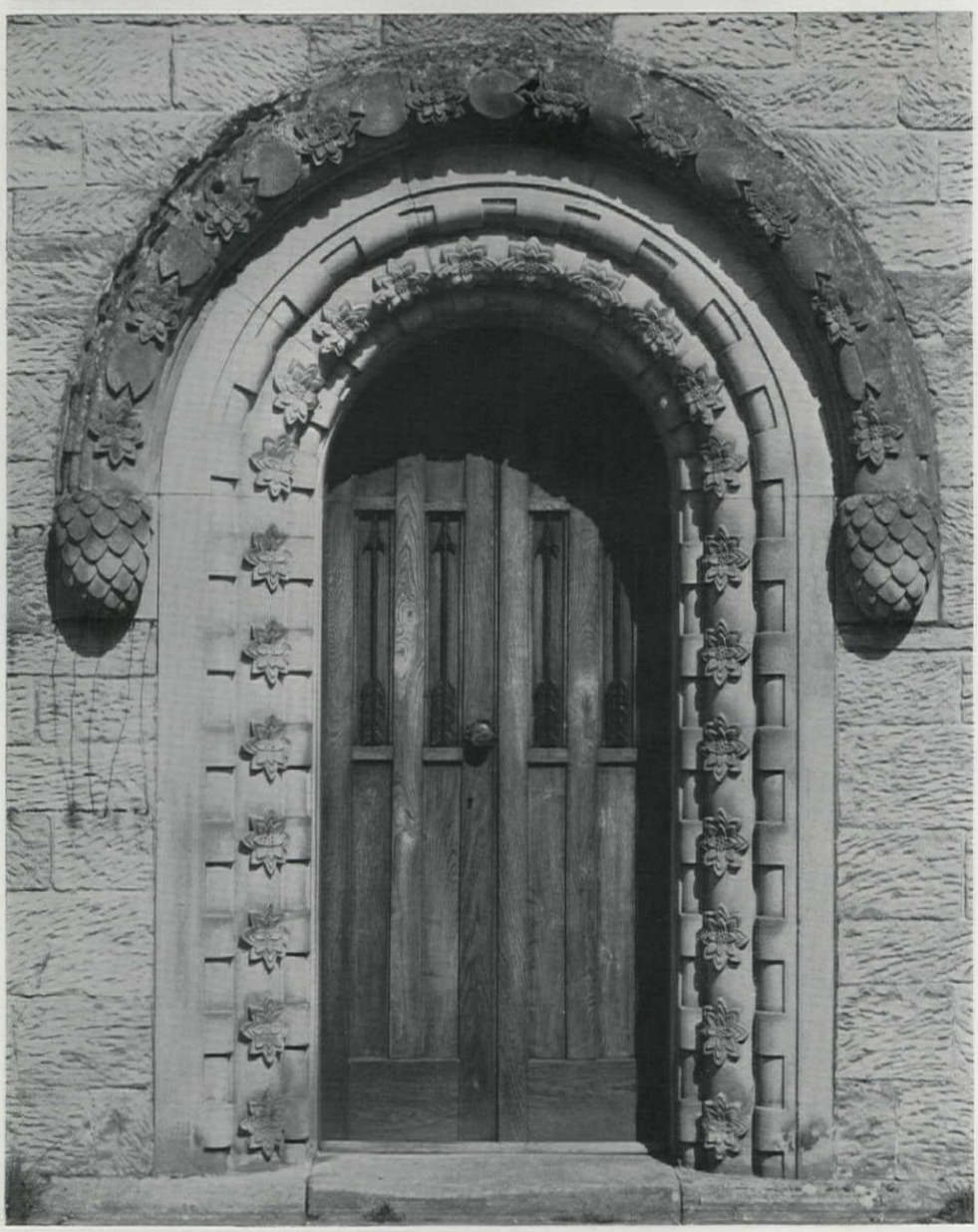

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Italy with Katherine. So she conceived first a church and then a mausoleum; and the church was to be reminiscent of their travels and beautified by symbolic conceits. It was built at Wreay, was consecrated in 1842 and cost £1,200.

It was intended to be a Roman basilica, and its apse marks it at once as such for hyperboreans. But much else is Romanesque rather that Early Christian, and French rather than Italian. Thus the west front, 1, has its gable enriched by rising little blank arches—the dwarf gallery of Italian Romanesque churches. Also there are no aisles, and the apse, 2, is internally provided with a close arcade of strong columns, both French Romanesque motifs. Above the four side windows of the nave is a clerestory of three dwarf openings for each bay, and that is neither Early Christian nor Romanesque. In short, Miss Losh was quite free in her interpretation, and

quite original. Her choice of what was soon to be known as the Lombardic style was in all probability an original decision too; for though the beginnings of the neo-Norman fashion of the 1840s date back to the 1820s (e.g. Robinson at Leamington, 1825), the church at Wreay has nothing to do with that brand of *Rundbogenstil*, and as for the Italian Romanesque, the three principal English examples (Wilton by Wyatt & Brandon, Christ Church, Streatham, by Wild, and Christ Church, Watney Street, by John Shaw) were all begun in 1840, i.e. just after Miss Losh's design.

It is true that the English versions were inspired by the Munich ones of Klenze (Allerheiligen 1827–37) and Gärtner (Ludwigskirche 1829–40), but these Miss Losh can hardly have known. We do not know much of her travels; she was with Katherine and Uncle William in Italy in 1817, travelled through France in the same year, and apparently saw something of Germany too. But that was long before Klenze and Gärtner (and Schinkel) had begun their revival. By the time the church was started, on the other hand, Moller e.g. was translated into English, and the principal Romanesque buildings of the Rhineland, from Lorsch to Gelnhausen, could be admired in his excellent plates.

Moreover, Wreay has a solidity all of its own, and in any case its symbolic carvings have no parallel at all. In fact one might easily make the mistake of dating St. Mary as one of the examples of the Early Christian or Byzantine Revival which took place about 1900 and its carvings as Arts and Crafts. The latter is indeed almost unavoidable. Miss Losh, just as she had no architect, used as her sculptor simply a local boy, William Hindson. The west windows and west doorway, 3 and 4,

6

have surrounds with vine, corn-ears, waterlilies, roses, pine, monkey-puzzle, and also beetles, birds, and butterflies, all naturalistically but flatly, carved, of a stylization which would be expected of 1900 but is unique in the 1840s. The gargoyles (needless to say not Romanesque at all) represent snakes, tortoises, an alligator, etc. Inside, the tiny east apse windows have metal grilles again of leaves, and this time with fossilized fern and other forms.

The furnishings are no less bewildering. The altar-table is of green Italian marble, carried by two brass eagles and placed so that the parson faces the congregation, an arrangement familiar today from the recent Liturgical Movement, but again entirely unexpected in the 1840s. How did the church authorities react? Was this not popery? Perhaps they were not on their guard yet. The altar candlesticks are of alabaster and represent lotus-flowers. The font is of alabaster too. It is a mixture of Byzantine and naturalistic details (lily, vine, pomegranate, butterfly), including however also Greek fluting and Norman zigzag. To the left and right of the font, against the wall, are the tables of the law,

7

one with a Jewish lamp in front, the other on a bracket with an owl and a cock—meaning vigilance. The pulpit, 5, is the stump of a hollowed oak, in imitation of the Calamites found in local coal measures. The lecterns are also naturalistic tree stuff, one with an eagle, 6, the other with a pelican.

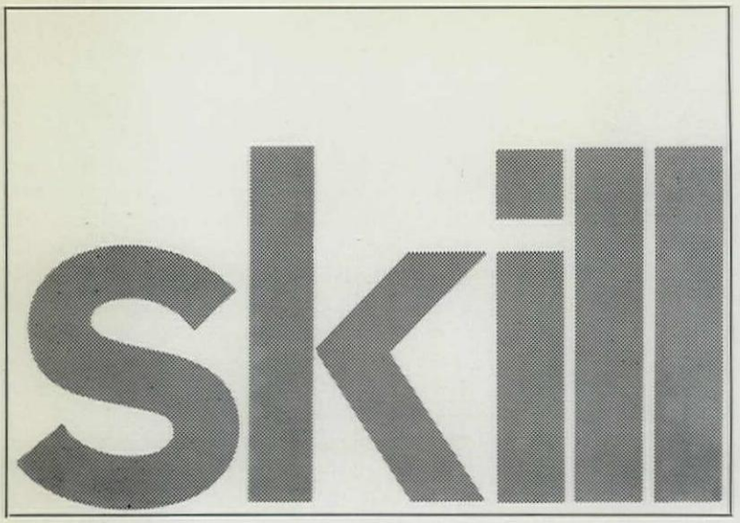
Nor are these all the surprises of Wreay. The stained glass is entirely non-figural, and partly made up of bits of ancient glass, bought after the revolution of 1830 by Sara Losh's cousin William from the ruins of the archbishop's palace in Paris, and outside, in the churchyard, is Katherine Losh's mausoleum, 7, built of large blocks of stone, left quite accidental in shape and surface and laid deliberately in a cyclopean irregular way. Henry Lonsdale in 1873, called it 'druidical' or 'Attic-Cyclopean'*. Inside is the lonely white-marble figure of Katherine reading. This is by Dunbar, as late as 1850, but done from a sketch which Sara had made near Naples in 1817. After that it may not be a surprise to find, also in the churchyard, a copy of the early sanctuary of St. Perran in the Sands near Perranzabuloe in Cornwall, found in 1835. It is only 29 ft. by 16½ ft. in size, and has inside a rude altar and a palm tree.

Sarah Losh died in 1853, and was soon, except strictly locally, entirely forgotten.

NIKOLAUS PEVSNER

5

* Henry Lonsdale: *The Worthies of Cumberland*, vol. IV, 1873.



Sociological evidence on housing, 1 Space in the home

It is a commonplace to say that social surveys are an important source of evidence bearing on architectural decisions. Yet the volume of survey work in this field is quite small and published results are not at all accessible for architects. In this article and its sequel (to be published in September) John Raven collates and comments on the work bearing on housing which has been published during the last twenty years in this country and America. In this first article he is concerned mainly with space within the dwelling. In his second article he will turn to the setting of the home and the effects of environment on the individual. The broader aspects of housing, especially in relation to the part housing development could play in the re-shaping of our towns, will be the subject of an AR special issue in November.

The aim of research into dwelling design is to provide information about the requirements of the people who will live in new dwellings. Viewed in this way it is no different from the aim of research concerned with the improvement of other products such as sausages, biscuits or motor cars. Nevertheless houses differ from these other products in a number of ways which makes it more difficult to do worthwhile research.

Firstly houses are much more durable. This means that fashions, which do so much to sell other products, must be confined to aspects of the design which are readily modifiable. It also means that much more attention must be paid to meeting *future* needs. This in turn means that the much more difficult task of predicting *trends* in requirements must be undertaken.

Secondly: Compared with other products that are equally essential, houses are in much shorter supply. This means that almost any house that is built will be occupied: there is less need for manufacturers to consider people's wishes. Furthermore, if one does try to improve the product one looses the feedback from a rapid increase or decrease in sales which normally helps to evaluate the quality of a product. One cannot substitute people's stated preferences as a criterion of quality because people rarely know what they want until they have had experience of something better.

Thirdly: Houses cannot on the whole be taken with a family when it moves. This means that people often feel that they have to buy what they think *other* people want in order to be able to sell it again later.

Fourthly: Houses occupy a much more central place in people's lives. The way a family uses its house and environment is intimately bound up with its most basic values. Far fewer people feel strongly about whether or not to buy wholemeal bread than feel strongly about letting the children play in the bedrooms.

Fifthly: Housing represents a much greater capital outlay. It is more expensive to exchange it if it is not quite what one wants. If one makes a mistake over a packet of biscuits one can throw it away; it is slightly more difficult to exchange one's car, and it is more expensive still to change a bad house.

Sixthly: Apart from housing rented from local authorities houses are not on the whole sold through a series of retailers who cater for different markets. For other products different retailers cater for fairly specialist markets whose needs they know. The people who want particular sorts of products go to the appropriate retailers. As a result a system has evolved which allows manufacturers to produce a series of goods, such as sausages, suited to a number of specialist markets simply by studying the differential needs of the people who shop in different places.

Seventhly: A house is psychologically a more complex product than a packet of biscuits or even a car. It has to fill a much wider range of physiological, psychological and social needs. Large teams of research workers are required to vary systematically the relatively small number of ingredients in ice cream and sausages and to test the resulting products on a series of different markets. Much larger teams would be required to do as systematic a job with houses.

Eighthly: Housing may have social consequences (in the form of disease and crime) which are more serious than the social consequences of other products. Indeed the belief that it *does* have such consequences largely accounts for its place in the political limelight.

Importance of doing the research

In spite of all these difficulties it is very important that the research should be done. There are two reasons for saying this. Firstly, the sellers market means that the client does not have the normal control over what he receives. Secondly, houses which are only just acceptable today are likely to be seriously substandard tomorrow.

Criteria of satisfactory design that have been used

As has been mentioned it is difficult to find a satisfactory criterion for good design. Most research has used the satisfaction and wishes of the occupants. This has a number of inherent difficulties—for example one cannot directly compare the levels of satisfaction produced by two designs because one may have different types of people living in them. It would be absurd to compare the relative satisfactoriness of palaces and local authority dwellings in this way. One might well find that 80 per cent of the inhabitants of each were satisfied —but this would tell us nothing about the space standards that should be introduced. This is an extreme example but it would not be justifiable to compare even large and small *houses* in this way. Quite apart from anything else the families that live in the larger houses are themselves likely to be larger. Even if we compared the satisfaction levels of families of the *same* size living in the two sizes of dwelling we may well find that those who are living in the larger dwellings belong to higher social classes and want different things from their dwellings . . . and so on. While this problem is capable of solution the psychological scales necessary to assess the different sorts of people one is dealing with have yet to be developed. The best that can be done is to control for the more obvious factors.

Results

1. *The house as a whole:* Houses serve a number of functions ranging from physical functions, like somewhere to sleep in the dry, to psychological ones like 'somewhere to show off to visitors.' Taking any one function people's desires vary a great deal. To take some examples: One might well expect that there would be a 'best' temperature for carrying out a particular type of work. However, Black (1954) found that throughout the range 64–72 deg. F as soon as the experimenter made one person warm enough another complained of being too hot: the percentage who were satisfied with the temperature was the same throughout the range. Similarly, Willis (1963) found that what people meant when they said that they wanted privacy varied greatly: some people did not like to do jobs like getting in the coal if there was a possibility that they were being watched by other people. Others did not care about this but wanted to be able to shut out the other members of their own family from time to time. Rosow (1948) found that businessmen were much more concerned that their house be an object of prestige display than professional people. The latter were more concerned that it should be comfortable

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skill

continued from page 68]
and that it should be a symbol of security.

It will be clear from these examples that one of the most important fields for research is to try to instil some sort of order into this field. One wants to be able to specify the main groups of people who have *different* housing requirements. One also wants to know what these requirements are and what proportion of the total population, or any specifiable subsection of it (such as people to be rehoused in urban renewal schemes) fall into each group. This last can only be done properly once scales have been developed for the purpose. Nevertheless a certain amount can be said now: There are certain obvious groups such as single people, couples whose children have left home, and so on whose needs should be studied separately. Clearly their housing needs are different from the needs of families with children, yet most housing is built for the latter group although it comprises less than half of the total population. Very little is known about the needs of these other groups: One wants to know how important it is for flats for young people to have common rooms; one wants to know how many older people do in fact wish to live in smaller homes; one wants to know how many older people want to move back into city centres . . . and so on.

2. *The total number of rooms:* The main thing that has been established is that most people consider themselves to be short of space. In one American Study (Paxton, 1955) it was found that 36 per cent of people who had bought a house in the last few months wanted more rooms and 55 per cent wanted larger rooms. The alterations most frequently made to houses in fact consisted of adding more space. In spite of this general shortage of space many couples whose children have left home would in fact like smaller houses but, for a variety of reasons, are unable to obtain them. This bad match between what is needed and what is obtained is one of the features of housing. If one looks at the pattern of need and the pattern of availability the fit could be much, much closer than it is—even without changing the supply of houses. The bad fit comes about partly because of the difficulty of exchanging housing, partly because people are often unaware that their needs for smaller housing could be met relatively easily if sufficient pressure was brought to bear in the correct places, but largely because young families with children whose space needs are greatest often cannot afford to occupy anything other than the smaller accommodation that the older people want.

One of the consequences of the general shortage of space is that the main reason for moving is additional pressure on space—either through an increase in family size or through a reduction in the amount of space available (Rossi, 1955). The word 'additional' must be stressed. Families of the same size differ greatly in the amount of space they require; there is in fact no correlation between the number of rooms available per person and desire to move. As a result if one wishes to predict the amount of space needed one must know both the size of the family and the importance it attaches to space in relation to other amenities. Some people prefer to spend their money on a smaller house with a garden in a desirable neighbourhood rather than on a larger house without a garden in a less desirable neighbourhood. More pressure on space will, however, cause them to think again. It will only be possible to lay down precise space recommendations when a conceptual framework has been developed which will enable us to group people according to their major values before trying to give advice about their needs.

The demand for more rooms means different things to people who have achieved different space standards. American work shows that people who have achieved the same standards tend to agree fairly well about what they would do with more space —regardless of what else they have had to sacrifice in order to obtain this space, or whether they would in fact prefer to spend their money in other ways. People who are very short of space would use an additional room for cooking and leisure time activities; people with more space would use an additional room as a bedroom; people with still more space want the additional room for a den or guest room (Koppe, 1955; Reimer, 1945). As has been hinted, however, people do not always prefer to spend their money on space. A game situation was created by Wilson (1962) and it was found that a very high proportion of the available 'money' was 'spent' on obtaining low density housing rather than spacious houses. Not only do people's overall space standards vary: the way they want it divided up also varies. One of the main variables is the importance attached to having two living rooms. This varies greatly with both the family's stage in the life cycle and its values. Families with children place less emphasis on the feelings of space that accompany 'through' living rooms and are more aware of the need to segregate hobbies and children's activities. The uses the second room is put to—whether it is kept tidy for special visitors, used as a television room, or used mainly for children's play or homework—also varies markedly between families at any one stage of the life cycle. Many of the functions which second living rooms fulfill could be satisfied by using bedrooms for purposes other than sleeping; however, many people are strongly opposed to this, both in England (Chapman, 1955) and the United States of America (Paxton, 1955). Some families are deterred from allowing their children to do their homework in the bedrooms by the cost of heating them (Ministry of Education, 1954) but others, particularly the adults and children of working-class families, both do not value education sufficiently to make this seem worthwhile and place great emphasis on sociability (Ryan, 1963, Willmott, 1963; Stacey, 1960; Mays, 1961; Mogey, 1956). It is far from true that such attitudes are entirely an adjustment to cramped housing conditions: they seem to occur just as often on council housing estates, where housing is cheap and adequate, as in slum conditions.

There is room for a great deal more work in this area. Firstly more work needs to be done to substantiate the view that such attitudes are one of the main determinants of house usage. It may be true that housing provision or income determines the attitudes rather than the reverse. One study in this area is that of Brennan (1957) which has demonstrated both that the small dwellings of the Gorbals attract a particular type of family—namely one consisting entirely of adults who go out to work—and that they influence people's pattern of living by turning them on to community facilities for activities such as eating and laundering which they would normally carry out at home. Secondly, the consequences of such basic attitudes as concern with achievement and affiliation need to be explored. It may well be that a family which values sociability not only needs one large room rather than two separate ones, but also wants that room to be of a particular shape. From a limited number of observations it would seem quite plausible that this should be so: such families often wish to segregate activities such as eating, television watching, playing with toys and doing homework, *without segregating the individuals concerned.* This can probably best be done in large L-shaped rooms with an unobtrusive restriction such as an arch segregating an alcove from the rest of the room.

3. *Living rooms:* American surveys reviewed by Paxton (1955) found that only 10 per cent of magazine readers wanted living rooms of less than 12 ft. by 18 ft., 40 per cent wanted them to be this size and 50 per cent wanted them larger. One survey asked people what they disliked about their living rooms. 37 per cent said it was too small, 32 per cent that the furniture wouldn't fit in, 29 per cent that there weren't enough windows, and 22 per cent that it was hard to clean. Such data obviously needs to be related to provision, but as it stands it does tell us something about the general order of priorities. Building Research Station surveys reviewed by Dick (1962) found the following room sizes acceptable to 85–90 per cent of Local Authority tenants in England.

Table 1

House type	*Room*	*Area, sq. ft.*
Working kitchen, no separate dining space	Living rooms for meals and general purposes	140–160
Working kitchen with separate dining space *or* separate sitting room *or* dining kitchen	Living rooms for general purposes excluding meals	135–150
Working kitchen with or without separate dining space	Kitchens for cooking and dishwashing	100–115
Kitchen living room	Kitchens for cooking, meals and general purposes	180–200

In the American surveys 70 per cent preferred to have separate living and dining spaces, and this was true irrespective of the price range the informant hoped to buy in. While 93 per cent expressed a preference for eating facilities in the kitchen, two-thirds of these still wanted a separate dining room as well. Families with children like to be able to feed their children in the kitchen and entertain others in the dining room: *two* dining spaces are required by most families. Half used their dining rooms *only* for meals. Other uses were for playing cards and entertaining (15 per cent), writing and paper work (12 per cent), children's play and hobbies (9 per cent) and children's study (8 per cent).

4. *Bedrooms:* The American Public Health Association Committee on the Hygiene of Housing has developed a standard of 'need' for bedrooms. The standard lays down that:

a. Not more than 2 persons should sleep in the same room.
b. Children of different sex should sleep in different rooms unless they are very young.
c. Children of very different ages should sleep in different rooms.

On this basis the American Housing and Home Finance Agency's survey of 1949–50 home buyers found the following pattern of need—a pattern which should be borne in mind when undertaking comprehensive development schemes.

Table 2

1 bedroom	23 per cent
2 bedrooms	40 per cent
3 bedrooms	28 per cent
4 bedrooms	8 per cent

(Family composition was not obtained for 1 per cent of buyers.)

Paxton's results show that for Americans the most popular size of the 'master' bedroom is 12 ft. by 18 ft. with 10 ft. by 15 ft. the second choice (43 per cent and 39 per cent respectively). For other bedrooms 10 ft. by 15 ft. was the most popular choice (50 per cent) with 41 per cent choosing 9 ft. by 12 ft. Such sizes are considerably larger than the Building Research Station has found to satisfy Local Authority tenants. Only 1 per cent of tenants with a master bedroom of over 136 sq. ft. complained that they were too small compared with 15 per cent of those 120–135 sq. ft. On the other hand one-fifth still complained that the second bedroom was too small when it was 90–100 sq. ft. As larger sizes were not included it is not possible to compare these with American figures.

42 per cent of Americans in the samples reviewed by Paxton made no use of bedrooms for purposes other than sleeping; about a fifth used them for each of the following: children's play, sewing, reading and relaxation. Only 4 per cent used them for children's study.

5. *Kitchens:* The most popular sizes for American kitchens is 9 ft. by 12 ft. The Building Research Station's work has paid more attention than the American work to the effect that different ground floor plans have on the uses that are made of the kitchen. It was found that when there was separate dining space kitchens of 100 sq. ft. satisfied most local authority tenants although most still ate at least some meals each day in the kitchen.

Kitchens are used for many purposes other than cooking and laundering. In America 70 per cent of all meals are served there, children commonly play there, friends are entertained there (40 per cent of all meals to guests are served in the kitchen), people listen to the radio there and generally sit and chat. It is the most used room in the house for both the housewife and the rest of the family. Great care should be taken in its design. If people are satisfied with their kitchens they tend to be satisfied with their homes (Mass Observation, 1943).

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6. *Garages, home extensions and storage:* Two-thirds of American families use garages for storage—a fact apparently not often appreciated by Local Authorities in this country. 15 per cent of the families also used them as a workshop.
Only 1 American family in 40 did *not* want a home extension, sun lounge or porch. These tended to be used for housework, storage and reading and family relaxation.
American households commonly have utility rooms for washing and storage. Households normally have a large number of articles which must be stored—bicycles, lawn mowers, prams, trunks and cases, mops, buckets, garden tools and so on. Storage of these articles has been a persistent complaint of British housewives ever since the war (Mass Observation, 1943) and the complaints still pour in in every survey that is undertaken. Traditionally it has been left to the occupier to provide himself with a garden shed to house these articles, but British housing might well adopt the American utility room—or at least a suitably designed home extension.

On adaptability in housing

Having reviewed the available evidence concerning conventional home design it is worth concluding with a few comments on the important concept of 'adaptability' which has become increasingly popular in the last few years. The reasons for this interest are:

1. That housing needs change over the life cycle.
2. That housing needs change with new inventions and new leisure activities.
3. That different families wish to do different things with their homes.

The trouble is that it is not practicable to have an infinitely adaptable house or flat. As a result it is important to discover which variations in need should be met by basically different designs and which should be met through design flexibility. Examples of the former might be those stemming from differences in the family's concern with such things as affiliation and achievement. Examples of the latter might be changes in hobbies over the life cycle.
In order to get useful information about this it would be necessary to consider all three of the above variables and study: (a) differences in the ways in which people in fact used their houses; (b) differences in the ways in which people *wanted* to live; (c) the main sources of complaint about existing dwellings.
From this information one would be able to develop hypotheses about the ways in which housing should be improved to suit various groups of people better. These hypotheses would then have to be tested by finding (or building) some houses which were more or less what one felt to be needed and finding out how they worked in practice for the sort of people one expected to like them.

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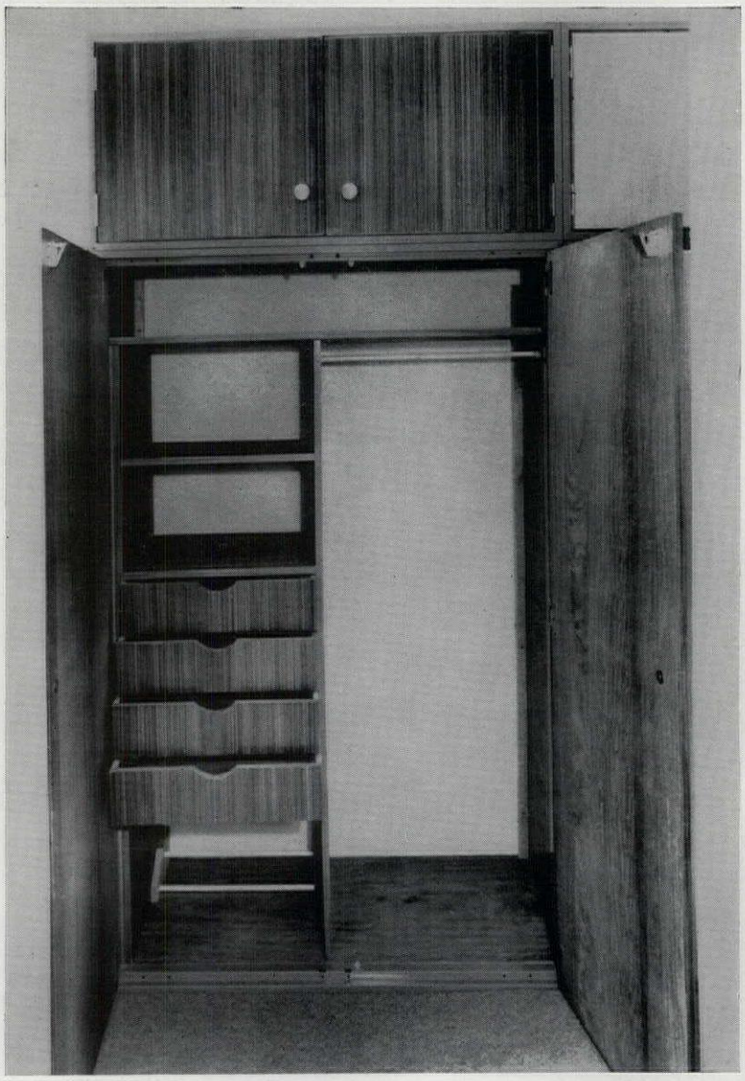
The Industry: New Products



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Storage units

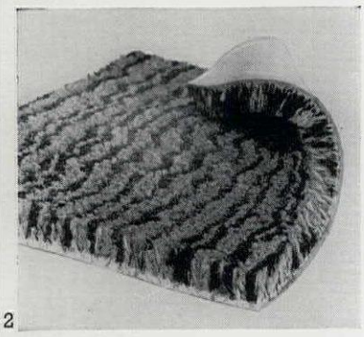
The Spacemaster Wallrobe storage system, 1, has been developed for domestic and contract work and can be used to fill any width of opening or in continuous runs. The storage units are supplied in knocked down form and consist of a metal frame which is clipped together to carry veneered-chipboard doors and panels. The units themselves are made in standard widths with a standard height of 6 ft. 2 in. or 6 ft. 8 in., plus two heights for the upper storage units. There is a very considerable choice of internal fittings ranging from simple shelf units, hanging rails, shoe rails, completely fitted drawers and dressing table units. There is also a choice of veneered finishes.
Wallrobe Furniture Ltd., 9 Chigwell Place, London, W13.

Colour coated steel

There seems to be a steadily growing demand by architects for colour in the cladding of industrial buildings. Several firms already provide coloured sheet, both in steel and aluminium, and the latest is Colorcoat, a plastics pre-coating which is tough enough not to be damaged when it is formed into roofing and cladding profiles. It can be made in any width up to 52 in., and for general building uses a coating 0.008 in. thick is recommended on top of the galvanized coating, as it not only improves the weather resistance but is also more likely to stand up to rough handling on the site. There is a choice of sixteen BS colours which have been specifically selected for external use and it is claimed that the life of the coating should be from 15 to 20 years to first painting, and that there should be a further 25 to 30 years of life in the galvanized coating even if no painting is done. For internal uses in office furniture, partitions, shop equipment and equipment like storage-heater casings or vacuum cleaners thinner coatings can be used and any required colour can be supplied: in the interior grade there are also four embossed patterns and three wood grains.
Richard Thomas & Baldwins Ltd., Bryngwyn Works, Gorseinon, Glam.

Coir mats

Wiltshire Carpets are now marketing the French-made Anchor door mat, 2, which consists of coir fibres held in a backing of vinyl chloride which is waterproof and resistant to acids. The mat can be cut to any shape with a knife and needs no edge



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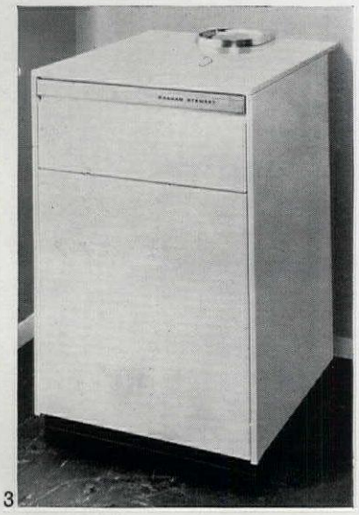
binding as it does not fray or unravel. Dust cannot pass through the backing and can be removed by vacuum cleaning. The mat can be stuck to any kind of floor and seams can be made by welding or with adhesive tape. Standard widths are 39 and 78 inches and it is made in rolls about 12 yards long, in three colours.
Wiltshire Carpets Ltd., Highworth, Swindon, Wilts.

Oil-fired boilers

Additions to the range of Stewart oil-fired boilers include four models with outputs from 50,000 to 100,000 Btu per hour, 3. The boilers burn domestic kerosene and have a wall-flame burner which has been designed to be as quiet as possible so that the



3

units can be installed in kitchens. Pipework is arranged at the back of the boiler and the top of the casing is extended backwards to fit flush against the wall, thus partially covering the pipes, which can emerge

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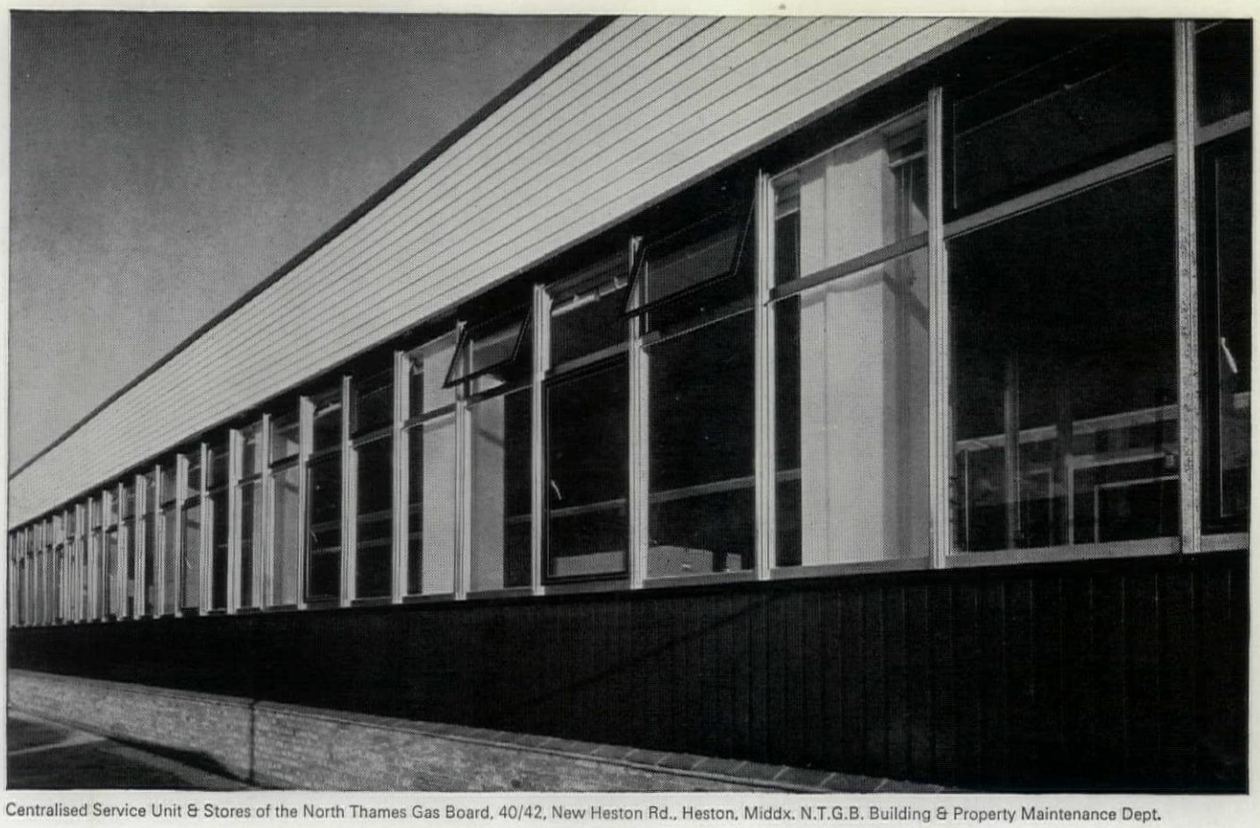
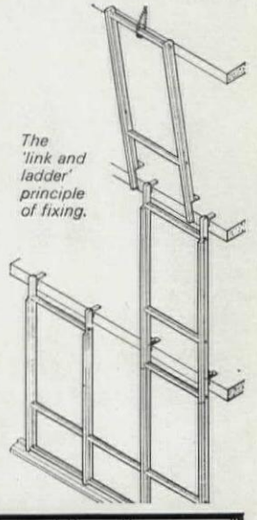


Centralised Service Unit & Stores of the North Thames Gas Board, 40/42, New Heston Rd., Heston, Middx. N.T.G.B. Building & Property Maintenance Dept.

Up goes curtain walling
clad in Silver Fox stainless steel



The 'link and ladder' principle of fixing.

down comes its price

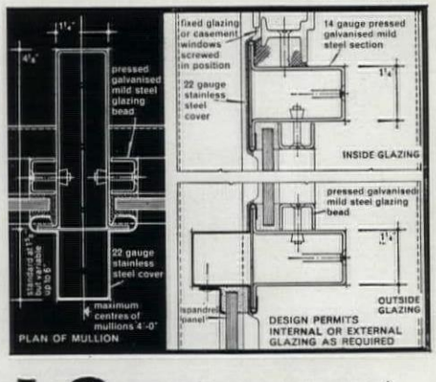
Today, more than ever, people appreciate the elegance, the long-lasting lustre of stainless steel. Its price is now highly competitive.

Thanks to improved designs and more advanced constructional and assembly techniques, stainless steel systems of curtain walling can compete in price with systems employing other materials.

Wherever 'Silver Fox' stainless steel is used, it will withstand hard wear and keeps its attractive appearance with very little maintenance. It does not require painting. An occasional wash-down will bring it up like new.

The Morris Singer Holoform Mark II stainless steel curtain walling was chosen for the Centralised Service Unit, Offices and Stores of the North Thames Gas Board at Heston. The system consists of pressed galvanised steel sections, externally clad with 'Silver Fox' satin polished stainless steel. For multi-storey applications, a "link and ladder" principle of fixing is employed. Units are fixed one above another in a series of ladders to occupy each plan module. Glazing can be done either from the inside or outside.

Further information on any aspects of "Silver Fox" stainless steel and its use will be supplied on request.



samuel fox
& COMPANY LIMITED STOCKSBRIDGE, SHEFFIELD.
The makers of 'Silver Fox' Stainless Steel
A subsidiary of The **United Steel** Companies Ltd

1967

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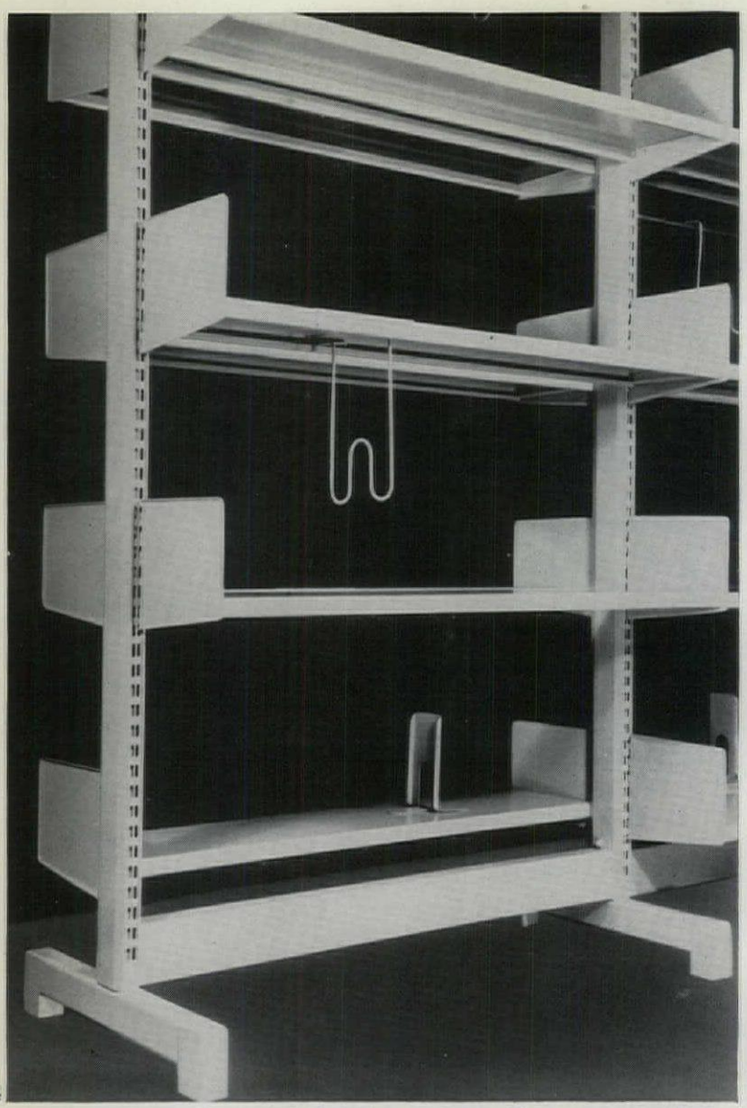

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at either side. In the past the makers have been selling mainly in the South-East, but have now made the necessary servicing arrangements to cover the whole country. They produce a very wide range of larger boilers, and there is also a model which can be converted from oil to solid fuel firing in about one hour.
Stewart Automatic Boilers Ltd., Brookway, Kingston Road, Leatherhead, Surrey.

Library shelving

Luxfer's new Slimline library shelving was designed in conjunction with Sir Basil Spence, Glover and Ferguson for use in the new Edinburgh University Library, to be suitable for open access or stack areas. The units are in steel, stove-enamelled two coats to any required colour and can be double-sided as in 4, or single-sided. There is no need for any cross bracing and the feet are adjustable for levelling, while there are also facilities for wiring if lighting is necessary. The shelves are made in a standard length of 3 ft., and in various widths from 7 in. to 12 in., and they are adjustable via the fixing brackets at 1 in. intervals. Considerable stiffness is provided by a triple-fold flange on both long edges, or the back of each shelf can be supplied with an upstanding edge to provide a book stop. Bays can be 7 ft. or 7 ft. 6 in. high and there is a full range of accessories for subdividing the shelves as required.
Luxfer Building Products Ltd., 16 Gresse Street, London, W1.

Furniture

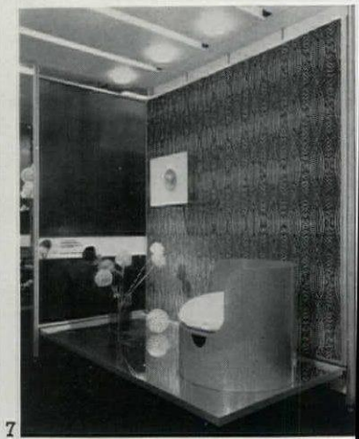
Design Workshop has recently produced a new range of chairs and tables for Scandart furniture. The chairs, 5, are made with or without arms, and with either a right- or a left-hand arm so that they can be used in continuous runs. There is also a matching stool and a low table. Chairs and stool have foam cushions on a rubber platform, and there is a very wide choice of upholstery, including hide. All the cushion coverings are fitted with zips. All the chair are in teak, and the table has a teak or Formica top. There is also a range of dining-room furniture in teak or rosewood. This consists of upright chairs, again with a wide choice of upholstery, a 3 ft. wide table extending from 4 ft. 3 in. to 6 ft., and two sideboards, with cupboards or drawers.
Bristow & Townsend Ltd., Desborough Park Road, High Wycombe, Bucks.

Hoods for cookers

The Autocon cooker hood, 6, is a ductless type which needs no wall outlet and which is suitable for gas or electric cookers. An electrically-driven fan circulates the air over the cooker through two large-area activated carbon filters to remove smells and also through washable grease and fat filters. All four filters are removable without dismantling the hood, and the activated carbon ones should be replaced when they cease to absorb smells. The fan unit passes air through the filters at 140 cu. ft. per minute even when they are partially blocked. There is a light at the front of the hood to illuminate the hot plate, both fan and light being controlled by a single switch. The whole unit is light in weight, being made largely of aluminium sheet with a white acrylic finish, and only a pair of screws are needed for fixing. Price, with purchase tax, is under £20.
Autocon Manufacturing Co., 10 Spring Place, London, NW5.

Advice about carpets

A new British Carpet Centre was opened in May at Dorland Hall. It is sponsored by the Federation of British Carpet Manufacturers, who represent the majority of makers of woven carpets—Axminster and Wiltons—but among whom the makers of tufted carpets are not included. The Centre, 7, seems to be intended very largely for the general public, and shows an enormous variety of patterns and colours on two floors, the various wool and synthetic mixtures having five classifications from light to luxury domestic. The three upper grades correspond to light, medium and heavy contract use, so that the Centre should also be of considerable use to architects who need information about wool and synthetic fibre mixtures, their resistance to dirt, cleaning methods and probable life under various types of use. It is also possible to get some facts about the somewhat confusing trade names which so many manufacturers use for their synthetic fibres, and the interpretation of wear tests in terms of probable life. It is obviously impossible to give any sort of life guarantee for a particular carpet grade, but if a graded carpet does not stand up to its recommended use there are provisions for replacement or, as a last resort, arbitration.
The British Carpet Centre, Dorland House, Lower Regent Street, London SW1.



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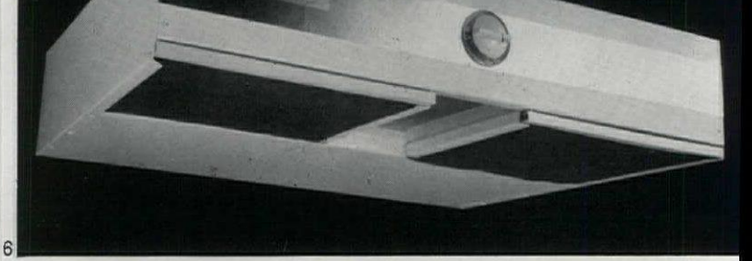

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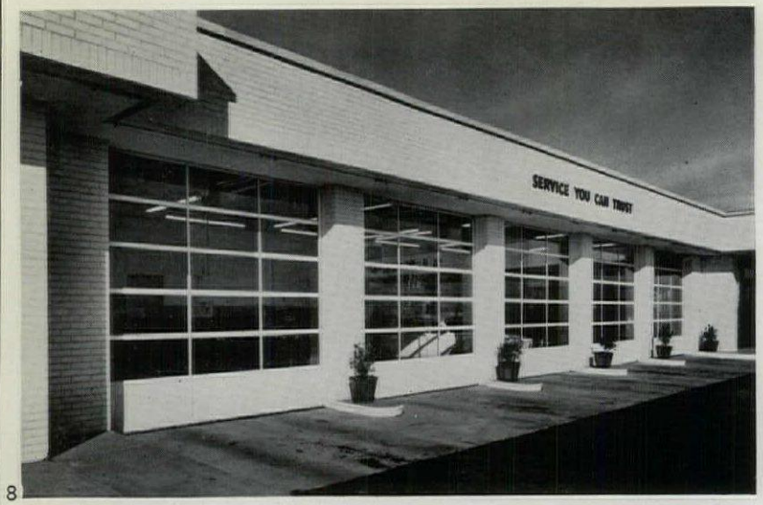
Up-and-over doors

There are now many firms making or marketing sliding and overhead doors

[continued on page 7



8

continued from page 74]

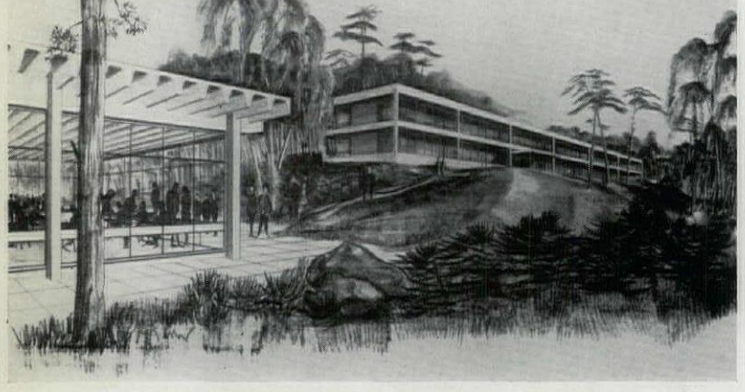
and gear of various types, most of them supplying the doors complete with gear, but others supplying the gear only. This can sometimes lead to difficulties if the contractor has to order a door from a joinery firm and perhaps install gear with which he is unfamilar as the architect may have to deal with faults for which nobody will accept responsibility. Hendersons, a firm which has been making door gear of all types for many years, has therefore decided to set up an installation and maintenance division, which will be responsible for making sure that doors will remain satisfactory in use, including the various types of automatic opening gear. Surveys showed a need for steel, aluminium or wood doors in which glazing could be provided, and it was found that in America the sectional type up-and-over door had replaced almost every other type and arrangements were ultimately made to make in this country the 'Slideover,' a design by the Overhead Door Corporation of Hartford. The door, 8, consists of horizontal panels from 18 to 24 in. deep, hinged together and with ball-bearing rollers at each end, running in galvanized-steel side tracks. These tracks are set at a slight angle to the door jamb and the rollers are correspondingly offset so that when the door is closed there is a strong wedging action against the jamb, so that rattles are prevented and the door is weathertight. For the time being the doors are limited to a height of 16 ft. 1 in. and a width of 20 ft. 2 in., with a maximum area of 240 sq. ft. Glazing can be provided, and the larger types are raised with a chain hoist, or they can be electrically operated. Cost is about the same as for a good quality roller shutter.

P. C. Henderson Ltd., Romford, Essex.

Pollards move to Basingstoke

Since 1896, when Pollards first started as shop fitters in Hackney, the company has grown steadily and the Group now includes Hammond and Champness the lift makers, Samuel Haskins shutters, and Morris Singer's foundry (which casts statuary and architectural work of all kinds). The factories were sited all over London, from Walthamstow to Clapham and some years ago a move to Basingstoke was started. The headquarters of the whole Group moved to the new site at the beginning of May, in a new building, 9, designed by K. Peers. In the new development, which extends over some 80 acres, it is intended to provide studio accommodation for sculptors who are preparing work for the Morris Singer foundry. Nearly all the Group companies will have factories on the Basingstoke site, though the shopfitting and display sides will remain at Walthamstow and Highbury.

The Pollard Group of Companies, Kingsland, Reading Road, Basingstoke, Hants.



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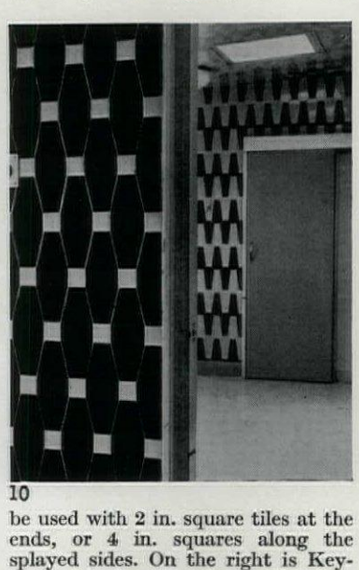
New tile shapes

Hereford Tiles have produced a new range of shapes with interesting pattern possibilities. They are known as the Intaloc patterns, 10, the shape on the left (Diamet) having dimensions 10 in. by 4 in. overall, so that it can be used with 2 in. square tiles at the ends, or 4 in. squares along the splayed sides. On the right is Keystone, 8 in. by 4 in., the parallel sides being 2 in. Not shown is Curlu, also 8 in. by 4 in., but with radiused ends, one concave and the other convex. All the tiles are available in a range of 160 colours, including mottles and flecks. Prices, supplied and fixed, are from about £4 17s. 6d. per square yard.



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Hereford Tiles Ltd., Whitestone, Hereford.

Correction

The name of the main contractor of the British Pavilion at Expo '67 was incorrectly given as Sir Alfred McAlpine in the Turners Asbestos Cement Co. advertisement which appeared in the May AR. The main contractor was Robert McAlpine Limited, Montreal.

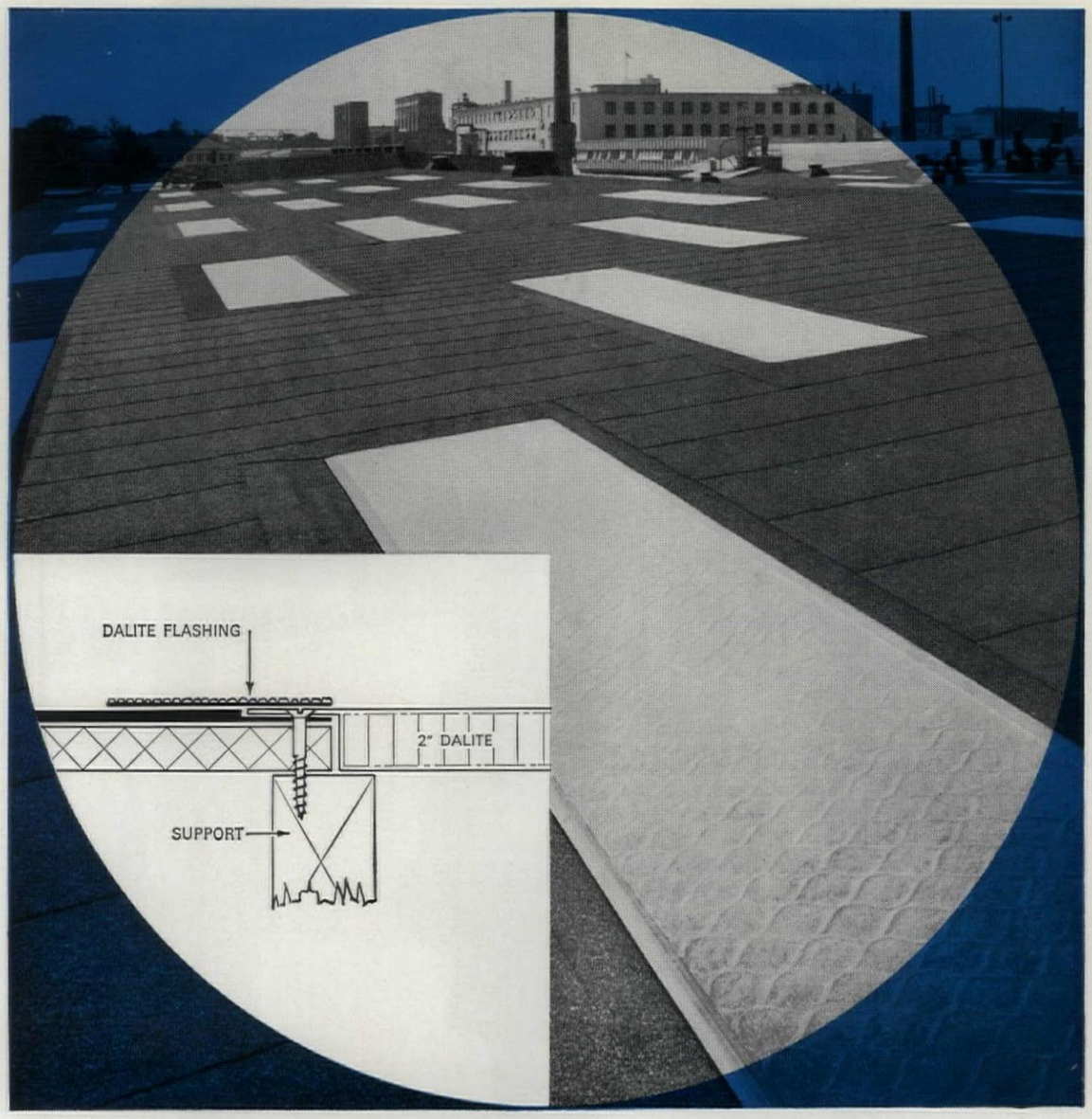
Contractors

Engineering Factory, Darlington, Co. Durham. *Architects:* Kevin Roche, John Dinkeloo and Associates. *General contractor:* Bernard Sunley & Sons Ltd. *Sub-contractors: Cast iron drainage and plumbing, mechanical services, heating, ventilation, electrical services:* G. N. Haden & Sons. *Structural steelwork:* Ethne Engineering. *Ironmongery to timber doors:* Parker, Winder & Achurch. *Timber doors:* Southern Ltd. *Structural steelwork and steel chimney:* Redpath, Brown & Co. *Hollow metal doors:* Williams & Williams Ltd. *Mosaic hardwood flooring, vinyl flooring:* The Marley Tile Co. *Built-up felt roofing and decking:* The Ruberoid Co. *Tarmacadam surfacing:* Tarmac Roadstone Ltd. *Internal glazing to hollow metal doors, curtain walling including glass:* J. A. Howard Ltd. *Monolithic granolithic flooring:* Malcolm MacLeod & Co. *Overhead doors:* Overhead Doors (GB) Ltd.

Factory at Swindon. *Architects:* Team 4. *General contractor:* Pope Brothers Ltd. *Sub-contractors:* Modern Engineering Ltd. Ruberoid Ltd. G. N. Haden & Sons Ltd. Faulkner Greene & Co. Dunlop Semtex Ltd. Tenon Contracts Ltd. Radiation Catering Equipment.

Factory at Swindon. *Architects:* Marcel Breuer and Robert F. Gatje; Frishman Spyer Associates. *General contractor:* William Moss & Sons. *Sub-contractors: Steelwork:* Dawnays Ltd. *Roofing and cladding:* The Ruberoid Co. *Aluminium windows and door frames:* Henry Hope & Sons Ltd. *Heating, ventilating and mechanical services:* Hopes Heating & Engineering Ltd. *Electrical services:* Hickmans (Swindon) Ltd. *Facing bricks:* Richard Parton Ltd. *Concrete blocks:* Lignacite Ltd. *Ironmongery:* Alfred G. Roberts (Exports) Ltd. *Sanitary fittings:* Adamsez Ltd. *Up and over doors:* Overhead Doors (GB) Ltd. *Flexible doors:* W. Langley Ltd. *Lavatory cubicles:* Flexo Plywood Industries Ltd. *Vinyl floor tiles:* Colovinyl Ltd. *Paint:* Hadfields (Merton) Ltd. *Carpet:* Catesbys Ltd. *Kitchen equipment:* W. M. Still & Sons Ltd. *Dock levellers:* Blue Giant Ltd. (Canada).

Factory at Cramlington. *Architects:* Chapman, Taylor, Partners. *General contractor:* Trollope & Colls. *Sub-contractors: Structural steelwork:* J. Austin & Sons (Dewsbury) Ltd. *Flooring:* Johnsons Floor Co. *Windows and rooflights:* Henry Hope & Sons Ltd. *Precast roof slabs:* Costain Concrete Ltd. *Roofing:* Rock Asphalt Co. *Plumbing:* George M. Bilclough Ltd. *Partitioning:* Roneo Vickers. *Roller shutters:* Mather & Platt Ltd. *Boiler installation:* Richardson West garth (Hartlepool) Ltd. *Ventilation and air conditioning:* Air Plants Ltd. *Pipework installation:* Capper Pipe Service Co. *Electrical installation:* Watson Norrie Ltd.



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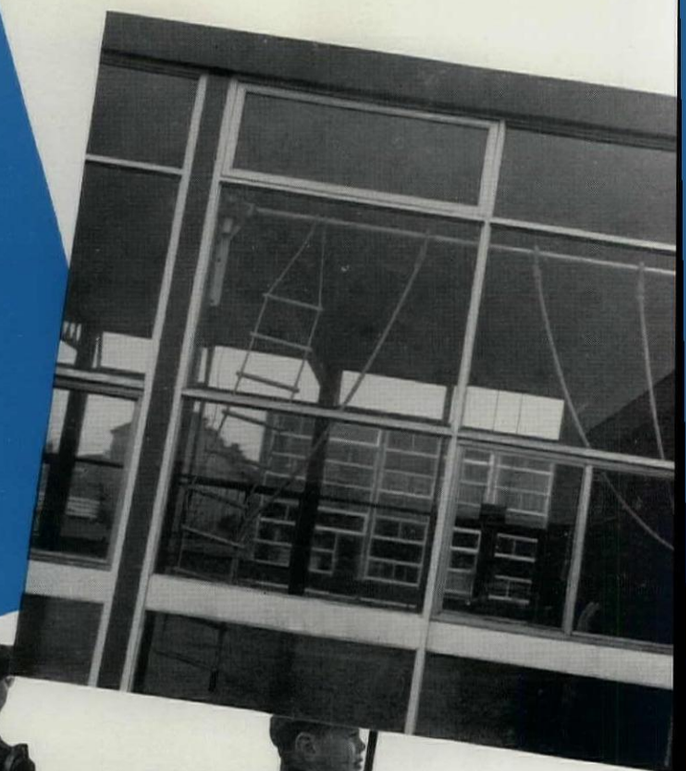

* South Eastern Architects Collaboration which represents the County Councils of Hertfordshire, Kent and Essex with the Ministry of Public Buildings and Works.

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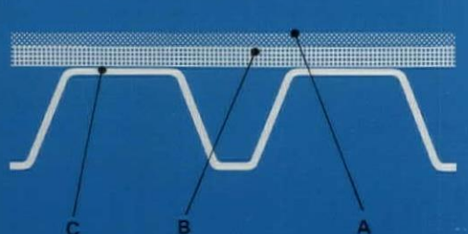

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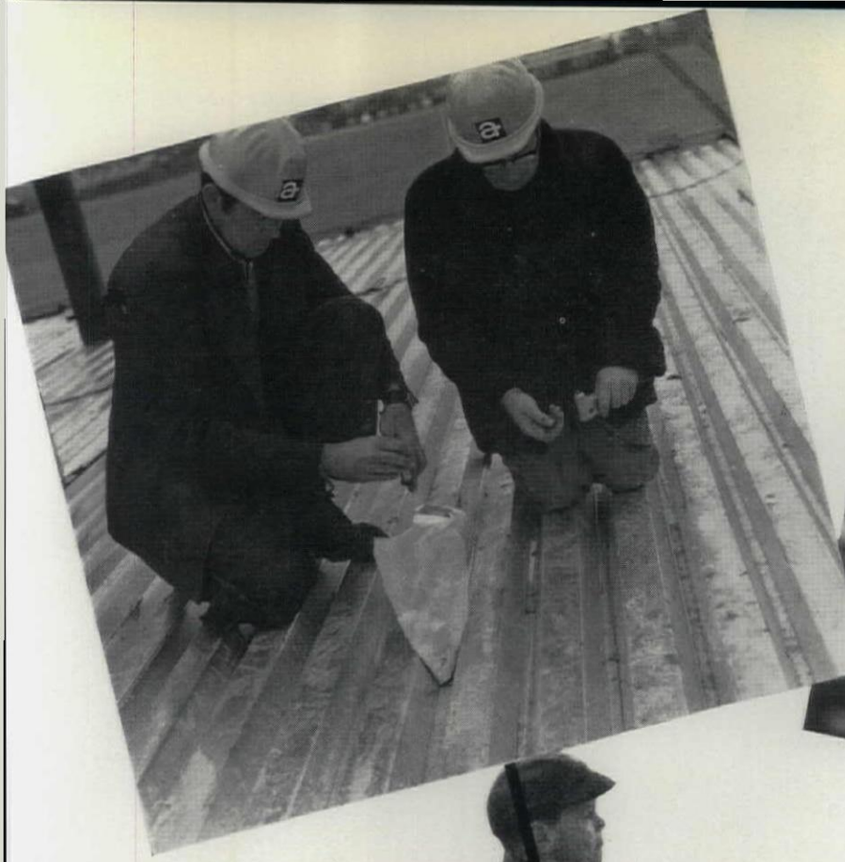

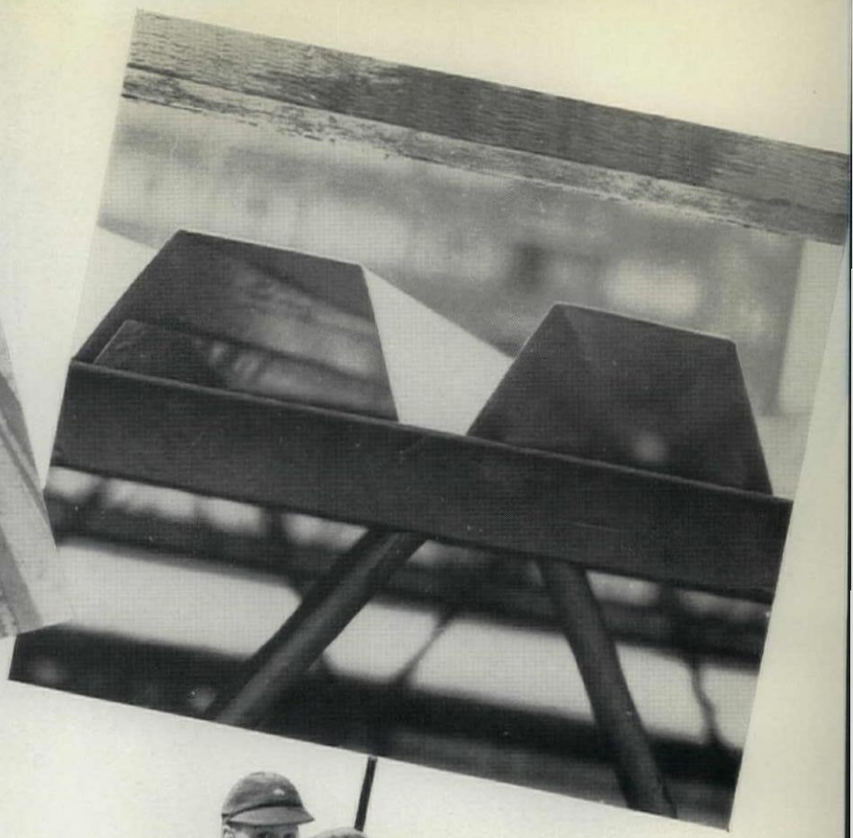

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Ian Nairn

STOP PRESS

A monthly anthology from all over Britain of townscape problems, outrages and opportunities, compiled by Ian Nairn.

OUTRAGE

HESLINGTON, NEAR YORK

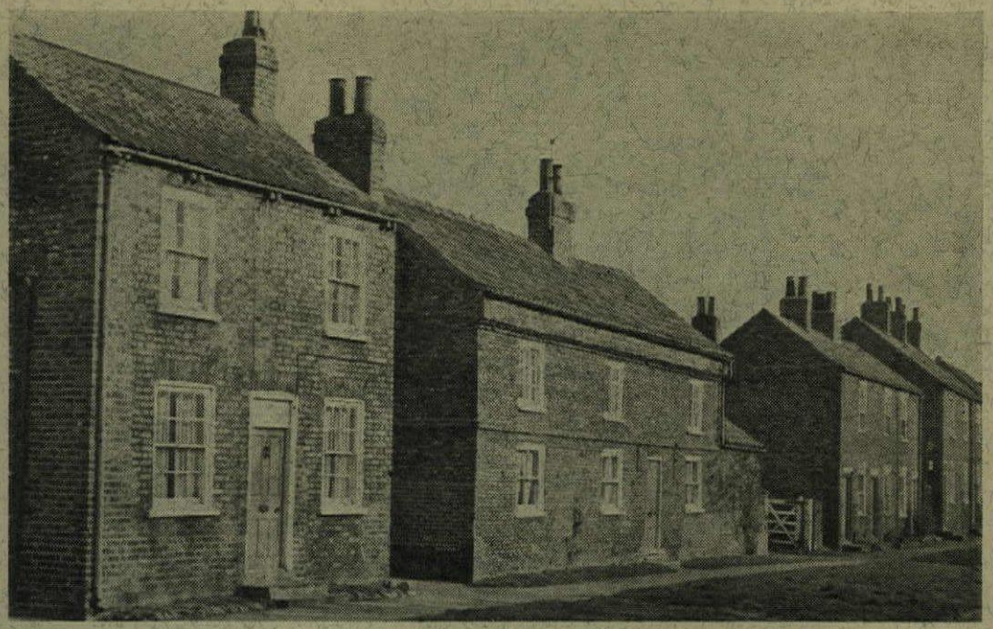
The comi-tragic effect of the impact of the Big Five (Six, including Martins) on what was a simple village street, 1, now become a banker's alley for York University. The line-up is as follows: Midland with a straightforwardly nasty Brummagem villa, 2; Lloyds and Nat. Prov.

3

with temporary prefabricated buildings, 3, offensive because not temporary enough—which will yield to further cottage disembowelling; Martins a complete new cottage, 4, with the brick and tiles just wrong; Westminster a conversion, 5, with a Beatrix Potter bow-front and the village post office given two more for good measure; Barclays, better in fact than photograph, 6, crude, but at least with an effect of deliberate

5

dissonance—probably unintentional. Laugh or cry, at a collective breakdown by the people who should be leading the country's taste? The shape of the street is still there, though the character has been changed completely. It seems a waste of housing units in an area which is desperate for them—yet the old Heslington would have gone anyway,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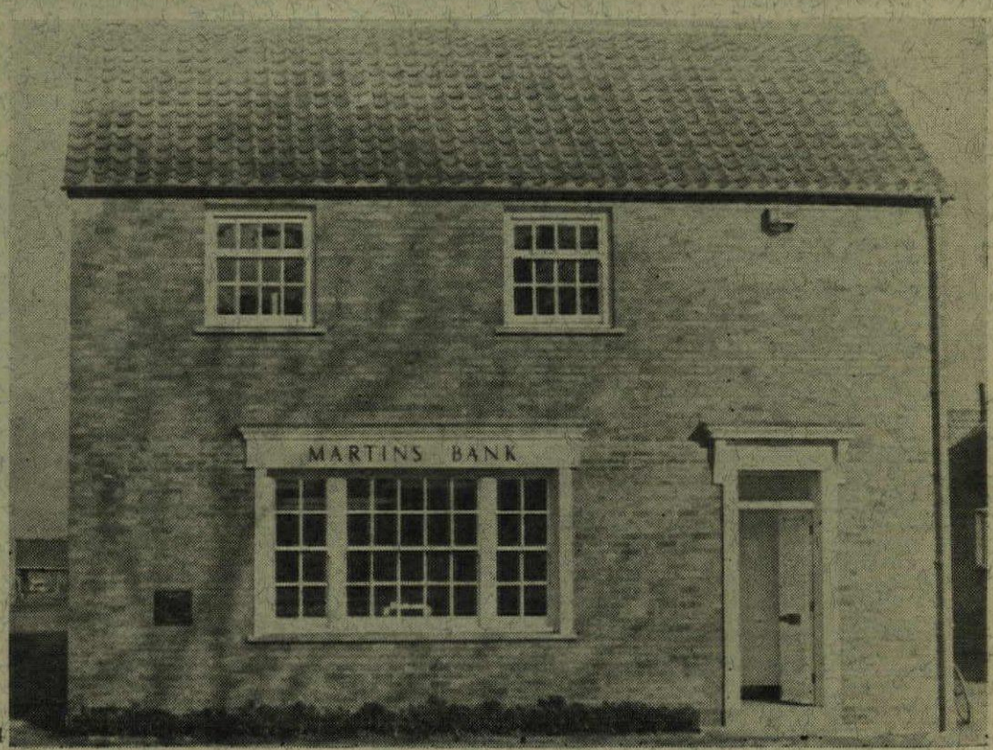

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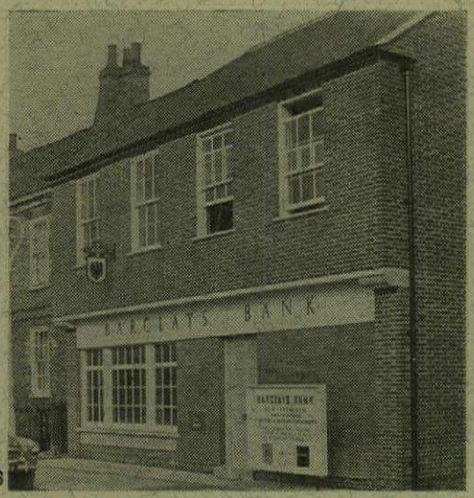
sunk as surely by with-it dons as by square bank managers. The real loss is the chance for a single building designed on the York campus in the York



6

prefabricated system, incorporating *all* the banks, as in an airport terminal. Or would prestige have been at stake?

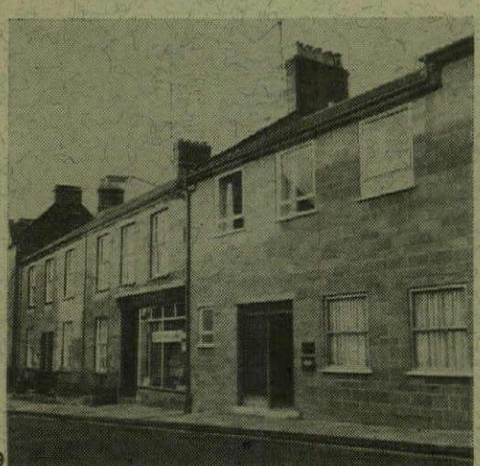
TAUNTON, SOMERSET
An example of what not to do in new commercial buildings, 7, which does no credit to the Market Place at Taunton, is alas a design by Julian Keable. Are each decade's good designers doomed to be the bane of the next decade's townscape?

CAUTION

SOUTH PETHERTON, SOMERSET
A sad contrast of old and new lettering on a local signpost, 8. The gentility of the inverted commas in Hospital is an especially unattractive touch. And the further caution is to watch that the few worthwhile cast-iron signposts don't get taken down in wholesale replacement by Worboys Committee signs, which are just as genteel as the 1930's in their weakly up-to-date way: ton-up lads on powered bicycles.

CREDIT

ILMINSTER, SOMERSET
The simplest and most basic gesture of all, 9; maintaining the street line with a new terrace. No finesse of detail and none needed; garages at the back with access through the entry, centre right in 10. But how many designers would be so content to leave a simple job alone?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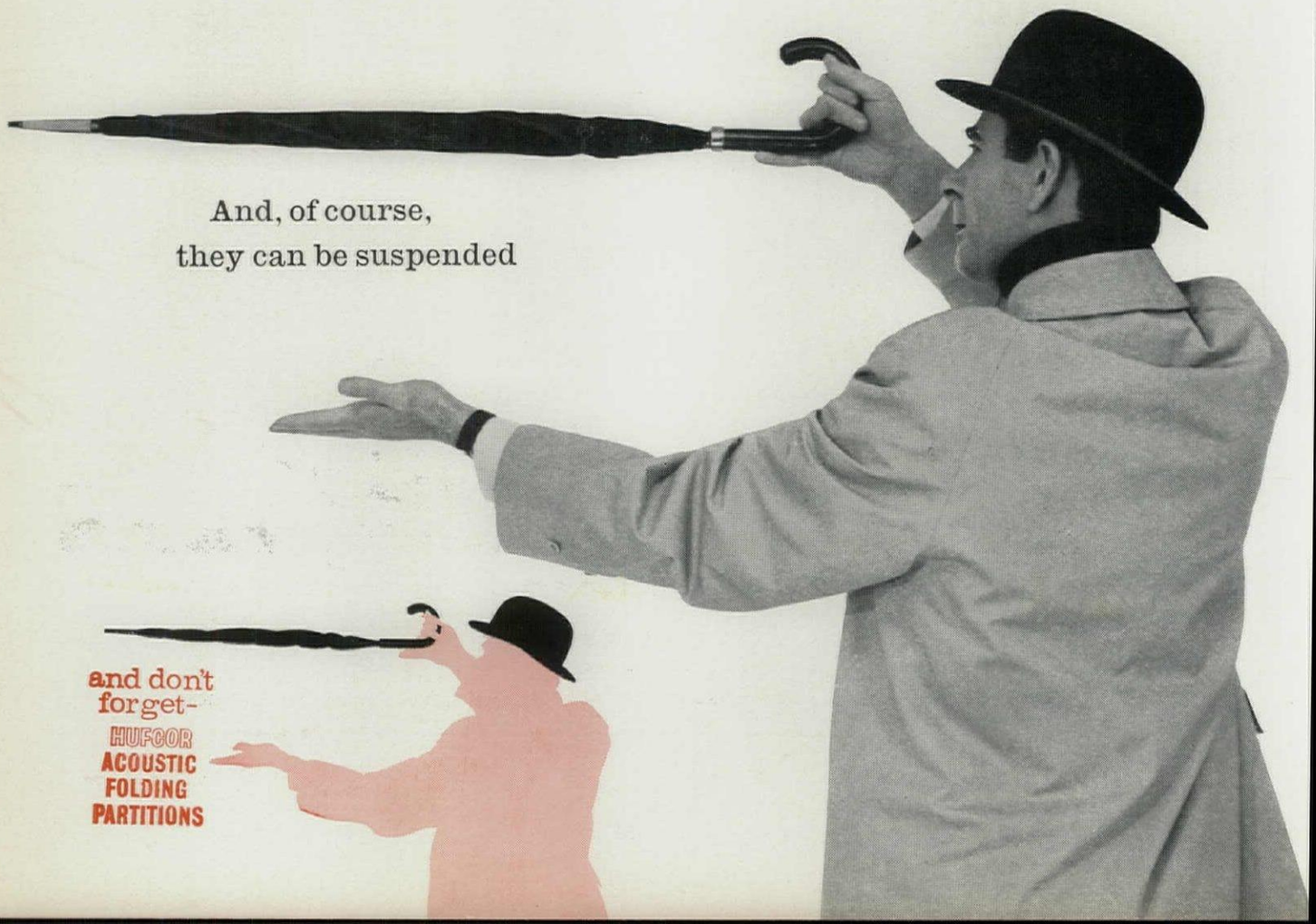

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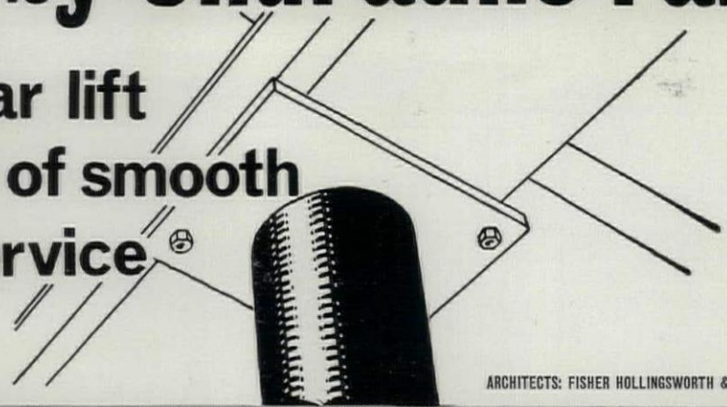

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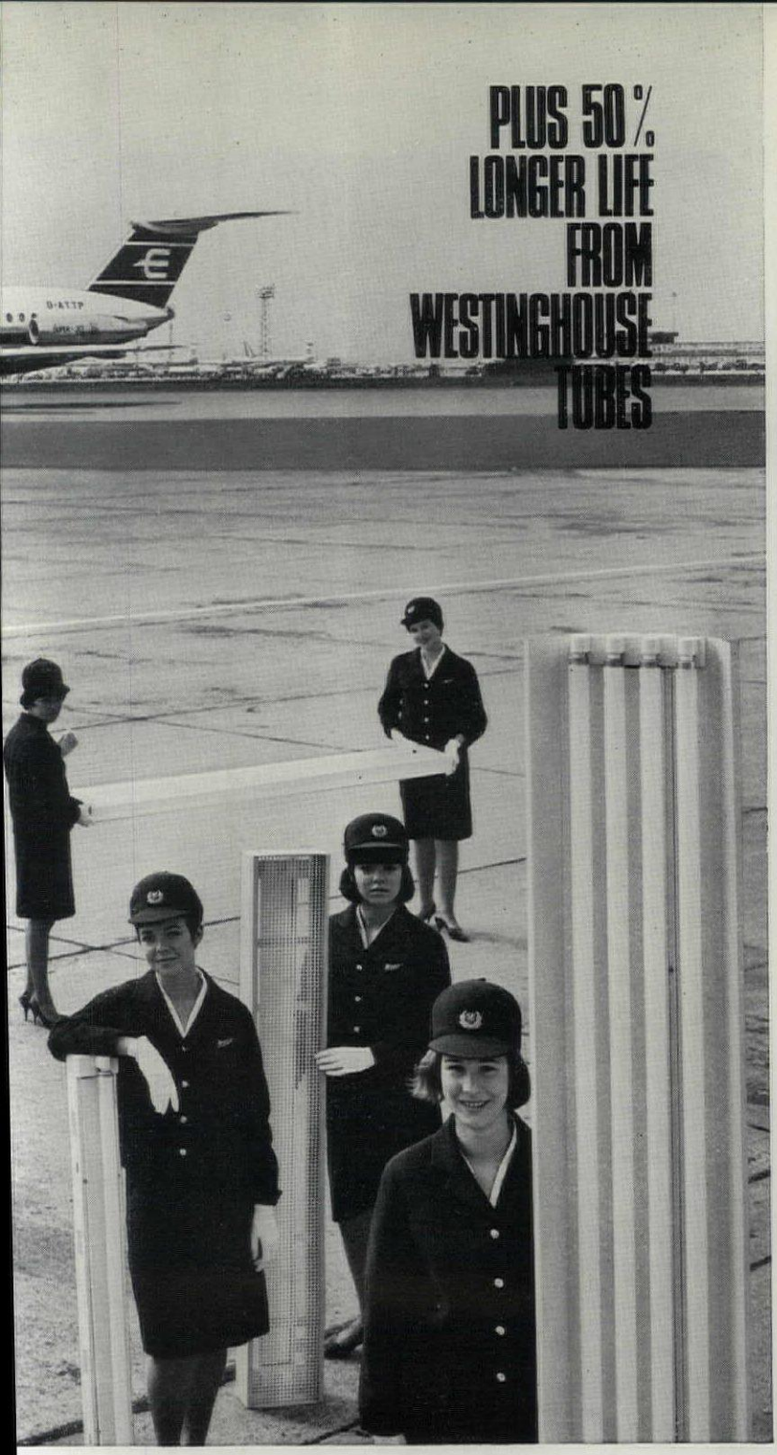

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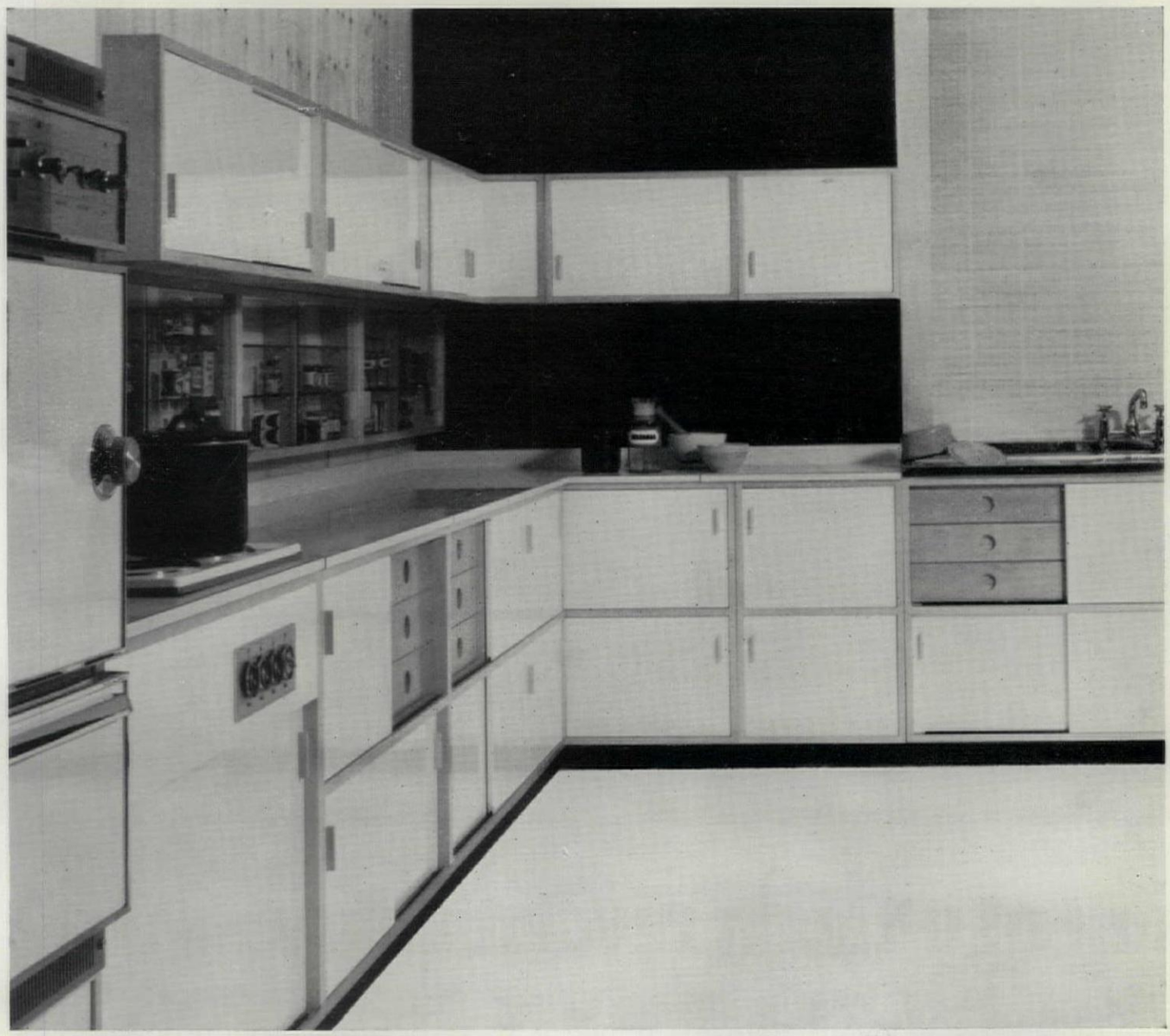

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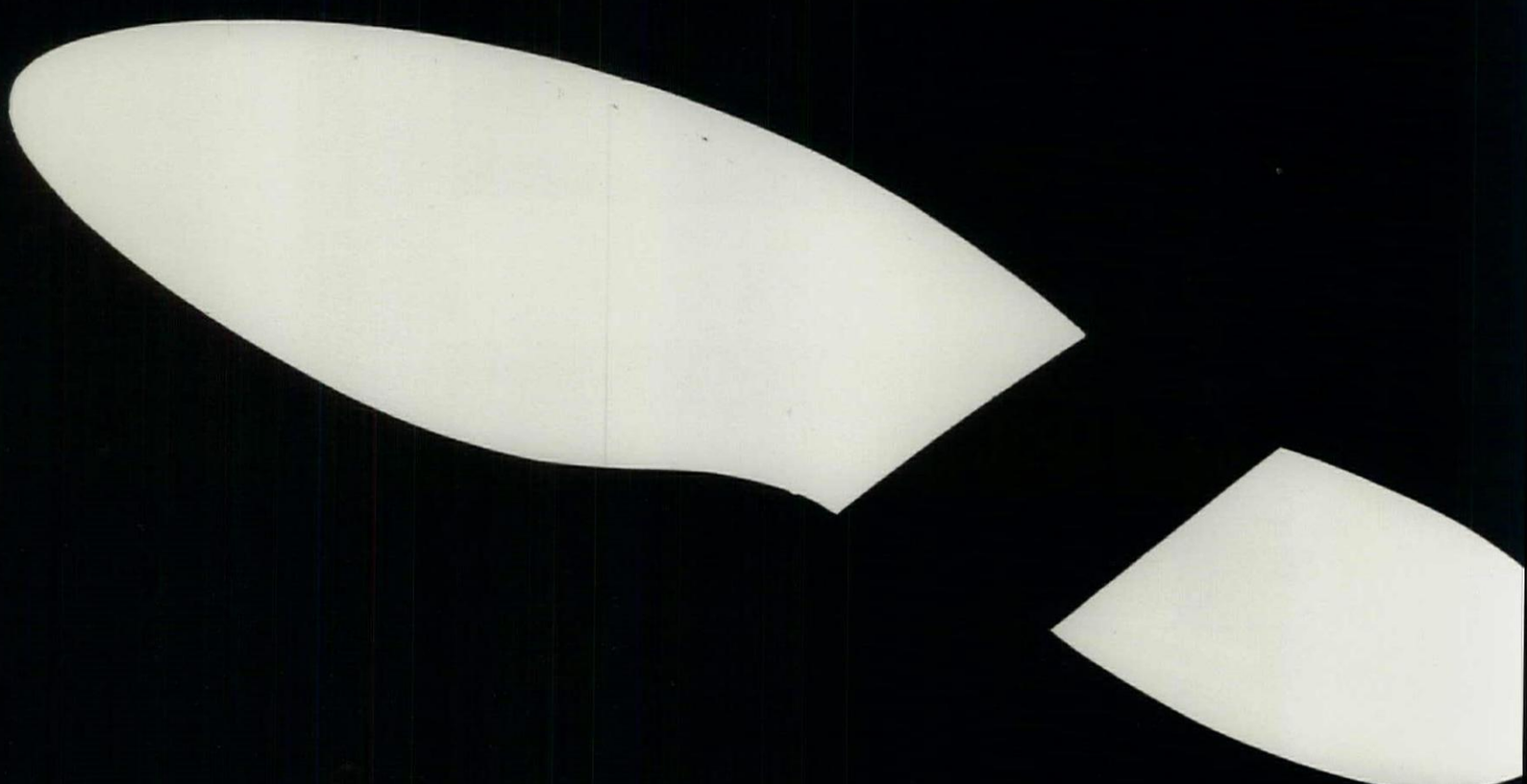

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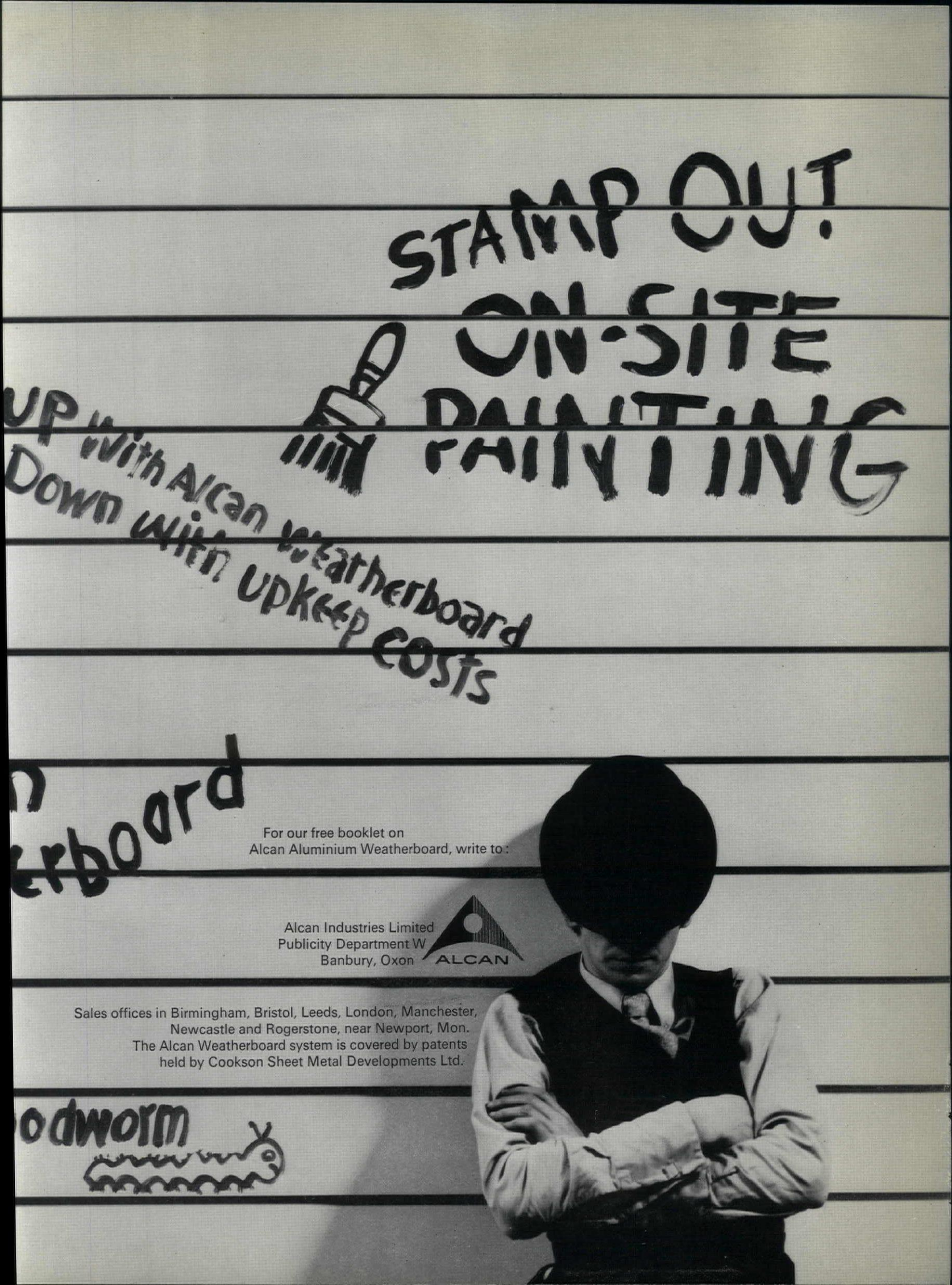
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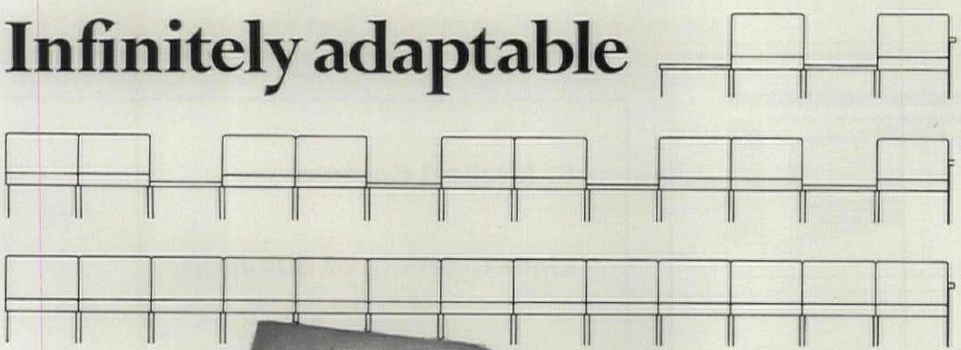

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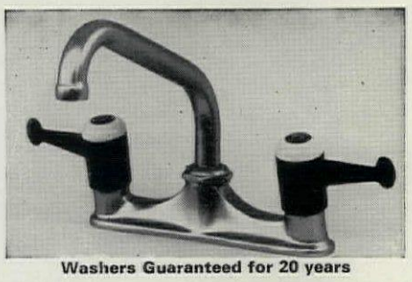

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