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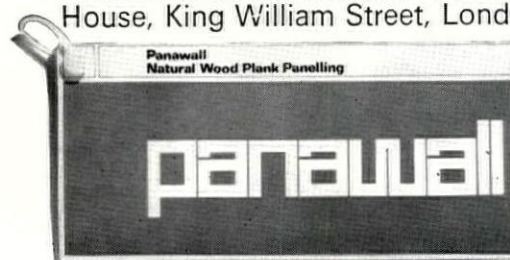
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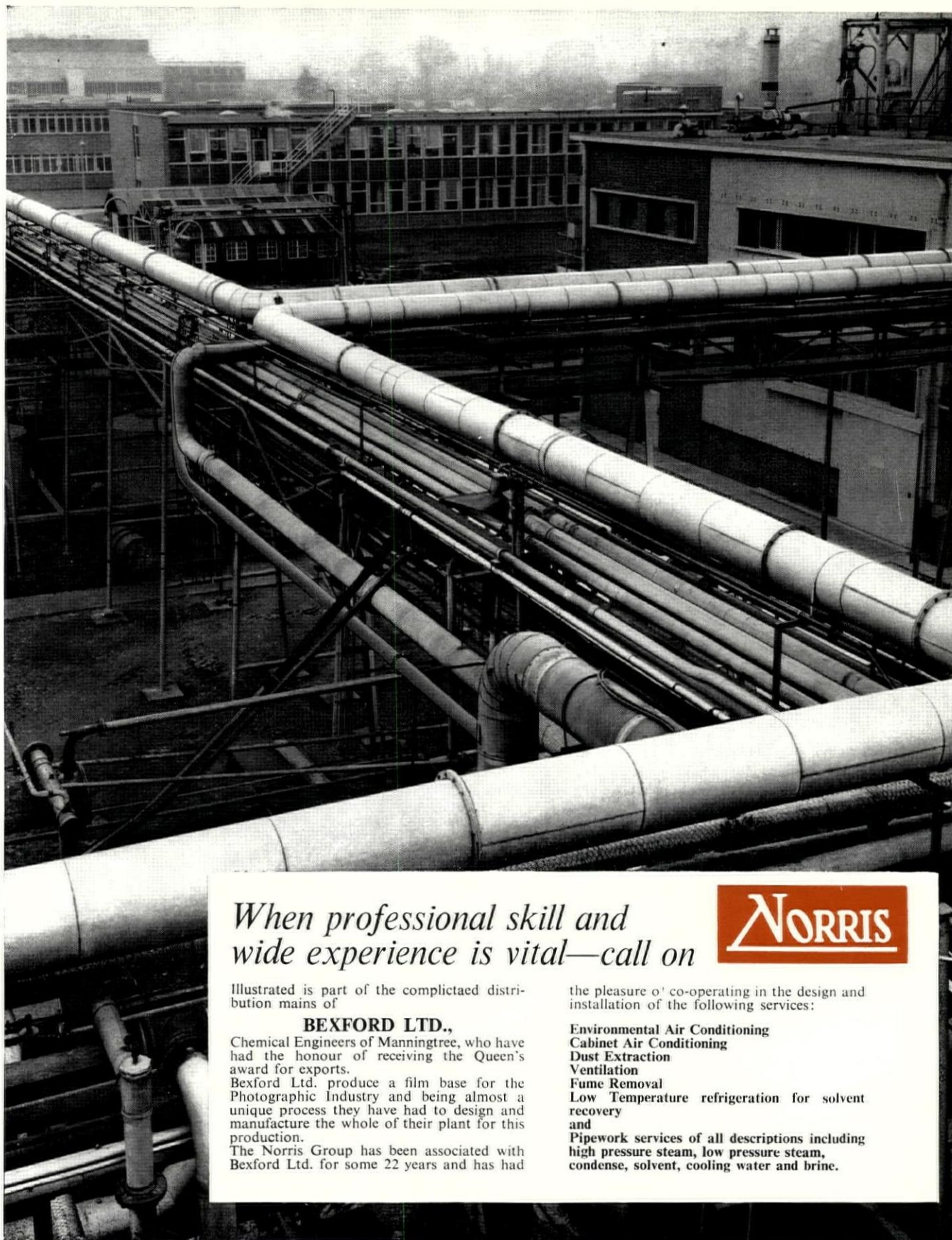
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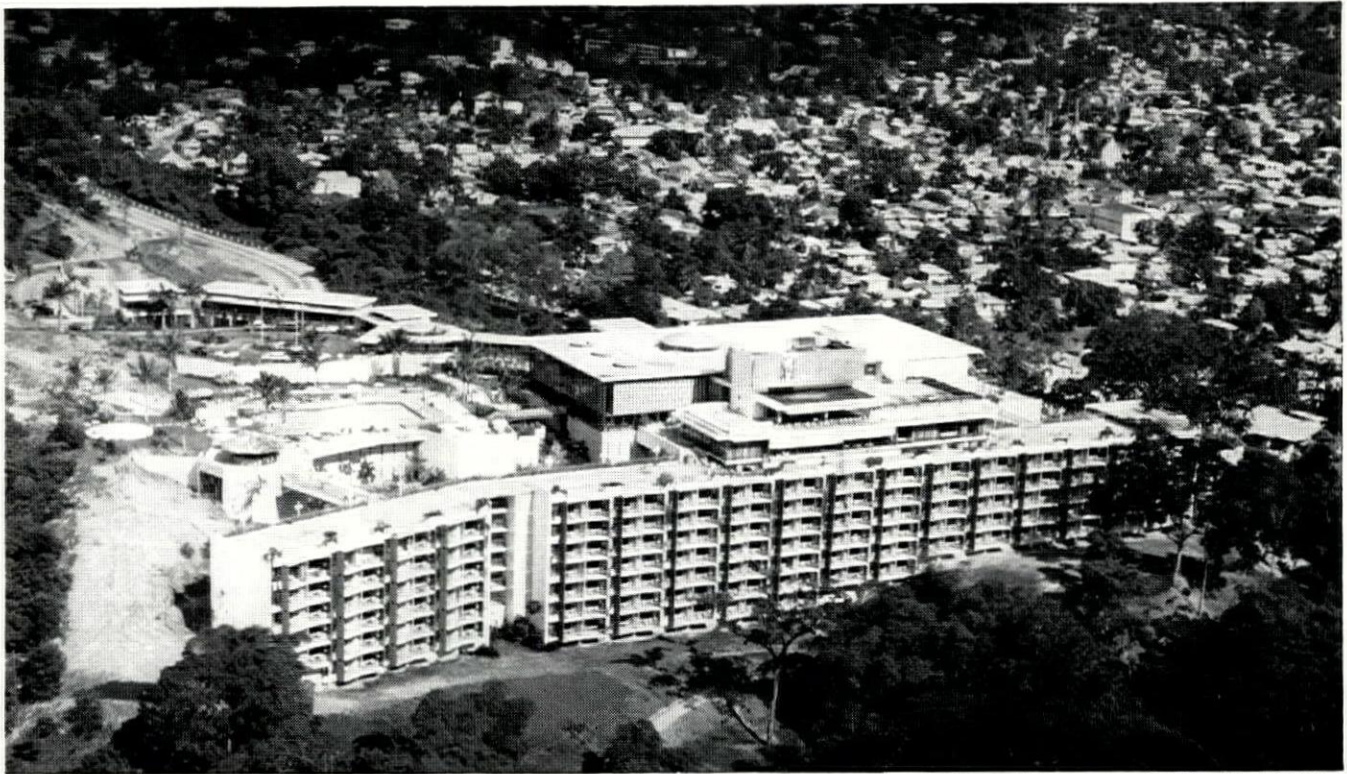
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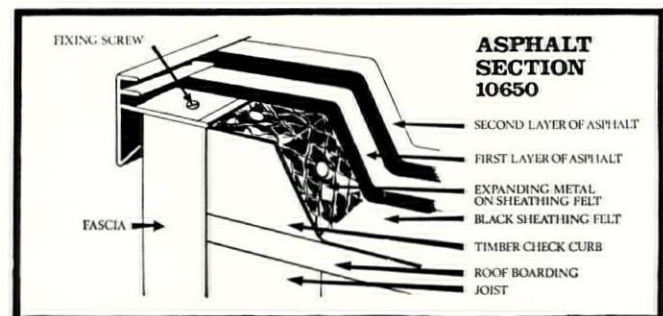
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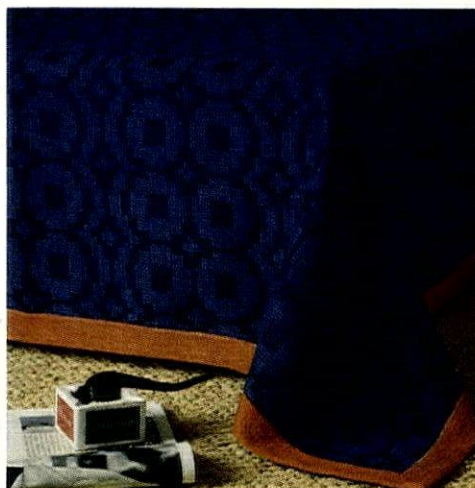
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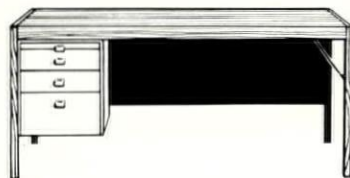


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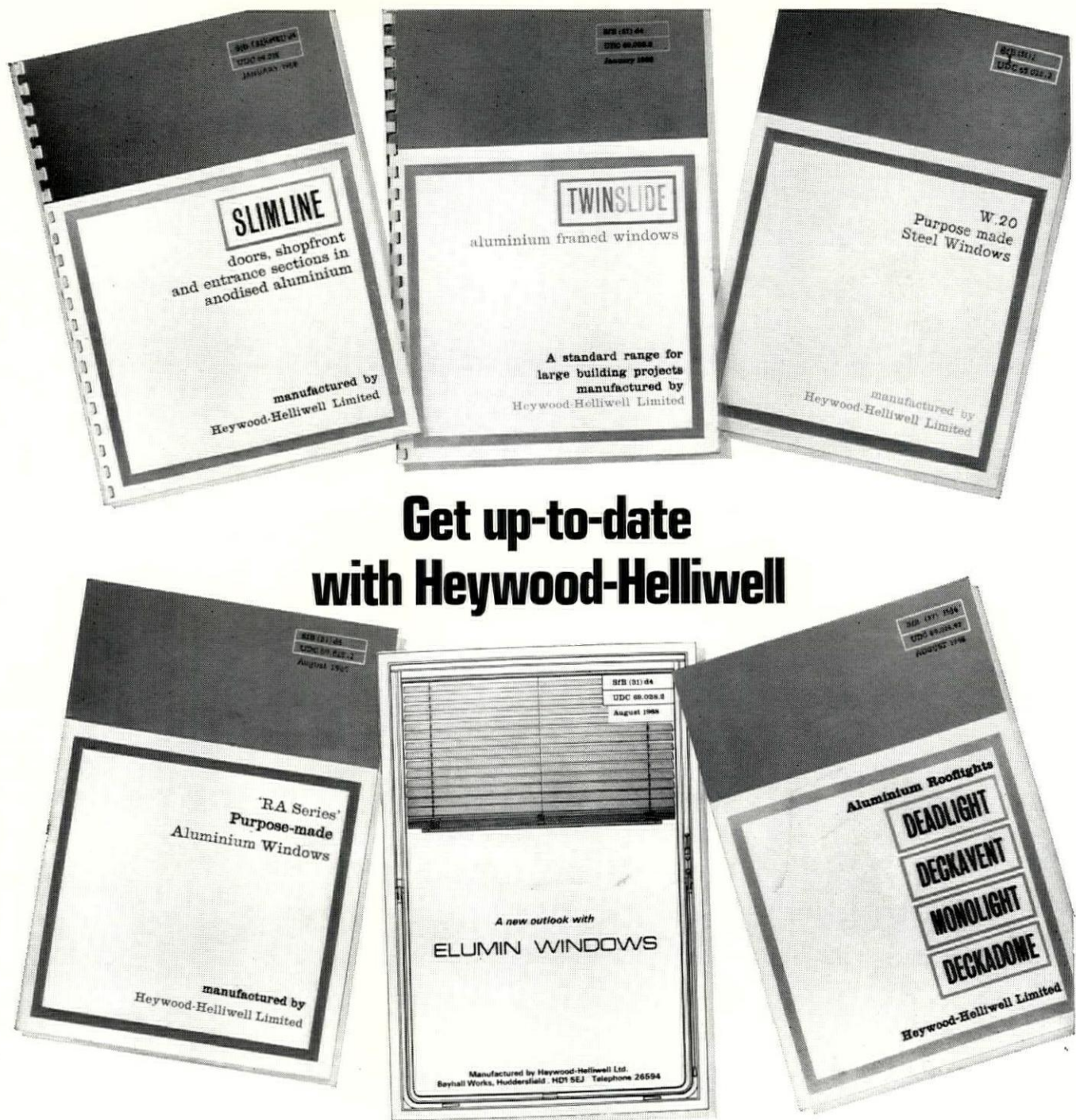
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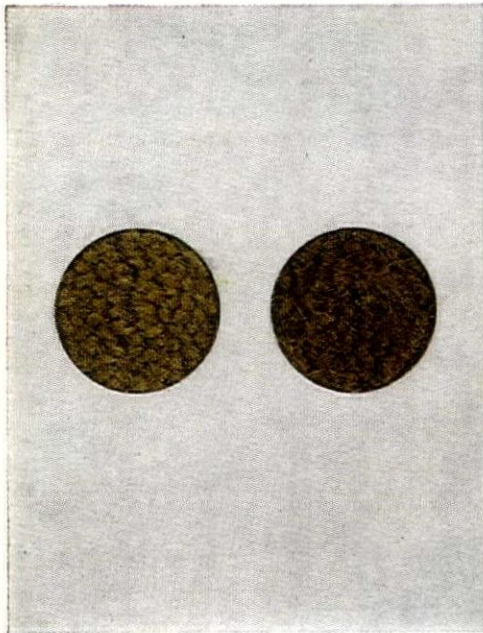
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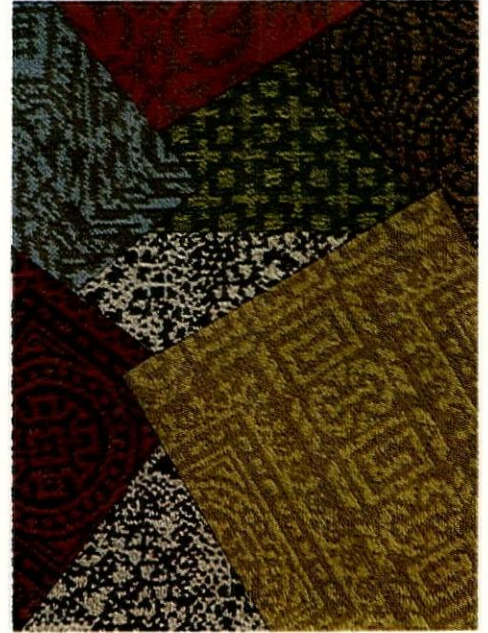
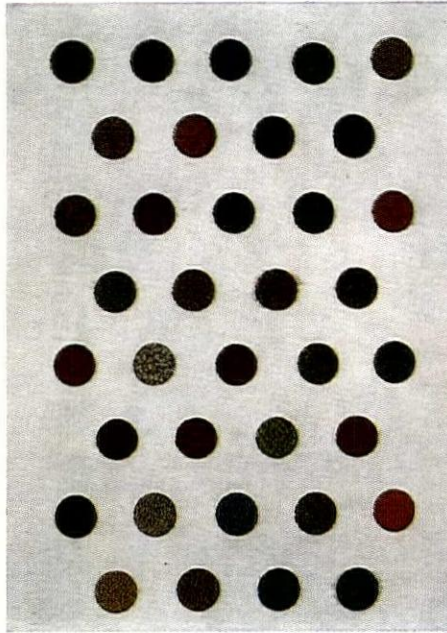
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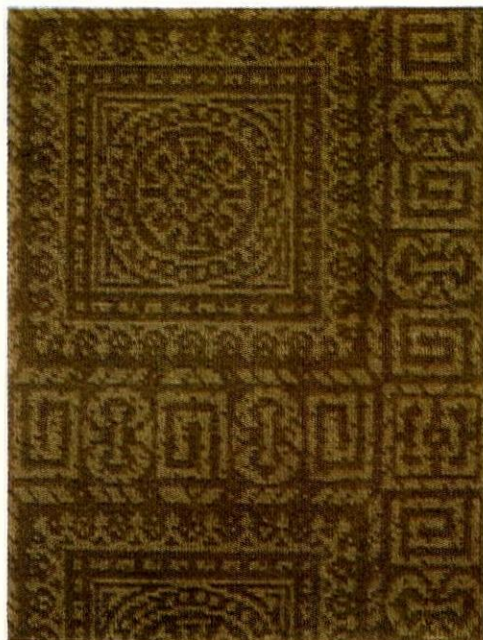
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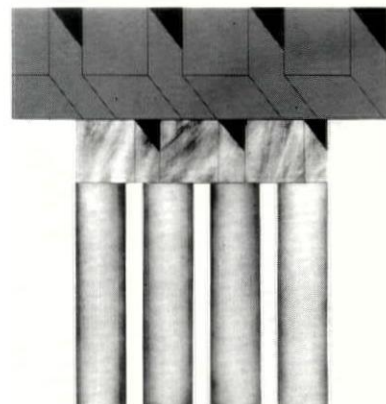
B. E. Wilkins

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FEBRUARY 1969
VOLUME CXLV NUMBER 864
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COVER

The paintings of Nicholas Georgiadis shown in his recent one-man exhibition at the New Art Centre, London, have a strong affinity with architecture, as the example on the cover and below, shows. It is called 'Standing Up I'. Georgiadis was born in Athens and studied architecture there and in New York, before studying painting at the Slade School, London, where he now teaches.

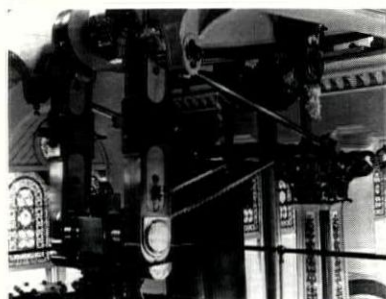


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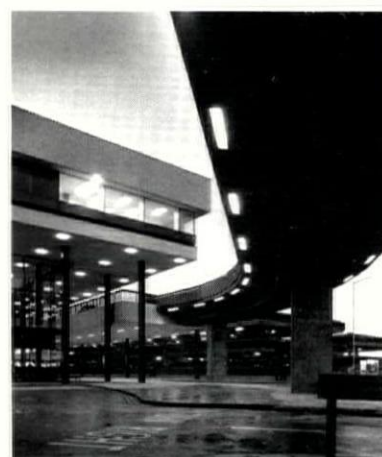
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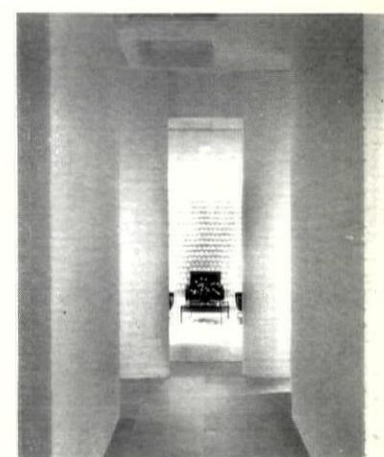
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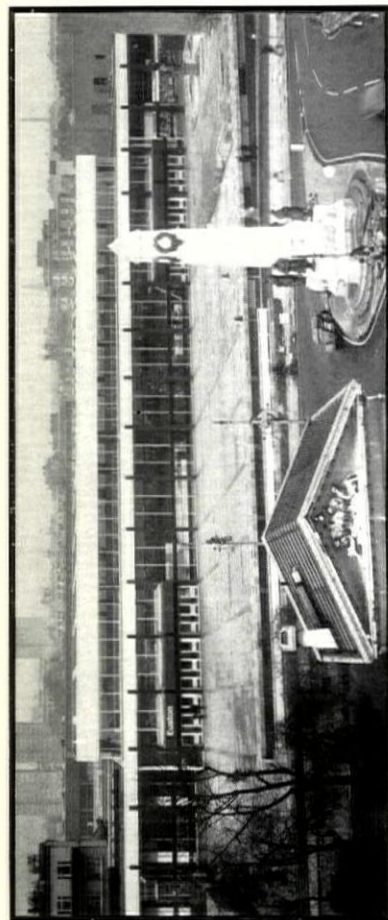


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Now that the new Euston station has been built it is evident—as many suspected before—that the destruction of Hardwick's great arch was a wholly unnecessary piece of vandalism. Retained where it stood it might have cramped the replanning of the station (a survey shows that its original site is now the terminal end of the new Platform 8), but had the stones been numbered and stored when it was dismantled, it could have been re-erected to add character and focus to the new raised forecourt, as the montage by Kenneth Browne below shows. At present this forecourt (picture on left) is a bleak and empty space, too large for the façade of the new station—clean, impersonal and unemphatic—to dominate. The historic arch could have transformed it into something handsome and meaningful. Before the arch was demolished in 1961, pleas were made for the stones to be kept with this very possibility in mind, but British Rail were determined to destroy it utterly, an act for which they can never be forgiven. See also 'The Euston Murder,' page 146 of this issue.



PHYSICIAN CURE THYSELF

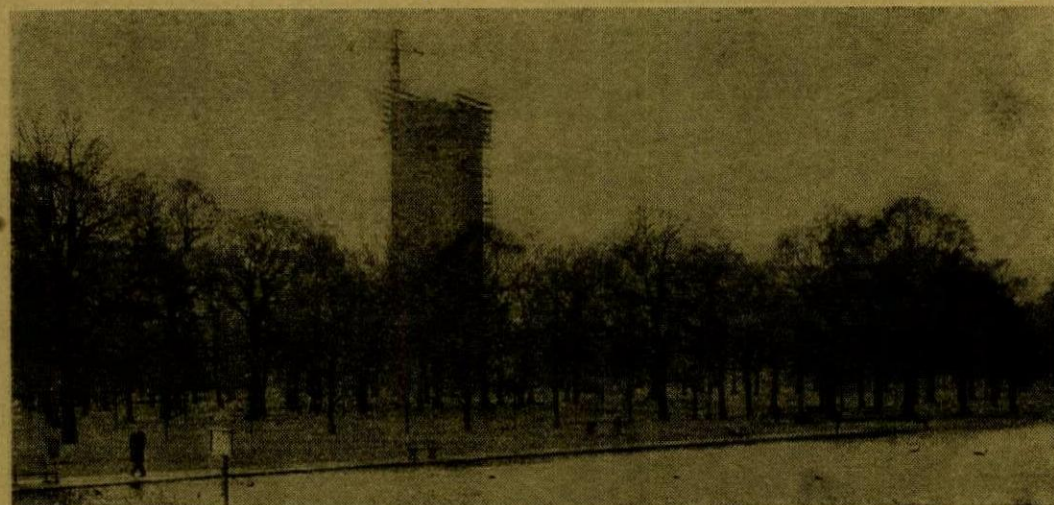
The tower of the new Knightsbridge Barracks can now be seen from the middle of Hyde Park, rising above the trees and thereby limiting the park's apparent extent and destroying the effect of rurality. It is no reflection on Sir Basil Spence's design for the building to say that this is a tower in the wrong place, and it is doubly to be complained about because it has been put there by the Government and is thus yet another example of the Government's tendency to think of itself as being above the planning policies and controls that its own legislation has established.

The Government declared its support for the GLC's policy of keeping high buildings a little way back from the edge of the Royal Parks, but insisted (in spite of objections from the Royal Fine Art Commission) on Knightsbridge Barracks having a tower actually within the boundary of the park.

Other examples could be quoted. No private developer would have got away with the bulk of the new Government office buildings in Horseferry Road which are ruining the skyline of Westminster, and there was the recent case of a tall office building with a splendid view over the Thames which was allowed additional plot-ratio by the planning authority (Westminster City Council) so that it could include a public restaurant at the top to take advantage of this view. The council indeed in this case only gave planning consent on the explicit condition that the top floor should be a restaurant open to the public, not simply an office canteen, yet on its completion a lease of the building was taken by the

Ministry of Public Building and Works for the use of a Government department, which thereupon made the top floor into an office canteen, inaccessible to the public.

This is a relatively minor case, but it is typical of a disturbing trend.



The tower of Knightsbridge Barracks, now under construction inside Hyde Park.

It may be objected that it would be undesirable to have the public passing through a Government office on the way to a restaurant—especially an office, as this one is, where security is important. But in seeking accommodation for Government departments

the Ministry should surely take into account existing restrictions on use and make its choice accordingly, instead of assuming the right to override such restrictions.

The nationalized services behave in the same way—witness the recent action by British Rail in dismantling and offering for sale the clock from St. Pancras Station when the building had recently been listed as a Grade One historic monument, not to be mutilated without specific ministerial sanction.

There may be good reasons—though they are not evident to the AR—why the Government is technically not bound by its own town-planning laws; but wilfully to ignore, whenever to do so is convenient, the laws it makes others conform to, brings those laws into disrepute, is bad and unfair government and suggests a scornful attitude to planning on the part of the very people who should be setting an example.

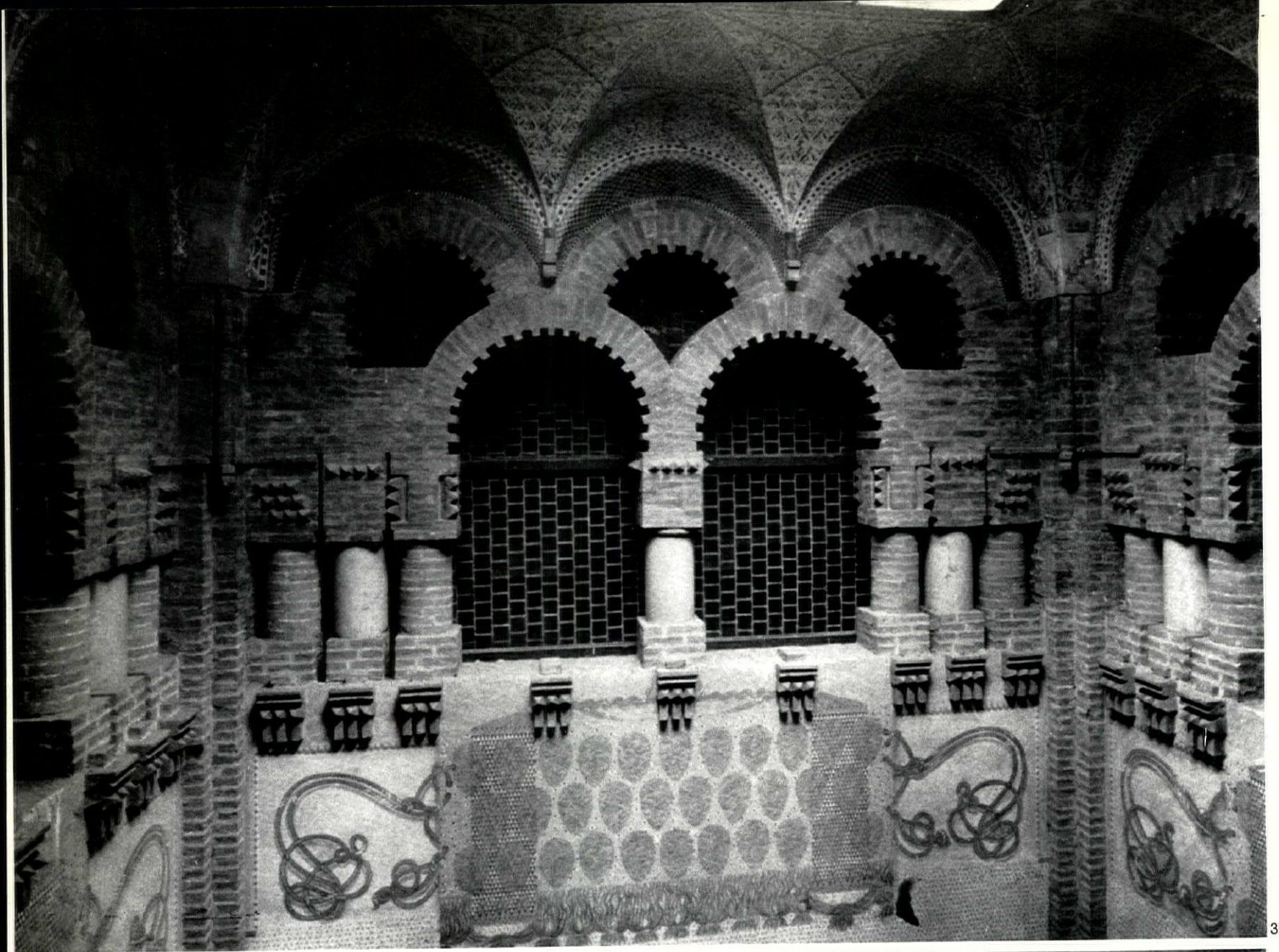
MERCATO GRANARIO MANTUA

Mantua, for three centuries the scene of Gonzaga splendour and patronage, the city of Alberti and Mantegna, the birthplace of Monteverdi, declined abruptly after its sack by Imperial troops in the early seventeenth century. Gradually it withered as a city of any significance on its secession to the Austrians in whose ownership it remained off and on for a hundred and fifty years. As Italy unified, Mantua experienced an economic revival, insignificant by Renaissance standards but enough to see the building of a number of sizable town houses for the newly prosperous merchant classes. Most were large and dull, all were stucco and stone and little more need be said about them. In 1912, however, two buildings by the same hand, one signed, the other not, were rising simultaneously and both must have commanded attention even in a city so completely overlaid with the monuments of the past. The more significant one is the Mercato Granario, 2, off the Piazza delle Erbe. Designed as a corn exchange below, and a chamber of commerce above, 1, it is a remarkably full-blooded and carefully detailed building. A high loggia, in which business was



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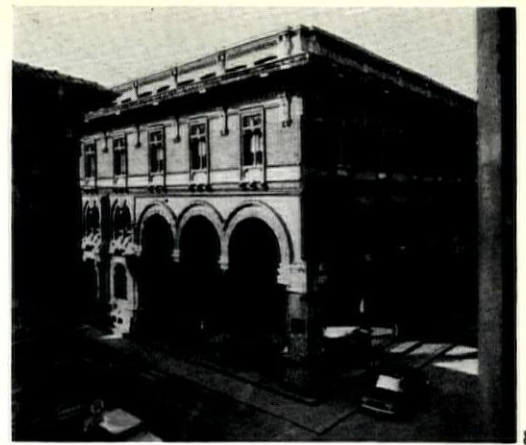
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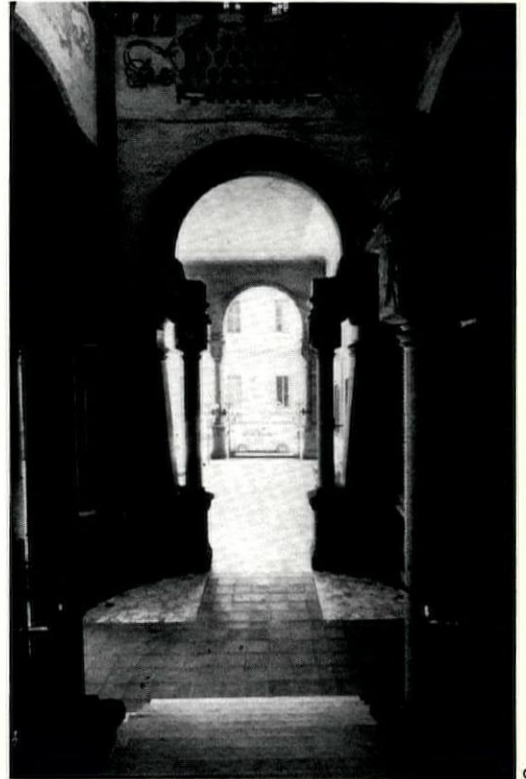
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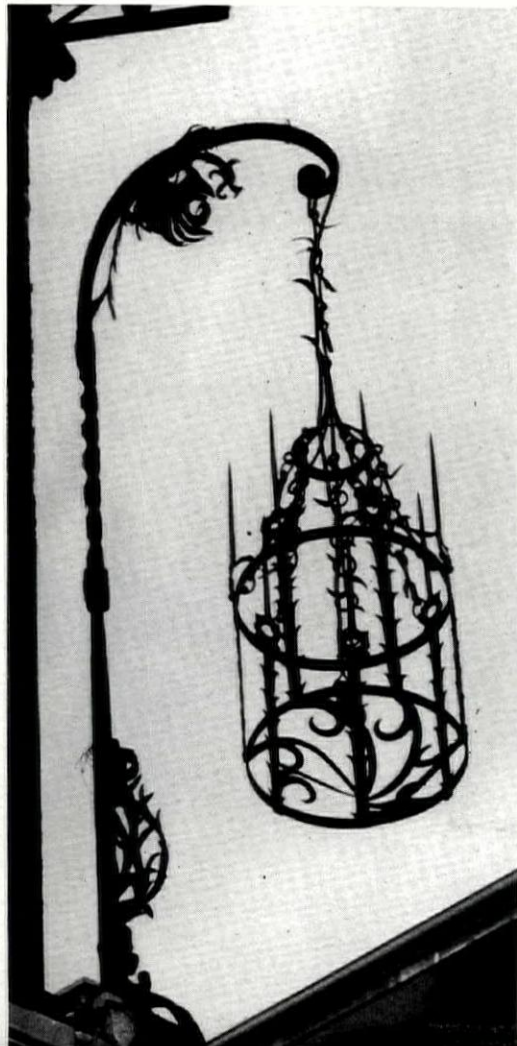
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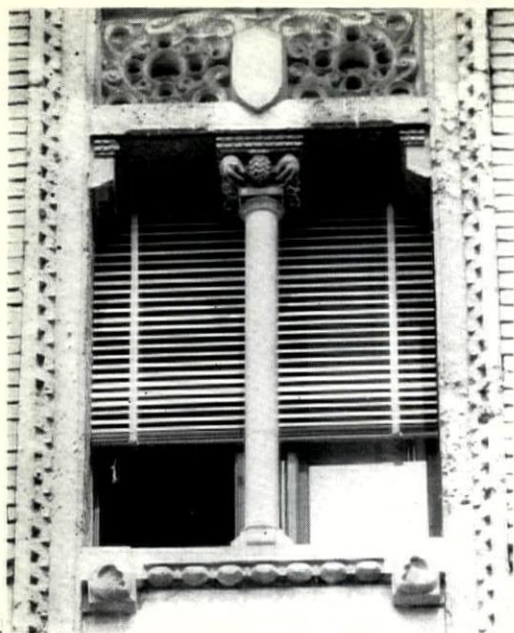
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transacted, gives on to a double-volume internal stone well, 3, 4, lit by a rectangular lantern. Around the upper part of the loggia are a series of mezzanine offices, 5, for the Chamber of Commerce. Out of the light-well leads a staircase to a half-height landing which is also the meeting point of the entrance staircase for the chamber of commerce. From this landing, two flights lead up to the chamber and all the rooms lead off a corridor encircling the light-well. The decorative elements are simple—plaster, cut brick, carved stone and cast ironwork, 8, 9. Their handling is astonishing. From the Moorish intertwining radiating patterns on the ceiling of the light-well to the stylized drums of the columns and pilasters, 10, and the medieval armoury of vicious cast iron, 6, 7—spiked balls on chains—the detailing is assured and eccentric, 11, 12.



10

83



11



13, 14

The architect, Aldus Andreani, is unknown outside his own city, omitted from Italian architectural history and, touchingly, much admired locally for his corn exchange in a town where such architecture might expect to be out of fashion. His other extant building, a merchant's house, 13, 14, is signed and exhibits similar bravura, 15, 16.

TIM ROCK

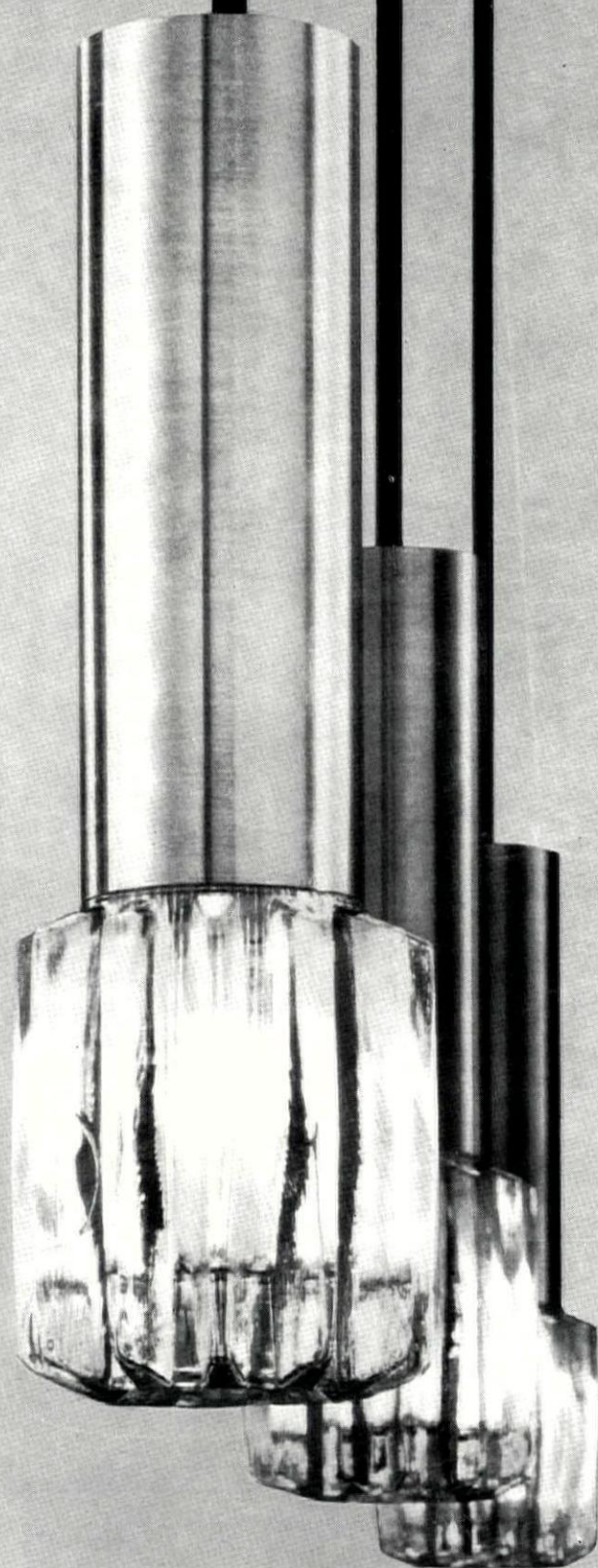


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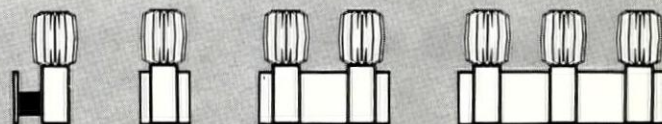
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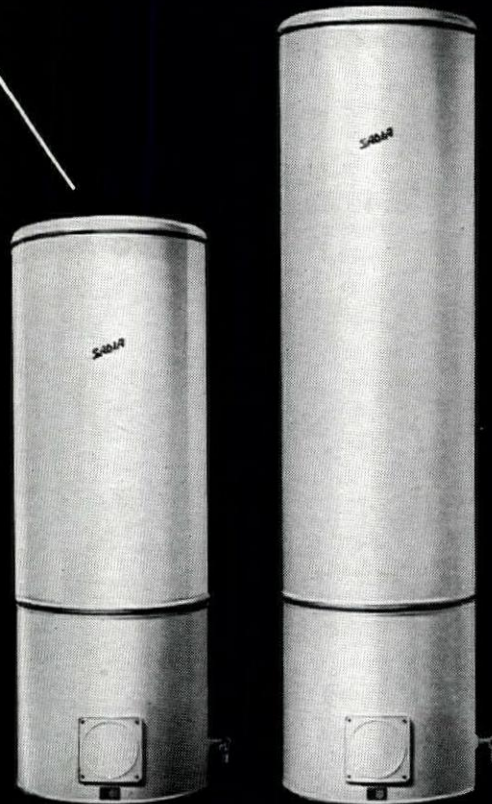
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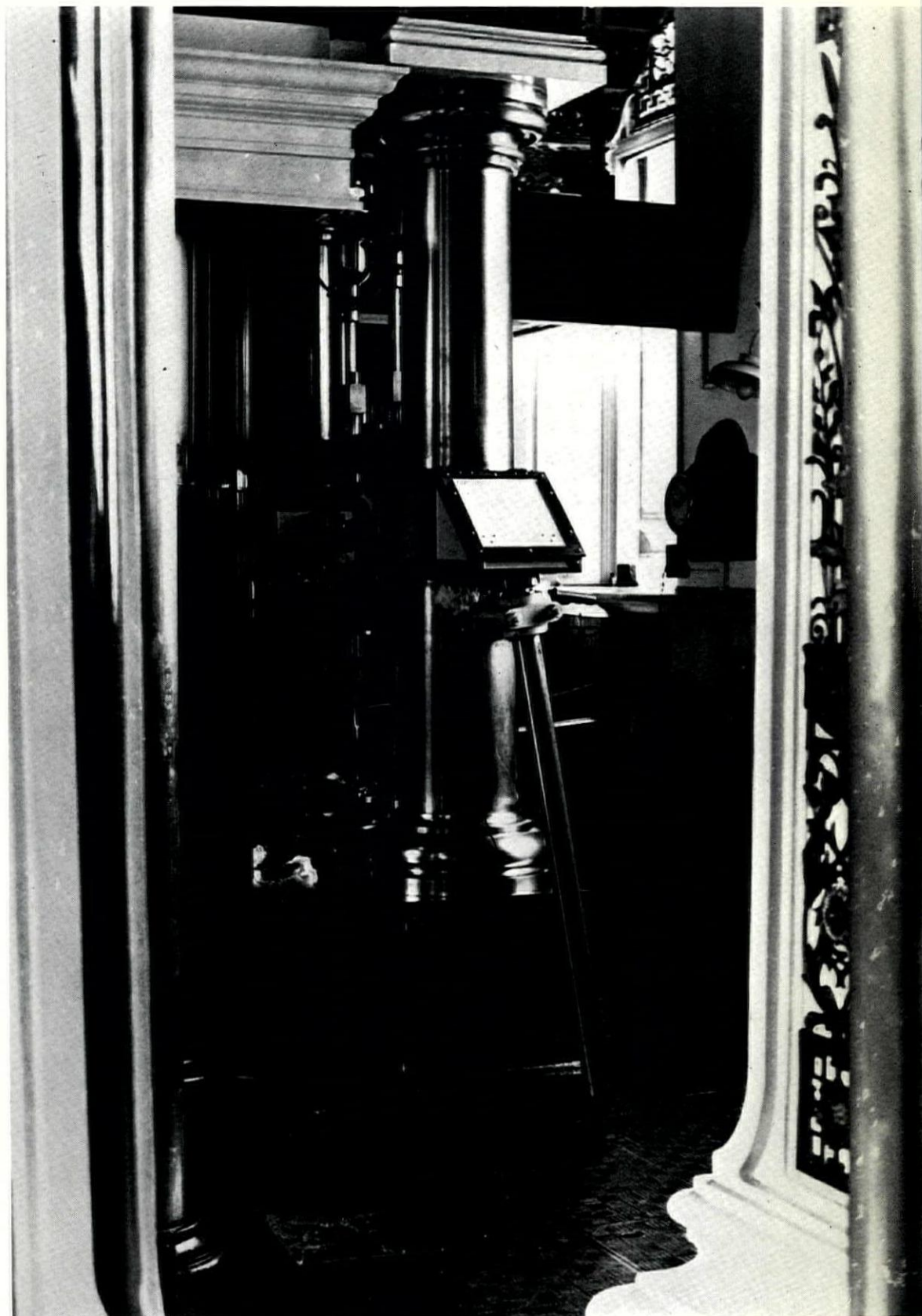
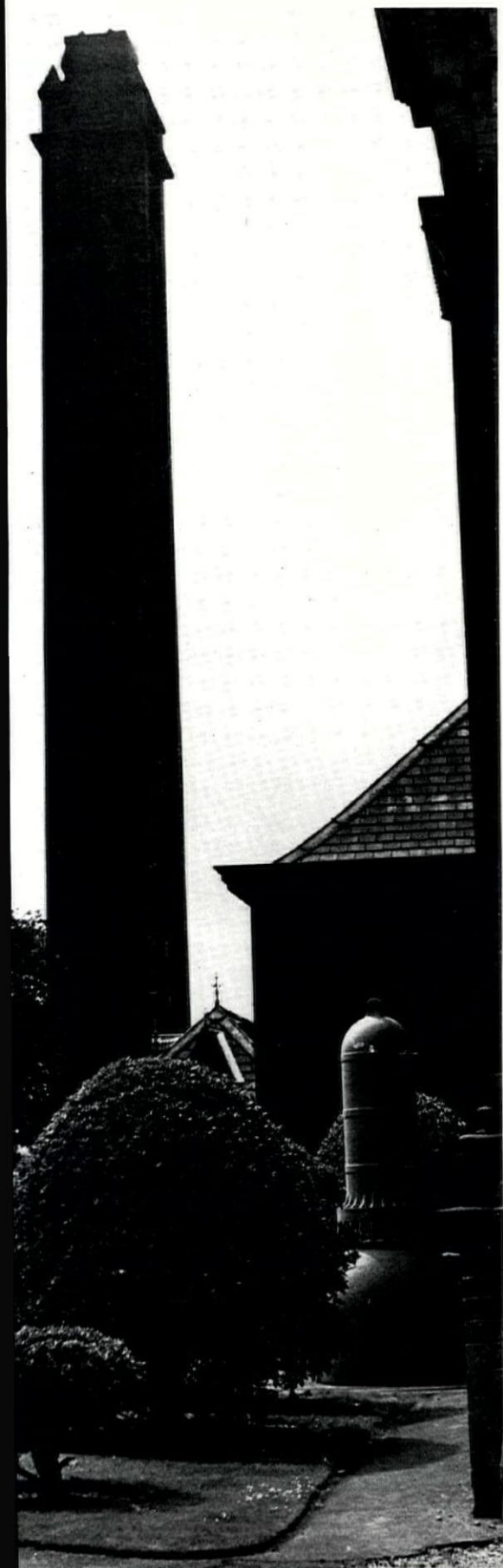


PAPPLEWICK PUMPING STATION

This magnificent pumping station, 1, almost unaltered since 1885, stands about eight miles north of Nottingham, entirely isolated in rolling forested countryside. Its 120-ft. chimney stands like a great campanile, 2, its square tapering shaft terminating in bold finials but lacking now its original flared cast-iron peak. Apart from this loss and the superb maturity of the landscaped grounds the appearance of the

building remains as it was when first brought into commission. The two large rotative beam pumping engines, working alternately in the pumping house, 3, 4, have supplied Nottingham city with about 1½ million gallons of water a day for nearly 85 years, drawn from the 200-foot deep well in which the immense pumping rods are set.

The engines, believed to be the last built by



2

3



4

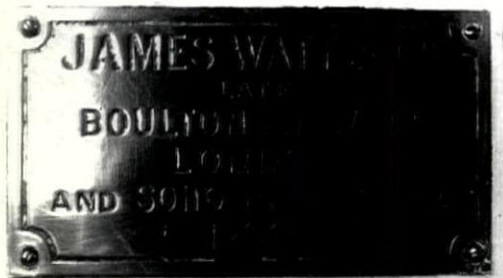
James Watt & Company (successors to Boulton & Watt), 5, are magnificent examples of late Victorian engineering. Each pair of engines was purpose-designed and hand-finished, and

each component was the subject of immense craftsmanship. Elements, which at first sight appear to be identical, prove on detailed examination each to be fractionally different

and to have been as carefully worked as a piece of sculpture.

The scale of this generation of engines was large. In these examples the stroke of the piston is 7 ft. 6 in.; its diameter 46 in. and the moving beam probably weighs 30 or 40 tons. The total thrust on the piston is in the order of 35 tons.

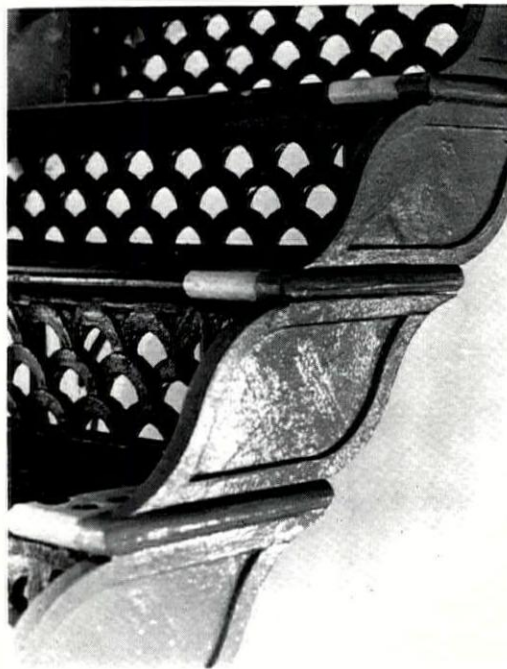
Money and effort were spent lavishly to make the engines far finer objects than function demanded, and this attitude of mind is manifest also in the design and detail of the pump house and its surroundings. As high as a church, it was 'beautified' in an idiosyncratic and individual version of late Victorian Gothic. The leaded lights contain stained glass with a waterlily motif, 6; the girder carrying the main journals rests on great piers with foliated Gothic capitals. The secondary columns, which take the thrust of the moving beam, are surmounted by highly original capitals in which cranes with outspread wings replace both echinus and acanthus. These columns are decorated on each of their four faces with an elaborate appliqué ornament of fishes, reeds and other water derived motifs, 9, but it is in the less self-conscious expression of the building that its quality really emerges, particularly in the engineering: in the cast iron treads to the stairs, 7, the magnificent casings to the valve gear and pistons, the



5



6



7

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AR2/J9

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AR 21/2



8

superbly shaped cylinder heads and the gleaming and immense pump rods and connecting rods which swell visibly to an entasis. The building itself is in a deep rose-red brick with sandstone dressings, elaborated with

fluted piers, carved bosses and moulded arrises. The roofs of such buildings were typically constructed of very heavy timber, 8, to allow the positioning of the very large components of these engines, which had to be suspended from them during installation and replacement. The principal scantlings were up to 50 ft. in length and 15 in. by 14 in. in section. Only the best Memel pine was used—trussed, bolted and braced into a rigid capping that must have contributed much to the stability of the structure under the constant vibration of the engines at work.

The whole building remains astonishingly unaffected by the eleven-times-a-minute tremor palpable throughout the structure and the only recorded substantial repair is the relatively minor work of replacing the rotted feet of a timber colonnade to the entrance porch. Immediately in front of the engine-house is the cooling pond from which the condenser coolant is drawn. In still airs and on humid days it steams noticeably, although it contains over 1½ million gallons. It is a highly ornamental pond with four curved segments and intersecting curves between them contained with a deep stone edging in the best tradition of the Vic-

torian municipal park. The high brick wall of the compound, with its great entrance gates (taken from MacFarlane's catalogue) and the superintendent's and deputy's lodges, are in the same tradition, set off, as their builders never saw them, by matured trees and shrubs among neatly gravelled paths and well-trimmed lawns. Unlike the engines, the building has no famous name attaching to it. The quality of the original drawings is by no means outstanding and the only signature on them is that of the then Engineer to the newly-founded Nottingham Water Department, M. O. Tarbotton. Little more is to be found in the drawings of the lodges which were signed by H. A. Synan, but the great importance of this installation does not lie in the historical merit or aesthetic quality of any particular element. It lies in the remarkable completeness of this example of Victorian municipal engineering at its height: engines, building and landscape, unaltered, in perfect condition and excellently maintained.

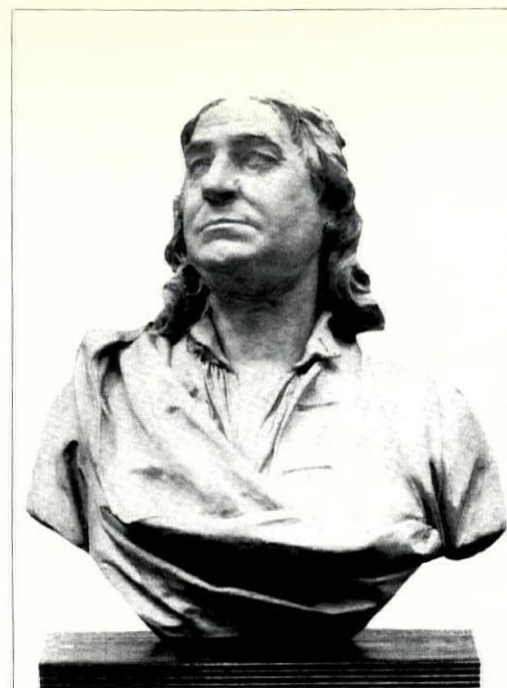
Unfortunately this is a breed of engine rapidly disappearing under economic pressures. The Papplewick Station will be taken out of steam when the replacement submersible electric pumps are installed this year. JOHN WARREN



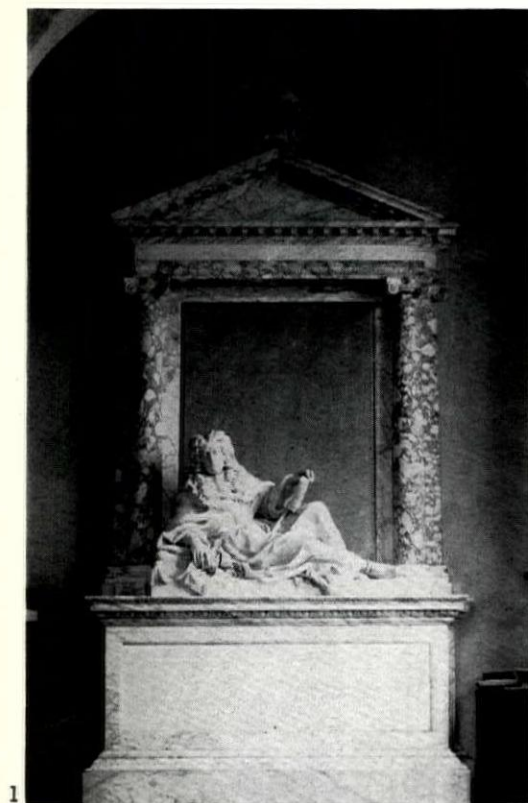
RYSBRACK AND ROUBILIAC

The medieval tradition of funerary sculpture had been the recumbent effigy. That tradition was broken by the Italian Renaissance, and effigies appeared of semi-reclining figures propped up on their elbows (Andrea Sansovino Sforza-Monument), seated figures (Michelangelo's Medici-Monuments) and also standing figures. In England these types began to appear

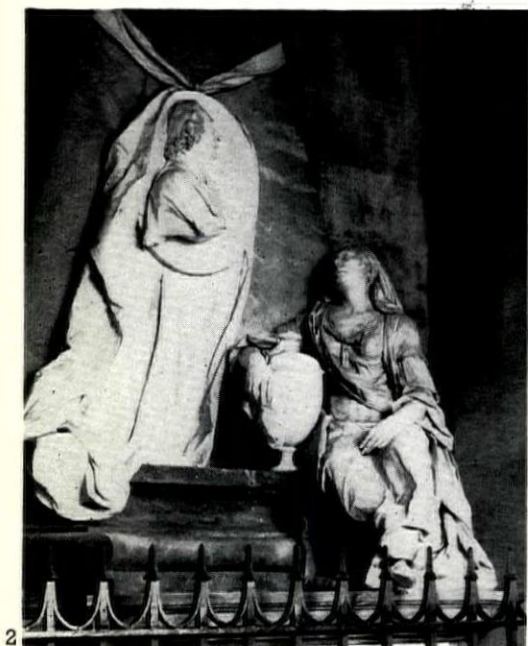
in the age of Nicholas Stone and Inigo Jones, but they were still treated rather tightly until the Italian Baroque made its impact. This was the moment of Bushnell, and Bushnell formed the end of a note, *a propos* the recent Northampton exhibition of Bruce Bailey's photographs, in the October 1968 AR. The catalogue of the exhibition incidentally costs 2s. 6d. and not 5s. Bushnell's monument of Lord Mordaunt in Fulham Church made its appearance at this time, as well as even freer, scenic compositions such as Cibber's Sackville Monument of 1677. But they remained exceptional, and the climax of Baroque composition and of Baroque dexterity of handling belongs in England to the remarkably late period of Rysbrack and Roubiliac, the former born in Antwerp, the latter at Lyons. In the Northampton exhibition Rysbrack was represented by the Ward Monument at Stoke Doyle, 1, and Roubiliac by the monument to George Lynn at Southwick, 2. Rysbrack's is of the early eighteen-twenties, i.e. among his earliest; Roubiliac's is of 1760. Sir Edward Ward is shown semi-reclining; i.e. in a conventional posture, as is Rysbrack's Newton in the Abbey. But the treatment has all the



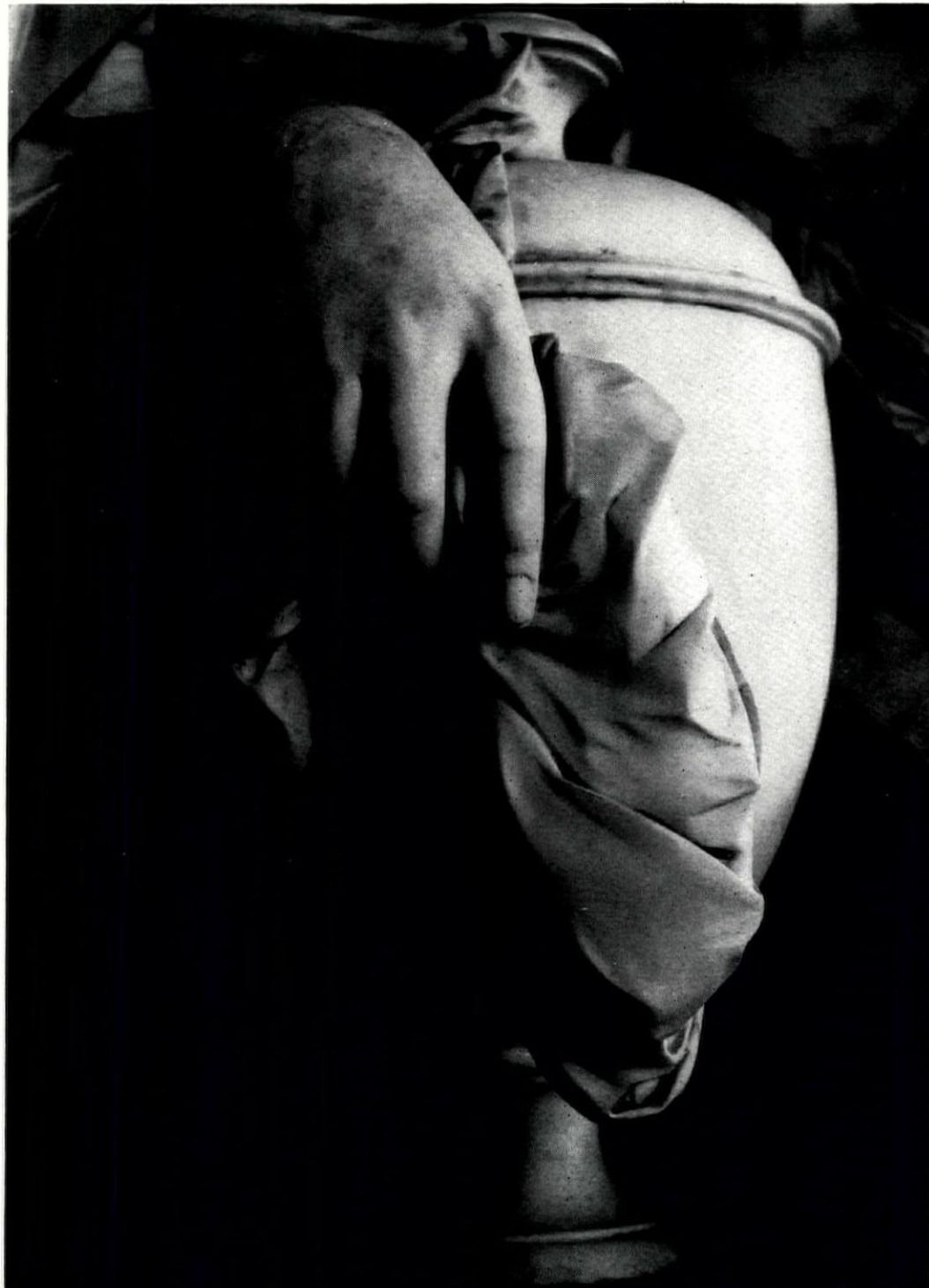
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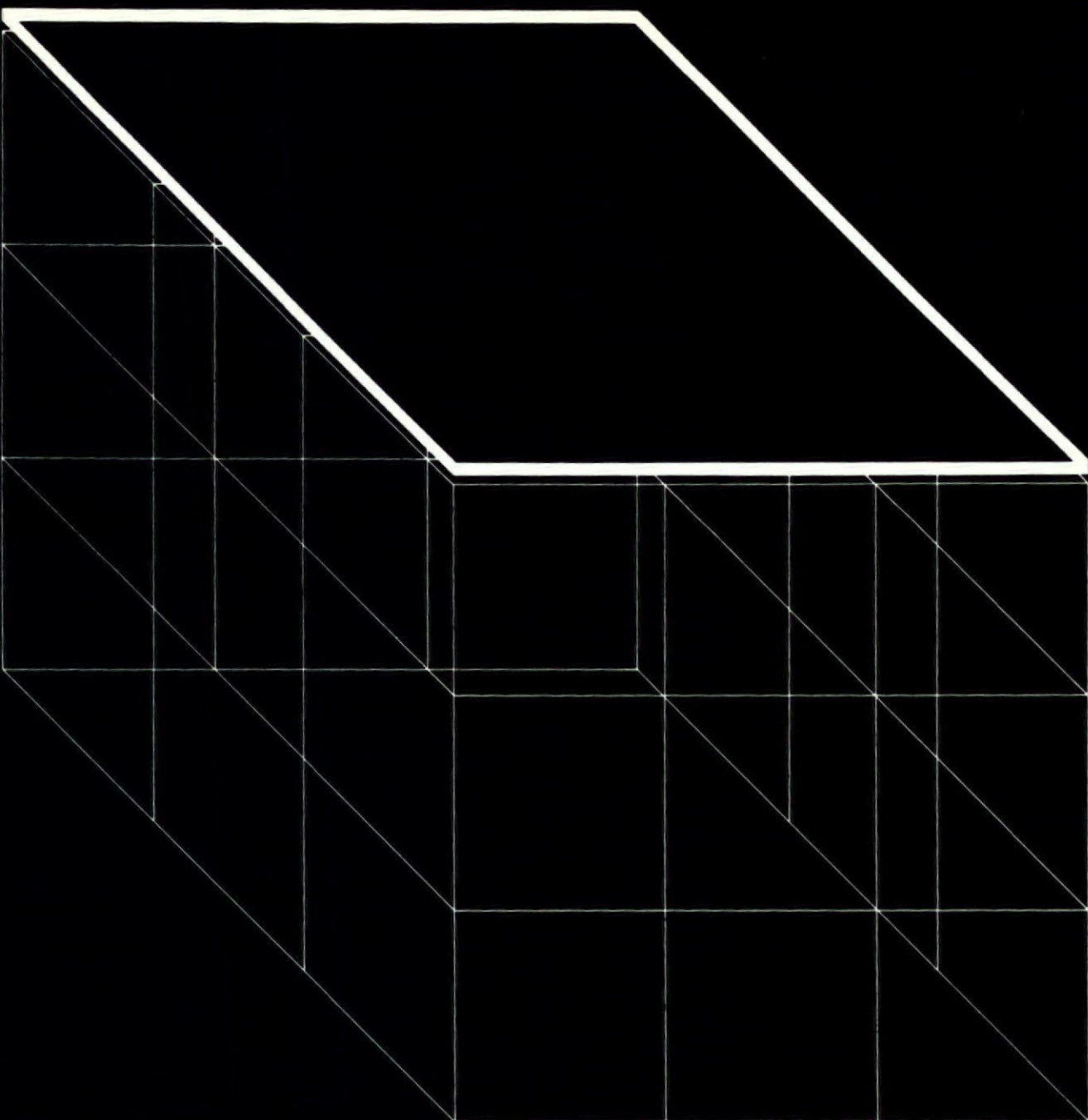
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2



3



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5 elegance and nobility of the best eighteenth-century work in Italy and France. A detail such as that of the hand, 3, shows that Roubiliac's Lynn is decidedly Rococo in its zigzag or serpentine composition. It is a treat to compare

Roubiliac's with Rysbrack's hanging-down hand, 5. For fidelity of portraiture the Rysbrack bust of Francis Smith of Warwick, the architect, ranks very high, 4. Smith was mason/contractor under Gibbs for the Radcliffe Camera in Oxford,

and the bust was made for this building in 1741. As well as taking the photographs, Bruce Bailey collaborated with Sir Gyles Isham on the catalogue of the exhibition, which was held at the Northampton Central Art Gallery.



No.1 TERMINAL LONDON AIRPORT

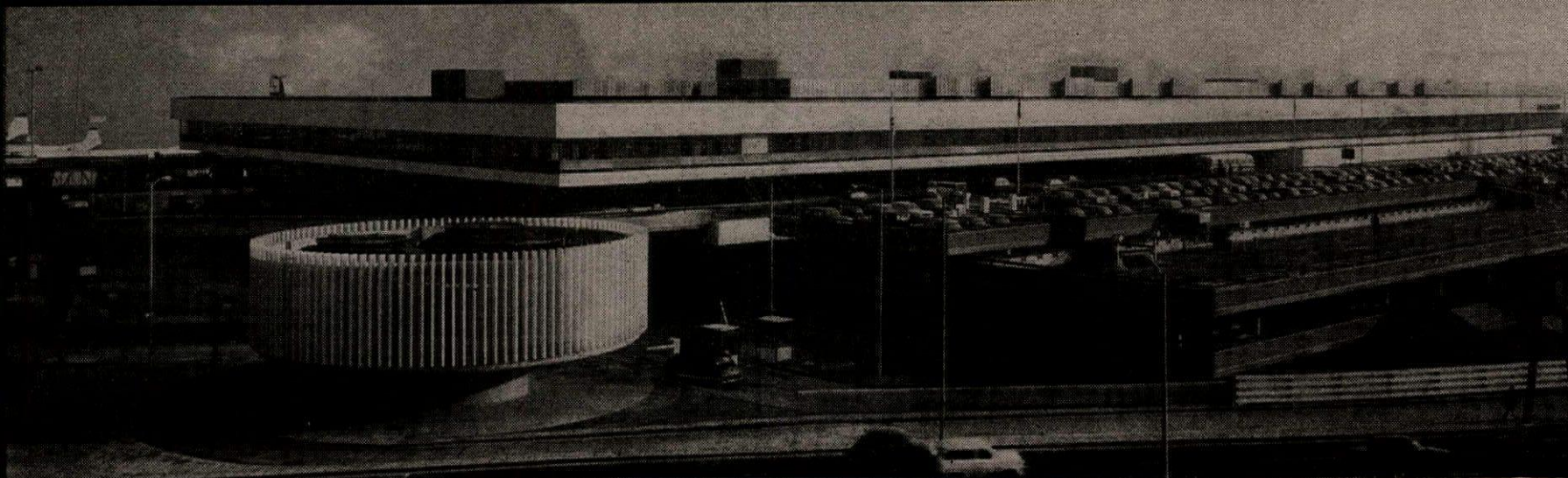
ARCHITECTS: FREDERICK GIBBERD AND PARTNERS

This building is the third and largest to date of the passenger terminals to be built in the central area of London Airport. It marks a further stage in the development of the original plan for this area in which two short-haul buildings mainly for European services, were to flank the Queen's building on the eastern side. Eventually the existing short-haul building will be turned over to foreign airlines and the new building to British short-haul international and domestic flights. The terminal is basically a large rectangular box on two levels. The lower level is for passenger arrivals and the upper for departures. At each level the south end is for international flights and the north for domestic.

The road system is correspondingly organized on two levels and thus arrivals and departures are kept wholly separate. An integral 800-space multi-storey car park is provided, with only a few yards walk to the arrivals or departures levels. Passengers coming by car prior to departure will approach via the elevated ramp road to first floor level. Passenger walking distances from the terminal to the end of the projecting piers are kept minimal. For passengers arriving at the airport the distances of necessity increase because of the complex procedures of customs and immigration clearance, luggage collection and connections to cars or taxis. On the arrivals level are banking, car hire, and hotel booking facilities, while on the departures level are all the catering and duty-free shops. An independent internal road for coaches passes through the building at ground level setting down and picking up passengers. Access from the coaches to the departures level is provided by centralized escalators, lifts and staircases. As far as possible the interior is treated as a single transparent volume within which maximum flexibility in the layout of control zones and similar areas is possible. At departures level there are views of aircraft on the apron from most points. Similarly the setting-down points for cars and taxis are normally in view. The catering balcony is centrally placed above the concourse level and can be seen from all viewpoints. There is a continuous gallery at third floor level around all sides of the building. On the airfield side it is used as an extension to the departures lounges and on the other three sides as offices. The set back from the roof fascia at this level, and the second set back below the offices, reduce solar heat.

The whole complex is of 'dry construction' with a widely spaced steel frame of free standing uncased columns, and deep trusses forming a service space. Universal sections are used and these allow consistency of size for different conditions of loading. The columns are located wherever possible within wells and are connected to floor slabs by flying beams. This produces uninterrupted floor space and structural clarity. The staircases are constructed with exposed steel strings and precast treads. The floors are precast reinforced concrete units. The external cladding consists of a deep artificial stone fascia which expresses externally the service void above the main ceiling and is continuous on all sides of the building. Below the fascia the building is enclosed with continuous windows of bronze anodized aluminium framing and infill panels. Offices and waiting rooms are double glazed but generally the building is single glazed. At the departure level the ceiling is a dominating and unifying element. Balustrading to balcony edges and staircases is a simple mild steel frame with plate glass panels and a heavy teak handrail.

To meet the need for overall flexibility of layout there are few permanent walls. The vertical shafts with lifts, ducts, services are largely isolated. The terminal incorporates a larger volume of services than most buildings and these are accommodated horizontally in special service floors, in the roof and in a mezzanine level, and vertically in service ducts. The entire building is fully air-conditioned. The windows which form the curtain walling to the perimeter of the building are in aluminium anodized a bronze colour. Departing passengers are directed by a large electronic Solari board linked to individual gates in the piers.



2, from the west, with the cooling tower and car park in the foreground and the terminal beyond.

NO.1 TERMINAL, LONDON AIRPORT

Initially pier 4 will serve domestic and international flights and pier 3 international flights only. Each pier is planned with air-conditioned forward waiting-rooms where passengers may assemble. Air jetties serving each stand connect to the aircraft. The terminal complex incorporates stands not served by the pier system. Passengers using aircraft on these stands are transported by apron coaches from special coach stations at the root of each pair.

Quantity surveyors, Franklin and Andrews.

Structural consultants, Sir William Halcrow and Partners.

Heating, ventilation and electrical consultants, G. H. Buckle and Partners.

For contractors see page 154.

key to ground level plan

- 1, immigration comb
- 2, international baggage reclaim area
- 3, information desk
- 4, customs examination area
- 5, central arrivals concourse
- 6, domestic baggage reclaim area
- 7, staircase
- 8, escalator up to departures
- 9, escalator down from piers
- 10, passenger lifts
- 11, goods and baggage lift
- 12, passenger lavatories
- 13, exit to road for private vehicles

- 14, exit to coach road
- 15, domestic passengers' entrance from coaches (departure)
- 16, porters' access doors
- 17, international passengers' entrance from coaches (departure)
- 18, departure baggage sorting
- 19, domestic passengers' entrance from aircraft coaches
- 20, airline counters
- 21, bank
- 22, coach road
- 23, catering goods entrance

- 24, baggage stores and offices
- 25, port health
- 26, VIP suite
- 27, ramp from aircraft coach station
- A, domestic arrivals baggage conveyor belts
- B, baggage carousels
- C, international arrivals baggage conveyor belts
- D, service ducts (also in perimeter)
- E, departure baggage conveyor belts (descending from departure level)
- F, transfer baggage conveyor

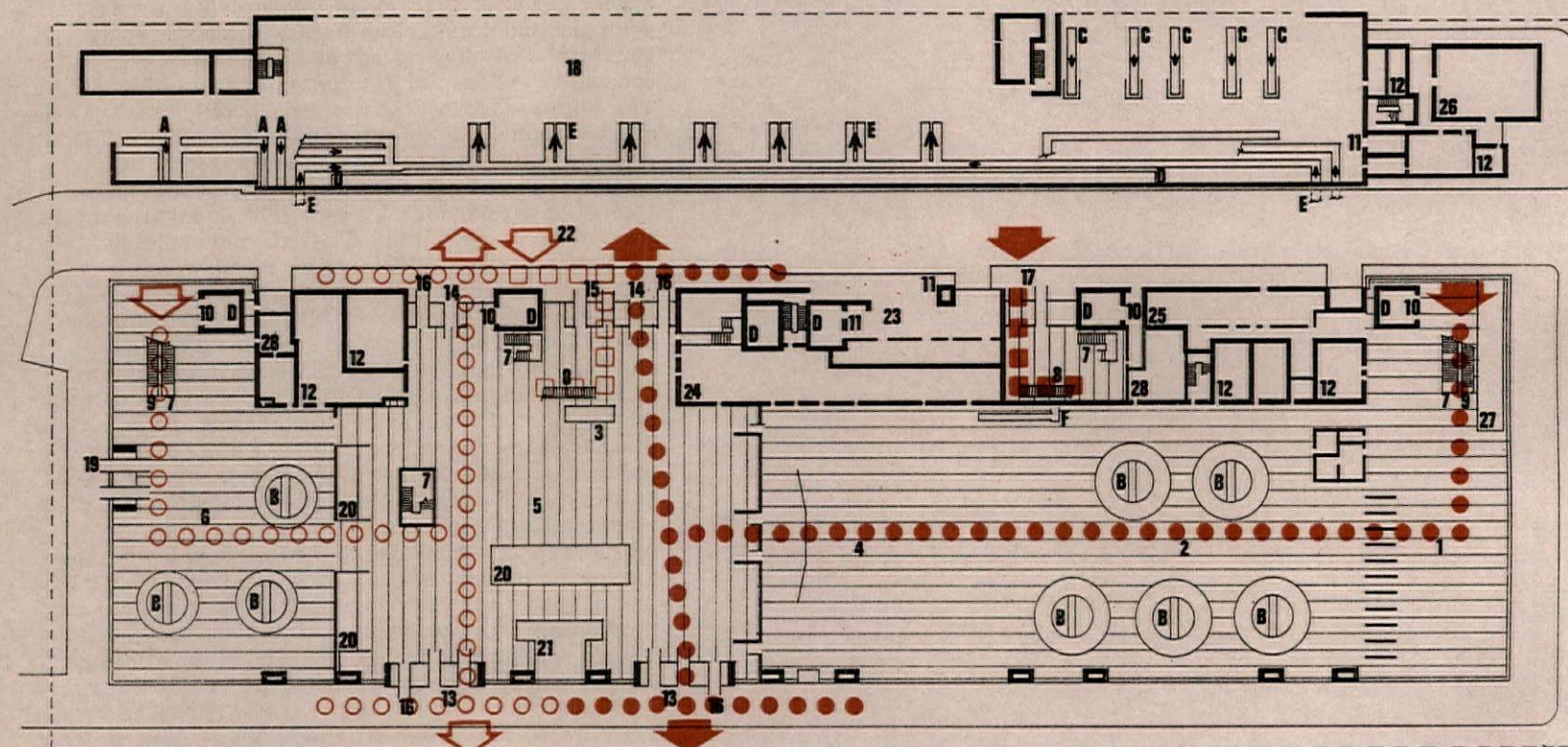
site plan: key

- 1, main tunnel
- 2, pier 4
- 3, new terminal
- 4, multi-deck car park
- 5, pier 3
- 6, Queen's Building

- 7, pier
- 8, existing terminal
- 9, existing terminal
- 10, pier
- 11, freight tunnel
- 12, pier

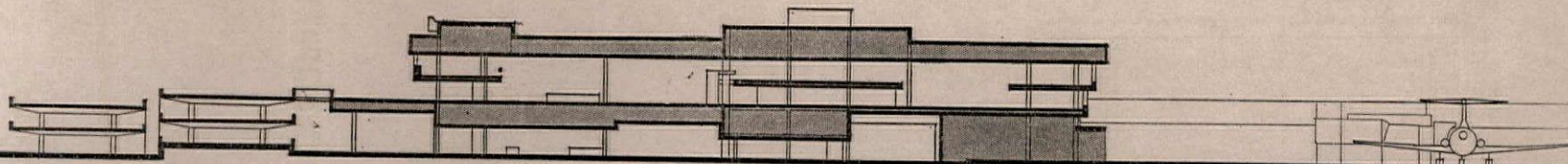
- 13, south wing office block
- 14, existing terminal
- 15, north wing office block
- 16, pier

- 17, freight building
- 18, petrol depot
- 19, central heating station
- 20, control building
- 21, bus station

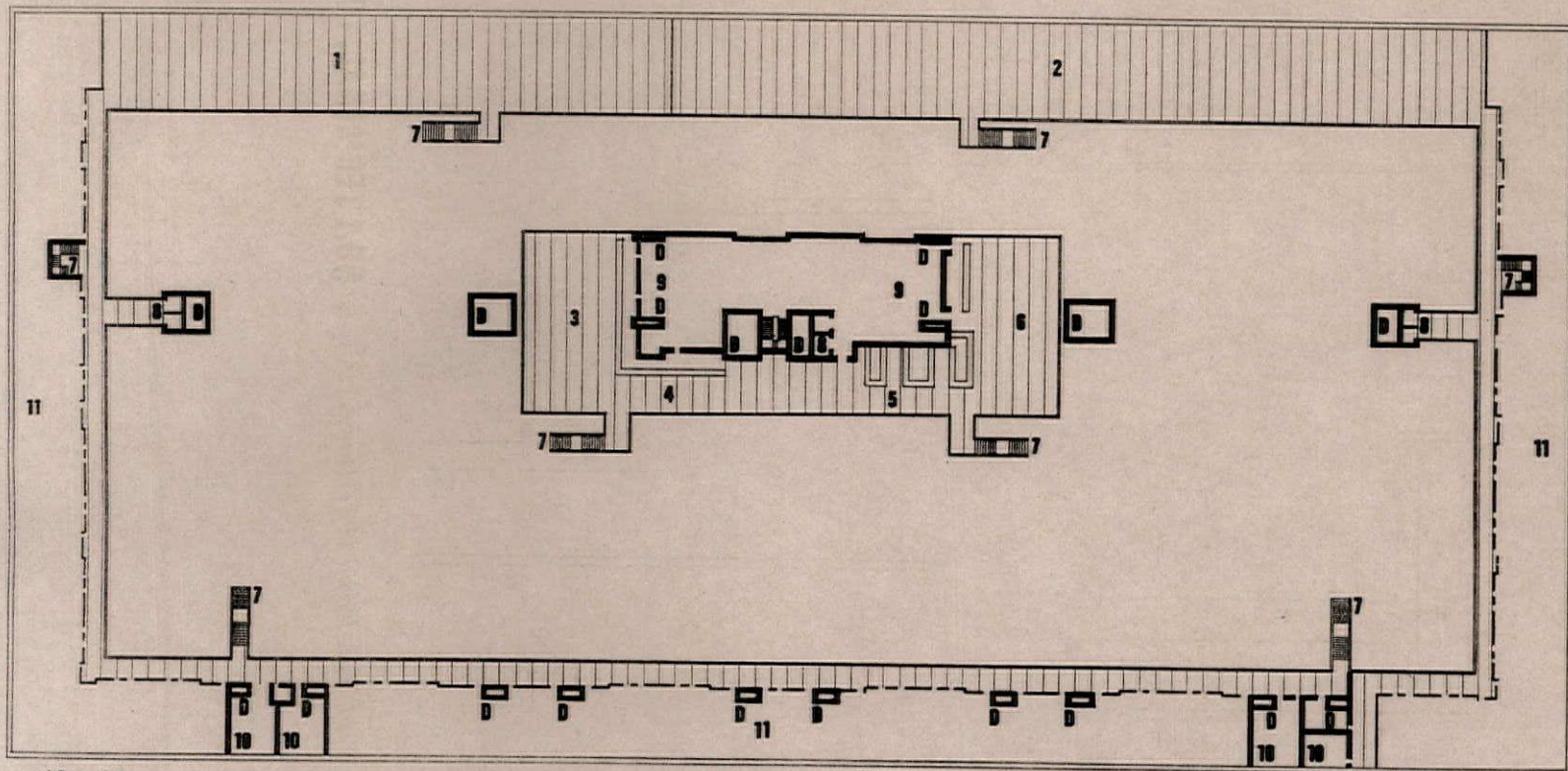


plan at ground level—arrivals

100 0 50



cross section through multi-deck car park and terminal



second floor plan

- ○ ○ ○ domestic passengers arrival
- ● ● ● international passengers arrival
- □ □ □ domestic passengers departure
- ■ ■ ■ international passengers departure

key to first floor plan

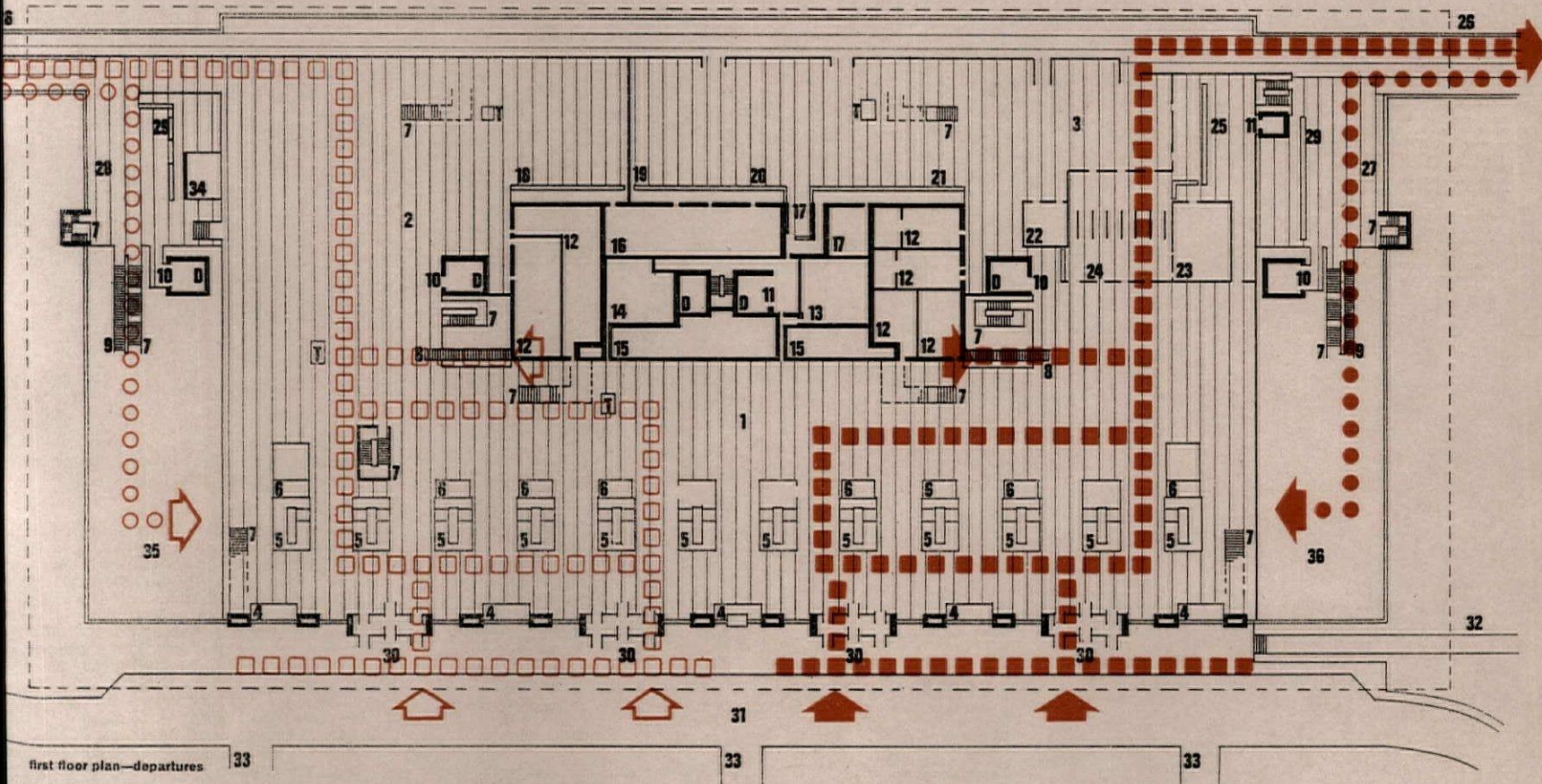
- 1, departures concourse
- 2, domestic departure lounge
- 3, international departure lounge
- 4, airline counter
- 5, check-in desk
- 6, airline office
- 7, staircase
- 8, escalator up from coaches
- 9, escalator down to arrivals hall
- 10, passenger lifts
- 11, goods and baggage lifts
- 12, passenger lavatories
- 13, nursery

- 14, BEA lounge
- 15, shopping parade
- 16, bar preparation
- 17, duty-free shop
- 18, bar
- 19, tea bar
- 20, 24-hour bar
- 21, bookstall
- 22, special branch offices
- 23, customs and immigration offices
- 24, departures immigration and customs comb
- 25, customs examination
- 26, bridge connection to pier
- 27, international arrivals balcony

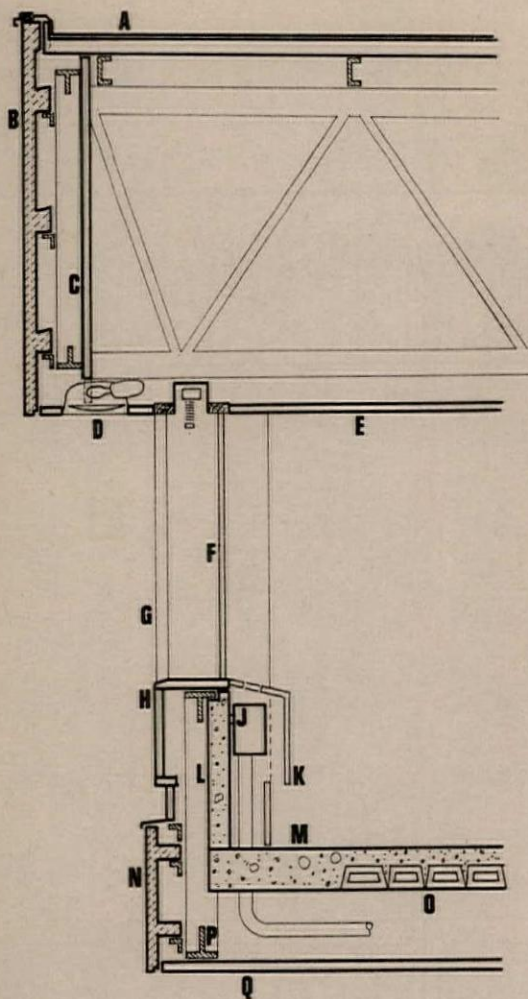
- 28, domestic arrivals balcony
- 29, transfer desks
- 30, entrances from elevated departures road
- 31, elevated departures road
- 32, bridge to Queen's Building
- 33, bridge to car parking decks
- 34, domestic VIP suite
- 35, upper part of ground floor domestic arrivals area
- 36, upper part of ground floor international arrivals area
- D, service ducts (also in perimeter)
- T, telephones

key to second floor plan

- 1, domestic passengers' balcony lounge
- 2, international passengers' balcony lounge
- 3, buffet and tea bar
- 4, licensed bar
- 5, call order bar
- 6, waitress restaurant
- 7, staircase
- 8, lift
- 9, kitchens, serveries
- 10, staff lavatories
- 11, offices
- D, service ducts

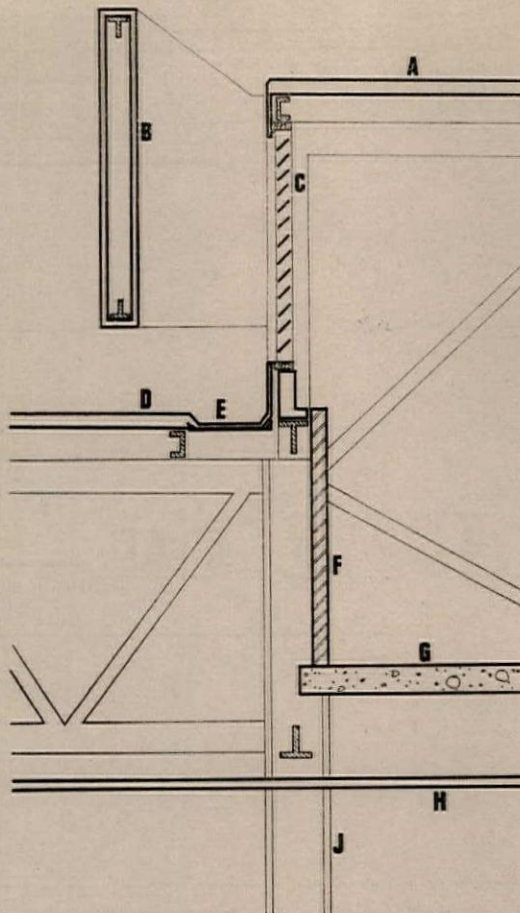


first floor plan—departures



section through office floor overhang

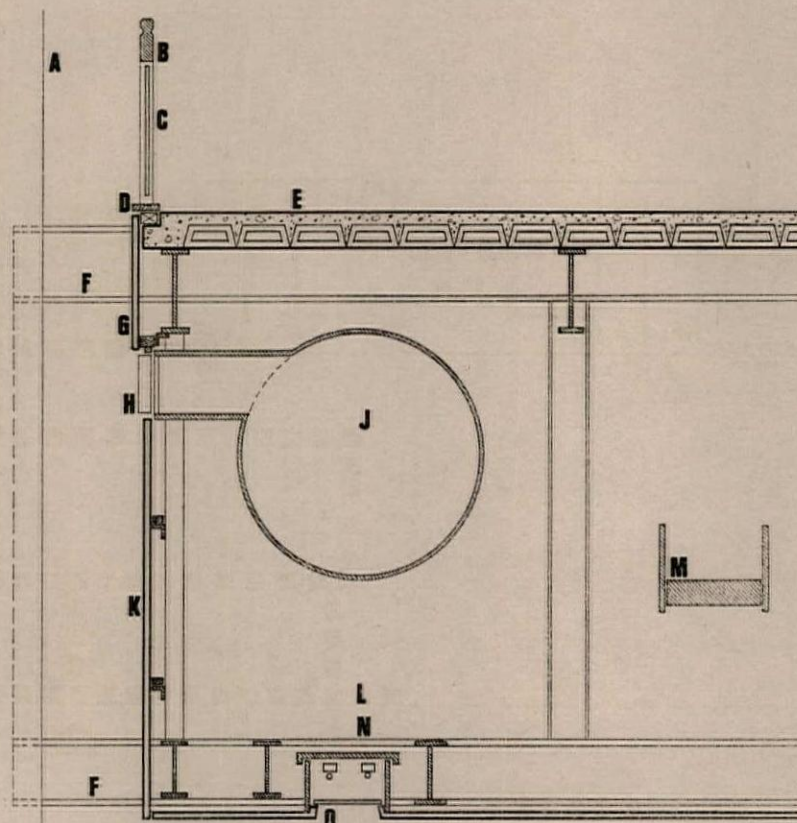
- key
- A, roof of felt on insulation board on metal decking
 - B, reconstructed stone fascia
 - C, insulation to roof
 - D, street light fitting in plaster soffit
 - E, metal tray office ceiling
 - F, double glazing
 - G, bronze anodized curtain walling
 - H, anodized aluminium facing panels
 - J, induction heating unit
 - K, melamine-faced casing
 - L, concrete back-up wall
 - M, lino floor on concrete screed
 - N, reconstructed stone panels
 - O, precast concrete slabs
 - P, perimeter steel truss
 - Q, asbestos ceiling to overhang



section through side wall to roof plant room

- key
- A, plant room roof
 - B, copper-faced baffle
 - C, opening in wall for services
 - D, main roof
 - E, gutter
 - F, brick wall
 - G, reinforced concrete floor
 - H, fibrous plaster ceiling
 - J, steel column

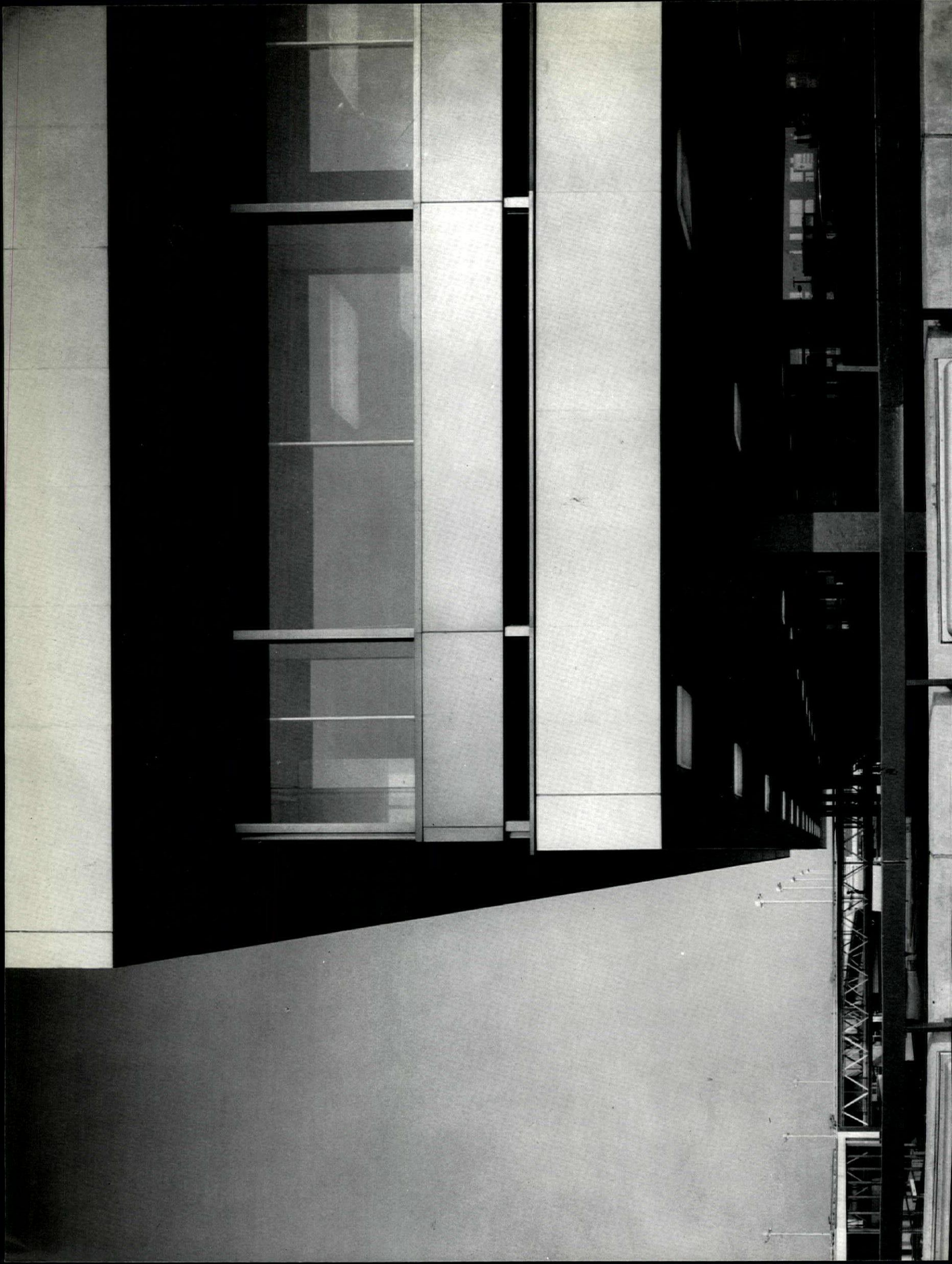
section showing the relationship between floor or balcony edge with free-standing column and service void under: structural steelwork throughout the building is exposed and isolated from the fabric wherever possible: finishing materials generally are pre-fabricated and installed to tolerances of $\pm 1/32$ in., whereas the tolerances for structural steelwork are often in excess of $\pm 1/4$ in.: this discrepancy between tolerances makes isolation of steelwork essential



- key
- A, steel column
 - B, teak rail
 - C, glass panel
 - D, teak capping
 - E, lino floor on precast concrete planks
 - F, exposed beam to column connection
 - G, white melamine-faced panel
 - H, ventilation grille
 - J, ventilation trunking
 - K, grey melamine-faced panel
 - L, services void
 - M, baggage conveyor
 - N, floor to service area
 - O, light fitting

3 (page 95, opposite), the elevated road from the first floor (departures) level, with the terminal building on the left.
 4 (page 96), close-up of the overhanging office floor, seen from the elevated road. The setting back of the building in section reduces the problem of solar heat gains. The windows, framed in aluminium anodized a bronze colour, are double-glazed and incorporate a deep transome section which expresses the air-conditioning induction unit. The deep fascia is of reconstructed stone (see drawing above left).
 5 (page 97), looking under the glazed bridges which connect the pier on the right to the forward waiting rooms.











7

NO.1 TERMINAL, LONDON AIRPORT

See ID on pages 125–128 for more illustrations of the interior

6 (opposite), the ground floor domestic baggage reclaim area at the north-west end of the terminal building. In the foreground is one of the baggage carousels which distribute luggage from the under-floor conveyor belts. 7, the north-west end of the terminal at

night. On the ground floor is the baggage reclaim area seen in 6, on the first floor is the domestic departures concourse and, oversailing, is the office and restaurant floor. 8, check-in desks in the first-floor domestic departures concourse.



8

99



NO. 1 TERMINAL, LONDON AIRPORT



9, air-jetty connecting a forward waiting room (left) with an aircraft.
10, front of an air-jetty, with nose-in guidance board on the right.

'An architect of great competence but of small invention' writes Colvin¹ of Benjamin Dean Wyatt (1775–c1850). His surviving works allow us to test this judgement of his inventive genius: his competence, on the other hand, can now be assessed from a study of his professional correspondence. A collection of over sixty items from Wyatt's office papers, now in the author's possession, have been used as the basis for this account of some important sections of the architect's career. In the main, the papers consist of letters from clients and Wyatt's autograph corrected drafts, retained as copies of his own letters to them.

BENJAMIN WYATT AND HIS NOBLE CLIENTS

R. STANLEY-MORGAN



1, Wyatt's first scheme for Waterloo Palace (1815).

Benjamin Wyatt's contribution to architectural form during the early nineteenth century consists chiefly in his handling of internal spaces; specifically on two developments: in the development of the imposing staircase hall, centrally placed and lit from above,² and also on his introduction to London of the revived rococo style of Louis xv at Apsley House and Stafford (Lancaster) House.

It has been customary to think of this revived style, with its exuberant surface treatment, as a typical Victorian debasement of Regency classicism, and to attribute its success solely to the demands of philistine nouveaux riches clients. Wyatt's is one of the cases which suggest that this is a superficial judgement. The 'debased' style is here the architect's free choice, a noble client, the Duke of Sutherland, attempting meanwhile to put a brake on Wyatt's experimenting zeal. What is clear is that less well-informed and powerful clients stood a poor chance of curbing the excesses of their architects during the 1830s and the years that followed. Unfortunately, together with his facility for manipulating space and surface, Wyatt disclosed a lack of faith in his own professional competence which quickly infected his clients and, I suspect, his contractors also, showing itself in annoyance and distrust on the part of the former and in ruthless exploitation by the latter. Wyatt's training as an architect in the office of his father, James Wyatt, seems to have been very short, and from what we know of James Wyatt's organization, or rather lack of it, not a very suitable preparation for the competitive world of the post-Napoleonic years. Benjamin Wyatt's earlier career, however, as private secretary to Lord Wellesley and his more famous brother Sir Arthur Wellesley (Duke

of Wellington) must have made him aware of the fruits of decisive action and the acceptance of responsibility in the sphere of public life.

James Wyatt's sudden death on 4 September 1813, when his carriage overturned on Marlborough Downs, is a suitable starting point for the narrative. It has a special importance for the profession of architecture in Britain, marking the effective end of professional influence on official building for over a century. Within hours of James Wyatt's death, his daughter-in-law, Catherine, Benjamin's wife, sat down to write this letter to Wellington:

... to acquaint your Lordship, that by the sudden death of Mr. James Wyatt, the Office of Surveyor Genl. to the Office of Works, and also to the Ordnance, Dean and Chapter of Westminster, and of Somerset House, are become vacant. There is every reason to apprehend, that the Widow, and Children of Mr. James Wyatt are left almost destitute by this melancholy Event. I therefore in the name of them all, do most anxiously solicit the honor of your Lordship's influence to secure to my husband, Mr. Benjamin Wyatt (who is the Eldest Son of Mr. James Wyatt) the Situations before mentioned—If your Lordship would condescend to interfere in my Husband's behalf, you would not only confer an invaluable Service on him, but would also enable him to promote the interests of his Mother and Brothers. Mr. Benjamin Wyatt has been brought up under the tuition of his Father, and of course pursues his stile, and taste in Architecture—He had the building of Drury Lane Theatre committed to his care and judgement, and gave perfect satisfaction to the Committee who employed him.³

'Mr. Benjamin Wyatt is at present at Lord Sunderlin's, Baronstown,

Ireland. I have therefore, ventured to solicit the honor of your Lordship's Patronage in his behalf, as he is not yet acquainted with the present melancholy situation of his Family.'

Wellington was busy with more pressing matters in the Peninsula at the time, but Lady Wellington engaged in correspondence with the Prime Minister, Lord Liverpool, on Wyatt's behalf, concluding, however:

'... I imagine the situation will not be disposed of for some time. Mr. Wyatt will by that time be at home and will understand better than I do what will be the best steps to take ...'

In fact a Commission of enquiry appointed to re-organize the Office of Works led to the exclusion of architects from the post of Surveyor-General because of the 'dilatatory habits and extensive engagements' of the late incumbent. The Westminster post alone came Benjamin Wyatt's way and he held it for the next fourteen years. The appeal cannot have been altogether fruitless, however, for within the next twelve months Wyatt was acting for the Duke of Wellington, first in securing a country estate for his use and simultaneously in designing a palatial mansion to be presented to the Duke by a grateful nation. Even before Waterloo, both projects were in hand, Wyatt acting as Wellington's personal agent, while other architects (Soane and C. R. Cockerell among them) were consulted by the Parliamentary Commissioners or Trustees who administered and approved the spending of the grants to the Duke.

Stratfield Saye, 1, 2, 3 and 4, near Reading, was the site finally settled upon and it is still the ducal seat. This was not, however, until the

claims of other estates: Bramshill, Exton (Rutland) and Radley (Berks) had been examined. Lord Liverpool favoured Houghton, while Wyatt's own scheme, which he pressed with stubborn vigour, was for the enclosure of a site in the New Forest. This is revealing, showing as it does Wyatt's total neglect of profitability in favour of romantic visual effect. His most telling argument relates to 'ornamental timber'.

'... the Park and the pleasure Grounds would at once be sufficiently furnished with ornamental Timber, and the Duke of Wellington, during his own life would have the advantage of a Place possessing Features, which if only just now erected would require an age to mature ... the Property, accompanied by the hereditary Wardenship of the Forest without the expense of purchasing a single Tree, excepting those in the Park, would possess more dignity and splendor with regard to Timber than the most richly timbered estate in the Kingdom, and with respect to its general aspect and character would be greatly superior to any Estate which the Duke of Wellington is likely to be able to purchase elsewhere.'⁴

This project was finally quashed by a letter from the Duchess:

'... I have received a letter from London from one who does not seem inclined to favour the scheme of the New Forest. In my letter is the following passage:

"The objection ever has & ever will prevail thro' the whole country around which is bad water both in taste & quality, a failure which no human power can rectify and no Act of Parliament can correct, but a point worthy of consideration."

'Have (you) ever heard the circumstance spoken of?'

The search for an estate was a protracted one and Wyatt, as well as his noble client, showed understandable impatience, even hinting that pressure from the Prince Regent was partly to blame:

'... I am prompted to express to Your Grace in confidence the apprehensions which, from a variety of circumstances have arisen and still exist in my mind upon the subject.

'I cannot divest my mind of the persuasion that there is in a *very high Quarter* (to which I once before alluded) the greatest possible jealousy of the House which is in contemplation for Your Grace (arising ... from disappointment and mortification at the failure of a certain projected plan with respect to another great Building)⁶ and that Ministers (or at least some of them who are concerned in these transactions) are aware of those sensations in the illustrious quarter to which I allude, and have not the boldness to combat them ... at one time the Ministers had acquiesced in the scheme of erecting the Great Building to which I alluded ... we all know that the Building has not only not been erected but that Ministers have since publicly disclaimed the intention of erecting it. 'What I principally apprehend is, not so much a desire of ultimately preventing the accomplishment of the right objects with respect to Your Grace's House and Estate, as a degree of delay which shall relieve the Ministers from their present embarrassment upon the subject by enabling them in some way or other first to provide Funds for executing the other Building ... It is very probable that the purchase of Houghton under all circumstances should have been considered desirable as a kind of middle course, steering between individual jealousies on the one hand and too small a portion of splendor on the other ...'⁷

(Wyatt's characteristic prolixity has forced me to take certain liberties with the sequence of these extracts.)

Oddly enough to the modern mind, want of a site did not deter Duke, architect or trustees from proceeding in detail with a design for this new 'Blenheim', to be known as Waterloo Palace. The trustees' minutes do not appear to have survived among the Public Records and the present correspondence may therefore be the only full account of the matter. Wyatt, understandably, recognized this opportunity as the major one of his career, and as early as 1814 was writing to the Duke:

'My idea with respect to the principle to be pursued in the architectural plan of a mansion for you is that a *very magnificent* & imposing effect should be produced by an accuracy of proportions, by a judicious arrangement of contiguous rooms & by a liveliness of Design & decoration in *one or two* parts of the Building rather than by the prodigious extent and magnitude of the Fabric. I would make the principal entrance of the house such as should arrest the attention of whoever came into it: and that I would contrive by roofing over the area which at all

events there would be in the center of the Building, and lighting it from above, without adding to the extent of the outline for this purpose. I am sure that in this way I could produce an effect which should be so striking that the impression made upon the Spectator, upon his first entrance, should afterwards be kept up by a moderate degree of space and enrichment in the rest of the Building, without incurring the monstrous expense of a Fabric extended to the dimensions of Blenheim, Castle Howard & many others which, after all, have no one feature in them half so striking as might be produced upon the principle which I have in view'.

Wyatt's developed scheme employed an entrance lobby fifty feet wide by thirty feet deep, leading to a fifty feet square domed compartment, housing the main staircase, of which he wrote⁸

'... the Drawing of the interior of the Staircase in *perspective* (which constitutes a very important feature of the Design) I have no copy of: I shall therefore put that Drawing in hand immediately ... and in the meantime I shall send a *geometrical* view of the staircase which I now have by me but that Drawing being confined to a view of only one side of the Area, its effect is very inferior to the perspective view which Your Grace saw when I was at Paris.'

ugly: it was not at all meant to object to a Dome in that situation but merely to the form of *that particular Dome*. My reply to these objections was first, that I had purposely given a grave character to the Attic in the Centre of the Garden Front ... that a Pediment ... would involve a sacrifice of some of the Rooms of the Attic story, and secondly as to the Dome I stated that the form and proportions of the exterior of the Dome of the Pantheon at Rome ... had been my model on this occasion and that if it appeared defective in the Drawing ... that apparent defect probably arises from the point of sight at which the Drawing is taken not being favourable to this particular feature which, when executed, would of course be seen from various other points of sight.

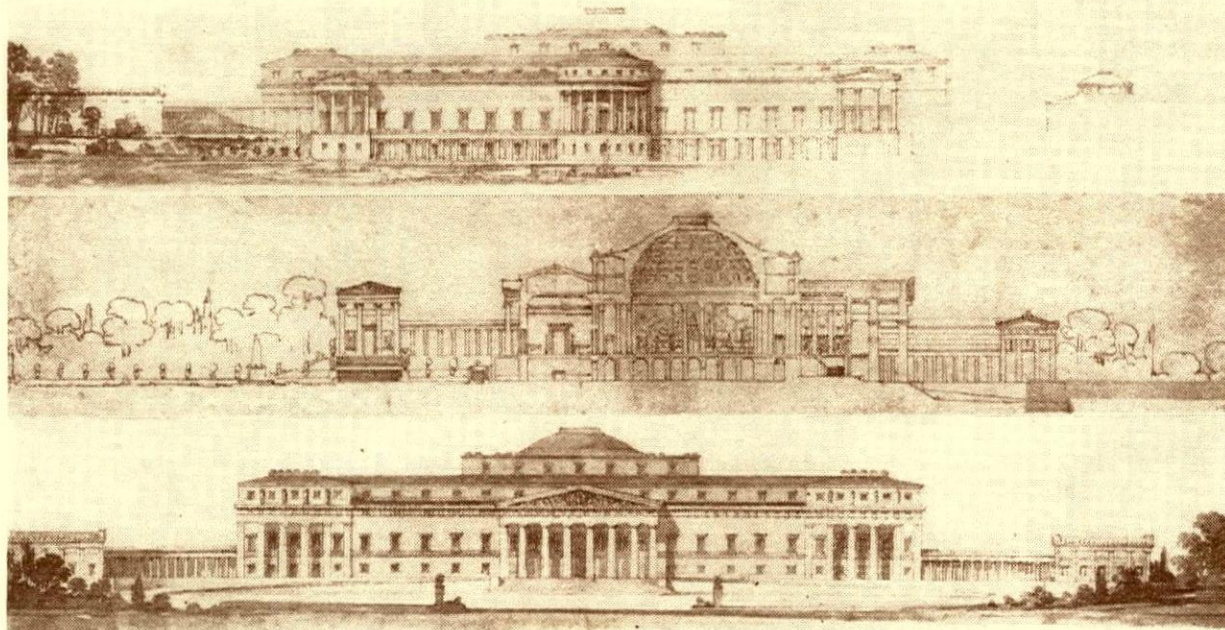
'Lord Liverpool questioned whether the centre of the principal Garden front would not be better *without the six columns* and some vague observations were made upon the plainness of the office wings towards the Park ... as to the former of the two points, I think the question was confined to Lord Liverpool and I answered it by saying that in my opinion the front of a House nearly 200 feet in length ought not to consist of less than five parts, namely a center, two wings and two Intervals, and that the center part of these five, in a Building of this character

however inclined to think from their reserve towards me that they may still urge the expediency of calling for other Designs, but in doing that they ought to consider that if it be done unnecessarily a very unprofitable delay & increase of expense will be the result.'

At this time plans appear, in fact, to have been commissioned, 2, 3 and 4, from C. R. Cockerell, Tatham and Rickman,¹² but the immediate effect of the meeting was a reduction in the scope of Wyatt's original scheme, which had allowed for extended office courts linked by Palladian colonnades to the main block. Wellington instructed his architect on 2 May about the reductions and Wyatt replied:

'(I) will accordingly revise the plan of the Basement story with a view to placing as many of the domestic offices as possible in that situation and will also with every attention to economy make another plan for the rest of the offices and the Stables supposing them to be in a detached Building at such distance from the House as shall hereafter be judged most convenient.

'I am afraid that Gentlemen's Bed-chambers could not with any convenience or propriety be had among the Detached Stable and other Offices and I think that upon reflection Your Grace would not wish any considerable proportion



2, Cockerell's scheme for Waterloo Palace.

After a number of delays and alterations made by the Duke to the arrangement of the State Rooms, Wyatt was ready to present, on February 9 1816, his plans to the Trustees: Lord Liverpool, Nicholas Vansittart (Chancellor of the Exchequer⁹) the Speaker of the Commons and William Wellesley-Pole (Wellington's brother).

'I only remember two points upon which I could collect anything in the form of distinct disapprobation: the one was that the present Attic or panelled Parapet over the six columns in the center of the principal Garden Front is too heavy and that a Pediment instead of that Attic would be an improvement and the other was that the Dome over the Staircase in its external form is

could not, I thought, have its due importance without *Columns*, the two wings, upon the same principles, having *Pillasters*.

'In my opinion the principal Garden front would be destroyed if the Columns in question were to be omitted. I myself suggested the question as to plain or fluted columns and I think the leaning seemed to be in favor of the plain ones.

'The estimate was scarcely adverted to; I did state the amount of it but Lord Liverpool said they were not in a stage of the Proceeding to go into that at present. He then turned to the Speaker and said 'I think our next object is to find an estate' ... 'I am at a loss to judge what Course the Trustees are likely now to take with respect to the Plans. I am

of the principal Bedchamber Floor to be occupied by Servants provided those servants can be conveniently placed elsewhere ...'¹¹

The reduced plan was still in currency two years later, when the opinions of several politicians were sought, including that of Charles Long, the Paymaster General:

'... I had the satisfaction to find ... that there is no feature or provision of the Plan as it now stands which Mr. Long thinks requires to be altered. He adverted particularly of his own accord to the objection expressed by Mr. Pole to making the staircase so important a feature of the Interior, and said that he differed in toto from Mr. Pole upon that subject and concurred entirely in my reasoning upon it ...'¹²

Why then did the plan come to nothing? The post-war economic slump is undoubtedly the main reason, coupled with the social and industrial unrest to which it had given rise. There is, however, another factor. Wellington was by inclination content with the more modest amenities of Stratfield Saye as it stood, although Mrs. Arbuthnot, his confidante, declared it 'not a nice place; the house an indifferent one for him.' His relations with the Duchess had become strained and on his return to England after the end of the occupation of France in 1818 they lived apart: the great palace, in short, would have lacked a châteline.

Lady Wellington seems from her letters rather a vague woman; a trait guaranteed to cause one of Wellington's temper the greatest annoyance. Here is a rather pathetic letter from the Duchess to Wyatt, written from Château Mont St. Martin:

'I am very much obliged to you for your letter of the 8th (October 1816) which I communicated to the Duke: he told me he would write to you on the subject; farther than that I know not, and as the Duke has no great fancy for being questioned twice on the same subject my speediest method of learning his wishes is to request information from you.

Should this silence impress you with an idea that things are not here as might be wished, I would not be

surprised and yet it would be a mistaken one: to account for it is impossible but having no reason to apprehend it proceeds from displeasure I submit at present and hope for better; in the meantime we are very comfortable the Duke in excellent health taking a great deal of exercise & keeping early hours. We expect Sir Henry Wellesley here in a few days. Believe me dear Sir your truly obliged. C. P. S. Wellington.'

During the protracted negotiations for an estate and a house to set upon it, Wyatt paid several visits to Wellington, both in Paris and at his HQ at Cambrai. The first of these visits was in September 1815, only weeks after Waterloo. He must therefore have been one of the first British architects to renew acquaintance with the work of French designers of both the pre-revolutionary and Directoire periods. (Smirke had tried unsuccessfully to reach Paris disguised as an American tourist in 1801.) Wyatt's visits to Stratfield Saye, where he carried out a full valuation, reinforced this experience of French design in an accidental way.

He found there a Drawing Room which had been fitted out about 1750 in a Louis xv manner. The designer remains unidentified but must certainly be a Frenchman, for this was no pastiche. The owner of the House, George Pitt, Lord Rivers, had ample opportunity to develop French tastes during his tour of

Lord Wellesley in 1817, he acquired a modest brick Adam structure to which had been added at the north-east angle a dining-room wing approached by a devious route from the principal rooms along a vaulted corridor. In this dining-room the early Waterloo banquets were held, but in 1828, on taking up residence in 10 Downing Street, Wellington commissioned Wyatt to recast the house, adding a new Waterloo Gallery wing, and deepening the body of the old house by moving out the north wall sufficiently to allow an axial entrance from the dining-room to the north drawing rooms. The ground floor rooms below the dining-room were rearranged as the Duke's bedroom suite and the whole house was faced in Bath stone, a shallow portico marking the south entrance. In short, the modest town house took on a semi-public monumental character. Not only were the totally new rooms decorated in Wyatt's version of the *dix-huitième* but the north suite, on the first floor, 5, dimensions of which had been changed, were given the same radical treatment, 6 and 7.

Wyatt evidently found the task of coping with an existing house rather more than he had bargained for. The contract figure was £14,000, the period for completion ten months; neither bore the slightest relation to the final outcome. During progress Wyatt complained of Wellington's inaccessibility and his reluctance to endorse the architect's decisions, though he can hardly have expected

'The Duke insists upon having the whole of the window in the return of the north east wing in his bedroom, and also upon having two slits in the closet adjoining that room. If you will have the goodness to look at the plan you will see I have drawn the slits in the position the Duke desires to have them: I have also drawn on the plan the mode by which it appears to me the whole window may easily be introduced into the bed room. I do not think it will have at all a bad effect, the north end of the room being square and if there is no objection to making the partition wall either thinner or thrown a little back the line of the room wd. come just at the north end of the window. I am aware that it is not quite right to have the window other wise than in the centre, but for this there seems no help and as it is a bedroom & will be sufficiently light it is of less consequence. Of course there must be parallel windows in the return of the north west wing.

'I will not conceal from you that the Duke is extremely anxious & uneasy with regard to all the arrangements of the doors windows & fire places of the other apartments in his house & the more so as he has never seen any detailed or finished plans upon these points. He is a good deal irritated upon the subject, but he has explained his wishes to me & has given me leave to apply to you upon these points. He feels it indispensably necessary that the doors in the apartments upstairs shd. be parallel with the g^t. door in the dining room, and that the fire-places in the two rooms where the north wall has been projected should be in the centre of those rooms . . . I am sure you must be so anxious to satisfy the Duke and to make this great work as perfect as possible that you will excuse my troubling you with this—if you will send me plans such as I describe directed to Mr. Arbuthnot in Whitehall place they will be franked down to us. Pray let me know if you understand & approve the alterations I propose in the Duke's bedroom.

Ever my dear Sir
yrs. very faithfully.
Harriet Arbuthnot.¹³

Woodford
Friday evg.
I send this to town by the Duke. I think you had better not communicate with him upon these points at present.'

At conclusion of the work, Wyatt had to present the Duke with a list of extras totalling £23,570 13s. 7d., of which he calculated £12,338 was spent in making good defects in the existing house. Significant alterations, however, were made to the design during progress and those which affect the architectural character include:

Casement windows with brass top vents and glazed with plate glass, substituted for sashes in all first floor rooms, laylights introduced in the Gallery ceiling in place of three lanterns which were actually constructed (the new skylights were iron framed.)

The famous sliding mirror shutters in the Waterloo Gallery were also 'second thoughts'.

the Prime Minister of the day to spare much time for such concerns. Wellington, on the other hand, felt considerable impatience with his architect, as this letter from Mrs. Arbuthnot shows:

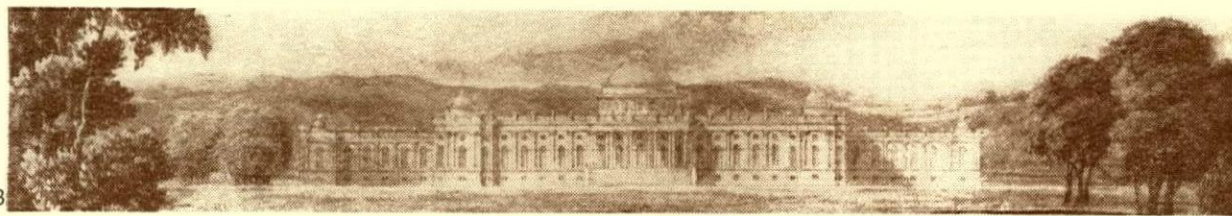
'I hope you will excuse my writing to you instead of Mr. Arbuthnot, but as I have a great fondness for architecture and plans, I have talked so much with the Duke concerning his wishes about Apsley House & think I understand these perfectly. Mr. A. wished that I shd. take the pen instead of his doing so himself. The Duke decides to have two windows in the North ends of the wings of his house; that is to say the plan A which leaves his dressing room with the window in the centre, but he sees that it will not do to have the windows in the West North wing open windows, he therefore consents to them being sham windows & the fire place remaining as it is.

'He is aware that the pier will be too small at the north west angle, and also that projecting under the solid pilasters is a fault but it wd. be total ruin to his apartments at the north east end to have the one window in the plan marked E or either of the Venetian windows, it would entirely spoil these rooms. In a choice of difficulty he therefore decides upon the two windows.

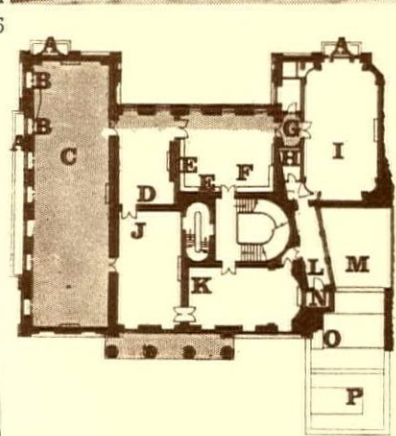
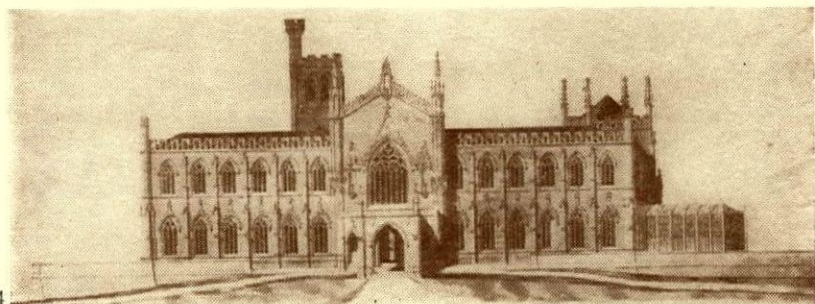
diplomatic duty and to import a designer whose acquaintance he had made abroad.

It has also been suggested that the Prince Regent's taste and his known penchant for French decoration was a factor leading Wyatt to the adoption of this style, and Wyatt's client, the first Duke of Sutherland, who had been ambassador in Paris, was sympathetic to its introduction. Whatever the reasons, we find Wyatt putting his experience to remarkable use at Londonderry House (1825), Apsley House and Stafford (Lancaster) House during the 1820s and 30s. Apsley House, although initiated later than Stafford House, was realized first and so takes a prior place in the chain of events.

When Wellington bought Apsley House, Piccadilly, from his brother



3. C. H. Tatham's scheme for Waterloo Palace (1817—misread for 1812). 4. Rickman's scheme for Waterloo Palace. 5. plan of first floor, Apsley House (Wyatt's work shaded).



Key
A, balcony
B, sliding shutters
C, Waterloo Gallery
D, yellow drawing room
E, banquettes
F, striped drawing room
G, lobby
H, store
I, dining room
J, portico room
K, Piccadilly drawing room
L, corridor
M, area
N, lift
O, new roof over boiler house
P, new roof over fuel store

The reference to the three lanterns shows that Wyatt, pursuing his theme of the top-lit 'grand space' intended the Waterloo Gallery to resemble those he designed for Londonderry House in 1825 and for Stafford House. The executed design at Apsley House, lacking the lucidity of the others, arose from Wellington's own preferences. Short extracts from Wyatt's self-justifying letter (of 21 February 1830) enclosing the accounts will be sufficient to convey the tone of the correspondence and the architect's methods of operation:

'My Lord,

I am sure that it cannot be Your Grace's wish to retain impressions unfavourable to anyone, especially to one whom you have known as long as Your Grace has known me, if any reasonable ground shall be shown for relinquishing such impressions and I am therefore induced to solicit Your Grace's attention to the few remarks which I have to make ... with respect to the amount of the accounts for the works lately executed at Apsley House ...

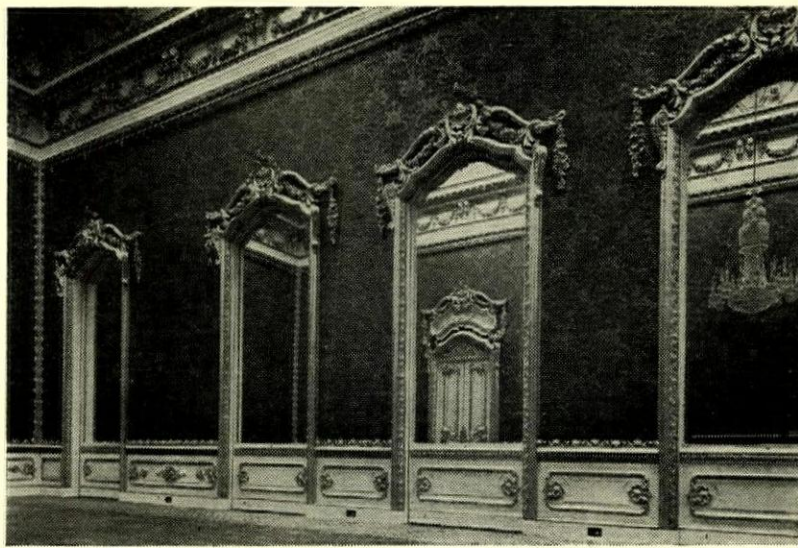
'... there are Vouchers for every separate portion of the work, however small, connected with this repair which will bear any scrutiny and plainly tell their own story in support of my assertion. ...

'The extreme rapidity with which these works were carried on did not admit of writing for Estimates or contracts excepting for certain parts of the works (although I never failed to have these in all cases where I could) and even after all the celerity of operations throughout the undertaking, I have had painful reasons repeatedly to apprehend that Your Grace was greatly disappointed as to the period of time which those operations occupied ... 'I am fully prepared to show in the most satisfactory manner that much more than ordinary precautions were taken to check the expenditure and to confine it within the narrowest possible limits during the progress of the works, but I could not myself know what would be the amount of Expenditure until the accounts were made up.'

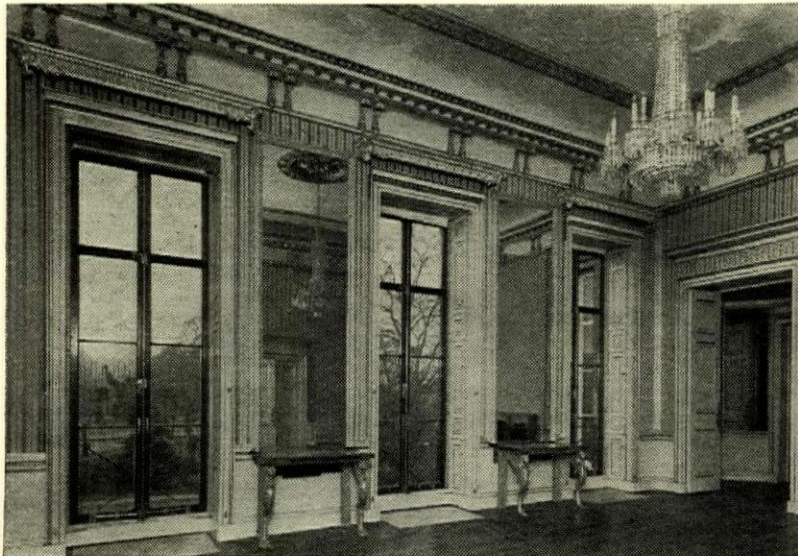
I cannot believe that these assurances went far to allay the Iron Duke's feelings of annoyance, and although all the charges and fees were duly met, the unhappy financial outcome soon became common knowledge in London circles and made Wyatt's future tasks much more difficult to discharge.

Distrust of his professional skill was sown in the mind of Wyatt's last important client, George Granville Leveson-Gower, 2nd Duke of Sutherland. The best account of Wyatt's work for Sutherland at Stafford (Lancaster) House, 8-10, has been given by H. M. Colvin¹⁴ based upon the brief of Wyatt's counsel in the suit for the recovery of his fees; I shall accordingly concentrate on augmenting this story, chiefly from the Duke's own letters.

The story begins in 1821 when Sutherland's father, as Marquess of Stafford, lent £72,000 to the 'noble' Duke of York (of the nursery rhyme) to build a palatial town house in the Stable Yard of St. James's Palace.



6



7

Smirke was employed initially but Benjamin Wyatt was called in in 1825 after Smirke's dismissal, through the influence of the Duchess of Rutland upon the King, who disliked Smirke's scheme. Two years later York died with his debts to Stafford (and to Wyatt) unpaid; the Crown called in the 999 year lease, reassigning it to Stafford for the amount of York's unpaid debt. The Crown also agreed, as James Lock, Stafford's auditor, reminded Wyatt:

'... that Lord Stafford should be repaid whatever was expended by him, in finishing the house according to the original plan, as should be fixed on by you on behalf of his Lordship and a Surveyor of the Crown on behalf of the Office ... and according to my recollection they agreed to every thing but the completion of the Ice House ...'¹⁵

Here lay a powerful incentive to refrain from second thoughts upon the design of the partly-finished building or, if the temperament did not admit of such constancy, to disclaim any responsibility for paying for such changes as were made. Work was so far advanced by October 1832 as to allow Lord Stafford to use the shell of the building, but when he died in the following year (by then as the first Duke of Sutherland) the whole of the interior decorations remained to be carried through by his heir. Wyatt secured reappointment by appealing to the dowager duchess, but here the complications began.



6, the Waterloo Gallery, Apsley House. 7, the striped drawing room, Apsley House. 8, gallery, Lancaster House. 9, green reception room, Lancaster House.

In the autumn of 1833, he received two letters from the second Duke which, as he said '... distinctly holds out to me that I shall have the satisfaction of *Designing the whole* of the finishings for Stafford House but does not explain in any intelligible way the intention of charging another architect with the *execution* of my designs.'

The second letter, 'announcing for the first time (and long after I had been engaged in making designs for Stafford House), his extraordinary determination of employing another architect to Superintend, or rather to carry out under me, the practical execution of my designs, and holding out to me an assurance that I



9

should have the full credit of the whole of the Designs.'

Here are the relevant passages from these extraordinary documents:

Bridgwater House. Sept. 28. 1833 'Sir,

'... I have considered the Drawings and I am obliged to acquaint you that, admirable as they are, they represent a style of decoration much more costly & rich & gorgeous than I purpose to adopt, but feeling as I said before a great desire that you should have the satisfaction of designing the Plans for the completion, I shall be happy, if you think it desirable to take the trouble of re-forming them on replacing them in your hands, to communicate to you the nature of the alterations I should propose for the decorations—and also some considerations regarding the Exterior with a view to converting the Garrets into a bedchamber story on the S & W Fronts, leaving the Dining Room & Gallery without any rooms above them—and probably giving a skylight to the Centre of the Gallery.

'It is right for me to say that I have determined that it is most expedient for me to employ certain tradesmen of my choice for carrying the Works into Execution ... allow me to avail myself of your talents in furnishing the drawings with the alterations which we may determine & I should wish to receive information from you of the value at which you would estimate them.

'I should be glad to obviate the inconvenience occasioned by the circumstance of the Kitchen being in the House, if it be practicable to place one where the ice house was made, but this may be a separate consideration ...

I am, Sir,
very truly
yr. humble servant
Sutherland.'

Trentham. Oct. 22, 1833

'Sir,
Having definitely settled the mode of executing the works of which you are occupied in preparing the designs I lose no time in acquainting you with the choice I have made of Sr. Robert Smirke for that purpose. The satisfaction which I have heard expressed in various parts of England (& also in Scotland) with his work leads me to hope that this choice will secure to myself

satisfactory result, & that you will also be of opinion that the execution of these works, of such importance to both of us (& the original conception of the whole as well as the adaptation of the various parts, the symmetry as well as the designs for the interior ornament being entirely yours, will I trust always give you the satisfaction which its being known that you have been the author may well occasion) could not be better confided to the hands of any other, & as my object must be (being of such importance to me) that your designs shd. be executed in the best way, it is after mature consideration that I have determined upon the choice I have made. Sir R. Smirke will leave this for London today, & take into consideration his arrangements for future proceedings

quiring far more than ordinary skill to construct in a substantial manner, will continue to bear ample testimony to the competency of its architect, long after the present & some succeeding generations have ceased to exist.

'... I hope Your Grace will allow me to defer sending a Drawing for the Gallery window until I shall have finished the Design for the other 3 sides of that room, in order that the whole may be in due "keeping". I have been proceeding with the Designs including the lantern & will send one for the windows the moment I shall feel that I can do so with advantage to Your Grace ...'

From this time until the summer of 1838 work on the decorations of the

the minds of the Duke & Dss. relative to this Lantern, when in the advanced state to which I have alluded.

'Let this however be as it may, when I found the Duke & Dss expressing the objections to the inclined sides of the Lantern with great earnestness & urging upon me to devise some means of giving to those sides a perpendicular direction without pulling down the Lantern for that purpose I very patiently and in the most perfect good humour explained to them that *that* was an utter impossibility: but that by pulling it down it would of course be easy to reconstruct in in any form which their Graces might prefer, and at the same time repeated my willingness to make Designs for that purpose if they thought fit. I carefully pointed out to them that the Lantern as it stood was *precisely* on the same principle as that in the great staircase (which has been so much admired) and that although lanterns of this description are not exactly embraced under the Authorities of ancient architecture and are consequently not amenable to any particular rules or restrictions connected with such architecture, yet as regards all the architectural principles involved in the Design for that in the gallery of Stafford House those principles were bona fide borne out by, and were *identically the same* as those of the Lantern under the Dome of St. Paul's Cathedral where the main walls of the building incline considerably to receive the Dome or roof above and to afford an increase of light below. 'The Duke always expressed himself to me as decidedly averse from pulling down the Lantern, and never gave me authority to make any Design for that purpose ...'

'Under these circumstances it was with astonishment that I first heard about the middle of June last that the Lantern in question was actually under the process of being pulled down and that Mr. Barry was employed as the architect for that operation and for its reconstruction! I could scarcely believe the information to be true (which reached me by mere accident but which seemed to come in no questionable shape).'

Wyatt's fee account, sent to the Duke of Sutherland in the August following, elicited this reply, of which the penultimate sentence particularly strikes me, confirming as it does Sutherland's reputation for fickleness and indecision:

'... The settlement I shall leave entirely in his (Mr. Lock's) hands. The amount I must fairly say exceeds my expectations, but considering it as a matter of business well understood in the profession, and that can easily be explained to the satisfaction of any competent and impartial person of experience, I don't wish to enter on the consideration of that part of the subject. 'I acknowledge that I feel that your observations are well founded regarding the change of effect in the appearance of the lantern in consequence of the alteration of proportion and the addition of height. I sincerely hope that you may enjoy better health this summer than unfortunately was the case last year.'¹⁷

On which note one could close this account, were it not for an unhappy sequel. Sutherland's unwillingness to meet Wyatt's charges, claiming as he did that Wyatt was only employed to make 'preliminary' drawings, forced the architect, against his wishes, 'to make enemies of the Duke and Duchess' and in September 1839 to give notice of instituting legal proceedings. Like his father before him he was 'almost destitute' and before the case was heard was removed to the King's Bench Prison by his creditors. Sutherland's pained surprise is on record:

'... I regret that there should be such a wide difference of opinion between us regarding the remuneration due to you & that you should have departed from the course of proceeding which you, at the time of my agreeing to meet your wish that you should execute designs, suggested should be adopted in the event of any difference—the submitting the question to the judgement of experienced competent professional men.

'I continue of the opinion which you then seemed to entertain that they could have no great difficulty in determining the value of your professional services, but if you should feel assured that neither experienced architects nor Barristers can be competent to give a proper opinion, & if you determine that a Court of Law will best settle the difference, it is not for me to give any opinion contrary to the decision which you state you come to after discreet and able advice on the subject. I can only say that I regret the circumstance.'¹⁸

The settlement, after taxed costs, recovered for Wyatt fees of £1,327 14s. 7d.: enough to secure his release from the King's Bench but not enough, one supposes, to restore him to full practice. Except for some minor alterations at Apsley House, Wyatt's productive years were entirely over and he died in obscurity some eight years later.

¹ H. M. Colvin: *Biographical Dictionary of English Architects*.

² Lewis Mumford: *The City in History* (reference in cap. 10).

³ He had in fact won the commission in competition with his father, from whom in consequence he was estranged. See *The Farrington Diary*, ed. J. Greig.

⁴ Wyatt's memo. to the Wellington Trustees, 24 April 1817.

⁵ Duchess of Wellington to Wyatt, 26 May 1817.

⁶ I deduce by a process of elimination that this must refer to one of the Regent's recurring dreams of erecting a palace in Green Park. Buckingham House was then occupied by Queen Charlotte.

⁷ Wyatt to Wellington, 28 February 1816.

⁸ Wyatt to Wellington, 29 February 1815.

⁹ Neither Liverpool nor Vansittart was sympathetic to the Wyatts insofar as they were instrumental in the changes at the Office of Works after James Wyatt's death and discrediting. Both signed the new, stricter regulations for the Surveyor-General's office in 1815 (see *Journal RIBA*, August 1946, p. 457).

¹⁰ Rickman's scheme was solicited by Thos. Lister Parker, a Yorkshire antiquary, in November 1817, 'in the castellated style', Rickman saying of 'Wyatt's idea for a staircase grand but still, like all his work, poor in parts' (*MS Journal*, 20 November 1817). One of Rickman's elevations has survived in the RIBA Library. Surviving drawings by Cockerell and Tatham are illustrated in *Country Life*, 26 November 1948.

¹¹ Wyatt to Wellington, 17 May 1816.

¹² Wyatt to Wellington, 27 February 1818.

¹³ Undated letter (1828) by Harriet (Fane), 2nd wife of the Hon. Geo. Arbuthnot, at the date of this letter Chancellor of the Duchy of Lancaster.

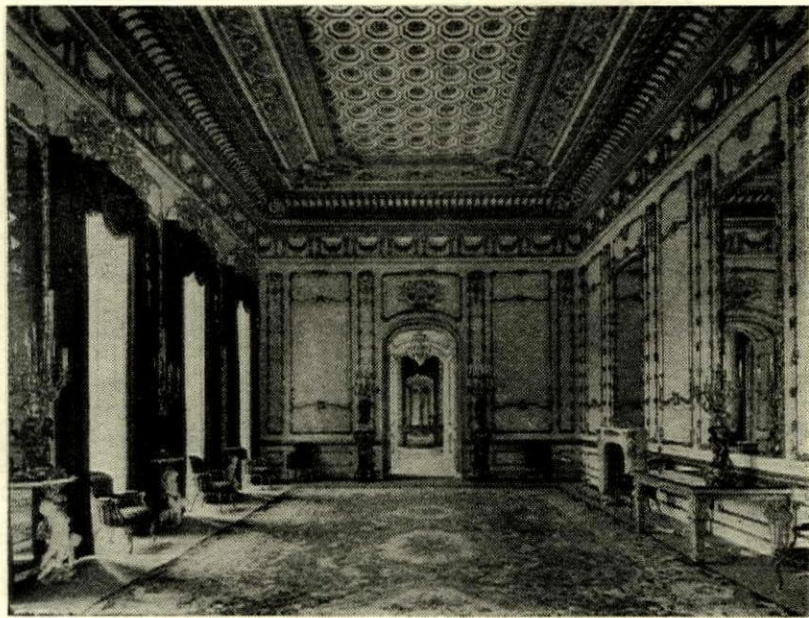
¹⁴ H. M. Colvin: 'The architect of Stafford House' in vol. 1 of *Architectural History*, 1958.

¹⁵ Jas. Lock to Wyatt, 10 January 1832.

¹⁶ Wyatt to Maj. General F. W. French, 12 March 1839.

¹⁷ Duke of Sutherland to Wyatt, 13 August 1838.

¹⁸ Duke of Sutherland to Wyatt, 10 September 1839.



10, drawing room suite, Lancaster House.

& any communication from you to him will be of value & consequence & well received by him.

'... It will not be necessary to make any further designs as to the Alteration of the roof as Sir R. will have to consider those details ...'

Wyatt was stung by the insolent tone of this last letter into a reply which is revealing alike of his own state of mind and the constraints imposed upon the architect by the patronage under which he worked.

'... if I were to profess to feel no pain at the determination announced in that letter, I think Your Grace could scarcely give credit to the assertion. Certainly the mortification and humiliation which I feel on the occasion are very heavy and the circumstance will, I am afraid, be very injurious to my reputation. 'That Your Grace has formed your determination under erroneous impressions arising from the misconceptions or misrepresentations of persons personally adverse to me is, to my mind, most manifest and I cannot but very deeply lament that such should be the case.

'... I have no wish whatever to detract from the merit of any other architect but at the same time that I may admit the qualifications of either (*sic*) of them for the practical execution of such a work, Your Grace will, I trust, permit me to express the firm confidence which I feel that the practical construction of Stafford House, a building re-

house continued and was completed with the probable exception of the walls of the grand staircase. It is not clear from the correspondence whether the attic story designed by Wyatt in 1833 had yet been executed. Smirke's name fades from the scene but another name appears—Charles Barry. Wyatt's account of the scandalous affair of the Gallery lantern is quoted by Colvin from the words of his Counsel's brief; Wyatt's personal narrative, as given to General French¹⁶ differs only in its more colourful phrasing and I shall accordingly restrict myself to extracts from this long and amusing letter.

'When the Lantern of the Gallery (the designs for which the Duke & Dss. had in the first instance expressed their approval of in the most satisfactory & unqualified manner) was so far advanced as to be nearly ready for painting and gilding, somebody suggested to them that that Lantern was not architectural, because (in order to obtain an increased quantity of the light, which was the primary object of the Lantern) its sides were inclined instead of perpendicular. The Duke told me that some French architect had first made the remark, but I know that Mr. Barry had, almost from the commencement of the works, been meddling in a way which I think was very unfair & improper towards me and I have good reason to believe was very instrumental in stirring up unfavourable feelings in

Berks Beef

Farm

BEEF TESTING FARM, LAMBOURN
BERKSHIRE

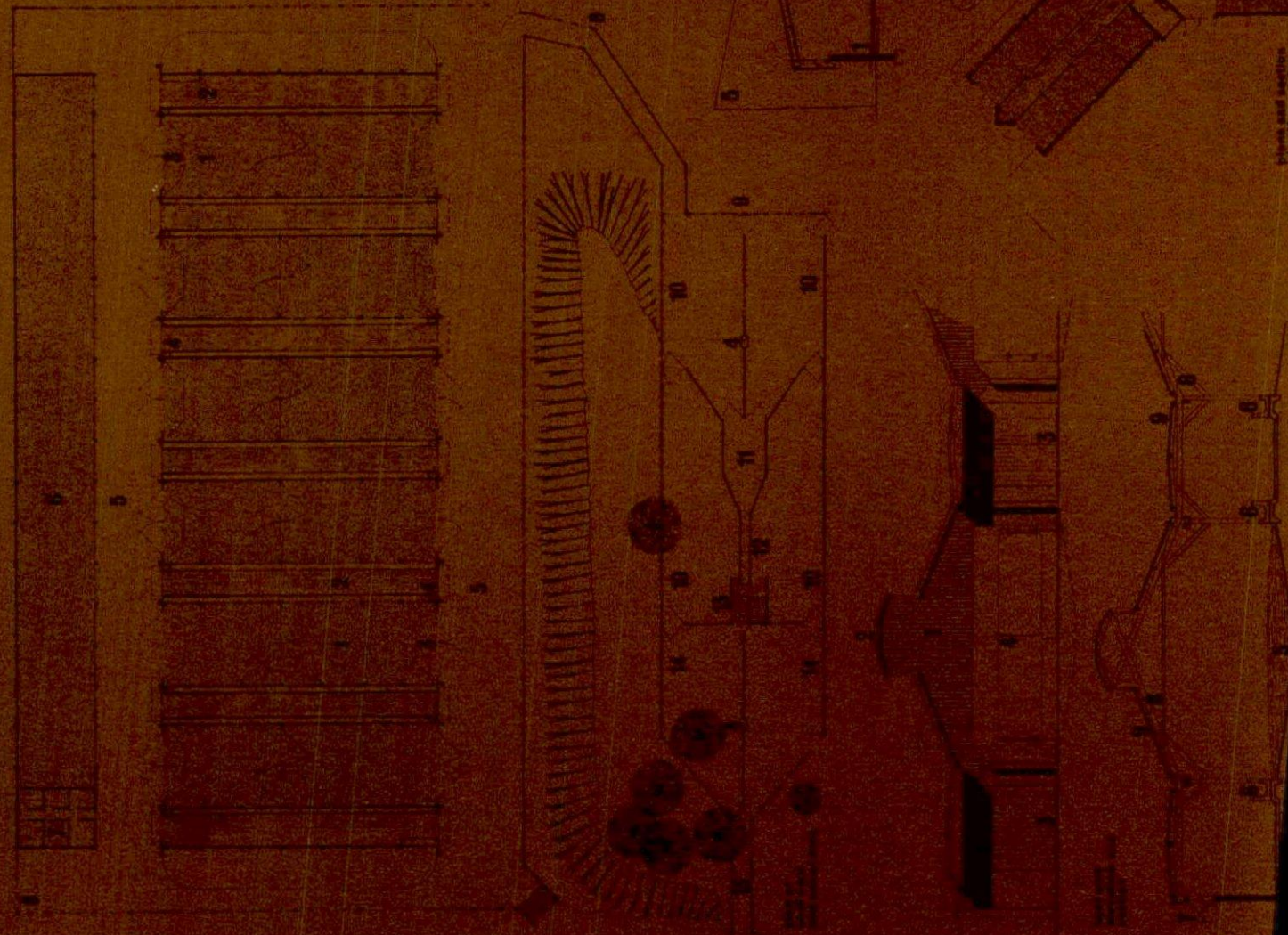
ARCHITECTS: JULIAN KEABLE
& PARTNERS

This new group of farm buildings has been built for the Milk Marketing Board in open country near Lambourn as a beef testing centre for the improvement of the board's beef stud. Here progeny of the beef bulls used for artificial insemination will be compared for growth and quality and quantity of meat. Calves stand by AI bulls from a week old are reared under strictly controlled conditions where growth can be measured. The buildings had to be designed for maximum fertility so that they could be modified to suit desired changes in feeding methods, pen sizes etc. and to house different size groups of steers or other classes of stock. Known as Warren Farm, the buildings include

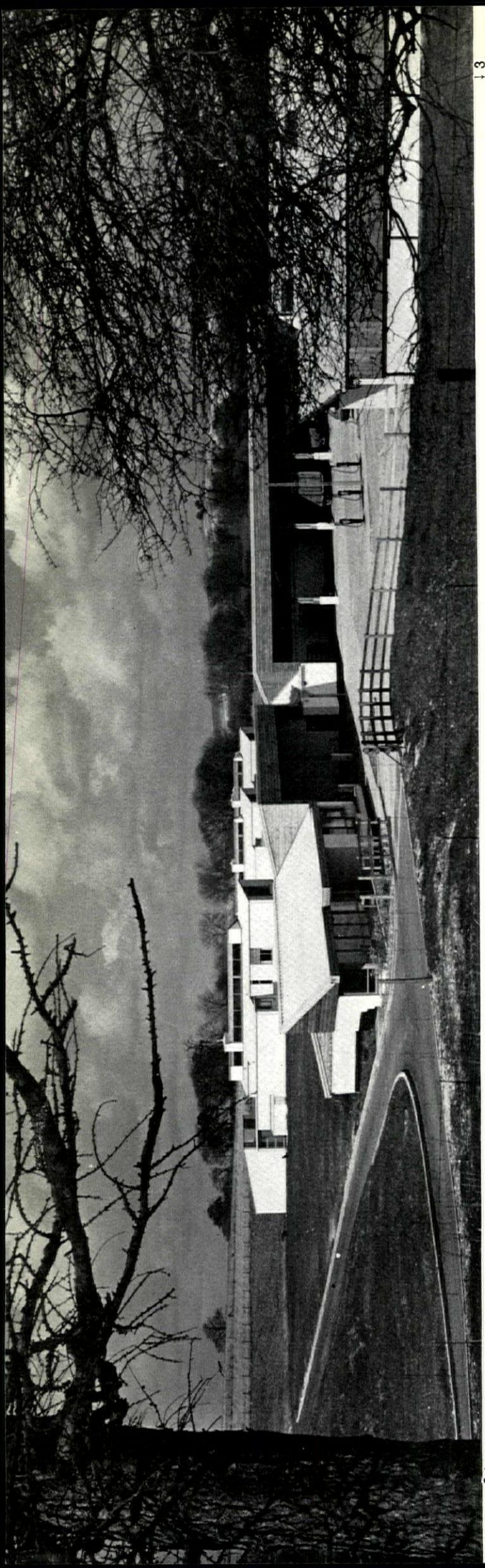
accommodation for 600 head of cattle. Construction is in timber, light-weight (insulating) block and asbestos sheeting. Heavy earth-moving equipment has been used to reshape awkward slopes, allowing buildings to be more economically sited in cleared ground and making vehicle movement easier.

Ventilation in the calf sections is by a piston system with two 24 in. fans in each gable with heating behind them. A duct with vents that can be regulated runs the full length of the building with air outlets under the eaves. The roof is insulated with fibreglass and the walls are double-skin with thermal breakers between. The covered feeding yards are naturally ventilated through the boarded gable ends of the roofs and through adjustable louvers at the end of the buildings and further down at the end of each feed passage. The feed shed is insulated where practicable

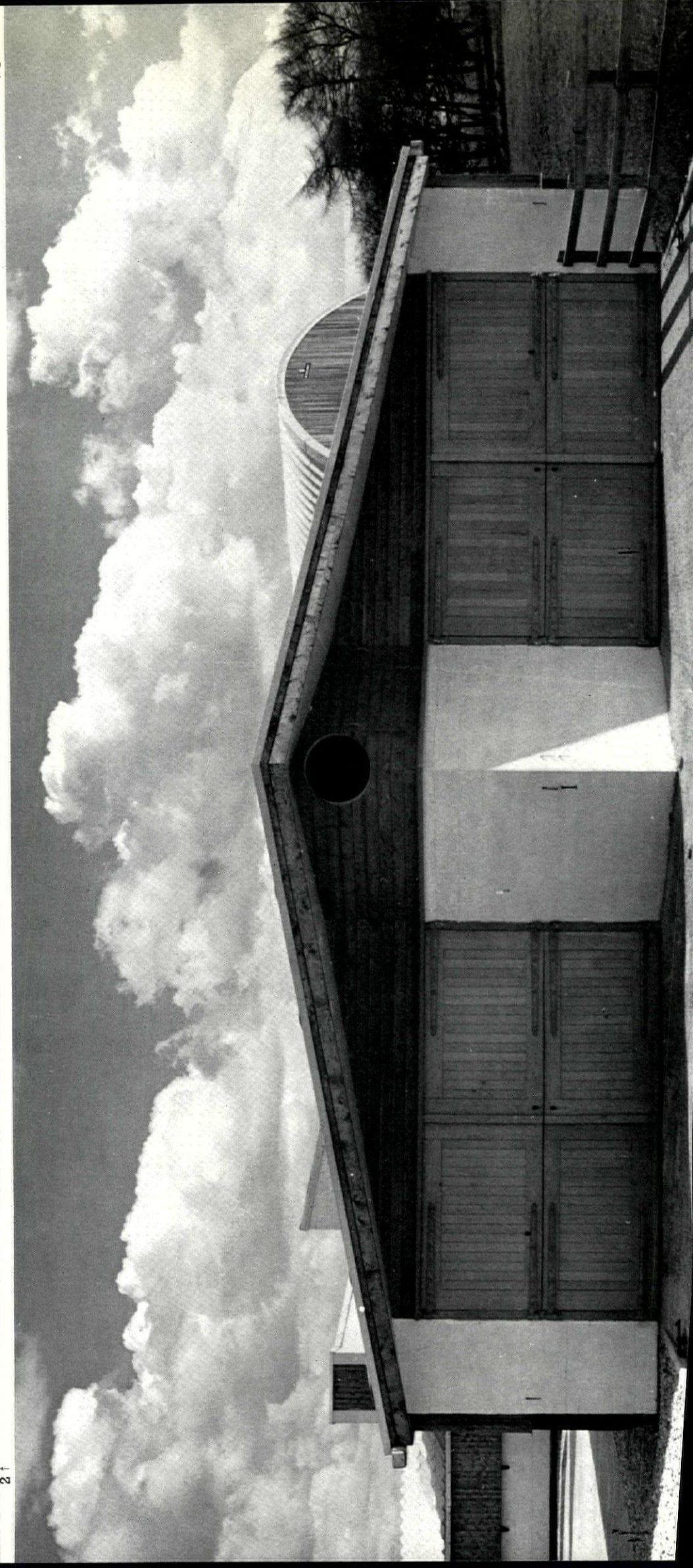
to allow movement of feed and not to retain heat below



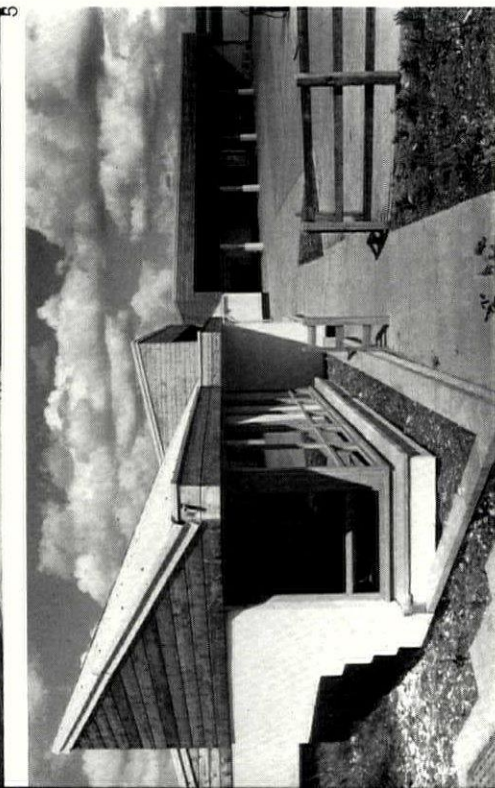
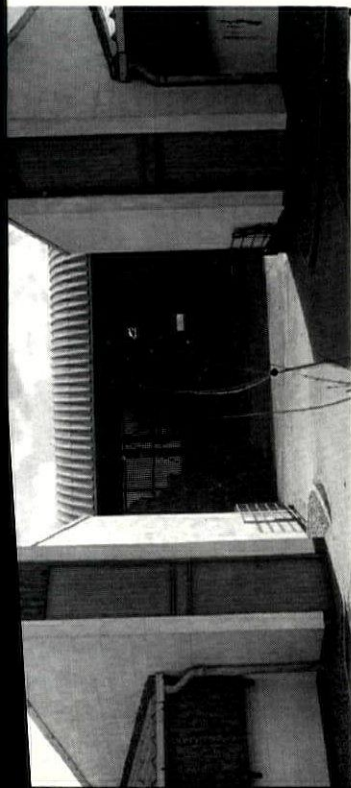




2 ↑



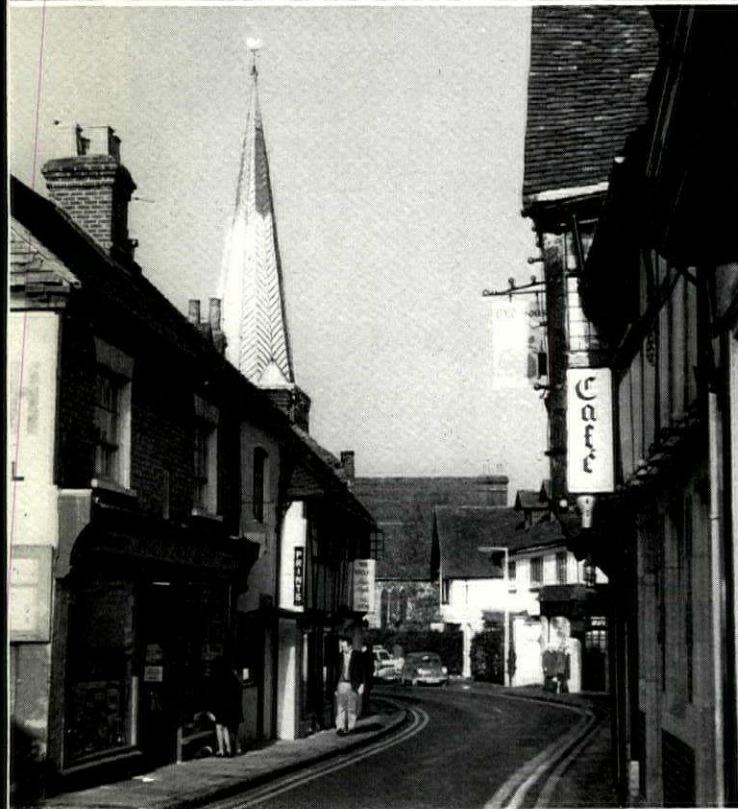
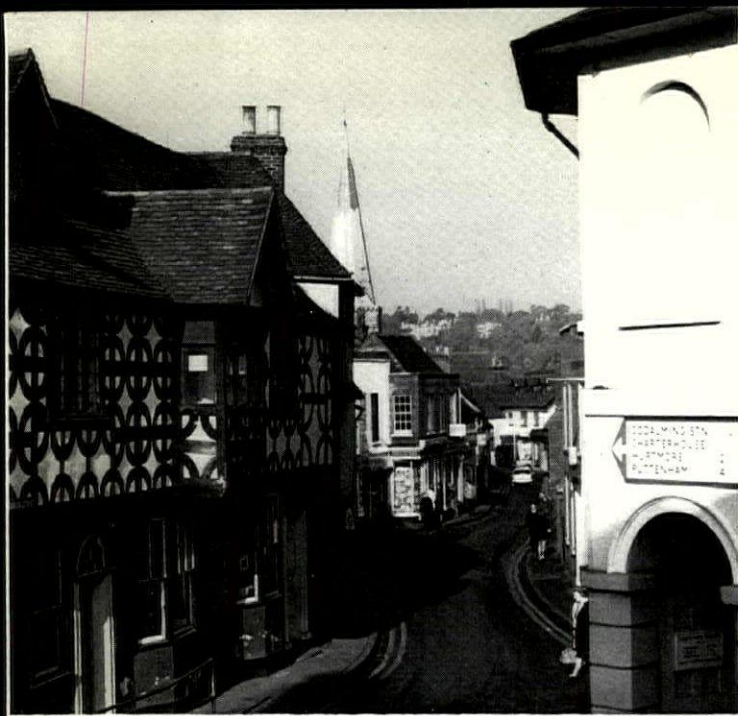
↑ 3



BEEF TESTING FARM LAMBOURN, BERKSHIRE

2, (facing page), looking north over the yard and offices to the staff housing. 3, one of the calf nurseries. 4, detail of the beef unit roof junction. 5, entrance to the calf buildings area. 6, offices with yard and, in the background, machine stores.





1-3 (above), Church Street, Godalming, threatened by a proposed ring road. 4 (below), the Lammas Lands which form an unspoilt foreground to the town.

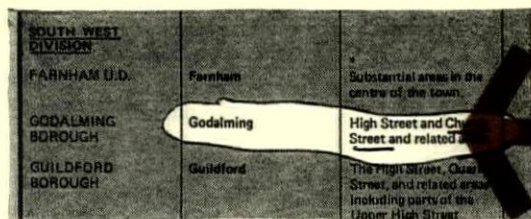


Six months ago, under the title *Conservation in Surrey*, the Surrey County Council published a provisional list of Conservation Areas, indicating, one would suppose, their intention to take the Civic Amenities Act seriously.

Aspects of conservation: 2

TOWNSCAPE

Kenneth Browne

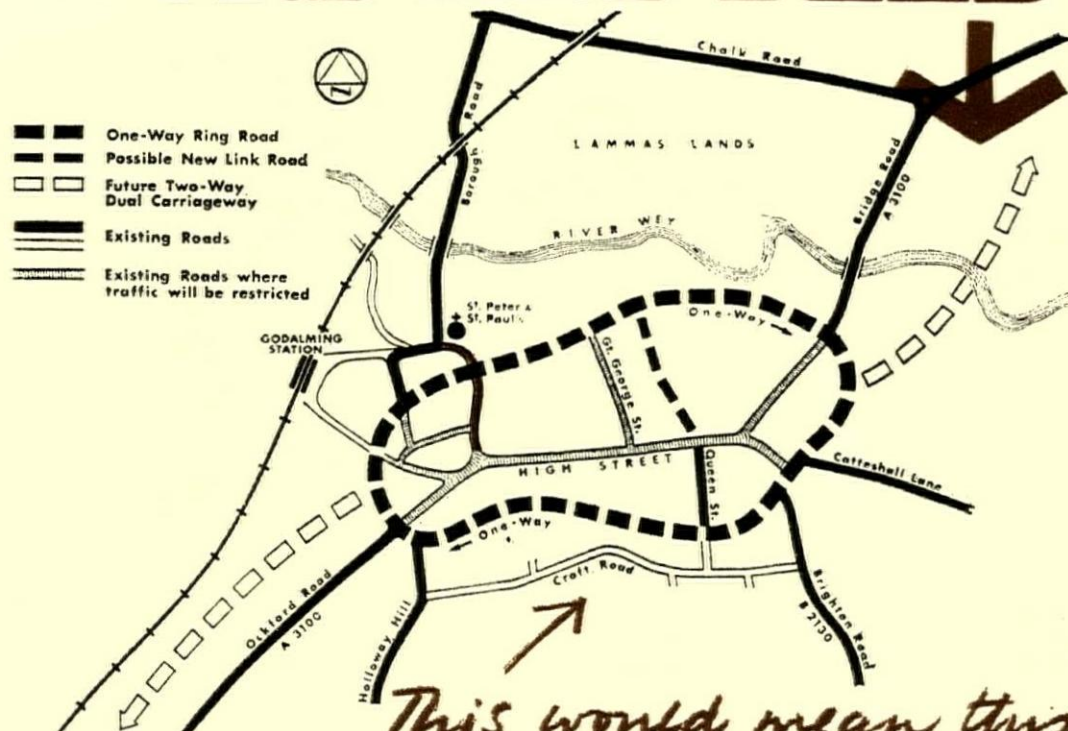


Under GODALMING we read 'High Street and Church Street and related areas' and a look at Church Street, 1 to 3, shows how worthy of conservation it is. A winding, medieval street of considerable charm and rich in listed buildings, it unfolds in a double curve. Beginning with the attractive Town Hall, topped by its distinctive cupola, at the junction with the High Street, its culmination is the uplifted spire of the parish church which visually blocks its end.

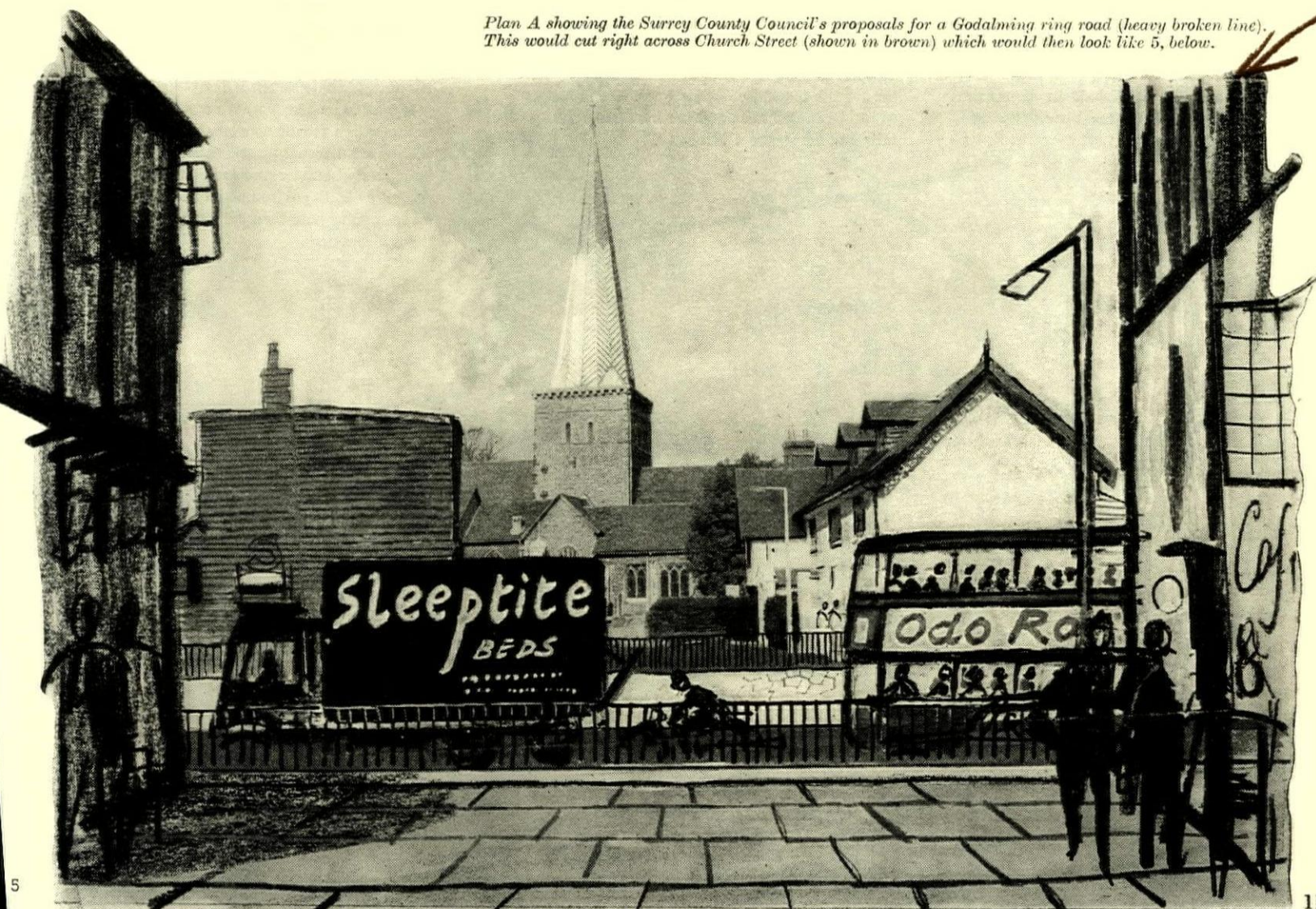
In the list, under 'Statement of Policy', the Planning Committee say that 'the County and District Councils will consider ways of enhancing the areas and controlling the traffic in the interest of the amenities they possess. Every effort will be made to preserve the best buildings and groups upon which the character of Conservation Areas depends'.

Admirable sentiments, but hardly can the ink have been dry on them before the local papers headlined an announcement that Godalming Borough Council had approved a Surrey County Council plan, A, for a one-way ring road, 40 ft. wide (to relieve the High Street), which would smash right across Church Street immediately in

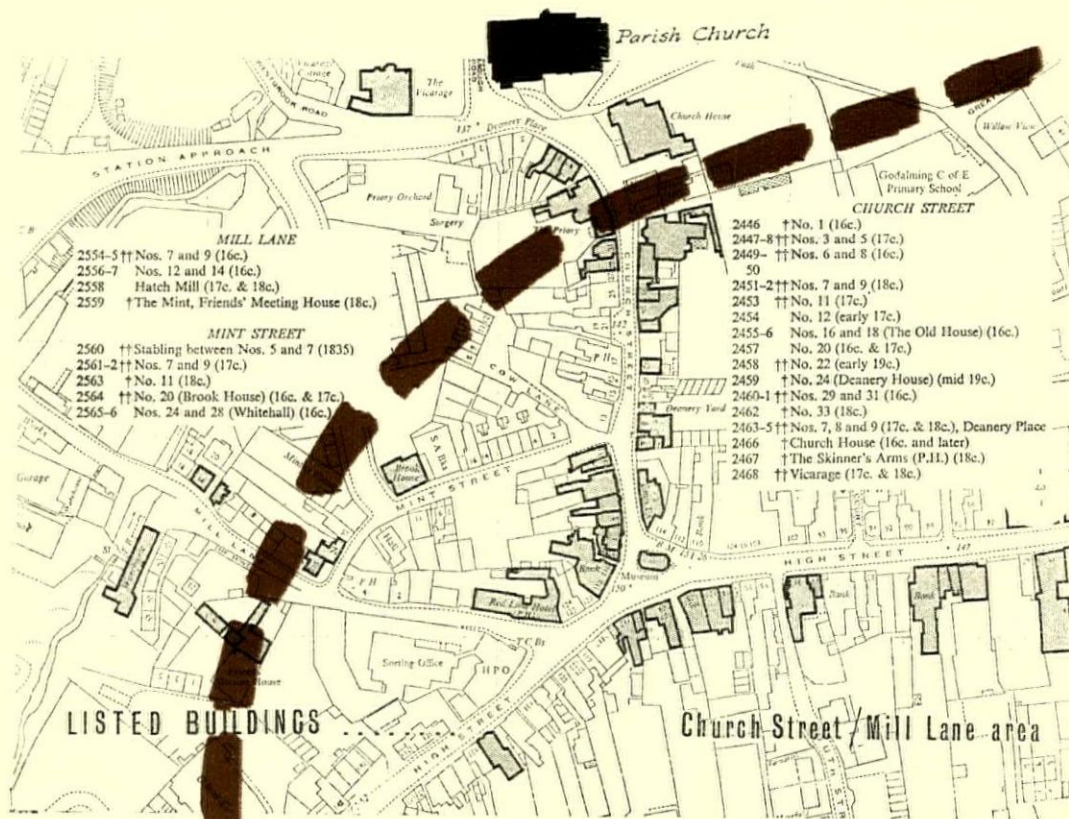
WORD AND DEED



Plan A showing the Surrey County Council's proposals for a Godalming ring road (heavy broken line). This would cut right across Church Street (shown in brown) which would then look like 5, below.



Church Street, Godalming, as it will be if the ring road is built.



Plan B showing the approximate line of the proposed ring road (broken brown line) in relation to listed buildings.

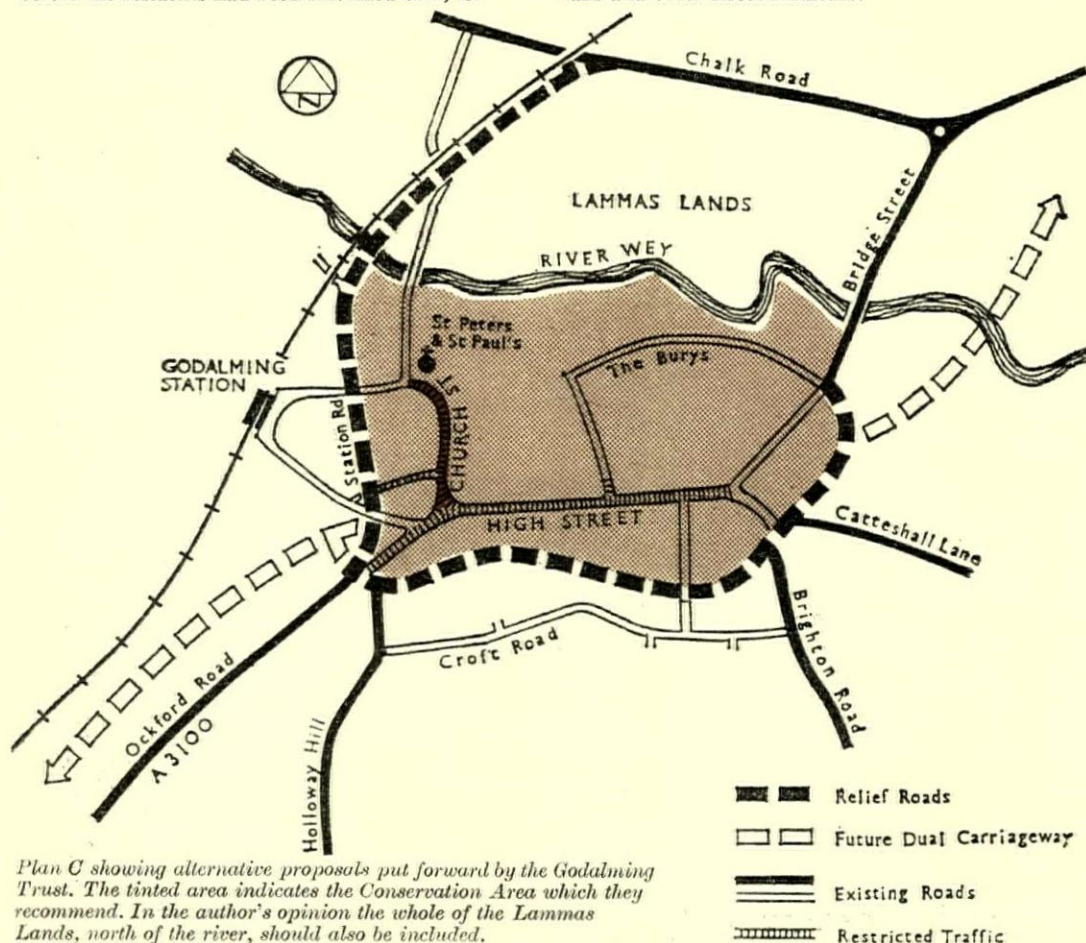
Elsewhere the ring road would spoil the Bury Fields, a quiet, green open space beside the River Wey, which is the important foreground to the town and should certainly be included in its Conservation Area. It would also wreck the Mill Lane area, one of the oldest parts of the town, where one of the earliest Friends Meeting Houses is situated alongside other listed buildings. The residents have not taken the threat lying down and the vicar, whose church is in the front line, has preached a sermon on it, quoting from the gospel of *Traffic in Towns*. Also, echoing the frustrations of many, he said that one consequence of the complexity of the technological society in which we live was that we had to leave many things to 'the expert—the man who is a specialist, the man who knows' yet 'in the actual business of living in Godalming we, you and I, are the experts. We live in the place. The man in County Hall or the man at the ministry does not. To him we are a neat little map, or an extrapolation on a graph estimating traffic density—and no more'. He had a point. It is true of course that Godalming has traffic problems, especially in the High Street where heavy vehicles often have to mount the pavements to get through. But alternatives have been put forward, notably by the Godalming Trust whose proposals are not just pie in the sky but have expert engineering approval. C. The Trust has no quarrel with the alignment of the southern sector of the County Council scheme, but it rejects the idea of a one-way ring road considering that it is likely to attract Guildford traffic which would otherwise use the bypass. It proposes instead that the southern sector, which does little damage to amenity, should be built first and then, at a later date, if a further relief road on the north side is necessary, it should be built along the line shown on plan C running behind the church and following the railway.

front of the 12th century parish church, severing it from the town and the street which bears its name. Furthermore the plan would mean demolition of historic buildings on either side, notably The Priory. In face of the resulting barrage of protest, the County has since said that the plan is not hard and fast. Most people, however, think it is, save for details of exactly which properties will go. What is more, the intention seems to be to press ahead as soon as possible with the northern sector of the ring, the very one that will do all the damage. Approval of the plan by the local council came before the residents had been informed of it, let

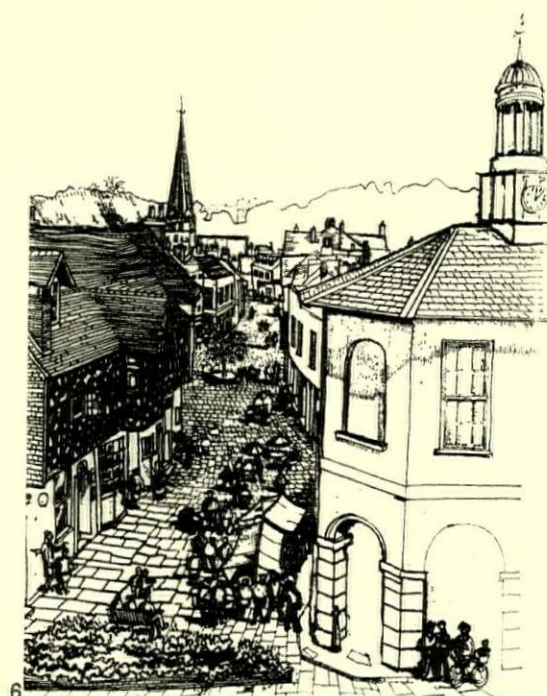
alone discussed it. So much for citizen participation. The effect of this proposal would be to immediately ruin the best view in the town, 3, making it look like 5. How little the visual and physical consequences of such clumsy planning are understood by those involved can be judged by the suggestion that the damage could be minimized by sinking the road. Since it cannot be sunk more than five feet or so, this would merely result in seeing half buses and lorries whizzing across in front of the church instead of whole ones. Added to this would be their fumes and the inevitable clutter of rails and other street furniture.

As at St. Ives, Hunts,* the County Council proposal is a case of blind traffic planning, pursuing a route which is tempting on plan but inexcusable on the spot. It must be stopped. Conservation means conservation on the ground, dealing with actual places, safeguarding individual character and seeing that traffic takes second place to environment; not just expressing pious theories and then conveniently forgetting them in practice.

*See AR, October, 1968.



Plan C showing alternative proposals put forward by the Godalming Trust. The tinted area indicates the Conservation Area which they recommend. In the author's opinion the whole of the Lammas Lands, north of the river, should also be included.

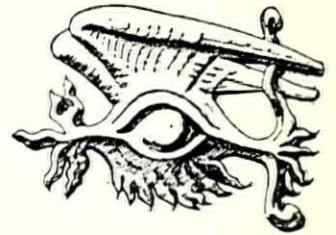


6, sketch by Michael Blower showing a Godalming Trust suggestion to turn Church Street into a pedestrian precinct.

Few people would expect the Azores—a cluster of dots on most maps and generally associated with shipping in distress in Atlantic gales—to show a considerable number of Baroque churches and convents. Nowadays most traffic to the islands is by air; and the airport at Santa Maria is a stopping point for a few airlines making the longer trans-Atlantic crossings. A short time spent on this small wind-swept island could show one the curiously stolid little church at Santo Espírito, set high on a hill; but it is necessary to make a half-hour flight in a light plane to the grass airfield on São Miguel to visit Ponta Delgada, the capital, and the other half-dozen towns on this, the largest island of the group. With its

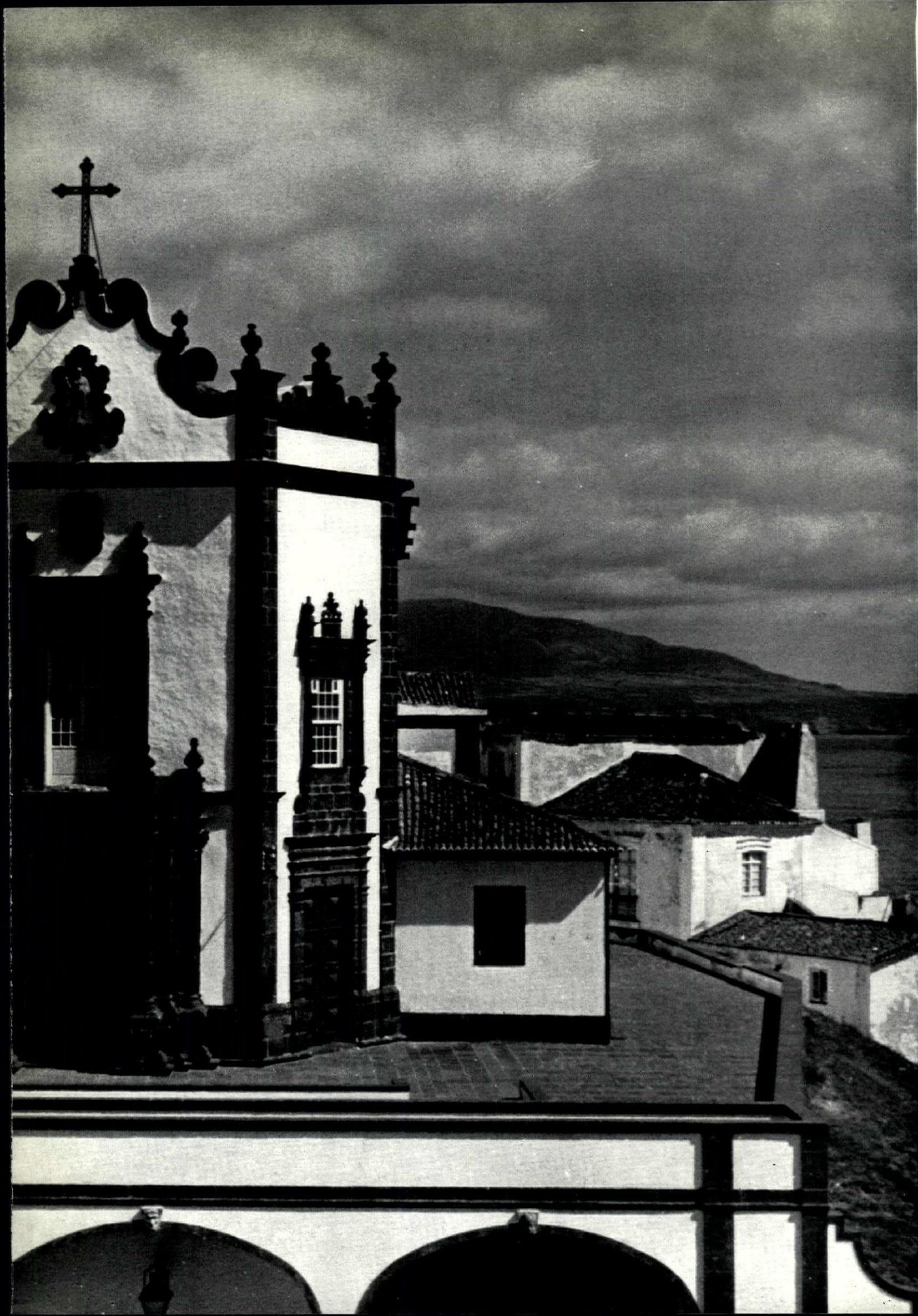
black and white cattle grazing on the green slopes of extinct volcanoes and the intensive cultivation of pineapples in glass-houses, São Miguel still displays some of the prosperity which must have flowed back to it—and to metropolitan Portugal—from the great mineral wealth of the Brazilian empire during the eighteenth century. Most of the buildings naturally reflect their home origin, and at first there seems little departure from Portuguese models, with the eighteenth-century façade superimposed on the fifteenth-century Matriz (parish church) in Ponta Delgada, and the massive stone carving of the façades of the seventeenth-century church at Ribeira Grande and the church of the Jesuit College (where

missionaries are said to have been trained before going to Brazil). But a more distinctive strain may be traced in churches like São Pedro (rebuilt 1681) and several of the convents in Ponta Delgada, where the builders have followed the idiom of northern Portugal in using pilasters and surrounds of carved stonework against plain white-washed walls. But here it is the dark local volcanic stone which is used, instead of the paler granite of Portugal, giving a much greater tonal contrast. This dark volcanic stone is also used with incisive effect to add calligraphic flourishes; and this practice was still in use in the early nineteenth century, as is shown by the church of São Roque on the coast outside Ponta Delgada.



the exploring eye









2

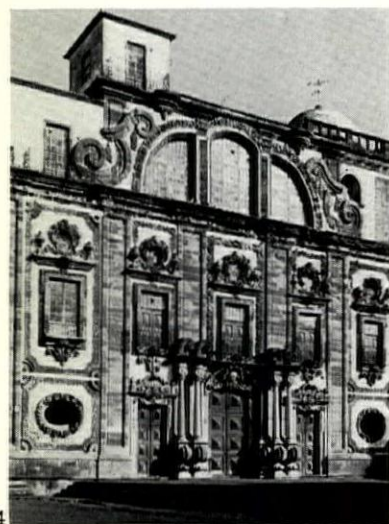


6

- 1 (page 113), the church at Santo Espírito on the island of Santa Maria.
 2, the Matriz at Ponta Delgada, the capital of São Miguel.
 3, the seventeenth-century church of Nossa Senhora dos Passos at Ribeira Grande on São Miguel.
 4, the church of the Jesuit College at Ponta Delgada.
 5, the Tribunal at Ponta Delgada (formerly the seventeenth-century convent of Nossa Senhora da Graça).
 6, the eighteenth-century convent of Nossa Senhora do Carmo at Ponta Delgada.
 7, the convent of Esperança at Ponta Delgada.



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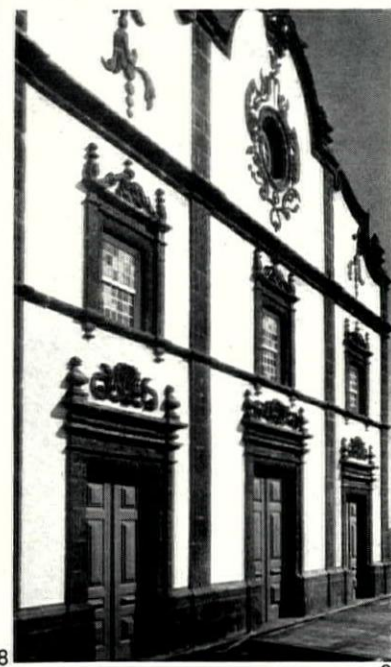


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7

- 8, carved volcanic stone decoration on the eighteenth-century convent of São José at Ponta Delgada.
 9, the early nineteenth-century church of São Roque, overlooking the sea outside Ponta Delgada.
 10 (overleaf), the church of São Pedro at Ponta Delgada. Originally built in 1642, it was rebuilt in 1681.



8

9

ARCHITECTS' ARCHITECTURE

For the last two hundred years it has been customary to regard the philosophy of architecture as a branch of the philosophy of the 'Fine Arts', or as part of that branch of philosophy known as 'Aesthetics'. Since there is no disputing that architecture is a 'visual art', the advantages of studying its criteria with respect to other 'visual arts', or with respect to some philosophical system which demonstrably underlies all forms of 'art' (whether visual or otherwise), will be only too obvious. But the justification for basing a philosophy of architecture *exclusively* on such philosophies is by no means self-evident, and may indeed be questioned on three major grounds.

Firstly, the notion that architecture is akin to painting and sculpture is based on certain methods of training which were current in Italy in the early sixteenth century; but even if these methods were valid at the Renaissance (which is by no means certain) it does not necessarily follow that they must be valid today. Secondly, it is clear that, whilst a number of distinguished philosophers have regarded 'Aesthetics' as a key to the understanding of all the 'Fine Arts', this concept pre-supposes the notion that all activities so classified have certain fundamental qualities in common; for there can be little point in discussing *differentiae* until the existence of the *genus* has been demonstrated. Thirdly, whatever may have been the 'artistic' condition of architectural practice before the mid-eighteenth century, it is now undisputably a *profession*; thus it would seem wise to examine whether or not its principles can be deducible by analogy with other professions, such as medicine and law, before regarding the practice of architecture as professionally *sui generis* or artistically unique.

The first two notions, which imply that architecture, sculpture and painting should be considered as belonging philosophically to the same *genus*, and that an understanding of 'Aesthetics' provides the philosophical apparatus for comprehending all the 'Fine Arts', can be disputed on a number of grounds. In the present context a reference to two authorities will suffice. The first is E. L. Boullée, who complained: 'Oh how preferable is the fortune of painters and writers; free and without any kind of dependence, they can choose all their subjects and follow the impulse of their genius. Their reputations depend upon them alone' ¹. The second is Professor W. E. Kennick, whose essay 'Does Traditional Aesthetics Rest on a Mistake?', published in the *Collected Papers on Aesthetics* edited by Fr. Cyril Barrett, suggests that the concept of 'Aesthetics' is devoid of all philosophical reality. Undoubtedly, the traditional 'Aesthetic' basis of architectural philosophy has certain practical values; but it seems to me that the traditional emphasis on the visual or emotional qualities of architecture has been due to fortuitous historical and philosophical causes which have given 'Aesthetic'

VERSUS LAWYERS' LAW

theories an unmerited preponderance. The purpose of this study is certainly *not* to demonstrate the total irrelevance of this traditional 'Aesthetic' basis, but simply to question its total adequacy. In other words, it is an attempt to correct a distortion and disequilibrium of method which has vitiated much which now passes for architectural criticism and has caused architectural philosophy (or 'architectural theory' as it is sometimes called) to fall into unmerited disrepute.

At the same time, it should be pointed out that, paradoxically, students of law show considerably more antipathy toward the study of jurisprudence than architectural students show towards the philosophy of architecture; so much so that the Faculties of Law of French-speaking universities have virtually abandoned all attempts to include the philosophy of law in their curricula ². Similarly, in medical schools, the philosophy of medicine is virtually non-existent as an academic discipline. But it can, I think, be shown that this undervaluation on the part of students of law and medicine (as compared with students of architecture) is explicable in terms of the peculiarities of their chosen professions. The Anglo-American system of law is such that students enter the legal profession with the primary intention of becoming *advocates*. Doubtless many of them are optimistic enough to hope that one day they will achieve such eminence as to be called upon to *judge*; but it is only natural that their main academic interest, as students, should be with the material and techniques of *litigation*, and only the most exceptional students can be expected to have the perspicacity to perceive the importance of philosophical problems which will have little practical relevance for them before they are either elected to the Legislature or promoted to the Bench.

Similarly, medical students have every incentive to devote all their intellectual energies to the materials and techniques of healing, without pondering about the *condition humaine* of those they will heal. The complex and challenging scientific problems concerning the prolongation of human life must seem of more pertinence to the medical student than any ethical problems concerning the extent to which such prolongation may or may not increase the happiness of those involved. Hence the average medical student is as little concerned with the implications of condemning men to live as is the law student with the implications of condemning men to die.

Architectural students sometimes show impatience with the philosophical problem related to their art, but for very different reasons. Their main concern is with the absorbing creative processes of architectural design, and with the vast mass of technological and sociological information required to achieve it effectively; yet they are well aware of the philosophical implications of criticism, since in many schools of architecture those who

teach design are in fact called 'critics'. But students, by virtue of their youthful inexperience, inevitably tend to see the present as the beginning of the future rather than as a transitional period constituting a prolongation of the past. This does not mean that a philosophy of architecture will only be acceptable to them in so far as they can be made to perceive its immediate relevance to their own current creative activities. But it does mean that any attempt to convey that philosophy by reference solely to the past is fraught with peculiar difficulties unknown to the teacher of the Common Law, since (as all law students are well aware) the study of law and the practice of law are essentially, by their nature, *historical* disciplines, based on precedent and on statutes enacted in the past.

The literature devoted to the study of architecture as a profession is scarce. So far, only two standard works seem to have been published in English. The first, by Frank Jenkins, is entitled *Architect and Patron*, and is essentially a factual history. The second, Barrington Kaye's *The Development of the Architectural Profession in Britain*, is far more philosophical; but since the author is a sociologist, he bases his arguments on the general definition of a profession as 'an occupation possessing a skilled intellectual technique, a voluntary association and a code of conduct'. At first sight, the concept of 'a code of conduct' might seem the obvious and facile link between the philosophy of architecture and the philosophy of law. But in fact this present enquiry is not in any way concerned with the social behaviour of architectural organizations, but rather with the problems of choice implicit in the term 'skilled intellectual technique'. This, of course, has little relevance to Dr. Kaye's thesis.

In order to explain what, in the design of buildings, seems to indicate a real affinity between jurisprudence and the philosophy of architecture, I would suggest four headings. The first is the popular concept of 'natural laws' as meaning the laws of inanimate nature. The second is the more accurate concept of 'natural laws' as meaning the relationships between members of a civilized society. The third is the concept of 'conventional law' as meaning obligations based on social convention. The fourth is the concept of 'judgement', as meaning evaluation based on explicable criteria. It will be apparent that, in Vitruvian terms, the first three correspond to *firmitas*, *utilitas* and *venustas* respectively; but such correspondence would be merely verbal and artificial unless it could be established that both jurisprudence and the philosophy of architecture have a common basis. I would suggest that they have, and that it is the notion that both professions presuppose 'rules' of some sort or another.

The notion that law implies some sort of rule would seem so fundamental to the whole concept of jurisprudence as to be self-evident. Indeed, it might be argued that, in so far as the study of jurisprudence (in its contemporary English sense) originated in the mid-eighteenth century with Blackstone's lectures,⁴ the idea of legal rules and the nature of legal rules is the whole basis of a philosophy of law. Yet Professor Hart devotes considerable space in *The Concept of Law* to what he terms 'rule-scepticism',⁵ and this scepticism is of immense relevance to any study of the philosophy of modern architecture (which can also be regarded as originating in the mid-eighteenth century), since the conflict as to whether rules are or are not a fundamental aspect of architectural design has been a vital factor in the develop-

ment of architectural thought. The number of books which, during the last two hundred years, have attempted to demonstrate that architects of the era prior to 1750 achieved excellence by observing certain rules of proportion (thereby implying that similar rules might be applicable today) is considerable. Even Le Corbusier's *tracés réguliers* and 'Modulor' belong essentially to this tradition of thought. But when J. F. Blondel complained in the mid-eighteenth century that students were wilfully disregarding rules in an unscrupulous quest for originality,⁶ he bore witness to the emergence of 'rule-scepticism' which many architects today would consider the essential trait of modern architecture. Hence, until the nature of 'rules' and 'rule-scepticism' has been resolved with respect to both disciplines, there seems little point in enquiring why or how this scepticism arose in architecture, or in what manner any rules do or might still apply.

It is important to emphasize here the generic quality of the term 'rule'; for, as John Austin implied in the first lecture of *The Province of Jurisprudence Determined*, a law is obviously some kind of rule, but all rules are not necessarily some kind of law. Thus in architecture, we may legitimately distinguish between those natural laws which affect *firmitas* and *utilitas*, and the possibility of another class of rule which may or may not affect *venustas*, but which is certainly the only class of rule which the majority of architectural theorists from 1750 onward have considered to be the domain of architectural philosophy.

This latter type of rule can best be understood in the context of those which Professor Hart discusses with respect to games. The whole essence of a game is that despite certain intrinsic and widely recognized values, its rules are essentially *arbitrary* and a matter of *convention*. Whether or not it is meaningful to say that someone plays tennis 'beautifully' (a semantic problem discussed by R. G. Collingwood⁷ and other writers on aesthetics) need not detain us here. The important fact is that it is certainly meaningful to ask whether the game itself is meaningful. Some enthusiasts may justify the sport by reference to 'natural laws', such as the desirability of keeping oneself fit, or the desirability of fostering social relationships; and these arguments may well provide a partial justification. But they can never constitute a *total* justification. Tennis may be played because it is healthy, because it is socially useful, or simply because it is enjoyable. But it is only playable at all if tennis-players voluntarily agree to certain rules which, in a legal sense, may be termed 'arbitrary'. These rules, in other words, are solely tennis-players' rules; but whereas no one would scornfully dismiss the skill of a tennis-player by some derisive expression such as 'tennis-players' tennis', architects, doctors and lawyers can see quite clearly what would be derogatory about the descriptions: 'architects' architecture', 'surgeons' surgery' or 'lawyers' law'.

The essentially derogatory nature of such criticism is its implication that the practitioners are making a mere game out of something of far deeper human concern. The histrionic oratory of a popular advocate may effectively save a malefactor from well-deserved retribution, or deprive a plaintiff of the restitution of his rights; but it will usually irritate the judge, and must be considered by any thoughtful member of the jury as being just as despicable as the medical virtuosity which prolongs the senility of an octogenarian by a few more months, or that architectural virtuosity which disregards the

reasonable requirements of a client and the amenities of his neighbours in the search for 'artistic' expression. It is not that these aspects of forensic, surgical or architectural skill are held in low regard. What is criticized is the cynicism, conceit and distortion of values which arrogates to one aspect of professional skill a virtue isolated from the total good which the profession is intended to achieve and the purpose it is intended to serve.

Ethically, then, the most obvious affinities between jurisprudence and architectural philosophy would seem to be those based on what are termed 'natural laws' and those based on laws concerning voluntary obligations. But it seems worth emphasizing that, in the first category, the scientific concept of 'law' derived initially from the juridical concept of law, rather than vice versa. Newton regarded his own discoveries as simply 'mathematical principles of natural philosophy', and it was the Rev. John Wallis who first seems to have related them to the Laws of Divine Providence. He coined the term 'General Laws of Motion' in 1668 when explaining his astronomical theories to the Royal Society. It seems doubtful whether the notion of scientific 'laws' entered French thought before Voltaire published his *Eléments de la Philosophie de Newton* in 1738, when he refers in his preface to '*ces lois primitives de la nature que Newton a découvertes*'. Moreover, even though Dr. Johnson's definition of law as 'an established and constant mode or process; a fixed correspondence of cause and effect' sounds scientific in a modern sense, the source he gives for this definition is Shakespeare's *Cymbeline*.

Hence the question: 'To what extent do the laws governing rational structures and functional plans relate to natural law?' is of more relevance to jurisprudence than might at first appear, because if one considers structural and functional laws in relationship to the philosophy of law, rather than to the philosophy of science, one can see why so much variety is permissible. The prestige of wide-span structural engineering—despite the number of bridges which have dramatically collapsed—has tended to make architects think of the 'laws' governing short-span structural design as imposing immutable shapes on structural members such that they become simply a kind of diagram of the minimal dimensions needed to resist bending, compression, buckling and shearing. For over a century, therefore, the philosophy of architectural structures has suffered through being an intellectual battleground where the most vociferous belligerents have been the ultra-rationalists, who regard the shapes of all structural members as mathematically predetermined, and the ultra-aesthetes, who regard them as completely arbitrary. Yet the juridical (as opposed to the 'scientific') concept of 'natural law' is essentially concerned with the prescription of minimal requirements. No jurist ever regarded sumptuary laws as natural. Hence, although an architect is very properly liable in law if the dimensions of his structural members prove inadequate for stability, one can readily envisage many reasons why he might be morally and professionally justified in deliberately exceeding the minimal dimensions. Such justification would almost certainly relate to some concept of human happiness or human dignity, and hence might legitimately be regarded as based on 'nature', though not on 'natural law' as the term is generally understood by scientists. Apart from individual definitions of natural law, many systems or aggregations of natural law have been formulated by successive genera-

tions during the last two centuries. They are important because they seem to have one fundamental quality in common, namely an appeal to a universal ideal which can be enunciated in the form of certain principles of order. Whether or not any kind of 'ideal' is valid will be discussed in due course. But it is relevant at this stage to note that a particular generation often has the illusion that its formulations of 'natural laws' are unequivocally applicable to every eventuality by the simple use of reason. Yet jurists usually find that what is 'rational' is less a matter of law than a matter of fact, and the failure of architects to appreciate this basic theoretical distinction—so obvious in legal theory—has obscured much of the merit of the so-called Rationalist school of thought.

The Rationalist theory, as expressed for example by Viollet-le-Duc in his seventh *Entretien*, is a clear illustration of this problem. A building, according to him,⁸ is a sort of 'organism'; the visible manifestation of the laws of nature; and he considers it illogical to enunciate any other kind of rule, since true architectural forms are nothing more or less than the 'expression' of structure. But this 'expression' can only be deduced by reason, and once architectural theorists embark on speculation as to what is structurally reasonable, they are confronted with the same dilemma which confronts jurists when they are asked to prognosticate concerning legal judgements involving the interpretation of 'reasonable' behaviour. Admittedly even jurists are divided as to the nature of this dilemma, possibly as a result of the political theory (derived perhaps from Montesquieu) whereby there has been a failure to distinguish between general rules and the problem of interpreting those rules authoritatively in a particular context.

Thus Montesquieu's assertion that 'there is no liberty if the judiciary power be not separated from the legislature and executive'⁹ is manifestly misleading, since it ignores the legislative power which the judiciary must inevitably assert. Hence (if I may rephrase a remark by Professor Hart in such a way as to give it a specifically architectural implication) there are two minimum conditions necessary and sufficient for the existence of an architectural system. On the one hand those rules of behaviour which are valid according to the system's ultimate criteria of validity must be generally obeyed, and on the other hand *its rules of recognition specifying the criteria of architectural validity and its rules of change and adjudication must be effectively accepted as common public standards.*¹⁰

Enough is known of the history of architectural theory during the last two hundred years for the importance of the first condition to be evident. Few theorists have ever been so eccentric as to deny the general rules of architecture. Even among the leading combatants engaged in the Gothic Revival's internecine strife, it can easily be shown that the general principles postulated by Viollet-le-Duc differ little from those postulated initially by Ruskin,¹¹ and that those postulated by Pugin¹² differ little from those postulated by Vitruvius. The frustration and sterility of the Gothic Revivalists' quarrels (to the extent that they were frustrating and sterile) resulted from the failure to grasp the need for establishing the criteria of validity and the rules of change and adjudication. And such frustration and sterility must inevitably be the fate of any theory of architecture which does not see that *criticism* is as fundamental to the natural laws of architecture as it is to the natural laws of society, since any law, whether it be forensic or architectural, is meaningless

except in so far as it is related to specific cases. A similar argument applies to 'Functionalism'—the term usually employed by architectural historians to indicate that aspect of Rationalism concerned with efficient planning. Ever since the Napoleonic era, when Durand published his treatise, the principle that good planning is the essence of good architecture has been enunciated with the complacent implication that the mere formulation of the law would itself ensure rational spaces. Even the complete absence of any visible sociological justification for the spaces delineated in Durand's published plans seems to have been overlooked by those who (perhaps unwittingly) have subscribed to his written doctrine. In recent years, the promotion of the study of human relationships and human emotions from the realm of literature to the dignity of 'Social Sciences', combined with the awe inspired by electronic computers, has led to a resurgence and enhancement of Durand's theory, whereby architectural planning is again considered to be subject to the same kind of 'laws' as those studied in other departments of the Ecole Polytechnique. Yet when the actual *design* of a major public building is involved, it is apparent (from the vast variety of solutions considered totally acceptable by those who designed them) that the element of uncertainty is commensurate with the *rationes decidendi* concerning the application of the fifth amendment of the United States Constitution.¹³ Hence, the conclusion to be drawn from comparing the laws of nature as they affect the philosophy of architecture with those which are the concern of jurisprudence would seem to be as follows: whereas in juridical law two distinct elements are essential, namely a body empowered to create law, and an adequate number of trained professionals empowered to interpret it; in architecture the first of these elements is irrelevant, since any such laws as exist are either the three primary general laws of Vitruvius (*firmitas, utilitas* and *venustas*), or mathematical principles which are so specialized as to be outside the competence of purely architectural studies. These may derive from experiments in acoustics, structural engineering, sociology, psychology, climatology or any other science. But the purpose of an architectural philosophy is not to test the validity of laws, but to establish the criteria of validity and the rules of change and adjudication, combined and applied in specific architectural circumstances to produce a 'just' result. The philosophy of architecture is thus synonymous with the philosophy of architectural judgement; i.e. criticism.

The process of criticism implies the need for some kinds of standard, and when comparing jurisprudence to the philosophy of architecture in the mid-twentieth century, few paradoxes are more striking than the persistence of a faith in legal standards and the absence of a faith in architectural standards. Before 1750, when structural materials were virtually limited to timber and masonry, when structural calculations were completely unscientific, when human needs were relatively simple, when building-types were relatively few, and when the pattern of cities was relatively homogeneous, it is not surprising that the validity of fundamental principles of Antiquity could be accepted by reasonable men without hypocrisy. Their notions of order, arrangement, eurythmy, symmetry, propriety and economy¹⁴ may not have corresponded exactly to those of ancient Rome; but the correspondence was evidently sufficiently close to allow a universal concept of architectural standards to find wide acceptance

among those who, because of influence or affluence, were able to control the environment which architects were called upon to create. Today, however, the multiplicity of building materials, the advances in accurate structural analysis, the complexity of society, the extent of financial investment in real estate and the incompatibility of conflicting urban planning requirements have created a situation where the very notion of a 'perfect building' seems not merely incongruous but virtually meaningless. The same incongruous disparity is evident in law, yet the belief in standards is not thereby destroyed. When American philosophers and jurists framed the United States Constitution, American lawyers were still either trained in England, or self-taught on the basis of English legal commentaries. Hence, it is not surprising that their first attempts at creating ideal republican laws should consist of the vaguer legal concepts of Antiquity amalgamated with the traditional specific privileges of their British ancestors; or that, in the expanding economy of a new capitalist and industrialist society, they should interpret 'liberty' and 'the pursuit of happiness' as legal principles indicating that legislation should be limited to the security of persons and property. Today, when legislation, like architecture, is thought of primarily as an instrument for social reform, the incentives offered to lawyers to find ways of circumventing the law are in some circumstances more tempting than the incentives to urge their strict observance, and experts on taxation law will more frequently be called upon to advise on how taxation can be avoided without penalty, than how the fiscal intentions of the legislature would most properly be fulfilled.

The importance of the advisory function of lawyers is of fundamental relevance to any study of jurisprudence as it relates to architectural philosophy, since legal advice is essentially a forecast of court decisions, and court decisions are based on the notion of *consistency and conformity to standards or norms of judgement*. The architectural implications of this principle are evident to anyone who cares to compare the decisions of the traditional Ecole des Beaux-Arts juries with the results of jury decisions in recent international competitions. The grading of French academic projects after a 'judgement' still suggests that the jury, after studying several hundred projects in a few hours, eventually concludes that a certain solution is best, and hence that every scheme which approximates to this solution should receive a 'mention' or a 'médaille'. Similar techniques seem to have been used in judging some of the major nineteenth-century public competitions in England (such as that for the London Law Courts). The premiated schemes have much in common, so presumably the rejected schemes were based on concepts which the jury deemed inferior or unacceptable. Yet few would claim that a similar philosophy has been in evidence in recent major competitions. It seems fairly clear that the prizes were not awarded to the schemes which elaborated, in a superior manner, certain norms to be found among many of the more accomplished submissions, but that, on the contrary, the various prizes were given to the schemes which seemed most distinctively idiosyncratic.

The desirability of such norms would seem to suggest that instead of thinking of *venustas* as something which, in the domain of architectural creativity, is highly personal, we should think of it more in terms of the kind of *social obligations* legally associated with the notion of propriety. Even in games, where the rules are discretionary,

some kind of *convention* is implied; and the importance of this fact is only too clear when one considers how derisively the term 'conventional' is used by critics of the 'Fine Arts'. When painters or poets are 'unconventional', it is a personal decision connected with the expression of their own private emotions. In so far as it ceases to be purely private, it will usually only concern very few people. But just as the publicity given to certain paintings or certain poems can be considered, by society, to be obscene or libellous according to law, so we should consider whether or not unconventional modifications to our environment can in certain circumstances fall so far outside the norms of convention—either by being too idiosyncratic or too *unimaginative*—as to outrage public notions of decorum and propriety. If so, what is the architect's moral responsibility in this respect?

The ability to establish norms is clearly more difficult in architecture than in law, since in the latter profession, the notion of *precedent* is still highly prized. Yet even with precedents as a guide, differences of judicial opinion are only too frequent, as is bewilderingly obvious from the number of times decisions in primary courts are reversed by courts of appeal, and by the number of times a final judgement of the United States Supreme Court is rendered on the basis of five in favour and four against.¹⁵ What chance, then, has an architectural jury, which regards precedent as a defect rather than a virtue, of achieving judgements which will be acceptable to the contestants, to the profession and to the public at large?

This question can be answered in two ways, and both answers not only call in question certain basic assumptions in current text-books on architectural philosophy, but indicate how salutary it would be for architectural theorists to study their own subject on the basis of the methods of teaching law. First, the current architectural assumption that precedent is the worst kind of guidance can only be based on a partial conception of architecture: that is to say, on the 'Aesthetic' theory criticized at the beginning of this essay. Secondly, few juries can justifiably claim nowadays to be judging by deference to the standards of the public, since the architectural profession—mainly through the influence of Le Corbusier—tends increasingly to regard itself as a paradigm for the whole human race.

The fact that legal judgement implies criteria and that legal criteria imply ideals, has given rise to a basic controversy in jurisprudence which cannot be ignored when trying to relate jurisprudence to the philosophy of architecture. This controversy, expressed in simple form, is whether or not the concept of 'justice' is inherent in the concept of 'law'. Architecturally, this corresponds to the difference of opinion between those who contend that there can be no such thing as 'bad architecture', because if a building is badly designed, it is not architecture at all, but simply 'building'.

Now there can be little doubt that a jurist's failure to forecast accurately a legally valid court decision is in no way synonymous with an assertion that justice has been denied. But if we transcribe this distinction into an architectural context, and ask whether the failure to design an 'ideal building' means that there is no such thing as 'ideal architecture', the answer seems comparable to the type of answer which justifies the study of legal *dicta*. In law, though there can be no such thing as an ideal judicial decision, the concept of justice makes it essential, in a civilized society, for judicial

decisions to approximate as closely as possible to this concept. Such a concept need neither be abstract nor universal; on the contrary, the more the concept of justice relates to the realities and diversities of the administration of the law, the better. But unless law schools demand constant reflection on the nature of ideal justice, it seems doubtful if the approximation of human judgements to the ideal of justice will be maintained, and it certainly will not increase.

In conclusion, then, it may be asserted that the study of leading cases in legal education plays the same rôle as the study of architectural ideals in architectural education, and that both are increasingly necessary as the complexity of each discipline grows. Both are essentially concerned with the two fundamental facets of every legal or architectural problem: the search to identify the perfection of each discipline according to its nature, and the critical search for specific examples of *decisions* which approximate closely (or are prevented from approximating closely) to these perfections.

Abstract speculation about 'perfect justice' is, in isolation, as futile as abstract speculation about 'perfect architecture'. On the other hand, exclusive concentration on the actual conditions of architectural or legal practice are likely to prove debasing to both professions. The art of effectively teaching jurisprudence and the philosophy of architecture must surely be to treat both these aspects with sufficient realism to make their relevance obvious to the student, whilst at the same time applying such techniques of criticism as will give each student a sense of professional integrity; for unless this sense of integrity is inculcated in the formative stages of a professional career, it seems doubtful if it will emerge during the temptations and human fallibilities of professional practice.

REFERENCES

¹ *Boullée's Treatise on Architecture* (ed. Rosenau), p. 30: 'Oh! combien est préférable le sort des Peintres et des hommes de lettres! libres et sans aucune espèce de dépendance ils peuvent choisir tous leurs sujets et suivre l'impulsion de leur génie.'

² In countries where the law has been codified, pedagogical techniques necessarily differ from those considered most effective in jurisdictions where the Anglo-American common law tradition prevails.

³ Sir George Paton (*Text-book of Jurisprudence* (1967) p. 96) points out that Aristotle 'made a useful distinction between natural justice, which is universal, and conventional justice, which binds only because it was decreed by a particular authority'.

⁴ In Sir William Blackstone's preface to his *Commentaries*, he begins: 'The following sheets contain the substance of a course of lectures on the Laws of England, which were read by the author in the University of Oxford. His original plan took its rise in the year 1753; and, notwithstanding the novelty of such an attempt in this age and country, and the prejudices usually conceived against any innovations in the established mode of education, he had the satisfaction to find . . . that his endeavours were encouraged and patronized by those, both in the university and out of it, whose good opinion and esteem he was principally desirous to obtain.'

⁵ *Op. cit.*, ch. VII.

⁶ *Cours d'Architecture . . . contenant les leçons données en 1750 & les années suivantes par J. P. Blondel* (1771), vol. IV, p. XV: 'Il est de jeunes Architectes qui prétendent que les règles ne servent qu'à les embarrasser, & à éteindre, pour ainsi dire, la vivacité de leur imagination'. Cf. also *ibid.*, p. LIII: 'Qu'ils ne croient pas, comme quelques-uns leur font entendre, que tout est épuisé, & que, pour paraître neuf, il faille avoir recours à la singularité'.

⁷ R. G. Collingwood, *The Principles of Art* (1938), p. 39.

⁸ *Entretiens sur l'Architecture* (1863), vol. I, p. 285: 'Il est impossible d'enlever à un édifice du XIII^e siècle ou d'y attacher des formes décoratives sans nuire à sa solidité, à son organisme, si je puis m'exprimer ainsi . . . Cette forme n'est pas le résultat d'un caprice, puisqu'elle n'est que l'expression, décodée si vous voulez, de la structure; je ne puis vous donner les règles imposées à la forme, puisque la qualité propre à cette forme est de se prêter à toutes les nécessités de la structure'.

⁹ *Esprit des Lois*, Bk. XI, ch. VI ('De la constitution d'Angleterre'): 'Il n'y a point encore de liberté si la puissance de juger n'est pas séparée de la puissance législative et de l'exécutive'. Since some commentators have asserted that most of the principles expressed by Montesquieu in this chapter were derived from Locke's *Treatise on Civil Government*, it seems worth pointing out that Locke distinguished simply between the legislature and the executive, and did not comment on the judiciary. Cf. also, in this respect, Dicey's *Law and Public Opinion in England*, Lecture XI, e.g. 'Judicial legislation aims to a far greater extent than do enactments passed by Parliament, at the maintenance of the logic or the symmetry of the law' (1926 ed., p. 364).

¹⁰ H. L. A. Hart, *The Concept of Law*, p. 113.

¹¹ e.g. in 'The Lamp of Truth'.

¹² e.g. in the first paragraph of *The True Principles of Pointed or Christian Architecture*.

¹³ See especially Judge Jerome Frank, *Law and the Modern Mind*, for a particularly cynical commentary on the administration of justice in the United States of America.

¹⁴ Vitruvius, I, II.

¹⁵ Cf. J. Frank, *op. cit.*, ch. VI.



- 121 Design Centre and
showroom, New York
Architect: Warren Platner
- 125 No. 1 Terminal, London
Airport
*Architects: Frederick
Gibberd & Partners
Consultants for furnishings
and equipment:
Conran Design Group*
- 129 Pottery by Alan Spencer
Green

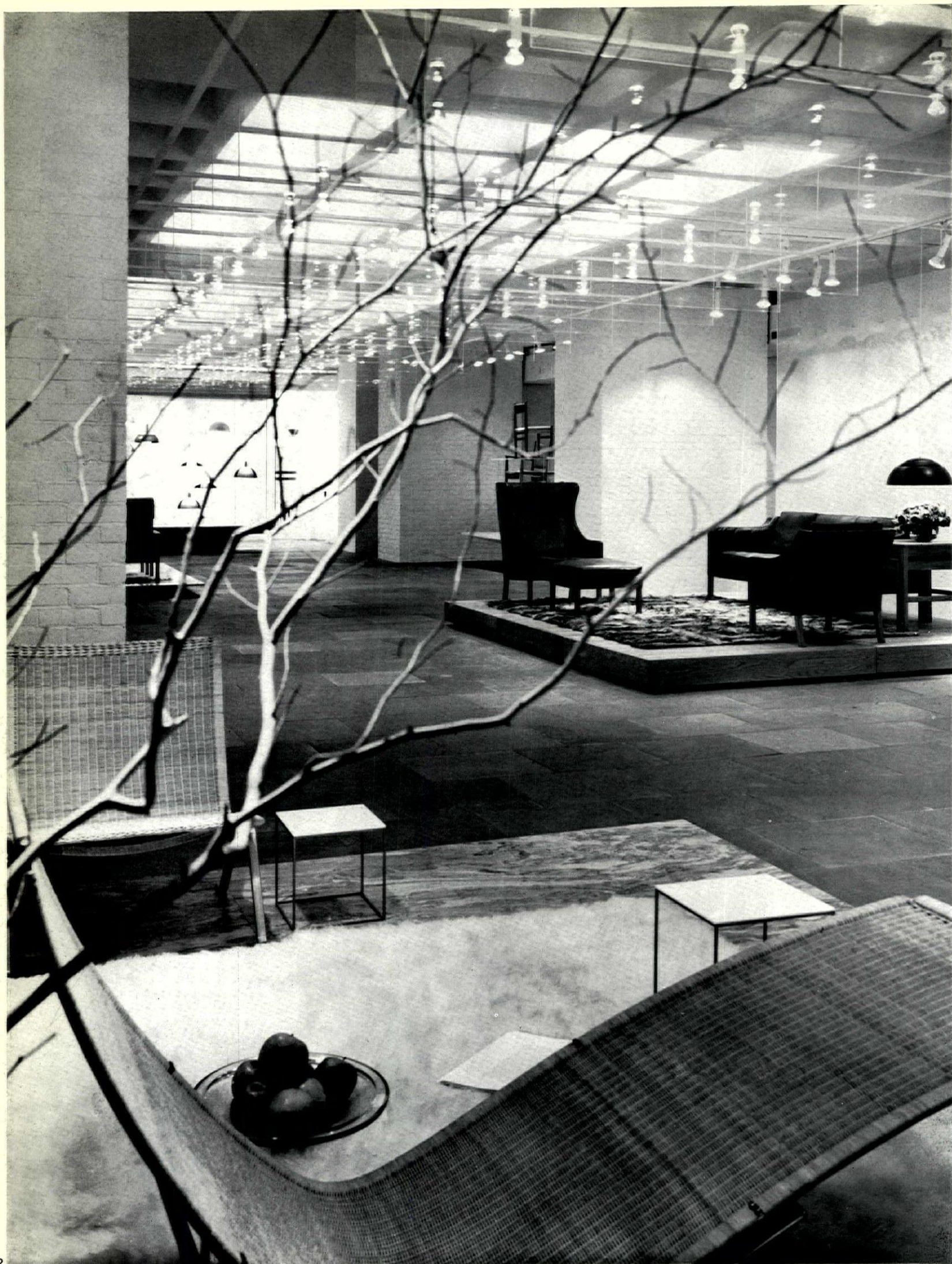
Design centre and showroom, New York

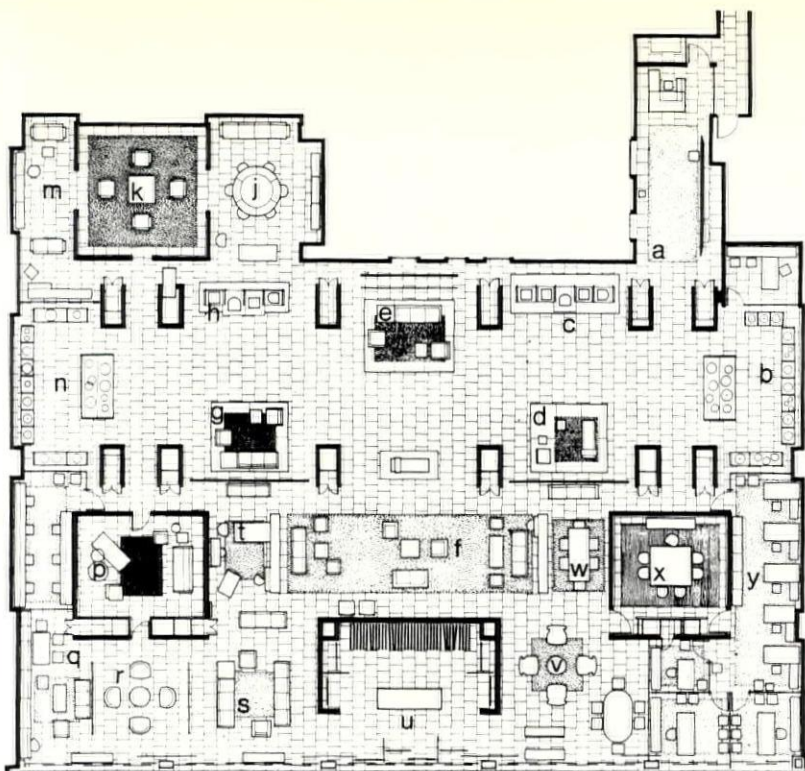
Architect: Warren Platner

This showroom, on the second floor of an existing building in Third Avenue, was designed for the firm of Georg Jensen to exhibit their permanent collection of furniture, lighting and textiles, as well as the work of artists in allied fields. In an open floor area of 12,000 sq. ft., solid elements—store cupboards and four enclosed spaces—provide regular divisions for separate display groups.

Warren Platner, whose work (with Roche, Dinkeloo & Associates) includes the interiors of the Ford Foundation Building and the Ground Floor restaurant in the CBS building, has designed what he calls 'a luminous space where light is used as an almost tangible material, where colour is so subtle that form, substance and material, become the dominant elements, where crystalline glass (or plastic) combines with substantial masonry of white brick and grey stone, where textiles become an architectural element all their own.' The most important single element in this space is a luminous ceiling of small lamps hanging between sheets of clear acrylic plastic, and directed both downwards and upwards (into the white-painted concrete coffers). Of particular interest is the architect's concern with textures, seen in the light patterns projected on to plain surfaces, and in the rich textile walls. There is no arbitrary decoration to distract, and everything is designed to serve the simple lines and warm natural materials of many of the exhibits.

1. looking through one of the four enclosed spaces. The walls are whitewashed brick and the floors Norwegian slate throughout. In the background can be seen Kukkapuro's fibreglass swivel lounge chairs.



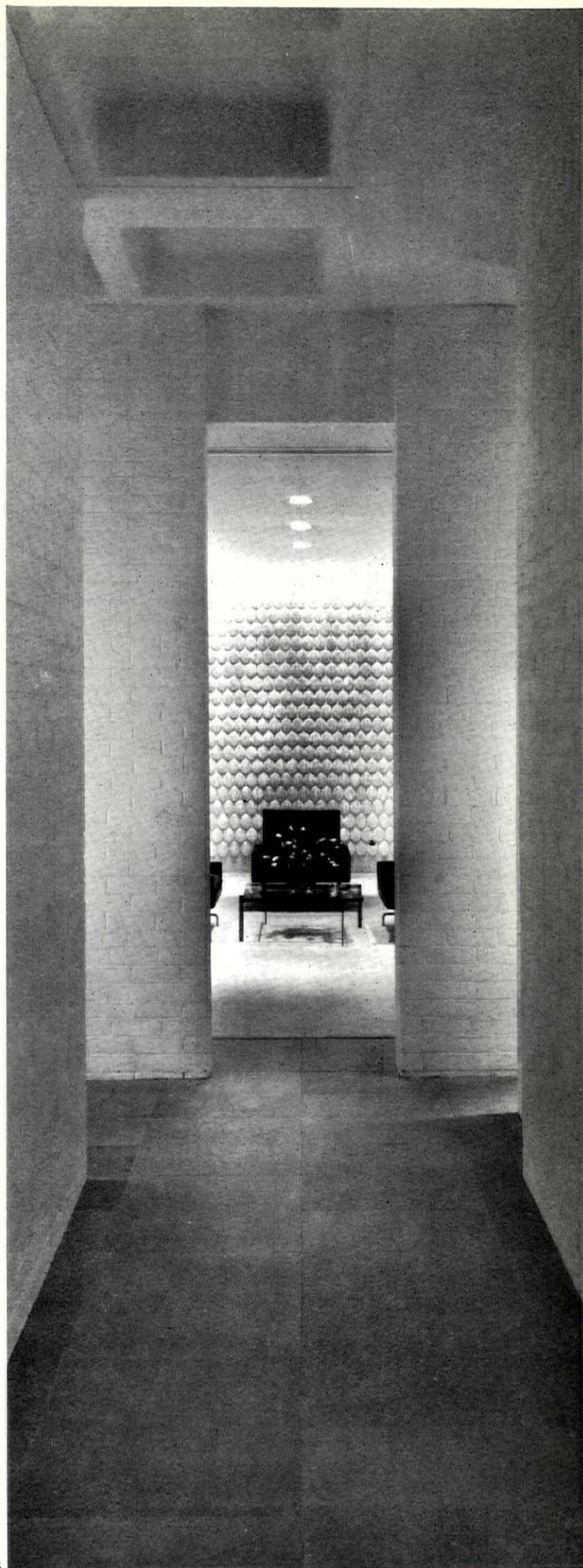


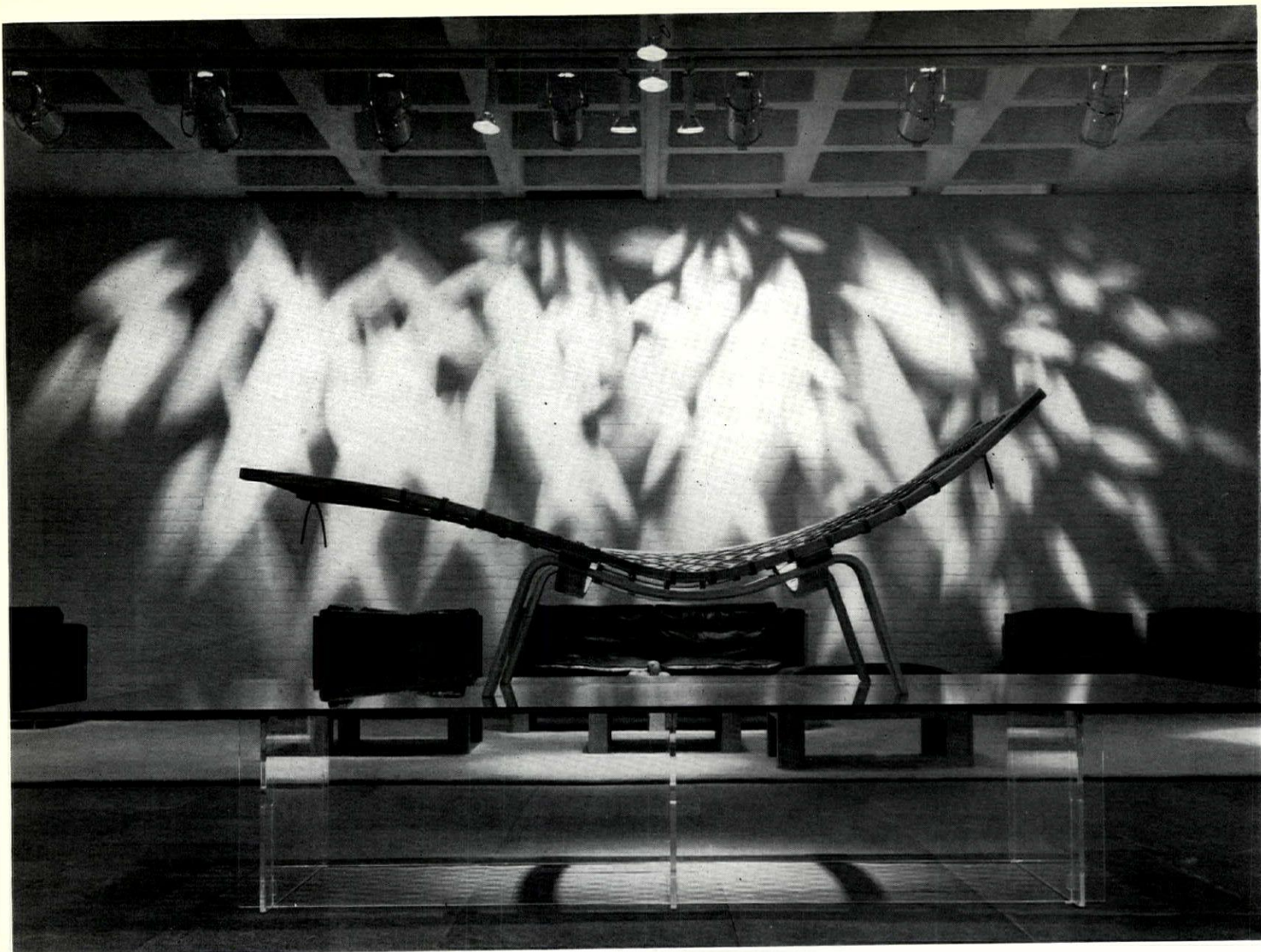
2 (opposite), the main part of the Georg Jensen showroom with lighting displayed at each end, and furniture mounted on pedestals of wood, marble, granite or white lacquer. The luminous ceiling consists of small lamps hanging between sheets of clear acrylic plastic, and directed both downwards and upwards into the white-painted concrete coffers.

3, one of the four enclosed spaces (p on plan). Ceiling and walls are covered in linen, two facing walls having rich rug-like textures made of linen tassels designed by Sheila Hicks and Warren Platner, and made in Paris. The laminated oak armchair and the teak and cane sofa bed are by Hans Wegner.

4, looking into another of the four enclosed spaces (k on plan), with walls of 'celadon' and white silk designed by Sheila Hicks and Warren Platner.

- plan of design centre and showrooms, New York**
- a, the reception area with a free-standing screen on to which are projected slide images (see World, page 142)
 - b, part of the showroom used for exhibitions and for the display of new acquisitions; the Jensen collection of light fittings is also exhibited here and at the other end of the showroom (n)
 - c, Hans Wegner chairs
 - d, Poul Kjaerholm designs (see foreground in 2)
 - e, Børge Mogensen's sofa armchairs in leather upholstery on a polished oak floor (see background in 2)
 - f, a group of sofas and armchairs against a leafy light pattern (see 5)
 - g, Wegner's new lounge collection on a platform of black and white granite
 - h, 'plexiglas' case containing various chairs
 - i, a new marble table by Kjaerholm, and Mogensen's modular storage system round the walls (to be featured in next month's AR)
 - k, one of four enclosed spaces; 'celadon' and white silk walls surround Kjaerholm's leather and steel arm chairs (see 4)
 - m, a library corner with Kjaerholm furniture and Mogensen storage units
 - n, lighting display
 - p, another enclosed space (see 1 and 3)
 - q, Wegner furniture and Mogensen storage units, this time in oak and partly wall-mounted
 - r, Yrjö Kukkapuro's fibreglass swivel lounge chairs with snap-on leather covers (see background in 1)
 - s, The Kukkapuro Ateljee group of furniture
 - t, a group of Wegner furniture including the sewing table and the hammock chair
 - u, the textile room
 - v, Wegner's Bull chairs and a Mogensen dining group
 - w, Wegner dining table and RY 100 storage system
 - x, office or conference room
 - y, general offices (see 6)





5
 5, Wegner's laminated oak chaise-longue in the Georg Jensen showroom, against a background of leaves and sunshine projected on to a brick wall.
 6, general offices with all-glass partitions and carpets inlaid in the stone floor. The furniture is Wegner Office Group desks and storage units.



6

No. 1 Terminal, London Airport

Architects: Frederick Gibberd
& Partners
**Consultants for furnishings
and equipment:** Conran
Design Group

For the interior of No. 1 Terminal (see also pages 90-100) the architects have provided uncluttered space and hard wearing materials requiring minimum maintenance. Physical barriers such as screens, immigration combs and customs barriers have been designed to impede the continuity of space within the passenger areas as little as possible. A consistent ceiling pattern and a transparent balustrade around wells have also been designed with this end in view. Ceilings are of heavy construction for sound insulation, incorporating fibrous plaster, and

panels of acoustic plaster to absorb internal noise. Demountable partitions consist of aluminium frames and infill panels in clear glass, or in solid material faced with neutral grey p.v.c. fabric. The perimeter wall to the kitchens on the public side is faced with a brown ceramic tile, and on the level below a similar tile is used on the walls of the central core to unify diverse elements such as bars, counters and shops. Floor finishes to suspended floors are generally heavy duty linoleum with areas of carpet at departure level in waiting areas. At arrivals level,

1, looking down from the west end of the third floor gallery, with offices on the left. The domestic departure concourse can be seen to the right on the floor below. The staircase and escalator descend from the domestic transfer area to the domestic baggage reclaim area on the arrivals level. The free-standing shaft houses lifts and services, and the white 'pulpit' in front controls the conveyor belts which feed the baggage carousel.

For plans of the building, see pages 92-93.





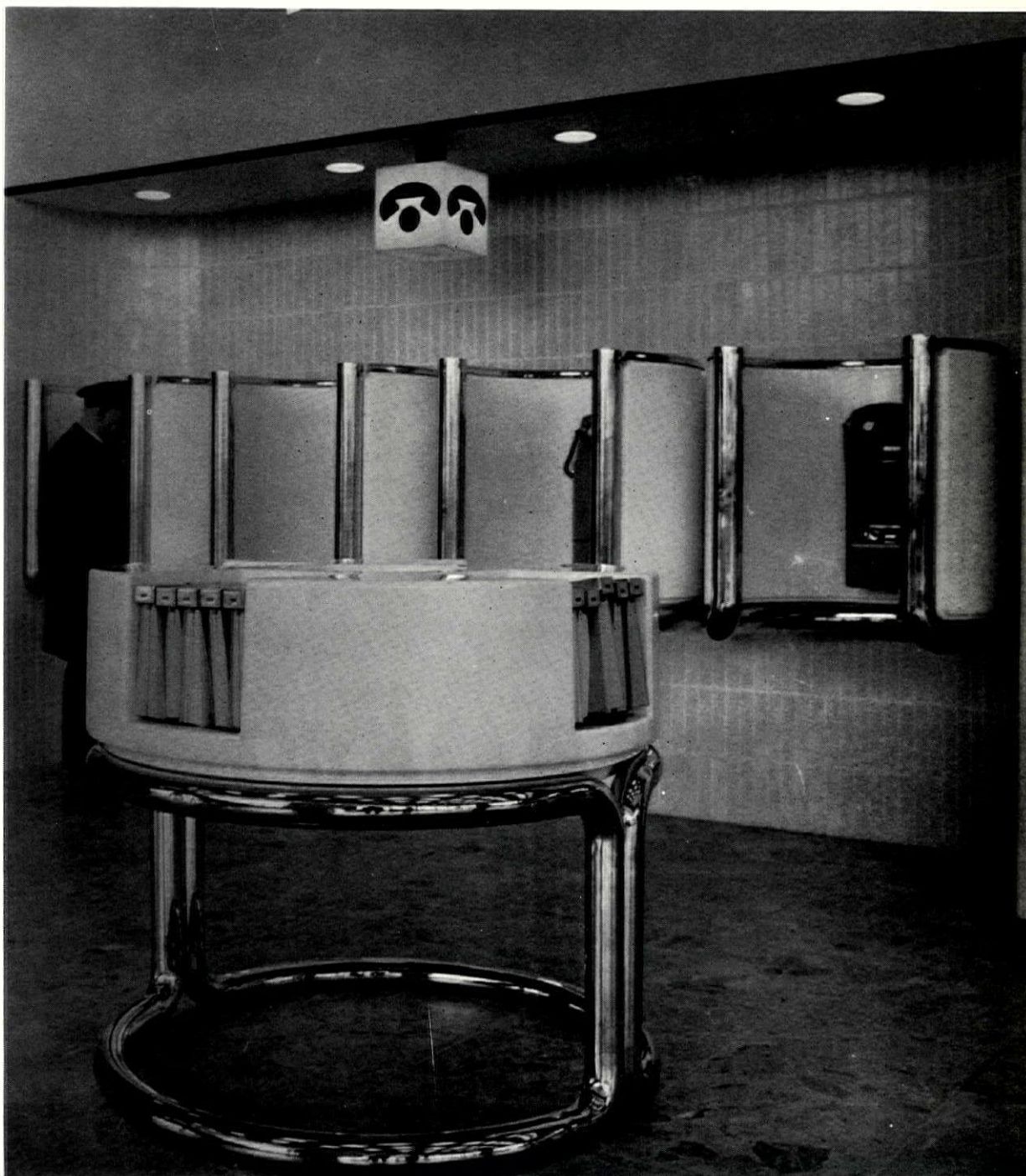
2 (opposite), a double bank of unit seating with backs in the airside domestic viewing gallery on the third floor gallery shown in 3. A standard tubular chromed frame is covered with a variety of moquettes varying from cool blues to warm browns and fiery oranges. The bench seats are orange moquette upholstery on tubular chromed frames. The seats with backs are blue and brown moquette, and the carpet is a brown and natural colour. The low tables are also used in the restaurant (see overleaf).

4, wall-fixed telephone kiosks and directory carousel at the arrivals level, constructed from white fibreglass shells on chromed tubular frames. The floor is a precast tile with an aggregate of large brown marble pieces. The same material with a smaller aggregate is used on all passenger staircase treads and landings.

where weight was not a factor, floors are finished in a precast tile with an aggregate of large brown marble pieces.

The restricted colour range of the interior—white, grey, brown and bronze—is intended to provide a suitable background for the strong colours of airline signs, house styles, shops and of passengers themselves. Advertising, which must always remain secondary to sign-posting, has been designed as an integrated element. Advertising panels are proposed at arrivals level in the customs hall, concourse and in the coach road opposite the departures draught lobbies; and at departure level on the wall of the kitchen which overlooks the airside lounges. The basic priority for furnishing and equipment was flexibility, so that the interior can be replanned with a minimum of fuss and inconvenience. The materials used for the furniture and ancillary fittings, like telephone kiosks, were chosen for their strength, durability and ease of maintenance. All the furniture is loose or semi-fixed, and falls into two categories. The waiting areas have been provided with continuous bench seating, with or without backs, in single or in double rows, and made up of units which are constructed to a basic design of upholstery slung over chromed tubular mild steel frames. The low tables in these areas really belong to the second category—loose tables and chairs for the restaurant, and tables, stools and bench seats slotted into the floor on the catering balcony.

The same chromed tubular frames, in conjunction with a white self-coloured fibreglass shell, have been used for the free-standing and wall-fixed telephone kiosks, and for the telephone directory carousel. Besides the absence of directories, the main design features of the kiosks are an open layout and the provision, in the case of the free-standing type, of a seat and shelf. The carpet in the lounge, reception areas and VIP suite has been specially woven for the Terminal to a design by Conran Design Group. Other areas and fittings for which Conran were responsible, but are not yet completed, include baggage and self-help trolleys, the duty-free shops, the bookstalls, and a nursery.



5, the restaurant area of the No. 1 Terminal at London Airport, with the third-floor gallery above. The panels below the glazed balustrade are matt white formica, and the ceiling is acoustic plaster panels. By the staircase are four free-standing telephone kiosks in white fibreglass shells and chromed tubular frames.

6, the furniture in the restaurant. The chair seats are upholstered in red moquette and stand on a carpet of brown and natural colours. The chair frame is chrome tube, and the seat back is bent hardwood stained and polished dark brown. The tables have grey melamine tops with fibreglass edging on cast aluminium stems, nylon-dipped and shot-blasted.



5



6

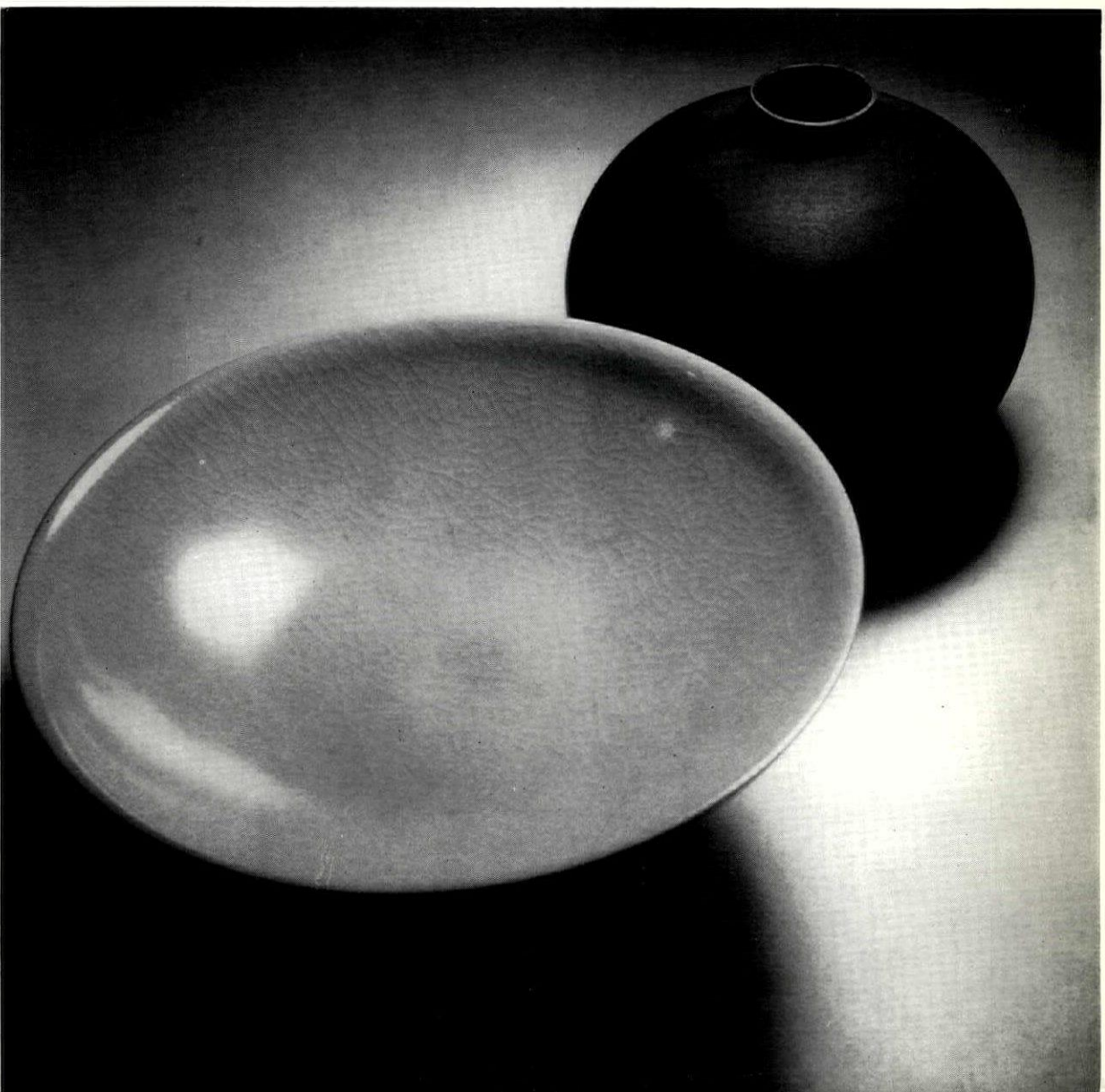
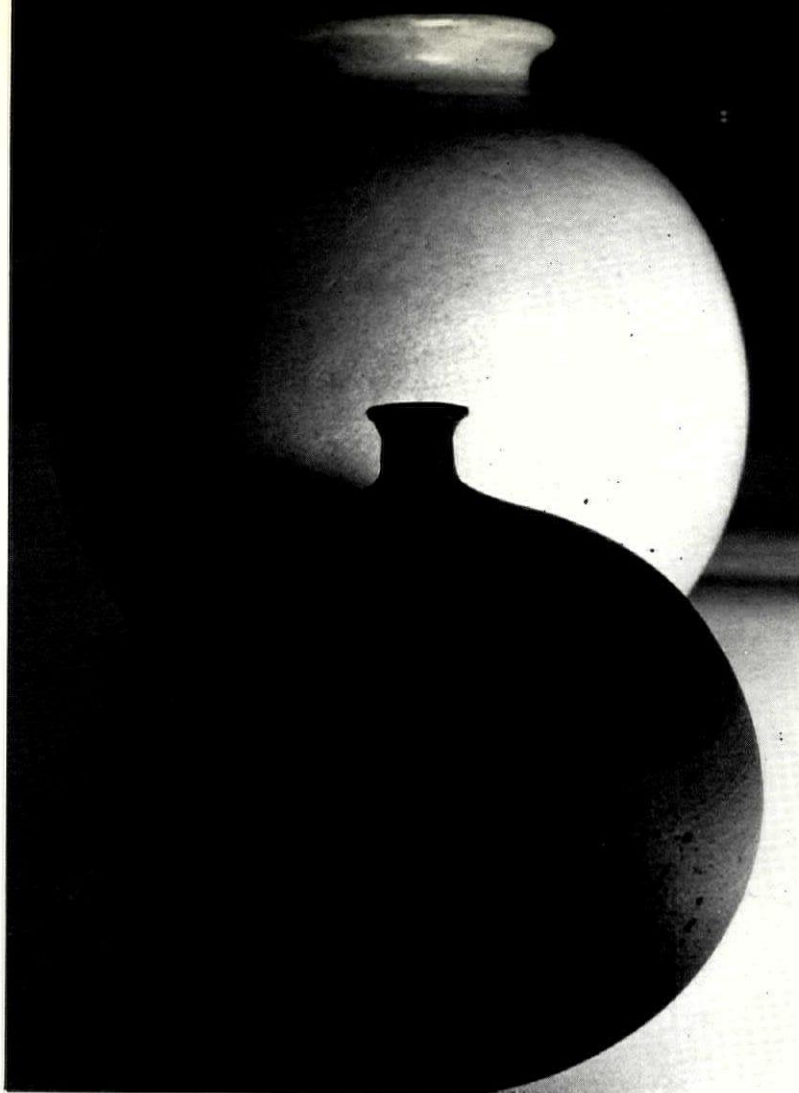
Pottery by Alan Spencer Green

At a time when literary values in design are once again predominant, when variety is a virtue, and decoration is considered more important than form, it is pleasant to find an artist-craftsman who eschews the fashion, and follows his own preference for economy and simplicity. Formerly a painter, Alan Spencer Green turned to pottery in 1961 and taught himself from technical manuals. Success came quickly with the award of second place in an international competition in 1965, and several international prizes since.

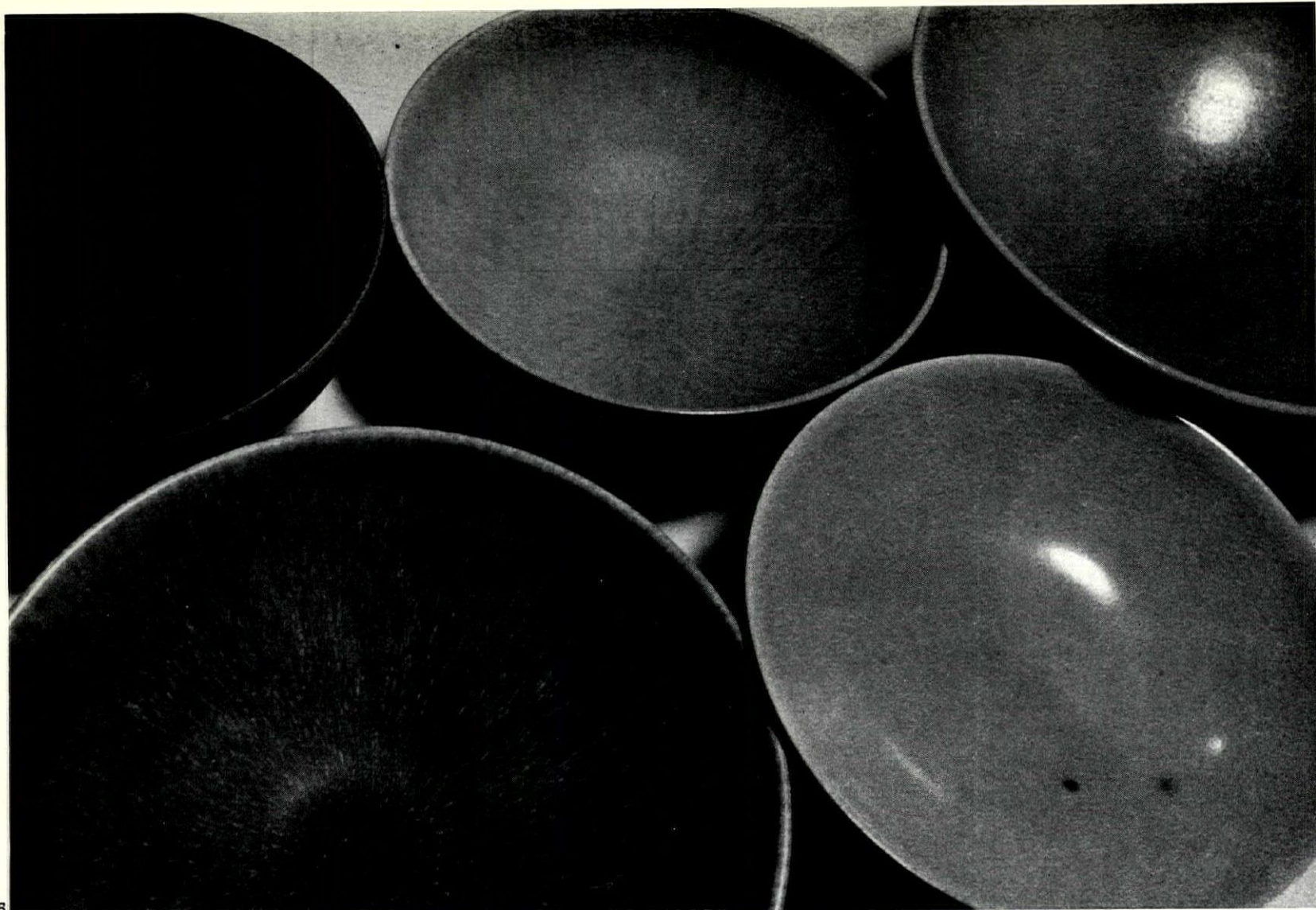
Although his repertoire is exceptionally limited, he has now established himself as one of our leading studio potters. Like Lucie Rie, whom he admires and with whom he has shared an exhibition (see DR in AR, October 1966), he is particularly interested in glazes, and applies these to simple rounded forms. He is not interested in producing utilitarian pieces (he leaves this to mass-production), and so avoids the problem of having to integrate excrescences such as handles and spouts with the main form.

Perhaps for these reasons his output is at present restricted to two complementary forms—concave and convex.

The shallow form of the porcelain bowl in 4 makes it possible to look into it and admire the delicate crackle glaze, while the effect of light falling on the convex form of the pot behind brings out the matt texture of its vapour glaze. The most successful pots are those with short and narrow necks, because the simple shape remains unimpaired, while the thin rim, relatively protected in that form, expresses the fragile character of the material.

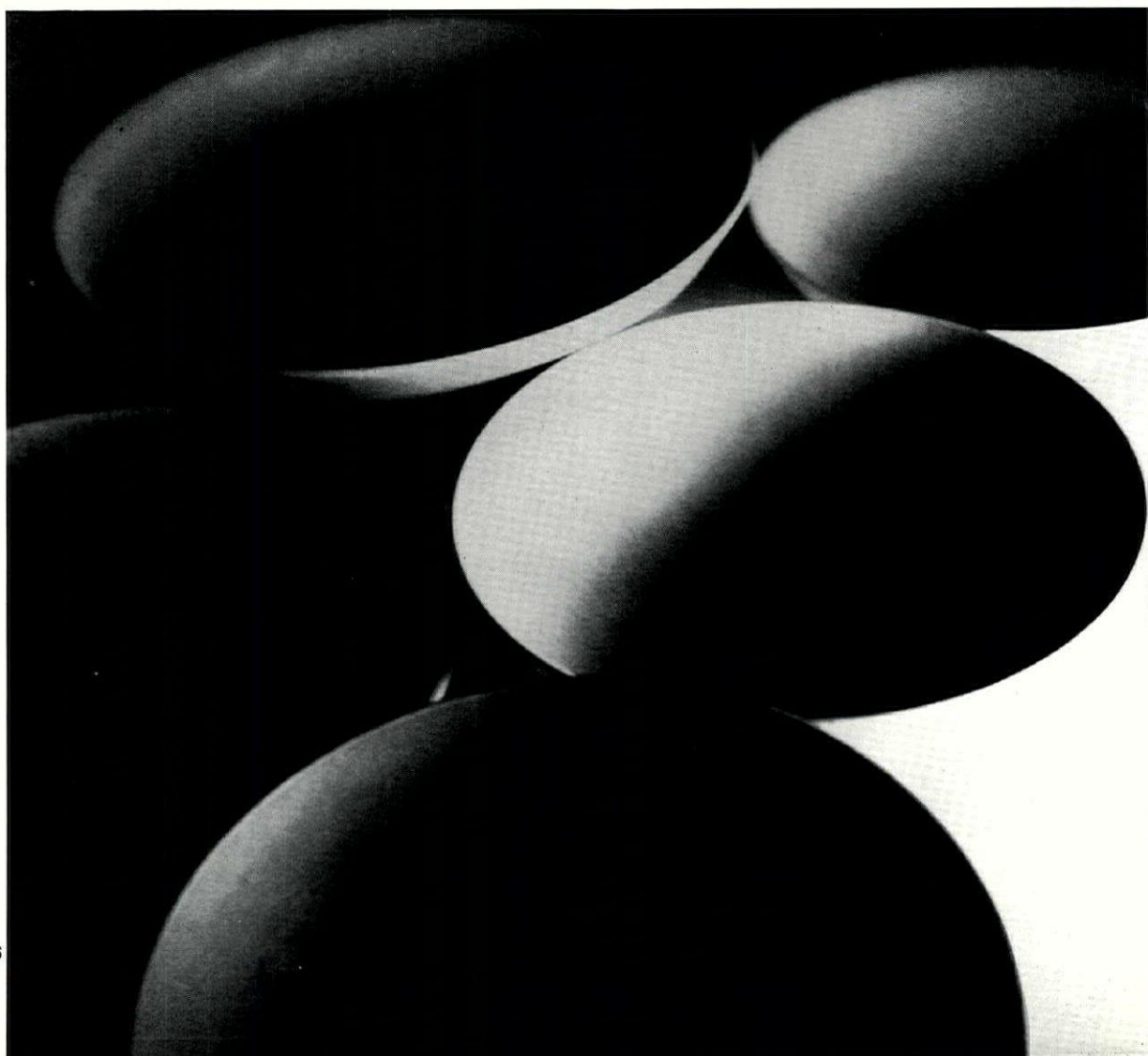


- 1, 3, two stoneware pots, one matt brown, the other glazed white.
2, stoneware pot and bowl.
4, white porcelain pedestal bowl and stoneware vapour-glazed pot in dark brown.



5

5, 6, two groups of stoneware and porcelain bowls by Alan Spencer Green. Colours range from matt grey to subtle glazes of blue, green, red and white.



6

EXTRAVAGANT POSITIONS

Robert Melville



1

The exhibition of paintings and drawings by Van Gogh from the Vincent Van Gogh Foundation, held at the Hayward Gallery, included some of the drawings in black chalk of peasants at work, 1. They are immensely powerful and probably the finest drawings of peasants ever made. In one of his letters, Van Gogh praised these potato diggers for having 'honestly earned their food'—a curiously moralistic approach to their brutalizing labours which is not reflected in the drawings. In another of his letters he referred romantically to miners as a race apart, as men from the 'depth of the abyss', but the peasants in his drawings, denied even the consolation of living dangerously, are in a deeper abyss, and they leave one with the feeling that

the planting of the first seed may have been mankind's original sin.

His obsession with peasants at work lasted throughout his stay with his parents at Nuenen from December 1883 until November 1885, and led him at the time to make the somewhat sweeping claim that to draw a peasant's figure in action was to be at 'the very core of modern art'. He himself transferred the action to landscape, and in his final period the world was rolling and heaving under gusts of madness, 2; but there is a sense in which images of the figure in action, although far from being images of toiling peasants, have remained at the core of the obsessional art of our time: the action is the evidence of inner turmoil. One thinks of Munch's



2

Van Gogh: 1, peasant and 2, landscape studies.

paroxysmal figures, of Bacon's screamers and self-destructive nudes, of Bellmer's erotic gymnastics—and of Balthus's demonstrative girls. Before the Arts Council presented the Balthus Retrospective at the Tate towards the end of 1968 his paintings were practically unknown here. The only previous exhibition in London was at the Lefevre Gallery in 1952. A handsome example of his work has been in the Tate Gallery's permanent collection for about five years, but it would convey no sense of his enigmatic realism to people who knew nothing else by him. It's a quiet, conservative painting of the head and bust of a sleeping girl, and now that we have been given the opportunity of seeing him at his best it will perhaps serve as a reminder of some very compelling images.

His first important work was the second version of 'The Street', 3, completed in 1933. The chief influence on this painting was Seurat's 'Sunday Afternoon on the Ile de la Grande Jatte'. Apart from the pervasive influence of the paradoxical stillness of this animated scene, there are some specific iconographical references to the Seurat. The headgear and scarf of the woman carrying a child has evidently been suggested by the uniform of the seated nursemaid; the pastry-cook standing on the curb has the same wooden-dolly look as the woman in the tall hat carrying a red sunshade; and the curious situation on the extreme left has been inspired by Seurat's little girl, running and yet not moving, who has made at least three other reappearances in modern art, in paintings by Chirico, Ernst and Dali.

In the Seurat, the appearance of a lively interaction between the figures is illusory. They are totally sealed off from one another, and it is this element of separateness that Balthus explores in 'The Street'. He has created a crowd scene of somnambulists, but one feels that the view from any of the curtainless windows would present only a deserted street. The central figure in white overalls brings to mind the wooden cut-out of two house-painters carrying a plank that used to advertise Halls' distemper and that could be seen from main-line trains marching across lonely fields. The plank has been sawn in half, the workmen have parted company, but the



3

Balthus: 3, 'The Street'.

one who led the way still marches steadily on in the Balthus painting, carrying half a plank. The equivocation in the delineation between real and unreal, between a man, a flat cut-out and a phantom, provides a clear enough clue to the nature of the other figures. They are all immersed in their own dreams and are only apparitionally present. Even the two figures locked together on the extreme left are asleep and dreaming separate dreams; one dreams of possession, the other of escape; but the man is not the man who pursues the girl in the girl's dream, and the girl is not the girl in the man's dream of possession. The enigmatic situation in subsequent paintings is conceived with a subtle attention to plausi-

bility. Many of the paintings of girls have the look of straight portraiture. The figure in 'Girl with Cat', 4, for instance, is obviously a carefully observed study of an actual girl, but it is equally obvious that the portrait was not commissioned. The unguarded pose is a disturbing element, undermining the quietness of the scene. One finds oneself paying excessive attention to trifling details; to the sleeve that has not been pulled over the elbow, to the sock that has slipped down to the ankle. One begins to think of the well-fed cat as a grimalkin. The atmosphere is fraught with invisible stirrings, with the unease of growing pains and vague expectancies. It's strangely close to the atmosphere in Chirico's early paintings. Outside, there could be a deserted square and at the far end of it a

statue facing the other way, casting a long shadow. It's Chirico's world of premonitions transferred to a domestic setting and centred in an adolescent girl.

If the scrutiny to which the figure in 'Girl and Cat' has been subjected seems not entirely disinterested, the dramatic situation in 'The Room', 5, lifts it clear of any taint of voyeurism. This painting has grandeur. The huge, shadowy room resembles a Piranesi prison without its trappings; but Balthus has done something that was beyond Piranesi's reach; he has created a happening worthy of the setting. Camus, who was a close friend of the painter, suggested that Balthus has too keen an appreciation of extremes not to include crime, and claimed that all his sleeping girls have had their throats 'dis-



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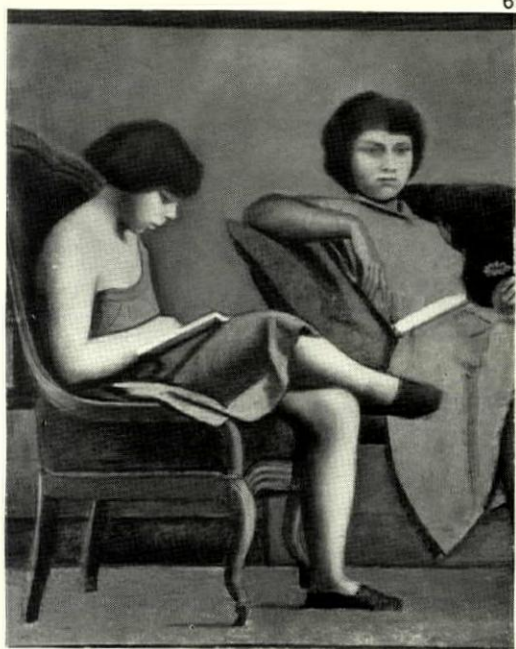
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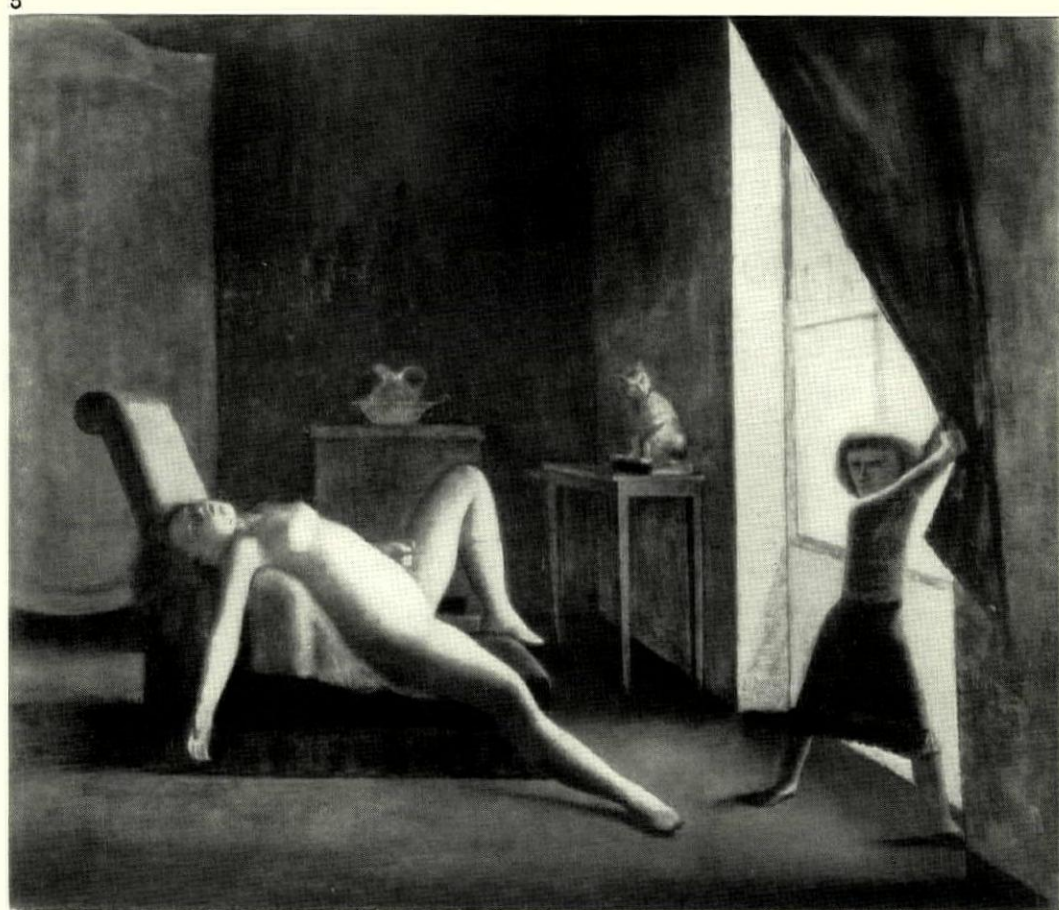
4



6



5



7



8



Balthus: 4, 'Girl with Cat'. 5, 'The Room'.
6, 'Study for "The Three Sisters"'.
Ammi Phillips: 7, 'Alice Slade'.
George Washington Mark: 8, 'Dismal Swamp'.

creetly' cut. The girl in 'The Room' presents the strongest case for such a claim, but murder is wasteful, and I prefer to think that the girl's body has assumed the posture appropriate to her visualization of a passionate encounter, and that the dwarfish figure is a fallen angel who tugs at the curtain to let the light pour in in exultant emulation of the Annunciation.

Sometimes Balthus gives his girls a monumental simplicity of form, and in 'Study for "The Three Sisters"', 6, they are distant cousins of Picasso's neo-Classical figures. A similar conception of form can be found in a raw state in some of the eighteenth and nineteenth-century portraits by American self-taught painters, and it gives them, whatever their shortcomings may be, a kind of authority. The portrait of Alice Slade painted by Ammi Phillips in 1816, 7, is one of many simple but powerful portraits in the Garbisch collection of American Naïve Paintings recently

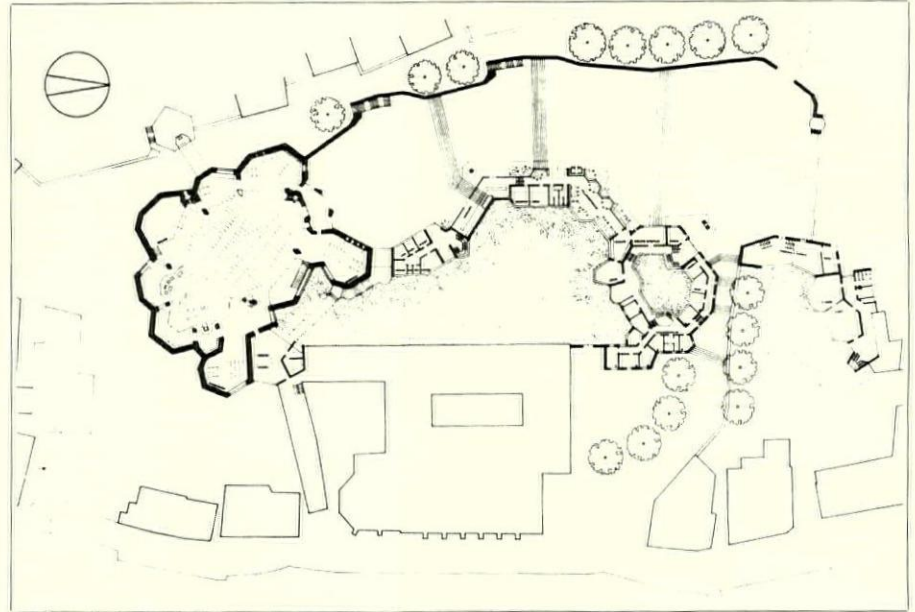
exhibited in the Diploma Gallery at Burlington House. Phillips was an itinerant painter who covered a lot of ground in his search for commissions, going from town to town along the Hudson River and in Western Connecticut and Massachusetts. His harsh, bold simplifications give Alice Slade an armoured appearance, and the weaving of the strip of lace between her iron

fingers gives the same sort of pleasure as Léger's mechanistic figuration. George Washington Mark's 'Dismal Swamp', 8, in the same exhibition, is a charming attempt to achieve a sublime ghastliness. The wraith-like trees picked out in white from a mass of Prussian blue are particularly effective. The woman in the canoe holding a sparkler in her hand is probably bringing the Light of Civilization to the benighted Indians, one of whom has emerged from a very small tepee to watch her pass by.

PILGRIM CHURCH IN THE RHINELAND

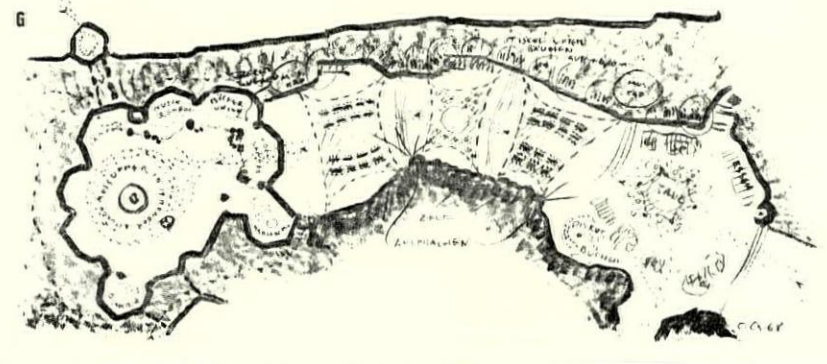
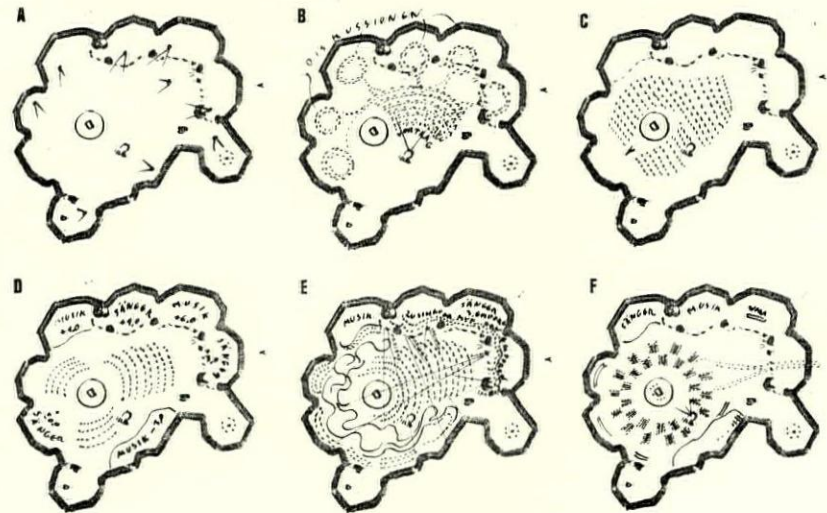
CHURCH AT NEVIGES, WEST GERMANY ARCHITECT: GOTTFRIED BÖHM

1 (facing page, top), looking through trees towards the peaks of the folded-plate concrete roof. 2 (facing page, bottom), the main altar. 3 (p.136), the principal nave, looking east. 4 (p.137), galleries on the side wall of the nave.



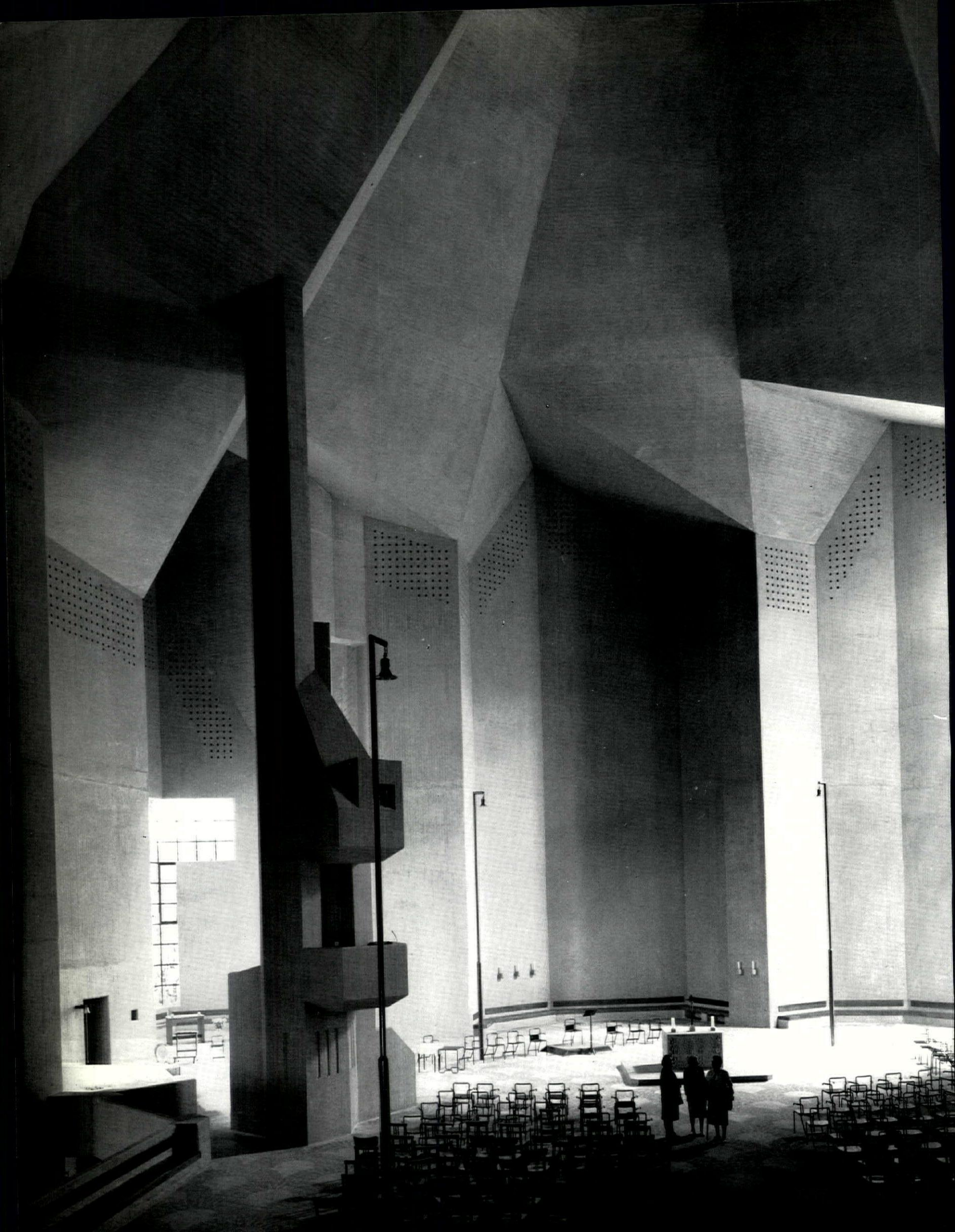
plan (church on left; older monastery on right)

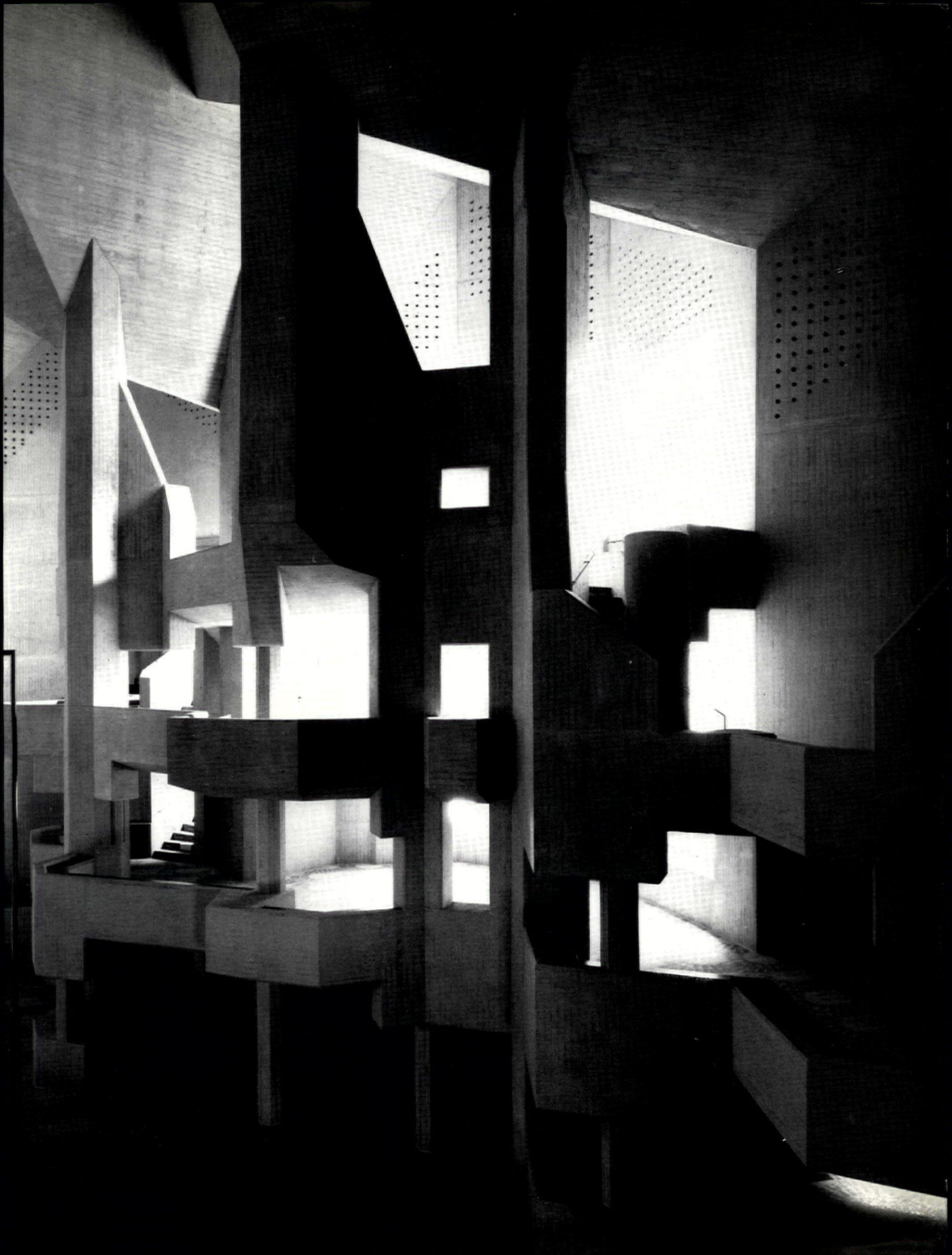
Neviges is a small town eight miles from Wuppertal and sixteen from Essen. It has a population of only 22,000, but every day hundreds of pilgrims alight from railway trains and long-distance coaches, amounting to 200,000 every year. Ever since 1681 Neviges has been a place of pilgrimage, consecrated to the Holy Virgin. The late-Gothic chapel connected to the Franciscan monastery seats only 200, and has long been inadequate to hold the ever-growing stream of pilgrims. A completely new pilgrim's centre has therefore been planned by the Franciscan Order to accommodate 7,000 people. The first part of the project is this church, seating 800 and with standing room for another 2,200. It is connected, through its sacristies, to the monastery. It is the second largest sacred structure in the Archdiocese of Cologne after Cologne Cathedral itself. Pilgrims arriving by bus or train approach the church along a broad pilgrim's way. A concrete wall, more than 300 feet long, flanks the road to the north. Four broad flights of steps make up the difference in level, which is about 28 ft. The entrance has massive bronze doors, each weighing a ton. The church is a concrete structure with a polygonal ground-plan and a folded-plate roof rising to a height of 114 ft. in successive peaks. The shape of the interior, like that of the exterior, is determined by the structure. The walls reach up to 65 ft. in height, as do the soffits of the roof. The self-supporting roof has an average slab-thickness of 10 in. All wall surfaces are sand-blasted exposed concrete. The principal nave, containing the main altar, the sacramental chapel, the chapel of grace and the sacristies are on the ground floor. The confessional chapel, shrines and secondary altars are in the crypt, which leads out on to a processional way. Eventually on the south side there are to be a small chapel, a kindergarten and a free-standing belfry on the other side of the road, connected by a bridge to the gallery of the church.



group of sketches by the architect showing the adaptation of the plan for different functions: a, for private prayer; b, for ecumenical gatherings; c, for communal prayer; d, for musical festivals; e, for dance and drama festivals; f, for Easter; g, for the church's great Lady Day festival.





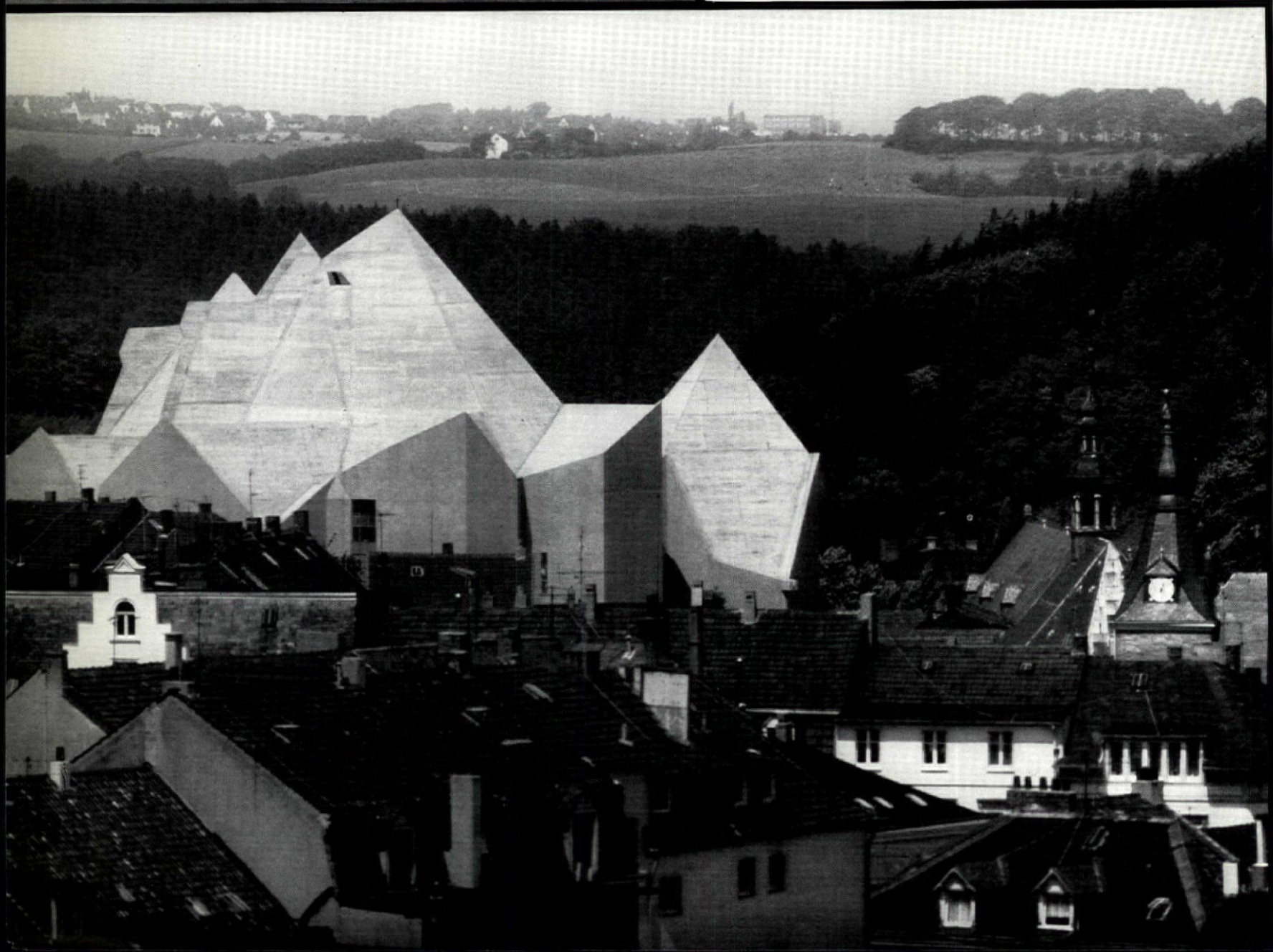




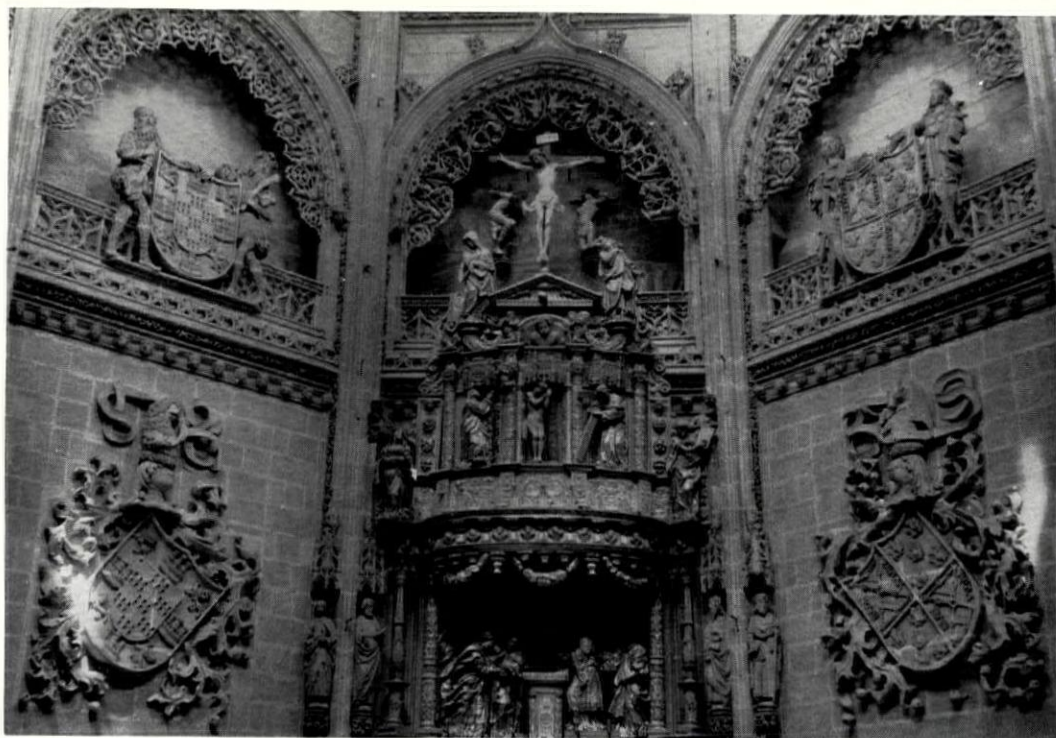
⁵ CHURCH AT NEVIGES, WEST GERMANY

5, chapel at north end. 6, the church over the roof-tops of Neviges.

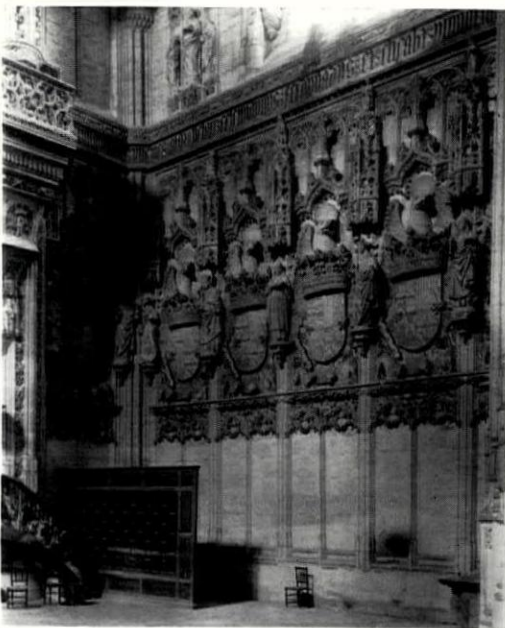
PHOTOGRAPHS BY PETER E FISCHER



The Virtue Of Magnificence



1



2



3

1. *Capilla del Condestable, Burgos Cathedral*; 2. *heraldry in San Juan de los Reyes, Toledo*; 3. *tombs of Ferdinand and Isabella, and of Philip I and Juana, in the Capilla Real, Granada Cathedral.*

At the west end of King's College Chapel, Cambridge is a rich display of large-scale heraldic decoration, added in the third building phase of 1508-1515 as a departure from the original plan. This decoration, for which there is no readily found English parallel, is sometimes criticized as an example of Tudor vulgarity, whereas it would be more correct to regard it as part of a contemporary fashion found elsewhere and most prevalent in Spain.

Much is made by art-historians, and rightly so, of England's close commercial ties in the fifteenth century with the Low Countries, culminating in the earliest years of the sixteenth century with the 'Flemish' craftsmen employed in this country and particularly for the King's Works. There were Flemish sculptors working at Henry VII's chapel at Westminster; and Torrigiano's tomb for Henry VII appears a less isolated piece of Renaissance style when seen

together with the sophisticated Renaissance details appearing as early as 1516-17 in the four earliest windows, largely the work of Flemish painters, of King's Chapel. Not enough has been made, however, of the close ties with Spain of both the Low Countries and of England at the time of the betrothal of Catherine of Aragon to two successive Princes of Wales.

Born in 1485 as the fourth daughter of the King of Spain, Princess Catherine was at the age of three betrothed to Arthur, Prince of Wales, and was thereafter known in Spain as the Princess of Wales. In 1501 she arrived from Spain at Plymouth where tremendous receptions and feasts awaited her. With her came an archbishop, a bishop, the Count of Cabra and a permanent household of sixty. In the following year Arthur died and in 1503 she was betrothed to Henry, Prince of Wales. He married her in 1509 as Henry VIII of England.

Thus it is at that courtly level that one might be justified in seeking Spanish influence in artistic matters, and a case can be made for the new heraldic decoration of King's being influenced by Spanish courtiers, as the new Renaissance decoration of the earliest windows of the chapel was by Flemish craftsmen.

The suggested influences can be divided into four main categories:

1. The enormous scale of heraldic decoration;
2. The repetition of identical coats of arms in adjacent bays;
3. The powdering of walls with heraldic charges or ornamentation;
4. The placing and surround of Henry VII's tomb at Westminster Abbey.

The enormous scale and 'architectural' use of heraldry both inside and outside buildings is such a feature of Spanish art that one hardly knows which examples to select. But there can be few examples more exaggerated than the colossal coats of arms, about twenty feet high, which adorn the Capilla del Condestable at Burgos Cathedral, 1, erected from 1497 onwards. A similarly fine example occurs at the contemporary west end of San Juan de los Reyes at Toledo, 2. This work is the very closest parallel in all respects to the decorative work at King's, and may be cited as a source for the repetition of identical coats in adjacent bays. The convent of San Juan de los Reyes was founded in 1476 by the Catholic kings to serve as a royal mausoleum. The architect was Juan Gúas, a Fleming as were many other architects and craftsmen in Burgos and Toledo. His plans may be dated 1479-80, although work proceeded slowly into the sixteenth century. The better-known Colegio de San Gregorio at Valladolid (W. portal c.1492), perhaps by Gúas, and the façade of Salamanca University (before 1516) are characteristically Spanish developments on the same theme. The bold spirit of all this work may provide the nearest parallel to the astonishingly large-scale heraldry, with its sprawling supporting beasts, over the gateways of Christ's College (c.1505) and St. John's College (c.1511) at Cambridge. One may be justified in including the heraldic gateway of East Barsham Manor House, Norfolk (c.1520-27) which is close in many details to the main gateway of St. John's College.

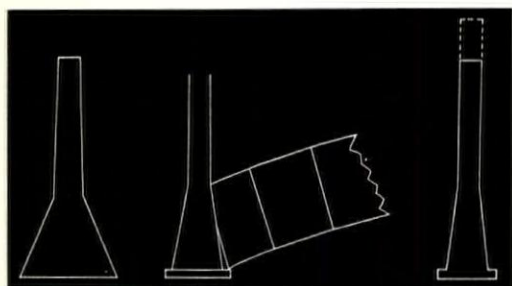
The powdering of walls with heraldry or ornament is a Spanish tradition represented particularly by the façades of the Casa de las Conchas, Salamanca (1475-83) and the Palacio del Infantado, Guadalajara (1480-92), the latter the work of Juan Gúas and others. While there is no precise English parallel, the numerous Tudor badges thrown at or pinned on to the internal piers and external buttresses at the west end of King's chapel are far closer to Spanish than to English precedent.

This is true also of the unusual position of Henry VII's tomb at Westminster, centrally-placed and free-standing before the altar, and the astonishingly elaborate bronze-gilt screen which surrounds it. The metal-work 'grille' is a consistent feature of Spanish churches, and frequently surrounds tombs. At the end of the fifteenth century a large metal screen, simpler than, yet similar in form to Henry VII's, was erected round the centrally placed tomb of Diego de Anaya, Archbishop of Seville, in a chapel at the Old Cathedral of Salamanca. Another example is Gil Silóee's magnificent tomb of Juan II and Isabel of Portugal in the centre of the choir of the Cartuja de Miraflores. The culmination in Spain is the tombs of the Catholic Kings, Ferdinand and Isabella, and of Philip I and

Juana in the Capilla Real at Granada Cathedral, 3. This royal mausoleum was designed in 1506–7 by Enrique de Egas after the conquest of Granada to replace the earlier mausoleum at Toledo. The superb tombs in the Renaissance style, like Henry VII's, surrounded by metal-work screens, were not completed until 1522. It is surely into this Spanish royal tradition that the conception of Henry VII's chapel and its tombs fits. There is no English precedent for the position of Henry's tomb, except the tomb of King John erected in 1217 in the choir before the High Altar at Worcester. However, in large chantry chapels, annexed to the body of a church—such as the Percy Chapel at Tynemouth Priory (c.1450), the Beauchamp Chapel at Warwick (tomb completed 1475) and the Fitzalan Chapel at Arundel—the normal position for the founder's tomb was in the centre. Similarly, though the metal-work 'grille' was not common in England, it is not unreasonable to regard that which surrounds Henry's tomb as the culmination of the English fifteenth-century chantry chapel. Another high point in the history of the chantry chapel is represented, significantly enough, by that designed for Prince Arthur in the south side of the choir at Worcester Cathedral, commissioned by his father Henry VII. This magnificent 'stone-cage' chapel was begun in 1504, possibly by workmen from Westminster Abbey. Henry VII achieved a masterly fusion of the fifteenth-century English tradition of the chantry chapel with the Spanish conception of the princely tomb-chapel. The betrothal of the sons of Henry VII to Catherine of Aragon and her continuing presence in this country, marked a new stage in the recognition and acceptance of England and her upstart Tudors by Spain, the greatest world-power. What more natural, then, that there should be an attempt within the King's Works to recreate on English soil the atmosphere of regal Spain at her most splendid?

DAVID WATKIN

Earliest Cast Iron Beams



Left, design by Bage, used at Shrewsbury in 1796; the Salford design, centre, as in a letter from Southern to Lee, 2 June, 1800 and, right, showing how the modification in the depth of the beam is marked on an undated drawing at Birmingham.

It is now known that the first three buildings in England where cast iron beams were used were the flax mills of Marshall, Benyon and Bage erected at Shrewsbury in 1796 and at Leeds in 1802, and the Philips and Lee cotton mill at Salford, built between 1799 and 1801. The designer of the two flax mills was Charles Bage, and it has been claimed that the firm of Boulton and Watt designed the Salford mill. But it is the purpose of this note to show that Bage had a bigger part in the Salford design than did

Boulton and Watt; and therefore that the development of cast iron beams up to 1802, as it was elucidated in an article by Skempton and Johnson in *THE ARCHITECTURAL REVIEW*¹ must now be attributed almost entirely to Bage.

The story that Boulton and Watt played a big part in this seems to have begun with Fairbairn, the Manchester engineer, before 1831. At first glance, the drawings of the Salford mill in the Boulton and Watt Collection (Birmingham Reference Library) seemed to support this attribution, and their evidence in that sense was accepted by Giedion² and Skempton and Johnson. However, Turpin Bannister, in the AR, pointed out that none of the Boulton and Watt drawings are working drawings from which the mill could have been built,³ but that most of them refer to the engine which Boulton and Watt supplied in 1801, or to the gas plant that was ordered from them in 1803.

The documents which best show how the mill was planned are some letters and drawings for the engine house.⁴ In July and August 1800, Lee wrote two letters giving the dimensions of the engine house and asking Boulton and Watt for a sketch of the engine. In December, having obtained this sketch, Lee sent Boulton and Watt a plan and section of the engine house and boilers; within a fortnight, their draughtsmen had produced a neat copy following Lee's instructions in every respect, this time after a delay of three months. In all this it was clearly Lee who had overall charge of the erection of the building—and as architect rather than client.

This should cause no surprise; as Bannister noted, Lee's obituary implied that he was the designer of the mill, and he had been in charge of the erection of factory buildings earlier, in the 1790s.⁵ When the mill was first proposed in 1798, Lee wrote that his partners had 'agreed that I should immediately erect another Mill', and elsewhere, 'I am planning a Mill with the same power as the present.'⁶ Foundations were laid and the walls had been begun in 1799, but there seems to have been little progress until after June, 1800. Then between June and November the walls were built to their full height and the iron columns and beams were erected. The delay of two years between the first proposals for the mill and its realization were probably of great importance for its final form, because during that time Lee had been thinking of going into the flax spinning business, and had been collecting information by various means, some underhand, from Marshall, Benyon and Bage. In January 1800, he said that Marshall had called on him and 'I placed myself in a situation that he could not decline introducing me into his (mill) . . . I have now the same Claim upon Bage who paid me a similar visit a few weeks since, which I shall certainly return the earliest opportunity.'⁷

Lee almost certainly did visit Bage at Shrewsbury, because in the letter of July 1800 quoted above he was able to describe the working of the Shrewsbury mill; and he remarked that the new mill at Salford would be bigger. It seems probable that Lee decided to use iron beams in the construction of his mill only during 1800, after two meetings with Bage. In May 1800 he showed a preliminary design with iron beams to Watt and to John Southern, one of Watt's engineers. From sketches in a letter from Southern to Lee,⁸ it is clear that the design of the iron beams was the same as that in an undated drawing in the Boulton and Watt collection which Skempton and Johnson discussed; the section of these beams was a refinement of the shape used by Bage in 1796.

Southern and Watt had various criticisms to

make; in particular, Watt thought that the section of the beam should be changed to something more like Bage's, in order to support the arches of the fireproof floor better. Southern sent Lee 'a sketch of what Mr. Watt . . . thinks to be an improvement, in which I coincide with him. Instead of two beams three are drawn across the Mill supported at the pillars . . . I am aware of the advantages you expect to derive from making two beams only and screwing them together, but neither Mr. W. nor myself think it safe to trust to . . . such screws for the purpose . . .'⁹ This criticism of the design, whereby Lee connected two projecting beams at mid-span instead of using three beams connected at the columns, seems understandable. But drawings made after November 1800 showing the completed iron-work⁹ indicate that Lee rejected the advice from Boulton and Watt on this important point.

Skempton and Johnson thought that the design Southern was discussing in the letter of June 1800 was a preliminary design made in 1799, later abandoned in favour of one which had iron beams with an inverted T-section, such as Fairbairn illustrated in his description of the mill.¹⁰ But Fairbairn was inaccurate in several respects, and it seems probable that the only alteration Lee made was in the dimensions, not the basic design, of the beams—the internal width of the mill was increased to 42ft. and the greatest depth of the beams was increased from 11in. to 13in. Fairbairn gave these latter dimensions accurately, but on his drawing of the cross-section of the mill, he showed three 14ft. beams crossing the width of the mill, instead of the two 21ft. beams that were in fact used. Thus Fairbairn cannot be relied upon; and since there is no evidence to support his statement that the section of the beams was an inverted T, that story must also be doubted. If he looked at the building, what he saw would agree with his experience of beams with an inverted T-section because the angle of the T would be obscured by the brick arches, so he would not see how the web of Lee's beams widened at the base to form the 'skewback' from which the arches sprang.

If these conclusions are accepted, the account of cast iron beam development given by Skempton and Johnson needs to be modified. Instead of there being four different cast iron beams designed between 1796 and 1802, two by Bage and two by Boulton and Watt, there are only three designs to consider, all essentially based on the ideas of Bage. The evidence of Fairbairn can be discounted, and the introduction of the T-beam in 1802 can then be seen as depending on Bage's understanding of cast iron and on the theory he had developed at about that date.¹¹ The points raised here seem to support the story of Bage's structural ideas, which Skempton and Johnson have done so much to unravel.

A. J. PACEY

I am indebted to Mr. R. L. Hills and Mr. Stuart B. Smith for their comments and assistance.

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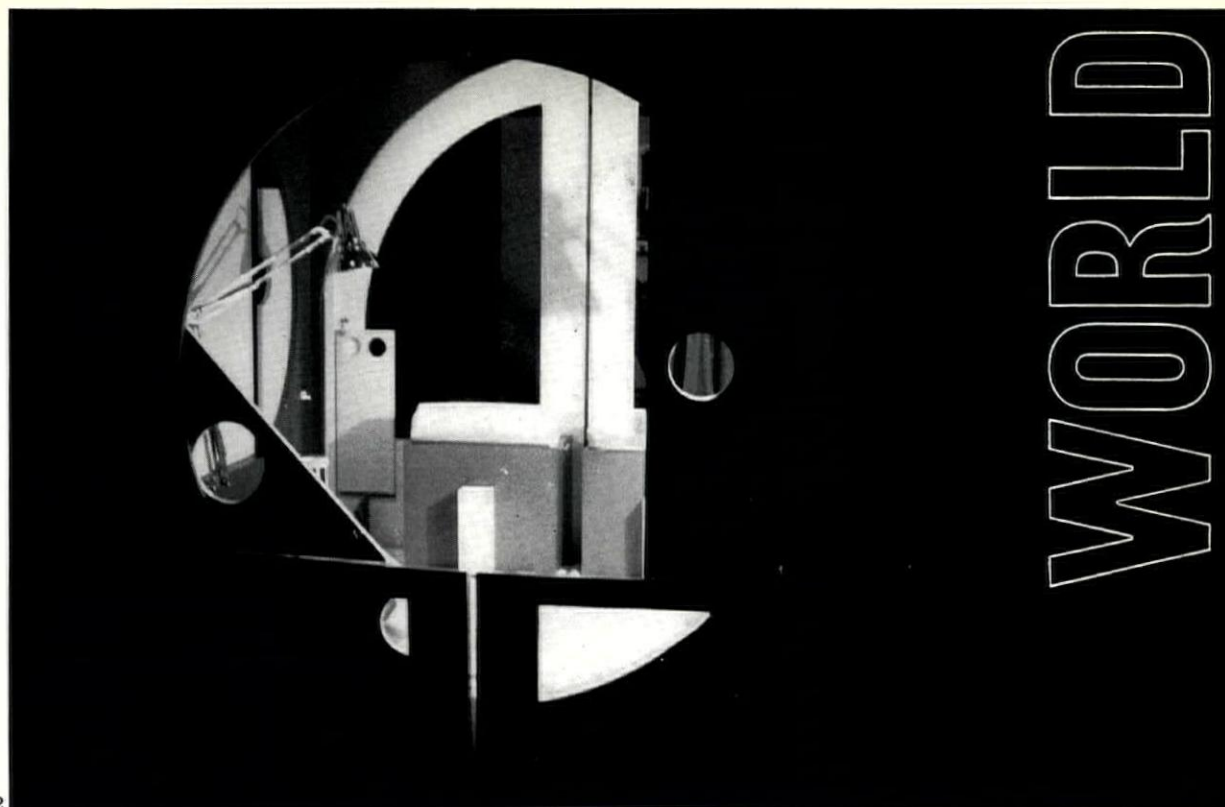
- ¹ Volume 131 (1962), pp. 175–186: 'The First Iron Frames'.
- ² Sigfried Giedion, *Space Time and Architecture*, Harvard, 1941, fourth edition, 1962, pp. 189–193.
- ³ Vol. 107 (1950), pp. 231–246: 'The First Iron-Framed buildings', see especially p. 241.
- ⁴ Lee to Watt junior, 16 July, 1800; Lee to Southern, 26 August, 1800; drawings by Lee dated 26 December, 1800 and 25 January, 1801; and drawings by Boulton and Watt dated 5 January, 1801 and 9 April, 1801; (indexed under LEE, M IV 'L' and PHILIPS & LEE portfolio 242).
- ⁵ G. D. H. Cole, *The life of Robert Owen*, London, 1965, p. 68; Owen took a job over from Lee at one Manchester factory.
- ⁶ Lee to Watt junior, 10 March, 1798, (Box 3), and Lee to Lawson, 5 March, 1798, (Box 5).
- ⁷ Lee to Watt junior, 8 January, 1800.
- ⁸ Southern to Lee, 2 June, 1800, Boulton and Watt Foundry Letter Book for 1797–1800.
- ⁹ In portfolio 242 at Birmingham and dated from a letter, Lee to Watt junior, 25 November, 1800.
- ¹⁰ William Fairbairn, *On the Application of Cast and Wrought Iron to Building Purposes*, London 1854, figures 1, 3, 4 and 5.
- ¹¹ A. W. Skempton, 'The origin of iron beams', *Actes du 8 Cong. Int. Hist. des Sciences*, Florence, 1956, 3, pp. 1029–39.

SUPER GAMES

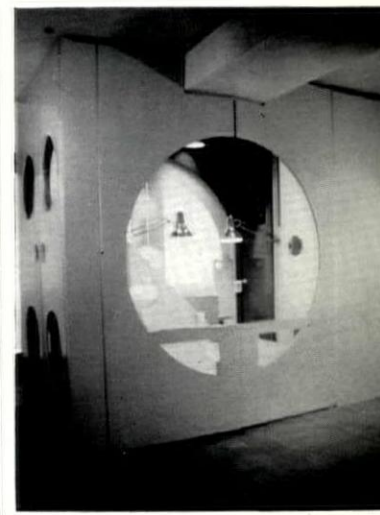
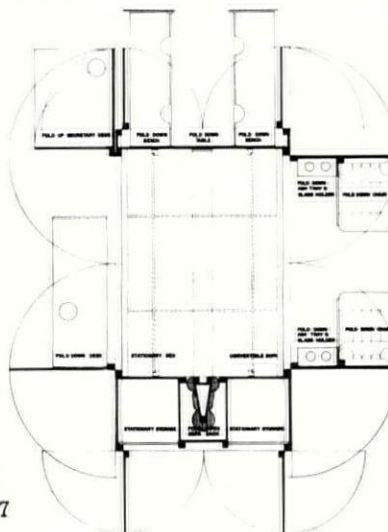
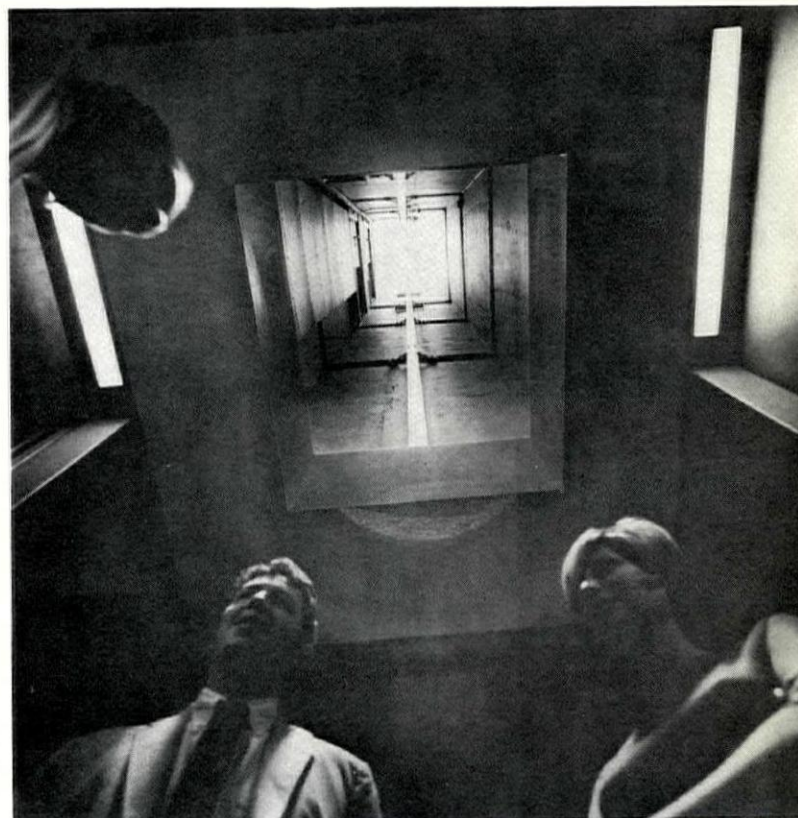
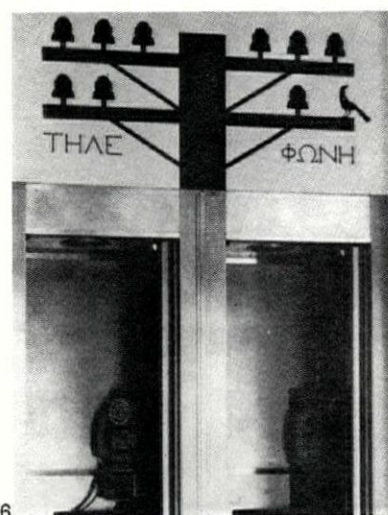
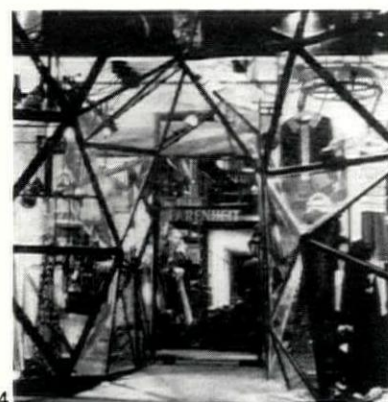
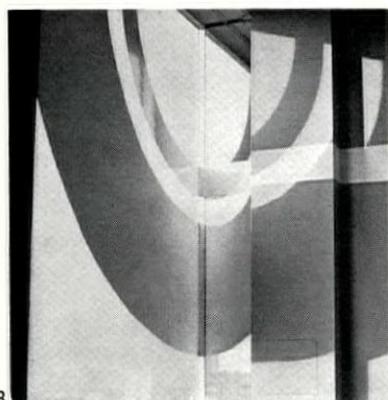
A new trend in design, especially interior design—a kind of violence, which *Progressive Architecture* in a recent issue largely devoted to this subject calls 'supermannerism'—is yet another sign of protest and permissiveness. On the one hand Robert Venturi extols the virtues of the commercial strip and would no doubt welcome the new sausage car, 1; on the other, experimental designs like Lester Walker's Supercube perform miracles of com-



pression and versatility, 2. More often than not the new trend is a form of camouflage by means of paint. Cheap, quick, frequently spectacular, occasionally witty, it is the self-indulgence of a society living on borrowed affluence. Doug Michels has played havoc in his Washington flat with the four-square window design (Pei was the architect of the block) by painting large circles which reflect in a mirror and cast confusing shadows over the walls, 3. Similar ambiguities result from the fashionable overall use of shiny materials, when wall and ceiling become active with the reflections of people moving. Of course the new trend is also a reaction against the articulated planes of Miesian space. The aggressively angular shop front of C. and P. Girard's *Fahrenheit* boutique in the Boulevard Saint Germain in Paris (irregular tetrahedrons rising through three floors), 4, is a successful, and no doubt intentional, mockery of the conventional shop window. By including the irrational and ambiguous, Venturi believes that our vocabulary as designers will be enlarged and our sensibilities extended. Some of the old guard have taken him up on this—Harry Weese in his Chicago office transparent-top lift (upward motion made visible), 5, and Alexander Girard at St. John's College in Santa Fé with his telephone booths sprouting mock telegraph poles, 6. Another aspect of the new trend is action, people and what they do in a space being more important than the space itself—a return to a basic kind of functionalism. Walker's Supercube, 2, 7-9, is five rooms in one. An independent structure within a room, it measures only 4 ft. 6 in. by 8 ft. by 7 ft. high, yet converts, by means of doors which swing out on all sides, into separate areas for sitting, dining, dressing, working and sleeping. The plywood is cut away to form circular openings, and the bright primary colours add to the general confusion of moving parts. Although Supercube was considerably more expensive than the equivalent in conventional furniture, there is no need



WORLD

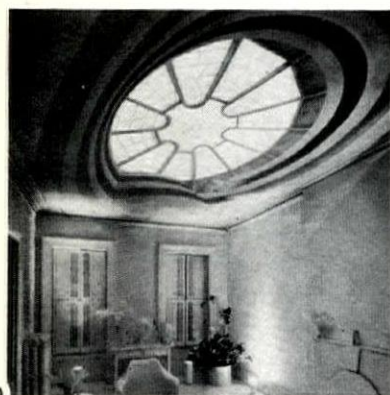


SHOP FUN

Lester Walker develops the circular cut-out theme of Supercube (for the same client) in 1-2-Kangaroo, 13, a small toy shop at the back of a gallery in Philadelphia. He describes the design as 'the filling of peripheral walls with shelves, structuring them to be self-supporting, and carefully cutting away the rest of the material that was not needed for these functional purposes'. The main problem was to create a scale which was powerful enough to catch the eye 50 ft. away at the other end of the gallery, and yet sensitive enough to accommodate the most delicate toy, 14. Alan Buchsbaum's Lucidity Inc. on Second Avenue in New York, 15, also had to attract attention, and on a very low budget. The shop sells only objects made out of plastics (the synthetic environment is yet another aspect of the new trend), and



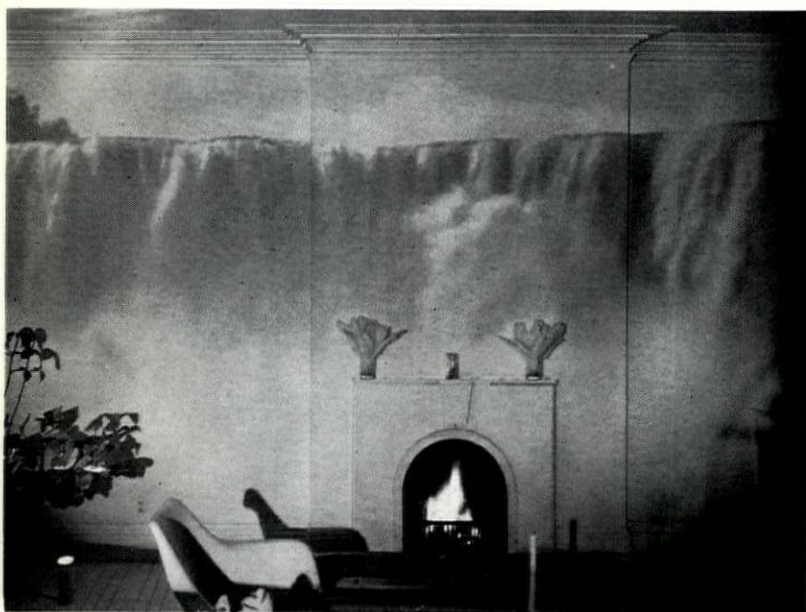
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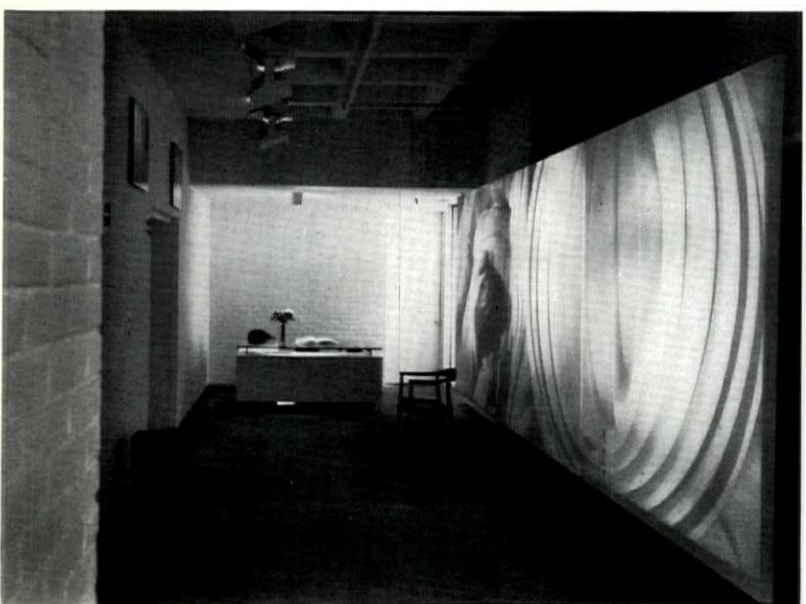
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SUPER GAMES

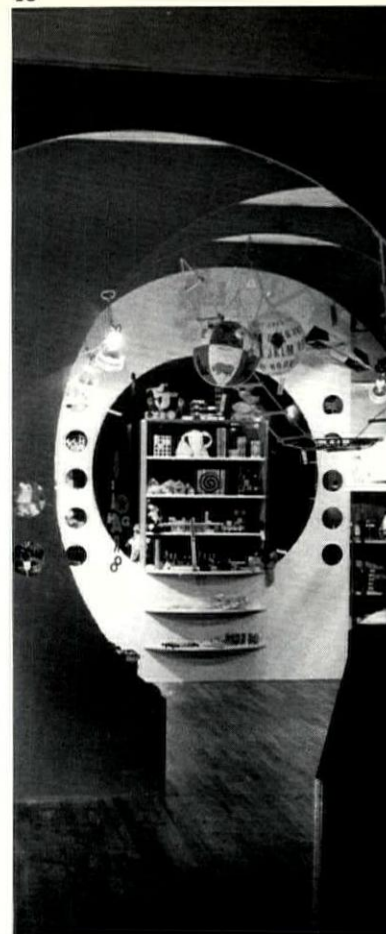
to regard it, as the owner seems to, merely as a huge 'supertoy' for adults playing super games at living. One prevalent characteristic of the new trend is an inflated scale, seen at its most absurd in the projection of incongruous images—the spiral ramps and dome of the Guggenheim Museum on the ceiling, 10, and Niagara Falls over the fireplace, 11, of a private apartment. Projection, however, is also used in a strictly old-guard architectural manner, and very effectively, by Warren Platner in his New York Jensen showroom, 12 (see also pages 121-124).



11



12

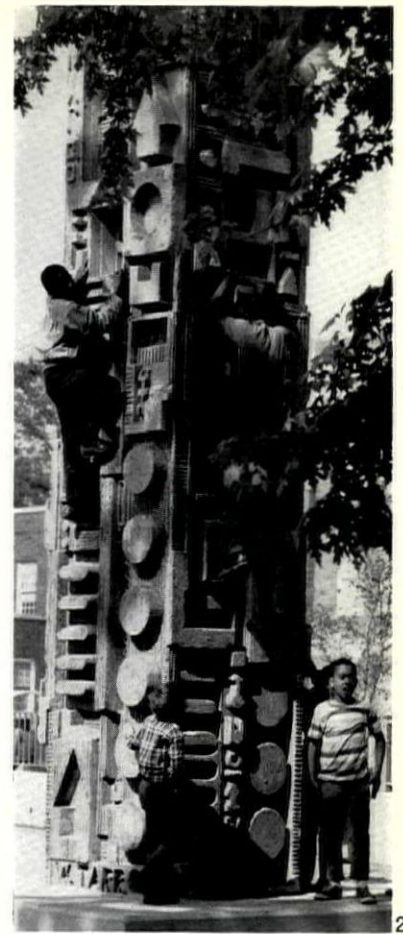


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SIMPLE GAMES

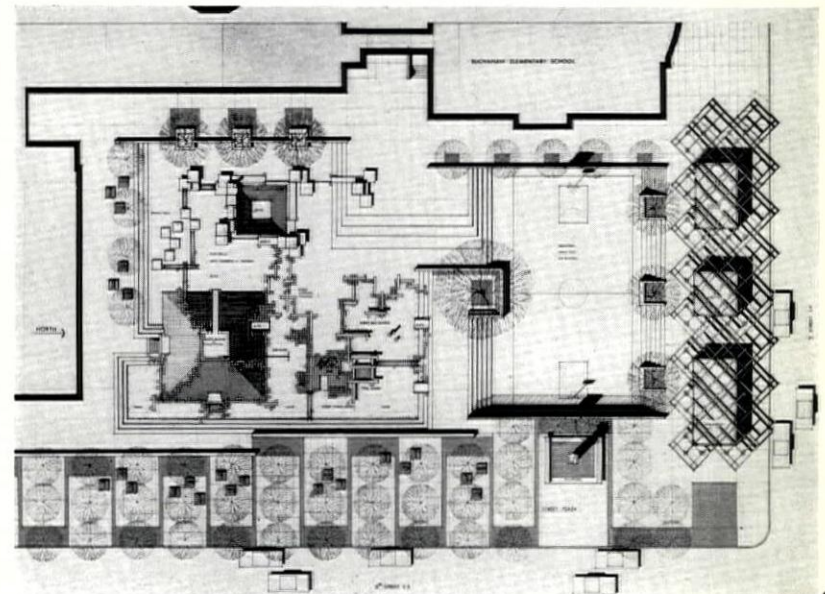
In November 1967 World illustrated Pomerance and Brienes's first outdoor rehabilitation scheme in a New York slum. Now, with landscape architect Paul Friedberg and thanks to the Vincent Astor Foundation, they have completed a similar scene for Buchanan School in the heart of one of Washington's black ghettos. Formerly empty and enclosed on its two street sides by a chain-link fence, 20, it has been turned into a delightful playground for the use of the school and neighbouring residents, 22. It is open on all sides and at all times, and every structure, even the snack bar and offices (right in 23), are designed for climbing. The result is also visually successful. The main



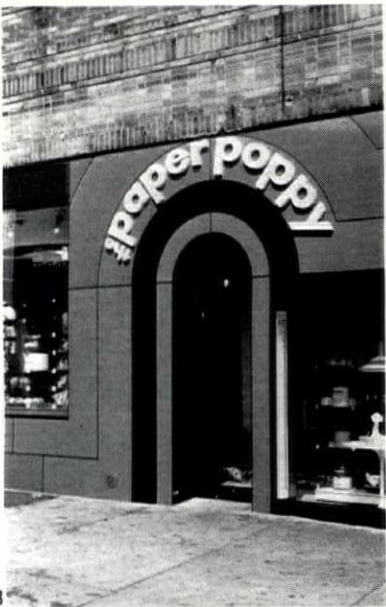
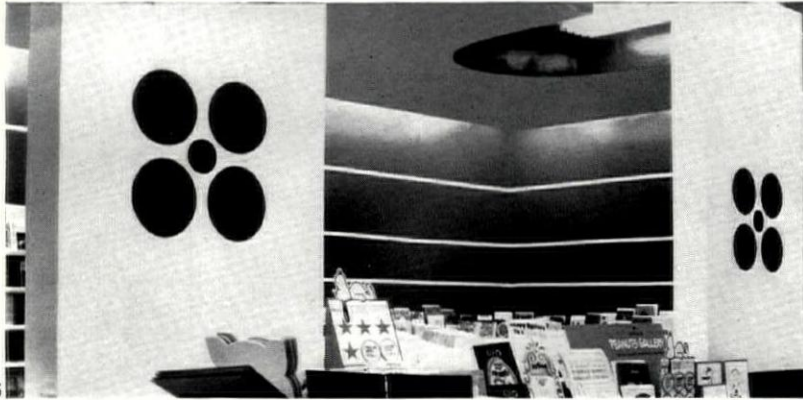
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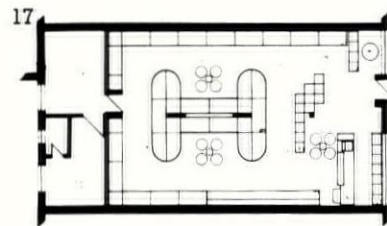


23



Buchsbaum has made use of another synthetic material, paint, to carry a design of bold black bands around and down the white walls, imposing a very big scale on a very small space. By these super-graphic means the corners of an awkwardly shaped room are dissolved (even the counter is denied its cubic form), and features such as mirrors are bent to the overall pattern of the design.

More ambitious, though perhaps not quite so successful because not all the furniture met the architect's requirements, is Buchsbaum's Paper Poppy



on Upper Broadway, 16 and 17, something of a surprise in a middle class Jewish-Irish neighbourhood (though admittedly second generation). Selling greeting cards, paperbacks and what are described as psychedelic-type gifts, the shop attracts attention on the street by its mannerist design (of red and black bands in porcelain-enamelled steel panels) which runs unfinished into brickwork or glass, 18. The same design is continued inside, where its linear quality is used to help circulation, the bands ending in a flourish over the cash desk with clusters of red and purple lights, 19, repeating the shop symbol which can also be found on the walls, inlaid in the vinyl asbestos floor and printed on the stationery, match books and shopping bags. For the window display (seen in 18 and 19) Buchsbaum uses the elegant German R T display system of glass panels and plastic connectors (illustrated in ID, AR October 1968).



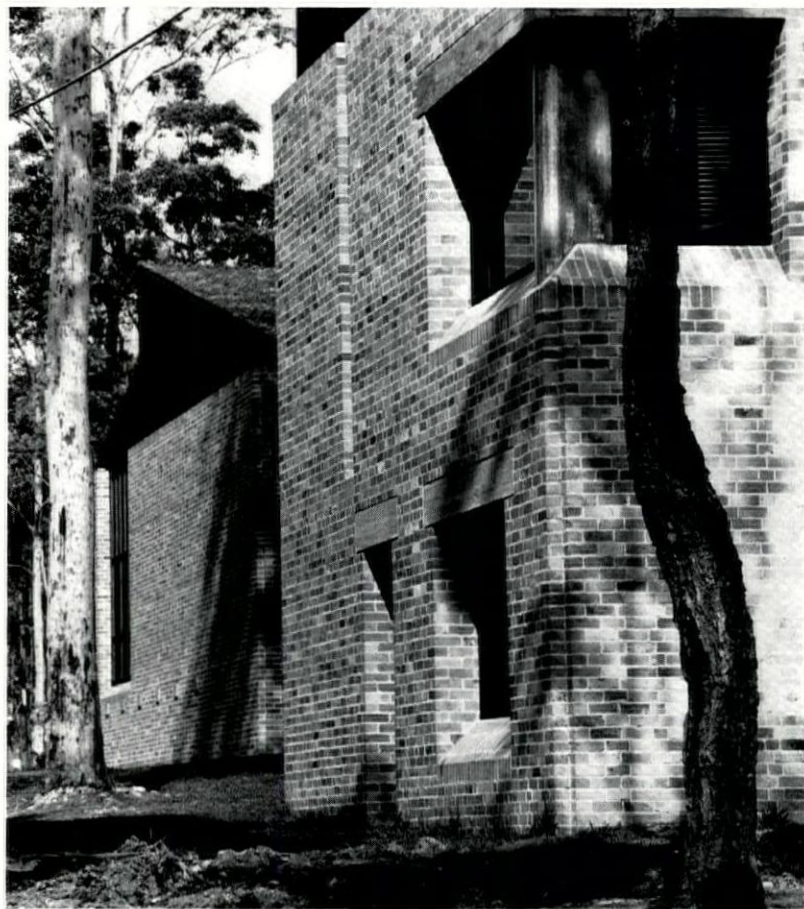
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SIMPLE GAMES

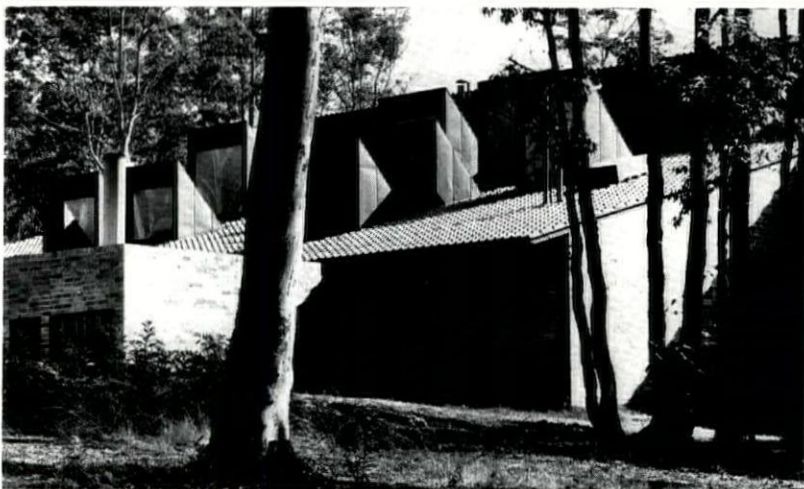
recreation areas are sunk below the surrounding level, and to the existing Buchanan School on two sides the architects have added the service building on the third side and a belt of trees on the fourth. The 'equipment', too, plays its part—challenging projections of William Tarr's concrete totem pole sculpture, 21, or the bold, constructed look of the 'gazebo', 24.

DISCRETE UNION

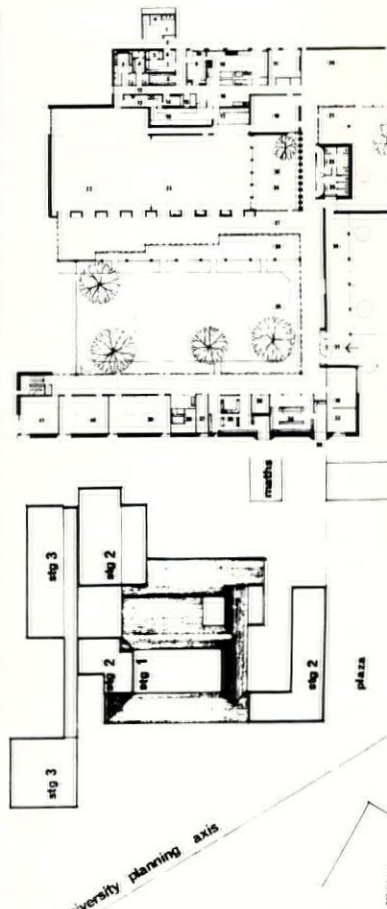
Anchor, Mortlock, Murray and Woolley's Union building for the recently established University of Newcastle in New South Wales is sited, like the rest of the university, in a forest of tall eucalyptus trees, 25. Winner of the RAIA Blacket award for buildings in the country areas of NSW, it is to be built in stages. With only the brief for the first stage in any clear form, and with plenty of land available, the building was designed of single-storey construction. The need to have durable and maintenance-free materials suggested the use of brick and timber, and the importance of the roof with higher ground around led to the choice of a brown glazed tile. Despite the use of such traditional materials, the temptation to exploit craft techniques for their aesthetic effect has been successfully resisted, and the whole design is distinguished for abstract qualities derived from the consistent application of hole-in-the-wall principles and pitched roof disciplines, 26. The plan, 27, consists of two wings facing an inner court and joined by an entrance link. Eventually the building will form one side of a central university quadrangle, but it is difficult to see how, with such an introverted plan, it can ever play its part in the greater whole, especially when the main entrance, even now far from obvious, will be completely hidden by a stage-2 building, 28. One wing contains offices, meeting rooms and a book shop; the other consists of dining rooms and a common room, all of which are served directly from a single kitchen. The depth of this wing demanded roof lighting, and the architects preferred numerous tall copper-clad dormers to a single strip, 29. On the court side the gallery steps forward, reducing the verandah correspondingly, 30, so that it is widest outside the main dining-room, where the largest numbers will also congregate.

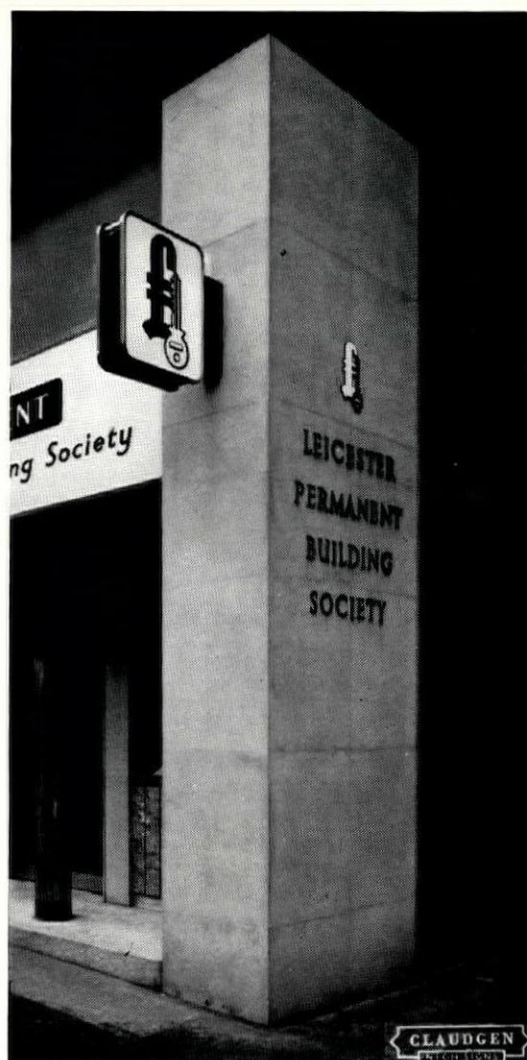


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29





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VIEWS AND REVIEWS

marginalia

THE EUSTON MURDER

The above was the title of the article in which, in April 1962, the AR recounted the long drawn-out history of dilatoriness and evasion which led up to the destruction by British Rail of the great Doric arch (or, more properly, propylaeum) at Euston, described in that article as 'one of London's major architectural monuments . . . one of the outstanding architectural creations of the early nineteenth century and the most important—and visually most satisfying—monument to the railway age, which Britain pioneered'. Its destruction was connived at by the British Transport Commission, the London County Council and the Government, and was completed in the face of widespread appeals that the arch should be preserved, appeals that reached (and were rejected by) the Prime Minister himself—then Mr. Harold Macmillan. Those who pleaded for it were prepared to accept the argument that the realignment of platforms when Euston station was rebuilt might make it too difficult to preserve the arch where it stood, and asked as a reasonable alternative that the method of demolition should allow of its re-erection as part of the layout of the new station, thereby preserving not only the arch itself but its symbolic significance.

The frontispiece to this issue shows that this would have been not only possible but highly desirable. There is no doubt that such problems as taking new foundations for the resited arch down through the low-level car-park could have been overcome. The improvement that would have resulted even the authorities who insisted on the demolition of the arch can hardly fail to acknowledge. But it is too late to acknowledge it now, because those same authorities, including Mr. Macmillan, refused at the time to have the stones numbered and stored even though to do so would have committed them to nothing. They were determined on complete destruction.

It is unlikely that such an act of utter vandalism would happen today—though one can never be quite sure; and had the authorities agreed at the time on re-erection, this would no doubt have been paid for today as part of the cost of rebuilding the station. For regard for historic monuments is growing, particularly those of the nineteenth century and, even more particularly, those which represent, as did the Euston arch, the industrial revolution and Britain's pioneering part in it: witness the Government's agreement (which they must not be allowed to go

back on) to preserve St. Pancras station and the many committees and publications concerned with the relatively new subject of industrial archaeology.

Symptomatic of this growing regard for nineteenth-century history and railway architecture is a book published in December by Thames & Hudson* of which the hero is the Euston arch itself—and in which incidentally the AR's 'Euston Murder' article of 1962 is reprinted in full. The authors of the book are Alison and Peter Smithson, who explain that the compilation of the volume filled a disturbing gap in their lives caused by the non-execution (see AR, August 1968, pages 79 and 80) of their design for a British embassy at Brasilia.

Whatever its immediate occasion, this involvement of an *avant-garde* firm of architects in the history of technology and the architecture that arose from it, and their feeling for what they call the 'ritual destruction of the Euston arch', is once again something that could not have happened even six years ago, when it was more common for *avant-garde* architects (if not these architects) to decry preservationism as the pre-occupation of reactionaries and sentimentalists. Nor is the element of nostalgia that now appears on the Smithsons' pages compatible with the way their generation looked at things earlier. This is not a sign of ageing nor of backsliding, but a reassuring indication of a maturer attitude to cities which accepts the value of continuity and of history still being written on their face, and no longer demands a *tabula rasa* as the town-planner's starting-point.

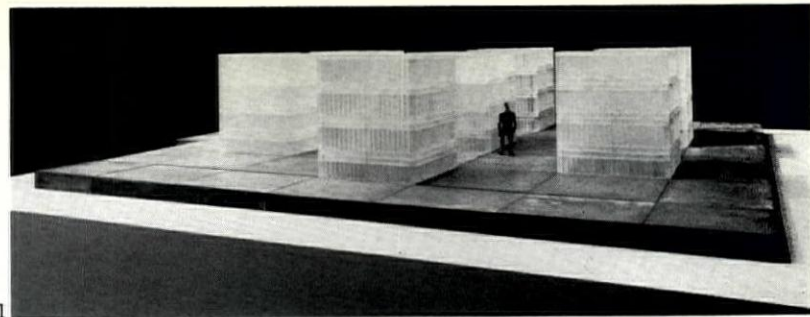
The Smithsons' book is a scrap-book, assembling for the reader an ingenious mixture of early prints, maps, posters, photographs and technical drawings, quotations from railway histories and other oddments. It is confusing, evocative rather than systematic, with many surprises and some irrelevancies, and not very well printed. But always behind this miscellany of material, even when the text or pictures take us as far afield as Carnforth, Birmingham or the River Tyne, looms the Euston propylaeum, illustrated at every stage from construction to destruction, once the noblest railway monument in the country and—in this remembered form—an indictment of the philistinism of all those who inherited responsibility for taking care of it but who refused to do so.

J.M.R.

IN MEMORIAM

The model of Louis Kahn's Monument to the Six Million Jewish Martyrs, 1, which will stand in New York's Battery Park overlooking the Statue of Liberty, was recently exhibited at the Museum of Modern Art. The design is based on a 10-ft. square grid, and consists of seven 11-ft. high glass piers standing on a granite podium, and arranged symmetrically about both axes. By means of the transparency of glass, Kahn here uses light as a symbol of hope, the piers being constructed out of interlocking sections and without mortar. The six surrounding piers are solid glass; the central one is hollow and contains a chapel. In Kahn's own words, 'the one—the chapel—speaks; the other six are silent.'

**The Euston Arch and the Growth of the London, Midland and Scottish Railway*. By Alison and Peter Smithson, with a foreword by Nikolaus Pevsner. London: Thames and Hudson, 1968. 42s.



1, model of Louis Kahn's Monument to the Six Million Jewish Martyrs, to go in Battery Park, N.Y.

ST. IVES RELIEF ROAD

Controversy over the correct route for the St. Ives relief road, which was sparked off by Kenneth Browne's recent article in the REVIEW,* continues. The county council's proposed route on the west side of the town (A on map) has come under heavy fire with justified demands that the whole question be reconsidered.

Moreover, the county planning officer's statement that the public had been misled by a calculated campaign by a group of architectural journalists in London who did not know the facts, is hardly supported by the findings of a report† just published by a study group of the St. Ives Civic Society. This careful appraisal comes out strongly in favour of a route on the east side of the town, as Kenneth Browne suggested, and plans have been published to show where this should run. This is no amateur effort, unsupported by evidence, but a considered study by a local team consisting of an architect, an architect-planner and an engineer, and it goes into the matter with exemplary thoroughness.

Its main conclusions are:

1. The proposed western route (favoured by the county council) would introduce

a new road across an area of outstanding natural beauty.

2. An alternative route to the east would not only avoid this, but would accord better with the forecast of traffic flow.

3. There will be considerable displacement of traffic and amenities during the construction of a western route and very little during that of an eastern one.

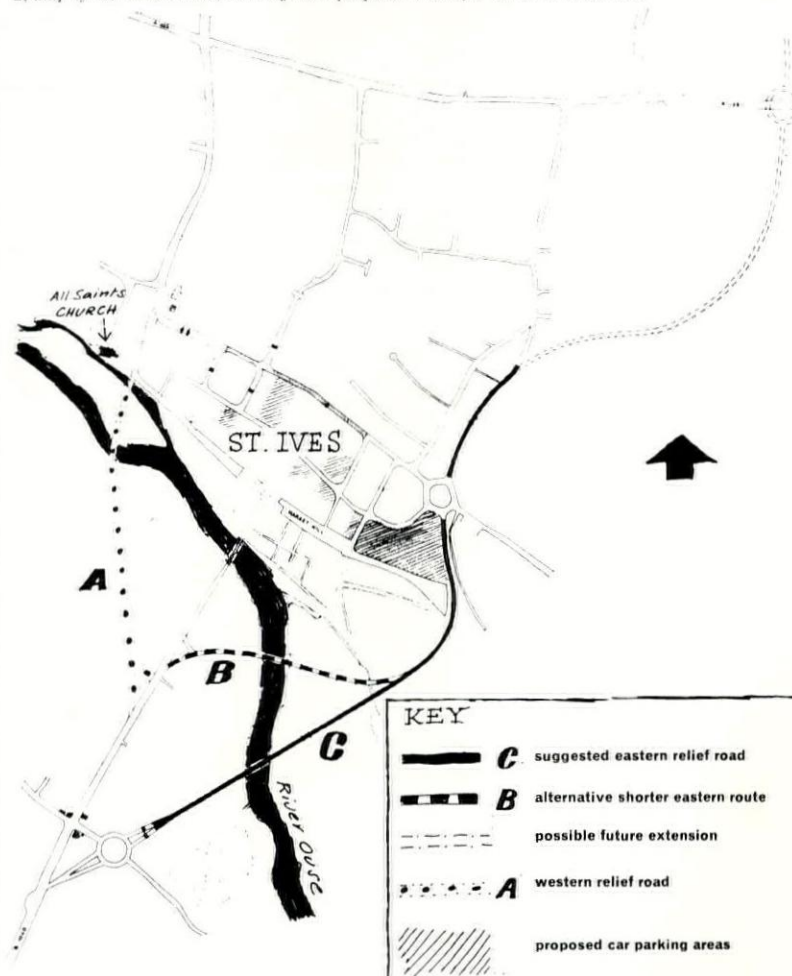
4. Demolition cannot be entirely avoided, but the cost is likely to be less on the east than on the west.

5. There is a commercial advantage with an eastern route, and a disadvantage with a western route.

Commenting on the county council's preference for the western route, the group points out that at the time when alternatives were first considered, the railway from Somersham to St. Ives was open and the goods-yard at St. Ives in use, thus precluding the best site for an eastern route. Also they consider that a decision should not be made on the bare cost to the county council of the first phase, without

*'Aspects of Conservation I,' AR, October 1968.
†Civic Society of St. Ives, Report of Study Group No 1. The route of the proposed relief road and bridge.

2, map of St. Ives, Hunts, showing three proposed routes for the new relief road.



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taking into account the cost benefits of the phases that follow.

For instance, owing to site costs future car parks will be at the east end around the cattle market and the main traffic flow from both north and south will be to this end.

Two alternative eastern routes are shown. B, the shorter, would be the cheapest route of all but a long term view would probably justify C, 350 yards longer. Both take advantage of the disused goods-yard, the only place in St. Ives where a traffic distribution point of sufficient size can be located.

MIES SPEAKS

The gramophone record on which the article under the above title in the December, 1968, AR was based was published initially by *Bauwelt* magazine of Berlin—as 'Bauwelt Archiv No. 1'. RIAS, to whom Mies gave his interview, described in the AR as the American Radio University in Berlin, should more properly have been described as the Berlin radio station of the US State Department, its initials standing for *Radio im Amerikanischen Sektor*.

WOMBOURN PREVIEW

On page 64 of the January 1969 AR (Birmingham and West Midlands Preview), the Wombourn junior training centre and hostel were erroneously attributed—in the text of the critical article—to the city architect of Worcester. The architects of the project, as correctly given on page 38, where it was illustrated, are in fact Donald Goldfinch Associates.

obituary

GERALD BARRY: 1898-1968

Gerald Barry, who died in November at the age of 70, was interested in everything except—as he always used to say—Egyptology. But above all he loved architecture. He liked the company of architects and spoke their language. He was genuinely proud of his honorary Fellowship of the RIBA, and in all his working life, as journalist, critic, impresario or public figure, there was never a time when some architectural project—whether it was the pioneering *Neues Chronicle* Schools Competition (a forerunner of Hertfordshire)—High Paddington, the new Barbican, Cities Redevelopment Research or the Festival of Britain—was not getting his interest and practical support, much of it either unpublished or certainly less well known than it should have been. But if most of us remember him for his achievements as director-general of the 1951 Festival of Britain, perhaps only those who worked closely with him during this extraordinary period of preparation (1948-1951) can appreciate what a task he took on and how triumphantly he accomplished it.

When he was appointed in 1948 the financial situation of the country was—as usual—bad, and getting worse. One war was over, but another in Korea was still active. It was the period of building licenses and petrol coupons. Everything—and in particular high spirits—was in short supply. He had no site for his central exhibition and precious little—as far as he could

see—to put in an exhibition even if it could be built. It was a situation to gladden his crusading spirit and he attacked it with zest. He collected his team, mostly young and perforce inexperienced, and within a few months the basic decisions were made, loyally backed throughout by Herbert Morrison, and we were off. The aim was not just to give the nation a much needed shot in the arm, but to demonstrate to the world that we were on our feet again. It was to be nationally celebrated, not London-bound, it should aim to leave some permanent, worthwhile legacies other than Jubilee clock towers when all was over, the exhibitions were to be selective, seeking quality in everything from architecture to canteen cutlery, and above all it was to be an exercise in patronage, calling up every national creative talent—engineers, gardeners, poets, musicians, designers, sculptors and scientists.

All this had to be co-ordinated and crammed within a tight budget (to be tightened even further in the process) and a cripplingly short time. On the sidelines throughout stood what Michael Frayn has called the 'carnivores', jeering, opposing, giggling and obstructionist. Barry's persistence never weakened—he believed in what he was doing and he infected all who worked with him with his enthusiasm and resilience. 'Sometimes' he used to say, 'I believe I'm exuding a *smell* of Festival'. Despite snowstorms and strikes, political upheavals, warnings from Professor Richardson that the site could never accommodate the crowds and from Noël Coward that nobody would ever go, it all opened on time and within the budget and was a knock-out success.

Inevitably, years have brought reaction and for some time now in the design world, the Festival has become almost a term of abuse. Certainly many of the qualities and values it celebrated have today lost favour or support as much as the manner in which they were expressed has become derided or rejected by younger generations. Such is always the fate of fêtes. We all know its faults, but nothing, and least of all the mercilessly destructive swing of Fashion's pendulum, can detract from its genuine achievement. It's nice to think that some of its permanent legacies, direct and indirect—among these the COID, the Festival Hall and National Film Theatre, slum clearance in Poplar, and hundreds of other 'improvements' all over the country—remain the real memorial to the life of this courageous, witty, humane, serious and wholly delightful man.

HUGH CASSON

correspondence

ROAD LIGHTING AT LEEDS

To the Editors.

SIRS: The carriageway on a section of the Ring Road in the Meanwood district of Leeds, north of the city, has been doubled to bring this stretch of road to the same standard as that of other dual carriageway sections. New lighting is also to be installed, and one wonders whether the Leeds authorities will show any more consideration for landscape values when this is done than they have shown elsewhere.

In 1958-59 concrete columns of the tallest kind were erected on the A63 in the immediate vicinity of the fifteenth-century church at Whitkirk, with no consideration being paid to the architectural environment, although with a little foresight it would have been possible to introduce lighting of the required power with the minimum of visual intrusion. Later, when the lighting was taken further eastwards to the city boundary on Swillington Common, a fine open landscape was ruined by insensitive use of the same type of column. It is likely that before long similar columns will have marched right across the Common to the West Garforth area, though here the responsibility would rest with another authority.

Driving south on the Otley Road, and turning east on to the Leeds Ring Road, one descends towards the Meanwood Valley; ahead there are distant views over slopes covered with old woodland, and this would be a fine prospect were it not for the concrete lighting columns which place the clumsy stamp of the uninspired improver across the landscape. Then, when one drives further, past the last of the columns and on to the newly improved stretch of the road, one is suddenly in real countryside. The effect is startling. The road becomes part of the landscape, rising with the contours, the clean uncluttered lines of carriageway flowing on through the massed trees. Urban development is close, but screened by trees and the shape of the land, and when tall flats can be seen they are no more than simple masses rising above the trees. And elsewhere, beyond the newly doubled section, the road continues in much the same way, mostly with trees and fields between the driver and the occasional stretches of urbanization, until Seacroft is reached, where once again concrete columns dominate the landscape. Ministry of Transport approval has now been obtained for the introduction of Class 2 lighting on the new stretch of dual carriageway, and the Leeds authorities are hopeful that this in turn will eventually be replaced by lighting of higher power. This, one presumes, would mean lamps of the same power as elsewhere on the Ring

Road, and would lead ultimately to the introduction of similar lamps all along the road to Seacroft. That the road should be properly lighted to Ministry standards one does not dispute, but care should be taken that columns of a material more sympathetic than concrete are used. The answer would seem to be steel columns, which are slimmer and may be painted a neutral colour to make them less obtrusive.

Tall steel columns are in fact used in the centre of Leeds, whilst the lighting of the A65 between Skipton and Otley is by means of steel columns which do little harm to the rich landscape of the Wharfe Valley, and in both cases the quality of the actual lighting is excellent. One wonders then what form the lighting of this road will eventually take. An enquiry to the chairman of the committee concerned has received the reply that the scheme will have to meet the requirements of the Ministry of Transport and be in accordance with their specifications, and that any decision as to whether steel or concrete columns are used rests with the Ministry. But if a suitable answer can be obtained elsewhere why not in Leeds? Is it not the responsibility of the Leeds authorities to prepare a scheme which will satisfy the Ministry and also suit the landscape?

GRAHAM S. HUDSON

Hythe, Kent.

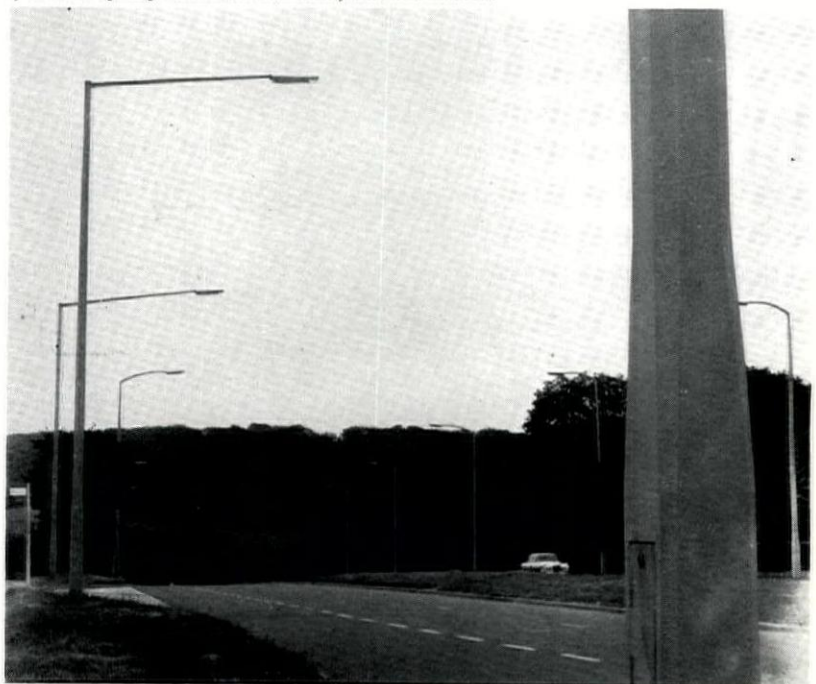
book reviews

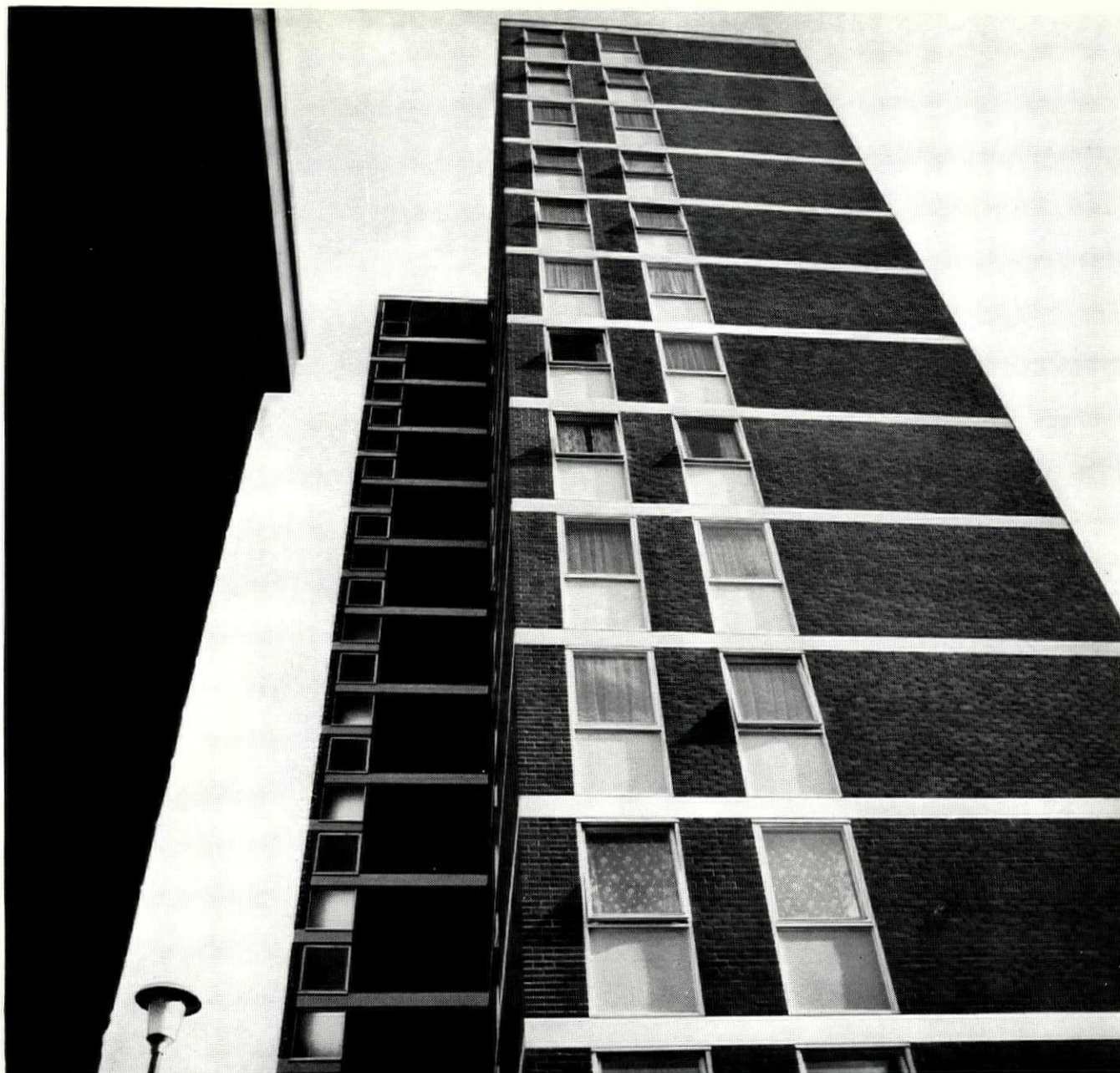
FESTSCHRIFT

CONCERNING ARCHITECTURE. Ed. John Summerson. Allen Lane, The Penguin Press. £6 6s.

This is a very private book indeed. Here are nineteen essays written by a galaxy of architectural scholars in honour of Nikolaus Pevsner's sixty-fifth birthday. The book is edited by John Summerson who, presumably, chose the authors and co-ordinated their work. Summerson's own contribution consists of ten lines addressed to 'My dear Nikolaus'. What a pity that he did not himself write the twentieth essay. The two best architectural writers in the English language, Pevsner and

3, looking eastwards over the Meanwood Valley, near Leeds, showing the intrusive effect on the landscape of concrete lighting columns. See the letter from G. S. Hudson.





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RB.39

Summerson, are thus excluded from the book; everyone else is there. The Select Pevsner Bibliography at the end of the volume has been compiled by John Barr. It begins with reviews in the *Dresdner Anzeiger* forty-three years ago and runs to almost ten double-column pages. It is an astonishing record of a life's work. Some tribute to that work was surely due and Pevsner would not have wished it to take any other form than this book. When we turn to the essays themselves,

however, one must repeat that this is indeed a private book in more senses than one. Both in its genesis and in the highly personal and esoteric nature of its content it is inbred. Seldom, at any rate in the architectural field, can there have been such a pyrotechnic display of erudition, profound scholarship, sheer pedantry and complete detachment from all reality. This book symbolizes the triumph of the great Teutonic bid to make writing about art more important than art. There is no architect alive in England in whose

honour anyone would want to produce a book of essays . . . only a critic. Oddly enough it is the most human, less rarified essay which, if only by implication, is the highest tribute to Pevsner. Alec Clifton-Taylor, in his account of 'Architectural Touring with the Little Guides', tells us of the cycling clergymen who wrote them for Murrays some eighty years ago. They always had more than half an eye on the squinch-arch, the Norman door or the Saxon quoin. How immeasurably far we have gone since then . . . and thanks largely to Pevsner.

The other dissertation upon tourism may surprise many. We are now hardened to the sight of such paupers as Marlborough, Devonshire, Bedford or Pembroke collecting their half-crowns to keep body and soul together. John Harris, however, in his essay upon 'English Country House Guides 1740-1840' shows that this is in fact no new thing. The trials of the traveller, from Celia Fiennes on, were hard indeed, but all the same they travelled, and their objective was usually the houses and parks of the nobility. It was a profitable game for the owners. True, only the gentry ever passed the lodge gates, but tickets and guide-books—usually to be bought at the inn—were expensive, and tipping exorbitant. All the same, to give only one instance, in 1776 well over two thousand people visited Wilton. The guide-books varied from mere pamphlets to serious tomes. It was the content, however, which was so different from the guide-books of the Pevsner era. Usually the book dealt at length, not with the house but with the owner's lineage and his collection of paintings and antique statuary. Many of these guide-books, however, were clearly of great merit on their own terms.

In spite of the title of this book it is obvious that the essayists were asked to write not about architecture but about architectural literature. This was surely a pity. The result is that the whole volume becomes a series of writings about other people's writings. This applies, for instance, to the fine opening essay by H. M. Colvin, on Aubrey's *Chronologica Architectonica*, to the necessarily rather thin analysis by R. M. Middleton on 'French Eighteenth-Century Opinion on Wren' thin because the French didn't really think very much about Wren one way or the other. Other essays where the authors write about writers are Mordaunt Crook's 'John Britton and the Genesis of the Gothic Revival', Paul Thompson's 'The Writings of William White', Maurice Craig's 'James Fergusson' and so on. Even when we come nearer our own time we have very little about buildings or fundamental changes in design; we have Frank Jenkins on 'Nineteenth Century Periodicals', J. M. Richards on 'Architectural Criticism in the Nineteen-Thirties' and Hugh Casson on 'Architectural Journalism'. In the same category, although far too journalistic in manner, is Reyner Banham's attempt to explain the 'Architectural Polemics' of the last twenty years. Not that some of these essays are not, each in its own way, rather brilliant. They are, but they are about criticism rather than about architecture, upon which Pevsner must surely have had some influence, unless he has lived in vain.

One wonders, one must admit, to what extent these depths of scholarship

and chronological minutiae may be plumbed without actual foolishness. Pugin, for instance, as we all know, was the most intense and most bizarre figure of the Gothic Revival. His *Contrasts* had a considerable effect upon taste. No one in the world knows more about Pugin than Phoebe Stanton. In her essay on *Contrasts* she has scraped the bottom of the barrel. If there is anything left it must be so trivial that a resurrected Pugin would surely be found to have forgotten all about it. Ruskin, who—unlike Miss Stanton—regarded Pugin as 'the smallest of all possible architects' is here dealt with by Henry-Russell Hitchcock in his 'Ruskin and American Architecture'. About a third of the total text consists of footnotes on Ruskin's American publishers and like matter. Someday, somewhere, someone will surely write an essay upon 'Hitchcock upon Ruskin's American Publishers'. The material is there, it would be a pity to waste it.

But to be serious: just occasionally one is reminded of an old crack of Casson's concerning 'foot-and-note disease' but one also realizes that this book is a most scholarly tribute to a great scholar; it is also one which no age could have produced except our own.

R. FURNEAUX JORDAN

SHELL STRENGTH

NORTHAMPTONSHIRE AND THE SOKE OF PETERBOROUGH: A SHELL GUIDE. By Juliet Smith. Faber, 21s.

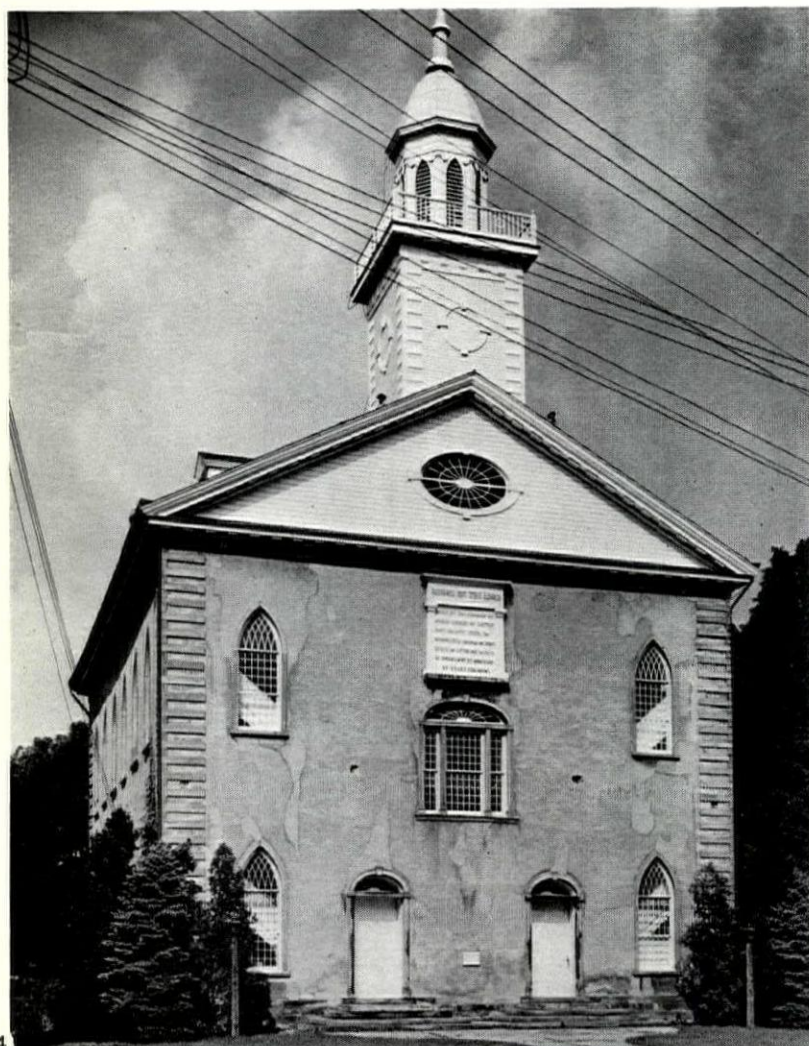
The Shell Guides are going from strength to strength. There are thirteen English counties now and two volumes on Wales and one on the Isle of Wight. They vary less in arrangement—introduction, gazetteer, ample illustrations spread over the whole text—than in the weight given to the parts. This volume alas has only two pages of introduction. That is a pity; for introductions to Shell Guides have a fine tradition. The Gazetteer still includes the Soke of Peterborough which is now Huntingdon. The entries are lively and not too archaeological. Some are a little short (Thorpe Hall 18 words), some larger ones tend to miss the architecturally significant points (Kirby Hall).

A comparison with *The Buildings of England*, which users will inevitably make, shows that the lodge of Rushton Hall, here illustrated, is in the B of E just 'Gothic C19', and at Scaldwell the bellecote, the font cover and the inscriptions in the porch are all absent from the B of E, but that Cottesbrooke Hall has twenty lines against the Shell Guide's 15 words. But the B of E is silent on Mary Queen of Scots at Fotheringhay and Clare at Helpston. The writing of the new Shell Guide varies of course, no doubt according to the author's involvement. Kettering, for example, and Oundle are a bit lame compared with the power of evocation of a Betjeman or a Nairn. The photography is excellent. There are now two generations of Pipers busy, apart from Edwin Smith and Christopher Dalton. It is no doubt John Piper's incurable modesty which accounts for the absence of his stained glass at Oundle.

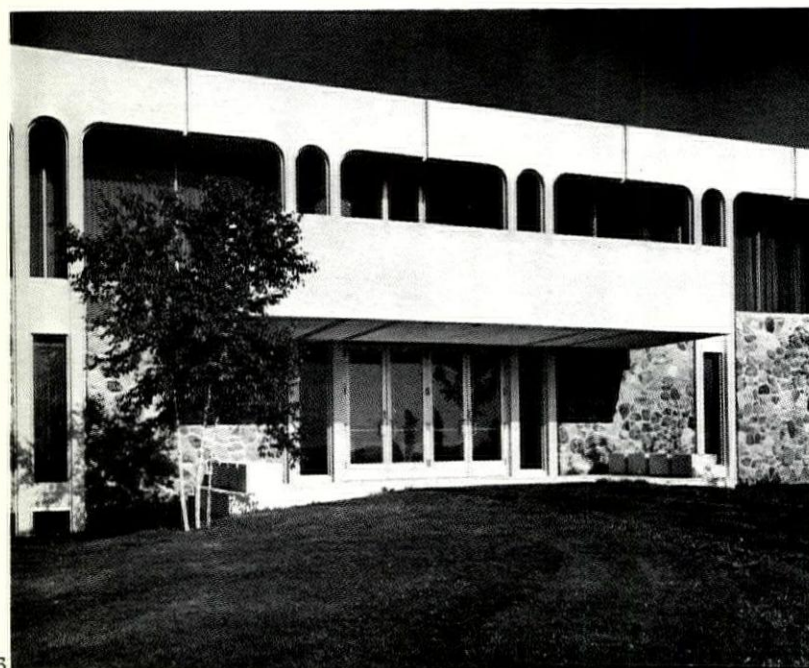
S.T.S.

BOOKS RECEIVED

LANDMARK ARCHITECTURE OF ALLEGHENY COUNTY, PENNSYLVANIA. By J. D. Van Trump and A. P. Ziegler. Pittsburgh. History & Landmarks Publications. BLANDFORD. By Peter Smith. Dorset Book Shop. 12s. 6d. AMERICAN BUILDING. By Carl W. Condit. University of Chicago. 90s. BUILDING LAW FOR STUDENTS. By Keith Munson. Cassel. 27s. 6d.

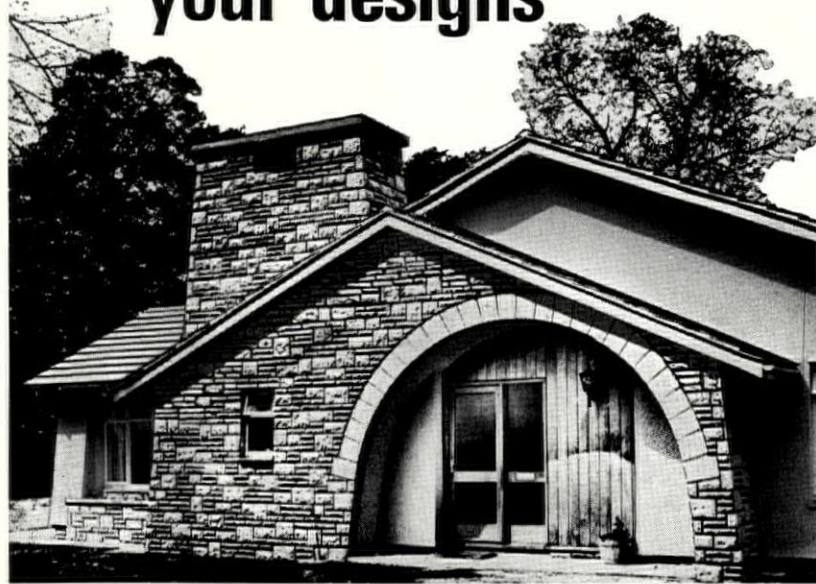


The earliest and the most recent of the buildings illustrated in Wayne Andrews' new and very comprehensive—though largely pictorial—Architecture in Chicago and Mid-America (New York: Atheneum, 820). 4, Mormon Temple, Kirtland, Ohio, 1833-36 (architect unknown); 5, Lake Michigan Hall, Grand Valley State College, Allenville, 1967 (architects, Meathe, Kessler & Associates).



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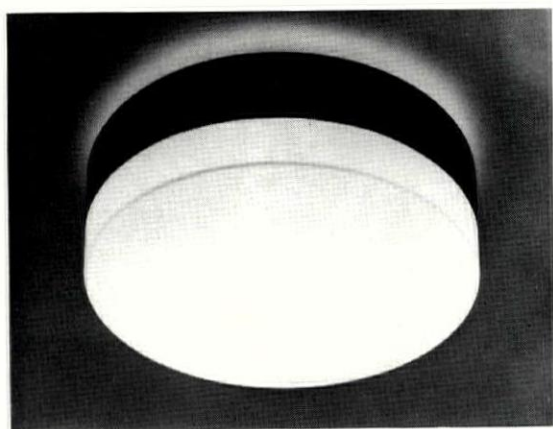
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The Industry

Finnish furniture

1 shows a very comfortable Finnish armchair of fibreglass with loose cushioning fixed with press studs and a pedestal base which incorporates a rocking mechanism. Designed by Yrjö Kukkapuro and manufactured by Haimi Oy, it is exhibited, together with another chair by the same team (shown on page 121 of this issue), in the FinnFurn exhibition (30 January—6 February) organized by the Finnish Foreign Trade Association at the Lancaster Hotel to promote Finnish design following the abolition of tariff barriers between EFTA countries. The chair will shortly be available in this country through Conran Contracts and is expected to retail at £60 in leather, other less costly upholstery also being available.

Furniture by shipbuilders

Brooke Marine have been building luxury craft, cargo vessels and yachts, both sail and power, since 1874, and their furniture and joinery division has craftsmen accustomed to the standards of work appropriate to this background. As well as carrying out high class contract work they have a standard range of office furniture, 2, designed by Robert Heritage and modular bedroom furniture by Richard Hornby which is based on a 4 in. module. This range consists of wardrobes with interior fittings, chest of drawer and dressing table units as well as stools and headboards, all available as individual pieces or as components of free-standing or fitted schemes. All the furniture can be supplied in any timber or veneer as required. The company also produced the kitchen units for the Barbican development schemes.

Brooke Marine Ltd, Lowestoft.

Roofing sheet

Marleydek roofing sheet consists of a specially formulated vinyl backed with asbestos and is designed to provide a jointless covering for flat, low-pitched and curved roofs on industrialized or portable buildings. It is laid with a cold adhesive to virtually any structural roofing material and is flexible enough to take up sub-structure movement. It has an EXT SAA fire rating when laid on non-combustible decks or screeded wood wool and compressed straw slabs. It is supplied in 70-ft. rolls to give a cover width of 3 ft. with a 2-in. selvedge, the side joints being made with adhesive and the butted end joints with a solvent welded tape. Flashings and tapes 12, 9 and 4½ in. wide are made for welts at eaves and verges. Marley carry out a supply and fix service throughout the country.

The Marley Group, Riverhead, Sevenoaks, Kent.

152



1



2



3

Fluorescent fittings for domestic work

The use of fluorescent fittings in domestic work has been somewhat limited by the size of the housing needed to take the starter choke, the lamp supporting spine being generally larger than the diameter of the lamp itself and looking too much like an industrial fitting to be acceptable except in kitchens and bathrooms. Simplex Electric have now developed a choke of exceptionally small cross section, barely an inch square, so that the lamp spine appears as little more than a slender supporting member from which the lamp and diffuser are suspended, 3. The choke is in two parts and is not encased but potted direct into the spine with a polyester resin. The spine is silver grey anodized aluminium with dark-grey plastic end caps and the lamp can also be fitted with a simple diffuser which clips over the tube, or with a teak panel for indirect lighting.

Simplex Electric Ltd, Blythe Bridge, Stoke on Trent, Staffs.

Poster display units

The Trilateral poster display unit, 4, is intended for use in pedestrian precincts, and will display three four-sheet (60 in. by 48 in.) posters each facing in a different direction. There is also a two-tier version to take six posters, with a height of 13 ft. The poster frames are in white stove-enamelled steel carried on a cylindrical steel column fixed over a base support embedded in concrete and weathered



4

with a galvanized capping. The posters are mounted on plywood and there is also a display unit with illuminated panels with the posters mounted on an opalescent Perspex diffuser panel and with a clear Perspex cover. Three fluorescent tubes per tier provide the lighting. This design has the blessing of the CoID.

London & Provincial Poster Group Ltd, 5 Southampton Place, London WC1.

Self-powered exit signs

Saunders-Roe Developments have now developed a new type 015 self-powered exit sign which needs no maintenance or servicing during its useful life, which should be about 15 years. The sign is internally illuminated by tritium-activated Betalights (patented by Saunders-Roe), and is completely independent of any wiring, batteries or electrical connections so that it can be placed wherever it may be needed. The

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Photographed at Antonio's Spanish Restaurant, Long Acre, London.

More Biddle Vectair heaters are installed in Great Britain than any other make. There are two important reasons why the Biddle Vectair is the most widely used convector in the country. The first is efficiency, the second is choice of size. Biddle first introduced the Vectair almost 40 years ago so that today's models incorporate all the knowledge gained in that time. The range of sizes is based on a floor and a wall model. Both are available from 19" to 63" long in increments of 4" and in depths of 4½", 6½" and 8½".

There are also 5 heights for each type.

A leaflet describing the Vectair is available on request.



The new Vectair has been selected by the Council of Industrial Design for the Design Centre, London.

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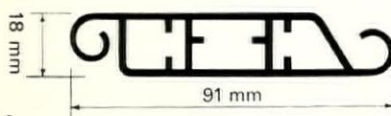
lettering is white on a black background when seen in daylight, but in darkness the lettering can be either yellow or green, as ordered. Other types of sign can also be supplied, the Beta-lights being applicable to diagrammatic signs, markers and meters.
Saunders-Roe Developments Ltd, North Hyde Road, Hayes, Middlesex.

New refrigerators

Westinghouse of America, whose luxury refrigerators sell at prices up to nearly £600, are now making a more realistically priced range starting at about £70 and of a size more suitable for kitchens in this country. There are five models ranging in size from 6.4 to 11 cu. ft. All of them have thin wall insulation to give maximum storage capacity, tilt-up shelves for tall bottles, and doors which open within the width of the cabinet. There is push-button defrosting, the refrigerator automatically re-starting when the defrosting cycle is completed. The two larger models have two doors with separate freezer compartments and defrosting is fully automatic, while the largest model will keep 2 cu. ft. of frozen food for three months. Model Dk 270, 5, has a capacity of 9.5 cu. ft.
Advance Domestic Appliances Ltd, 66-68 Margaret Street, London W1.

Plastic roller shutters

Colorastic roller shutters, 6, are made from extruded hollow pvc sections which interlock in much the same way as the conventional metal types, but are made in a choice of colours and never need painting. Three different sizes of shutter lath are made, the largest (91 by 18 mm) being suitable for openings up to 20 ft. wide, with a height of 15 ft. Alternate laths are fitted with end locks to prevent lateral movement between one lath and another, and the bottom rail is in aluminium alloy. For large openings concealed reinforcing bars can be supplied. There is a choice of ten standard colours, and shutters may be made up plain or in colour combina-



tions. Four transparent colours are also made which can be seen through for inspection and should be useful for areas where extra security is required. Shutter rollers are made from steel or



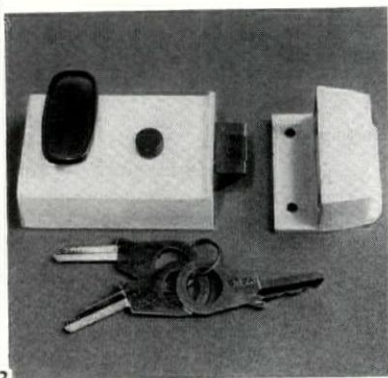
aluminium tube and the larger sizes should be designed for operation by chain hoists, cranks or electric motors. There is a list of twelve approved fabricators well spread over the country, including Scotland.
Colorastic Ltd, Frenches Works, Chew Valley Road, Greenfield, Oldham, Lancs.

Internal telephones

Telephone Rentals have introduced a new 15 line automatic telephone system intended for small offices, factories, sales depots or shops. The system has a master unit, 7, with a loud-speaking telephone with key-calling facilities so that the user can obtain any of up to 10 extensions without dialling. The automatic switchboard is housed in a compact cabinet 24 x 12 x 8½ in. and can be mounted on any convenient wall. Unlike the more usual direct-wired private telephone installations with their thick and often unsightly cables, the only connection needed is a thin twin-core cable which reduces installation costs and makes it easy to move a telephone to a new position.
Telephone Rentals Ltd, 197 Knightsbridge, London SW7.

New dead latch

Yale's new Mercury 33 automatic dead latch, 8, includes several security



features for the relatively low retail price of 37s. As the door is closed a projection on the staple engages with a lever on the bolt, which automatically deadlocks the bolt against end pressure so that it cannot be pushed back into the case. A reverse turn of the key from outside double-locks the inner turn knob so that the door can be opened only from the outside. Concealed fixings also prevent the lock from being removed bodily when the door is closed. The photograph shows the revised shape of key, which has an offset handle so that there is no likelihood of using the key wrong way up in the dark. The Mercury is finished in ivory enamel

with a grey turn knob and a satin-chromed cylinder. It is interchangeable with existing Yale night latches and can be master keyed with them. The cylinder is a 5-pin type and the lock is suitable for right or left hand doors.
Yale Locks & Hardware, Willenhall, Staffs.

Internal linings

ICI's agricultural division has added a new rigid-faced polyurethane foam laminate to the previous paper- and plastic-faced range. One face of the laminate is a paper skin which can be plain or plastic-coated, while the rigid face can be plasterboard, plywood, hardboard, steel or aluminium—the last two in either flat or profiled form. These facings have been chosen as being suitable for the building industry, though work is being carried out on other types. Standard foam thicknesses are ½, ¾ and 1 in., which should cover most insulation requirements, though greater thicknesses can be supplied when required. The panels are quite rigid and can be used to span across 3 or 4 ft. centres. Likely uses include wall linings and ceilings, the sheathing of timber frame houses, infill panels, insulated linings in cold stores and the whole field of insulated cladding.
ICI Ltd, Building Products Department, PO Box 1, Billingham, Teesside.

Textured Formica

Formica is now being produced in a choice of five textured finishes from a simple woven surface to more elaborate hieroglyph designs. The designs are in low relief only, since the total thickness of the sheet is only 1/32 in., but it still has a Class I rate of flame spread and also meets the requirements of Class 0 when bonded to a non-combustible substrate. The development of this finish was started three years ago with the production of imitation wood grain finishes having small indentations. These were followed by prototypes for possible use in the QE2 and ultimately about one million sq. ft. of a light weave pattern were used in cabins and bathrooms. The various patterns are made in a choice of six BS 2660 colours, though other colours to the Specification can be specially made. The new material is for internal use only, and not on horizontal surfaces such as table tops. It is, however, suitable for wall or ceiling panels, bar and counter fronts, partition panels, lift car linings or shop fittings. Standard sheets are 9 ft. by 4 ft.

Formica Ltd, 84-86 Regent Street, London W1.

Contractors

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Architects: Frederick Gibberd & Partners. *General contractors:* George Wimpey & Sons Ltd. (substructure); Tersons Ltd. (superstructure). *Sub-contractors*—*Passenger Building:* Structural steelwork: Redpath Brown. Precast concrete floors: Concrete (Southern) Ltd. *Roof contractors:* William Briggs & Sons Ltd. *Furnishing and shopfitting suppliers:* Conran & Co. *Windows:* Henry Hope & Sons Ltd. *Window cleaning gear:* Cradle Runways Ltd. *Terrazzo & random marble floors & stairs:* Alan Milne Ltd. *Heating & ventilating:* J. Jeffreys & Co. *Henry Hargreaves & Son Ltd. Electrical installations:* Electrical Installations Ltd. *Lifts & escalators:* Otis Elevator Co. *Baggage conveyors:* Spencers (Melksham) Ltd. *Sovex Ltd. Balustrading & Screens:* Culford Art Metal Co. *Demountable partitioning:* Unilock Compactum Ltd. *Specialist joinery in public lavatories, airline company desks and panelling:* Alan Newman Ltd. *Catering counters and joinery, fibrous plaster ceilings:* David Esdaile & Co. *Kitchen equipment:* Benham & Sons. *Pneumatic tube systems:* Shipton Automation Ltd. *Lamson Tube Ltd. Traffic indicator boards:* Supplied by Solari & Co. Installed by The Plessey Co. *Signs:* Franco British Ltd. *Sound amplification system:* Standard Telephone Co. *Sub-contractors — Piers:* Structural steelwork: Dawns Ltd. *Roof covering:* Limmer & Trinidad Co. *Heating and ventilating:* Sulzer Bros. Ltd. *Demountable partitions:* Roneo Vickers Partitions.

Acknowledgments

FRONTISPIECE, page 78 (left): Toomey Arphot; PHYSICIAN CURE THYSELF, page 80: Toomey Arphot. MERCATO GRANARIO, MANTUA, pages 81-84: Rock Arphot. PAPPLEWICK PUMPING STATION, pages 85-87: J. M. Taylor. RYSBRACK AND ROUBILLIAC, pages 88-89: Bruce Bailey. NO. 1 TERMINAL, LONDON AIRPORT, pages 90-100: 1, 2, 4, 5, Henk Snoek; 3, 6-10, Galwey Arphot. BENJAMIN WYATT AND HIS NOBLE CLIENTS, pages 101-105: 1-3, 8-10, Country Life; 4, RIBA; 6, 7, MOPBW. BEEF TESTING FARM, LAMBOURN, pages 106-109: Galwey Arphot. TOWNSCAPE, page 110: 1-4, R. N. Wheeler. THE EXPLORING EYE, pages 113-116: Stephen Harrison. INTERIOR DESIGN, pages 121-130: Design centre and showroom, New York, Ezra Stoller. NO. 1 Terminal, London Airport: 1, Henk Snoek; 2-5, Galwey Arphot. Pottery by Alan Spencer Green, Reid Arphot. GALLERY, pages 131-133: 1, 2, Gemeente Museum, Amsterdam; 3, Museum of Modern Art, New York, Soichi Sunami; 4, Arts Council of GB, Marc Vaux; 6, Arts Council of GB, O. E. Nelson; 7, 8, Arts Council of GB. CHURCH AT NEVIGES, pages 134-138: Peter E. Fischer. THE VIRTUE OF MAGNIFICENCE, pages 139-140: MAS, Barcelona. WORLD, pages 141-144: 1, Architectural Forum; 2, 9, Lester Walker; 3, 5, 6, 10, 11, Progressive Architecture; 4, L'Architecture Française; 12, Ezra Stoller; 13, 14, Cantor/Campbell/Walker; 15, Cervin Robinson; 16, 18, 19, Peter Hujar; 25, 26, 29, 30, Harry Sowden. VIEWS AND REVIEWS, pages 146-150: 1, Museum of Modern Art, New York; 3, G. S. Hudson. STOP PRESS, pages 155-156: 2-5, 11, 12, 14, 15, Nairn Arphot; 6-10, Geoffrey Gale.

Ian Nairn

STOP PRESS

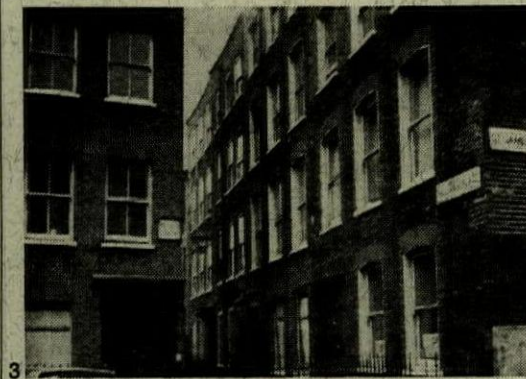
Townscape problems, outrages and opportunities compiled by Ian Nairn.

S.O.S.



HOLBORN, LONDON

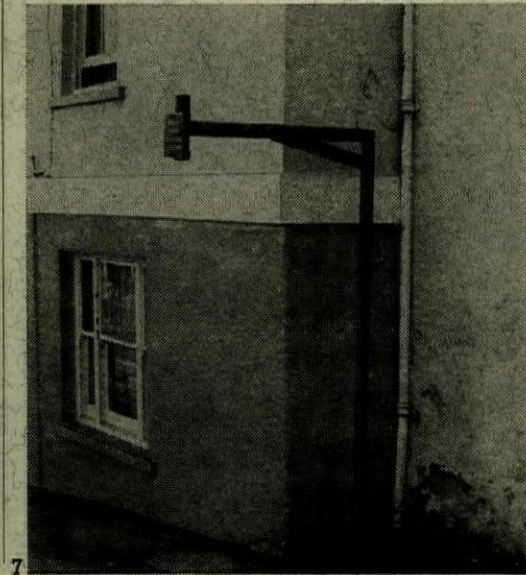
Millman Street and Millman Place are two of the last Georgian streets in central London which are part of a continuous experience rather than an isolated set-piece. Camden Council wants to remove one side of Millman Street, 1, 2, all of Millman Place, 3, and an essential part of Great James Street, 4, as part of the development of the back land—a car park since the blitz—as a new school. The new school is fine, but why demolish a street to provide it. Keep the houses, build the caretaker's house in the gap in Millman Street with an arched entrance underneath, and fit the school in behind. There's surely enough space, 5. But please don't bust up one more bit of real London.



OUTRAGE

BIDEFORD, DEVON

An anthology from Geoffrey Gale: first of all the result of applying the letter of the law with the new signs, 6, 7 and 8, a disproportion so grotesque that it becomes a macabre joke. Alas, I fear that it was



meant to be taken seriously. The right answer, surely, in this case, is stick it on the wall. If the homeowners are worried then negotiate. If it is not strictly legal then make a test case. But don't just advertise the failure of twentieth-century organization all over the streets of your town. That is no disaster, though it is a dangerous symptom. The other thing at Bideford is much more serious: demolition of a whole slice of the town, to make a car park. The quality of the curving streetline on the left in 9, the alleyway in 10, we are never likely to get again: cars can go anywhere.



10

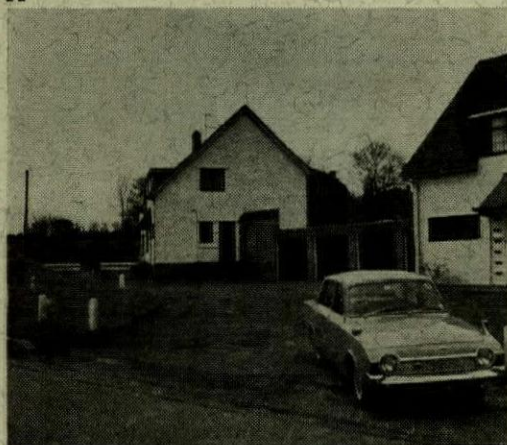
CAUTION

VOUZIER, FRANCE

This remarkable *Art Nouveau* front, 11 and 12, done by a local man in a town as remote as, say, Penrith in England, is in no immediate danger: the firm for which it was built still owns it. But it is a reminder for every civic society, especially in the industrial towns, to look out for similar buildings, however they may be neglected. 'They' are after anything different, because they don't understand it: it might be a 'thirties cinema, an 1880 factory, or an apparently insanitary street of cottages. 'Monstrosity' is the key word to look for; if someone thinks a building is ugly, rather than faceless, it at least has some quality.



11



14

EASTON, NEAR WINCHESTER, HANTS

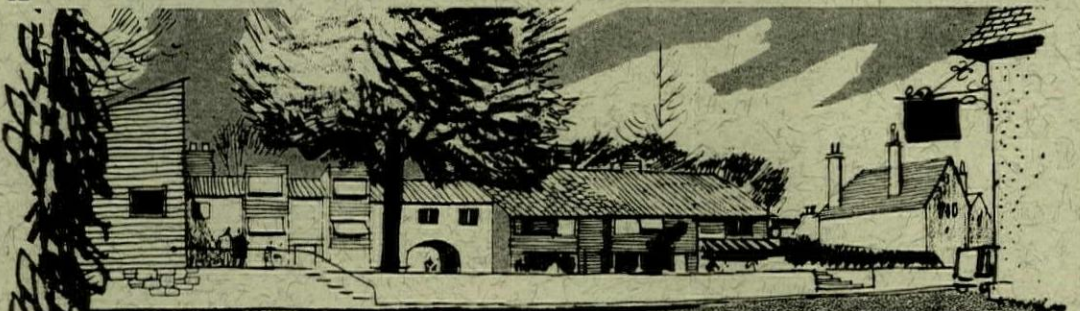
Four years ago Kenneth Browne did a drawing of how the centre of Easton might be improved by new building, 13. What actually happened there, 14 and 15, was maybe predictable but nonetheless disastrous.

156

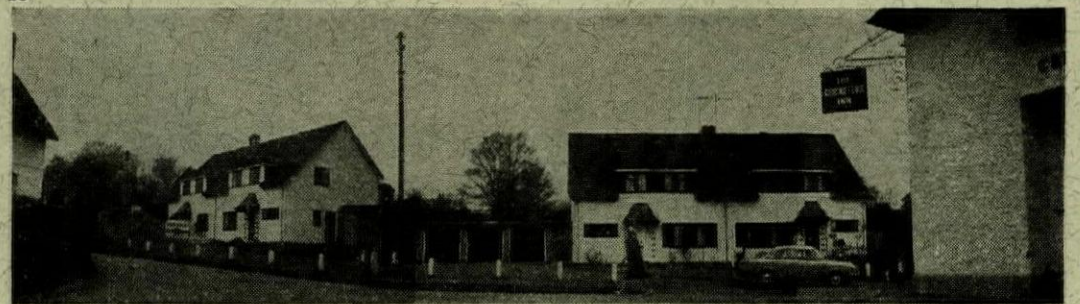
9



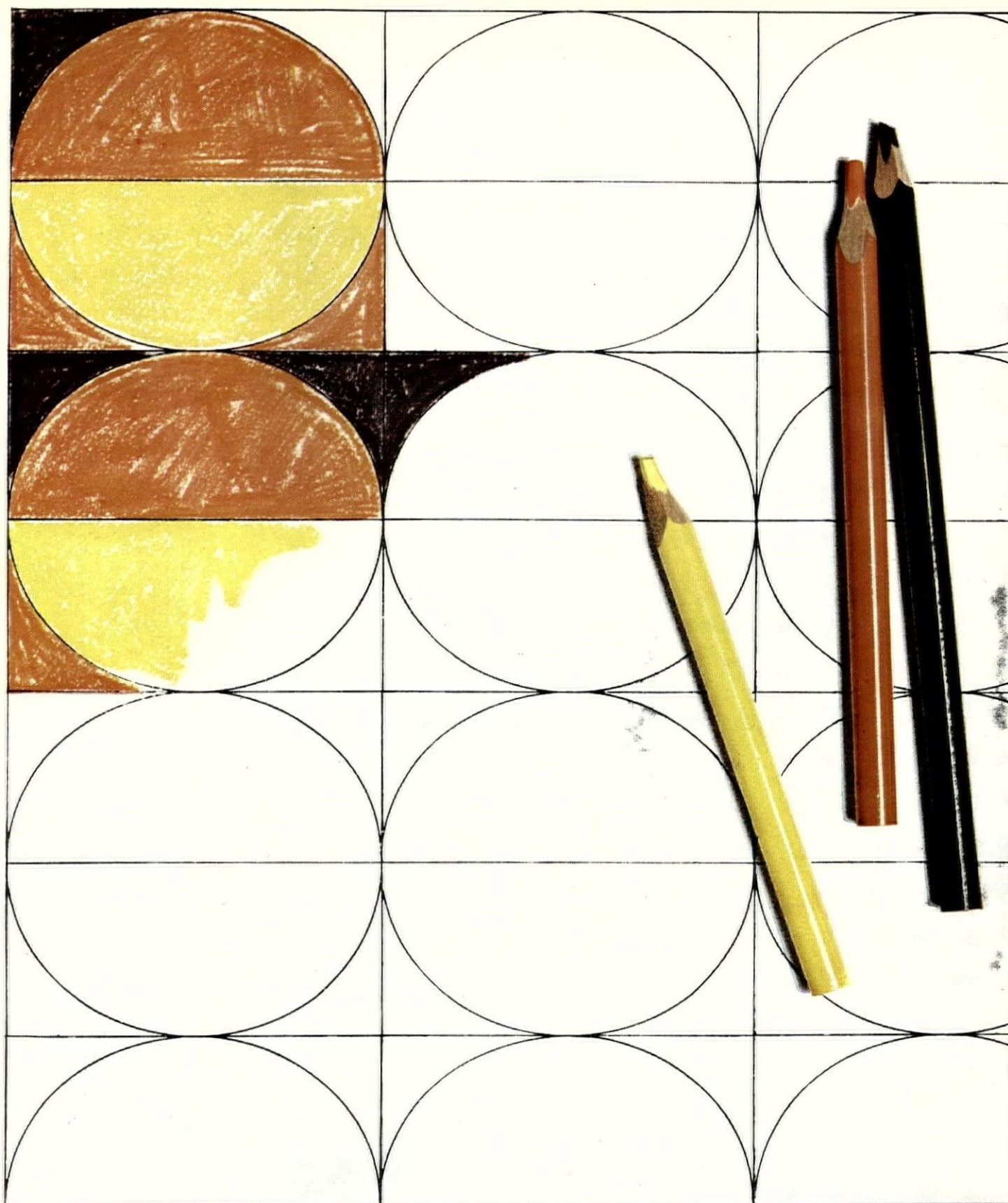
12



13



15



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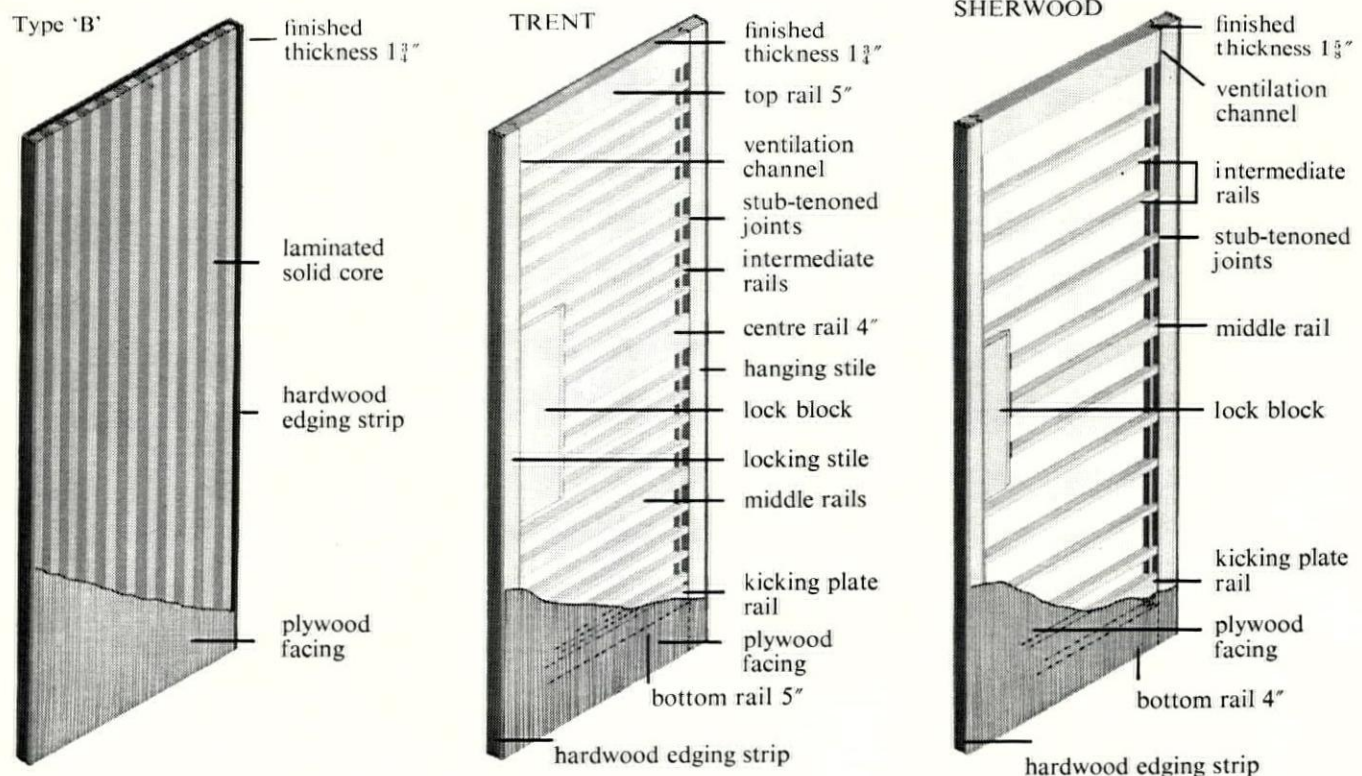
SfB (32)

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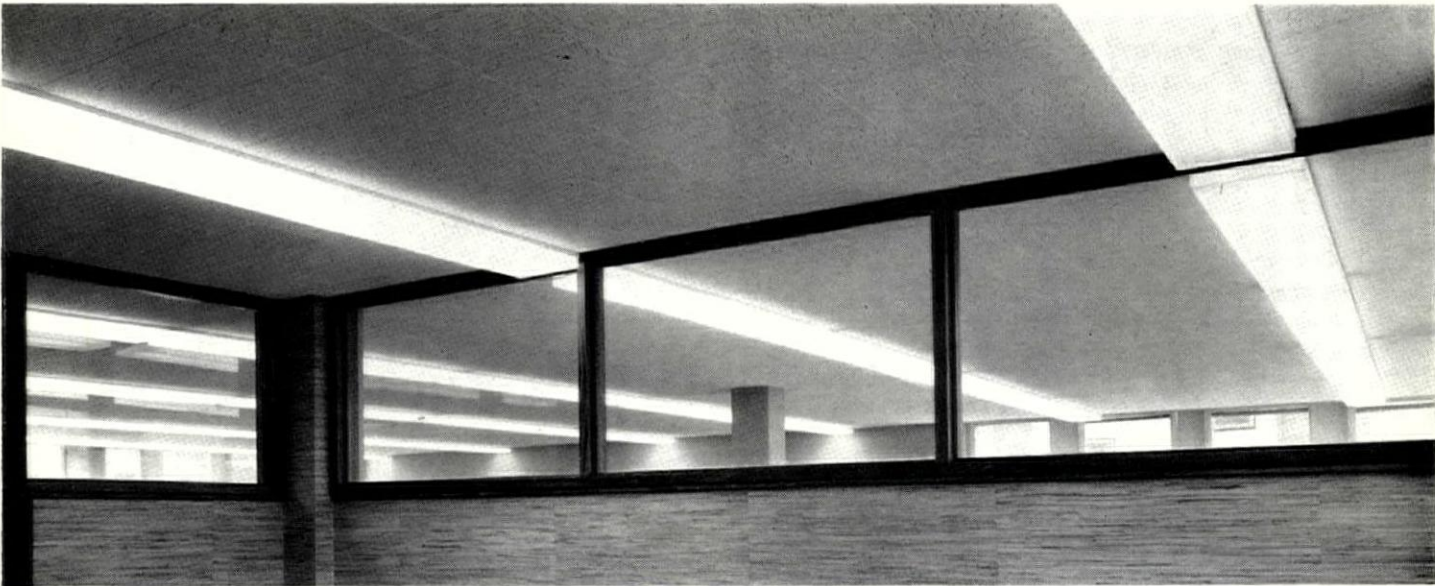
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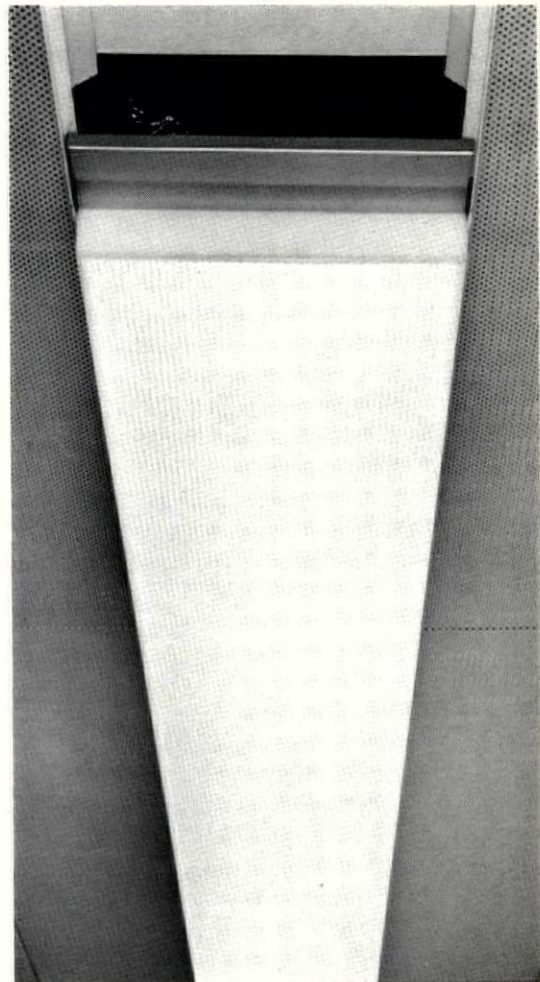
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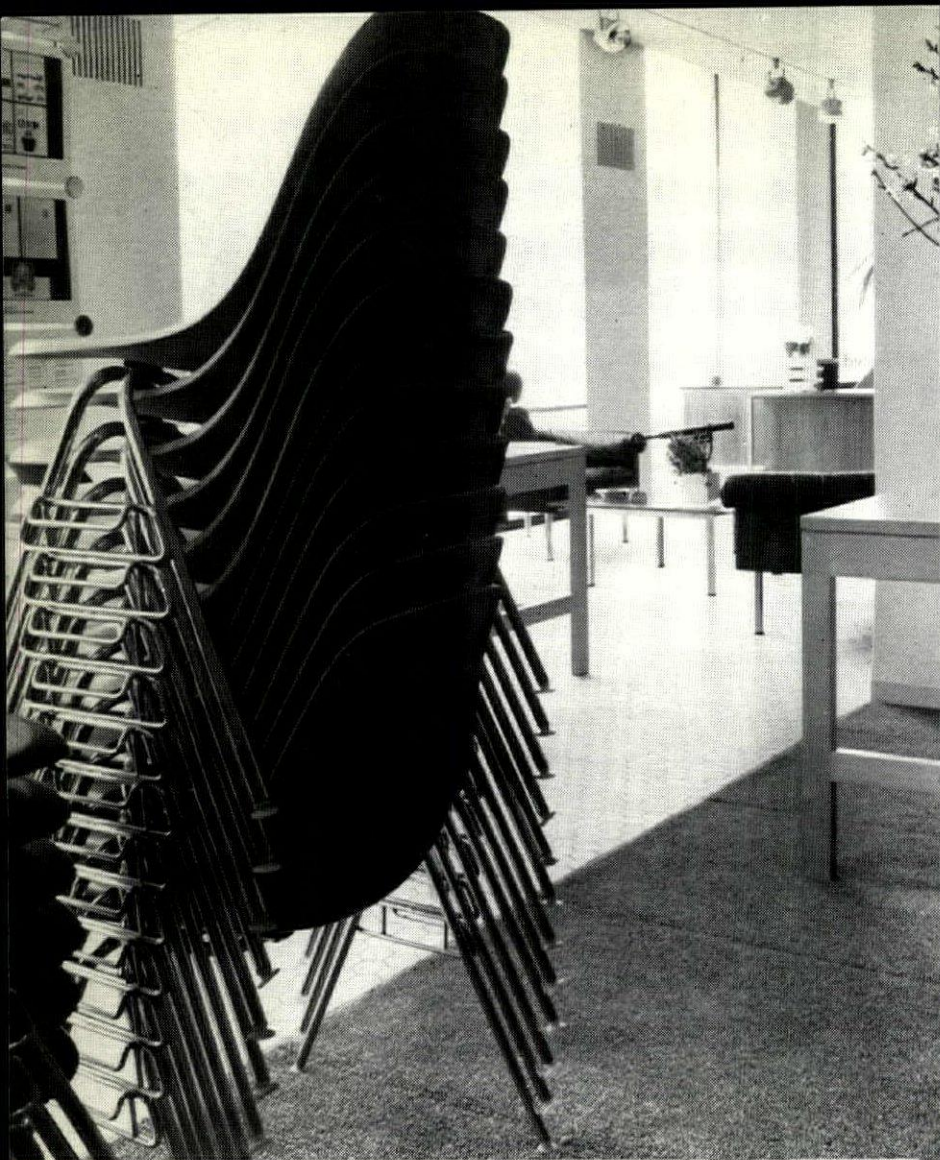
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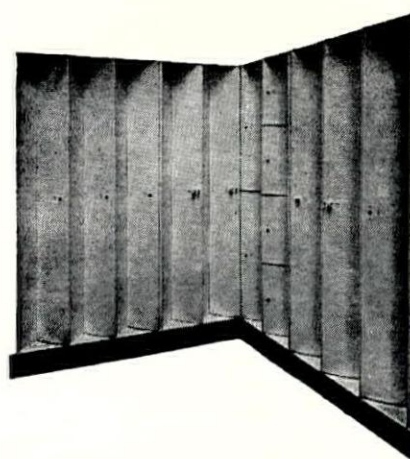
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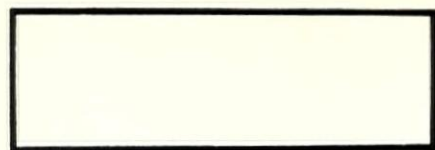
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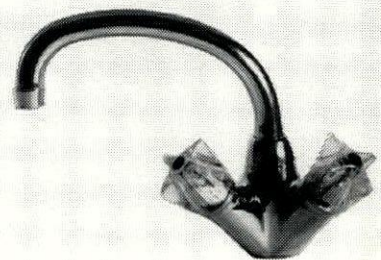
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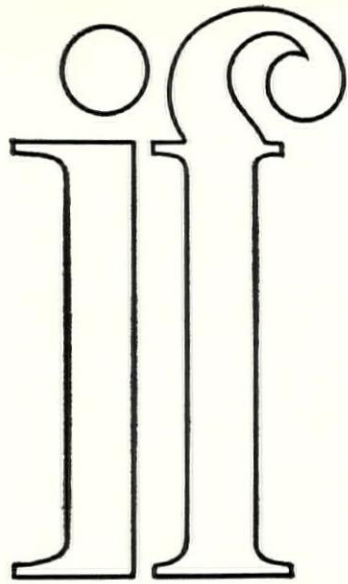
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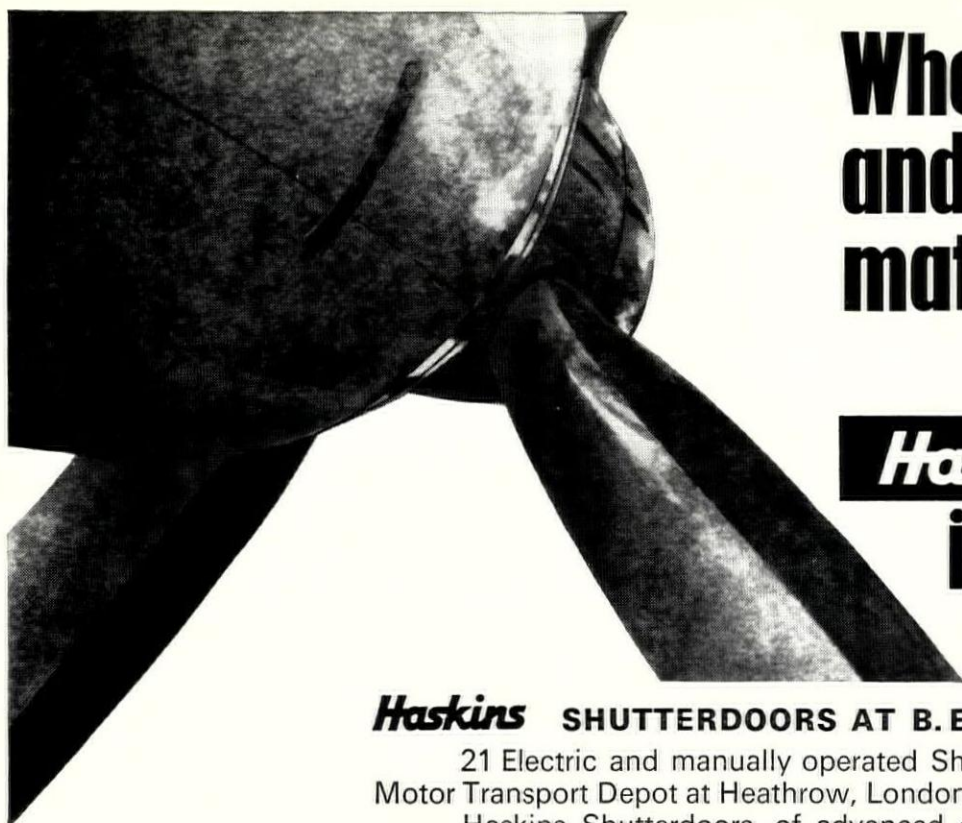
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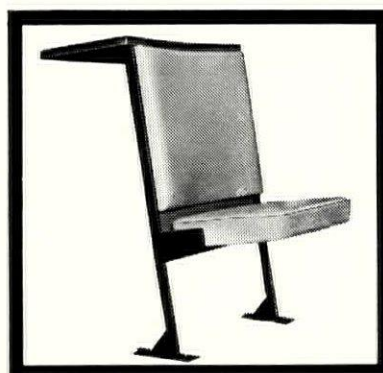
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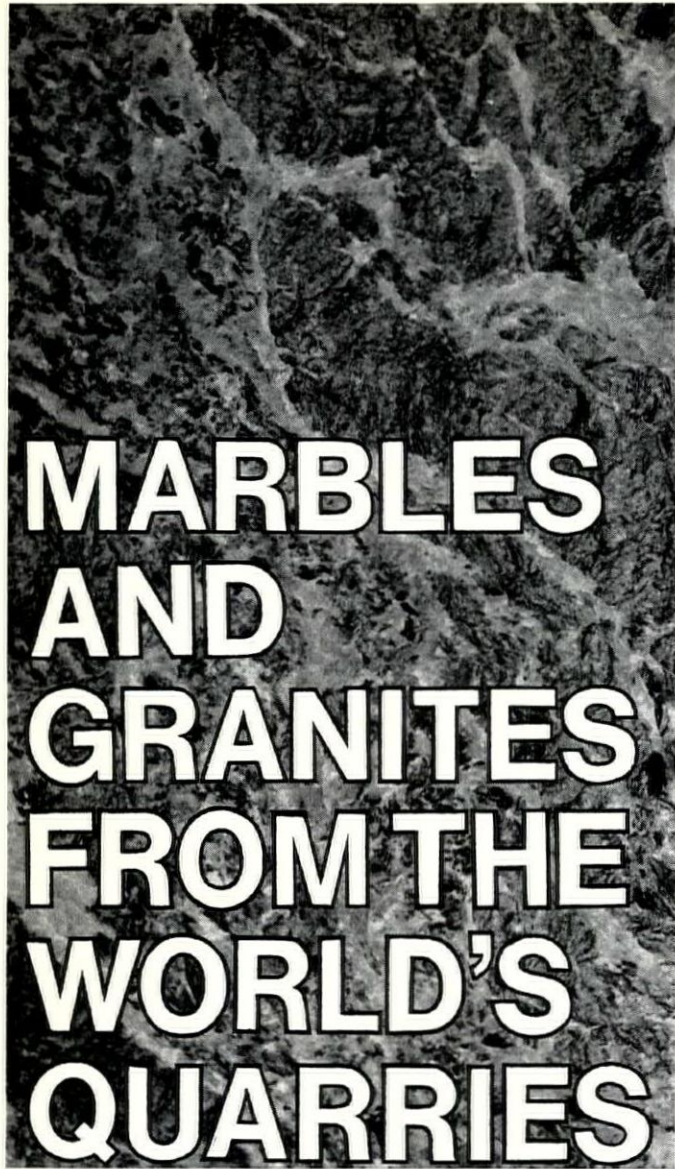
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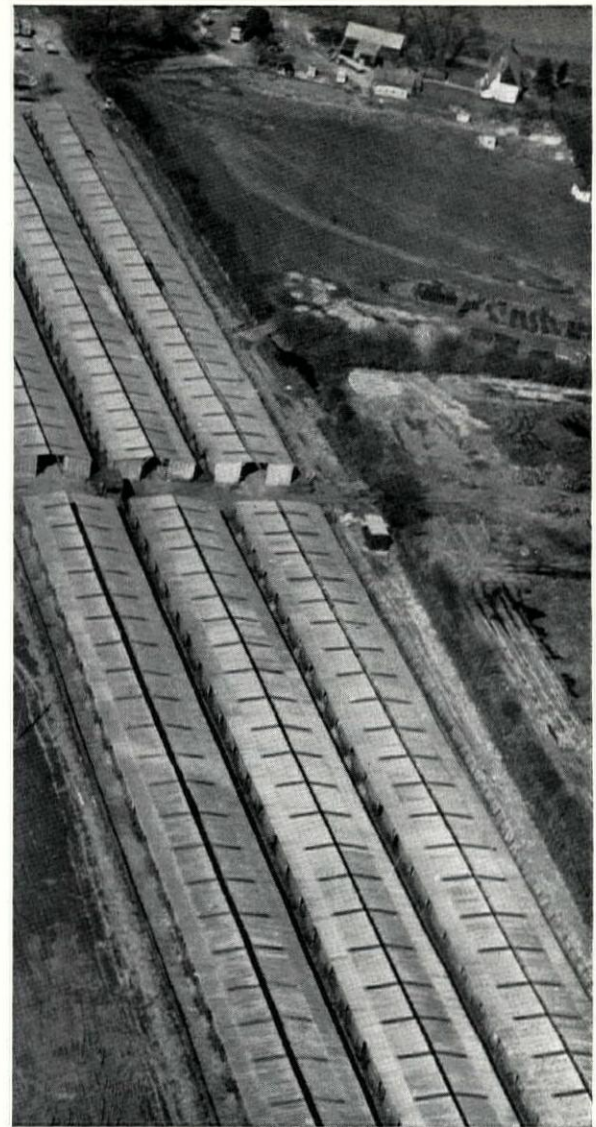
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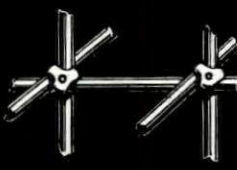
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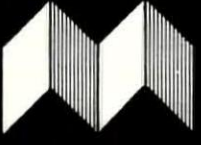
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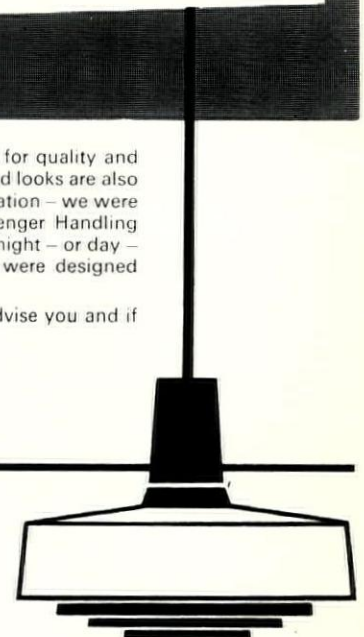
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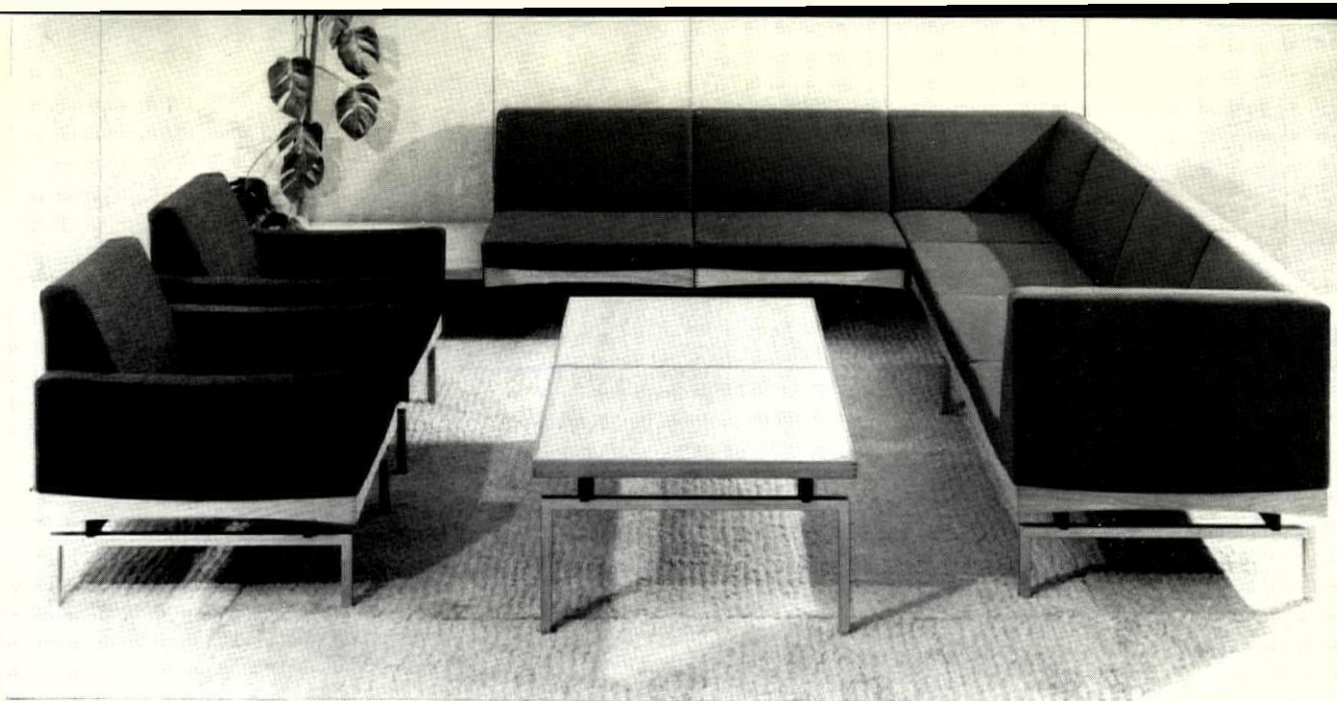
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