The Architects' JOURNAL for April 16, 1959

THE ARCHITECTS' JOURNAL

standard contents

every issue does not necessarily contain all these contents, but they are the regular features which continually recur

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THE ARCHITECTURAL PRESS
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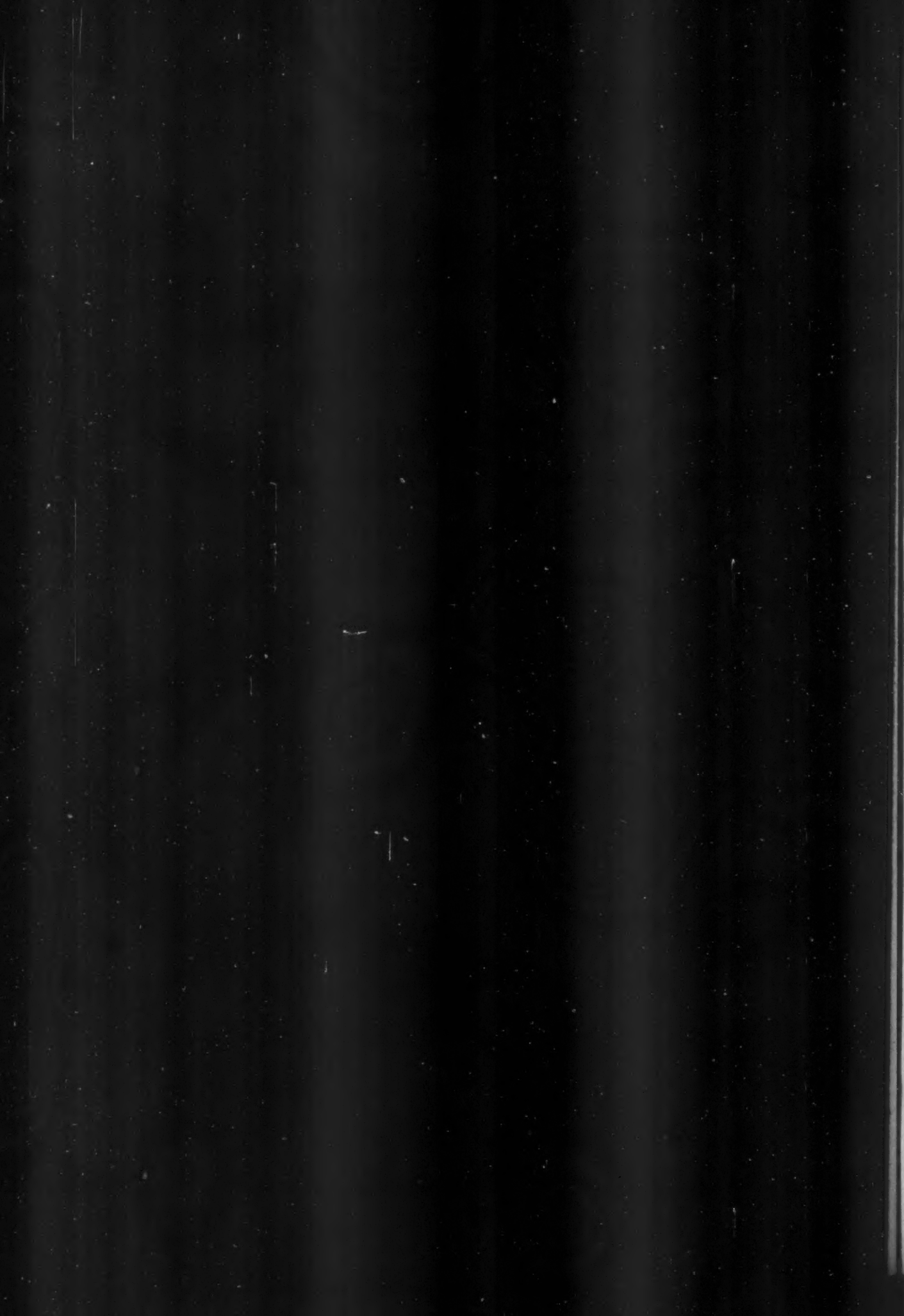
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ii one week, Il to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

ILA	Institute of Landscape Architects. 1, Park Crescent, Portland Place, W.1.	Museum 3473
I of Arb	Institute of Arbitrators. Hastings House, 10 Norfolk Street, Strand W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 68, Gloucester Place, W.1.	Welbeck 9966
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee) Fire Research Station, Boreham Wood, Herts.	Elstree 1341/1797
LDA	Lead Development Association. 18, Adam Street, W.C.2.	Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1.	Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Hyde Park 7070
MOH	Ministry of Health. 23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James' Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2.	Gerrard 6933
MOT	Ministry of Transport, Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 2, Caxton Street, S.W.1.	Abbey 4813
NBR	National Buildings Record, 31, Chester Terrace, Regent's Park, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers, 10, Storey's Gate, S.W.1	Abbey5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2.	Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 58, Portland Place, W.1.	Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1.	Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5533
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1.	Whitehall 5322/9245
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, E.C.3.	Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1.	Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1.	Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1.	Grosvenor 6636

OK 2501
Bell 2983



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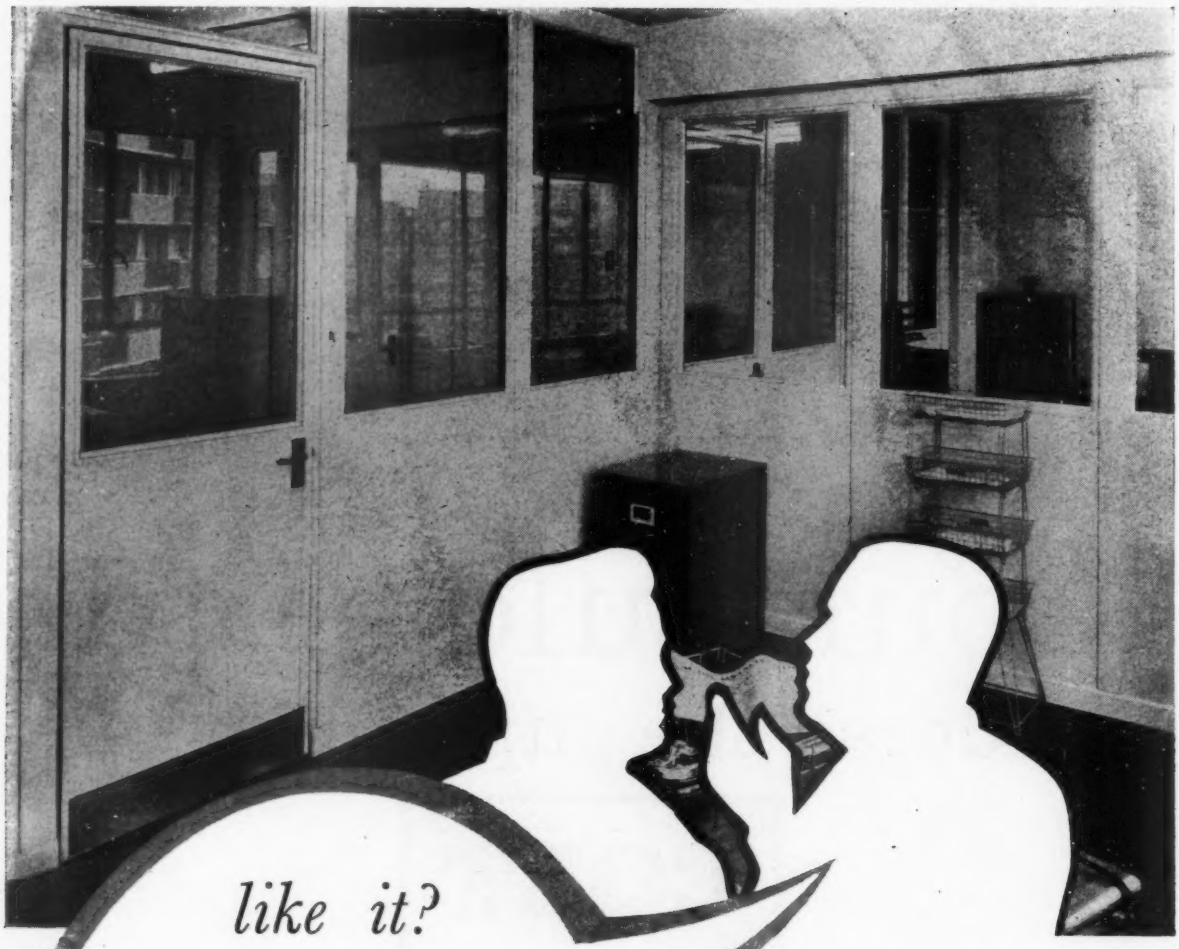

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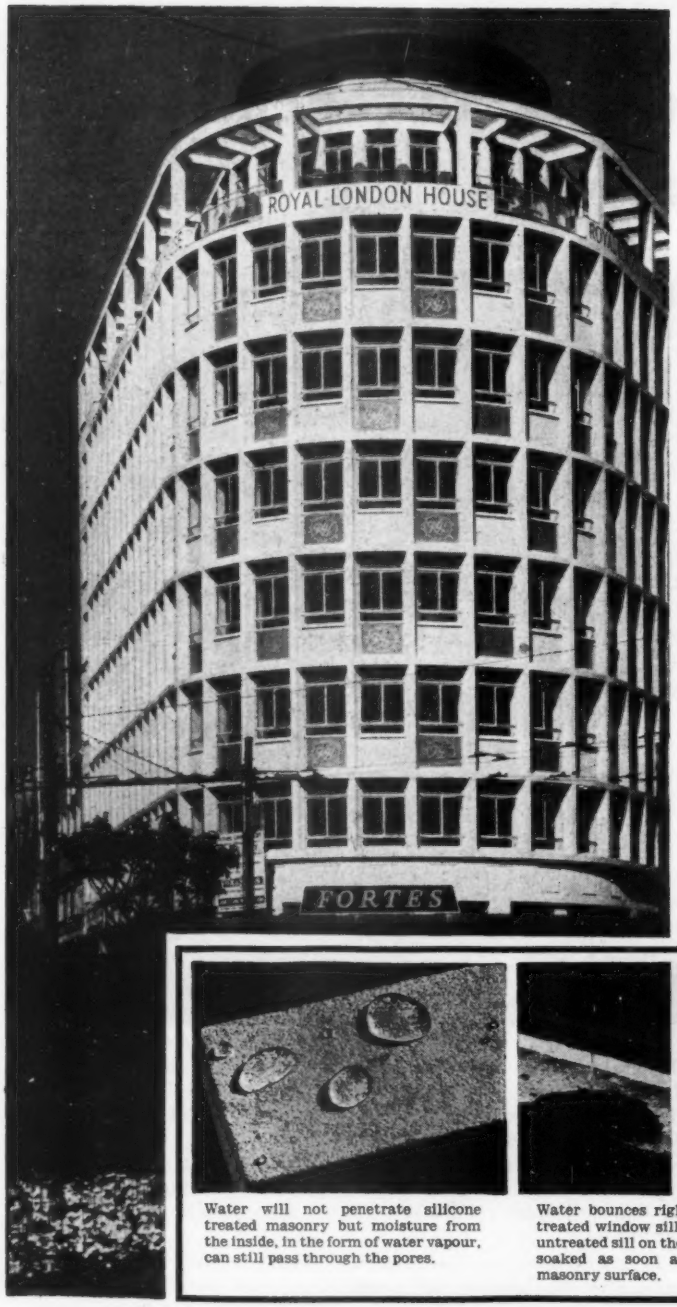

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Water bounces right off the silicone treated window sill on the right. The untreated sill on the left is thoroughly soaked as soon as water hits the masonry surface.

PROOF OF THE EFFECTIVENESS OF THESE TREATMENTS IS SHOWN IN THIS TABLE		% Water absorption after 24 hours' immersion	
		Initial Test	*Retested after 3 years' natural weathering*
Sandstone	untreated	7·0	6·2
	DRI-SIL treated	0·1	0·2
Cement Block	untreated	6·0	5·9
	DRI-SIL treated	0·4	0·7
Common Brick	untreated	20·0	20·1
	DRI-SIL treated	0·1	0·3

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British Bitumen Emulsions Ltd, Slough
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Cambridge Timberproofing Laboratories Ltd, Trumpington
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Stuart B. Dickens Ltd, Borehamwood, Herts
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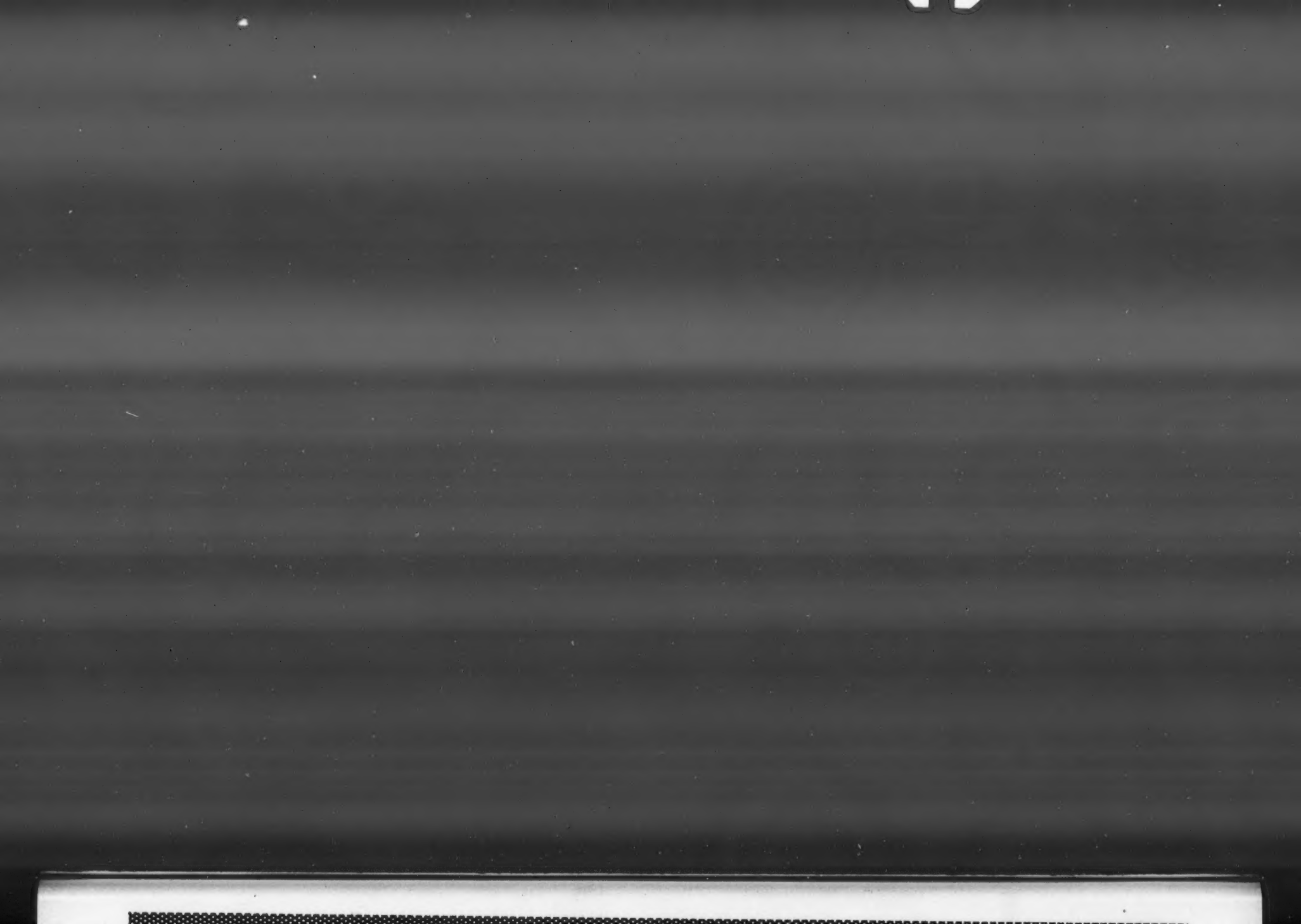

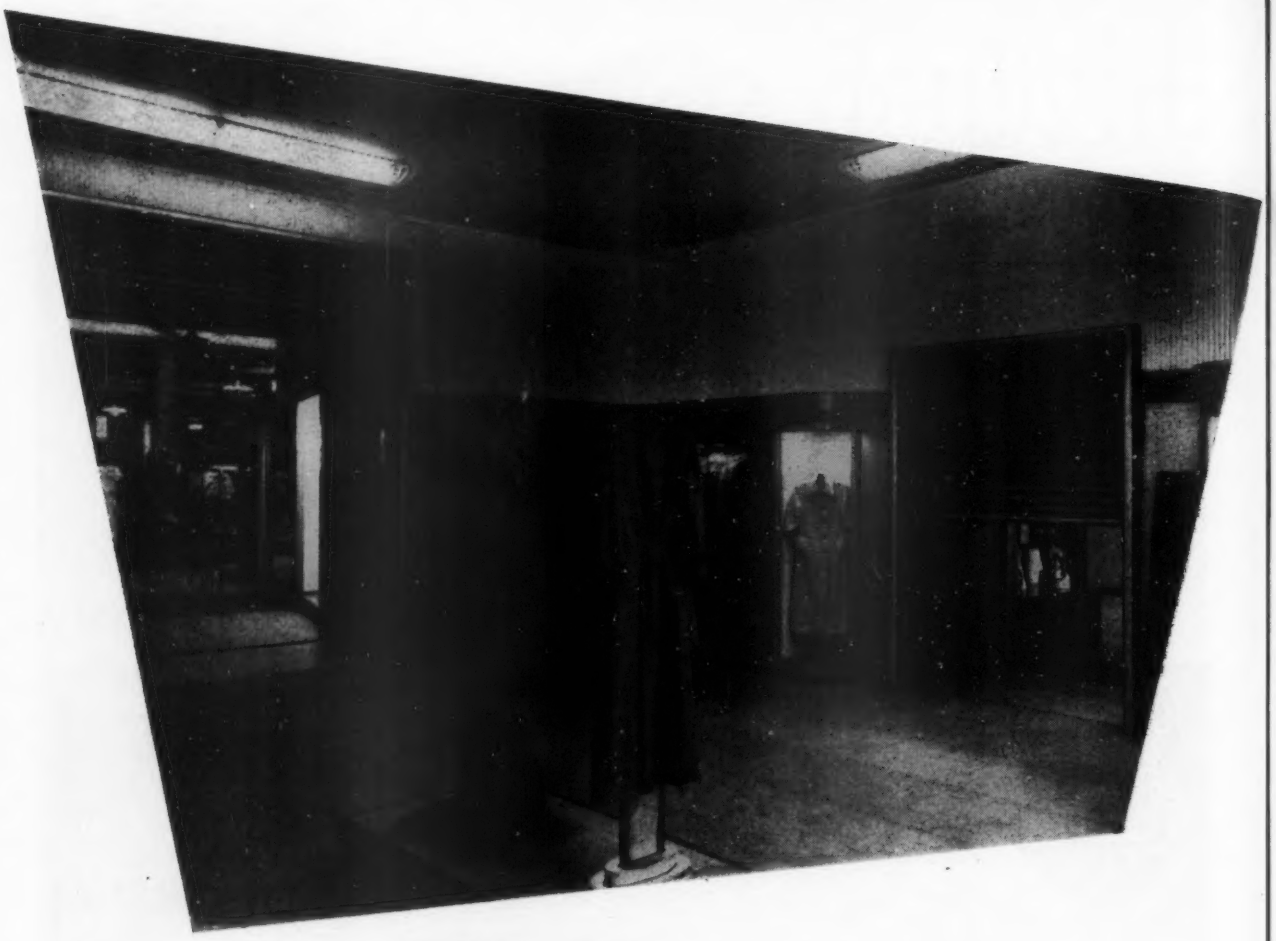

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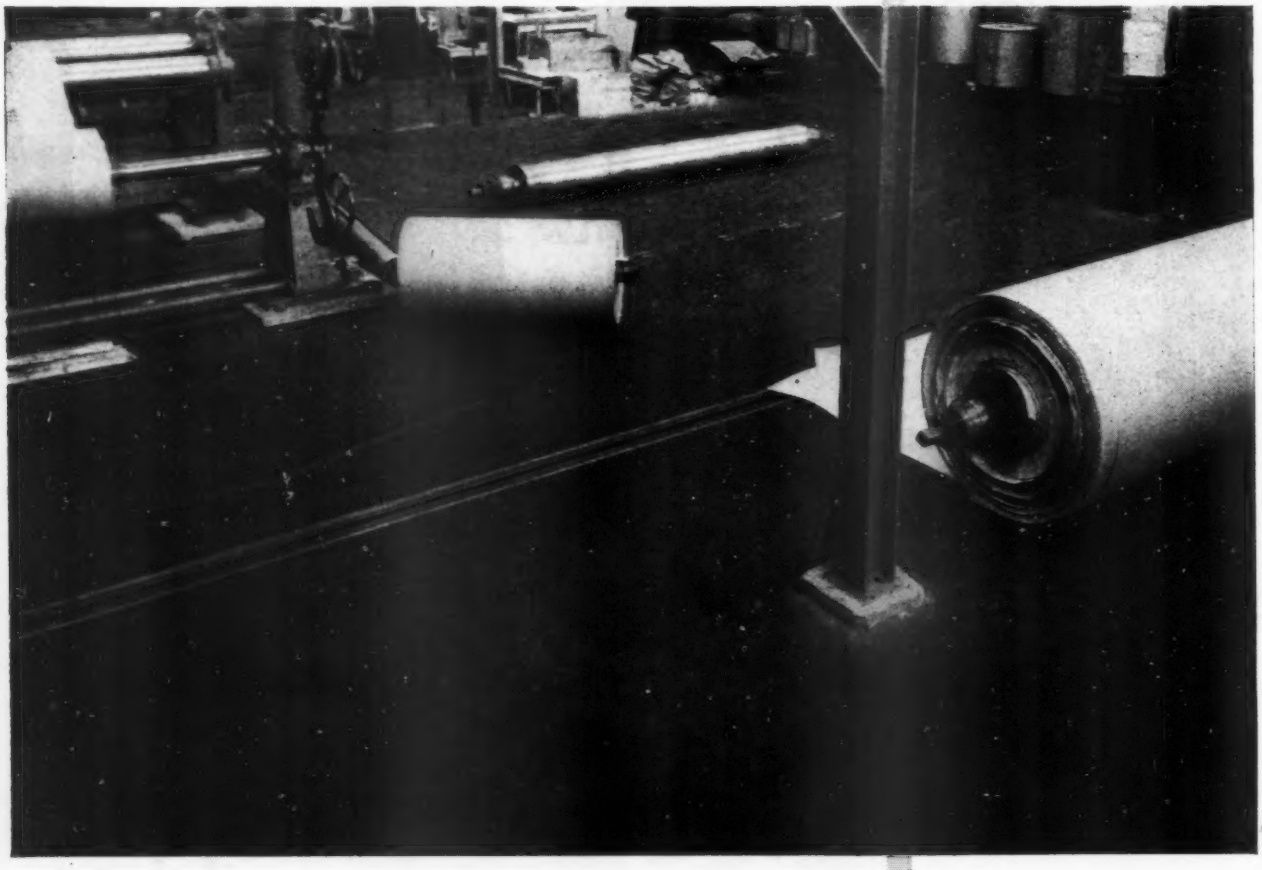
A Flintkote REGD. Floor

Flintkote flooring in paper mill in Sweden. (Photo. by courtesy of Fiskeby Fabriks A.B.)



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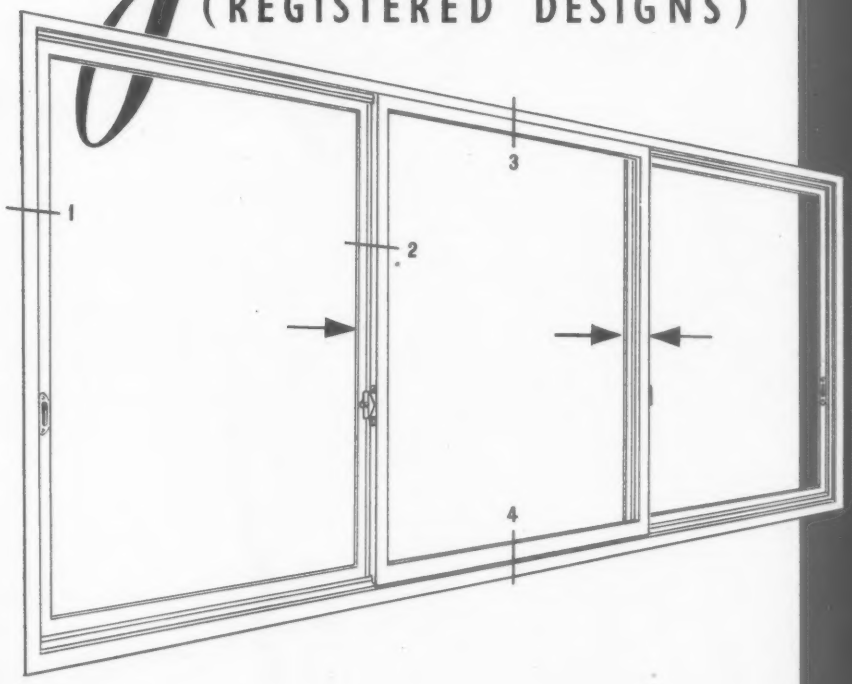
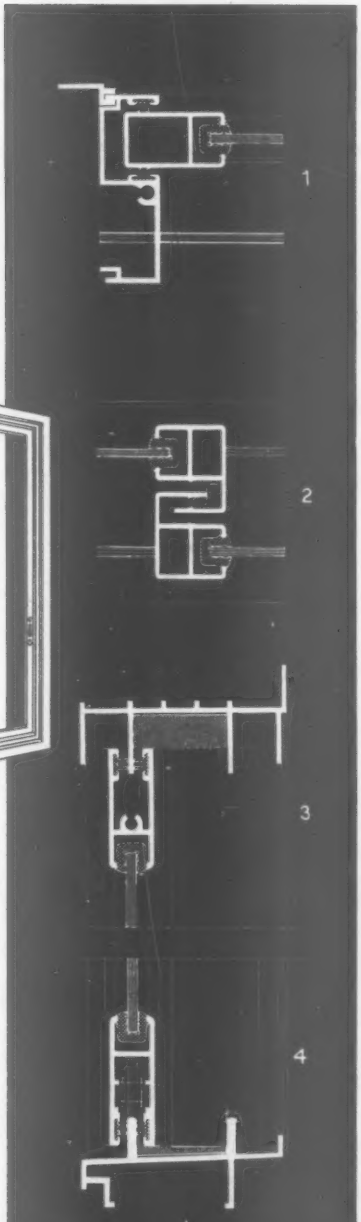
(REGISTERED DESIGNS)





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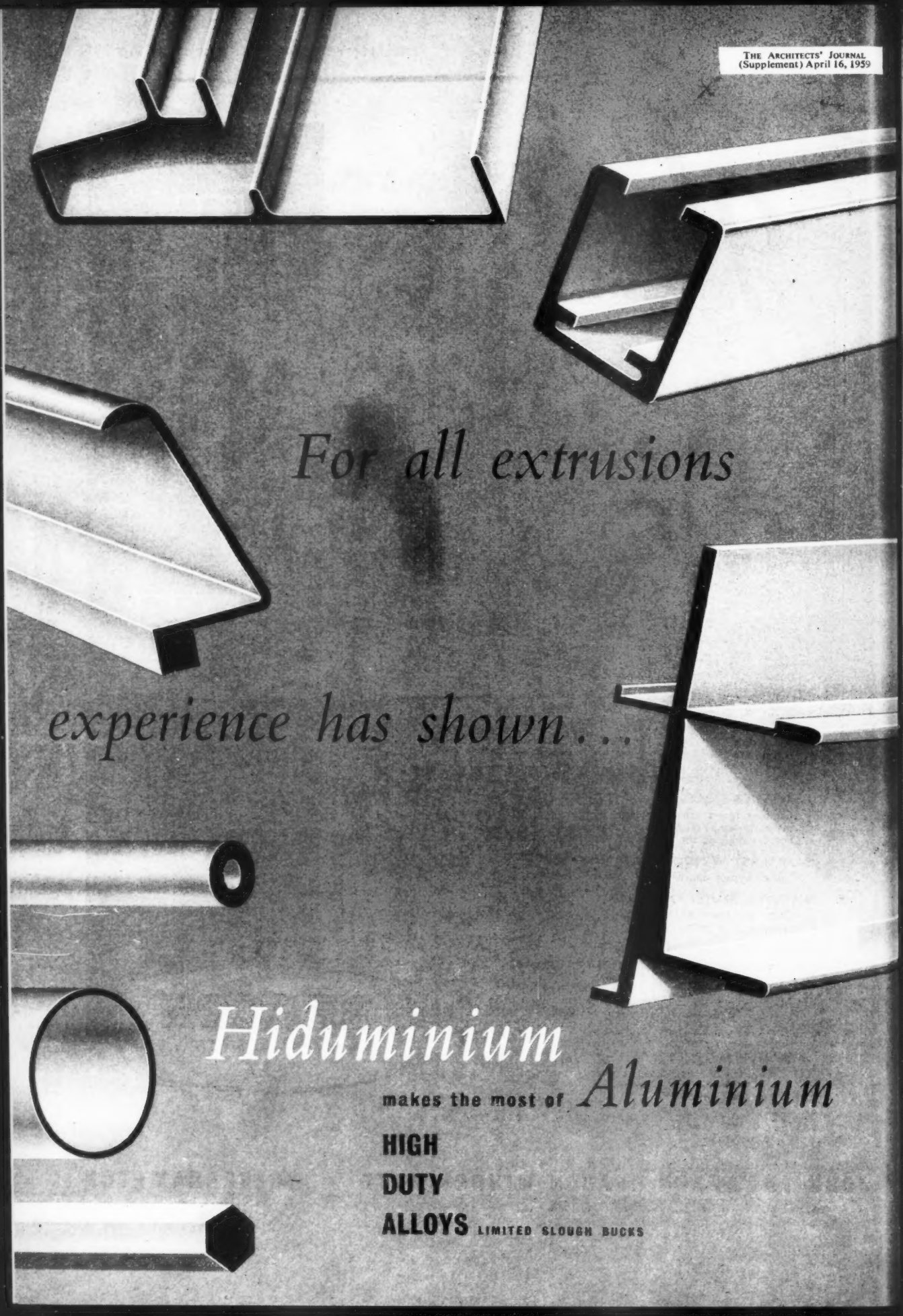

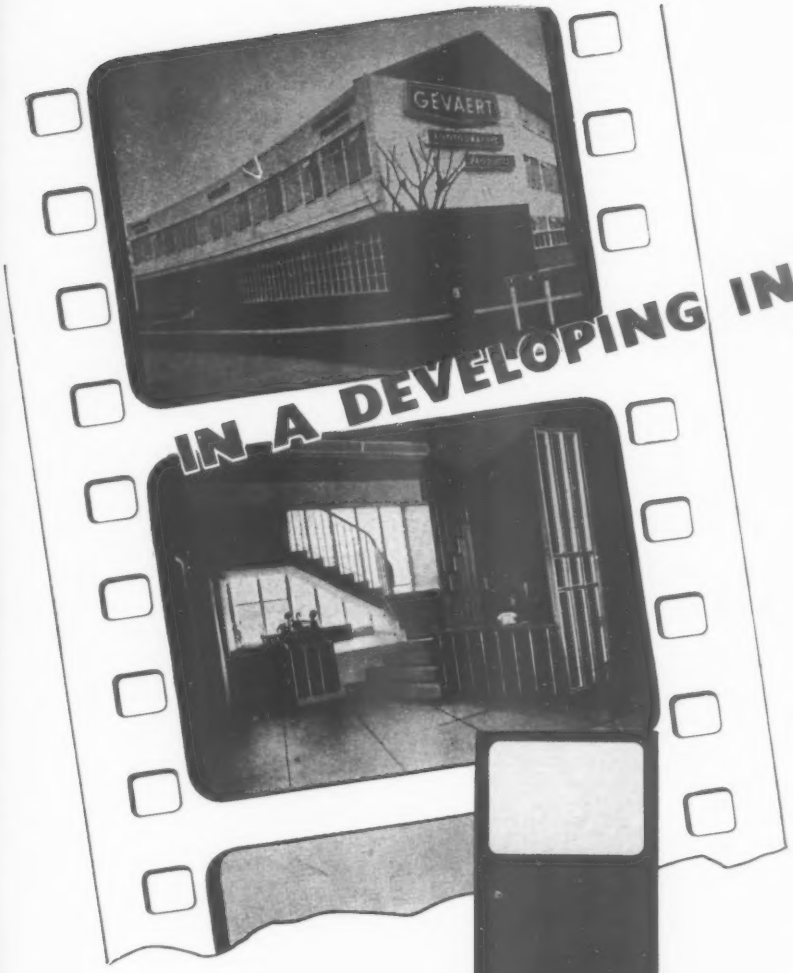

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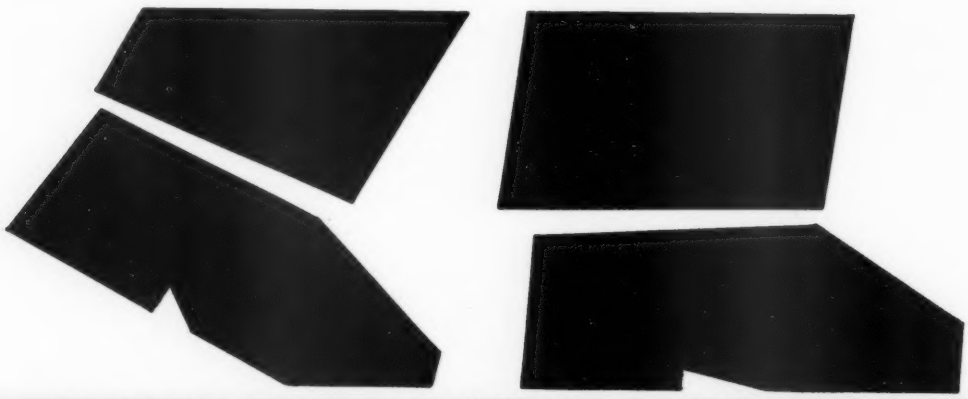

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Glamorock Granite was evolved to give an exceptional degree of wear-resistance under the most severe conditions, while retaining the beauty, colour and design possibilities of Glamorock Glaze. Glamorock Granite makes a perfect surfacing for factories, schools, hospitals, public buildings and similar places. It is completely slip-proof and after a normal floor polish has been applied it can be thoroughly cleaned simply by water.

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Both materials (which are supplied ready-mixed) can easily and very rapidly be applied "in situ" on practically any surface—timber, stone, cement, etc.—provided it is free of oil and grease. And they are ideal for prefabrication in tile or sheet form. In either case only a comparatively thin application (say 3/16") is needed.

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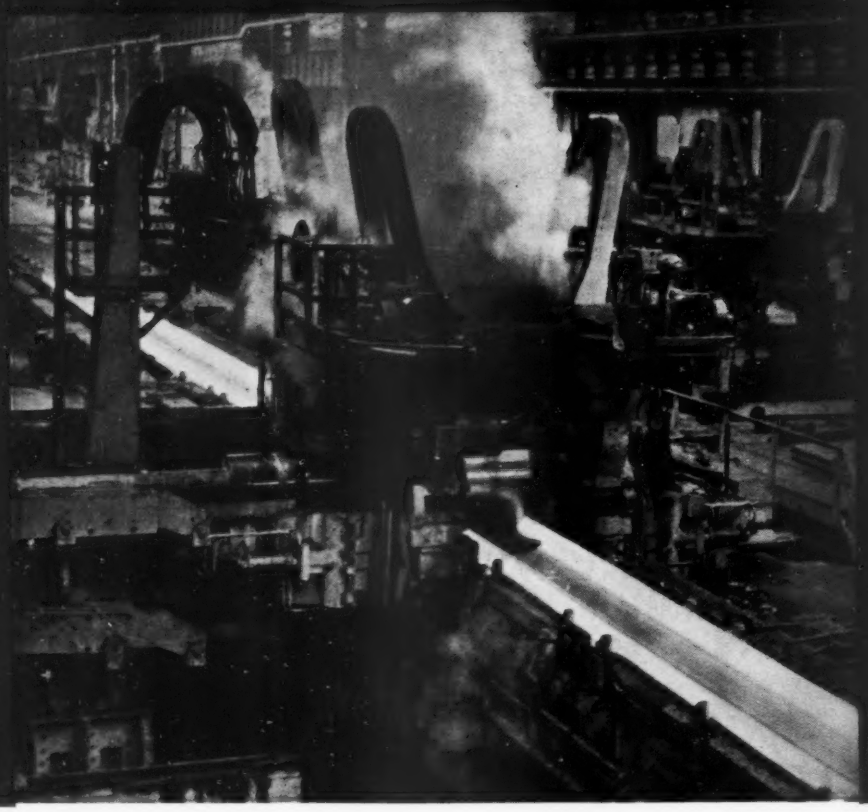
Glamorock Glaze used dramatically on a corridor floor and wall. The right hand wall is faced with standard Glamorock.



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IN MANUFACTURE AND IN USE

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The mill has important features which considerably augment its productivity and service to the industry: one is its construction with alternative sub-assemblies having rolls and bearings already mounted in interchangeable stands, thereby facilitating rapid changes. Another feature is the mill arrangement by which a beam or column section can be rolled in different 'weights' to suit different loads—yet without substantially affecting the overall dimensions.

The photograph of the Catterick bridge (shown at right), by courtesy of R. Sawtell Esq., A.M.I.C.E., County Surveyor, North Riding, Yorkshire C.C.

Above in red, the new 36″ x 16½″ beam (shown in the rolling mill picture); in blue, the largest of the British Standard sections, 24″ x 7½″.

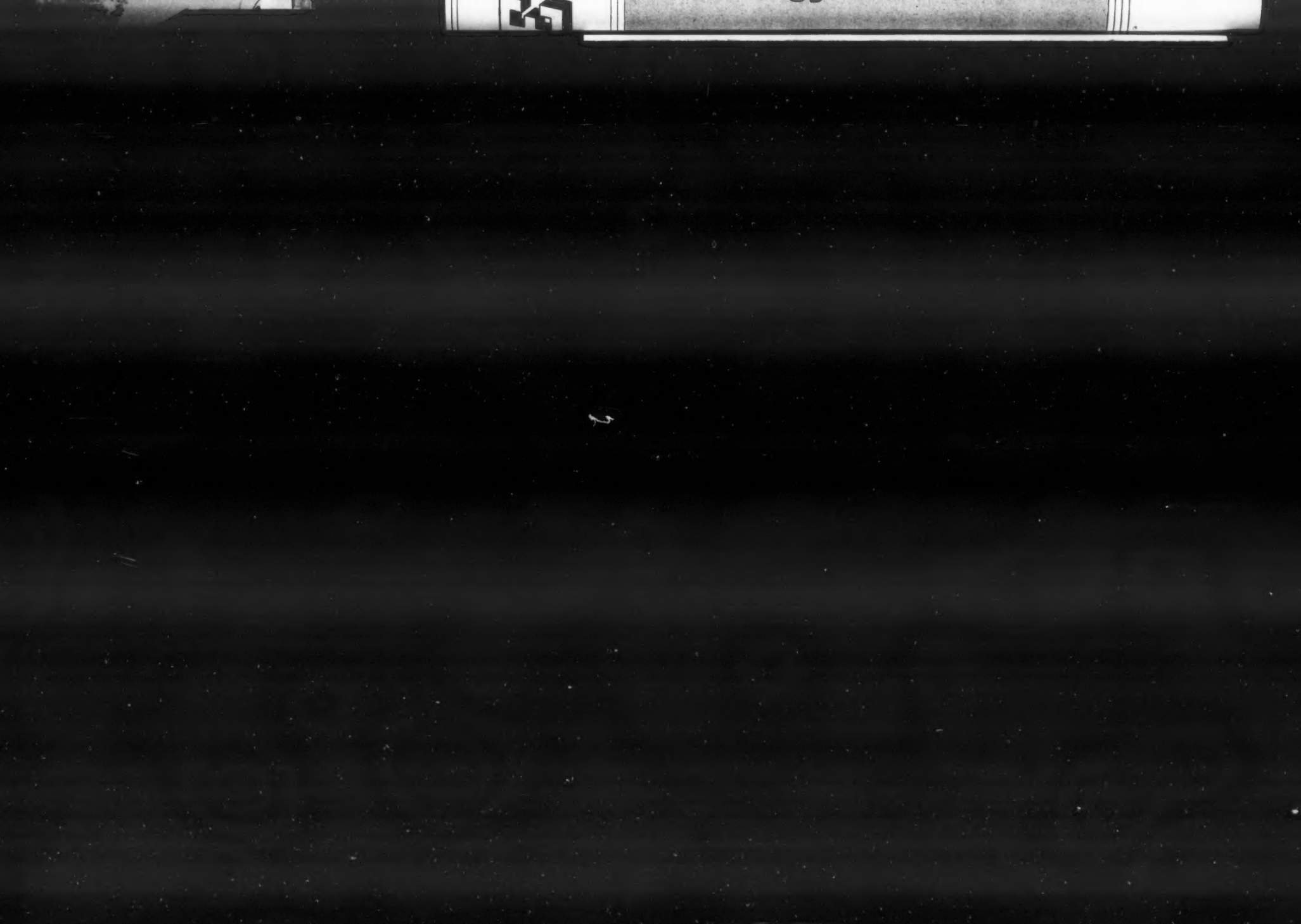
A bridge at Catterick (shown below) recently built by Tees Side Bridge & Engineering Works Ltd., with spans of the new 24″ x 12″ Universal beams (shown in yellow) without plating.

EARLY DELIVERY OF THE FULL RANGE OF SECTIONS

DORMAN LONG

6½" beam
e); in blue,
d sections,

n below)
Bridge &
spans of
ns (shown



ESCOL

PROJECT FOR: Evershed & Vignoles Ltd.
ARCHITECTS: S. T. Walker & Partners in association with Stanley Peach & Partners
CONTRACTOR: Wm. Moss & Sons Ltd.
The ESCOL panels are coloured Grey & Yellow to clients particular specifications

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(Bonding Patent No. 796118)

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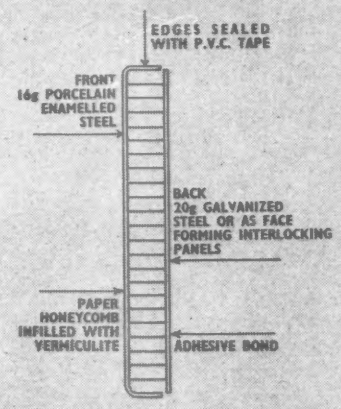

PANEL SECTION TYPE
Composite panel consisting 16 gauge porcelain enamell steel face, bonded to pheno resin impregnated paper honeycomb and 20 gauge galvanized steel back. The paper honeycomb cells are infilled with granular vermiculite. The paper honeycomb is rigid and wa resistant. The galvanised ba sheet may be replaced by a enamelled steel panel.

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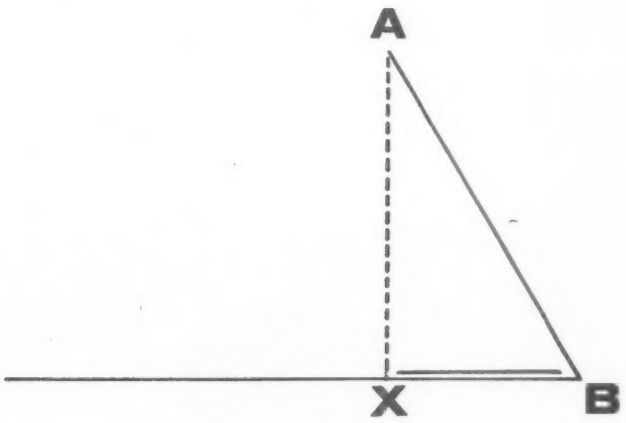
Theorems of ***PLY****thagoras No. 2*



That the use of 3-ply glazing - a sandwich of two leaves of structural glass and a layer of specially made glass gauze in a hermetically sealed cavity between them i.e. Diffusing Plyglass - substantially reduces heat losses through a glazed roof.

It is axiomatic that conventional single glazing is a distressingly good transmitter of heat, particularly in the large expanses associated with steeply-angled saw-tooth roofing.

But substitute for the near vertical pitch AB, a practically horizontal plane of Diffusing Plyglass BX, and two important thermal advantages are gained at once.

(1) The glazed area, for a given amount of light-admittance, is reduced by at least 40%, with a proportional diminution of heat loss in cold weather.

(2) The amount of heat lost per square foot of glass is reduced by approx. 42%.

Taking (1) and (2) together we find that 0.6 x 0.58 = 0.348, indicating a saving of heat which would otherwise have been dissipated through the roof glazing of just on TWO THIRDS.

AND, FOR GOOD MEASURE THERE ARE TWO ANCILLARY BENEFITS.

Light, including direct sunlight, passed through Diffusing Plyglass is so diffused by the fine glass gauze interlayer that it cannot produce discomfort and possible danger through glare.

Diffusing Plyglass, because it renders unnecessary the orientation of roof glazing to the north, permits the architect to make the best use of the site, unrestricted by considerations of the effect of aspect on internal daylighting.

Illustrating the use of Diffusing Plyglass in the roof of a factory at Harlow.

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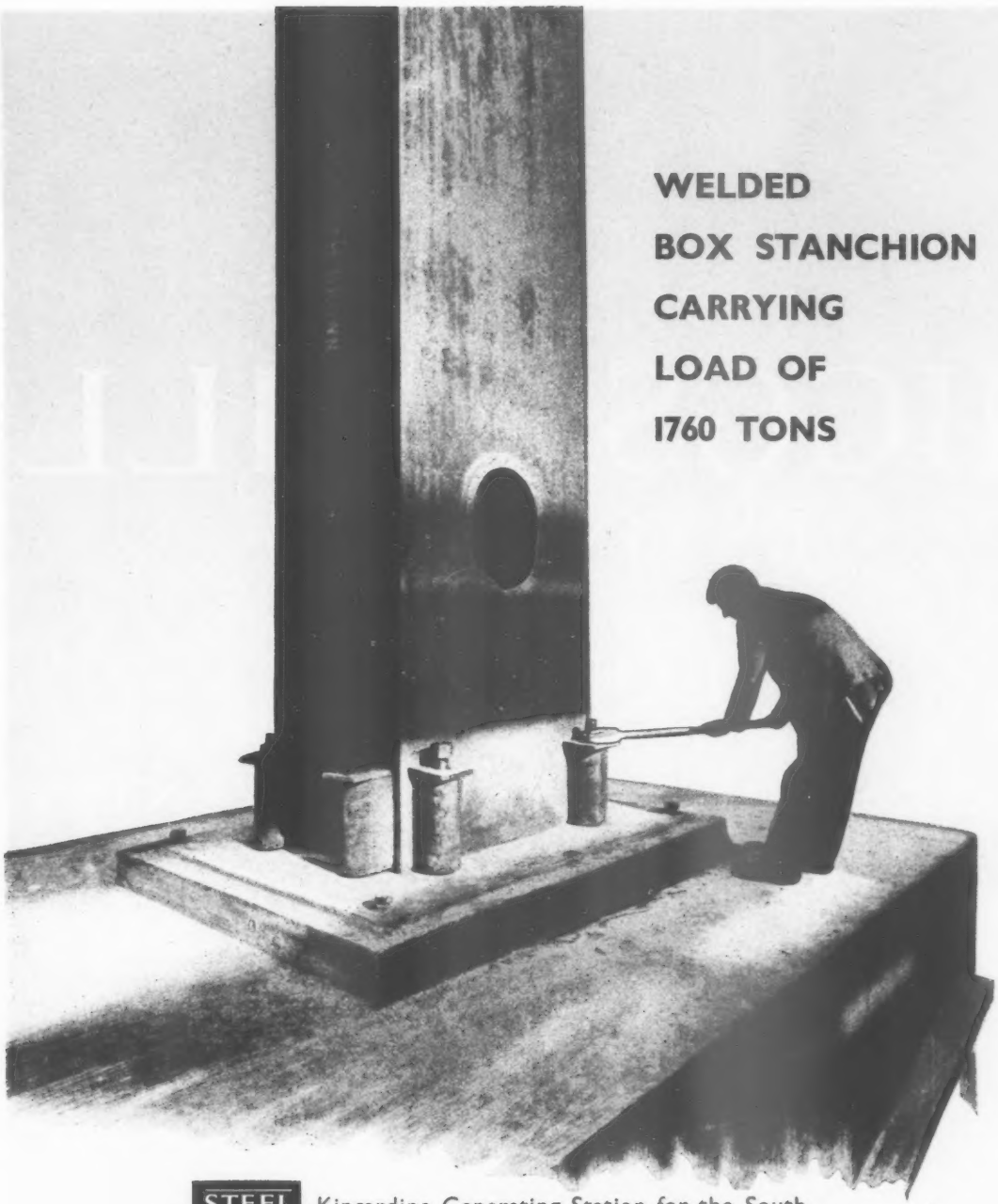

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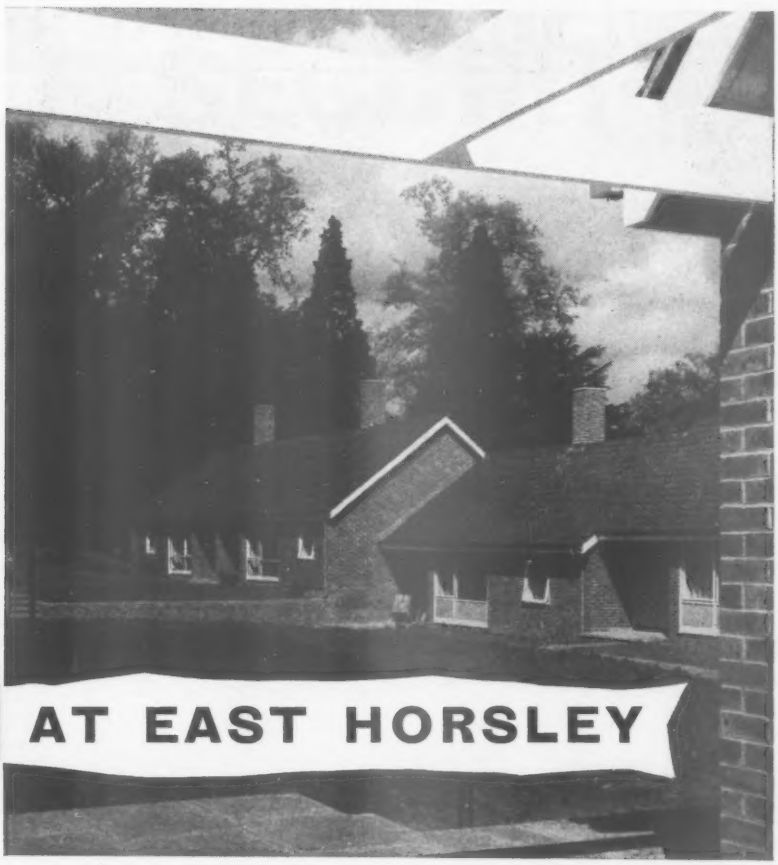

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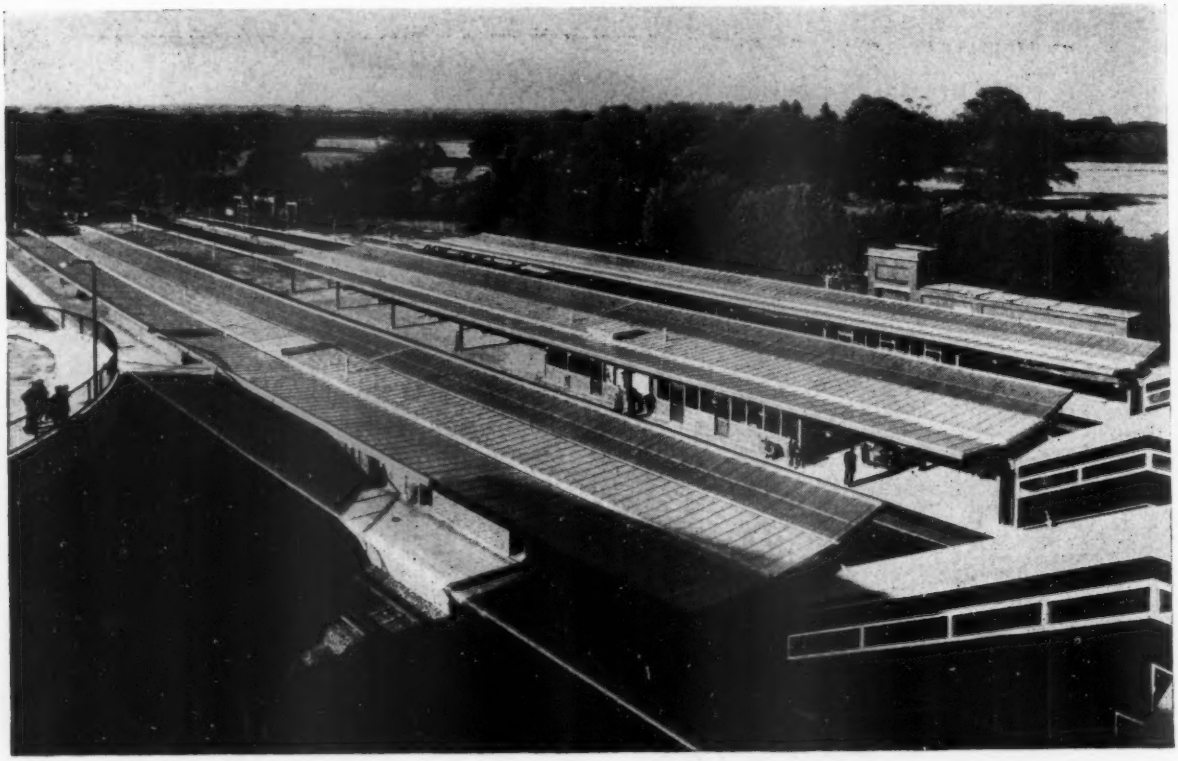

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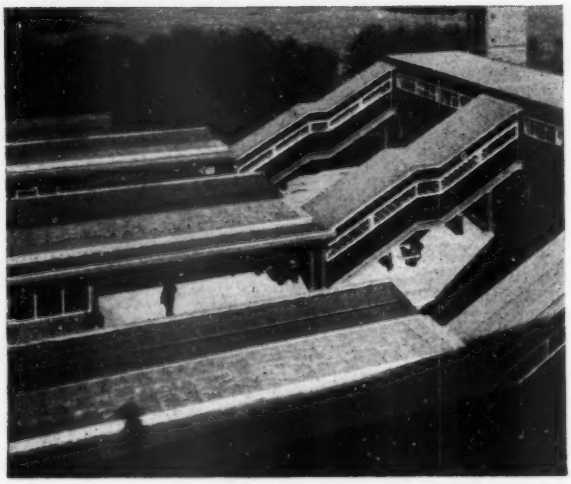

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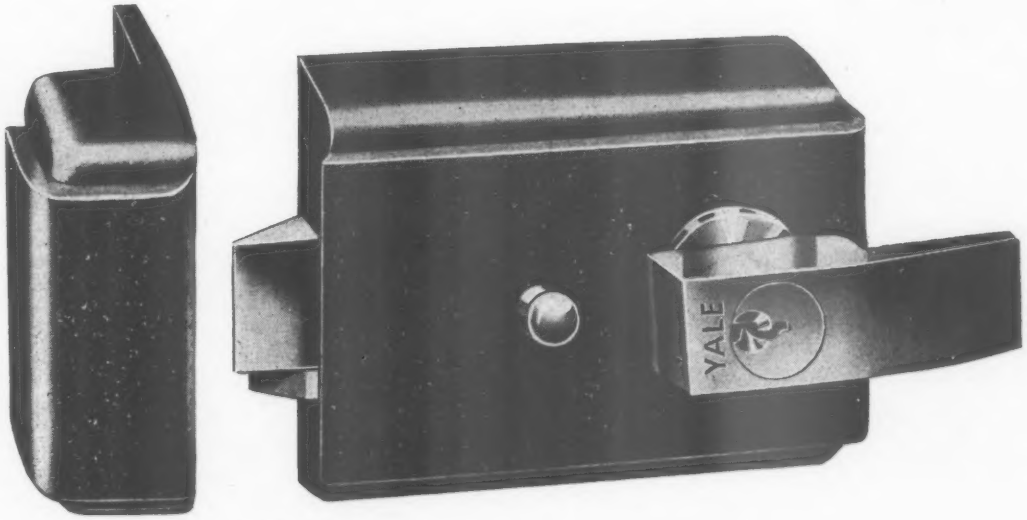

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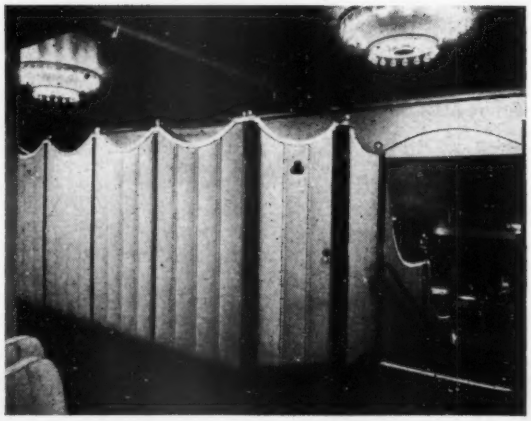

'Vynide' panelling on the exterior of one of the boxes at the completely transformed London Hippodrome.

All the chairs you can see in this illustration are covered the modern way with 'Vynide'.

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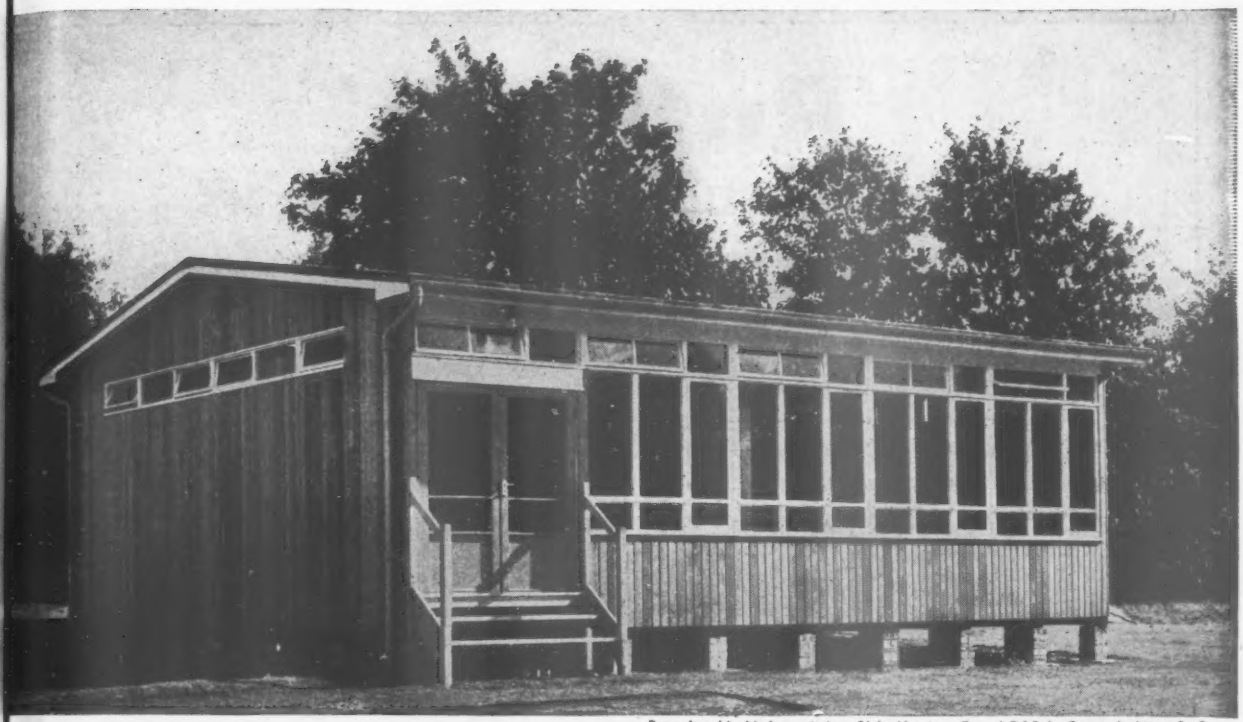

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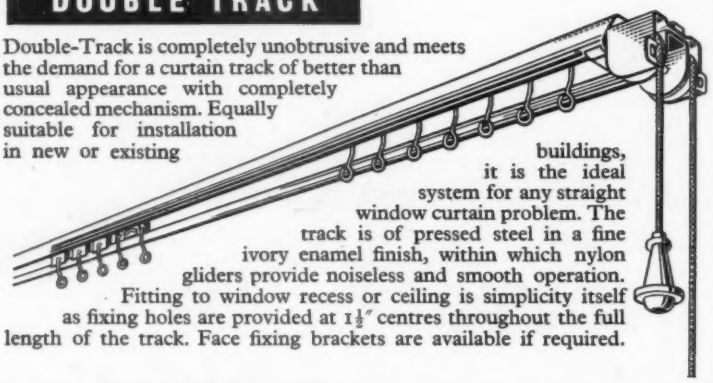
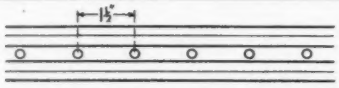




3/16" diam. fixing holes run the full length of the track section.

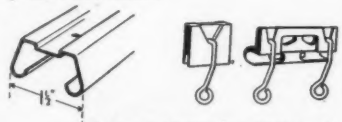
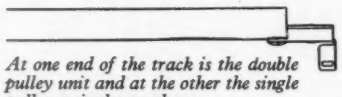
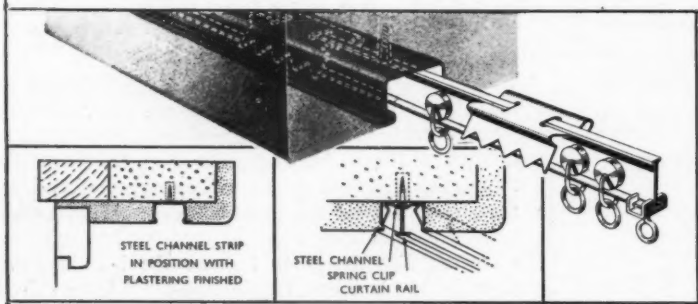


Diagram shows the robust track section and the free and master gliders which operate within the track.



At one end of the track is the double pulley unit and at the other the single pulley unit shown above.



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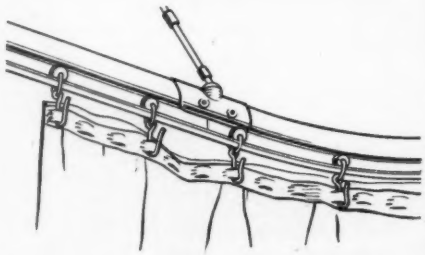

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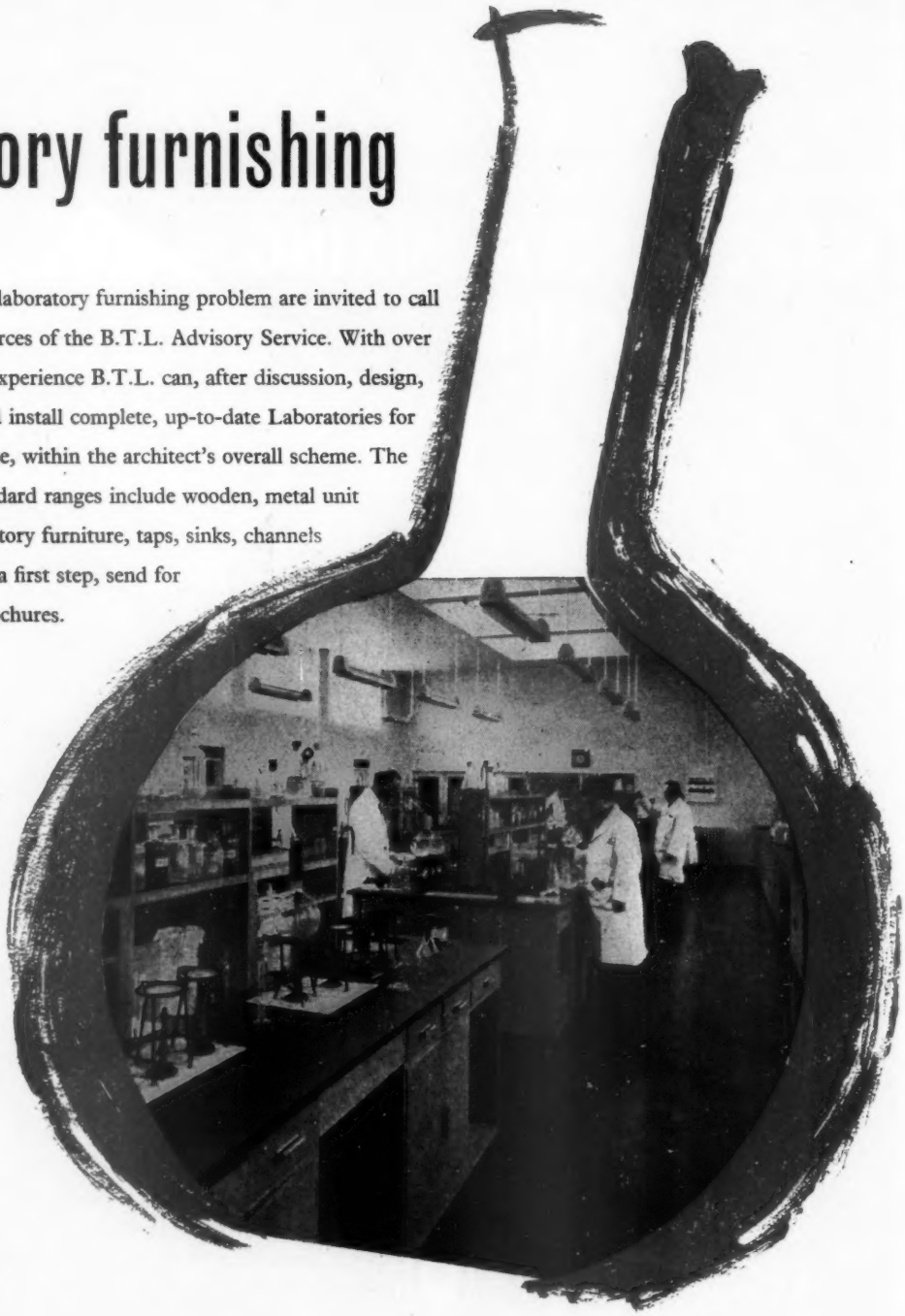

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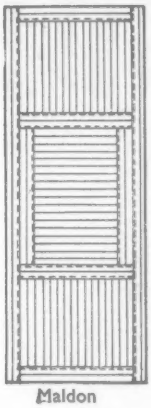

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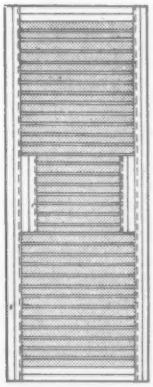

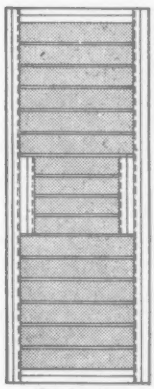

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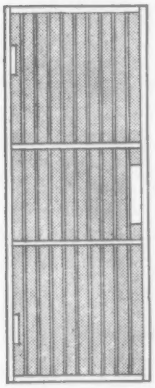

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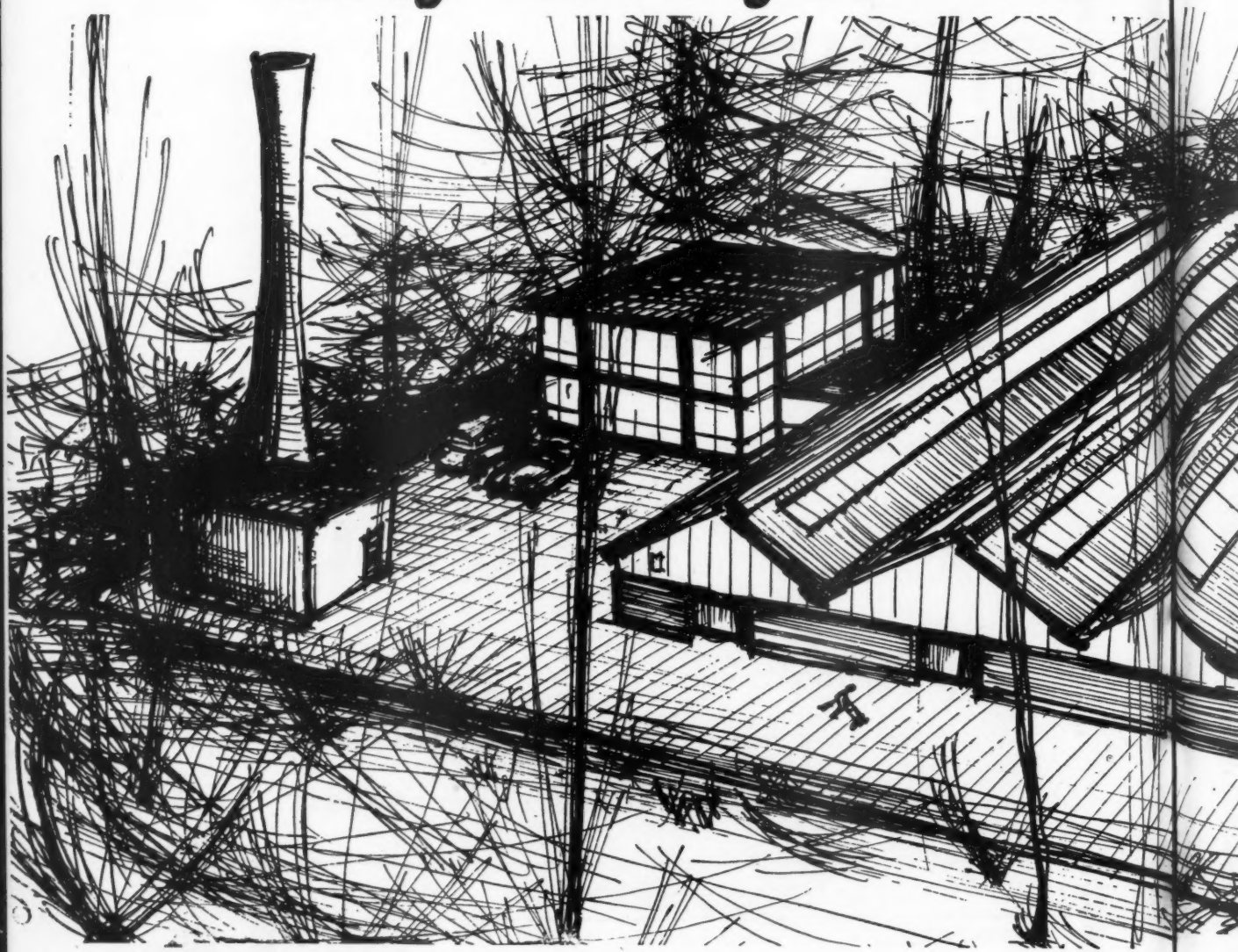

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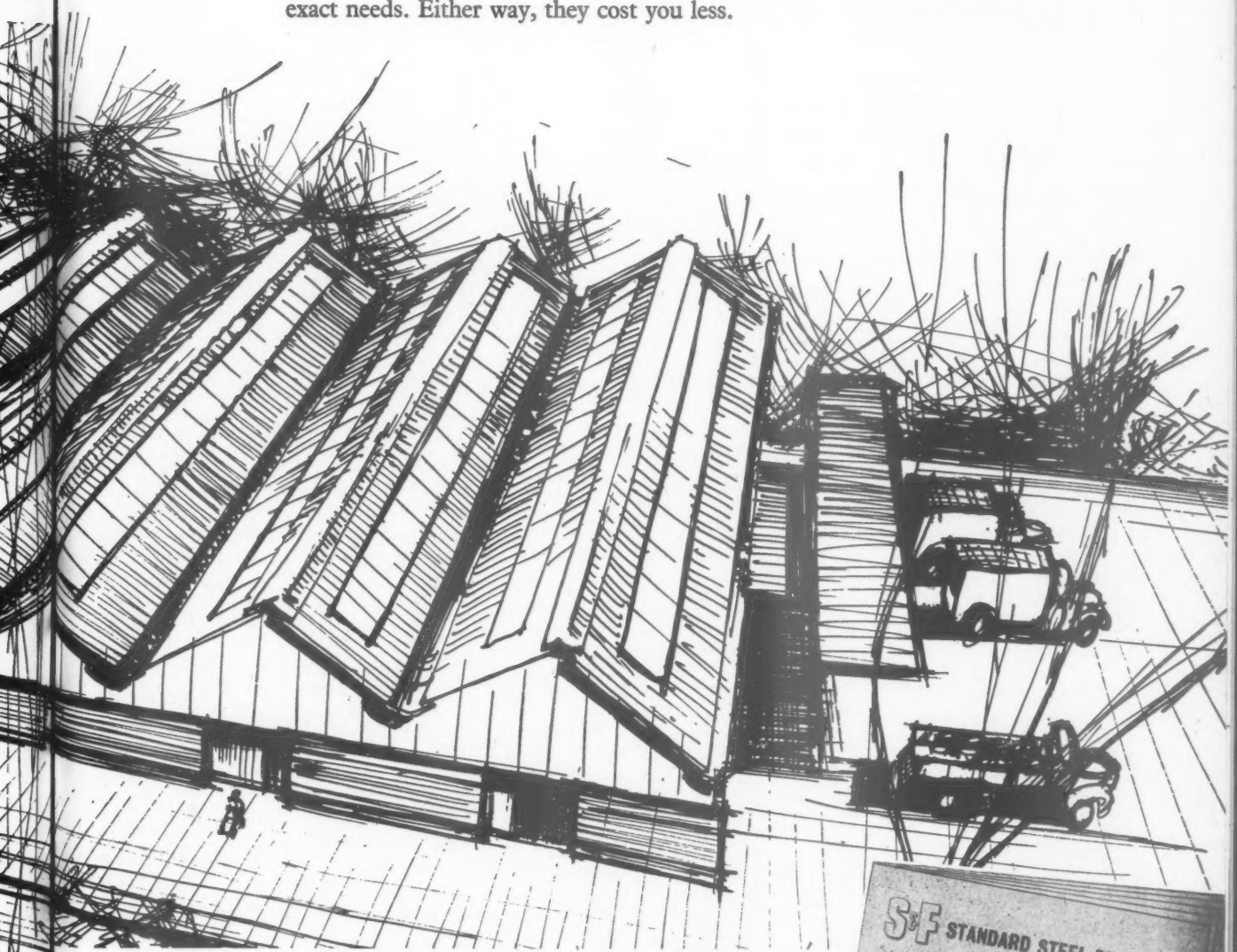

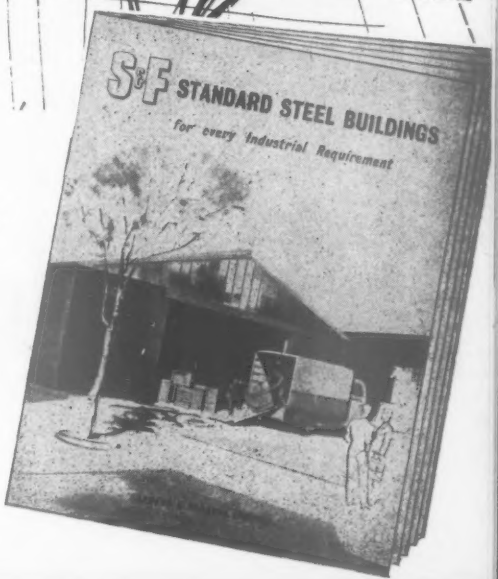

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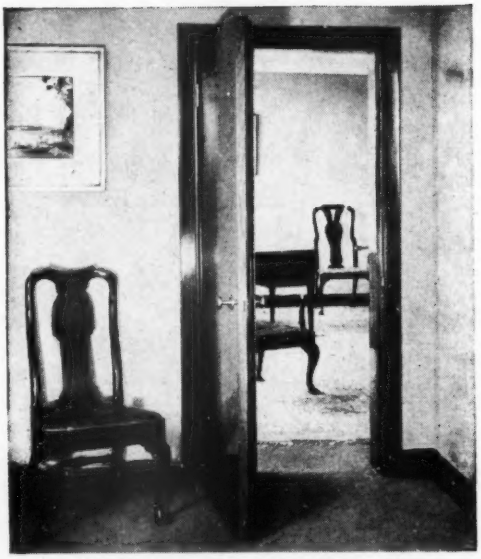

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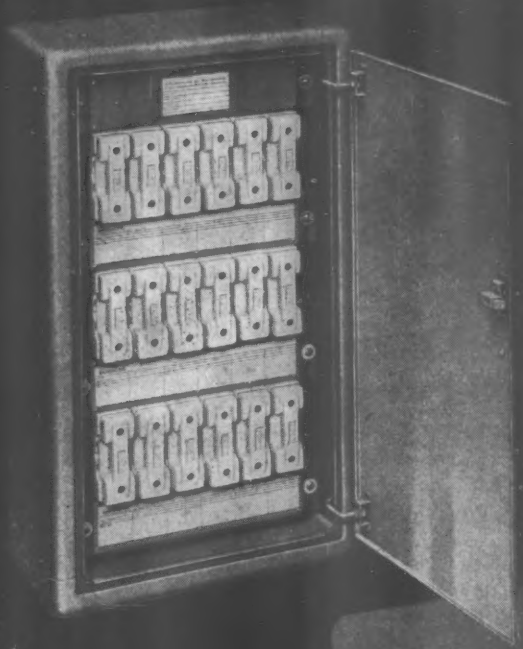

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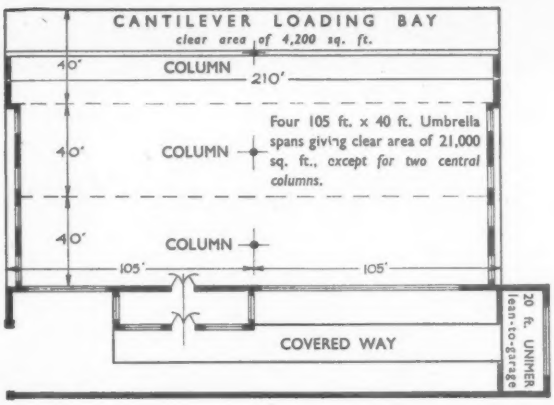

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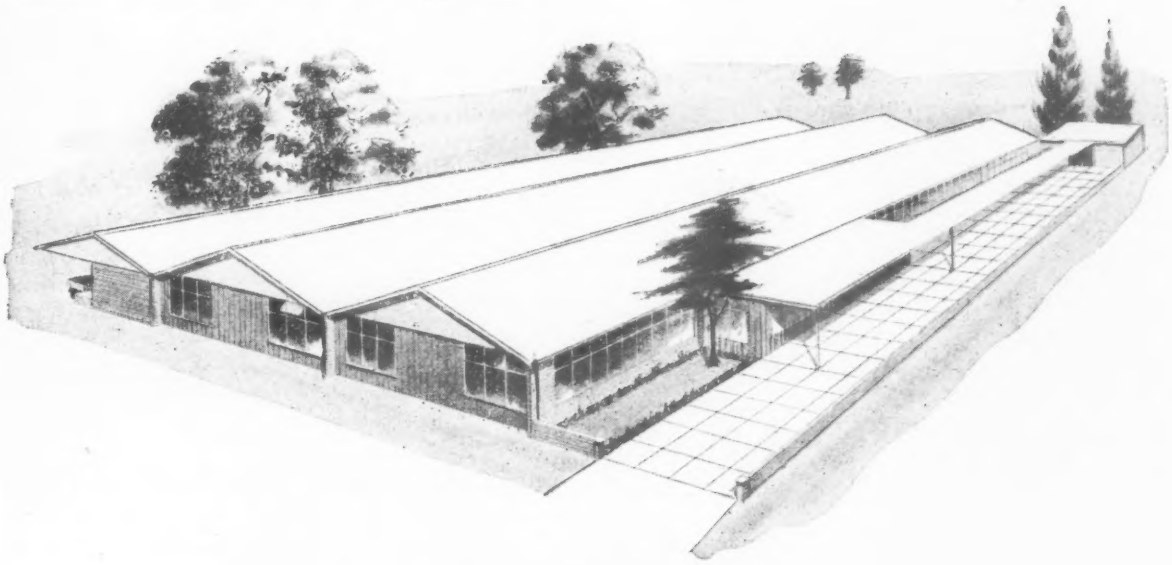

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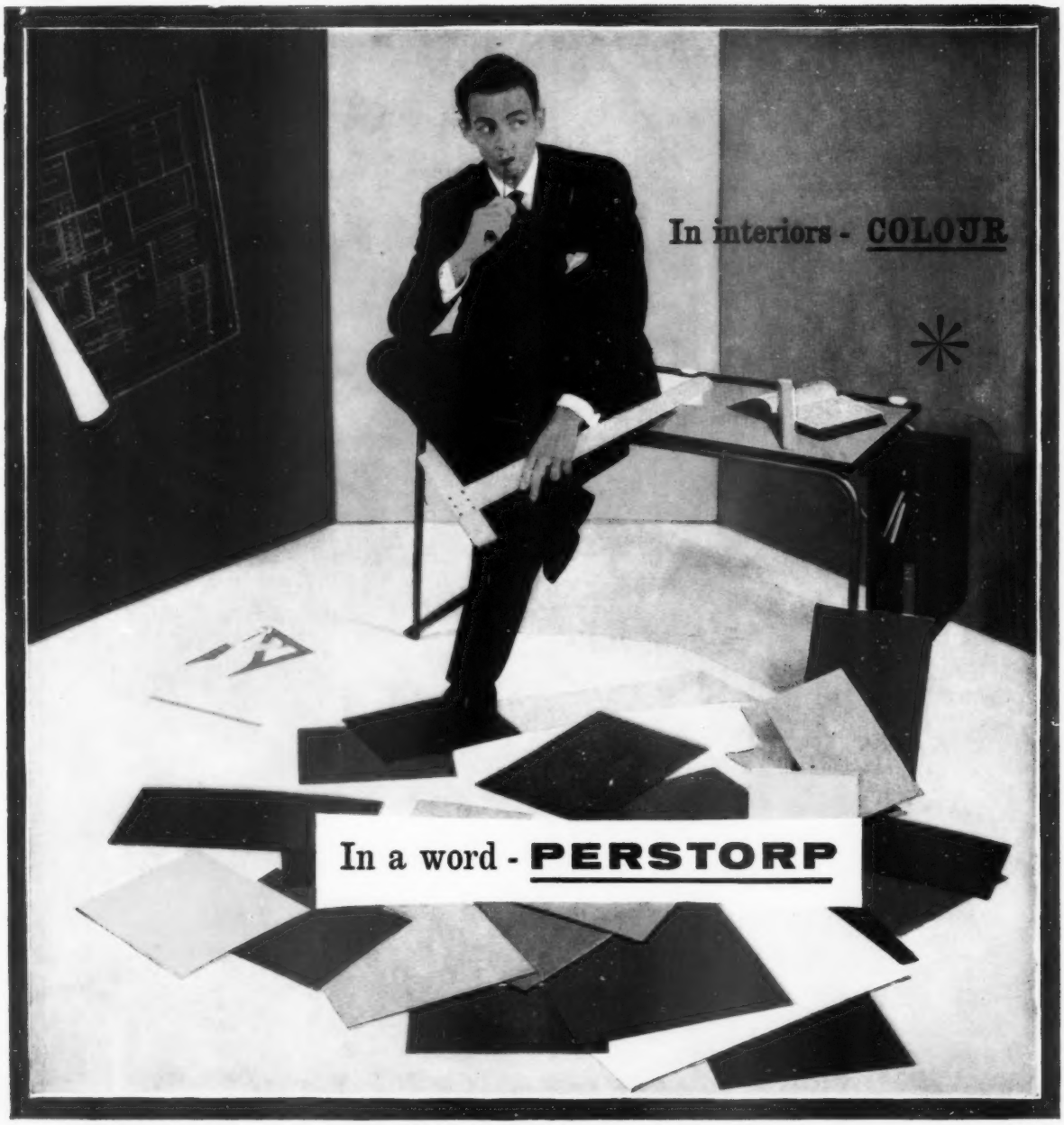

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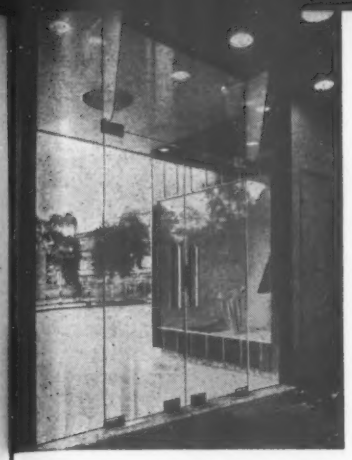

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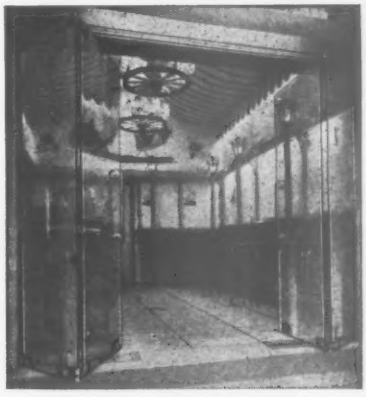

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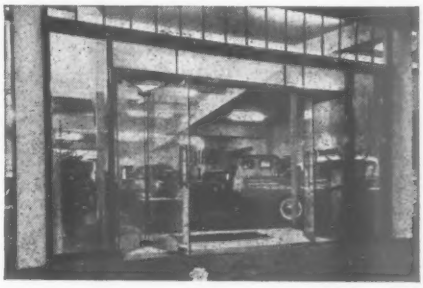
4 Shopfront at Weston-super-Mare. Architects: Fry, Paterson & Jones, F.R.I.B.A. Shopfitters: Parnall & Sons Ltd.

5 Chicken Inns (London) Ltd., Leicester Square, W.C.2. Shopfitters: Garmack & Co. Ltd.



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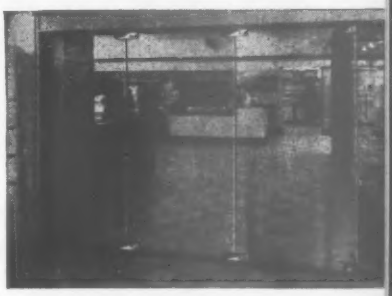
6 Motor-car showroom entrance for Harvey Hudson Ltd., South Woodford, E.18. Architect: V. Fletcher Russell, F.R.I.B.A. Shopfitters: Stewart Fraser Ltd.

7 New store for Messrs. Williams Bros. Direct Supply Stores Ltd., Hatfield. Shopfitting by O. Peterson Ltd.



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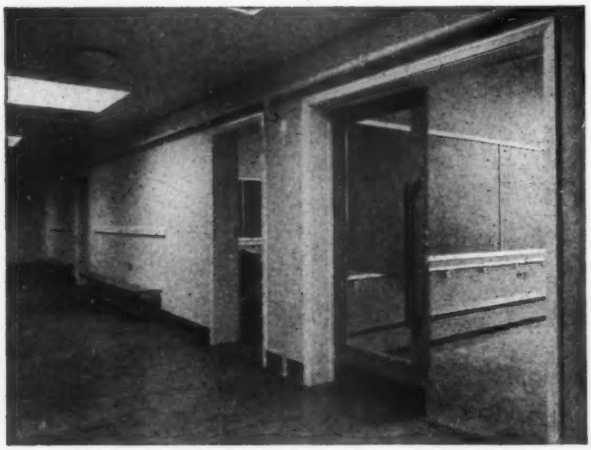

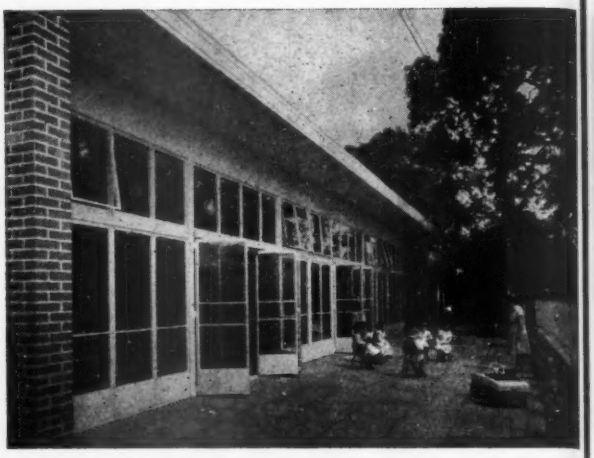

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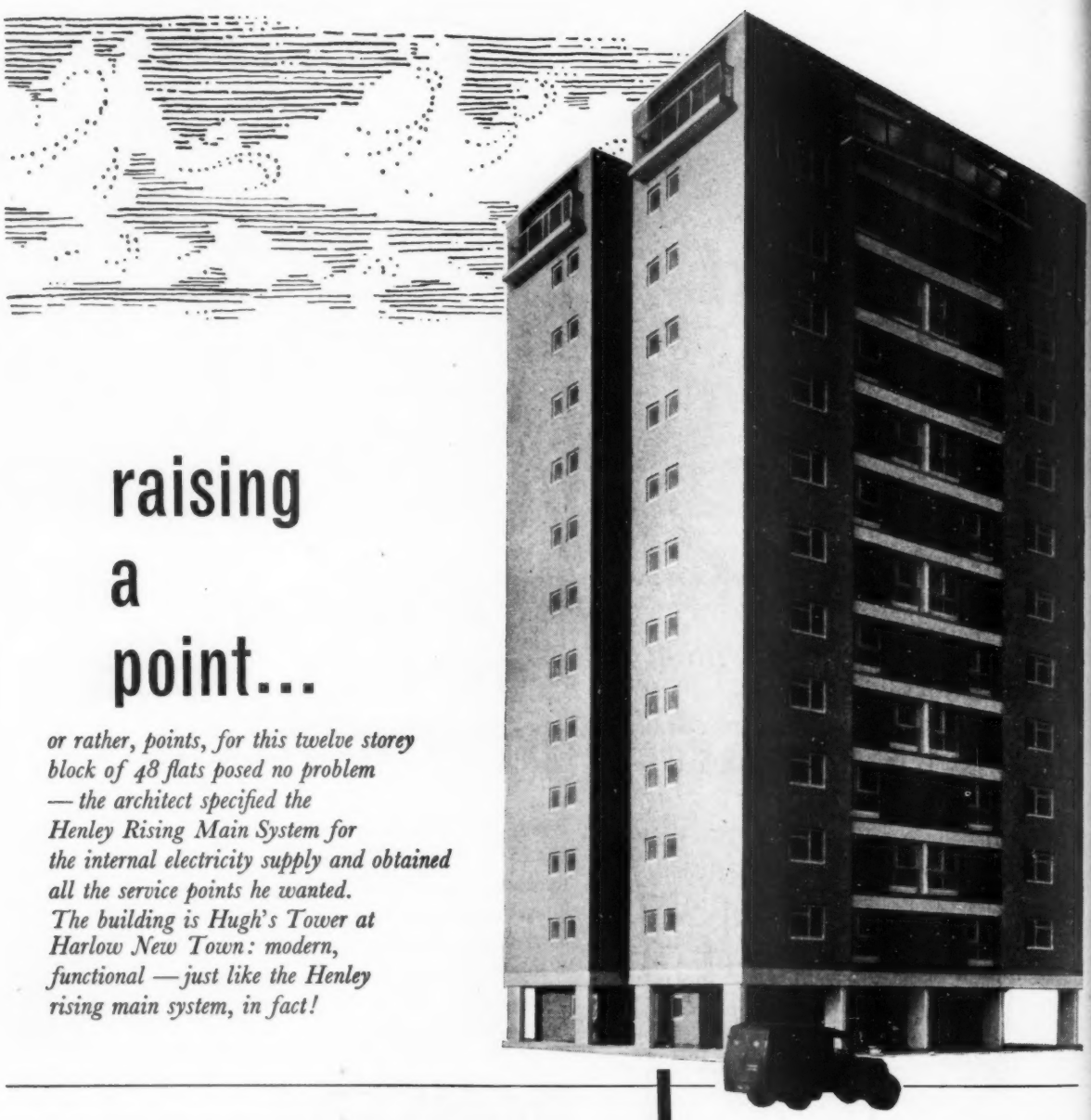

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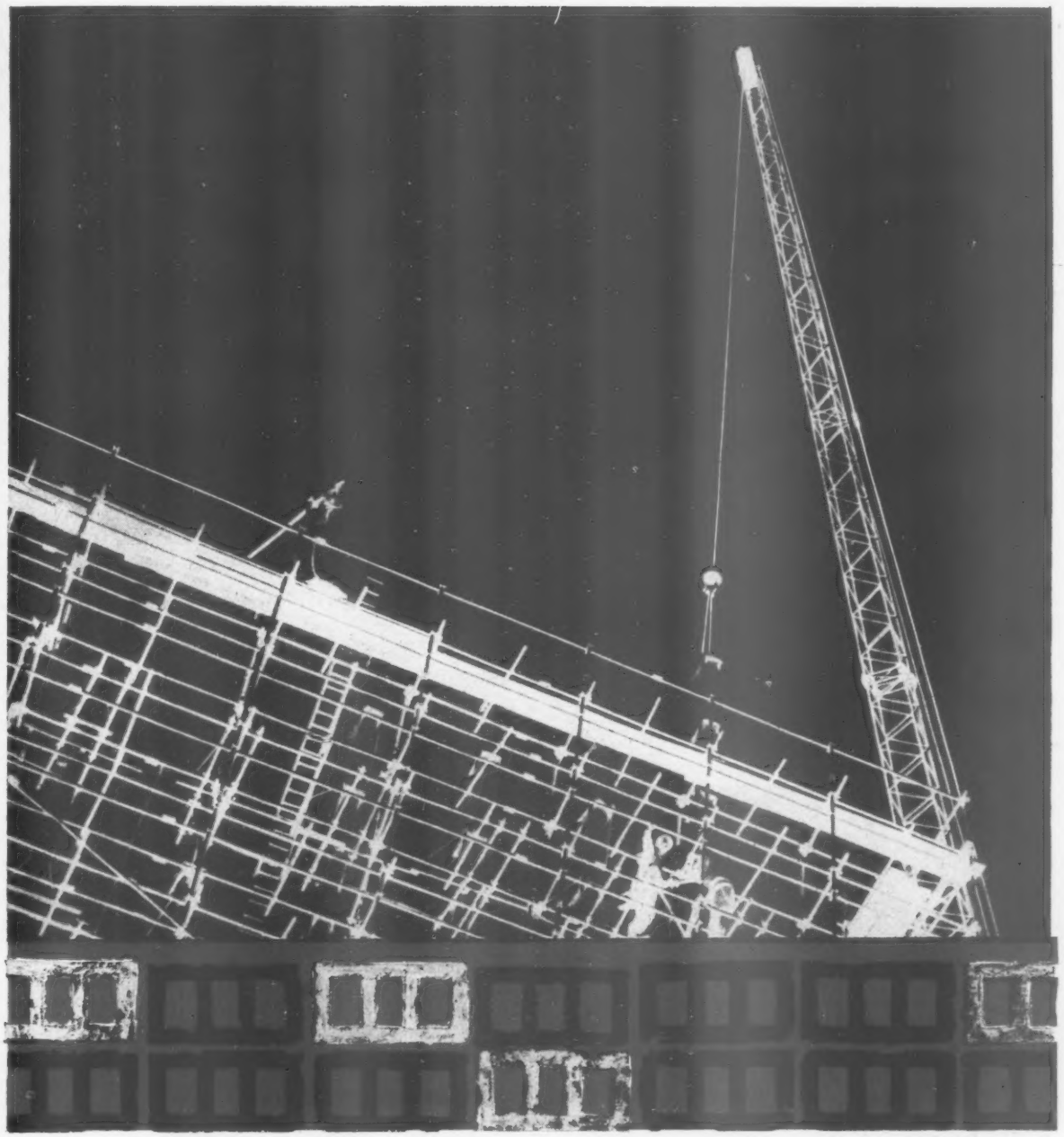

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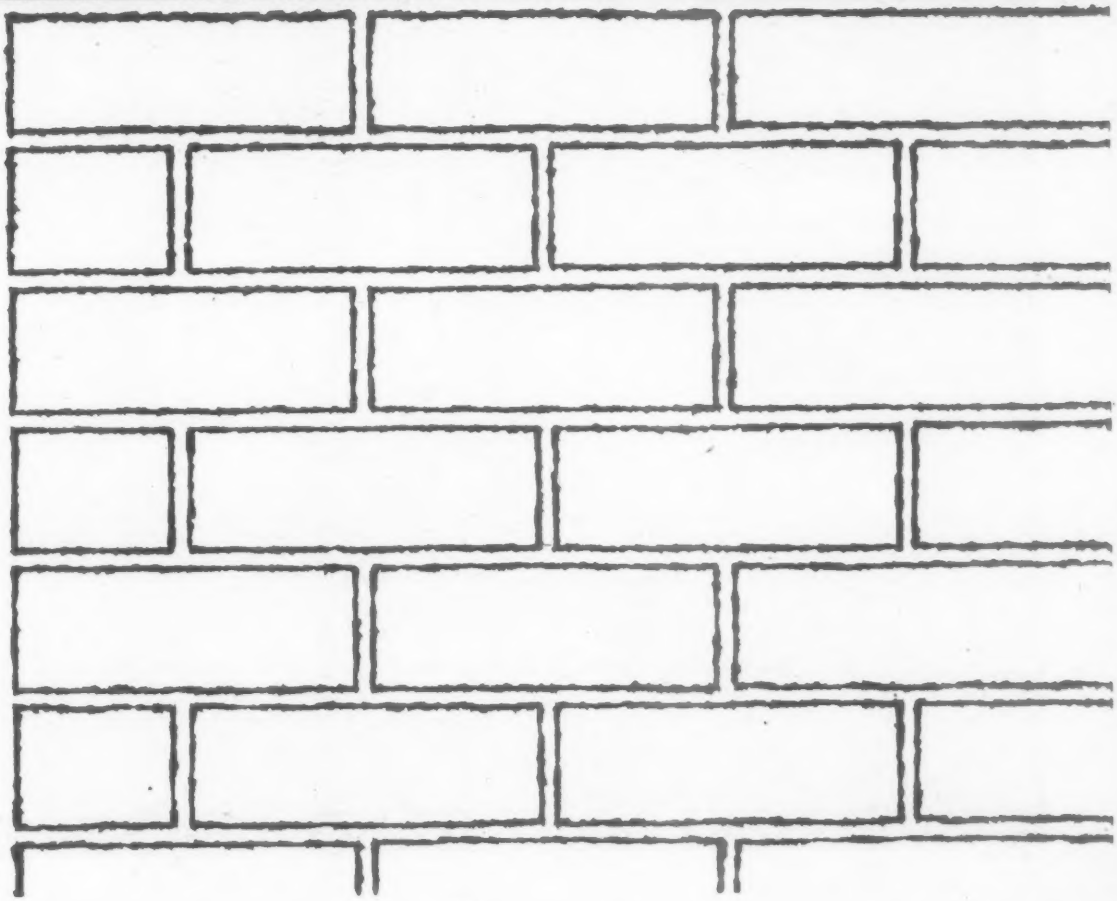

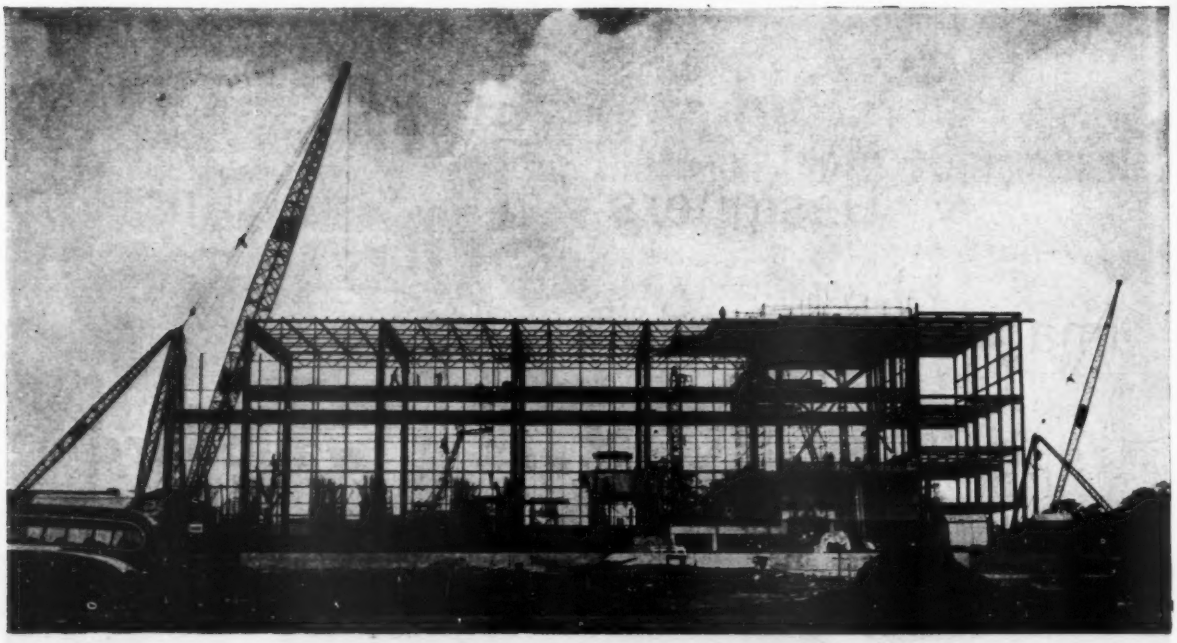

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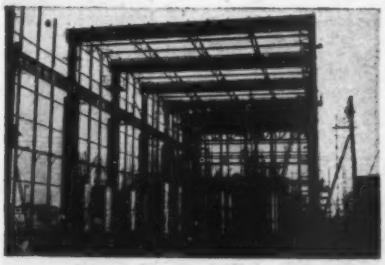

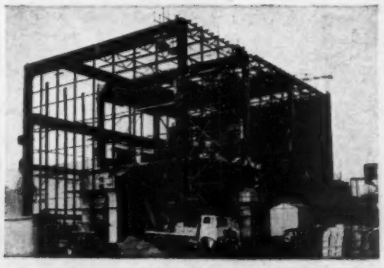

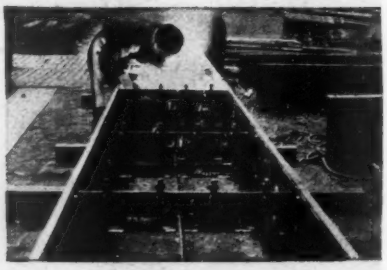

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AJ

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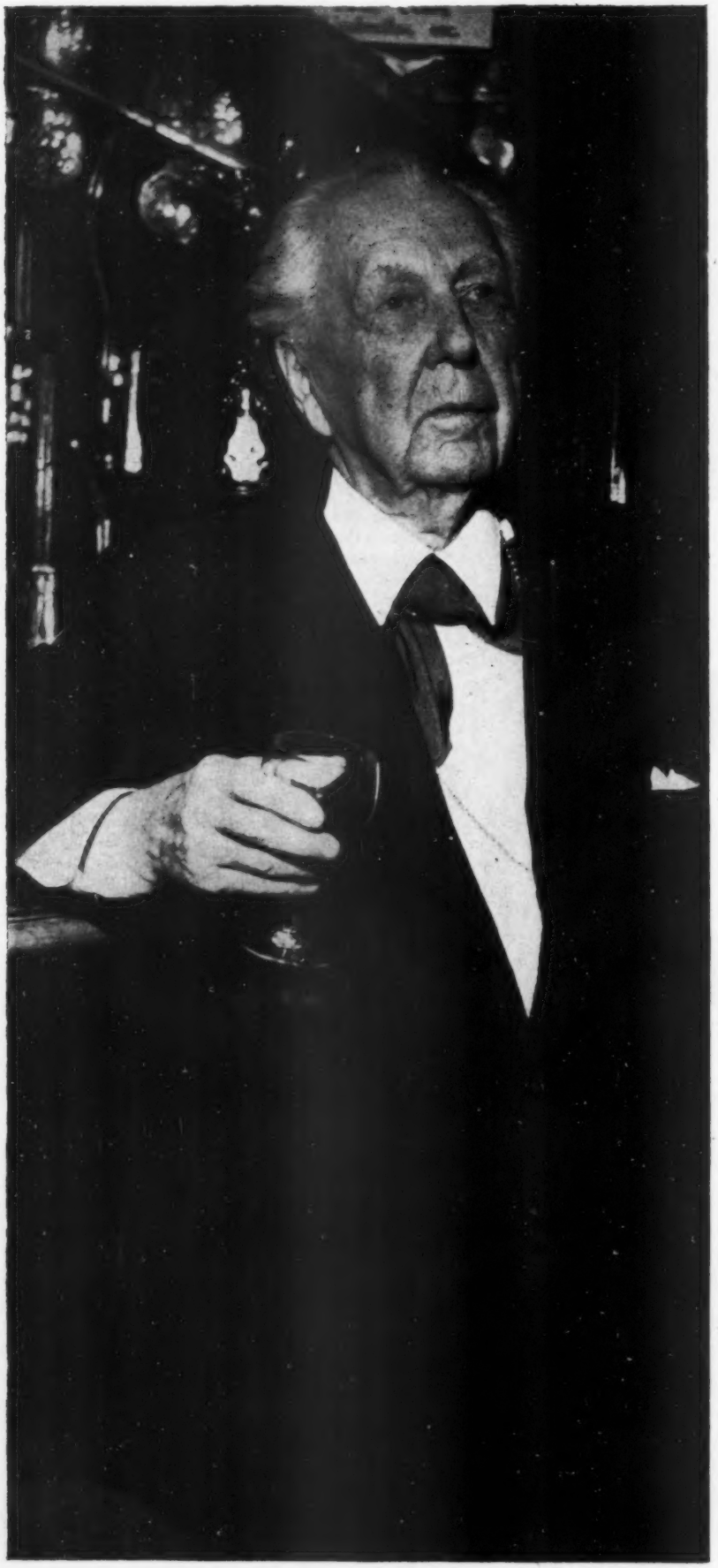
FRANK LLOYD WRIGHT, 1869-1959

It is only given to the few to become great legends in their lifetime. Frank Lloyd Wright in America, like Sir Winston Churchill here, was one of these. There are indeed certain parallels, if little resemblance, between the two great men. Both belong to a generation of individualists who were called on to guide the world in new "mass" ways; both gave to the word democracy, poetic connotations it refuses to live up to. Both had their careers divided by long periods in the wilderness and in returning achieved greater triumphs and both, one suspects, have been slightly dismayed by the world they have helped to bring about.

So renowned had Wright been in latter years, so full had been his life, so many his achievements, that we sometimes forget there was a time when he was almost forgotten. H-R. Hitchcock has said that when called on to write the official biography (*In the Nature of Materials*, 1941) he realized that in earlier books he had written of Wright as if he was at least artistically dead. His embarrassment was easily dispelled by Wright's amusement. Yet it is this double life of Wright's which made him so fascinating. Whenever one saw him one realized that the "early Wright" already belonged to history and that around that all sorts of myths had grown up. When Philip Johnson called him "the greatest living architect of the 19th century," he was not merely being flippant, and was in no way reducing his importance as a 20th century architect.

Wright had been pictured as a rebel, egocentric tyrant, embittered by a life of storm. Yet the man one met in his old age was a relaxed, quietly spoken, immensely charming little man. He was beautifully dressed, very erect, and mildly but smilingly deprecating about the modern world in whose making he had played so large a part. And this world which had treated him so capriciously had seemingly left no scars.

Yet the legendary awe in which he was held in America latterly was not due to his years alone, but to the realization, no doubt half conscious, that he was perhaps the first major architect, one might almost say artist, to come wholly out of America, be



brought up there, educated there, and find inspiration from its wide western landscape. Wright's architectural education was unacademic by American standards. He studied engineering for a short time at the University of Wisconsin under Professor Conover and may have worked in 1885 on his new Engineering Building, a dull, Richardsonian block. The real influence of these early years was his mother's Welsh pioneer farming family at Spring Green where he later built Taliesin. His father seems to have been a rather feckless character and disappeared from the scene quite early. After a short spell in the office of Lyman Silsbee, a friend of his mother's family and one of the "shingle-style" architects who were spreading the gospel of Norman Shaw across the middle West, Wright went to work for Adler and Sullivan, where he stayed for six important years as Sullivan's personal assistant during the success years of the partnership. In view of Sullivan's decline soon after Wright's stormy departure (Sullivan had found that Wright had undertaken private work) it has sometimes been suggested that Wright was the real genius behind much of the better work. Wright consistently denied this and in later writing his so-called biography, expressed his debt to "the liebermeister" in the warmest and most touching terms. However, in the Sullivan office, Wright had been responsible for all domestic work and this combined with the houses he had done on his own gave him a great deal of experience at an early age.

His own practice in the 'nineties thrived, and the variety and originality of these early houses is both amazing and eclectic ranging from the Palladian Colonial Blossom house and the Norman Shaw half-timbered Moore house, to the superbly original Kankakee and the mature Ward Willitts houses. Out of these evolved those long low "prairie" houses, culminating in the Coonley and Robie houses with their logical open-plans so suited to a wealthy servantless intelligentsia. These technically brilliant designs incorporated new methods of heating and construction and became more and more abstract in form over the years. Many of them were finely built of the most beautiful materials, long Roman bricks, dressed stone, marble and oak. They made their designer's reputation. This was greatly enhanced by other buildings of the period such as the Larkin office building—the first to incorporate air-conditioning and metal office furniture—with its top-lit internal brick "landscape," an idea to which he was to return with even greater imagination 30 years later in the Johnson offices.

But by 1909, Wright's first marriage was on the rocks and he was weary. And since Ernst Wasmuth was about to produce two great folios of Wright's work, which more than any other books were to change the course of European modern architecture, Wright suddenly threw up everything and fled to Europe. It was the end of an era in which he had built over 60 houses and though he returned in 1911 to design other works including Taliesin 1 and the great, somewhat Italian, Francis Little house at

Wayzata, it was a period marred by the Taliesin tragedy: his house burnt to the ground and the inhabitants butchered, including "she for whom Taliesin had taken form and her two children."

The building of the Imperial Hotel, Tokyo, took his mind off the disaster and occupied him for the next five years. Wright had many previous contacts with Japan and though he constantly denied any influence of Japanese architecture on his work, he had long been a connoisseur of Japanese prints and had made his first visit to Japan in 1905 for the purpose of buying prints for a private collector. His own very fine collection was sold at the time of his bankruptcy in 1927.

The years between 1924 and 1934 were lean, lost years, producing little building and complicated by marital financial troubles. During this time he did, however, rebuild Taliesin in its present form for the third time after another fire and set up the Taliesin Fellowship—that curious mixture of school, office and therapy institute.

Then in 1934, at an age when most men's careers are over, he built the simple but revolutionary little Wiley house in Minneapolis to a "Usonian" plan, whose significance is still not fully realized. But it was Falling Water and the Johnson Wax Administration building soon after which set his career once again in motion.

In 1939, when he came to London to deliver four lectures at the RIBA, the impact of the man and his work (to which had lately been added the summer camp Taliesin West at Phœnix, Arizona) was tremendous. His romantic philosophy of soil and craftsmanship, with its vision of wide free spaces deriving from Whitman, Thoreau and Morris, was not without its appeal to many, sensing the claustrophobia of impending war. There were many who would have joined his students if they could have done so at the time.

The last twenty years of Wright's life were even and happy: a father figure surrounded by family and students, assured in the admiration of his country and the world. Yet so sensational had been the incidents of his past that it was still often forgotten by the press that Wright had been very happily married to one woman for over thirty years. Since 1940 he has built much and designed a great deal more. Yet apart from the "early Wright" it may well be in the buildings of the late 'thirties that his greatest achievements will be found. It is as if he re-awoke and said "I will show these young men in Europe that I am still alive. I will outdo them at their own game." Falling Water does more than just cantilever over the waterfall. It is married to it and bedded with it in the little valley in which it lies. One hears, long before one sees, this mysterious and beautiful house; while the Johnson building unfolds and dances before one's eyes, its interior glowing with miraculous light.

If he was not one of the supreme architects of all time, he will surely rank with the great innovators like Palladio; indeed, he has probably had more influence than any other architect since.

FELLO ATKINSON

The Editors

ANOTHER SEVEN LAMPS OF ARCHITECTURE

IT is the usual irony of fate that in the week we give special prominence to the sound words (see page 578) of W. D. Pile, Joint Head of Architects and Building Branch of the MOE, we also have to report the death of one of the great masters of architecture, Frank Lloyd Wright. The State, in the words of Pile, asks not for prima donnas, or stars, but for business-like, scientific democrats with fire in their bellies. Frank Lloyd Wright was perhaps more renowned for the fire than for the other attributes. Is then to support Pile's statement to disparage the standing of Wright? Yes, if he is judged only by mid-twentieth century standards. But that is not fair, because he should be judged for what he did in his prime, thirty-forty, years ago, which was tremendous. Wright was a genius, but a genius of the past. He was a master, but not a master of architecture as a social art and science as it has now become. He and his school at Taliesin were dedicated to an essentially individual interpretation of an art, to the production of sculptural works in which mankind, or the wealthier sections of it, were permitted to live. This is not to deny his greatness, the freshness of his spatial concepts, the brilliance of some of his structural design. But it is a greatness which should be related to the age and society in which he lived. He was one of the pioneers of modern architecture who led the battle against meaningless styles. He bore the brunt of the battle, and won it, almost single-handed. The greatness of this achievement can never be forgotten, or the honour taken away from him. Today, however, the need in architecture is not the cultivation of a few masters, but for a much higher standard of ordinary practising architects. The cult of the individual genius can reach ridiculous heights and lead to obvious and distressing dangers.

Today the assertive individual must, in normal life, learn and achieve humility. It is the idea that should count, not the ability to dominate others—that is, if we are ever going to learn democracy, and to live at peace with ourselves and others. We are in no way ignoring the mastery of Wright when we advise all architects to study what W. D. Pile said to students at their recent Cambridge Conference. It is sound sense, and architecture will progress further, faster, if architects follow it and stop cultivating their individuality, like would-be Wrights or Corbs, or, at the other extreme, if they stop deliberately ignoring their art because they cannot emulate Wright's and Corbusier's mastery of it.

We believe that W. D. Pile has put succinctly the essential factors by which architecture can develop today, which is why we print them large.

HOW MUCH BY HOW MANY

The first report of the survey on private practice, which appears in the current issue of the *RIBA Journal* is a most useful piece of research, which on the whole confirms the picture we already

had of the profession. Private practice is responsible for the design and supervision of at least one-third of all building work, and the profession as a whole is responsible for between 60 and 70 per cent of it. The small firm still predominates, and in this field at least the individual can still go into practice. But a few big firms are doing as much work as thousands of small ones: 285 firms, employing 4,896 staff, do 38 per cent of the work, while 2,218 firms employing 6,235 staff, do 39 per cent of it.

The author of the report draws the conclusion from it that the scope for extending the services of the architect is not as great as was envisaged, the implication being that the size of the profession must not grow much more. But architects' work can be extended both by architects doing work now done by non-architects (and that alone would increase the work done by architects by 50 per cent.) and by an expansion in the volume of building work. Admittedly the increasing productivity of builders and architects will enable both of them to do more work without employing more people; but if the standard of living is to be doubled in the next 25 years, and if the great task of urban renewal is to be undertaken, an even greater expansion will surely be required.

HOSPITALS

One of the most interesting and surprising survey results of recent years are those which relate to hospital demand. They are such because it is only comparatively recently that people have had the idea of assessing demand, not by the number of people who are using hospitals or are on waiting lists to go into them, but by the incidence of disease and by an estimate of the degree of hospital attention each disease ought to require. We have all assumed that as our population increases and grows older we shall need more hospital beds. But a report recently published by the Central Consultants and Specialists Committee of the BMA* shows that, if only we had the right sort of hospitals in the right places and if only these were supplemented by other welfare buildings (particularly old people's homes), we could probably provide a better service with fewer beds than we now have. As the report points out, it was perhaps a mercy that we could not embark on our hospitals programme in 1948 when the Health Service began, for, at that time, we had no real notion of what we wanted. Now the broad pattern of our requirements has emerged and the longer we wait to fulfil it, the more costly it will be. The Guillebaud Committee estimated that £1m. spent on an extension, costs an extra £400,000 in upkeep: but that the same sum spent in a new hospital costs only £150,000 in upkeep. On this analogy it seems certain that our present ramshackle heritage is costing far too much to keep up; and that if we were to spend for the next ten years not £22m. p.a. as at present, but £75m., as this B.M.A. report suggests, it will be cheaper in the end.

* Published in the *British Medical Journal*, April 4, 1959

ARNE NOUVEAU

So Arne Jacobsen *has* been appointed architect to St. Catherine's College, Oxford. It seems that Alan Bullock and the other people concerned knew what they wanted (they had, after all, searched hard—both at home and abroad) and were not to be swayed in their judgement. Good for them. But, as I've said before, I think they have made the wrong choice by seeking a great individual monument instead of trying to create a pattern for university buildings. However, as Mr. Jacobsen is doing the job (with the help of Philip Dowson, an architect associate of engineer Ove Arup) I hope he won't be overawed by the university city, but that he will produce a straightforward building of the kind he might design for Denmark—even if he has to import Danish craftsmen to build it.

GOOD NEWS FOR HEALTHY ARCHITECTS

As the AJ reported last week, Corb's Villa Savoye is to be saved from destruction. This, according to *Figaro*, may mean that other important French buildings will be classified and protected even during the lifetime of their architects. Until now the genius who died young has had a better chance of immortality through his work than the genius who lived to a ripe old age.

THE BLAND LEADING THE BLAND

The Depwade case has been lost, as

you will see from the correspondence columns. Professional bodies seem powerless when faced with the bland ignorance of county councillors. What a pity it is that the architect's advocates couldn't be given facts about the costs (in the AJ analysis style) and the design details of similar buildings. This is the sort of case where the RIBA's abandoned scheme for a photographic building record would have been useful.

A THOUGHT FOR THE WEEK

Talking of the RIBA, what do you think of this?—"the RIBA constitutes the best architects' organization that exists in the world today, and its evolution can suggest methods of value for other countries as well." These are the words of Bruno Zevi in an editorial in the forty-first edition of *L'Architettura*. Perhaps distance lends enchantment, because Italy has no national institute of equivalent standing for architects. Nor has it a code of professional conduct—though before you pack that bag let me point out that it *does* have æsthetic control, vested in local authorities, of a kind that's getting bigger every day. But this outside opinion ought to make us a little less disenchanted in our views of an organization we should be fairly thankful for.

The Tudorbethan building in Swansea. See 'Planning No. 105'.

PLANNING NO. 105

The Tudorbethan building on this page screams for itself. It has been put up, in Swansea, by Sidney Heath, who says: "I could have retired from business some years ago and instead of spending my money on our new premises I could have enjoyed myself by going on luxury cruises, trips to the Continent, visiting winter sports and a hundred and one other pleasures." This is his defence against Swansea's anti-uglies (from the local art college and the university college) who threatened to observe a minute's silence outside it "for the passing of good architecture." I gather that the anti-uglies did demonstrate, but it was sad to see that one of them apologized to the *Western Mail* and even sadder that that newspaper carried a long article in defence of traditional styles. "A half-timbered petrol station," says the writer, "is not appropriate; it is an absurdity. But so far as I can see, a hosier's shop is as appropriate in the Tudor style as in any other, and there is nothing inappropriate about an insurance office in the Georgian style."

NORTHERN NEW TOWNS

In a recent visit to Peterlee and Newton Aycliffe, ASTRAGAL found these new towns almost undistinguishable from their southern equivalents. The only differences are that details and construction are slightly worse—and Newton Aycliffe has the ugliest, most sprawling and unkempt industrial estate of any New Town. It is, in fact, a hangover of the Ministry of Supply's munitions factories. Both towns have so-called centres which are nothing more than suburban shopping parades set in an empty wilderness. It is pathetic that towns like this should be built near such magnificent examples of urbanity as Durham, York and the seventeenth-century model village of Blanchland. Not far away, at Middlesbrough, ASTRAGAL looked for some signs of the fifteen-year-old plan by Max Lock. There was not much new to be seen in this large industrial town (population 150,000), but the two-storey, cross-wall flats built in parallel position makes one wonder why the dreary, uniform height of the town must be maintained in new building.

NEUTRAL ARCHITECTS?

When Richard Neutra did a recent hasty tour of buildings in this country (no comment for Herts schools, a "good" for the Festival Hall and a "better than Germany" for Golden Lane) he gave an unusual opinion about the supervision of construction. He doesn't think this is the architect's job at all. He thinks, in fact, that such an arrangement undermines the responsibility of the contractor, who should be given a specification and contract which will enable him to go ahead with a clear knowledge of what to do. This is a good point in favour of the case for contractors being professional men.

WHERE IS SIR ALBERT'S MEMORIAL?

Where is the tomb of the mother-in-law of Mary Queen of Scots? That question is the sort of thing would-be guide lecturers in London find in examination papers set by the British Travel and Holidays Association. They also have to know about architecture. Although they don't apparently have to know who designed St. Pauls (though they must know the internal measurements) they are expected to list the designers of St. Pancras Station, the Victoria Embankment, the Port of London Authority building and the Old Admiralty building. I suppose correct answers to these questions imply a knowledge of the architects for other historic buildings, such as the Houses of Parliament. But shouldn't there be a question to test knowledge of modern buildings? I have two suggestions. (1) What is that enormous hole in the ground on the South Bank? (2) Who designed the Festival Hall?

FRANK LLOYD WRIGHT

It was uncanny and very touching to see Frank Lloyd Wright, four days after his death was reported, talking in a filmed interview on *Monitor*. This condensed version of a NBC programme was remarkably good—it in-

cluded remarks about most aspects of Wright's work—and the great man came over in a way that will have made many people aware of the magic of his personality, a magic which, in Huw Wheldon's words, made him a legend in his own lifetime. An appreciation is published on page 571.

UNIONS ON THE MOVE

There is to be a special conference of building operatives at the end of the month. The trades union executives are meeting to discuss the effect of new building techniques, and an interesting introductory article on the subject appears in this month's issue of the *National Builder*. Masonry, bricklaying and plastering are but three of the trades which have seen, or are seeing, the red light. And the quickly-trained operative of the specialist subcontractor may threaten all or any craftsmen. The article states that the unions want to establish a policy through which they can influence events, rather than to have to run after each problem as it arises.

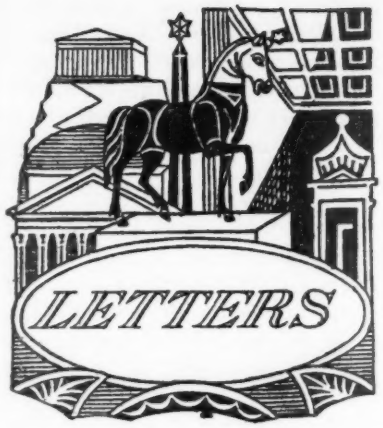
*

One sympathizes, but how difficult it is when divorced from research, design or managerial implementation to take the lead. What a pity there are not closer relationships between designers and constructors, and not quite so many middlemen in the form of boss architects, boss builders, salesmen and quantity surveyors. Nevertheless the unions have a reputation, perhaps unjustly earned, for enormous conservatism. A lot would be achieved if the unions would produce evidence to refute this charge.

*

Incidentally the author of the article referred rather disparagingly to architects "drawing heavily on the capital of past prestige," "contracting out" from the ferment of interests which flows from technical change, seldom occupied with industrial politics . . . their approach . . . cavalier and . . . adolescent. The poor chap obviously meets the same architects ASTRAGAL is always complaining about. But there are one or two others—a thin red line—who have saved this country's architectural bacon, so to speak, with schools and housing. Did these buildings mean nothing to the men who built them?

ASTRAGAL



J. F. Souhami, Director, Stramit Boards, Ltd.

Raymond Moxley, A.R.I.B.A.

"Altera" (one of the two)

Gaston Gottier, A.R.I.B.A.

"Undecided," A.R.I.B.A.

Dinerman Davison and Hillman, A/A.R.I.B.A.

Information for the Architect

SIR: Your first article in this series has appealed to us as interesting and extremely well presented.

As one of our Directors is both Scandinavian and a serving member on the British Standards Institution we decided over a year ago to standardize our literature on the continental "A" series of paper size. If any of the manufacturing firms amongst your readers decide to follow suit, we would ask you to draw their attention to the following pitfalls:

1. Costs will be greatly increased as none of the British paper makers appear to produce paper which cuts readily and economically into this size.
2. Envelopes produced by the majority of manufacturers will not easily take this size; and it is therefore difficult to obtain competitive prices.
3. It is virtually impossible to obtain window envelopes with the openings in the correct place.

As far as we can determine from discussions with various printing firms, most of them not only do not know about the "A" sizes, they do not want to know. It is only our pioneer spirit, plus a willingness to absorb inflated costs, for the sake of an ideal, which has enabled us to get our first supply of brochures of this size off the press.

J. F. SOUHAMI

Uxbridge

SIR: Dargan Bullivant's recent article, "The Problem of Information before the Architectural Profession and the Building Industry," is most interesting and stimulating and I am very much looking forward to his following articles.

He mentions the lack of regional information centres. I would just like to mention that we at the Bristol Building Centre are providing a library and information centre which is coping with an average of two hundred questions a week from architects, surveyors, builders and owners. This number is steadily growing. We have quite a reasonable collection of textbooks and over five thousand sections of trade literature. What an enormous help it would be if we could persuade manufacturers to produce literature to British Standards recommendations and also to persuade them to present literature in a way more suited to the profession.

RAYMOND MOXLEY

Bristol

Depwade Town Hall

SIR: The cautionary tale of the Depwade Rural District Council's decision to place the design of its new offices in the hands of its Engineer and Surveyor, and the subsequent unfolding of the scheme, prompts one or two burning questions from one who saw most of the game from the inside.

The two who pleaded originally for the employment of an architect incurred much odium from those who argued mainly on personal grounds, and we were also ridiculed for upholding the principle that a functional building can still be beautiful, and that an architect is the best person to produce it. Can it be; then, that the claims of functionalism as an extreme point of view are not yet dead, and if so, what are architectural bodies doing to prove that practical and aesthetic principles need not always be at loggerheads?

Months have passed by, and the busy Engineer has produced no less than six plans, all variations of a similar theme, until a single-storey plan has been approved by the Design Sub-Committee which had been giving him guidance on every point including principles of movable partitions, pitch of roof and so on, by a majority of four to two. The last-mentioned protagonists had remained on the sub-committee hoping their fears would be groundless and that loyalty would not be strained too far. In fact most of their suggestions were incorporated, in the process of parturition, but in spite of repeated requests, their desire to see an elevation, orientation and a properly-surveyed site-plan was never met and the logical order of designing never followed. Ultimately, three elevations were shown to the sub-committee half an hour before the meeting of the Council, and the renegades' refusal to make this split-second decision was denounced as obstructive. Why is the public, as seen in this instance, so ignorant of the normal procedures, and why are those who care about the normal process of creating an integrated design, seen to be the villains of the piece?

The main cause for concern appears to be the fact that those who in this case might have been expected to feel strongly on the score of the aesthetic responsibility of erecting a civic building in a rural area, preferred to go to the opposite extreme of alleged

cheapness and practical needs. It cannot be placed only to the stout determination of the East Anglian to "do different." The outnumbered protagonists of the architectural profession were conscious throughout of the difficulty of defending the intangible truth that in some inexplicable way, a building that succeeds in its practical aims can also be aesthetically pleasing, if all its aspects are considered in a logical relationship, rather than after months of playing with a jig-saw puzzle ground-plan.

To whom can those in a similar plight turn for help? Where are available photographs, cost analyses, etc., of similar projects? The profession must not be too timid in advocating its case, even in the face of accusations of "touting." Here, kindly letters from the Civic Trust, The Royal Fine Arts Commission, the local Architects' Association were read expressing interest, but few Councillors had heard of these bodies, and the Councillor who moved that the letters be left on the table "where they deserve to be" earned thunderous applause and a place on the design sub-committee. How can this ignorance be counter-acted?

ALTERA (one of the two)

Norfolk.

Restricting Entry

SIR: In introducing the new educational requirements for entry into architectural schools Mr. Sheppard hopes that one of the consequences of these new standards will be the possibility of reducing the duration of the course in architecture from five years to four years. I cannot conceive of a more facile or dangerous policy. The educational attainments of a student in a secondary or grammar school are in my experience as a teacher no indication of his ability as an architect. If the RIBA wish to ensure higher standards of ability in its student members, the objective should be directed to the other end of the school training course, *i.e.*, the Final Examination, which in both the Recognized Schools (including the University Schools) of the External Examination of the RIBA falls at far too low a level in all subjects including design in the greater majority of cases.

By all means let us try to restrict entry into the profession, but let it be by increasing the qualification standards at Certificate and Diploma or Degree level rather than at Probationer level.

GASTON GOTTIER

Edinburgh

Life in Africa

SIR: I have been offered an opportunity for service abroad in East Africa for a period of 2-4 years. I have no desire to live there permanently and would prefer to bring up my family in England.

Fellow architects have warned me that if I accept the above offer my prospects of employment on return to England will be poor. Future employers will not be interested in my experience abroad and will assume that I have lost touch with the English practice, and the salary offered will be low. I am 29 years of age and after a hard struggle now earn just over £1,000 per annum.

There must be many architects who have been faced with a similar problem, and I will be grateful to anyone who is prepared to write to me (c/o Editor, the AJ) and offer the benefit of his advice or experience.

"UNDECIDED," A.R.I.B.A.

Flat and Pitched Rejected

SIR: Recently we submitted to the Hendon Council application for the erection of seven terrace houses. To give a more interesting treatment to the elevation we proposed alternating flat and pitched roofs. The Middlesex County Council refused the application giving the following reason:

"The elevational treatment of the houses would be unsatisfactory owing to the use of alternate flat and pitch roofs which would give an impression of *monotony* and would be out of harmony with the existing development in Uphill Road."

No further comment . . . .

DINERMAN DAVISON & HILLMAN

Hampstead

DIARY

Engineering, Marine, Welding and Nuclear Energy Exhibition. At Olympia.

APRIL 16 TO 30

Compensation and Betterment. Talk by J. D. Trustram Eve at the Ordinary General Meeting of the RICS Junior Organization, 12, Great George Street, S.W.1. 6.15 p.m.

APRIL 16

Problems and Principles of Timber Usage. Weekend Course convened by the Midland Wood Society at Attingham Park, Shrewsbury, Shropshire. (Persons interested should apply to the Warden, Attingham Park.)

APRIL 17 TO 19

Sanitation Within Buildings. Talk by J. Clancey and A. J. M. Tolhurst, at the RIBA, 66, Portland Place, W.1. 6 p.m.

APRIL 21

New Techniques in the Building Industry. NFBTO Conference at Maritime House, Old Town, Clapham Common.

APRIL 22 TO 24

Town and Country Planning Association AGM. At the Planning Centre, 28, King Street, Covent Garden, W.C.2. 2.30 p.m.

APRIL 22

The Engineering Aspects of the Development of Gatwick Airport. Talk by F. S. Snow and E. V. Finn at the ISE, 11, Upper Belgrave Street, S.W.1. 6 p.m.

APRIL 23

Men and the Landscape. ILA Symposium at the RIBA, 66, Portland Place, W.1. Speakers include Edward Hyams and H. F. Clark. 6.15 p.m. APRIL 23

The Incorporated Association of Architects and Surveyors AGM. At 29, Belgrave Square, London, S.W.1. 10.30 a.m.

APRIL 25

WAR OFFICE

A Reorganization

Architects and quantity surveyors at the War Office are to be organized on a team system. This was the main theme of a talk given to his senior staff last week by the new Chief Quantity Surveyor, James Nisbet (formerly principal quantity surveyor at the MOE). Each of the teams, which will correspond closely to similar architects' teams, will number about eight men, operating as a complete professional office, doing all parts of the work—estimating, preparing bills, certificates and final accounts. There will also be collection and study of cost data, experiment with new types of bill and opportunities for the development of punched card methods.

James Nisbet said that the quantity surveyors should not regard themselves as "policemen" restricting the way money was to be spent or as "undertakers" rescuing contracts that had got into difficulty. In the past there had been no real yardsticks on which to plan and budget building expenditure. The surveyors would work closely with the architects, provide cost guidance on questions of value for money and work out firm yardsticks so that public money was wisely spent and the Treasury satisfied. He emphasized that the chains of command were short and that information and ideas should flow both ways along them; initiative would be encouraged, and all members of staff should know what the rest of the department was doing.

Under the chief q.s. there will be three superintending surveyors—for development work and administration; for home works and for overseas works, each of whom will direct a number of teams. Work loads for each team will probably be calculated on the basis that their combined salary equals 50 per cent of the normal scale fee. This means broadly an annual turnover of £0·66 million per team. The total of what are called by the War Office Part I works (large new projects) is expected to be worth £11·5 million a year. In the immediate future there will be a total of 78 quantity surveying staff, growing to an eventual establishment of 135 (home and abroad).

by W. D. Pile

The striking advances in post-war school design owe a great deal to the Architects and Building Branch of the Ministry of Education, of which W. D. Pile is joint head. Mr. Pile's ideas on architecture and architects, which we publish below, are summarized from a paper on "The State as Client" made to the BASA conference at Cambridge. Mr. Pile uses the term "state" to include both Whitehall and local government, and at the end of his talk to mean not only the state organization but also the society which architecture serves.

The State as Client

The characteristics of state building are: (1) its division into large homogeneous classes of work, such as houses, schools or hospitals and (2) a permanent group of officials in charge of each division. While this ought to mean that the client is utterly clear about what he wants, about the means, about how long the job is to take and how much he can afford, I fear that this is very rarely achieved in practice. But things are changing, and the most urgent need is that we should grasp this opportunity.

Everything we have tried to do at the MOE has been directed towards merging the architect, the client, the quantity surveyor, the builder and the user into one organism with a uniform thought process. Do not confuse this with co-ordination, team spirit, consultation; these are totem poles to which far too much blind and useless lip service has been paid. What I mean is rather a technical, professional and emotional polygamy; the relation is essentially an incestuous one, and takes a great deal of hard work to achieve.

I do not want to psycho-analyse the architect, but there are seven characteristics that I, as a client, would like to see in the architect:

1. The ability to make as well as to follow policy. There is no place in this dynamic organization that the state needs for the slave. Each of the architects must be ready at the top flights to make policy, that is to influence the direction in which people should move.
2. A perpetual discontent with the *status quo*, a revolutionary desire (non-violent, I

hasten to add) to change the order of things. I think that has got to be in the belly of every architect who is going to form part of the organism that I would like to see.

3. You can make policy if you have that fire in your belly, but to be responsible that revolutionary feeling must be guided by some systematic and scientific methodology. The architect must have the social scientist's interest in the social policies that generate the need for buildings. He must have a profound affection for the subject: if he is designing a school he must be deeply interested in the process of education—I don't mean a passing acquaintance with the subject, but something approaching an expert knowledge of it and of the latest developments in it.

4. I don't want architects with an over-riding specialism. I want all-round architectural performance, biased only towards design ability or construction ability, qualified if you like with a scholarly mastery of one subsidiary aspect of architecture—e.g. colour, lighting, furniture.

5. He must have a belief in what I call the non-hierarchical organization of work. The work has got to be organized not on the star system but on the repertory system. The team leader may often be junior to a team member. That will only be accepted if it's commonly accepted that primacy lies with the best idea and not with the senior man. Nothing must stand in the way of that. The best ideas must be given a trial, and in the end good ideas drive out bad ideas. So this man has to be a democrat.

6. He has got to be a businesslike character. I don't want any prima donnas or little Corbs. He has to have a prudent business acumen. Too many subjects are lightly dismissed as not part of the architect's job—the structure of the building industry, contractual arrangements, productivity, output and the programme of site operations are all fundamental to the act of building for the state.

7. The ultimate disciplines in this chap's mind have got to be "cost control" and value for money. But remember that under my first point the architect will be making those cost limits and establishing that value for money.

What is the function of the architect? In my view building as an activity must express the State as such (or as society, if you like) and the state of man. Furneaux Jordan recently wrote that architecture today is an expression not of aesthetic values but of economic power. I agree, but would go further. Building seems to me to be one of fundamental expressions of the essential extroversion of the human being. When all the moods, doubts, arguments and introspection are over, rational man expresses himself in extrovert action basically in three ways—by building things, making things and growing things—shelter, tools and food. Building is probably the most instinctual and powerful of these. Economic power is clearly a significant motor force leading to extrovert action, and building cannot help but be shaped by it. But there are other dynamics which impel to action—not only economic power but also, for example, willpower, anger, ambition or compassion. Building as an expression of extrovert action must be an expression of all such things as these.

The great pathetic fallacy of the school which says that architecture is an expression of aesthetic values is that the architect thinks it is an expression of his own willpower or anger or ambition or compassion. But it must be an expression of the State's (or society's) willpower, anger, ambition or compassion, and of its economic power. Thus building is an expression of the State as it is and as it will be and of the state of man as it is and as it will be. The job of you as architects and of me as client is to ascertain what those states are and in what direction they are moving.

A correspondent reports on the British Architectural Students' Association conference on "The Function of the Architect in Society," held on April 4-5 at Trinity College, Cambridge. The conference brought together students, architects, developers and industrialists and, despite some weaknesses, was a stimulating and well-run meeting. The RIBA and the Civic Trust each paid £100 towards the cost.

BASA CONFERENCE, CAMBRIDGE

The Function of the Architect in Society

A roll-call showed that those present included students from every part of the country (there was even one enthusiast from Belgium), a small but very vocal contingent of Anti-Ugly art students, a fair number of architects, and a sprinkling of clients, developers and industrialists.

State as Client

Jeremy Mackay-Lewis, the President of BASA, was in the chair, and Professor Sir Leslie Martin welcomed the conference to Cambridge. Percy Johnson-Marshall's opening speech tried hard to direct the students' eyes to the society of the future, in which there would be new kinds of cities to plan because tomorrow's clients would not tolerate the semi-twilight state of living we had to put up with at present, but the conference arrangements kept all eyes glued pretty firmly to the *status quo*. W. D. Pile (whose speech is reported fully on page 578) then spoke on "State as Client," and Stirratt Johnson-Marshall (deputizing for Professor Robert Matthew) made two points in reply. The first was to emphasize the change represented by Pile's paper (ten years ago his predecessor would have regarded his function as control and policework, not patronage), and second to say that it depended on the students' generation whether this break-through by a new patronage would be a colossal success or would peter out

There were three different kinds of response to Pile's paper. One was the architects' reaction that Pile was untypical of the state (a reaction expressed by Leonard Manasseh and Eric Lyons). Another was the reaction of an AA student, Julian Mostowe, who did not share the idea that the MOE was leading to great things, and charged Pile with having left out the most important thing—the architect's function as a creative artist. Pile replied that while, formally, Mostowe was right, he had consciously avoided this question of the creative artist because the architect, if he had the seven attributes he had mentioned, *would* create. The third reaction was typified by Henry Swain, of the Notts "rock 'n roll" team who insisted that the MOE "has got this one right," and said that the danger was that there might not be enough architects with ideas and ability to carry the work through.

Industry as Client

A. Hudson Davies, a director of Pilkingtons, gave the views of a forthright industrialist on "Industry As Client," presenting an alarming picture of the industrial client's mental image of the architect as a man more concerned with Architecture than with his industrial requirements or costs. Industry, he emphasized, could manage with shacks and could knock up designs in its own drawing offices. To use an architect would cost 15 per cent. more for fees and better quality, but as that would add only about ½ of one per cent. to yearly costs it was not, he thought, a very significant figure. Nor did it take into account what the architect might save on a really difficult problem, or the value of extra seemliness. His advice to students on how to win friends and influence people in industry was to study industrial requirements, manage the job well, master cost planning, study maintenance costs, realize that anything may happen to the building after five years and concentrate on laying down the bones and tidying up the details. "You are batting on a wonderful wicket with industry," he said, "if you only know your job."

Grenfell Baines, who replied, after some reminiscences about his own experiences with design unconscious clients, advised the students not to imagine that the fair flower of their poetry was going to wilt through being brought into contact with some of the hard facts of business life, to find their inspiration in their clients' programme, to design *with* him and not to impose æsthetic and structural ideas on him, to master building construction and costs.

Package Deals

There was no more than a minute or two to discuss the industrial client before the conference was taken for the first of three excursions into the Utopia (as the speakers would no doubt have it) or the Underworld (as most of the architects clearly regarded it) of the package deal in its various forms. A. H. Anderson, an accountant who has formed his own building company, gave an interesting account both of the backwardness of the building industry and of his own variant of the package deal which he described as the "comprehensive service." In this service, unlike the All-In Service (where the builder controls the architect), the architect is appointed by the client, and in turn appoints the builder (Mr. Anderson's comprehensive building service), who "becomes a member of the architect's staff, at whose disposal he places his specialist knowledge and experience of his own product." Mr. Anderson saw his service as a means by which the architect, without climbing on the All-In bandwaggon, could retain his status and integrity while himself offering an All-In Service to the client.

Eric Lyons, who replied, lived up to his own description of the conference as a variety show by contributing a good turn, in which he took a knock at a good many people and institutions from the *Manchester Guardian* and planning control to the Ministries. He saw the architect's responsibility and influence being lowered by the establishment of specialists who did part of his work for him, and thought the idea of the architect as an equal member of a team of specialists employed by a firm of commercial developers was even more dangerous: profit would be the objective and architecture irrelevant. Architecture could not be produced by a team of experts with the architect in the middle because the architect was the only one who cared what the building looked like. So the technicians must be selected by him and, above all, directed by him. The package deal would only be challenged by the effectiveness of the architects themselves, but if they were not careful architecture would be sunk without trace. He wound up with a programme of reforms: there should be a qualification for Building Technicians, the object of the building industry should be to create architecture and not just to make money, architects should be barred by the RIBA from working as hack assistants to borough engineers and surveyors, and the competition system should be reformed.

Discussion Groups

At the end of the Saturday afternoon session, Professor Sir Leslie Martin outlined a framework for discussion in the discussion groups which met on Saturday evening and again on Sunday morning. There were four groups, on the State as Client, the Industrial Client, the Developer as Client and the Private Client, and each group was asked to answer a number of questions under three separate headings into which Sir Leslie Martin divided the architect's work: Research (getting the facts), Design and Production. It was suggested that students might report from each group, though the chairman doubted whether students would be able to do this.

On Sunday morning, when the conference reassembled, the students had already met separately and rebelled against the domination of the conference by their seniors, and against the framework suggested for their discussions. Mr. Mackay-Lewis announced that the discussion groups would meet without the architects, and said in an explanation that the framework for the discussion groups did not help to give the answer to the problem of the architect's function in

society, because the students didn't know very much about the requirements of each division, while the architects were holding forth from years of experience.

Before the discussion groups reported, however, the conference heard two more papers: N. C. Baker, of Taylor Woodrow Construction, advanced the familiar arguments in favour of the All-In Service. Mr. Welch, of CAS Developments Ltd., on "The Developer as Client" insisted that the developer should employ independent architects, and said that his firm always did so—an assertion that did not prevent later speakers from voicing their suspicions that the architects must in fact be "tame" rather than "independent." He strongly criticized the architect's belief that he was competent to undertake any job in the architectural field, and suggested that a "functionally qualified architect" should carry through the design stage in conjunction with an experienced commercial man as his consultant, the roles being reversed at the building stage when the commercial man should take executive charge of the job, with the architect acting as consultant to him.

Students' Reports

John Outram's report from the "State as Client" group said that the position of the architect in state employment was very favourable, but he wanted architects to be trained to understand the problems of the planners, whose economic and other decisions conditioned his work, so that architects would be consulted as policy-makers. The architect should be educated in the social sciences because the architect alone could create cities and towns for human activities rather than for the machines with which the industrial developers seemed to be concerned. This group also questioned whether the architect was preventing good ideas from being carried out by clinging to his professional positions. Similar conclusions were reached by the group on "Developer As Client," which suggested that architects should publicise themselves, raise the standard of visual awareness in the schools and instil knowledge of good design into the public, and improve their own efficiency.

The students in the "Industry as Client" group were unanimous in opposing specialization during the architect's training: his specialization was design, and they wondered whether industry could employ design groups that would include students who should have contacts with industry from the earliest stage.

The report from the students in the group on "The Private Client" stressed the dissatisfaction of the private client, and suggested that architects must probably stop being professional men and take over the package deal.

The Discussion

In the discussion Frank Walker (student) protested that while Mr. Pile had urged architects to change the *status quo* all they had heard about was the *status quo*, and he asked whether they were to be educated for this or for the future? Kenneth Baynes, of Anti-Ugly, complained that the conference had been discussing clients but not society, sounded a sturdy liberal warning about the state's threat to freedom, praised the architect as a visionary, administered "a very severe raspberry" to the spec builders, and urged the architects to show humility to society but none to the client—sentiments which, it need hardly be said, brought the house down.

Then up stood Julian Mustowe to deplore "all that stuff about pipes and drains." Behind Pile's rosy picture of state patronage he saw a dead hand on architecture threatening to land us with miles of Herts schools, which worked but were dismal as space or sculpture. The most difficult client of all was the man who had seen the Herts schools and been armed with a phoney economism and science, said Mr. Mustowe, who concluded with a fine peroration on the need for students to preserve some very precious values, which nobody else cared about.

A Brighton student, who said that he had come to the conference completely innocent, but was no longer innocent, resented a remark by Mr. Mustowe that the young blood of the profession was flat. He saw the function of the architect as being to make the world a better place for the people to live in. A Glasgow student thought Mr. Mustowe's contribution was "sheer arrogance" and stressed the need for architect town planners to organize the state building programme. Another student, Alex Flinders, insisted that architects had a responsibility not only to building owners but to the 49 million members of society who would never be clients, but had to use and look at the buildings. Grenfell Baines retorted that architects had to rely on clients for architecture, and that clients were part of society, and referred more in sorrow than in anger to the gap that had opened up between students and architects. The chairman rebuked Mr. Baines for referring to architects and students as "we" and "you," and a student chipped in with the tactful suggestion that the difference arose from the fact that the students noticed changes that the architect who was "pickled" in the system hadn't. Henry Swain tried to restore harmony with the dictum "we are all students here." He asked for more opportunities for the younger architects at least to meet students and talk with them as equals.

The conference ended with an hour's debate on the All-In Service. This resulted from a meeting of the architect members of the conference, who resented the overweighting of the platform with speakers for the various package deals. Grenfell Baines suggested that the answer to the All-In Service involved the RIBA releasing architects from some outworn professional ideas, the education of the public, and the provision of an all-in design service led, if possible, by architects, backed by all-in fees. There followed a heated discussion which was finally brought to an end when James Nisbet poured some oil on the troubled waters by pointing out that the conflict between architects and the All-In Service and between architects and society would disappear if architects could assure their clients on cost and time. Society, he said, saw architecture as the Seagram building which cost £28 a sq. ft., King's Chapel or St. Paul's—exceptional buildings which were expensive and took a long time to build. Society wanted architecture—but within the cost and the time it could allow.

Dr. Mellanby, former Principal of the University of Ibadan, Nigeria, now head of the Department of Entomology at Rothamsted Research Station, recently wrote an article "The Case Against The Architect" in The Spectator, *in which he accused architects of having scant regard for efficiency or economy. He gives here his comments on the BASA conference.*

A CRITICAL LAYMAN AT THE BASA CONFERENCE

by Frank Mellanby, C.B.E., SC.D.

I am most grateful to Mr. Jeremy Mackay-Lewis for inviting me to attend the conference, and to take part in the discussions. I learned a great deal about architects, their ideals and their problems. I was relieved to find that when they get together architects can be even more violently critical of each other than I as an outsider would dare to be!

To the non-architect, the most interesting phenomenon was the revolution by the students on the second day. It will no doubt brand me as stuffy and middle-aged if I say that all the points about being creative artists made by the angriest of the young men were all made equally angrily 30 years ago by the middle-aged and successful architects who today form the "establishment." I think that it is right and encouraging that young architects feel so strongly, and I

hope their anger may have some result. But I doubt whether it will. Artists are very rare —would anyone deny that of the many competent journeymen painters who come out of our art schools every year, it is unlikely that more than one in a hundred thousand will become a great artist?

Unless architecture is a much easier art than painting (and I should expect it to be more difficult) we shall be lucky if we produce one real artist in a generation. From him the community must take what he is prepared to give. But from the 199,999 others the client has every right to expect at least competence, a knowledge of the drains, economy and a businesslike approach to the subject, as well as as much "art" as the honest journeyman can achieve. I feel that often the journeyman is not honest, and he is only trying (honestly perhaps) to be an artist.

I was glad to find that architects of experience attach as much importance as I do to the desirability of being really competent in practical matters, even if this point seemed to anger some of the students. If clients had to deal with the sort of super-architect visualized by Mr. Grenfell Baines they would be happier men. Personally I found developments like the "all-in service" most encouraging. In my experience architects simply do not make use of the skill and technical know-how of contractors. I am sure that an architect with guts and ideas could become the dominant person in such a team, and he would become a better architect into the bargain. The same result could perhaps be achieved by changing the curriculum for students, but as was said several times we are all students all our lives, and I would like to see architects taught to learn in this way without getting all hoity-toity about it.

"Expensive Luxury"

My fundamental criticism in the past has been that for certain purposes architects seem to be an expensive luxury. I know that I can build a laboratory which is a convenient place to work in for less than half the cost of that built by an architect, and his laboratory may well be the worse place for working in. If anyone denies this, I can give him the figures. When I say these things it is not because I like the "hair shirt" of working in an ugly building. I don't, but I know that good scientific work can come out of one, and that bad work can come out of the architect's dream palace. The most encouraging thing I heard at Cambridge was the remark "Architects must reorganize building so as to put the jerry-builder out of business." I think—as the ARCHITECTS' JOURNAL would seem to think also—that an architect-planned building ought not only to be better in every way, but it should also be cheaper. If the students of today could learn this lesson they might make a better world. Many of their elders have not learned it yet!

Nevertheless it was enjoyable to hear all this talk about art for art's sake once again. Were I an industrial client I should enjoy hearing it also, and would hope that those who talked it got plenty of good contracts —from my competitors!

The Council of the RIBA at its meeting on April 7 approved four recommendations of the Constitutional Committee. These broadly affirm the Committee's earlier recommendations that the Council should consist of members elected by ballot, some nationally and some regionally. They also provide for automatic membership of all members and students in the Allied Societies, and the financing of the Allied Societies by a block grant instead of a per capita grant. The recommendations involve amendments to the byelaws which will have to be approved by two successive general meetings. Further recommendations by the Constitutional Committee come before the Council in May. The Committee's report is given here, and followed by the RIBA Council's statement.

RIBA CONSTITUTIONAL COMMITTEE

Final Report on Elections and Allied Societies

Since our first "Interim Provisional Report" to the Council in November, 1958, we have reviewed our earlier recommendations in the light of comments made at the Special General Meeting, written comments received from the Allied Societies, as well as contributions received separately from Chapters and Branches and individual members.

We now recommend the Council to approve the following measures in principle:

Part I. Recommendations

Recommendation 1

That members of Council should be elected by postal ballot, in part nationally by the general body of members at home and overseas, and in part regionally through the Allied Societies in the United Kingdom.

Recommendation 2

(*a*) That the Council should consist of 63 elected members, comprising 30 nationally elected, 27 regionally elected from England and Wales, four from Scotland, one from Northern Ireland and one from the Republic of Ireland.

(*b*) That each elected representative should serve for three years (with a maximum of six as at present).

(*c*) That, in the case of nationally elected members, one-third should retire each year giving rise to an annual election of 10 members.

(*d*) That, so far as regional voting is concerned, England and Wales should be divided for voting purposes into three main regions, or groups of Allied Societies (see Appendix A), each region having nine representatives; That each of these three groups should elect its nine representatives every third year, giving rise to one regional election annually from each region in turn; and that in every case Allied Society members should vote only for candidates in their own "constituency" (each "constituency" to consist of an Allied Society area, or, in the case of certain larger Societies, one or more Chapters within the Society's area).

(*e*) That the national and regional elections should be held at the same time each year, and organized from Portland Place.

(*f*) That national nominations should be made by the RIBA Council, or by any seven individual members as at present. Regional nominations should be made by the Allied Societies' Councils, or by any seven individual members in the appropriate area. Voting, and the right of nomination, to be restricted to corporate members of the RIBA.

(*g*) That the method of appointment of representatives from Scotland and Ireland should be determined after further discussion with representatives of the organizations concerned.

That copies of the report be sent to the RIAS, the RSUA and the RIAI, with a request to consider the principles enunciated in regard to methods of election; and that they be informed of the Council's hope that they can consider some method of electing their representatives by postal ballot.

Recommendation 3

That membership of the appropriate Allied Society should be automatic on membership of the RIBA. Students, RIBA should also be automatically members, in the appropriate classes, of the Allied Societies. Probationers, RIBA may be enrolled with Allied Societies on payment of a local subscription, if required.

(The position in Scotland and Ireland to be decided later after further reference to the organizations concerned.)

Recommendation 4

(*a*) That finance allocated from headquarters to the Allied Societies should be

in the form of annual block grants (subject to triennial review), in lieu of the presents *per capita* rebates.

(*b*) That those Allied Societies who wish, continue to raise funds locally, but such additional financial contributions to be on a voluntary basis so far as RIBA members are concerned.

(*c*) That the Allied Societies, if they wish, should continue to elect to local membership non-members of the RIBA on payment of local subscriptions. Such local members not to have voting rights in RIBA elections.

(*d*) That the case for the formation of a new Allied Society to cover the London and Middlesex area does not appear to have widespread support, and that no further action on this account be taken.

Part II. Explanation and comment by the committee

Recommendations 1 *to* 4

These recommendations should be considered together. While there is certainly room for variation in the detailed provisions outlined in recommendations 2 and 4, the principles stated in recommendations 1 and 2—basing the regional elections on the Allied Societies, and automatic membership of the Societies—are fundamentally interdependent.

These principles were approved by a large majority, both of Allied Societies and of members attending the Special General Meeting. Certain of the larger Societies, however, who have their own local subscriptions, added the rider that they would be opposed to the scheme if, as a result of its operation, they were financially worse off. We feel that this is not a problem which can be determined in isolation. The present position whereby financial rebates are paid out from headquarters to Societies containing only a minority of local RIBA members is also unsatisfactory. Similarly, a number of chapters of certain Societies complain that they receive an inadequate share of the moneys paid to the main Societies.

We have, as one of our terms of reference, to review the whole question of the structure and the finances of the Allied Societies, as well as some boundary delimitation questions. Given good will, and accepting the automatic enrolment of all RIBA members in the Allied Societies, as well as the flexibility of the block grant system of financial allocations to them, we feel that solutions to local financial difficulties can be achieved which will be fair to all. These problems will, however, take some time to sort out, and will require detailed individual consultations with the local Societies, who will, of course, have the main say in the distribution of funds within their own areas. The idea of the block grant system in lieu of the *per capita* rebate system, has the support of the Finance Committee, on the grounds that the administrative procedure involved in obtaining and checking the Allied Societies' annual lists, for the purpose of assessing the rebates due, is extremely onerous and wasteful of staff time and energy at both headquarters and the Allied Society.

The block grant system will have the additional advantage that both RIBA headquarters and the local Society will know in advance the amount of the annual grant due. This will simplify the preparation of budgets.

These grants would be regarded as a basic allowance to cover minimum secretarial and organizational expenses, taking into account the volume and scale of local activities. Societies in the Home Counties area, a number of whose members live sufficiently close to London to take advantage of activities organized at Portland Place, would have a relatively lower rate of grant in this respect.

After reference to the Finance Committee, we have worked out within the general financial context that the global sum available for allocation to the Allied Societies will not be less, but may not be substantially more, than at present. However, we have noted the creation of the Development Fund as a basis for expanding the work and activities of the RIBA throughout the country. While this Fund should obviously not be used for routine expenditure, it could be regarded as a possible source of financial backing for a particular Society, wishing to undertake, with the approval of Council, some important new local activity, exhibition or campaign, in the general interests of the profession and of architecture.

In regard to recommendations 1 and 2, before arriving at our final views, we considered at some length, and rejected, a proposal that members of the RIBA should be allocated to the Allied Societies only for enrolment on local electoral rolls, for the purpose of voting for the regional representatives to the RIBA Council. While this proposal would have had the advantage of expediency (since it would in itself have raised no problems concerning the finances and membership of the Allied Societies), it would have had the serious disadvantage that, in some areas, particularly where the local Societies at the moment contain only a minority of the corporate members of the RIBA in the area, it would open the way to the development of local antagonisms and rival groups. Conflict between the Allied Society and non-Allied Society candidates might develop, which the system of election could do nothing to resolve but only exacerbate. In theory, at least, under this system, not a single provincial representative need be a member of the local Societies. This could have bad consequences also not only from the point of view of local representation on the Council, but also from that of representation of the Council's views to the local regions.

For similar reasons we rejected a further proposal that regional representatives should be elected from geographical areas, regardless of the membership or the boundaries of the Allied Societies.

In proposing that the regional representatives should be elected through the medium of the Allied Societies, we consider it essential that the Societies should become, if in fact they are not so already, fully representative of all the RIBA members within their areas. This again emphasizes the interdependence of these recommendations

Appendix A : Suggested grouping of Allied Societies for Regional Elections to the RIBA Council

The scheme is based very roughly on an average ratio of 1 representative to 400 members, although in small Societies and in very scattered areas the ratio is lower. Where an Allied Society has more than one representative, it is intended that these shall be elected separately from the main chapter areas within the Society, *e.g.*, Birmingham and Coventry. The actual sub-division of the areas of the larger Societies for this purpose is a matter, however, for local discussion within each Society.

Society	*Approximate number of corporate members in area*	*Number of representatives on RIBA Council*
East Anglian	203	1
Essex, Cambridgeshire and Hertfordshire	1,048	3
South Eastern	2,146	5
Total	3,397	9
Region II—West and Midlands		
Berkshire, Buckinghamshire and Oxfordshire	533	1
Birmingham and Five Counties	953	2
Devonshire and Cornwall	328	1
Hampshire and Isle of Wight	418	1
Wessex	656	2
South Wales	418	1
Leicestershire and Rutlandshire (175) Northamptonshire, Bedfordshire and Huntingdonshire (196)	371	1
Total	3,677	9
Region III—North		
Liverpool	636	2
Manchester	839	2
Northern	522	1
Nottinghamshire, Derbyshire and Lincolnshire	469	1
West Yorkshire	492	1
Sheffield and South Yorkshire	255	1
York and East Yorkshire	242	1
Total	3,455	9

RIBA Council Statement

An explanatory statement issued by the RIBA Council says:

Under the proposed new constitution, the Council will consist of 63 elected members [Rec. 2(*a*)], plus certain *ex-officio* officers to be decided. *All* members will vote annually to fill 10 places on the national list of candidates [Rec. 2(*c*)]. Additionally, all members outside London and Middlesex will also vote for one place, every three years, to return a local Allied Society representative from their local constituency [Rec. 2(*d*)].

The "regions" referred to in Recommendation 2(*d*) and elsewhere are the same thing

as "groups of Allied Societies," and the regional representatives are in fact the Allied Society representatives. There will in future be no members outside London and Middlesex who are not members of their appropriate Allied Society.

Certain of the older established Societies, who possess local premises and other liabilities, charge an additional local subscription—which may be of the order of £2 a head—over and above the RIBA subscription. Some of these have said that they will be unable to carry on their present activities if they cease to charge such a subscription. Under the proposed new arrangements they will still be able to charge a local subscription or fee, if they wish, for participation in certain activities or for the enjoyment of facilities built up over the years from local funds, but they will not be able to make it obligatory on all members to participate or to pay extra subscriptions. By and large, however, it is the older Societies, with their additional subscriptions, who at present have only a minority of local RIBA members in membership. By contrast there are a number of flourishing Allied Societies embracing the great majority of RIBA members in their areas, who manage their affairs without raising any additional subscriptions from their members, over and above the grant received from RIBA headquarters. It is hoped that in the future the necessity for raising additional local subscriptions within the Allied Societies will gradually wither away, but this is a matter which will be left entirely to the membership of the local Societies to settle in their own ways.

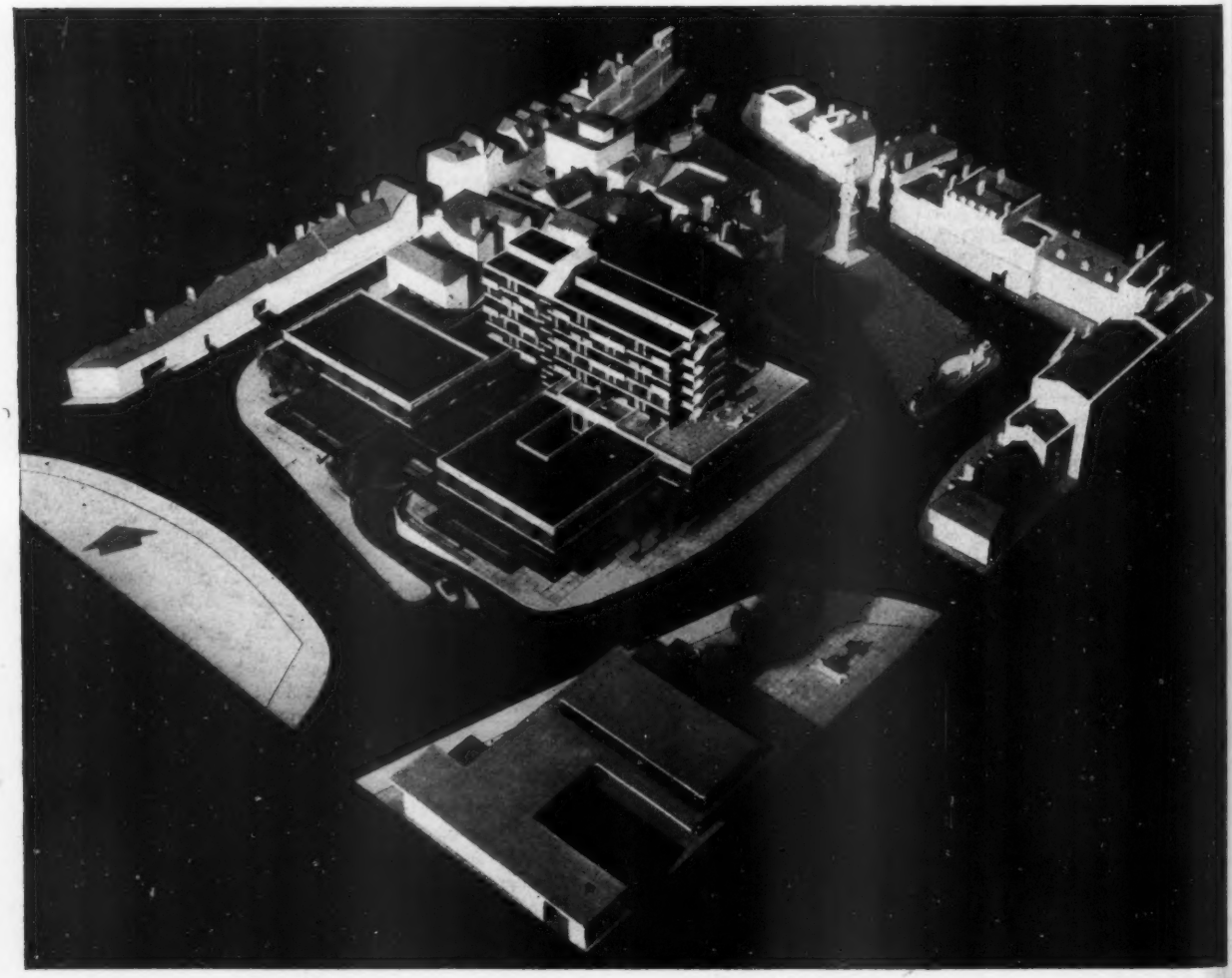
NEWS IN BRIEF

The RIBA and the Building Centre are once again to act as joint sponsors of a competition for Manufacturers' Trade and Technical Literature. Previous competitions were held in 1957 and 1958. Conditions for the 1959 competition will be available from The Building Centre, 26, Store Street, London, W.C.1, towards the end of April.

An international furniture conference has been arranged by the Dutch furniture manufacturers on behalf of the Union Europeenne de l'Ameublement, at the Hague from May 24 to 29. The British party is being organized by the Furniture Development Council, 11 Adelphi Terrace, London, W.C.2, at an inclusive cost of £55 for a single person and £98 for a couple.

An International Working Party on timber roof construction met for the first time in London last week. E. Levin, chief architect of the TDA, is acting as Convener, which has been organized through the International Council for Building Research and Documentation (CIB).

The proposed Central Area Development plan for Aylesbury, designed by Fred Pooley, provides a pedestrian shopping precinct with thirty two-storey shops and a taller block to be developed either as flats or a multiple store. There is a basement for car parking and service to the shops. There is also a service road to the north. When through traffic has been diverted by a bye-pass and by a relief road to the north the market square, on the left, may be closed to traffic on market days. A shopping arcade runs through the centre from east to west, giving it a pleasant and intimate character. But is the site overdeveloped and the scale rather too big for a small country town? County Hall, on the right, is going to look a size smaller when the new building is complete.



The Hochschule at Ulm.

THE EXPERIMENT AT ULM

By R. T. Walters

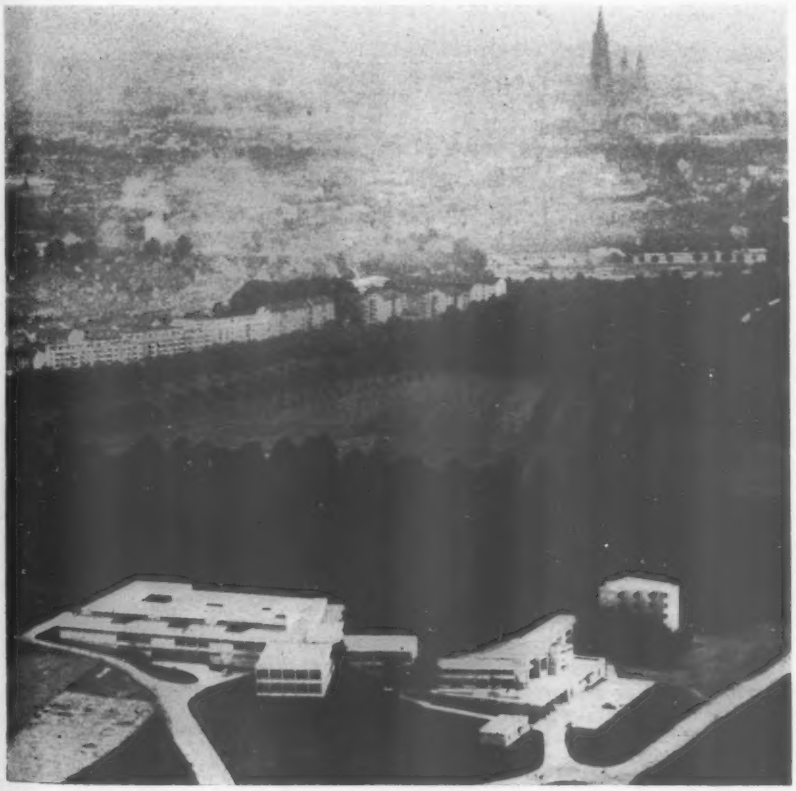
Last summer I met a young German architect named Herbert Ohl who was over here to study English methods of industrial design and production. He said that he was in charge of the building department of the *Hochschule für Gestaltung* (University for Design) at Ulm, and that he was teaching industrialized building. As I am interested in the industrialization of building, and this was the first time I had heard of anyone actually teaching it, I raised the subject of the *Hochschule* with several other architects and asked them what they thought of it. The replies were somewhat confusing. Some of them said that it was highly significant, others that it was completely out of date and of no importance whatever, and there seemed to be a good deal of doubt about what the *Hochschule* was really doing. The account which follows is based on a visit to Ulm in February of this year. It is a superficial account, because I stayed at the school for only four days, and because I was mainly interested in building which is only one of the subjects taught there. But one thing is fairly clear—the *Hochschule* is not simply a revival of the Bauhaus.

Origins

To begin at the beginning; during the war there was a group of students at Munich University who led a resistance movement against the Nazi régime. Two of the leaders of this group were Hans and Sophie Scholl, whose family lived in Ulm. In 1943 these two students, with others, were arrested by the Gestapo and executed.* Their elder sister, Inge Scholl, was also imprisoned but survived, and after the war she began to raise funds to set up a trust in memory of her brother and sister. Inge Scholl's idea was to create an organization which would work for non-political aims and which would do whatever could be done to help fill the cultural vacuum in post-war Germany. By 1950 there was enough money and it was decided to establish a foundation* and to make it legally and financially responsible for a new *Hochschule*, a school and institute, independent of state and university, which would train designers for industry.

* For details of this story see *Six Against Tyranny* by Inge Scholl. John Murray, 8s. 6d.

Ulm Cathedral and city in background, Hochschule in foreground.



The school buildings

The first courses were held in Ulm in 1953. One of the most influential of the early teachers was Max Bill, and it was he who was asked to design the new buildings for the *Hochschule*. The site chosen was on a hillside outside Ulm. The accommodation is based on a maximum of 150 residential students, and with extensive lecture rooms and workshops, living quarters for students and staff, offices for administration, kitchen, dining room, and so on, it adds up to quite a large group of buildings. The construction is almost exclusively in *in-situ* reinforced concrete with varnished wood windows. The detailing is simple, much of the concrete is left unpainted and there is practically no applied colour. Externally, the sloping and wooded site helps to relieve the somewhat monotonous fenestration; internally, the atmosphere is one of almost neutral orderliness, with plenty of space, simple furniture and fittings and an efficient central heating system. When one remembers that the organization of the school had to be planned before the buildings could be designed, they have turned out reasonably well. Max Bill is no longer connected with the school, but he has left them with a group of buildings which is not unsuitable for re-examining the education of designers. The new *Hochschule* was officially opened in 1956.

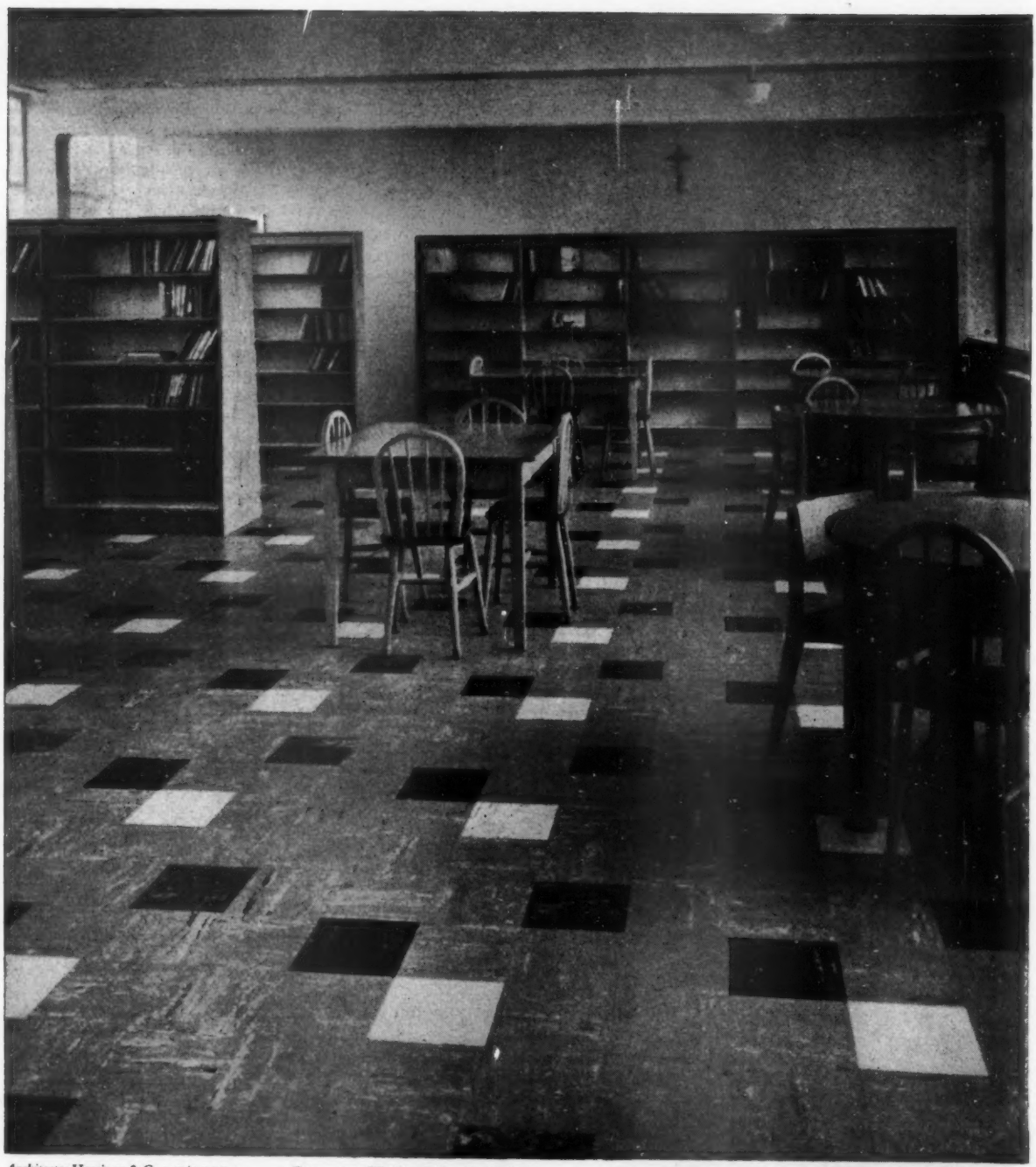
The Bauhaus influence

In any discussion of the *Hochschule*, it is not long before the Bauhaus is mentioned. This is because the reputation of the Bauhaus was high in Germany after the war, and the founders of the school were strongly influenced by its ideas. Several of the early teachers had been trained there; Walter Gropius was consulted when the first curriculum was being drawn up; Max Bill was Director of the school until 1956. I am neither an educationalist nor an historian, and it must be left to those who are to discuss what the Bauhaus really achieved, what happened when it went to America and, in short, to give it its due place in history. My impression is that the ideologies of the *Hochschule* have undergone a profound change during the last five years; that both the faculty and the students have been examining the Bauhaus ideas in the light of post-war conditions; and that they have rejected many of them as being no longer relevant.

The needs of modern industry

One of the concepts which was dominant when the *Hochschule* started was that an industrial designer should be primarily an artist. In other words, that his training should be directed towards developing self-expression, and that if, in addition, he were given some knowledge of materials and processes, he would then be equipped to collaborate with industrialists in raising the standard of product design. Perhaps the

* Geschwister—Scholl—Stiftung.

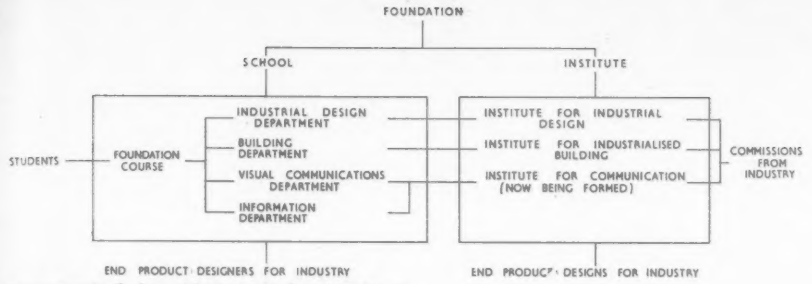


Architects: Harrison & Cox, F./A.R.I.B.A. *Contractors:* Hinkins & Frewin, Oxford

Over 1,330 sq. yds. of Marley floor tiles
were used throughout the new
Blessed Edmund Campion School at Iffley, Oxford

MARLEY

SEVENOAKS · KENT · SEVENOAKS 55255 · LONDON SHOWROOMS: 251 TOTTENHAM COURT ROAD · W.1



Organization of the Hochschule für Getaltung

most damaging blow to this concept has resulted from a study of modern business methods. The *Hochschule* has discovered that some of the more progressive manufacturing firms are no longer prepared to accept industrial designers who think of themselves primarily as artists. It seems that in certain firms a younger generation of business executives has reached positions of authority, and that these men have been trained to use mathematical, statistical and logical methods of analysis in making their decisions. In the process they have learned what is almost a new language. When they are trying hard to plan their buying, production and selling on a scientific basis, it does not seem to them reasonable for the designer to treat the product itself as a medium of self-expression.

It is difficult to find any fixed principles in industries of this kind. Their methods are continually changing and the only constant factors are tendencies, for instance towards making decisions by analysis, rather than by intuition; towards thinking in terms of productivity and operational research, rather than of problems in isolation; towards using team work, rather than individual effort.

The problem the *Hochschule* has set itself is how to train a designer who can work in such industries and not feel out of it. Someone who could sit in a conference with production and sales executives, back-room technicians, automation engineers, economics experts, and so on, and discuss the design of the product in the same language as they do; who could argue with as much logic, and could have as much determination to take the hunch out of the decisions reached, as they have. The question is not whether, under these conditions, the designer ceases to be an artist; his creative ability is needed more than ever. It is whether he can be trained to use his ability, with the full knowledge of the cultural and social obligations of what he is doing, as a member of a group to whom the æsthetic factor is one of many, all of which must be brought to bear and resolved in every choice which is made.

Of course it is an immensely difficult task. It would be hard enough if consumer goods alone were involved. But, as it is, the *Hochschule* has undertaken to train designers for both the consumer and the capital goods industries, including building, as well as for the industries which deal in means of communication; press, films, radio, television and advertising. The school has not yet acquired a formal concept of its own teaching, but it has begun to discuss its work publicly in a quarterly bulletin.*

Organization

Since Max Bill left in 1956, the *Hochschule* has been directed by a Faculty Board consisting of three senior members of the teaching staff, Tomas Maldonado, Otl Aicher and Hanno Kesting. The school is now organized on the basis of four "departments," each with an associated "institute." The four departments are called Industrial Design (industrial products), Building, Visual Communication (typography, graphic design, photography, exhibitions, films, television) and Information (the written word, script writing, copy writing, broadcasting).

The institutes are organizations which accept commissions from industry to carry out development or design work on a fee-paying basis. They are the means by which the school makes contact with industry on practical terms, and the money which they bring in is important to the economy of the whole organization. The institutes operate in the same building as the school and the teaching staff and the senior students work in both. The arrangement is shown diagrammatically above.

The Foundation Course

The students who enter the school come from many different countries and educational backgrounds and are at different ages and levels of development. The first year, of the four year full-time course, is designed to adjust these levels and to provide an introduction to any of the four departments. The *Hochschule* calls this the Foundation Course and the students are at present taught visual method, workshop practice, means of presentation, methodology, sociology, perception, theory, cultural history of the 20th century, mathematics, physics and chemistry. I cannot speak with any authority on this mixed diet, but I have the impression that as the influence of industry grows stronger in the departments, so the foundation course may be modified to suit their needs. At the end of the first year the students choose (and are chosen for) the subjects in which they will specialize.

The Building Department

For the next three years, the students who join the building department find themselves in an environment very different from an ordinary school of architecture. When the school started the training is said to have been fairly conventional and many of the students worked with Max Bill on the *Hochschule* itself. But by 1956 the buildings were finished, Tomas Maldonado had joined the foundation course and Konrad Wachsmann and Herbert Ohl had joined the building department. This was a period of even more intense discussion than usual, because both the teachers and the students were divided on how the building department should be run. Should architecture be taught in conventional terms, or should an attempt be made to apply the methods being used for training the industrial designers?

During 1957, and without knowing where it would lead, the school decided to teach architecture only as "industrialized building." At about this time Konrad Wachsmann left, and Herbert Ohl took charge of the building department. When the choice was made, the words "industrialized building" were scarcely more than a slogan.* There were no highly organized building firms to set the pace. It was obviously going to be difficult to relate the training to the building industry as it exists. However, the school took the view that the building industry would move towards industrialization; that factory production, operational research, mechanization and the other tools of the product industries would, sooner or later, be applied to it; that already, now, there is a need to train designers of buildings who will understand such methods and who will be able to work with those who use them.

Among the subjects taken by students in the building department are theory of manufacture, operational research, theory of science, applied physiology, sociology and the history of 20th century architecture. Visiting lecturers include E. Ciribini on the theory and technique of industrialized building production, Bruce Martin on modular co-ordination, G. Pizzetti on building statics, Frei Otto on lightweight construction and Matthew Wallis on site organization. The studio work seems to be mainly concerned with the organization of building, analysis of requirements, the behaviour of materials and with problems of technique. During the third and fourth years it is often connected with the current commissions of the building institute.

The Building Institute

The building institute was established in 1958. The Max Braun electrical firm, Frankfurt, has already successfully marketed a range of products designed for them by the industrial design institute. Last year they placed a commission with the building institute to design a production factory, near Frankfurt, of some 200,000 sq. ft. with two associated areas of housing, each to contain 60-80 houses. The first stage of the project will cost about £1½ million. The firm was not acting from philanthropic motives; the directors believe that the solutions which the institute will find for them will be strictly good business. They do not yet know precisely what products they will be making in the new factory when it is built and it may be that, in the institute, they have found architects who are prepared to

* The first three issues called *Ulm* 1, *Ulm* 2, *Ulm* 3 are obtainable from Hochschule fur Getaltuing Ulm-Donau, Germany, price 2s. 6d. per copy.

* In Maldonado's phrase "a nice bottle, but empty."

be equally flexible in their approach to the design of the buildings. The Braun project has begun with a study of functional requirements not unlike the work of the Ministry of Education and the Nuffield Trust in England.

More recently still, the building institute has been in contact with an aluminium firm (Aluminium-Walzwerke, Singen) on the design and jointing of insulated sandwich panels and on the problems of covering large spaces with industrially made components.

Unanswered questions

This sketchy description of the building department and institute leaves a lot of questions unanswered. What kind of students do they get? Apparently most of them have had some previous architectural training and I think the school would like to take qualified people if it could. But how can a man, who has already done a full-time training, afford to do another four years at the *Hochschule?* I don't know, except that I think that the money which the institute brings in may help. And what happens to the students when they leave? All students who satisfactorily complete the four-year course are awarded the *Hochschule's* diploma, which has, of course, still to become recognized. I do not think the problems are great for the industrial designers; one assumes that, if they are good, they will find their place in industry. But for an architect who has no conventional qualification it may be more difficult. The whole thing is so new that the first students in the building department are still doing their last year.

End products

The end products of the *Hochschule* are twofold: firstly, men and women with a specialized training in the fields of product design, architecture, visual communication and the use of words; secondly, the designs developed in the institutes which are produced by industry for the use of the community at large. It is on the quality of these two end products that the reputation of the *Hochschule* will eventually rest. This may mean waiting some time before passing a judgment, and I personally hope that the experiment at Ulm will neither delight nor enrage too many people in the meantime.

For instance, the building department will have little to show for their work for several years to come; no exciting structures, no image which can convey their intentions in purely architectural terms. While they are evolving their specialized method of training, because they believe there is a need for it, they are not at the same time trying to solve all the problems of architectural education at once, and they have no wish to deny the existence of any other kind of school of architecture.

Similarly with industrial design, having adopted an approach which is based more on methodology than it is on self-expression, they are trying not to glorify it. Having discovered a few industrial firms who understand what they are doing, they have no ambition to work with others who do not.

With all this, I found the *Hochschule* open-minded. It seems to have developed a capacity for drawing in ideas, and personalities, from all over the world, and of subjecting them to rigorous enquiry until they are either accepted or rejected. It has changed a great deal in the first five years and is clearly going to change a lot more. I think it is an important experiment, and one which we, in this country, should watch with interest.

Reyner Banham lecturing, with his two translators in the foreground, during his recent visit to the Hochschule für Getaltung at Ulm, Germany. Dr. Banham's comments on his teaching experiences at Ulm appear below.

Lecturing at Ulm

by Reyner Banham

VIP treatment as a mark of respect is one thing, VIP treatment as an aid to increased performance is another, and needs serious consideration. I had been invited to the *Hochschule* at Ulm to talk about the things I usually talk about in connection with design problems—æsthetic consequences of expendability, relevance of Pop-Art and so forth—and this posed a double language problem. Firstly, my German is barely good enough to order a hard-boiled egg; secondly, the subjects I wanted to talk about just don't exist in German academic discourse on design, they don't have the words (but NB, on other aspects of design theory they are way ahead of us at Ulm).

Professional interpreters, never much use on technical subjects, were thus completely out of the question, and they therefore set about the problem from the other end. About a fortnight before my arrival, Dr. Tomás Maldonado, the dynamic Argentinian, who is one of the triumvirate that runs the school, set up what was virtually a seminar on Banham, with his administrative factotum and a fourth-year student from the Communications division, named Bonsiep—later joined by another student named Heck. Armed with skeleton notes for my lectures, and all my old articles they could find, they combed out my basic thought processes and key concepts, and compiled a "Banham-Lexikon" of German equivalents for my verbalizations. With this they then made practice translations from my articles and criticized them, and also cyclostyled a sort of prospectus of me for the students, giving brief biographicals and a summary of my main ideas. When I arrived the five of us had a short briefing session, but all I had to do was to drop into a Banham-shaped slot in a prepared system.

In the lectures, Bonsiep and Heck sat together on one side of the blackboard and the tape-recorder crew on the other. I would talk, up to about three minutes at a time, while one of the translators made notes (as you see Bonsiep doing in the picture) and, when I stopped, or when he had as much material as he could handle, he would give a German summary of what I had said. About every fifteen or twenty minutes they would swap, and the other one would take over—translating off the cuff is hard work any day of the week. In discussion, they would feed back the questions to me in English, as I rarely grasped thinking-aloud type German accurately. Some members of the audience thought that some subtleties of language were lost in the translating process (what did they expect—blank verse?) but the only actual boob I spotted was when "thomist" appeared in German rather surprisingly as *Atom-wissenschaftler* (but what did *I* expect—walking encyclopædias?).

But everyone agreed that the translation service was remarkably good—never have I been more completely at the mercy of any two persons, nor more confident in their ability, than with these two impeccably turned-out young men in their wide-screen spectacles and the German equivalent of grey flannel suits. As a result of their skill and careful preparations, I probably achieved a higher degree of audience-penetration (starting from behind zero, remember) than even with English-speaking hearers. My views were frequently rejected, and vigorously, but they had clearly been at least as well understood as at, say, the ICA or the RIBA.

All this was extremely flattering, of course, and really fanned my prophet-without-honour-in-own-country complex—no one in England ever took such pains to see that I was understood. But it was also bitterly humiliating to think that no one in England ever took such pains to see that *anyone* was ever understood, even English speakers like Bučky Fuller—think of the pain and embarrassment that could have been spared if some small attempt had been made to ease the audience into his manners of thinking. But, beyond this, what about the non-English speakers, beginning with the *Ulmermeisters* themselves, who have a great deal to contribute even on such problems as the teaching of architectural history—we have heard attempts to translate Maldonado himself, *by* unprepared minds *to* unprepared minds, and the results were terrible. We can do better, and we must—and the Ulm system of translation seems to me the most promising experiment in the field so far. *Verb. sap.*—I hope.

Photograph by courtesy of Imperial Chemical Industries Ltd.

To provide a line of easy communication between their extensive premises sited on each side of Wexham Road, Slough, Imperial Chemical Industries Limited decided to build a tunnel under the roadway. The tunnel was constructed of pre-cast concrete units and protected from the infiltration of dampness by a two-coat rendering of three parts sand to one part of cement, mixed with 5% of 'PUDLO' Brand Waterproofing Powder. A two-coat rendering, similarly composed, was applied also to the concrete walls of the tunnel approaches, the approach to one side of the tunnel is shewn in the photograph. The waterproofed rendering ensures freedom from the sodden, dingy appearance that mars ordinary, non-waterproofed work so quickly, when it is saturated by dirt laden rain. The work was carried out by Holland & Hannen and Cubitts Ltd., and designed by the Civil Engineering staff of I.C.I. Ltd.

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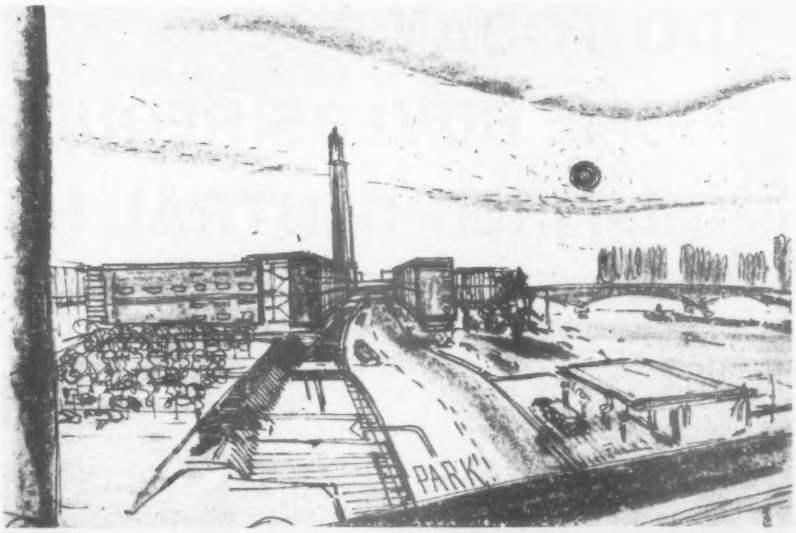
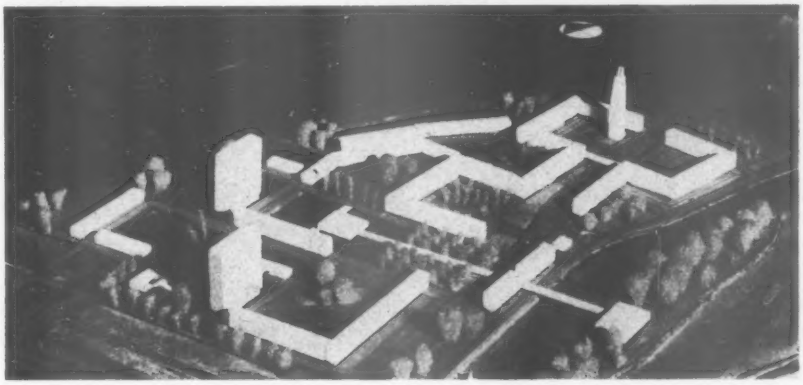
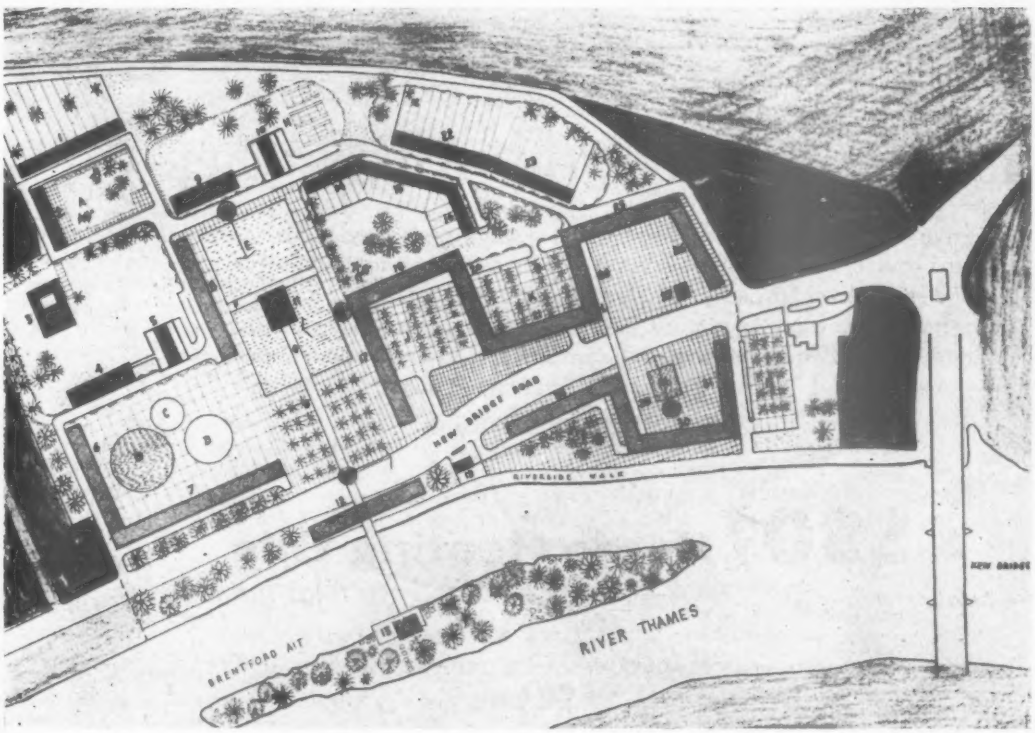
PLAN FOR THE DEVELOPMENT OF BRENTFORD AND CHISWICK

The design for the development of Brentford and Chiswick, by Patrick de Saulles, is interesting mainly for two reasons. First is that the eventual realisation of the scheme depends on the acquisition by the Borough Council of the site which is at present largely occupied by a waterworks and a gasworks. There is hope that the Metropolitan Water Board will relinquish some of their property fairly soon and if any gasworks are to be abandoned, Brentford gasworks will be the first to go. The second, dependent on the first, concerns the design itself and the brilliant use or adaptation of existing buildings. Brentford's famous landmark, the water tower, has been retained and forms the central feature of the main shopping area (see sketch above right) and at the same time retains for the new scheme some identity with the old borough. The reservoir in the waterworks has become a lake connected by a raised walk-way to the hitherto unused Brentford Ait and the small pond and play areas utilise the wells which at present contain gas-holders.







KEY:
1. 2-storey houses
2. 1-storey old people's houses
3. 1-storey nursery school
4. 17-storey maisonettes
5. 2-storey garage
6. 5-storey maisonettes
7. 5-storey maisonettes
8. 5-storey maisonettes
9. 17-storey maisonettes
10. 2-storey garage
11. 2-storey community centre
12. 5-storey maisonettes
13. 2-storey restaurant
14. 2-storey houses
15. 2-storey houses
16. 2-storey houses
17. 5-storey maisonettes
18. 5-storey maisonettes
19. Existing garage
20. 5-storey maisonettes
21. 5-storey maisonettes
22. 2-storey houses
23. 2-storey houses
24, 25, 26. 5-storey maisonettes, 4 shops; shops at ground and first floor
27. Existing tower
28, 29, 30, 31. 5-storey maisonettes, 4 shops; shops at ground and first floor
A. Old people's garden
B. Pond
C. Play area
D. Play area
E. Lake
F. Pedestrian bridge
H. Tennis courts
J. Car park (96 cars)
K. Car park (72 cars)
L. Pedestrian bridge
M. Pond
N. Car park (60 cars)

THE INDUSTRY

Brian Grant describes a new emulsion paint, a drainage catalogue, roofing materials and fittings, a small refrigerator and draught stripping.

One-coat emulsion paint

A new one-coat emulsion paint known as Luxol enamel has just been introduced by British Paints Ltd. Covering capacity is 80 to 100 sq. yds. to the gallon, and it is easy to apply with either brush or roller, drying in about half an hour without any unpleasant smell. The twenty standard colours include a range of ten which are claimed to be weather resistant and which are recommended for outdoor work. (*British Paints Ltd., Britannic Works, Portland Road, Newcastle-upon-Tyne,* 2.)

Cast iron drainage

Broads new cast iron drainage catalogue (120-odd pages) shows an exceptionally full range of cast iron pipes and fittings for soil waste and rainwater drainage, from roof level to within the ground. Typical applications of fittings are illustrated to show the advantages of certain types, particularly single-stack boss-pipe fittings. Manhole covers and gratings are also shown, notably a new Broadstel type which has a slender section zinc-protected steel frame and a cover which can be filled with any type of floor finish. Where an extra good appearance is needed the cover, frame and keyhole bosses can be edged in brass: special sizes can also be produced to suit any size of tile or block floor, avoiding broken joint lines. (*Broads Manufacturing Co. Ltd., 4, South Wharf, Paddington, London, W.*2.)

Roofing materials

The latest addition to the FEB range of building products is a roofing compound known as Febflex. It is a combination of aluminium paste and asbestos reinforcing fibre with non-drying oils and asphaltic gums, and is applied by brush, spray or squeegee in a single coat to give an aluminium coloured finish which is claimed to provide a water and vapour seal on all types of roof surface, including concrete, roofing felt, and even perished asphalt. Coverage is about 100 sq. ft. to the gallon, and it is available in black, red and green as well as in the metallic finish. (*FEB (Great Britain) Ltd.,* 102, *Kensington High Street, London, W.*8.)

Roofing fittings

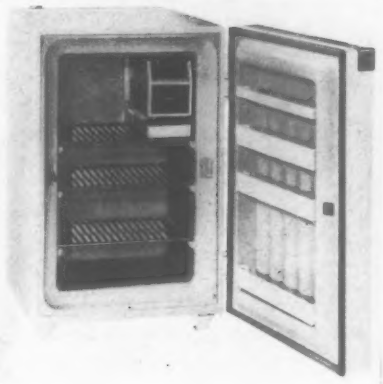
The picture on the right shows a new type of plastic washer and protective cap for use with roofing bolts of all kinds. The washer provides a tight fit to the crown of any standard asbestos sheet profile, and a secondary felt washer of the type normally used with metal washers is not necessary. The washer can be used with ¼-in. and $\frac{5}{16}$-in. bolts, including aluminum, of the rolled thread type. The protective cap is made of the same material and fits securely over the boss of the washer and the head of the nut. The treaded part of the bolt which projects above the nut must be cropped off level before the cap is fitted, but it seems a good idea to protect the threads and prevent the nuts from rusting solid. (*Turners Asbestos Cement Co. Ltd., Strafford Park, Manchester* 17.)

New small refrigerator

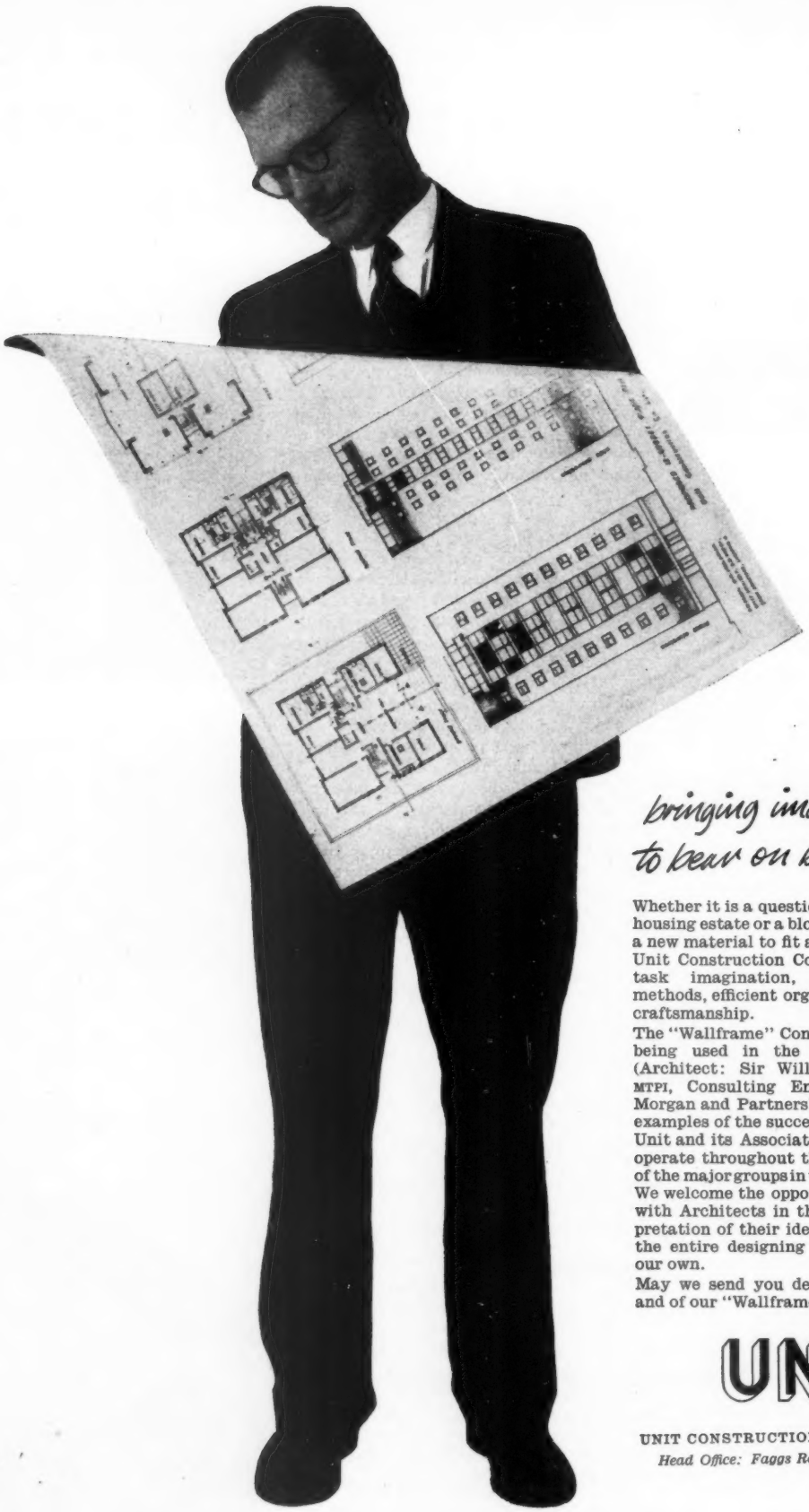
The new 2½ cu. ft. refrigerator by the GEC is described as "cabin size" and although there is a natural tendency for all refrigerators to become larger, there will no doubt be a market for this in the smaller kitchen. This model is an absorption type, a change for GEC and is rated at 100 watts. It provides a shelf area of more than 5½ sq. ft. and there are the usual storage racks in the door. Price is £49 17s. 6d. including purchase tax. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.*2.)

Draught stripping

A new weather stripping known as Vinl-Sweep is made up with a flexible vinyl strip inserted in a rigid frame of Geon p.v.c. The material is easy to fix, and can be drilled or sawn without splitting, while it also has good weather resistance. Two standard lengths are produced, 32½ in. and 36½ in. and they sell retail at 11s. 3d. and 12s. 9d. (*Adams & Benton Ltd., Duraflex Division, Albion West Bromwich.*)



Right, top to bottom: Turner's plastic washer and cap for roofing bolts; the GEC 2½ cu. ft. refrigerator; fitting Vinl-Sweep weather stripping.



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technical section

22 SOUND INSULATION AND ACOUSTICS

acoustics of concert halls

This week our Specialist Editor for Sound Insulation and Acoustics reports on a lecture given to the Acoustics Group of the Physical Society by Dr. Leo Beranek. Dr. Beranek, who has just completed a survey of existing concert halls, pointed out, first, that the measured reverberation times of full halls were invariably lower than the calculated reverberation times; and suggested that, to correct this, we should use a modified formula which would allow for the actual seating area per person. Second, he drew attention to the decisive part played by first reflections, and suggested that these should be designed to reach listeners in the first 60 milleseconds after hearing the original sound.

Dr. Beranek introduced his subject by saying that he had conducted a very wide survey of concert halls both in America and Europe and that he had tabulated a great mass of data obtained from the survey. A striking result of this was the fact that in all the examples where the acoustic pre-design details were available, the measured reverberation times of the completed (full) halls were distinctly lower than that predicted and designed for. He went on to infer that the reason for this was that the audience absorption coefficients published in all the text books and/or the methods of applying them into the table of total absorption, are wrong.

Audience absorption

W. C. Sabine in his work in the last century had suggested that the audience absorption could either be rated as so many units per person, or, if the units were divided by the floor area occupied by the seated person, one could use a "square foot" coefficient and Dr. Beranek suggested that this was the better way. Thus if the absorption per seated person at, say, 500 c/s is taken as 4·7 units and the area occupied by one seat and its access is 5 sq. ft. then the absorption coefficient is 0·94. He further claimed to have detected significant differences in the audience absorption depending on whether the seats were tightly packed together to minimum standards or were spaced out more widely, and that the latter arrangement gave greater absorption. Thus if a value of area coefficient (of, say, 0·94) were allowed for a seated person occupying 5 sq. ft., then, if the seating area were, say, 8 sq. ft. the allowance per person should be 7·5 units. The basis of this assertion was that with wider spacing a greater area of the person's body came into the "view" of the sound waves or conversely that there was less "shading" of one person by his neighbours. There seems to be some support for this view in figures for orchestral players (with instrument) suggested by Ingerslev. He gives, for example, 12·4 units (500 c/s) for this coefficient. There was also the "edge" effect of the absorbent to be considered. It is well known that when a powerful absorbent is juxtaposed to a less absorbing area the edges of the absorbent area are more effective than some equivalent part in the centre of the area, because of diffraction effects. Dr. Beranek suggested that a marginal addition of about 2 ft.* should be made all round seating groups to allow for this effect, or in other words gangways between seating of less than 3·5 ft. width should be treated as seated areas in calculation.

He also claimed that the type or nature of the seat (whether hard or softly upholstered) made little difference to the total absorption once it is occupied by a person.

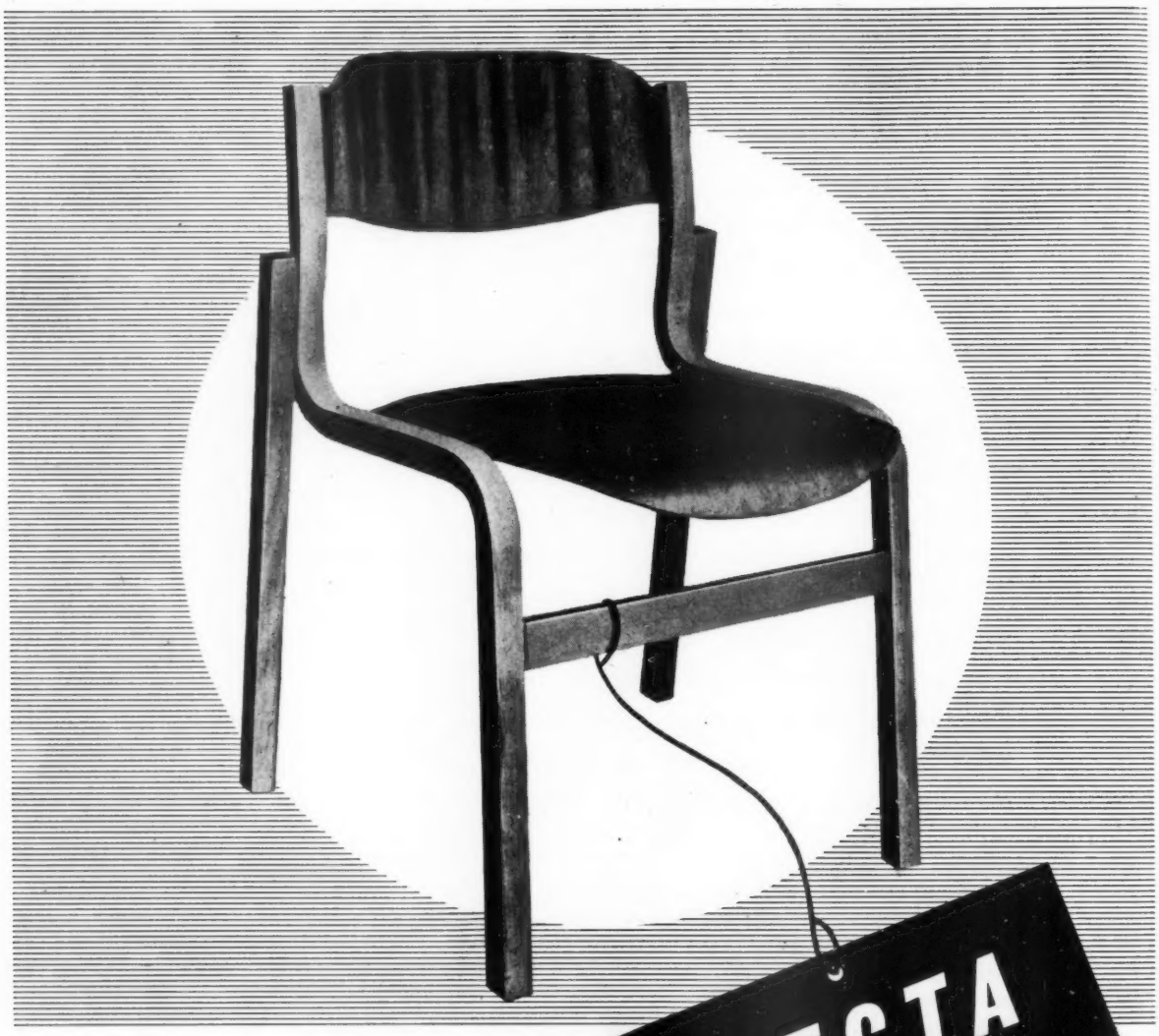
The suggestion is that to calculate reverberation times of concert halls the following area absorption coefficient values should be allowed (in the Sabine formula) for audience and seating. Take the area as the whole of the seating (audience, orchestra and choir) plus a marginal amount of 1·75 ft. in width all round the seating blocks counting any gangway of less than 3·5 ft. width into the total area.

	125	500	2,000 c/s
Occupied seating	0·72	0·96	0·96
Unoccupied, well upholstered cloth covered seating	0·64	0·84	0·86
Unoccupied thinly upholstered leather covered seating	0·56	0·61	0·55

Acoustic reputation

Dr. Beranek next discussed the acoustic reputation of the concert halls he had studied. He took two groups of ten halls each, the first group contained only halls having an unblemished reputation for good acoustics and the second group contained halls which, although not considered bad, were reported to have some minor acoustical defect. An impressive first point of comparison was the average building date of the halls. That for the first group was 1893 and for the second 1954. From this it would appear either that the recently designed halls are not acoustically as satisfactory as older ones or that a period of hall life is needed in order for it to obtain a good musical reputation. The possibility that the acoustics of a hall change or "ripen" with age has been put forward but it can, in the lecturer's opinion, be safely dismissed. He found certain differences in the measurable acoustic performance of the newer halls when compared with the older ones, but these did not seem sufficient to account for the difference in reputation, and he therefore concluded that any new concert hall, because it is new

* In practice 1·75 ft. see below.



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technical section

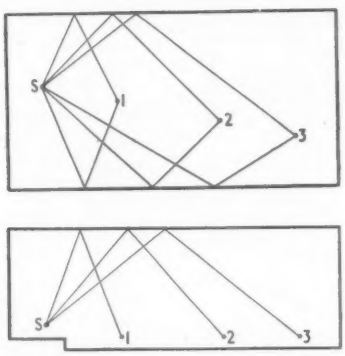
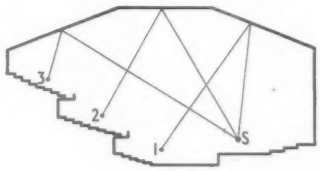


Fig. 1. Comparison of first reflected sound path lengths in (above) a typical rectangular and (below) a typical fan shaped hall.



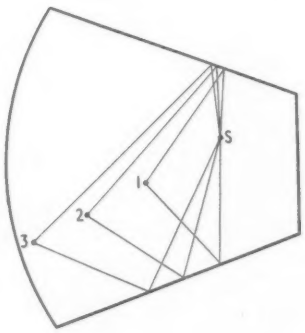
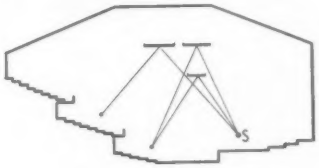


Fig. 2. Diagram showing the use of reflectors in a high concert hall to reduce reflected sound path lengths.



and different may at first be disliked or found fault with. On the other hand, a hall which has "been in the business" for a number of years seems to acquire a good reputation, whether this is entirely deserved or not. A contributor to the discussion pointed out that a very potent factor in enhancing a hall's acoustic reputation was for it to be burnt down! A reverberation time of around 1·7 seconds (full audience) seems to be required for "average" symphonic music. It has always been recognized that the best reverberation conditions for different kinds of music varies, and therefore that in choosing a single value this must be a compromise. It is also of interest to note that according to Dr. Beranek's calculations, for a hall seating some 3,000 audience (such as the Royal Festival Hall) to achieve a reverberation time of 1·8 seconds, its volume must be *at least* 900,000 cubic feet (compared with the 775,000 cubic feet of the RFH).

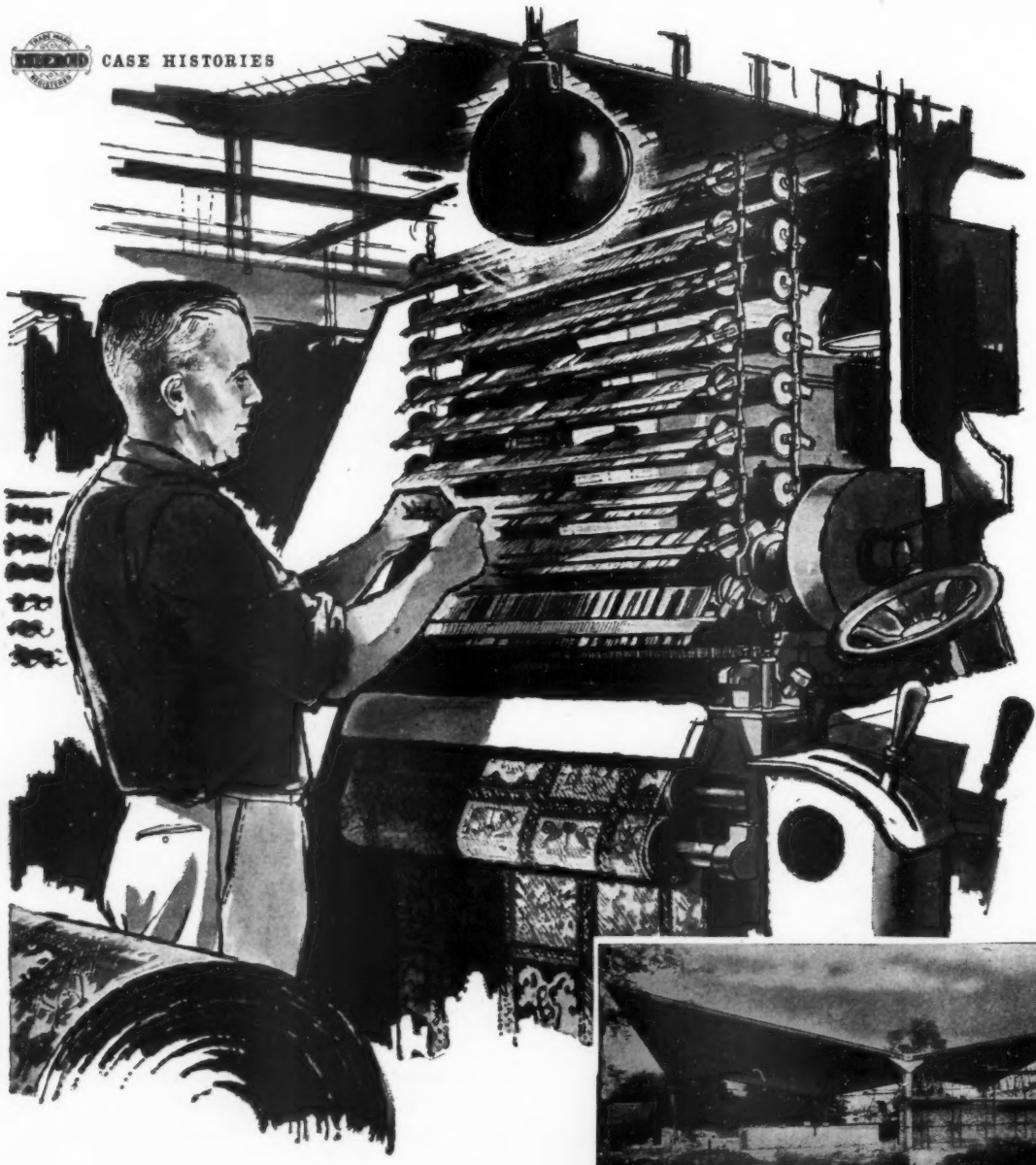
Importance of first reflections

Finally, on the matter of the best shape for a concert hall, Dr. Beranek produced some convincing evidence of the importance of the timing of the first reflections of sound from the wall and ceiling surfaces and pointed out how this is influenced by hall shape. For example, taking two typical hall shapes illustrated in Fig. 1, it is obvious that the first reflections arriving at three representative audience seats (1, 2 and 3) in the rectangular hall arrive sooner and are stronger (because they travel less far) than in the fan-shaped hall. Dr. Beranek claims that it is important that strong first reflections shall arrive at a listener in the first 60 milleseconds after the direct sound is heard.

This result is achieved by arranging that the path length difference between direct sound and some once reflected sound does not exceed about 60 ft. (because sound travels about 1 ft. in one millesecond). This is a new conception of the importance of 60 ft. path differences; we have always guarded against strong sound reflections arriving at audience positions *more* than 60 milleseconds later than direct sound owing to the possibility of such sounds resulting in audible echoes. It was also pointed out that wide halls, say, more than about 80 ft. at the orchestral platform end, tend to give longer time delays in first reflection arrivals than narrower halls, and designers often feel compelled to put absorbent surfaces at the sides near the orchestra to avoid echo dangers, thus effectively destroying the first reflections which would have been useful adjuncts to the tone had they travelled a shorter distance. Similarly when a hall must, for architectural and acoustic reasons (in order to keep the volume and hence the reverberation time high) have high ceilings, then early first reflections can be achieved by hanging reflectors, either large single areas or smaller units (sometimes called "acoustic clouds") in positions over the orchestra end of the hall, see Fig. 2.

The information given is from a paper on Concert Hall Acoustics by Leo L. Beranek and is copyrighted by Bolt, Beranek and Newman Inc. and reproduced with the author's permission.

RUBEROID CASE HISTORIES



The roof consists of four panels of hyperbolic paraboloid shells, each 57 ft. 5 in. square, supported independently by a concrete column at the mid-point of each side and weatherproofed with Ruberoid Built-Up Roofing.

Roll out the carpet for hyperbolic paraboloid!

Much architectural interest is being focused on the unusual roof designed by Architect Mr. Robert Townsend, F.R.I.B.A, for The Wilton Royal Carpet Factory Limited, using a Ruberoid Built-Up Roof with a mineral surfaced Capsheet. First roof of its kind to be erected in this country, first and only roof ever to be built in timber on the multiple hyperbolic parabola principle, and a great triumph for its adventurous designer, for using a basically simple geometrical principle to such good effect.

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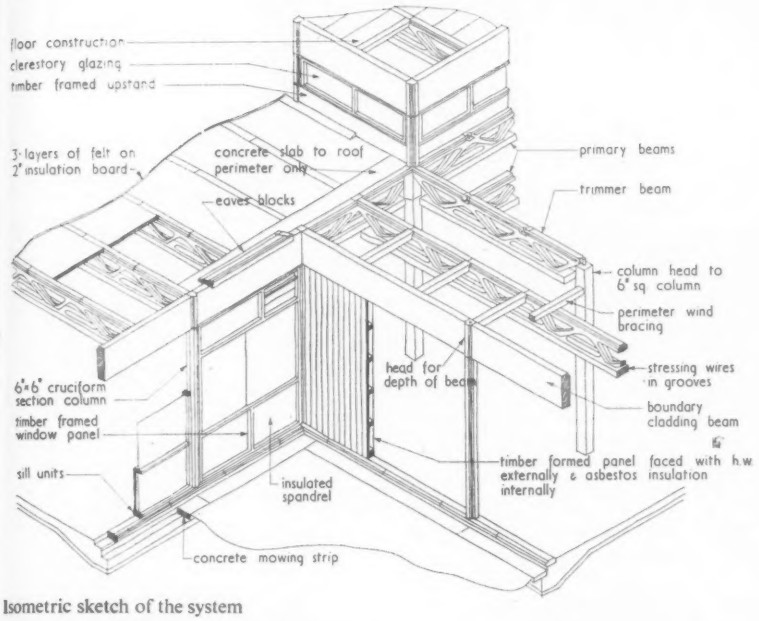
structure study

PREFABRICATED MODULAR SYSTEM FOR SCHOOL BUILDING



Isometric sketch of the system

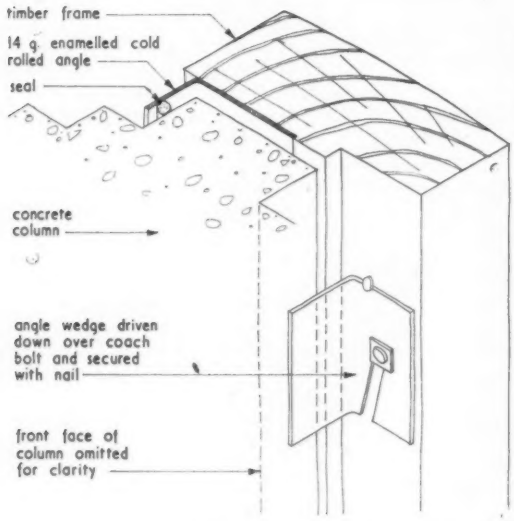
The new system of prefabricated buildings for schools recently developed by John Laing & Son, Ltd. in conjunction with A. J. Harris and with advice from the Architects and Buildings Branch of the MOE is basically a flexible modular system of frame construction (see left) using prestressed concrete units which are assembled and post-tensioned on site. The units have been designed with a view to easy handling but have been kept as large as possible to avoid excessive jointing. Laingspan, as the system is called, is intended for buildings up to four storeys in height. The vertical module chosen is 10 in. and the horizontal 3 ft. 4 in.

Construction starts with the laying of a normal slab foundation. Precast concrete sill units are then laid round the

View of primary beams in course of erection. In the background can be seen part of a completed building.

structure study

PREFABRICATED MODULAR SYSTEM FOR SCHOOLS: continued



Detail of friction joint in cladding panels

perimeter of the whole building. This is a job for a mason as it is on the accuracy with which these sills are laid that the subsequent successful erection of the building depends. This is because the precisely cast units provide a base for the columns and so fix their position. With the sills in place, the external columns are put up and smoothly finished boundary beams placed on top. These are post-tensioned and the tensioning wires pass through the heads of the columns, thus forming a rigid frame around the building. It is then a simple matter to position the internal columns.

The columns are manufactured up to 15 ft. 10 in. in height, but it is recommended to limit this to normal room height in multi-storey buildings.

Webbed beams of prestressed concrete units, 1 ft. 8 in. deep, are spaced at 3 ft. 4 in. centres and for floors, can span up to 33 ft. 4 in. (for roofs, up to 46 ft. 8 in.). These beams are rebated at the top to receive 1½-in. slabs which form the floor, or 2-in. lightweight slabs for the roof. Floors are finished with an *in-situ* screed and roofs with three layer roofing felt.

To keep the number of column types to a minimum, a column, cruciform in section, has been adopted, which can receive cladding panels on any face. This eliminates the need for different types of column at internal and external angles, etc. The only other type of column is square in section and is for use internally where it might be required to be free standing.

The cladding panels are timber frame with vertical 1-in. teak boarding on building paper externally and asbestos panel on aluminium foil on the inside. Due to the all-purpose nature of the columns it was not possible to have fixing holes in them for the panels, as these would be unsightly on exposed faces. A friction joint has therefore been devised which clamps the panels tightly to the web of the column by means of a piece of angle iron with a raking slot which is driven down over a coach screw in the side of the panel (see left). A side effect of this method of fixing is that it enables it to be carried out from the inside of the building and eliminates any necessity for scaffolding. The windows used are ¼-in. plate sliding glass in timber frames, with asbestos panels below and louvred ventilators above.

The units which make up the 1 ft. 8 in. deep beams are 3 ft. 4 in. long. Upper units which include the webbing struts are slotted on to other units which form the lower boom, and grouted. The stressing wires go in grooves along this bottom member. The columns are provided with a number of different heads to accommodate the various possible requirements and the beams are secured to them by steel sockets in the end units which fit over dowels in the column heads. Trimmer beams, cast in one section, 10 ft. long, are used for heavy loads and they can also be made up of 3 ft. 4 in. units, similarly to the primary beams. The solid section external boundary beams which are finished fair to obviate the need for further cladding also function as trimmers.

There is sufficient space between the webbing in the beams to allow for the installation of electrical and water services and slots in the lower boom make provision for these to be brought down through the ceiling. The slots are also to give a fixing for metal clips which have been designed to hold the ceiling panels which are also on the 3 ft. 4 in. module.

Staircases are also of precast prestressed units and are self-supporting with the exception that they are tied to the trimmer beam at the top. For normal room heights the stairs are in two flights and occupy an area of 10 ft. × 16 ft. 8 in. on plan. This includes the half landing which is carried on beams cantilevered out from a single column.

Laingspan is to be manufactured at a number of centres to reduce haulage costs. Altogether John Laing & Son, Ltd., hope to achieve a saving of 25 per cent over traditional building costs.

critical study

OFFICES IN EASTBOURNE TERRACE, LONDON, W.2

Post-war commercial building in London has plumbed depths of mediocrity rivalling the worst of earlier precedents. Eastbourne Terrace, in Paddington, London, W.2 (designed by C. H. Elsom and Partners ; architect-in-charge, F. P. Softley; assistant architects, A. Artur and J. L. Smith) is a speculative office block of such distinction that it may confidently be placed among the best work of any kind that has been done in this country since 1935.

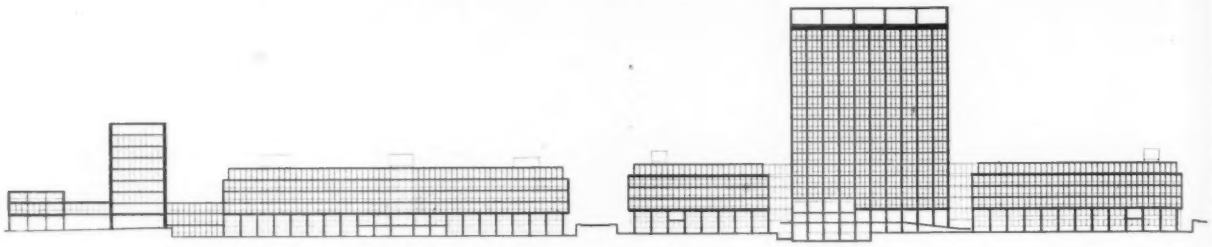
CLIENT'S REQUIREMENTS: Broadly speaking the client's requirements for a building of this kind are simply to provide the maximum well lit and planned floor area which the Town Planning Authorities will allow to be built on the site. It must be borne in mind that rental levels in general are determined more by locality than by the building itself, and indeed it was considered by the client that for this reason the Eastbourne Terrace scheme should be more modestly conceived than if it had been in the West End. There is probably little doubt that the sponsors of even the worst speculative commercial buildings believe that they have architectural merit and would not wish it otherwise, but the client for the Eastbourne Terrace project not only subscribes to architectural values but genuinely appreciates them.

It is immediately evident that the outstanding merit of this project is the massing of the buildings; a long low horizontal base six storeys high, relieved by a nine-storey block at the south end with an eighteen-storey skyscraper soaring upwards in the middle of the northern half. This, however, is not simply the result of aesthetic and urbanist considerations. It reflects a further requirement for a variety of lettable accommodation. Sometimes a tenant may claim only the floor area actually usable as office space, sharing the lifts, entrance hall, lavatories, etc., with other tenants. Alternatively he may prefer to lease a complete vertical section of the building so that he has all the circulation and ancillaries in that section for his own exclusive use. Variation in building heights makes this easier to arrange. In either event the entrance halls and other communal facilities will be provided and

". . . the mullions . . . providing an insistent rhythm continuously for the whole length of the street . . ."

critical study

OFFICES IN EASTBOURNE TERRACE, PADDINGTON,



Elevation to Eastbourne Terrace

finished by the building sponsor, but the office area proper is left with a minimum finish so that individual tenants may provide their own partitions and whatever additional finishes and fixtures they require. Occasionally the architect for the building is engaged to carry out this work on behalf of the tenants, but more often than not, tenants already have their own architects.

Block plan (A is the four-storey block, B the nine storey block, C, D and F are the six-storey blocks and E is the 18-storey tower block.) The shaded areas on B and C and shown in detail right.

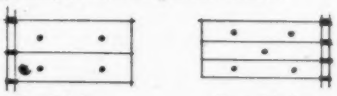
Looking south along Eastbourne Terrace.

The total width of the site is only 120 ft. and the mews is one floor below street level. Consequently the lowest floor is set back behind a generously wide area for the greater part of its length. Access to the car park is provided in the traditional way from side streets and there is also a ramp down to the car park from Eastbourne Terrace at the junction between the skyscraper and the northernmost block.

The number of staircases and their width was determined by the London Building Acts with a number of occupants calculated on the basis of one person per every 100 sq. ft. of floor area. The likely number of occupants is also relevant to the amount of lavatory accommodation and in this instance the Post War Building Study on Business Buildings has been used as a guide. This study lays down the number of fittings per person and it was assumed in this case that there would be one person for every 70 sq. ft. of net office area, more or less equally divided between men and women. The need to attempt such forecasts as this typifies the problems encountered in any building where the detailed requirements of tenants cannot be precisely known when the building is being designed. Electric wiring was installed at a forecast load of 3 watts per sq. ft. for power and one lighting point to every 75 sq. ft. loaded at 2 watts per sq. ft. These figures are based on previous experience of similar buildings. The boiler capacity works out at a little over 5 B.T.U.s per sq. ft. of office area. The decision which most affects the final conception is, of course, the choice of mullion spacing to give the maximum flexibility consistent with economy for the positioning of partitions normal to the external walls. Because tenants' requirements vary so much and are not known in advance there is, probably, no ideal solution to this problem. Earlier schemes carried out by the same firm had mullions at 8-ft. centres but it was found that this did not provide sufficient variety of office widths. In this case a module of 5 ft was adopted. The following table shows the increased range of choice which this affords:

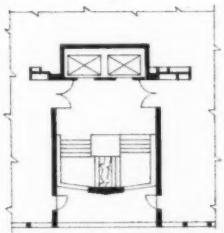
1 × 5 ft. = 5 ft.	1 × 8 ft. = 8 ft.
2 × 5 ft. = 10 ft.	2 × 8 ft. = 16 ft.
3 × 5 ft. = 15 ft.	3 × 8 ft. = 24 ft.
4 × 5 ft. = 20 ft.	

Greater flexibility still could be provided by an even closer mullion spacing, but this carries attendant disadvantages. First there would be too many mullions for economy. Secondly, it is important that there should be one "draw-off" point for each service—power, telephones and heat—in every mullion bay, and this, too, has an obvious impact on costs. The same applies to lighting points, as this comparison shows:

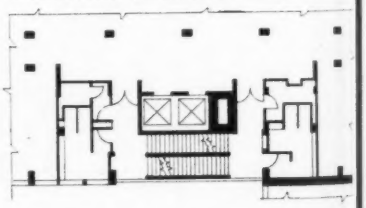


The method of heating selected is medium pressure hot water convectors running from floor to sill along the entire length of the external office wall. Control of the heat emission is obtained by adjustable dampers in the convectors. The system is designed to operate with flow and return temperatures at the boilers of 220 deg. F. and 205 deg. F respectively. In particularly cold weather the flow temperature can be increased to 250 deg. F.

To summarise, the architect's problem is mainly to provide a shell capable of being sub-divided in a wide variety of ways and serviced with heat, light and power adequate for any reasonable estimated occupancy.

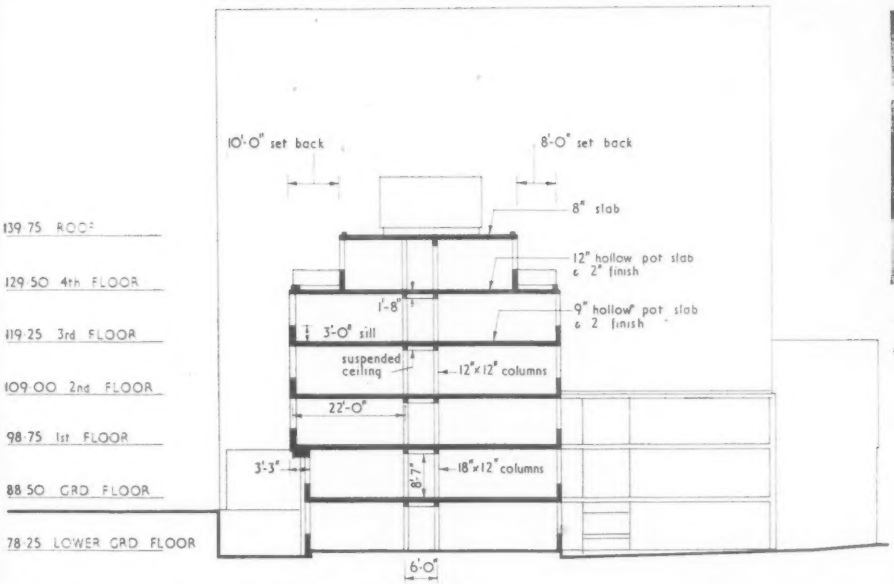


Detail plans around stairshaft; above in Block C, below, in Block B [Scale: $\frac{1}{16}$" = 1'0"]



PLANNING: The basic planning concept for a building of this kind on a comparatively narrow site resolves itself into a long range of double-banked offices with vertical circulation and lavatories, etc., at appropriate intervals. The width of the building itself is limited by considerations of natural lighting, economical structural spans and depth of room. Subject to these limitations financial considerations demand the maximum possible width, and in this case the building is 50 ft. wide with a 6 ft. wide central corridor. The principal interest lies in designing the vertical circulation and lavatories with a maximum economy of space. Thus in the stairshaft of Block C the space in front of the lifts can only be counted as circulation, whereas in Block B this space can be

LONDON, W.2 continued



Cross section through six-storey block [Scale: $\frac{1}{32}$" = 1' 0"]

"*Entrance halls have an air of dignity and spaciousness . . .*"

Entrance hall to tower.

critical study

OFFICES IN EASTBOURNE TERRACE, PADDINGTON,

"... the classic requirements of scale ..."

The entrances to each block provide incident in the street facade (below).

LONDON, W.2 continued

Left: entrance canopy to the 18-storey tower.

thrown into the lettable office area. This emphasis on economy must not be taken to mean that the planning of the building is in any way cramped, and indeed the principal entrance halls, although not wasteful, have an air of dignity and spaciousness which is aided by an extremely high quality of finish—terrazzo floors, marble and hardwood facings to walls, as seen in the pictures on page 597. If, considered from a strictly functional viewpoint, the planning problems are comparatively simple, from the viewpoint of urban design, of the relationship of heights and widths, they are all the more difficult, for want of any firmer functional stimulus than is presented by the broad requirement for height variety. Indeed, when so much contemporary architecture is almost entirely functionally-determined, it is refreshing to find an instance where the classic requirements of scale, massing, proportion and incident (seen in photos left and opposite) are so free from utilitarian inhibition.

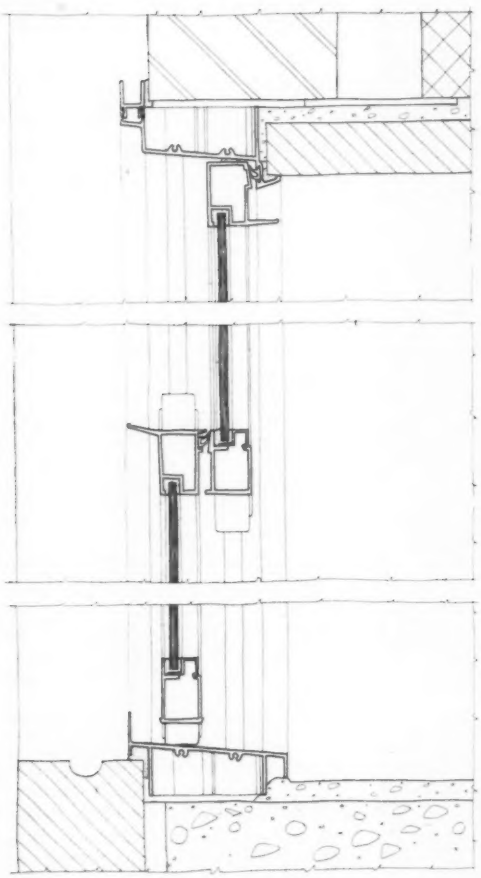
Eastbourne Terrace marks the boundary along which the faded Forsytean grandeur of Bayswater peters out into the mean warrens around Paddington station. As a street it was always far too long for the buildings on either side of it and at each end there was nothing more significant to stop the eye than a set of traffic-lights. Now there is a nine-storey tower at one end and a sky-scraper at the other.

Further, the placing of these two vertical dominants lends significance to the two side streets coming in from the west, interrupting as they do the long horizontal stretch of the six-storey wings. It is as though a long dull paragraph had been punctuated to make sense.

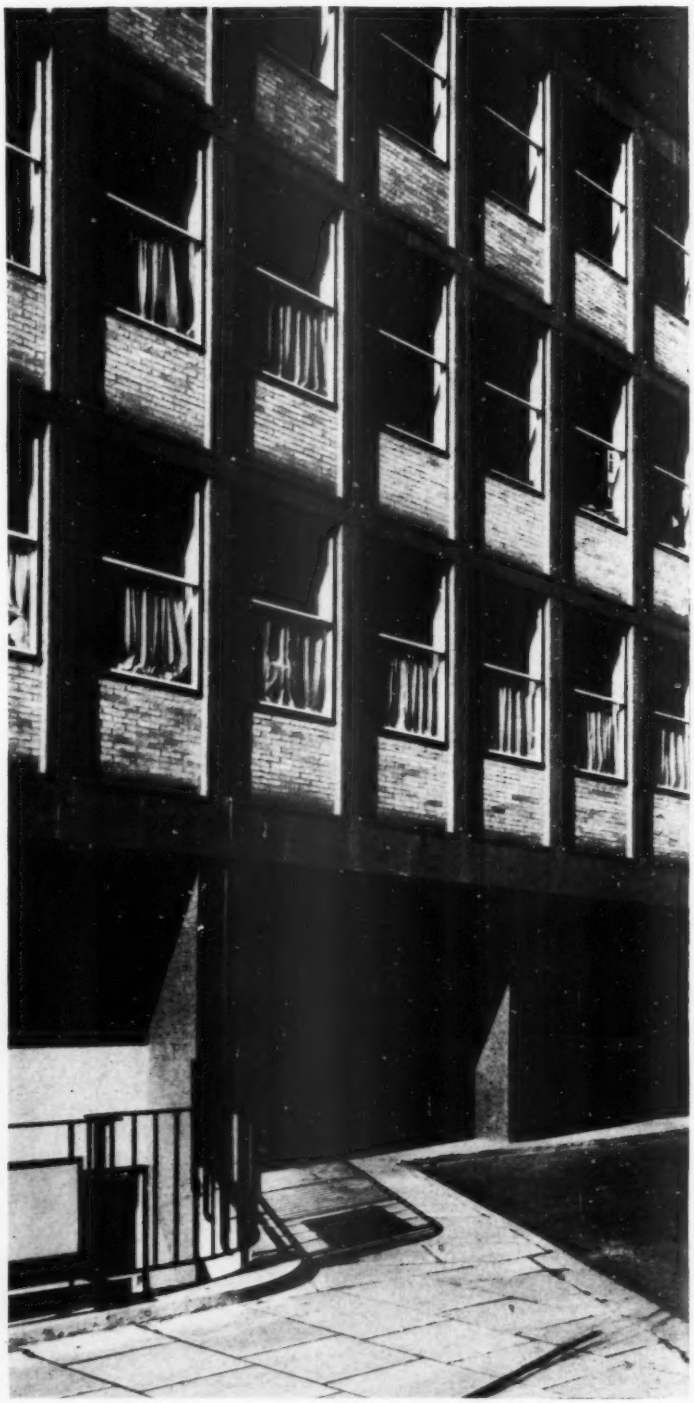
"As a street it was always far too long for the buildings on either side of it and at each end there was nothing more significant to stop the eye than a set of traffic lights. Now there is a nine-storey tower at one end and a skyscraper at the other."

critical study

OFFICES IN EASTBOURNE TERRACE, PADDINGTON,



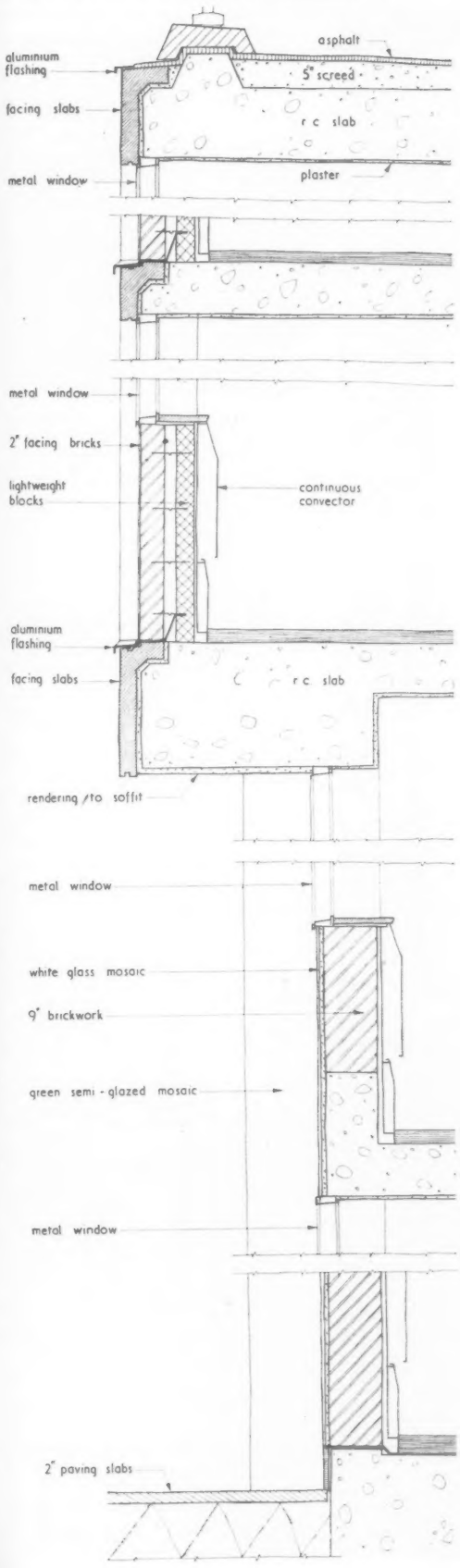
Detail of window [Scale: ¼ full size]



Above, close-up of east elevation, six-storey block.

". . . because the two bottom floors are set back the building seems to sit lightly over the ground instead of sinking heavily into the area."

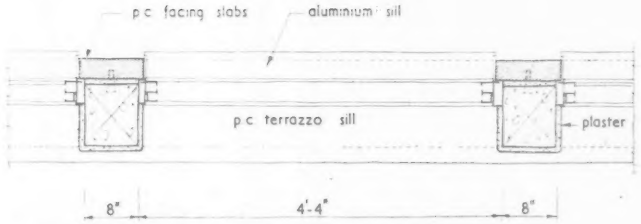
LONDON, W.2 continued



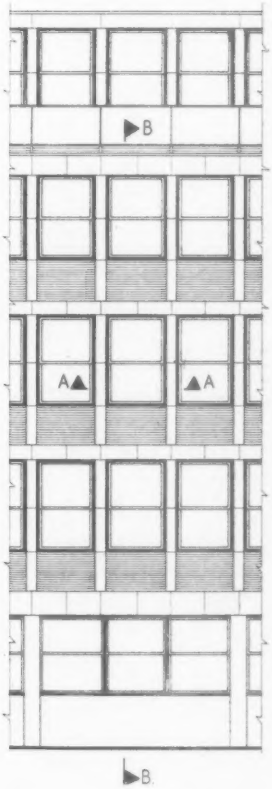
Left, detail section B-B through window
[Scale: ½" = 1' 0"]

STRUCTURE AND DETAIL: As with the planning, there is nothing either complicated or novel about the structure In essentials it is a simple code of practice r.c. frame cast *in-situ*. But it is handled in a way that supports and strengthens the basic massing. The six storey wings use the mullions as structural columns throughout the top four floors, providing an insistent rhythm continuously for the whole length of the street. Where there is an "area" well below street level, the mullions finish on a beam one storey above the street, and the load is then carried down through columns at 15-ft. centres to ground level. This relieves the visual rhythm at eye level and because the two bottom floors are set back the building seems to sit lightly over the ground instead of sinking heavily into the area.

There is no area on the mews side, so that this device is visually unnecessary, and the mullions are carried right down



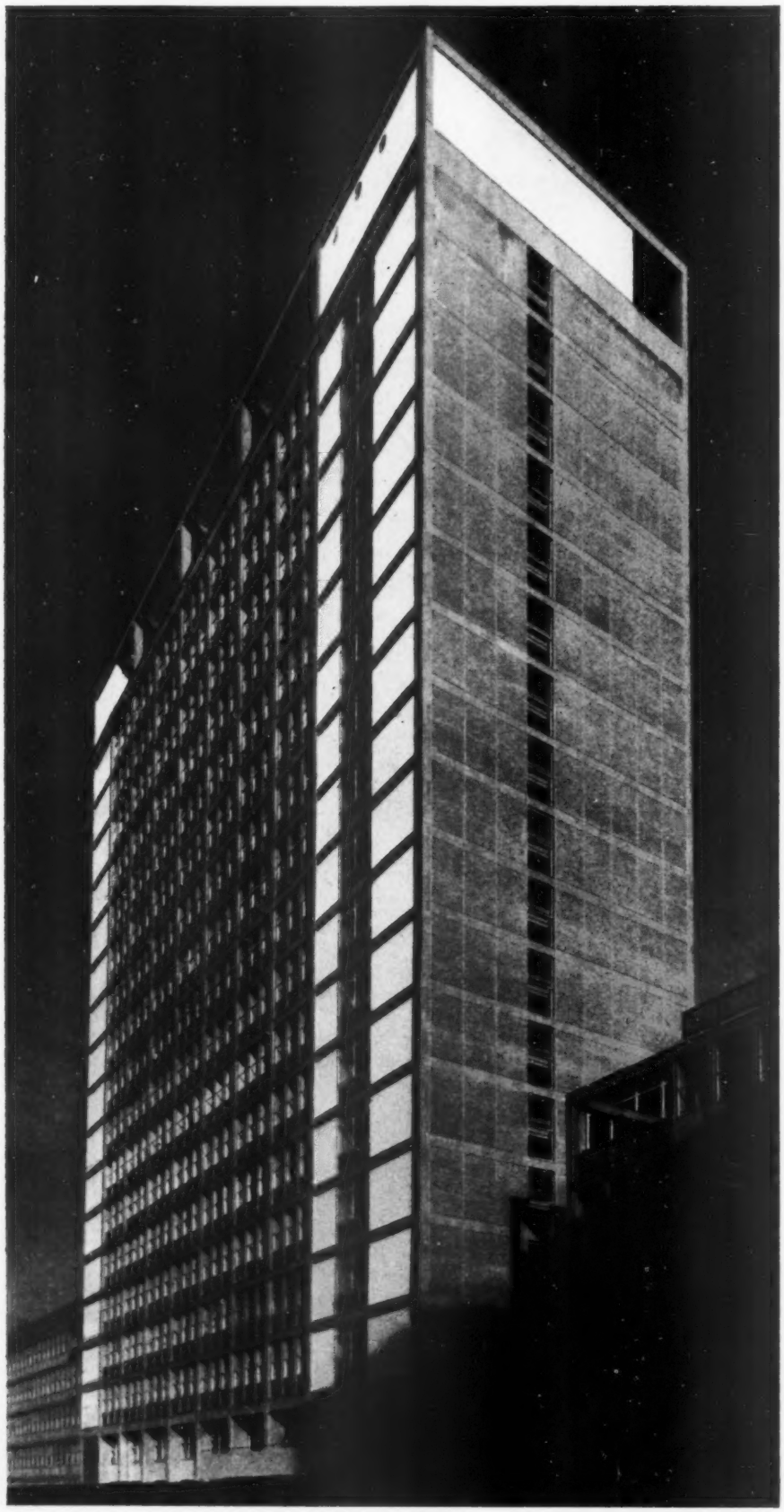
Detail section A-A through window
[Scale: ½" = 1' 0"]



Part elevation, six-storey block

critical study

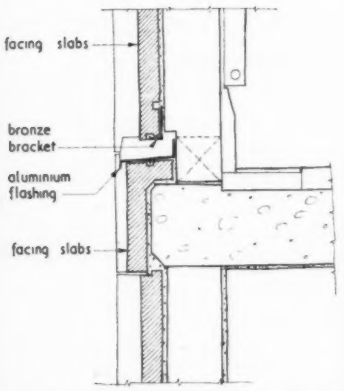
OFFICES IN EASTBOURNE TERRACE, PADDINGTON,



to a ground beam, and the rhythmic breaks are provided by the shorter projecting wings of the building.

"*. . . on the mews side . . . the mullions are carried right down to a ground beam and the rhythmic breaks are provided by the shorter projecting wings of the building.*"

In the two vertical blocks the heavier loads made it necessary to employ normal structural columns, so that here the mullions are non-structural and slightly more slender. Thus, whereas in the lower blocks mullions and beams lie in the same plane, the columns of the towers stand forward and the visual forces as well as the structural ones are carried firmly and resolutely down to the base. The mullions on the other hand are slightly set back behind the beams. Here again, functional and aesthetic purposes are happily integrated. In order to allow the aluminium beam flashing to run without interruption from column to column, the mullions stop short of the top of the beam and are supported on a bronze cramp,



Detail section of mullion at the top of beam showing bronze cramp
[Scale: ½" = 1' 0"]

thus emphasizing their structural independence and lending a tautness to the facade where otherwise it might have been flabby and indeterminate.

"*The end walls provide wind bracing and are faced with brick panels contrasting with the mosaic facing. . . .*"

LONDON, W.2 continued

had to be kept separate from the lower ones. Thus the skyscraper is linked to its wings by lightly framed glazed staircases which provide a visual separation as well as a structural one. The end walls of the towers provide wind bracing and therefore have the minimum fenestration, as is to be seen opposite. They are faced with brick panels contrasting with the mosaic facing to the pre-cast concrete panels of the window facades. In the low wings the contrast with the towers is maintained by reverting again to brickwork for the under window panels But in each case the brick panels retain their separate identity, on the end walls by being set slightly forward of the concrete frame with dividing concrete strips between them, and under the windows by being slightly recessed.

Brickwork, mosaic, and pre-cast concrete made with an exposed Rubislaw granite face, form, with the glazing of the windows, the principal external finishes and, where one finish joins the other their separate identity is always consistently defined.

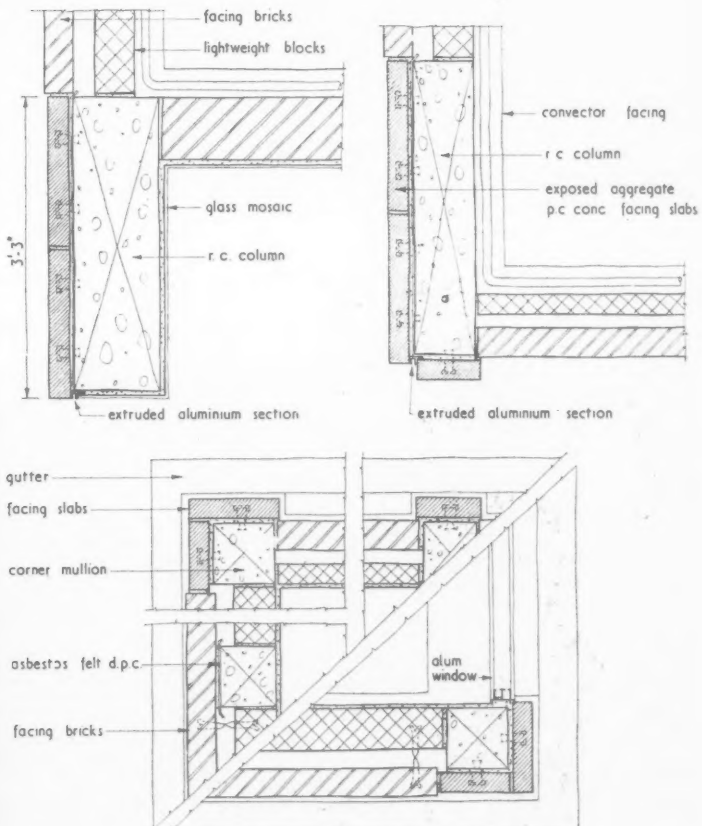
These finishes were selected with a view to easy maintenance, but their subdued colours, the velvety grey of the granite, and the carefully controlled recession of planes, provide the building with a grave and sombre richness and a depth and solidity which make a welcome contrast to the facile repetitiveness of metal curtain walling. At the same time the mullions provide a really substantial stop to internal partitions which run into them, and a quality of graded internal lighting impossible to achieve with metal sections. See photograph overleaf.

SPECIAL PROBLEMS OF HIGH BUILDING: The eighteen-storey block, although diminutive by American standards, presented certain difficulties of which there is at present little experience available in this country. First of these is the problem of disposing of the rain-water collected on the face of the building. The glazed curtain walling of the UN building in New York was the first pointer to the magnitude of the dangers of providing so high a building with an impermeable external facing. The collecting water cascading downwards is driven by the wind through the vertical and horizontal joints unless special precautions are taken. The most obvious precaution is not to allow the water to collect in quantity, in other words, to face the building with an absorbent surface which soaks up the

". . . lightly framed glazed staircases which provide a visual separation as well as a structural one."

Clarity of definition characterises the building from the broad massing to the small scale detail. Mention has already been made of the definition given to the horizontal mass by the intersection of the side streets. In the same way, the tall blocks, with their much heavier loads and risk of differential settlement,

" Where one finish joins the other their separate identity is always consistently defined."



Detail plans of external cladding of 18-storey block [Scale: ½" = 1' 0"]

critical study

OFFICES IN EASTBOURNE TERRACE, LONDON, W.2 continued

" The mullions provide a really substantial stop to internal partitions which run into them, and a quality of graded internal lighting impossible to achieve with metal sections."

water without allowing it to penetrate inside. The absorbent material dries out eventually in the wind. This was the solution adopted at Eastbourne Terrace. In addition, the flashings at beam level are all most carefully detailed. Heat losses due to excessive exposure are another factor which had to be considered, and from the eighth floor upwards windows are double glazed. A further and somewhat unexpected precaution which must be taken follows upon the exceptional velocity attained by down-pouring liquid wastes and rain-water from the roof. Brakes must be provided in the form of double off-set bends in all waste and rain-water stacks if the effluent is not to build up with terrific force at the bottom of the building. To be effective the offset must be between 4 ft. 6 in. and 6 ft.

The presence of two tower blocks ruled out the possibility of more than two boiler houses, as flues rising from the lower blocks would have been overshadowed. This has some disadvantages because each boiler house has to serve more than one tenancy, and in fact separate heating and hot water installations for each block would have been preferred.

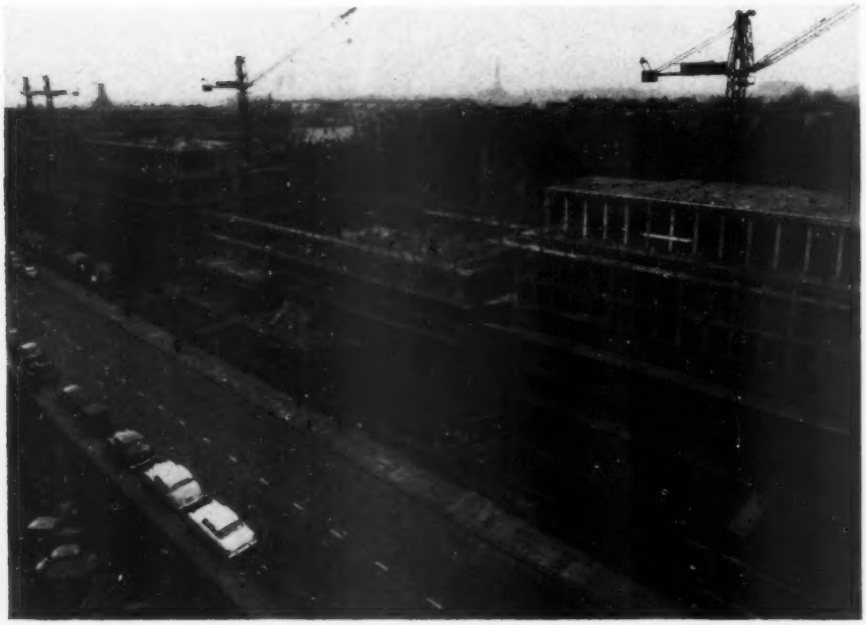
Hot water is supplied from storage calorifiers in the boiler house and separate boilers for summer use. The fuel used is oil and underground storage tanks are provided in the car park behind the buildings.

The lifts in the 18-storey block are driven by gearless motors and travel at 700 ft. per minute. This higher than normal speed was considered necessary to deal economically with peak periods.

TIME AND COST: The whole building (apart from piling) was completed in 19 months, including much of the tenants' work. This was partly due to the degree of repetition involved, to which contractors' attention was drawn in the bills of quantities, and partly due to efficient site organization, with mechanization used to the fullest extent. Five tower cranes were in operation at the same time (as in progress photograph on left) and no shuttering was left erected overnight unless the concrete had been poured.

It is well known that high buildings are more expensive per square foot than low ones, bearing in mind that the ratio of lettable floor area to the more expensive service areas, such as staircases, lifts and lavatories, is considerably less. The higher cost of foundations and structure also adds to the expense. Even so, the architects to the Eastbourne Terrace development have evidence that a sensible combination of high and low blocks can produce approximately the same lettable area at approximately the same cost as dull, straightforward periphery street development without variations in height. This controverts the widely held assumption that imaginative developments of this kind are only possible if the developer is prepared to make the kind of financial sacrifice which is only acceptable in return for commercial prestige. If this were more widely realized, we might be able to look forward to further examples of the large-scale comprehensive planning for which this scheme provides such admirable vindication. The general contractors were Tersons Ltd. For sub-contractors, see page 606.

" Five tower cranes were in operation at the same time . . ."



working detail

CURTAIN WALL: OFFICES IN CREVE COEUR, MISSOURI

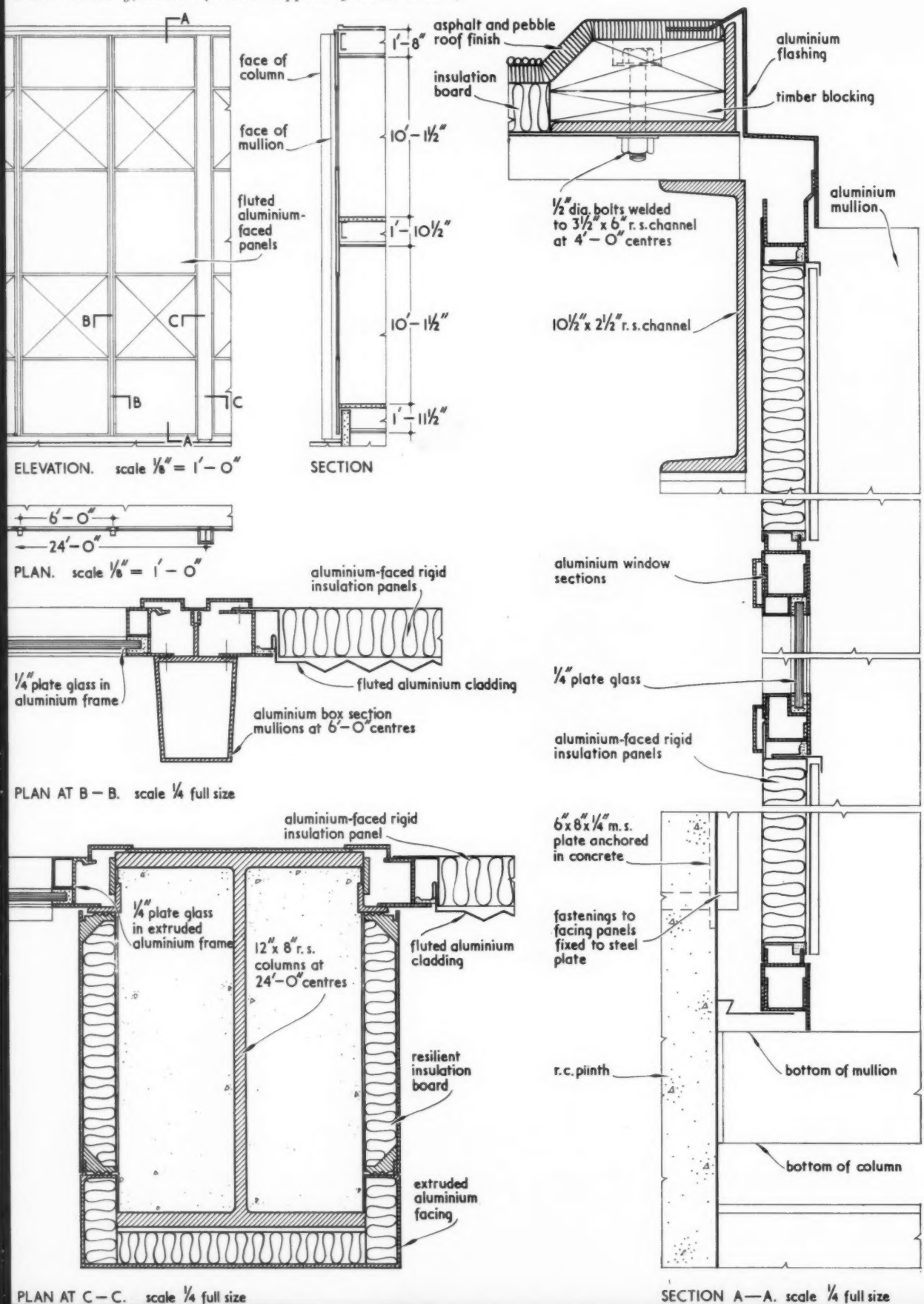
Vincent G. Kling, architect (material supplied by W. H. Roberts)

The opaque surfaces of this curtain wall are wholly of aluminium. The mullions of the facades visible in the photograph are made of tapering aluminium box sections bolted top and bottom to the main structure. On the facades which fall at right angles to these, the main steel stanchions project in front of the curtain and are faced with prefabricated aluminium panels with insulated backing.

working detail

CURTAIN WALL: OFFICES IN CREVE COEUR, MISSOURI

Vincent G. Kling, architect (material supplied by W. H. Roberts)



ELEVATION. scale ⅛" = 1'-0"

SECTION

PLAN. scale ⅛" = 1'-0"

PLAN AT B—B. scale ¼ full size

PLAN AT C—C. scale ¼ full size

SECTION A—A. scale ¼ full size

working detail

CEILING LIGHTING: ART GALLERY IN BIRMINGHAM

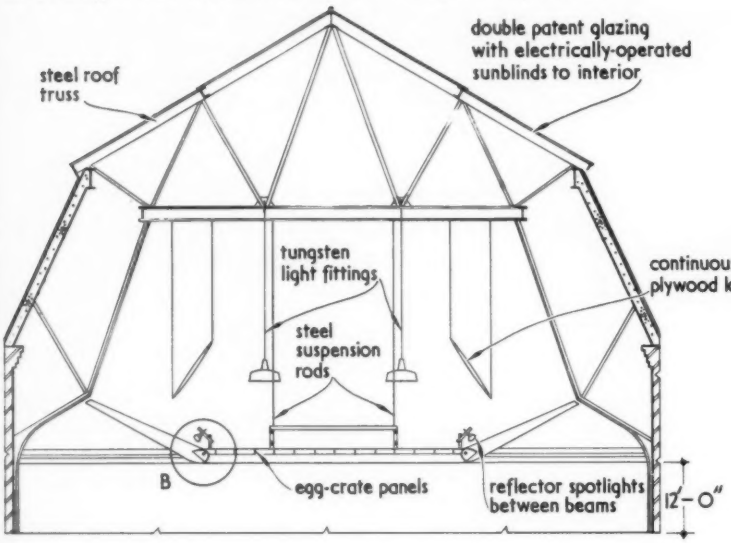
A. G. Shepherd Fidler, Architect to the Birmingham City Council

This detail shows the adaptation of an existing gallery to provide ideal picture-viewing conditions. The elements used (which can be seen more clearly in the drawing than in the photograph) were as follows. First, to reduce the view of the sky to a minimum, a timber velarium, with plastic eggcrate louvres in the central bays, was slung 12 ft. above floor level. Second, to make the pictures the best-lit objects in the room, two continuous plywood louvres were run above and at both sides of the velarium and down the length of the gallery. These direct and concentrate the light on the walls at 5 ft. 6 in. above floor level with even diminution above and below. Third, to provide artificial light from the same direction as the natural light and of comparable quality, a line of colour-matching fluorescent tubes was fixed along the edges of the velarium, with reflector spotlights above them to restore the red element missing in the fluorescent fittings and, above the eggcrates, blended lamps in dispersive reflectors.

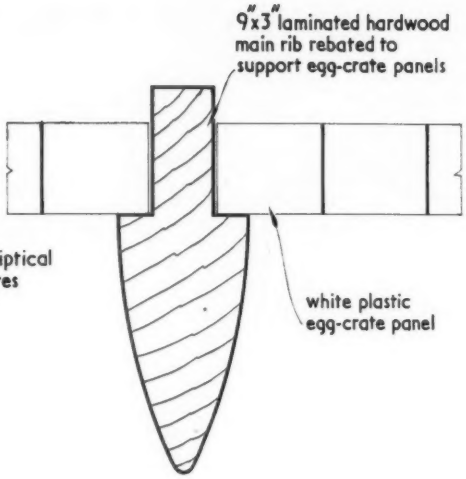
working detail

CEILING LIGHTING: ART GALLERY IN BIRMINGHAM

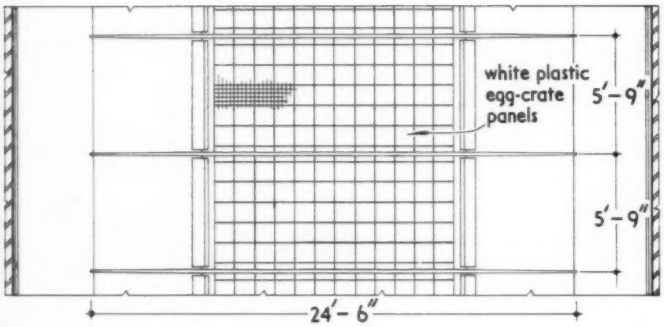
A. G. Shepherd Fidler, Architect to the Birmingham City Council



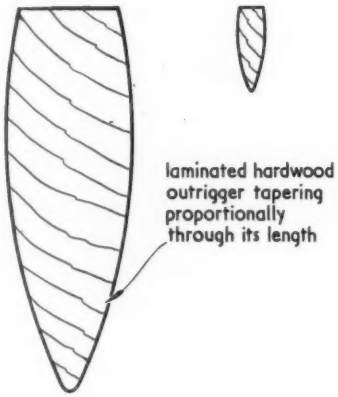
SECTION. scale 1/8" = 1'-0"



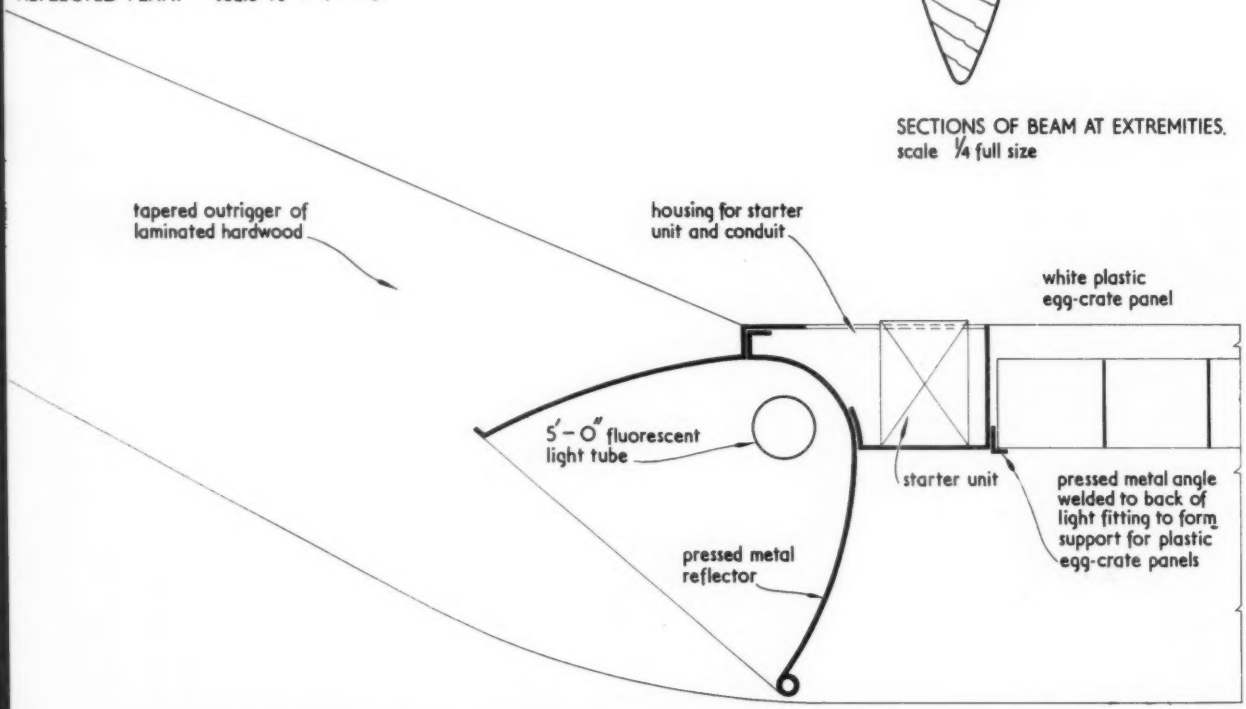
SECTION A-A. scale 1/4 full size



REFLECTED PLAN. scale 1/8" = 1'-0"



SECTIONS OF BEAM AT EXTREMITIES. scale 1/4 full size



DETAIL AT B. scale 1/4 full size

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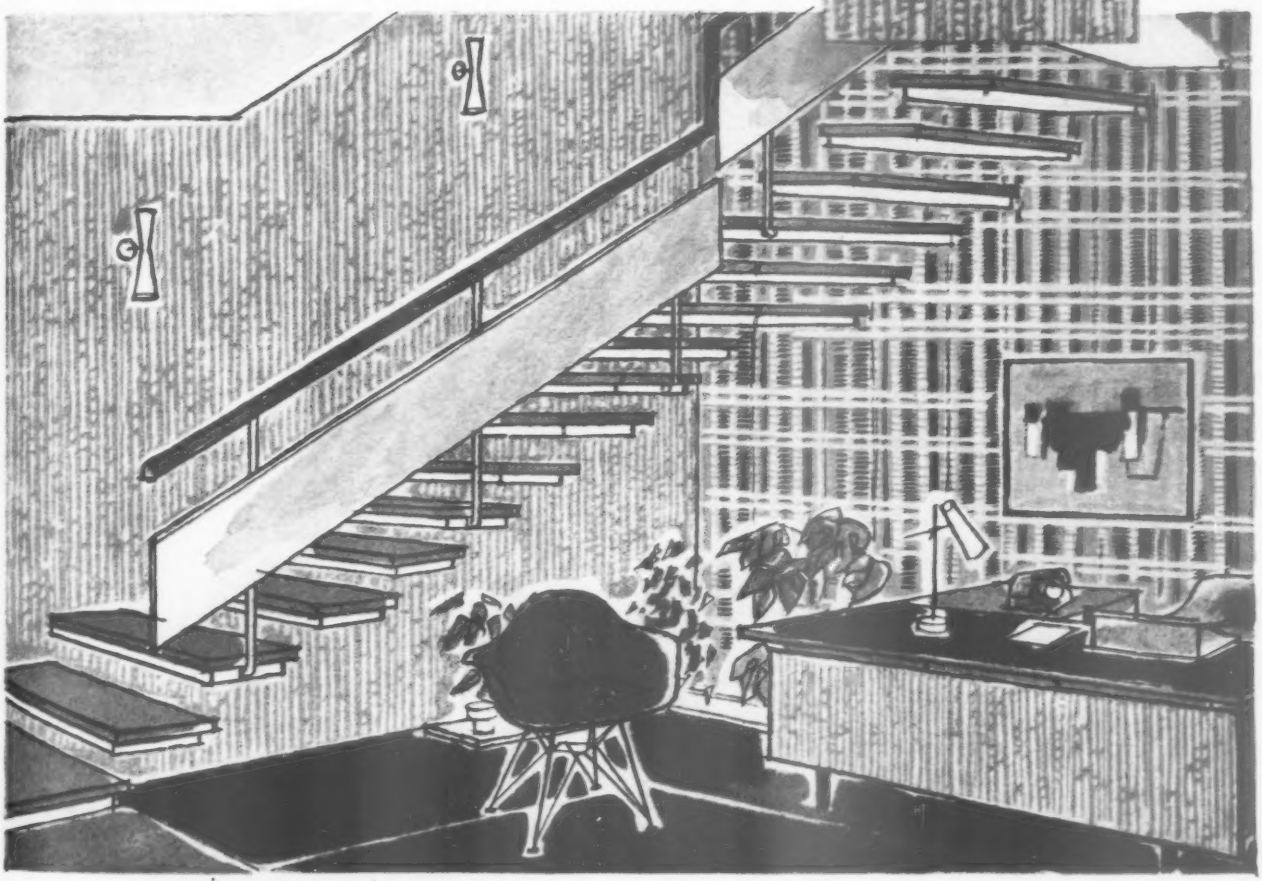

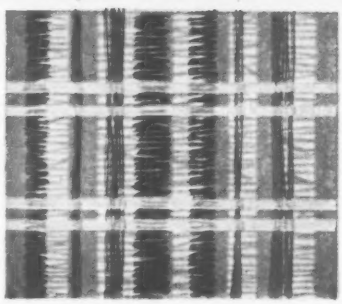

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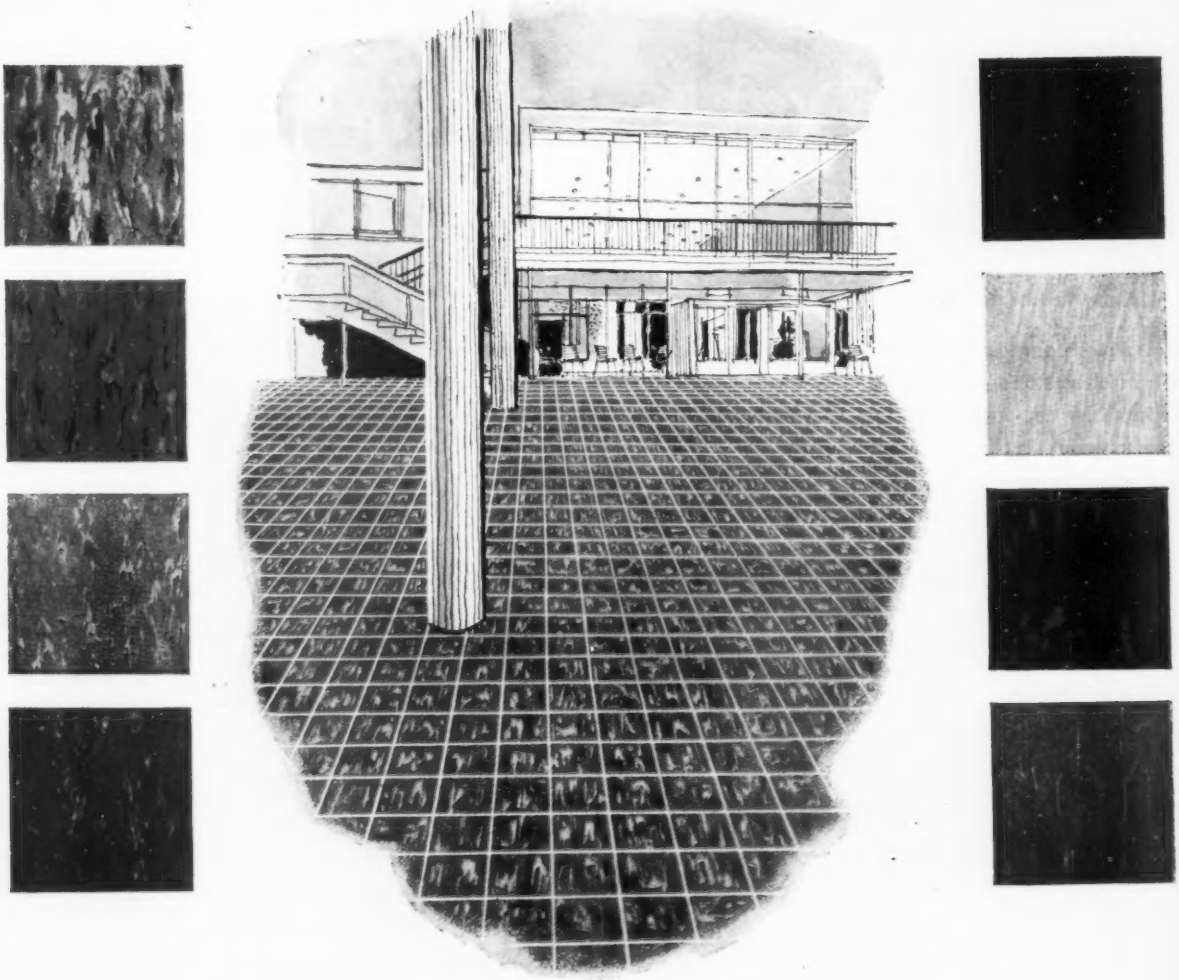

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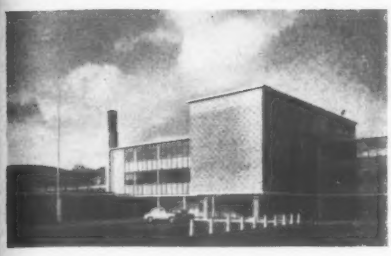
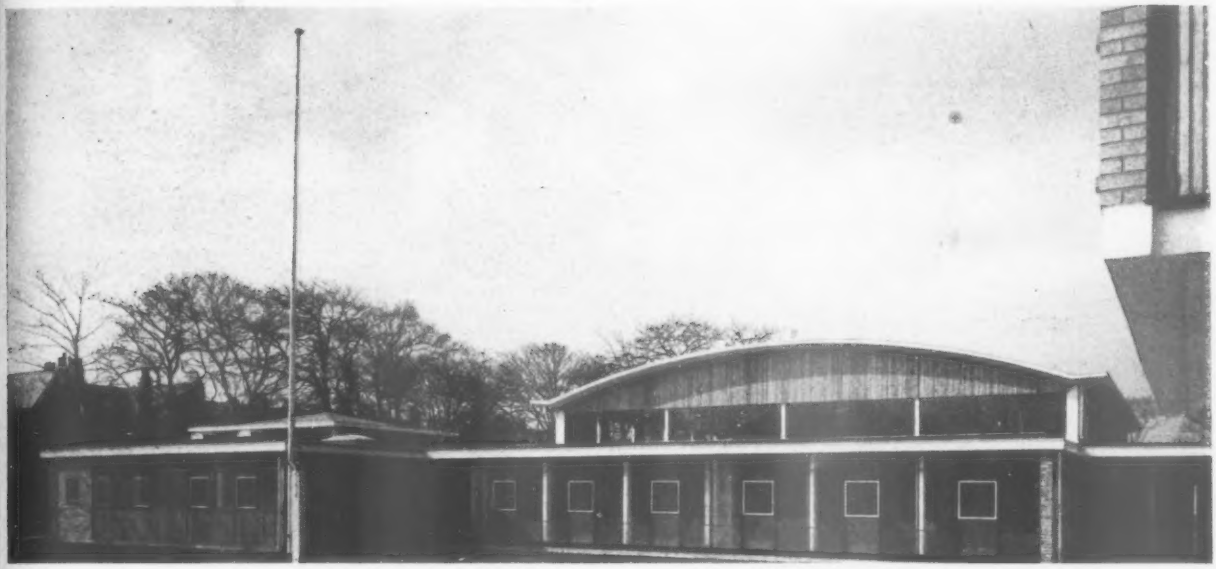


This new technical school, designed by Harold E. Davies and Son in collaboration with Dr. Ronald Bradbury, City Architect, lies in a residential suburb of Liverpool. The upper floors of the main teaching block (left) are designed without corridors so that the classrooms are lit from both sides and are served by two subsidiary staircases. The assembly hall group (below) is so arranged that it can be isolated from the rest of the school and used for public functions. The general contractors were R. J. Barton and Sons Ltd.



Contractors

Eastbourne Terrace Development, Paddington (pages 595-604). *Architects:* C. H. Elsom & Partners, F.R.I.B.A. *Architect-in-charge:* F. P. Softley, A.R.I.B.A. *Assistant architects:* A. Artur and J. L. Smith. *Consulting engineers:* Clarke Nicholls and Marcell. *Quantity surveyors:* Cyril Sweett and Partners. *General contractors:* Tersons Ltd. *Lifts:* Otis Elevator Co. *Heating, hot water and ventilation:* G. N. Haden & Sons. *Internal plumbing, rainwater plumbing, dry riser and hosereel installation:* Matthew Hall & Co. *Electrical installation:* Phoenix Electrical Co. *Metal windows, ventilation, glazed roof, balcony balustrading:* Williams & Williams Ltd. *Lightning protection:* R. C. Cutting & Co. *Terrazzo pavings, wall linings and lavatory partitions, mosaic wall facing:* W. B. Simpson & Sons. *Thermoplastic flooring:* Armstrong Cork Co. *Metal balustrades, core rails, guard railing, staircases, etc.—South Site:* George Wright (London) Ltd. *Metal balustrades, core rails, guard railing, staircases, etc.—North Site:* Light Steelwork (1925) Ltd. *Staircase plastic handrails:* Marley Tile Co. *Rolling shutters:* Haskins Rolling Shutters. *Marble wall lining:* Art Marbles Stone & Mosaic Co. *Entrance hall screens:* James Gibbons Ltd. *Bored piling:* The Cementation Co. *Special dampproof courses:* Ruberoid Co. *Fibrous plaster and acoustic tiles:* Jonathan James Ltd. *Boardroom and members' room furnishing—Block C:* Hille of London Ltd. *Horticultural work:* Gilliam & Co. *Boardroom panelling—Block C:* H. N. Barnes Ltd. *Venetian blinds—Block C:* J. Avery & Co. *Special rendering:* Mineralite Ltd. *Cradle runways:* Palmers Travelling Cradle & Scaffold Co. *Bricks:* Richard Parton. *Incinerators:* Sloan Electric Co. *Ironmongery:* Alfred G. Roberts Ltd. *Floor springs and overhead door closers:* Comyn Ching & Co. *Flush doors:* Gliksten Doors Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Precast concrete mosaic faced infilling panels and exposed aggregate cladding units:* The Modular Concrete Co. *Dry riser inlet boxes and outlet covers:* George Wright (London) Ltd. *Glass dome lights:* T. & W. Ide Ltd. *Folding ladders:* Loft Ladders Ltd. *Special light fittings:* F. H. Pride Ltd.; Frederick Thomas & Co. *Rubber door mats:* Redfern's Rubber Works Ltd. *Double glazed units:* Hollowseal Glass Co. *Glass cladding units:* Plyglass Ltd.; Pilkington Bros. Ltd. *Concrete paving, bollards and planting bowls:* Mono Concrete Ltd. *Electric clocks—Block C:* English Clock Systems Ltd. *Thiokol rubber jointing compound:* British Paints Ltd. *Paint:* Hadfields Ltd. *Special wall tiles:* Langley London Ltd.; Carter & Co. *Glass mosaic:* Proctor & Lavender Ltd.; Dennis M. Williams Ltd.

Announcements

TRADE

As from April 1, S. R. Badley will be Market Development Manager, Distillers Plastics Group. L. R. Anthony will become Information Officer and A. E. Oates Publicity Officer.

The new telephone number of Lewis and Randall Ltd. is Victoria 4671 (3 lines).

British Geon Ltd. have appointed R. J. Facer as General Sales Manager. J. E. Richardson takes over as Export Manager from S. A. Williams who becomes Administration Manager (Sales). G. Y. Blomeley has been appointed Northern Manager.

Holloway Brothers (London) Limited have extended their activities to property development and formed a new associate company, Holloway Development Limited with offices in Westminster.

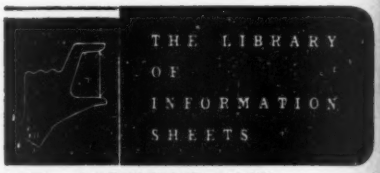
J. Douglas Elstone, Sales Manager (Agricultural and Industrial Divisions) of the Dunlop Rubber Co. Ltd., Birmingham, has accepted an appointment with David Brown Industries Ltd., Tractor Division, Meltham, Yorkshire, as Director of Marketing.

H. G. Campbell, Managing Director, and J. O. K. Purdey, Sales Director, of the Benjamin Electric Ltd. left London on March 4 for a business tour which will take them round the world.

Polycell Products have acquired the Merthyrware Co. of Merthyr Tydfil. The Merthyrware Co. will continue to manufacture and trade under its own name.

J. D. Winston has been appointed General Sales Manager for British Resin Products Limited and is now responsible for the sales of all the plastics materials produced or marketed by them.

G. C. Pillinger & Co. Ltd. have now opened a branch at 2, Queens Terrace, Exeter (telephone Exeter 71902). The local representative is J. Ley who will welcome all enquiries from the West of England contractors.



19.F1. *REFERENCE BACK*

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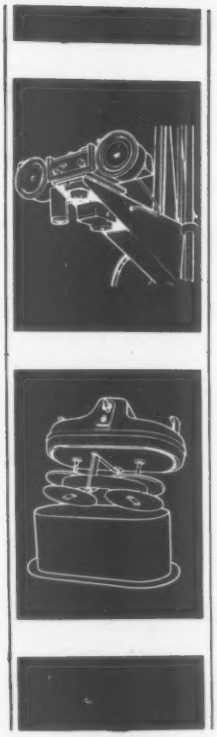

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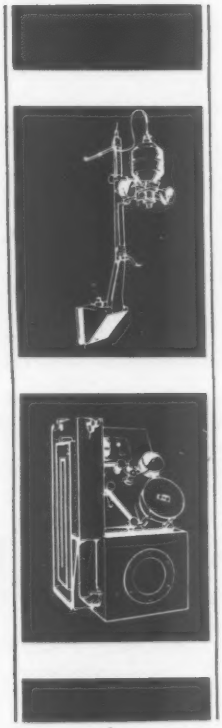

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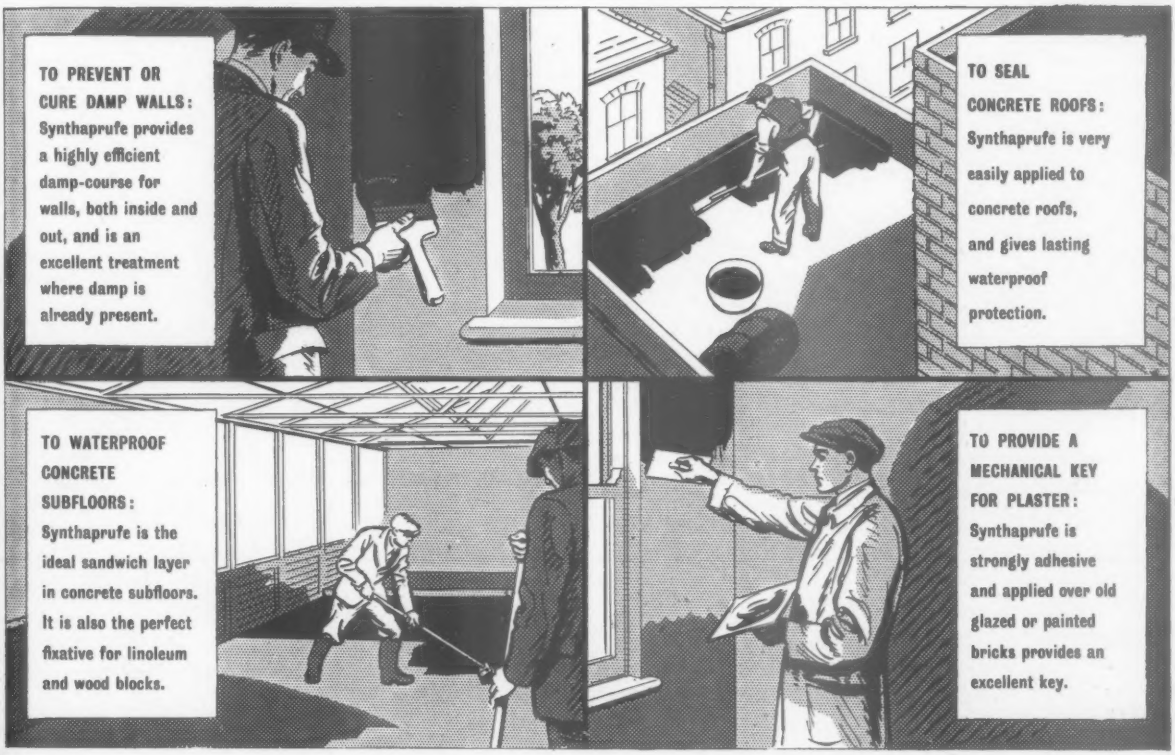


SYNTHAPRUFE is a waterproofing compound which can be applied cold by brush; its rubber content makes it strongly adhesive, and it sets quickly and forms a strong, elastic, moisture-proof film.

Most surfaces will take Synthaprufe—concrete, plaster, brick, metal or timber—and it is equally effective on old or new buildings.

Synthaprufe is also highly effective as a vertical damp-course on either external or internal surfaces, and is most valuable for treating damp in existing walls.

When applied over old and shabby glazed brick or painted brick wall surfaces (e.g. in hospitals, institutions and factories) Synthaprufe provides an excellent mechanical key for plaster finishes. This process obviates the noise, discomfort and expense of hacking.

When Synthaprufe is applied to inside walls it may be finished in distemper, wallpaper, or emulsion paint; full instructions will be furnished by the manufacturers.

Synthaprufe offers the architect, builder, and engineer a waterproofing and jointing material of unusual efficiency and versatility, ready to use and easily applied.

Some special uses

- Sealing concrete structures above and below ground-level, cooling-towers, etc.
- Protecting concrete piles, steelwork, sewer-pipes, and joints, etc.
- Waterproofing old asphalt, lead, zinc, corrugated iron, or felted roofs.

SYNTHAPRUFE

Manufactured by the NCB *National Coal Board*

Synthaprufe is a product of British Coal. Further details, and advice on any technical problem, will gladly be given on application to the National Coal Board, By Products, National Provincial Bank Buildings, Docks, Cardiff.

"Synthaprufe" is a Registered Trade Mark

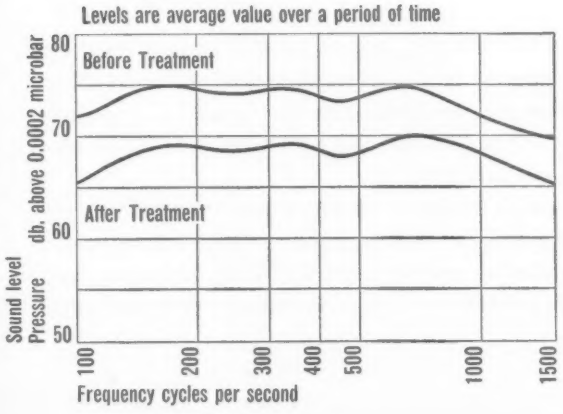
THE ARCHITECTS' JOURNAL
for April 16, 1959

THESE PANELS CAN CUT SOUND ENERGY IN SHOPS

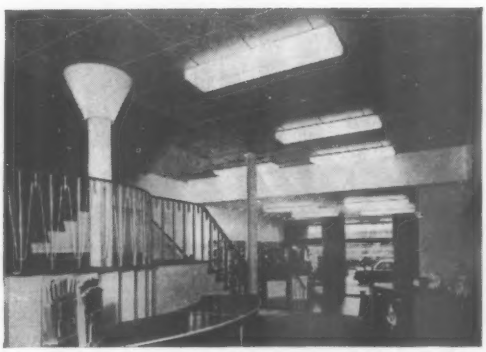
BY

68%

And since Sound Energy is directly related to *noise*, this means quieter, more comfortable surroundings for customers and staff—and, in time, greater efficiency and greater profits. Without getting too technical, it means that after treating shops and stores with T/A Panels, you could increase the source of noise up to TEN TIMES before the original noise level was reached. And stores and shops are not the only places where T/A Panels are beneficial. They do equally good work in busy offices, canteens, and restaurants where constant clatter and chatter affect efficiency and irritate customers.



This graph shows the level of noise in a typical self-service store, selling mainly groceries, before and after treatment with Bowater T/A Panels. The situation was this: 10′ ceiling, 40′ x 20′ floor; rubber flooring on concrete, plaster ceiling with extensive fluorescent lighting, walls shelved to 6′; entrance and windows on 20′ side; four cash registers. Area treated: ceiling and 2′ drop on walls.



A T/A ceiling quietly enhances the displays in this Edinburgh store.

- Strong sandwich construction keeps the panels flat on wall or ceiling. 2 ft. sq., 1″ thick.
- Low thermal conductance figure: C value only 0.22.
- Decorated in a range of washable colours from the current I.C.I. "Dulite" range.
- Easy to fix—in three different ways.
- Supplied, fixed and decorated from as little as 29/- per sq. yd.
- Flame retardant version available (Class I Spread of Flame Test) at extra cost.

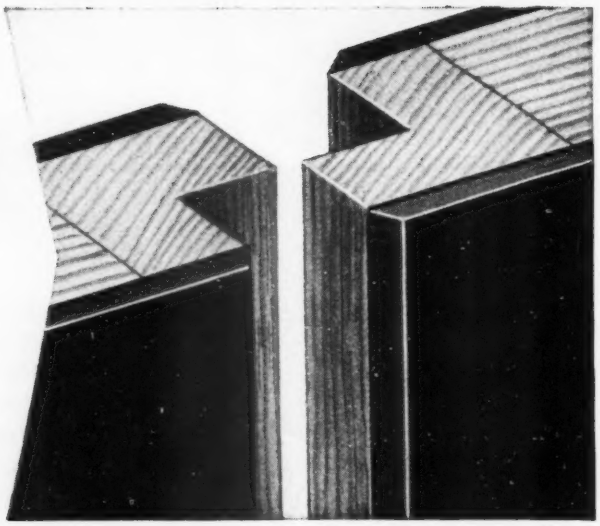
YES only 29/-! SUPPLIED, FIXED AND DECORATED

Drop us a line for further information and the name of your nearest distributor

Bowater T/A Panels

BUILDING BOARDS DIVISION, BOWATERS SALES COMPANY LIMITED,
BOWATER HOUSE, KNIGHTSBRIDGE, LONDON, S.W.1. Tel: KNI 7070

Here's something NEW in partitions



★ RAPID DRY-CONSTRUCTION

★ FLEXIBLE LAYOUT

★ DE-MOUNTABLE

★ LOW COST

★ HARD SURFACE

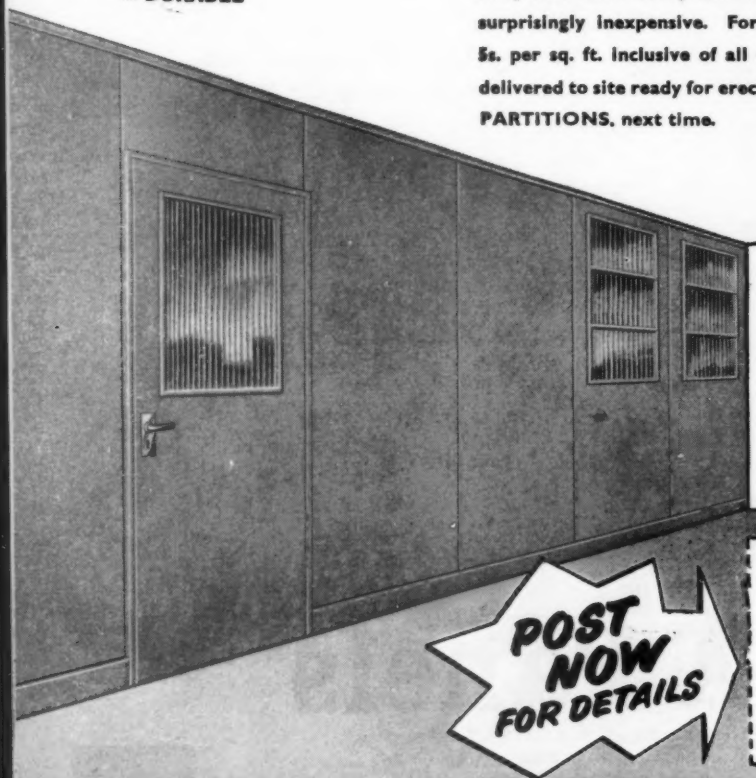
★ SOUND REDUCING

★ DURABLE

Thanks to their ingenious design, STRAMIT 'MOVAFLUSH' PARTITIONS can be erected really quickly. Whilst top and bottom edges of each hardboard-faced Stramit panel are finished with square timber, the long edges have an L-shaped member. This means that successive panels can be rapidly, easily fitted together to give a flush finish. These new, dry-construction partitions are simply placed on a sole-plate and secured, being fixed to one another with screws which are neatly seated in brass cups.

STRAMIT 'MOVAFLUSH' PARTITIONS comprise essentially the familiar and well-tried Stramit building slabs and so have all the advantages of Stramit. They are strong, rigid, fire-resistant and have remarkable sound-deadening properties. As STRAMIT 'MOVAFLUSH' PARTITIONS are faced with hardboard, they offer an exceptionally good surface for decoration.

In spite of their many advantages, STRAMIT 'MOVAFLUSH' PARTITIONS are surprisingly inexpensive. For schemes of average size, the approximate cost is 5s. per sq. ft. inclusive of all timber sections, doors, screws, etc. (excluding glass) delivered to site ready for erection and decoration. Try STRAMIT 'MOVAFLUSH' PARTITIONS, next time.



STRAMIT 'MOVAFLUSH'

-THE EASY-TO-ERECT PARTITION

POST NOW FOR DETAILS

Please send me, without obligation, full details of Stramit 'Movaflush' partitions

NAME .....

ADDRESS .....

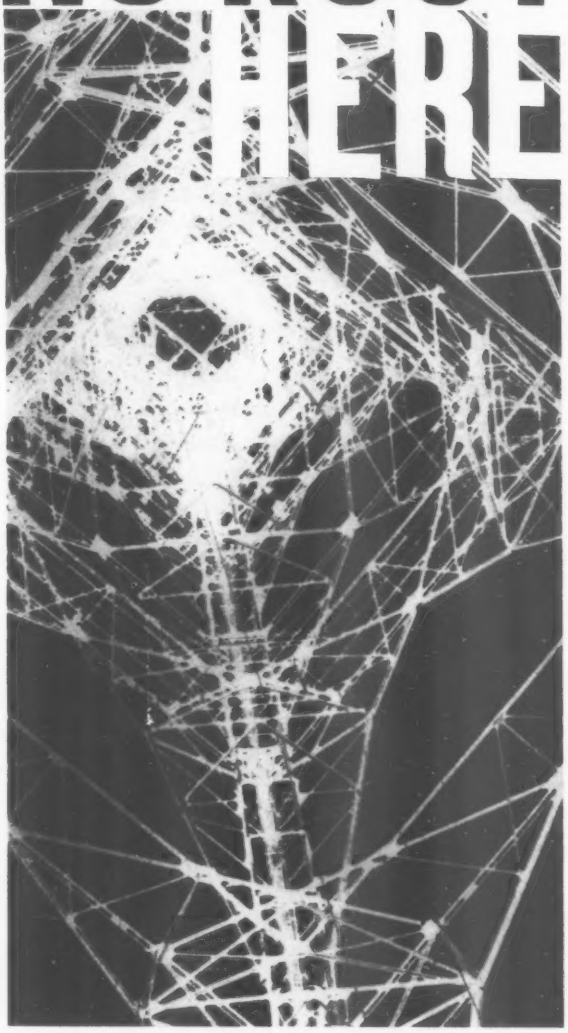
.....

.....

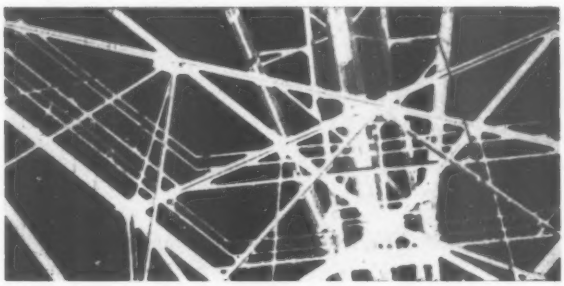
For the attention of .....

STRAMIT BOARDS LTD., COWLEY PEACHEY, UXBRIDGE, MIDDLESEX West Drayton 3751 A.J.4

NO RUST HERE



This tower is safe from rust because it is hot galvanized, the most effective method of preventing the corrosion of iron and steel and the cheapest in the end. Hot galvanizing ensures a tough, tightly adherent & thick coating of zinc alloyed to the basic steel. Few structures or parts are too big, too small or too complex for this versatile process. For further information write to the Hot Dip Galvanizers Association, 34 Berkeley Square, London W1



PLASTAWELD BONDING

100's

OF SQUARE YARDS 'KEYED' EVERY DAY!

Over 100 sq. yards can be covered with a gallon can of PLASTAWELD, the Permanent Bond for gypsum plasters — the 'key' that goes on straight from the tin. And that's one reason why more architects are specifying PLASTAWELD. Another reason — PLASTAWELD slices labour costs.

Ideal for browning backing as well as skimming coats, PLASTAWELD Permanent Bonding Fluid is specially suitable for bricks, smooth shuttered concrete, tiles and even asbestos. Architects on major projects everywhere always specify PLASTAWELD, for Hospitals, Factories, Schools, Military and Ministry of Works contracts. Specify PLASTAWELD for all your work, too.

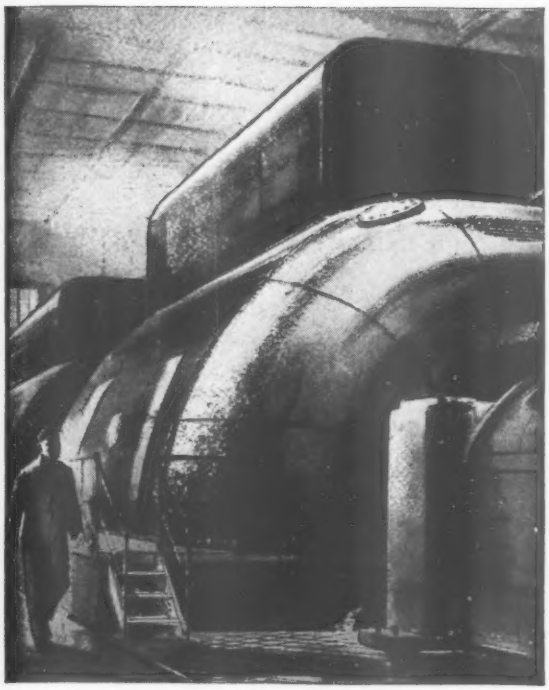
MANGER'S PLASTAWELD
puts an end to hours of expensive labour

NO stippling! NO blinding with sand!
NO hacking! NO noise, dust or dirt!

Apply straight from the can

Please write or 'phone our Technical Department when you've any problems.

J. MANGER & SON LTD, Dept. AJ, London E.8 CLissold 8521 (5 lines)



The world's largest Generators will help to fill the demand for still more power

The development of nuclear energy for generating electricity is still front-page news. Less publicised, though no less outstanding, are new developments in "conventional" generating plant. The turbo-alternator shown here is a 550,000 kilowatt unit – twice the capacity of the next largest on order for the Central Electricity Generating Board. It has been designed for the projected new power station at Thorpe Marsh. For Blythe 'B', another new station, 275,000 kilowatt in-line units are on order. They will be powered by steam at 2,350 lb. per sq. in. and 1,050°F, with reheat to 1,000°F.

Nuclear power will play an important part in meeting the ever-increasing demand for electricity. Work is now in progress on the first three nuclear power stations, at Bradwell, Berkeley and Hinkley Point. By 1966/7 some 5 to 6 million kilowatts of nuclear-generated electric power will be available.

Though these projects will not be completed for some time, the Central Electricity Generating Board plays an important part in today's fight against inflation. Power stations are being built at a cost no greater than in 1948 – £50 per kilowatt installed. And, although the output of the industry has doubled since 1948, the increase in manpower is only about one-third.

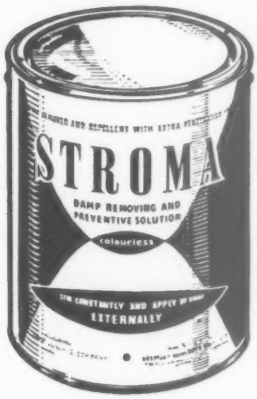
By providing today for the power we shall need in years to come, the Central Electricity Generating Board is building a secure foundation for our future prosperity.

C E G B

THE CENTRAL ELECTRICITY GENERATING BOARD

a new treatment for driving out and preventing damp

STROMA



damp removing and preventive solution

Effective against rising damp in walls, floors or screeded surfaces. Prevents damp penetrating through brick, concrete, stone, rough cast and plaster surfaces. Cannot harm paint, paper or subsequent coverings.

Brush applied STROMA is both economical and effective. One gallon covers up to 40 sq. yds. As it contains *no* silicones it does not just seal the surface temporarily, it penetrates deeply, up to 9 ins.—depending on porosity—and forms a permanent, damp-proof barrier. It has been used with entirely satisfactory results as a damp proof membrane, on concrete sub-floors under linoleum, plastic tiles and other composition floors, when applied to combat rising damp in a wall without a damp course on a clay sub-soil and to prevent external impregnation.

Details on request.

For internal and external use.

STROMA

BREARLEY CONCRETE UNITS LTD.,
Brearley Street, Birmingham 19.
Aston Cross 4371/2.

CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

AIR-MAIL SERVICE available on request:
In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

Public and Official Announcements

30s. per inch; each additional line, 2s. 6d.

BOROUGH OF FINCHLEY
HOUSING DEPARTMENT
JUNIOR ARCHITECTURAL ASSISTANT

Salary within A.P.T. Grade I, according to qualifications and experience (£575×£30=£725), plus London Weighting.

Subject to satisfactory service, anticipated duration of the post will be approximately 2-3 years.

Preference will be given to those who have passed the R.I.B.A. Intermediate Examination and who have had practical office experience in housing work.

The National Scheme of Conditions of Service and the Local Government Superannuation Acts apply and medical examination is required.

Applications stating age and full particulars of qualifications and experience, with the names of two referees, to be submitted to the Borough Housing Officer, The Avenue, Finchley, N.3, by first post on Wednesday, the 22nd April, 1959.

R. M. FRANKLIN,
Town Clerk.
3707

CWMBRAN DEVELOPMENT CORPORATION
APPOINTMENT OF ARCHITECTURAL STAFF

Applications are invited for the undermentioned superannuable posts, the point of entry in each grade being in accordance with qualifications and experience.

(*a*) ARCHITECTURAL ASSISTANT.
A.P.T. IV/V. £753—£1,029.

(*b*) ASSISTANT ARCHITECT.
A.P.T. V/VI. £844—£1,146.

Candidates for post (*a*) should either be Graduates about to complete their studies at a recognised school of Architecture or be persons possessing minimum qualification of Intermediate Examination of R.I.B.A. with office experience.

Candidates for post (*b*) should be Associates of the R.I.B.A. with suitable office experience and should have had good experience in house design, construction and layout.

Housing accommodation will be made available to successful married candidates.

Applications stating age, experience, details of present and former employment (together with applicable salaries) and the names and addresses of two referees must reach the undersigned by first post on Monday, May 4th, 1959.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria St.,
Cwmbran,
Mon. 3715

THURROCK U.D.C. (Engineer and Surveyor's Dept.) require ARCHITECTURAL ASSISTANT I/II under Architect to the Council. Salary—A.P.T. I/II, *i.e.*, £575—£845 p.a. Good architectural experience necessary. Applicants must be capable of preparing working drawings in all categories and should have passed the Intermediate Examination of the R.I.B.A. The Council have interesting projects in hand, including an Indoor Swimming Bath. Appointment pensionable. Applications, stating age, qualifications, and experience, and quoting three referees, to Clerk of the Council, Council Offices, Grays, Essex, by 28th April, 1959. Canvassing disqualifies. Relationship with Members or Senior Officers of the Council must be disclosed. 3730

OXFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following:—
(*a*) ASSISTANT ARCHITECTS. Special Grade (£750—£1,030).
(*b*) ARCHITECTURAL ASSISTANTS. A.P.T. Grade I (£575—£725).

Applicants for appointments (*a*) must have passed a suitable professional Final examination and for (*b*) must have passed the appropriate Intermediate examination.

Applications giving names of two referees and one recent testimonial, must give details of qualifications, education, experience, age and relevant particulars and should be sent to the County Architect, Park End Street Offices, Oxford, not later than the 21st April, 1959.

GERALD GALE BURKITT,
Clerk of the Council.
3673

LONDON COUNTY COUNCIL

ARCHITECTS required for interesting and varied work which provides excellent experience in alterations and extensions to a variety of buildings. Candidates should be able to carry jobs through all stages—surveys, schemes, working drawings specifications and supervising contracts. Up to £1,090 according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (AR/EK/31/59), County Hall, S.E.1. (652.) 3693

CITY OF LANCASTER

Applications are invited for the appointment of a QUANTITY SURVEYING ASSISTANT, Salary A.P.T. II (£725 to £845 per annum) in the Architects' Division of the City Engineer's Department. Preference will be given to applicants having passed the Intermediate examination of the R.I.C.S.

Housing accommodation may be made available in suitable cases.

Applications with names of two persons to whom reference can be made to be received by Mr. L. Lyons, B.Sc., A.M.Inst.C.E., City Engineer, Town Hall, Lancaster, not later than Friday, 24th April, 1959.

J. D. WADDELL,
Town Clerk.
3680

BEESTON AND STAPLEFORD URBAN DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment, in Grade II (£725—£845) or Special Grade (£750—£1,030), the grade and commencing salary to be according to applicant's qualifications and experience.

Applications, accompanied by the names and addresses of two referees, should be forwarded to the Housing Architect, Town Hall, Beeston, Nottingham, not later than 30th April, 1959.

H. D. JEFFRIES,
Clerk of the Council.
3650

LEEDS REGIONAL HOSPITAL BOARD

Applications are invited for a SENIOR ASSISTANT ARCHITECT. Salary Scale £1,050/£1,245 per annum. New entrants to the Health Service commence at the minimum. Applicants must be associate members of the R.I.B.A.

The above appointment is in the Major Development Section and offers an excellent opportunity to architects to design and construct a wide range of hospital buildings, in particular, multi-storied residential accommodation.

The service is a rapidly expanding one and many new hospital projects are to be built in the immediate future.

Applications, giving age, experience and the names of two referees, to the Secretary, Park Parade, Harrogate, by not later than 30th April, 1959. 3770

CITY AND COUNTY OF BRISTOL

Applications invited for following permanent staff appointments:

(*a*) SENIOR ASSISTANT ARCHITECTS:
Special Scale, £750 × £40—£1,030 p.a.

Applicants must have passed Parts I and II of Final Examination of R.I.B.A. and have had experience in design, construction and contract administration, preferably with a large Local Authority.

(*b*) SENIOR QUANTITY SURVEYORS:
Special Scale, £750 × £40—£1,030 p.a.

Applicants must be suitably qualified (by examination) and have had experience in taking off quantities, site measurement, interim certificates and final accounts.

Housing accommodation available if necessary at economic rent.

Details and application forms (returnable by 27th April) from City Architect, Council House, Bristol. 1. 3769

LONDON TRANSPORT require the following staff for the Architect's Office:—

(*a*) ASSISTANT ARCHITECTS.
Candidates must be fully qualified with sound office experience and be capable of supervising junior staff.
Salary range £1,020 p.a.—£1,185 p.a.

(*b*) ARCHITECTURAL ASSISTANTS.
Candidates must be qualified to R.I.B.A., Intermediate standard and have previous office experience.
Salary range £814 p.a.—£979 p.a.

(*c*) ARCHITECTURAL DRAUGHTSMEN.
Candidates must show ability in Architectural drawing and be studying for the examinations of the R.I.B.A. Some office experience an advantage.
Salary range £371 p.a. at age 18—£767 p.a. plus additional payments for certain recognised qualifications. Commencing salary will not exceed £675 p.a.

Free travel; medical examination; 38 hour week; no Saturdays; good dining club, and sports facilities.

Please apply within 7 days to Staff and Welfare Officer, (P/EV. 731/3 (*a*), (*b*) or (*c*)), London Transport Executive, 55, Broadway, London, S.W.1. 3768

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECTURAL ASSISTANTS, starting salary up to £860. Full and interesting programme of houses, flats, schools and general buildings.

Application form and particulars from The Architect to the Council, County Hall, S.E.1, quoting AR/EK/14/59 (256). 3040

BERKSHIRE COUNTY COUNCIL

ASSISTANT ARCHITECT. Special Grade (£750—£1,030).

Candidates should have had good architectural training and be experienced in planning, design and construction. Preference will be given to Associates of the R.I.B.A.

Application forms and further particulars can be obtained from J. T. Castle, A.R.I.B.A., A.M.T.P.I., County Architect, Wilton House, Parkside Road, Reading, to whom they should be returned not later than Tuesday, 21st April, 1959. 3745

COUNTY BOROUGH OF MERTHYR TYDFIL
APPOINTMENT OF DEPUTY BOROUGH ARCHITECT

Applications are invited from Associates of the R.I.B.A. with appropriate experience for the above post, at a salary in accordance with a scale based on two-thirds of the Borough Architect's salary, namely, £1,930 × £70 (1) × £65 (3) to £2,195.

Application forms may be obtained from the undersigned and must be returned with copies of three recent testimonials by 9th May, 1959.

The appointment is subject to the provision of the Local Government Superannuation Acts and to the passing of a medical examination and is terminable by three months' notice on either side.

Canvassing in any form will disqualify.

T. S. EVANS,
Town Clerk.
3790

CITY OF BATH

Applications are invited for the following posts:—

(*a*) ASSISTANT ARCHITECT. Salary within the Special Grade (£750—£1,030 per annum). Applicants should have passed Parts I and II of the R.I.B.A. Final Examination and preference will be given to those who have had experience in local authority housing work.

(*b*) PLANNING ASSISTANT. Salary within the Special Grade (£750—£1,030 per annum). Applicants should have passed the Final Examination of the Town Planning or other approved Institute. The person appointed will be engaged mainly on work connected with the review of the City Development Plan; he should also be experienced in the preparation of layouts for redevelopment areas.

(*c*) PLANNING ASSISTANT. Salary within A.P.T. I (£575—£725) according to qualifications and experience.

The provision of housing accommodation will be considered for these appointments.

Applications, stating age, education, experience and qualifications, together with names and addresses of three referees, should reach the City Planning Officer & Architect, 7, North Parade Buildings, Bath, by the 2nd May, 1959. Canvassing disqualifies. Candidates must disclose whether they are related to any member or chief official of the Council.

JARED E. DIXON,
Town Clerk.

Guildhall,
Bath. 3806

COUNTY COUNCIL OF ESSEX
COUNTY PLANNING DEPARTMENT

Applications invited for following posts:—

1. PLANNING ASSISTANT, A.P.T. Grade II (£725—£845), plus London weighting, at Wanstead. Applicants must have had good general planning experience including undertaking of requisite surveys and preparation of development plans for large urban areas. Applicants should also be reasonably advanced in their studies towards obtaining Corporate Membership of Town Planning Institute or other appropriate professional institute. To this end successful applicant will be granted all reasonable facilities including day release, for completing an approved course of studies.

Subject to satisfactory services person appointed may expect upon Final qualification to be promoted to Special Grade as Senior Planning Assistant to take charge of Survey and Development Plan Section of this Area Office.

2. PLANNING ASSISTANT, A.P.T. Grade II (£725—£845), at Chelmsford Area Office. Applicants should have had good all-round experience in a planning office, particularly with regard to preparation of development plans, and should be up to Intermediate standard with their studies for membership of Town Planning Institute or other appropriate professional institution.

Five-day week; medical examination; superannuation; day release facilities.

Application forms obtainable from County Planning Adviser, Broomfield Place, Broomfield, Essex, returnable by 24th April, 1959 3810

GEORGE WIMPEY & CO., LIMITED

The Architects Department's current work covers all types of technical, industrial and domestic projects.

Appointments are available for a wide range of experience, particularly for assistants who appreciate the contribution good design can make towards efficient construction and are interested in applying cost knowledge to detailing.

Appointments, on a permanent basis, are immediately available at Head Office for ASSISTANT ARCHITECTS and ARCHITECTURAL ASSISTANTS.

Salaries will match qualifications and experience and, following a probationary period, there is a Pension Scheme available.

Applicants should write to E. V. Collins, A.R.I.B.A., 27, Hammersmith Grove, London, W.6. 3767

THE UNIVERSITY OF LIVERPOOL

The Liverpool School of Architecture has two vacancies for LECTURERS and STUDIO INSTRUCTORS. Candidates should be fully qualified architects, preferably with at least three years' practical experience, and for one of the posts some experience of research and development work is desirable. Initial salary will be within the range £900 to £1,350 per annum, according to experience.

Applications, stating age, academic qualifications and experience, together with the names of three referees, accompanied if possible by drawings or photographs of work, should be received not later 15th May, 1959, by the Registrar, from whom further particulars may be obtained. 3765

SOUTH EAST DERBYSHIRE RURAL DISTRICT COUNCIL

(POP.: 84,530)

SURVEYOR'S DEPARTMENT

ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of an Architectural Assistant, A.P.T. Grade III (£845—£1,025). The successful applicant will be required to assist in the preparation of drawings, contract administration and supervision of work in the construction of new dwellings and other buildings required by the Council and must have adequate experience for this purpose. Preference will be given to Associates of the Royal Institute of British Architects.

The appointment will be subject to the Local Government Superannuation Acts and will be terminable by one month's notice on either side. The Council will pay the appropriate travelling allowance on the National Scale.

Applications, stating age and full details of experience and qualifications, together with the names and addresses of two referees, should be sent to the undersigned not later than 25th April, 1959.

F. CLAYTON,
Clerk of the Council.

Council Offices,
St. Mary's Gate,
Derby. 3764

KUMASI COLLEGE OF TECHNOLOGY

(Principal: W. E. DUNCANSON, PH.D., D.SC., F.INST.P., A.M.I.E.E.)

Applications are invited for the posts of (*a*) SENIOR ARCHITECT; (*b*) ARCHITECT.

The post of Senior Architect is being relinquished, for personal reasons, by Mr. E. Williamson, A.R.I.B.A., A.M.T.P.I. The successful applicant for this post will be in charge of a team of Architects responsible for the design and supervision of College Buildings. These include Teaching Buildings, Halls of Residence, a Great Hall, Chapel, etc. Applicants for either post should be sympathetic to contemporary design and for (*a*) experience of tropical architecture is essential.

There is also at the College a School of Architecture, Town Planning and Building which conducts courses for the professional examinations in these subjects.

Appointments will be for three tours of 12 months each in the first instance.

Contract Salary Scale: £2,100 × £105—£2,625 p.a. (Senior Architect); £1,080 × £50—£1,580, £1,660 × £60—£2,080 p.a. (Architect), plus gratuity payable at end of appointment at the rate of £12 10s. 0d. for each month of satisfactory service. Entry point according to qualifications and experience.

Children's allowances up to a maximum of three at rate of £50 p.a. per child up to 10 years, and £100 p.a. per child over 10 years in full time education up to 21 years. Annual leave with free return first class passages for member of staff, his wife and up to three children under 17 years. Bungalows with basic furniture at moderate rental provided. Income tax low.

Applications (six copies), giving age, qualifications, experience and names of three referees, should be sent to the Council for Overseas Colleges, 12, Lincoln's Inn Fields, London, W.C.2. Closing date 1st May, 1959. 3755

COUNTY BOROUGH OF ROCHDALE

Applications are invited for the post of ARCHITECTURAL ASSISTANT on Grade A.P.T. I (£575—£725 p.a.)/Special Classes Scale (£750—£1,030 p.a.).

The successful applicant, if fully qualified, will be offered housing accommodation.

Applications, including names of two referees, to the Borough Surveyor, Town Hall, Rochdale, by 27th April, 1959.

Canvassing or non-disclosure of relationship to any member or senior official of the Council will disqualify. Appointment subject to medical examination.

K. B. MOORE,
Town Clerk.
3753

AIR MINISTRY WORKS Design Branch requires in LONDON and PROVINCES ARCHITECTURAL ASSISTANTS experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings. Salaries in LONDON up to £1,055 p.a. for men and £1,008 p.a. for women. Somewhat lower in provinces. Starting pay dependent on age, qualifications and experience. Long term possibilities with promotion and pensionable prospects. Five-day week, three weeks three days' leave a year. Liability for overseas service (for men). Normally natural born British subjects. Write stating age, qualifications, employment details including type of work done to any Employment Exchange quoting Order No. Borough 250. 3337

TRAIN TO TEACH BUILDING SUBJECTS
EXCELLENT CAREER PROSPECTS

Applications are invited for Training as FULL-TIME TEACHERS OF BUILDING SUBJECTS IN TECHNICAL COLLEGES AND SIMILAR ESTABLISHMENTS.

The next course of training will begin in September 1959 and end in June 1960.

Applicants should normally

(1) be between about 25 and 45 years of age;
(2) have practical experience in the building industry;
(3) possess one or other of these, or similar qualifications: L.I.O.B., A.I.O.B., A.R.I.C.S., A.I.Q.S., A.M.I.Struct.E., A.R.I.B.A., B.Sc. (Tech), Higher National Certificate, 1st Class Full Technological Certificate in a Craft accompanied by the Ordinary National Certificate.

Substantial grants available free of income tax with normally free tuition, board and lodging.

Write for details and application form to:—

The Director (S/2/40), Bolton Training College, Manchester Road, Bolton.

The Director (S/2/40), Huddersfield Training College, Holly Bank Road, Lindley, Huddersfield.

(774) 3800

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of SENIOR ASSISTANT ARCHITECTS on the permanent staff of the Board's Regional Architect, generally in accordance with Whitley Council conditions of service.

The Board is undertaking a considerable programme of hospital development and the persons appointed would be engaged on varied and interesting work in connection with major projects in this programme.

Applicants must be associate members of the Royal Institute of British Architects and should have had considerable experience in preparing working and detailed drawings and specifications and supervising work on individual projects. In addition applicants should have enthusiasm for hospital work and experience in contemporary construction and design. Previous experience of hospital planning and construction would be an advantage but is not necessary. The posts offer a good opportunity to anyone wishing to gain experience in this field.

Salary:—£1,050 p.a. × 30(3) × 35(3) — £1,245 p.a. plus £50 p.a. London Weighting allowance.

Applications should state age, experience, qualifications, present appointment and salary, together with the names of three referees and should be sent to the undersigned at 40, Eastbourne Terrace, London, W.2, by not later than 21st April.

E. G. BRAITHWAITE, *Secretary.*
3811

LANARK COUNTY COUNCIL

SENIOR ASSISTANT ARCHITECTS wanted for County Architect's Department, Motherwell. Salary £1,155/£1,207 10s. Must be A.R.I.B.A. In addition to all-round knowledge of architectural practice, should have knowledge of modern School building and be capable of assuming position of responsibility.

In addition to large School Building Programme, work in Department embraces every aspect of building with exception of Housing; appointments, therefore, provide excellent opportunity for extending experience on an interesting and varied programme.

Medical examination. Superannuation. No canvassing.

Applications, stating age, qualifications and experience, together with names and addresses of three referees, should be lodged with County Clerk, P.O. Box 1, Glasgow, within 14 days of date of advertisement. 3750

DRAUGHTSMAN, £445 (at age 21 or over) × £25 (5) × £30 (3) = £660, plus London weighting £20—£30. Applicants must have had suitable architectural training for at least three years and be capable of making details of Building Work. Will act as Junior Architectural Assistant in a group undertaking development and alteration work to existing and future hospitals.

Applications, stating age, present salary, qualifications and experience (with dates), together with the names and addresses of two referees should be sent to Secretary, North East Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, W.2, within 14 days. 3741

SOUTH WESTERN ELECTRICITY BOARD

Applications are invited for the following position in the Board's Head Office at Electricity House Colston Avenue, Bristol, 1.

SENIOR ARCHITECTURAL ASSISTANT

Salary according to Class AX/CX, Grade V—£1,090 × £25 to £1,215 per annum and thereafter to £1,285 per annum—of Schedule "B" of the N.J.B. Agreement.

Applicants should be qualified Architects and have wide experience in large projects and also the adaptation of existing premises. Duties will include the preparation of plans and specifications for alterations to Showrooms, Offices, Stores, etc., and the construction of new buildings.

The post is permanent and pensionable and is covered by attractive conditions of service, including five-day (38 hour) week, canteen facilities and liberal holidays with pay.

Applications to be made on an official form *obtainable by postcard only*, from the Establishments Officer South Western Electricity Board, Electricity House, Colston Avenue, Bristol, 1. Closing date for receipt of completed applications is 30th April, 1959. 3735

CORPORATION OF LONDON

require

ARCHITECTURAL ASSISTANTS

permanent staff, in the Architectural and Building Section of the City Surveyor's Department. Good architectural knowledge necessary, and capability to prepare working drawings in all categories.

Applicants should have passed the Intermediate R.I.B.A. The work is interesting and covers design and alteration to a wide variety of buildings. Salary scale up to £985 p.a., point of entry dependent upon experience and qualifications.

Applications in writing, giving full particulars of age, experience and qualifications to City Surveyor, Guildhall, London, E.C.2, within 14 days. 3738

SOUTHERN ELECTRICITY BOARD

ARCHITECTURAL ASSISTANT

Sub-Area Office of No. 3 (Portsmouth) Sub-Area. Salary N.J.B. Schedule "D," Grade 5 (£790 × £20—£890 per annum). N.J.B. Conditions of Service.

Candidates should have had experience in an Architect's Office and be capable of designing and administering, during the construction stage, building work in connection with offices, showrooms, workshops, etc. The possession of suitable qualifications would be an advantage.

The successful applicant will be required to contribute to the Electricity Supply (Staff) Superannuation Scheme, if eligible.

Applications on forms obtainable from the Sub-Area Secretary, Lower Drayton Lane, Cosham, Portsmouth, and returned to him, quoting Z.1008, not later than April 21, 1959. 3737

CITY AND COUNTY OF THE CITY OF EXETER

CITY ARCHITECT'S DEPARTMENT

Vacancy on the established staff for SENIOR ASSISTANT ARCHITECT. Salary within Special Grade (£750 to £1,030 per annum).

Applicants must be Associate Members of the Royal Institute of British Architects and preference will be given to those with experience in the design and construction of civic buildings.

The appointment is subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts, 1937 and 1953. The successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications, previous and present appointments and salaries, full details of experience and earliest possible date when available, should be sent to the City Architect, Municipal Offices, Exeter, not later than the 22nd April, 1959. 3648

BUILDING SURVEYORS

Vacancies in Housing Division, Architect's Department, L.C.C. Experienced in structural surveys, drawing and specification writing for conversion work. Large programme of Rehabilitation of older property. Candidates should have initiative, a real interest in this type of work, and be able to act on their own judgment.

Up to £1,090 according to qualifications and experience. Application form, returnable by 29th April, from Hubert Bennett, F.R.I.B.A., Architect to Council, AR/EK/36/59, County Hall, S.E.1. (743.) 3799

SOUTHAMPTON COUNTY BOROUGH COUNCIL requires under N.J.C. conditions of service:

ASSISTANT QUANTITY SURVEYOR—salary within Special Grade (£750/£1,030 p.a.).

Applicants must be Chartered Quantity Surveyors, preferably with experience in municipal housing, including multi-storey flats and shopping centres.

Apply on application form obtainable from the Borough Engineer and Surveyor, Civic Centre, Southampton, as soon as possible. 3816

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

Vacancies for PLANNING ASSISTANTS. Duties include investigation of development proposals, surveys, report writing, preparation of data for Public Inquiries. Starting salaries up to £860 according to experience and qualifications. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (Ref. AR/EK/11/59), County Hall, S.E.1 (186.) 2917

CITY OF NORWICH

CITY ARCHITECT'S DEPARTMENT

Permanent staff wanted on programme of urban renewal.

(*a*) SENIOR ARCHITECT, salary within A.P.T. IV (£1,025 × £50 to £1,175).

(*b*) ASSISTANT ARCHITECT, salary within Special Grade (£750 × £40 to £1,030).

Application forms, obtainable from the City Architect, City Hall, Norwich, must be returned by 5 p.m., April 27th. 3817

ISLE OF ELY COUNTY COUNCIL

SENIOR PLANNING ASSISTANT

Applications are invited from suitably qualified persons for the above appointment. Salary within Special Grade (£750—£1,030). Work in Development Plan Section on preparation of Town Maps and County Map Review; village plans; layouts, etc. Applicants should be A.M.T.P.I. or hold equivalent qualification. National conditions. Consideration given in appropriate cases to assistance towards removal expenses.

Forms of application and further particulars obtainable from the County Planning Officer to whom they must be returned by 2nd May, 1959.

R. F. G. THURLOW,
Clerk of the County Council.
3814

ROYAL INFIRMARY OF EDINBURGH AND ASSOCIATED HOSPITALS
ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment. Candidates should preferably hold the Intermediate certificate of the R.I.B.A., and must be experienced. Starting salary £525—£605 per annum, according to age and experience. Applications, giving details of age, qualifications and experience, together with the names of two referees, should be addressed to the Personnel Officer, Royal Infirmary, Edinburgh, 3. 3754

DURHAM COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

ARCHITECTURAL ASSISTANTS—Salary scales £750 to £1,030 and £1,025 to £1,175 p.a. Forms and further particulars from the County Architect, South Street, Durham. Closing date 24th April, 1959. Canvassing members of the Council is prohibited.

J. K. HOPE,
Clerk of the County Council.
3815

DURHAM COUNTY COUNCIL
PLANNING DEPARTMENT

ASSISTANT FOR DESIGN SECTION—salary £750 to £1,030 p.a. Applicants must be Associates of the R.I.B.A. or Associate Members of the Town Planning Institute with design experience. Housing available at Peterlee and Newton Aycliffe, 12 miles from Durham. Forms and further particulars from County Planning Officer, 10, Church Street, Durham. Closing date 30th April, 1959. Canvassing members of the Council is prohibited.

J. K. HOPE,
Clerk of the County Council.
3813

COUNTY BOROUGH OF DERBY
BOROUGH ARCHITECT'S DEPARTMENT

(*a*) SENIOR ASSISTANT ARCHITECTS, Special Grade (£750—£1,030 per annum). Qualifications: A.R.I.B.A.
(*b*) ASSISTANT ARCHITECT, A.P.T. Grade I (£575—£725 per annum). Qualifications: Intermediate R.I.B.A.

Commencing salary according to qualifications and experience.

Permanent superannuable appointments, subject to one month's notice and to medical examination. National Conditions of Service.

Application forms obtainable from and to be returned to the Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 4th May, 1959.

G. H. EMLYN JONES,
Town Clerk.
3802

DEVON COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT

Applications are invited for the following posts:—

(*a*) THE ASSISTANT DIVISIONAL PLANNING OFFICER, Dartmoor National Park, at Exeter. Architectural or landscape qualifications an advantage.
(*b*) THE ASSISTANT DIVISIONAL PLANNING OFFICER, South Western Division, at Plympton. A.M.T.P.I. preferred.

The salary for both appointments is within Special Scale £750 × £40 to £1,030.

The posts are classified as Essential Car Users.

Forms of application giving further details and returnable by 20th April, from: County Planning Officer, "Bellair," Topsham Road, Exeter. 3812

KENT COUNTY COUNCIL

SURVEYING ASSISTANT required for work in connection with the selection and purchase of sites and buildings for the Council's large and varied building programme.

Applicants must be experienced in the surveying of land and buildings and in dealing with site and property matters generally. A knowledge of valuation is desirable but not essential. They must have passed the Final R.I.C.S. Examination or hold a similar qualification.

Salary within scale £750—£1,030 a year. Commencing salary according to qualifications and experience. N.J.C. Conditions of Service. Further details and application forms from County Architect, Springfield, Maidstone. Closing date 29th April, 1959. 3786

BOROUGH OF WARWICK
APPOINTMENT OF
SENIOR ARCHITECTURAL ASSISTANT

Required, Senior Architectural Assistant in the Borough Surveyor's Department. Salary A.P.T. II (£725 × £30—£845); entry in the scale according to qualifications and experience. The position is permanent and subject to medical examination.

Applicants must have passed at least the Intermediate R.I.B.A. with a sound knowledge of building construction. The post offered is for existing work of conversions and large Housing Estate Development incorporating Shops, Flats, etc.

Applications, stating age, qualifications, experience and the names and addresses of two referees, should be sent to the Borough Surveyor, 23, Jury Street, Warwick, not later than Saturday, the 2nd May, 1959.

HECTOR SETON BROWN,
A.M.I.C.E., A.M.I.W.E.,
Borough Engineer and Surveyor.
3838

CITY OF WINCHESTER

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the City Engineer's office (C. C. Steptoe, A.R.I.B.A., Chief Assistant Architect). It is essential that the applicant should be a neat and accurate draughtsman and have had previous experience in an architect's office. Salary, according to experience, will be within Grade I of the National Scales, and the appointment is subject to the Local Government Superannuation Act.

Applications, stating age and details of experience, together with the names and addresses of two referees, should be addressed to the City Engineer, Guildhall, Winchester, and should reach his office not later than Monday, 4th May, 1959.

Canvassing, either directly or indirectly, will disqualify.

R. H. McCALL,
Town Clerk.
3830

SURREY COUNTY COUNCIL

Applications are invited for the following appointments on Grade IV (£1,025—£1,175 p.a., plus £30 p.a. London allowance):—

ARCHITECTS. Must have, after qualifying as Assoc. Mem. R.I.B.A., 10 years' experience in preparation of drawings and specifications, and capable of assuming responsibility for medium to large scale contracts.

BUILDING SURVEYORS. Must have, after qualifying as Assoc. Mem. R.I.C.S., 10 years' experience in drafting specifications in all trades, preparation of schedules of dilapidations, detailed estimates for general maintenance works and surveys of properties.

Full details, present salary and three copy testimonials to County Architect, County Hall, Kingston, by 1st May, 1959.

The County Council have adopted a five-day week. 3824

CITY OF NOTTINGHAM
ESTATES DEPARTMENT

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, of Intermediate R.I.B.A. standard, in the Chief Architect's Section. The salary will be in accordance with Grade A.P.T. II (£725—£845).

The appointment will be subject to the National Joint Council's Scheme of Conditions of Service.

Applications stating age, qualifications, experience, present appointment and salary, and naming two referees, should be sent to the Estates Surveyor and Valuer, The Guildhall, Nottingham, by Tuesday, 21st April, 1959.

T. J. OWEN,
Town Clerk.
3667

BERKSHIRE COUNTY COUNCIL

ASSISTANT QUANTITY SURVEYOR. Special Grade (£750—£1,030). Applicants should be capable of taking off for large projects. Preference will be given to Associates of the R.I.C.S.

QUANTITY SURVEYING ASSISTANT, A.P.T. Grade II (£725—£845). Applicants should have passed the Intermediate Examination of the R.I.C.S.

Application forms and further particulars can be obtained from J. T. Castle, A.R.I.B.A., A.M.T.P.I., County Architect, Wilton House, Parkside Road, Reading, to whom they should be returned not later than Tuesday, 28th April, 1959. 3839

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD

W. G. PLANT, DIP. ARCH. (L'POOL), F.R.I.B.A., *Regional Architect*

Vacancies exist in the Board's Architect's Department for the undermentioned appointments offering exceptional opportunities of gaining experience in designing and supervising the construction of all types of Hospital buildings.

Own car may be used for visiting hospitals, etc., for which adequate mileage allowance paid. Posts pensionable and prospects of advancement good. *Previous hospital experience not essential.*

SENIOR ASSISTANT ARCHITECTS. Commencing salary £1,100 rising to £1,295. Those appointed will be expected to accept a considerable degree of responsibility.

ASSISTANT ARCHITECT. Salary in the range £750—£1,105, according to age and experience.

For both these posts applicants must be Registered Architects having passed the requisite examinations, and must be good designers capable of preparing working drawings and specifications for and undertaking site supervision of all types of building projects (under limited supervision in the case of the Assistant Architect).

Applications, giving date of birth, present salary, qualifications and experience (with dates), together with the names of two referees, to the Secretary, North East Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, London, W.2, within 14 days. 3832

LONDON COUNTY COUNCIL
PARKS DEPARTMENT

ARCHITECTURAL ASSISTANTS. Good Draughtsmen with experience of preparation of working drawings and specifications and supervision of contract work. Salary up to £860. Apply Chief Officer, Parks Department (AI/A), County Hall, London, S.E.1. (WATerloo 5000, Ext. 8076.) (473.) 3587

DEPARTMENT OF HEALTH FOR SCOTLAND

The Architectural Division which covers work on housing, hospitals, schools, local authority buildings, agricultural colleges and State institutions and includes development work, has vacancy in Edinburgh for an ASSISTANT ARCHITECT (non-pensionable post). Salary range £805—£1,260. Write Establishment Officer, Department of Health for Scotland, Room 30, St. Andrew's House, Edinburgh, 1, for application form. Closing date Friday, 15th May, 1959. 3684

Architectural Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

SENIOR ASSISTANT required of Intermediate/Final standard in Croydon office. Varied practice of interesting work. Good draughtsman and sound knowledge of construction essential, together with ability to manage jobs. Five-day week. Salary according to experience. Apply George Lowe & Partner, 4, High Street, Croydon 3608/9. 2611

ARCHITECTURAL firm in Home Counties with varied practice, require ASSISTANTS, Intermediate, qualified, or at that standard. State experience and salary required to Box 3089

ARCHITECTS' co-partnership require ASSISTANTS for working drawings and detailed design. Salary according to experience. Write 44 Charlotte Street, London, W.1, or telephone Langham 5791. 3265

W. H. WATKINS, GRAY & PARTNERS require ASSISTANT for interesting hospital work, pension scheme in operation. Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 3200

ARCHITECTURAL ASSISTANTS required. Starting salary £915 per annum. Glasgow office, five-day week. Schools, Offices, etc. State Experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 3368

ARCHITECTURAL ASSISTANTS required. Starting salary £750 per annum. Glasgow office, five-day week. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 3369

ARCHITECTURAL ASSISTANTS required about Intermediate standard. Opportunities for good all round experience. Please write stating age, experience and Salary required. Box 3386.

ARCHITECT'S ASSISTANTS required. Intermediate and Final standard, also Surveyors. Salaries from £600 to £1,000 per annum. Offices in Stroud and Dursley, and site office in Bristol. Write giving details of qualifications and experience to Ellery Anderson, Roiser & Falconer, Imperial House, Stroud, Gloucestershire. 3463

ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details. The appointment is pensionable, five-day week. Dining room facilities. Application, stating age, experience, qualifications and salary, to District Architect, F. W. Woolworth & Co. Ltd., 26/40, Kensington High Street, London, W.8. 3601

ADAMS, HOLDEN & PEARSON require two ARCHITECTURAL ASSISTANTS up to Intermediate standard. The work includes Commercial Buildings, Hospitals and Laboratories. Apply giving age, qualifications, experience and salary required to 38, Gordon Square, W.C.1. 3643

ARCHITECTURAL ASSISTANTS wanted with experience. Good salary and working conditions. B.S.P. Industries, Ltd., Maxwell Road, Elstree Way, Boreham Wood, ELStree 3311/7 (Ref. 190). 3639

ARCHITECTURAL ASSISTANTS required to work on development of large power station project. Previous industrial experience useful but not essential. Salary according to age, experience and qualifications. Applicants should write stating relevant details to A. J. Bryett, Sir William Halcrow & Partners, 47, Park Lane, W.1. 3494

LLEWELLYN SMITH & WATERS require SENIOR and JUNIOR ASSISTANTS for a widely varied programme of work. Salary according to experience. Please write stating qualifications, experience and age to 103 Old Brompton Road, S.W.7. 3719

ARCHITECTURAL ASSISTANTS of experience are urgently required by a Yorkshire (West Riding) firm of Architects engaged on all types of work. Only assistants capable of accepting responsibility will be considered. Living accommodation can be provided. Apply in writing giving particulars of age and experience. Box 3718.

SCHERRER & HICKS require in their Manchester Office INTERMEDIATE ASSISTANT with some office experience for work on new schools. Salary according to ability. Write giving details of training and experience to 27, King Street, Manchester 2. 3706

EXPERIENCED ARCHITECTURAL ASSISTANTS of Senior and Intermediate Standard required for expanding practice in Dartford. Work on hand includes multi-storey flats, housing and industrial schemes. Please write stating full details and salary required to Box 3705.

SENIOR ARCHITECTURAL ASSISTANT required to work in large Contractor's Head Office. Must be fully conversant with Housing and Flat Development. Apply Architectural Department, Sir Lindsay Parkinson & Co. Ltd., 6 Lambeth Road, St. George's Circus, London, S.E.1. 3704

EXPERIENCED SENIOR MEN required for interesting commercial projects in London. Holiday arrangements will be recognised. Five-day week. Salary according to experience. Phone City 8811. 3694

ARCHITECT'S office in Manchester, engaged on School and Church projects, requires Three Qualified ARCHITECTS. Write, stating age, qualification, experience and salary, to Box 3690.

QUALIFIED and INTERMEDIATE ASSISTANTS required for full and interesting programme of works. Pleasant working conditions, salary in accordance with age and experience. Please send fullest particulars to Deacon & Laing, 65, Goldington Road, Bedford. 3580

ASSISTANT required in Essex practice with varied works in hand. Intermediate or Final standard; office experience essential; opportunity to accept responsibility. Apply with full particulars and salary to Box 3688.

QUALIFIED ASSISTANT ARCHITECTS required, minimum three years' office experience preferably in London. Salary according to ability and experience. Theo. H. Birks, 38, Portland Place, W.1. LAN. 7236. 3697

LONDON Building Surveyors' Architectural Department require JUNIOR for general duties. Age 17-18. Good prospects for advancement. Write Box 3665, or ring MET. 8001 for appointment.

ASSISTANT of Intermediate/Final standard required in Croydon office. Varied and interesting work. Five-day week, holiday this year. Apply by letter to Hugh Macintosh & Partners, 33/35, High Street, Croydon. 3683

ARCHITECTURAL ASSISTANT required in South Bucks office. Intermediate to Final standard, with practical experience. Box 3674.

ARCHITECTURAL ASSISTANT required for North Devon Office. Intermediate standard. Salary £600 per annum. Box 3677.

KUMASI COLLEGE OF TECHNOLOGY, Kumasi, GHANA, require temporary ARCHITECTURAL STAFF at their LONDON OFFICE for about nine months to prepare contract drawings for a large building programme in Ghana.

Applications are invited from qualified architects and architectural assistants.

Further details may be obtained from the London Office of Kumasi College of Technology at 29, Tavistock Square, London, W.C.1, to whom applications should be sent as soon as possible. 3653

A DESIGNER with Architectural experience, imagination and progressive ideas required. Apply Trehearne & Norman, Preston & Partners, Architects & Surveyors, 83, Kingsway, W.C.2. HOL. 4071. 3659

INTERMEDIATE STANDARD ASSISTANTS required, minimum two years' office experience. Salary according to ability. Theo. H. Birks, 38, Portland Place, W.1. LAN. 7236. 3698

CAPABLE ASSISTANT required for varied Practice, Bedfordshire. Scope for responsibility. Salary range from £500 to £700 according to ability. Box 3656.

TWO ARCHITECTURAL ASSISTANTS, Intermediate to Final standard, for Licensed premises, Shops, Interior Design and Fittings, etc. Good draughtsmanship and some experience in specification writing desirable. Also SURVEYOR for repairs and decorations, etc. Salaries to be agreed. Apply: Chief Architect, Friary Brewery, Guildford, Surrey. (Guildford 2965.) 3658

BUILDING DRAUGHTSMAN required at the London Co-operative Society Ltd., Works Dept., Parsons Green Lane, Fulham, London, S.W.6. Salary at the rate of £663 8s. 8d. per annum. Applicants must be capable of working up details from Architect's Drawing, and producing drawings for minor jobs, and also preferably have a knowledge of the London Building Acts. The successful candidate will be required to undergo medical examination, and, after a probationary period, to participate in the Society's Contributory Staff Pension Scheme. Applications giving details of age, experience and qualifications should be addressed to Staff Manager, L.C.S. Ltd., 54, Maryland Street, Stratford, London, E.15, endorsed "Building Draughtsman." 3774

J. W. POLTOCK & ASSOCIATES require Intermediate standard ASSISTANT with office experience. Phone Victoria 6100. 3820

ARCHITECTURAL MODELS of highest standard speedily executed. Competitive quotes on application. Phone Mountview 0902. 3819

BOURNVILLE VILLAGE TRUST have vacancy for keen and energetic ASSISTANT, Intermediate or Finalist, with practical experience, capable of preparing working drawings and specifications, varied work; pleasant working conditions and pension scheme. Good salary according to experience, possibility of house. Apply Selby J. Clewer, F.R.I.B.A., Bournville Village Trust, Birmingham 30. 3808

ASSISTANTS required immediately by Architects in South Kensington, for varied and interesting work. Two positions are vacant; one for an Assistant having passed Intermediate and preparing for Finals, with 2/3 years' practical experience. The second for an Assistant preparing for Intermediate having 1/2 years experience Write Box 3804 or ring KENsington 1242.

SIR ROBERT TASKER & PARTNERS immediately require ARCHITECTURAL ASSISTANTS (Final and Intermediate) in office with varied practice. Write to No. 3 Field Court, Gray's Inn, W.C.1, or telephone Chancery 5957 stating salary required. 3803

WELLS, HICKMAN & PARTNERS need a keen ARCHITECTURAL ASSISTANT capable of working without supervision. Several years' experience, sound knowledge of construction and very good draughtsmanship are vital. Salary £750—£850. Please ring TER 1404 for appointment. 3801

ARCHITECTURAL ASSISTANT. Intermediate standard. Neat draughtsmanship essential. Good prospects for advancement. Salary according to ability. 3796

INTERMEDIATE standard ASSISTANT required with experience of Laboratory work for London Architects' office. Salary by arrangement. Write Box 3795.

ARCHITECTS require ASSISTANTS, Intermediate to Final standard. Reply Herbert, Son & Sawday, 18, Friar Lane, Leicester. 3794

ENTHUSIASTIC ASSISTANT urgently required in small modern practice. Salary by arrangement. Apply in writing stating present salary to Messrs. Godsmark & Miller-Williams, 37a, Tuhwell Row, Darlington. 3793

ASSISTANTS required, Intermediate to Final standard, for interesting Commercial and Industrial work. Salary commensurate with ability and enthusiasm. Good office conditions, lunch facilities. Apply in writing to Alan A. Briggs, F.R.I.B.A., 10, Fleet Street, London, E.C.4. 3792

BRIDGWATER & SHEPHEARD want one or two young Intermediate standard ASSISTANTS for interesting work. Ring MAY 6391 for appointment. 3789

ARCHITECT urgently requires ASSISTANT. Interesting work in pleasant Worcester Office. Scope for initiative and design. Good salary, young staff. Box 3788.

KATZ AND VAUGHAN have vacancies for one Senior and one Intermediate ASSISTANT. 208a, Regent Street, W.1. REGent 5401. 3785

ASSISTANTS required, Intermediate and Final standard, for a general practice with some interesting projects. Salary will be commensurate with ability and enthusiasm. Apply, with details of experience, to H. H. Clark, F.R.I.B.A., 3-4, Clement's Inn, W.C.2. CHA 3222. 3784

OPPORTUNITY for keen ASSISTANT, about Final standard, in small but busy office in Middlesex dealing with extensive Industrial and Commerical Schemes. Some office experience essential, salary according to ability. Box 3782.

EXPERIENCED Intermediate or Senior ASSISTANTS required for expanding progressive practice. Written particulars from first-class applicants will be considered by Morgan & Carn, A./A.R.I.B.A., 12, Grand Avenue, Hove 3, Sussex. 3781

FRY, DREW, DRAKE & LASDUN have vacancies for experienced qualified ASSISTANTS in their London office. Write giving details of training, qualifications, experience and salary required to the Secretary, 63, Gloucester Place, W.1. 3780

ARCHITECTURAL ASSISTANTS, Intermediate and Final standard, required for London office. Excellent opportunities in varied practice covering wide area. Good salaries, closely related to capabilities and reviewed annually. Pension Scheme available. Five-day week. W. S. Hattrell & Partners, 14, Hanover Square, London, W.1. Mayfair 4992. 3778

ARCHITECTURAL ASSISTANT (A.R.I.B.A.) with office experience, required for busy City practice offering excellent opportunities. Salary by arrangement. Apply Messrs. Morgan & Branch, A./A.R.I.B.A., 8-16, Great New Street, London, E.C.4. Fleet Street 2771/2. 3779

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