THE ARCHITECTS' JOURNAL

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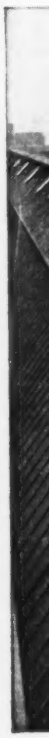
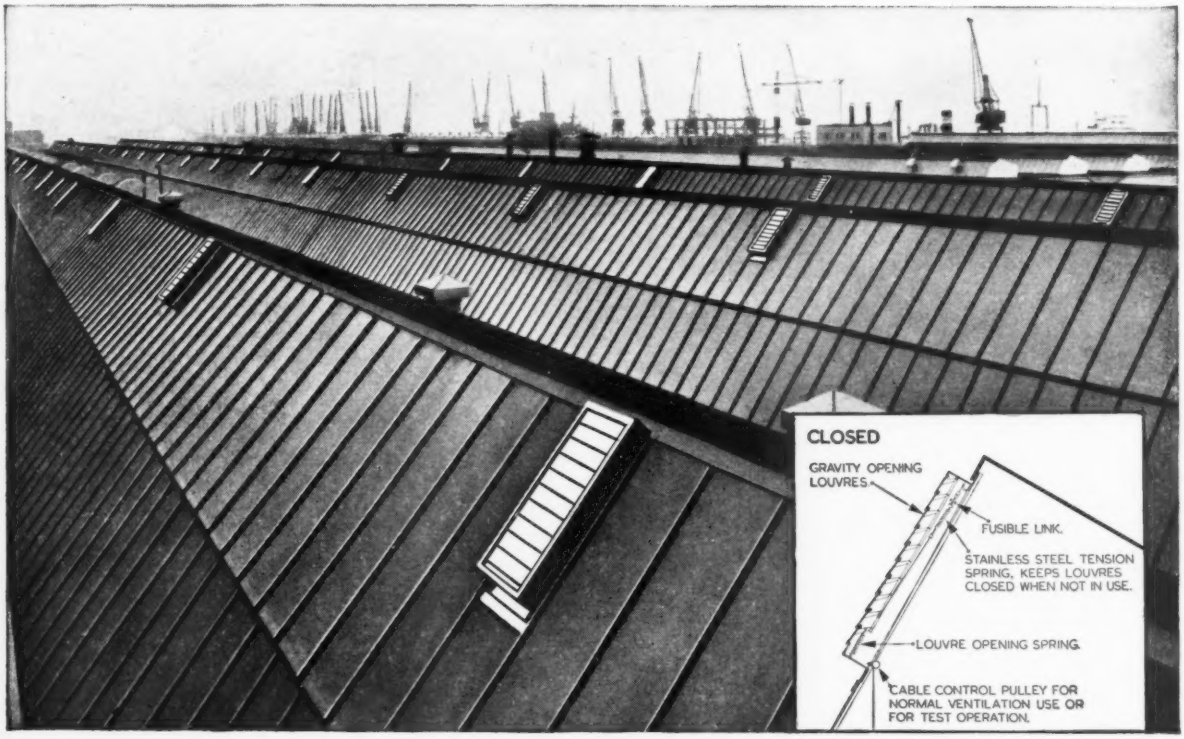
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square. Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street, Grosvenor Square, W.1. Mayfair 7086
ILA	Institute of Landscape Architects. 2, Guilford Place, W.C.1. Holborn 0281
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 7179
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. 47, Victoria Street, S.W.1. Abbey 6172
ISE	Institute of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
LDA	Lead Development Association. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
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. Mayfair 9400
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. 9, Victoria 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 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9242
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, London, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, London 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



VENTILATION *AND* FIRE PROTECTION!



with the COLT DUAL PURPOSE FIRE VENTILATOR

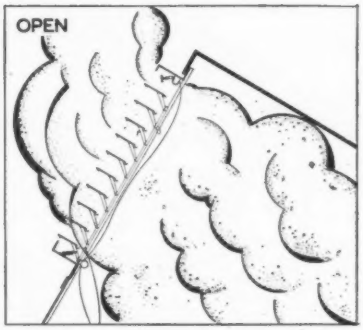
at AC-Delco, Division of General Motors Ltd., Southampton.

A study of industrial fires in Great Britain and in America has shown that the primary cause for the spread of fire is the super-heated air, smoke and explosive gases trapped under the roof. They build up in heat and intensity from the fire below and cause flash fires. Furthermore, the smoke rapidly extends downwards, entirely filling the premises and preventing the work of the fire fighters.

Colt have successfully solved this problem with the design of the Dual Purpose Fire Ventilator which **provides ventilation during normal conditions and—in the event of fire—functions as a heat and smoke exhaust.**

The installation of heat and smoke exhausts is standard practice in America and is rapidly being adopted by leading industrialists in the United Kingdom. Already, 1,290 Colt Dual Purpose Fire Ventilators have been installed in General Motors buildings in this country.

Write to Dept. L.9/5C for paper "Some Aspects of Fire Prevention in Industrial Buildings" by M. J. Reaney, which deals fully with this matter.



The insets illustrate the action of the ventilator as a Heat and Smoke Exhaust. In the event of fire, the fusible link fuses, providing Automatic Escape for Super-Heated Air and Smoke.

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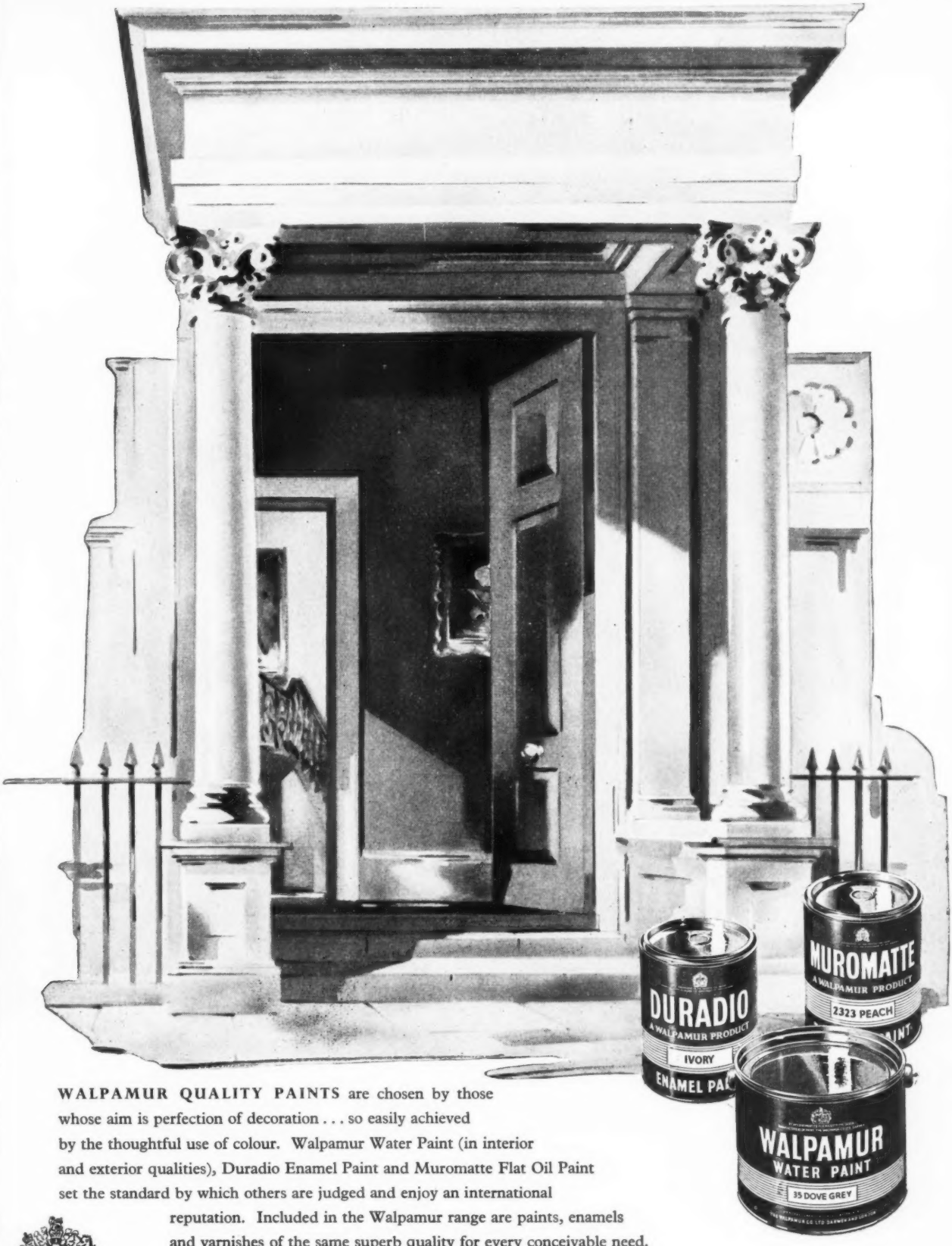

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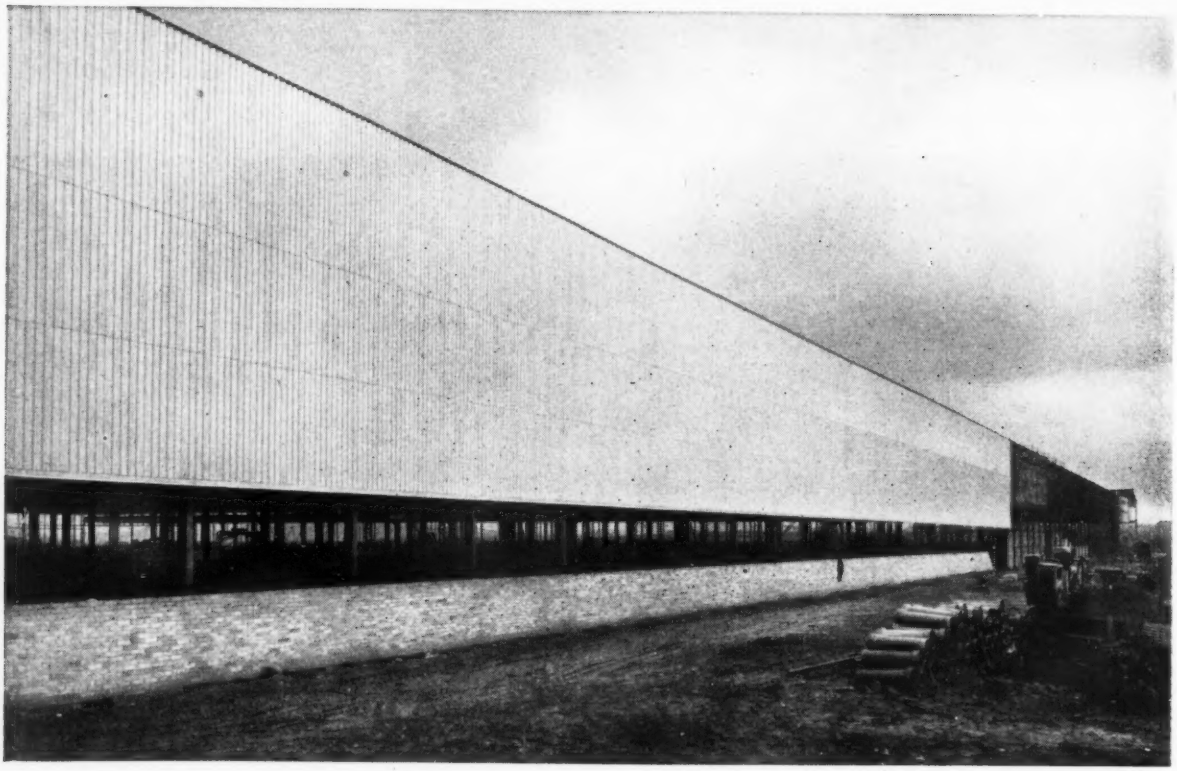

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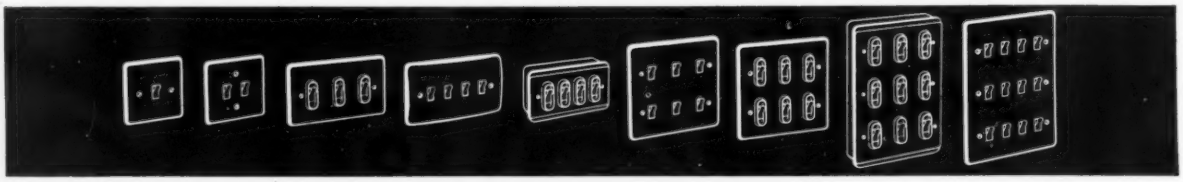
We are very pleased to give the fullest help to architects interested in this modern answer to switch installation problems.



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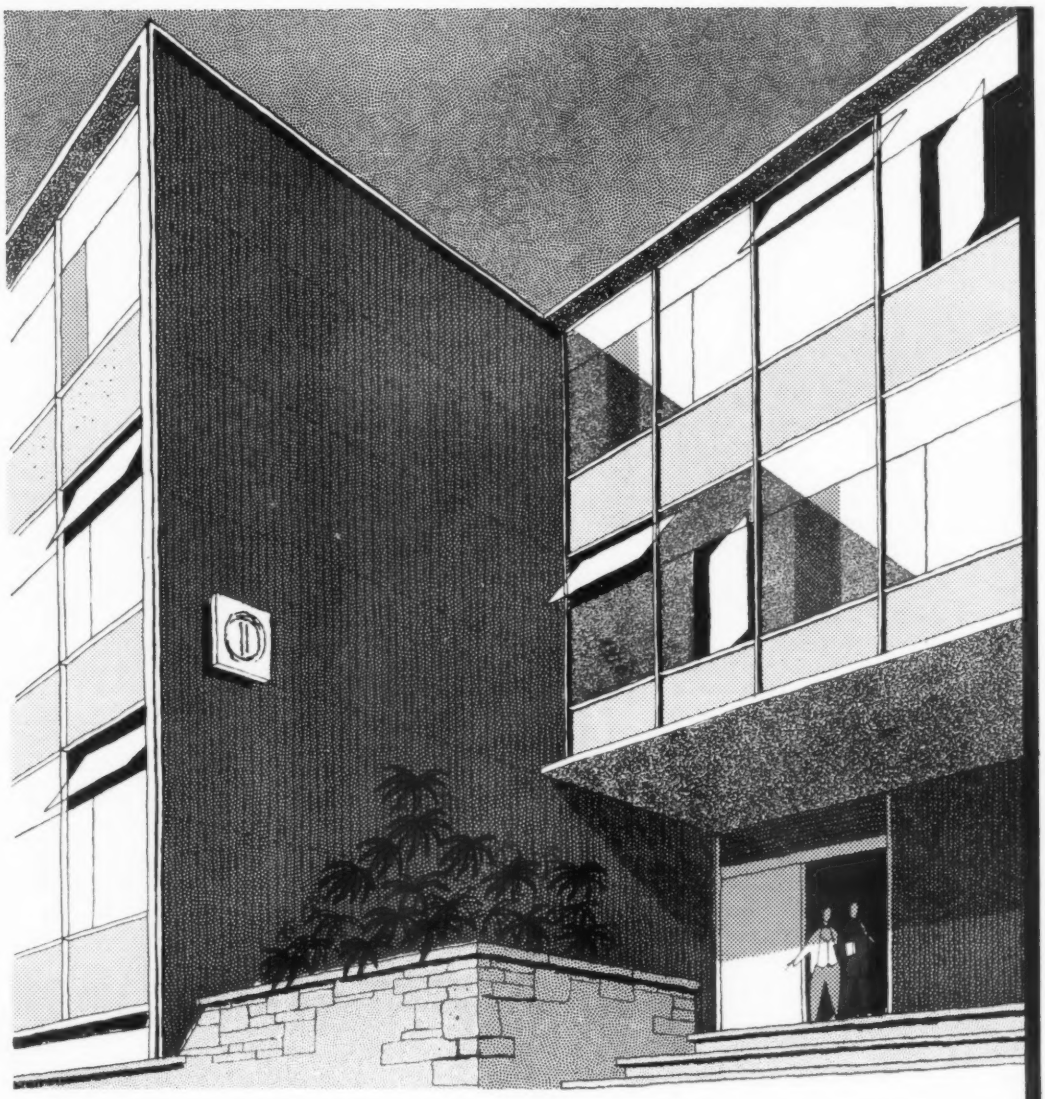

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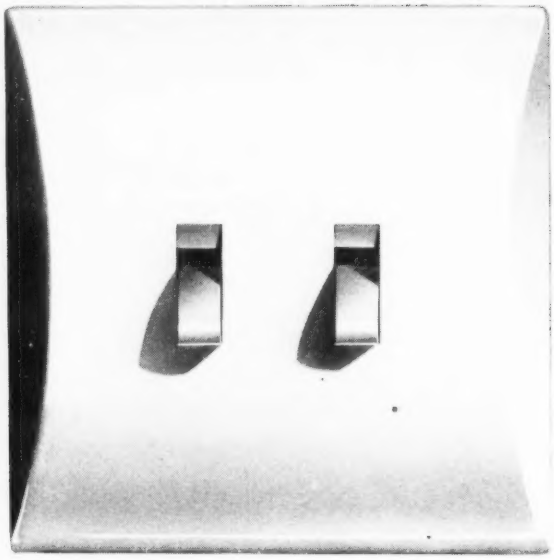
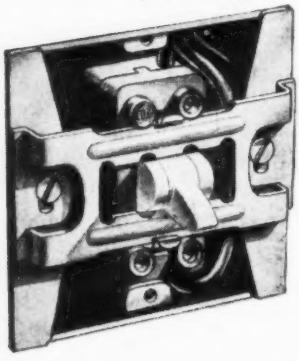


FALKS new switch makes others obsolete

Here is a handsome new switch, modern in every respect and unique being without plate fixing screws.

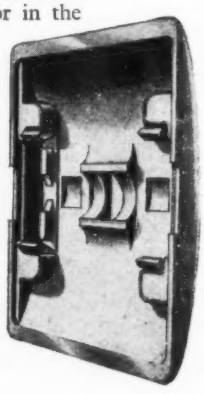
The design must appeal to every architect and its simplicity to the contractor in the saving of fixing time.

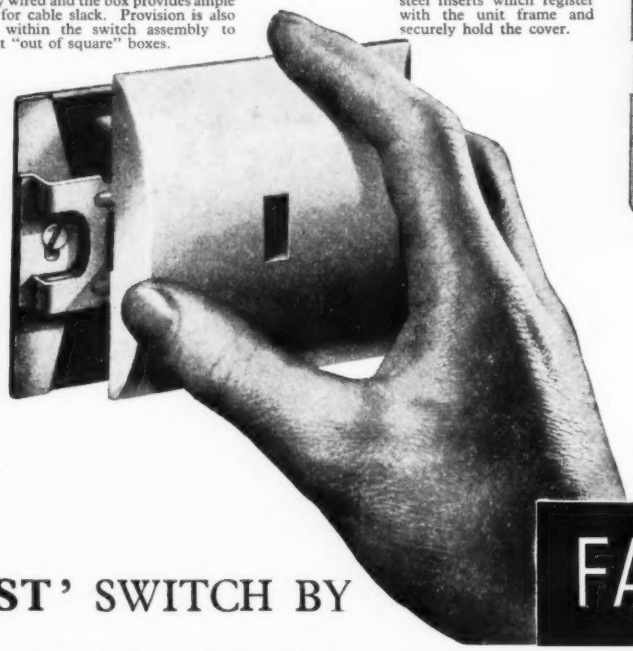
Note these special features—



The 'Snapfast' switch unit is fitted to the standard box by two screws. It is very readily wired and the box provides ample space for cable slack. Provision is also made within the switch assembly to correct "out of square" boxes.

The secret of the FALKS 'Snapfast' lies in the Spring steel inserts which register with the unit frame and securely hold the cover.





It is now the simplest of operations to snap the cover into position. Although firmly fixed it can be prised off and replaced without damage to switch or surroundings.

'SNAPFAST' SWITCH BY FALKS

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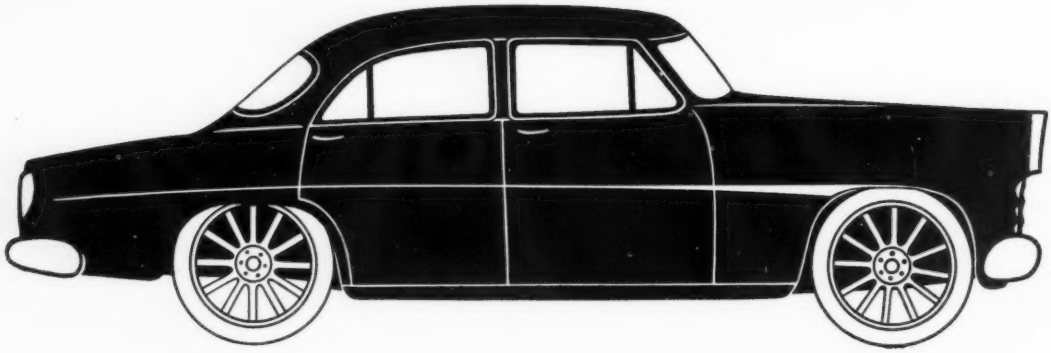

Putting the old with the new

Old style heating surface, with its network of pipes requiring valuable wall and floor space, gives the same effect to modern buildings as old style wheels on a 1957 car. They are out of place and certainly don't measure up to the efficiency of the latest developments.

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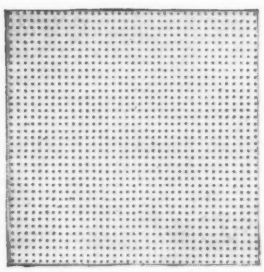
(*On right*) interior of Surface Coatings Laboratory.

Architect: Philip Cranswick, A.R.I.B.A., A.M.T.P.I., of Walker, Harwood & Cranswick.



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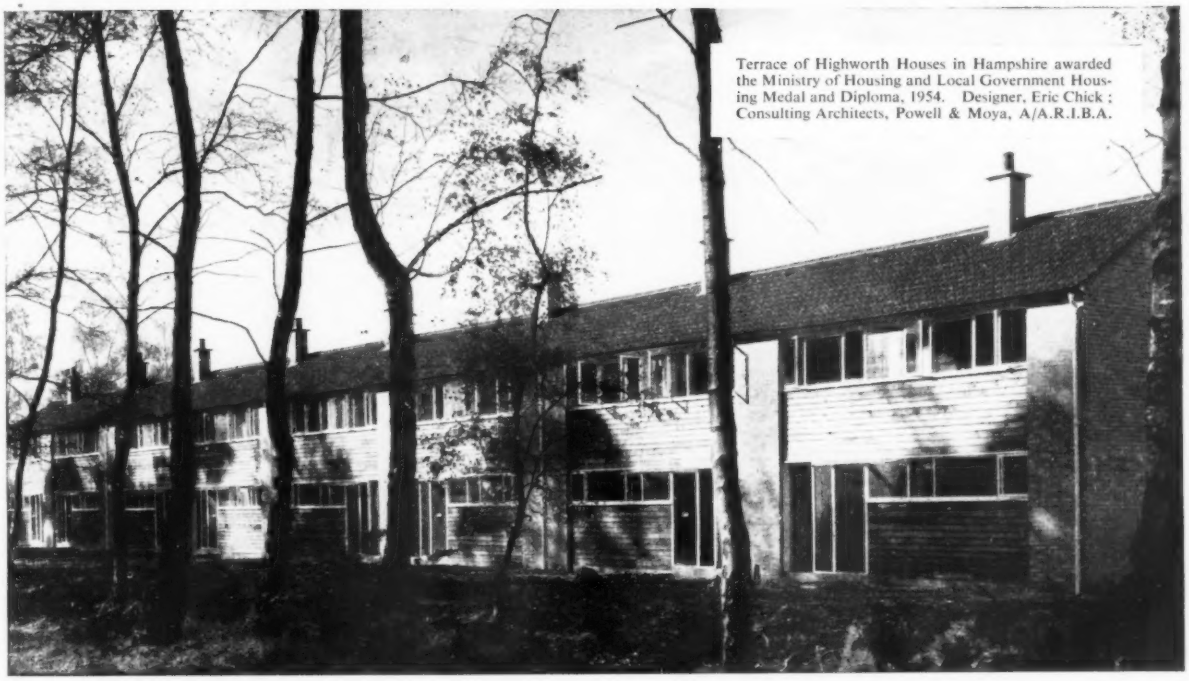

Terrace of Highworth Houses in Hampshire awarded the Ministry of Housing and Local Government Housing Medal and Diploma, 1954. Designer, Eric Chick; Consulting Architects, Powell & Moya, A/A.R.I.B.A.

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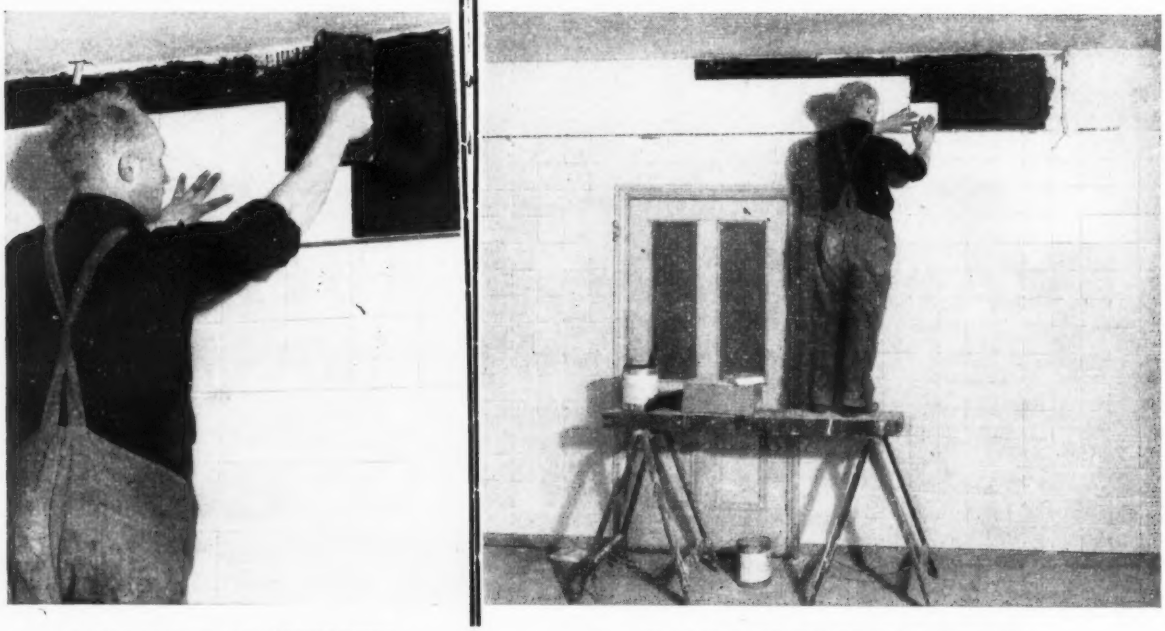

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The Man from Chubb was as courteous as ever. Door locks, he explained, even by Chubb were not enough in such a quiet neighbourhood, if windows were left unfastened. For a few shillings each, simple but well-nigh impregnable Chubb window catches could be fitted.

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"Even that," said the Man from Chubb.

Architects wishing to extract a moral from this anecdote are reminded that Chubb locks, though incredibly famous, are still well within the means of most clients. This is as good a reason as any to write or telephone for the most recent catalogue. The address is Chubb & Son's Lock and Safe Co. Ltd., 175-176 Tottenham Court Road, London, W.1. (MUSeum 5822).

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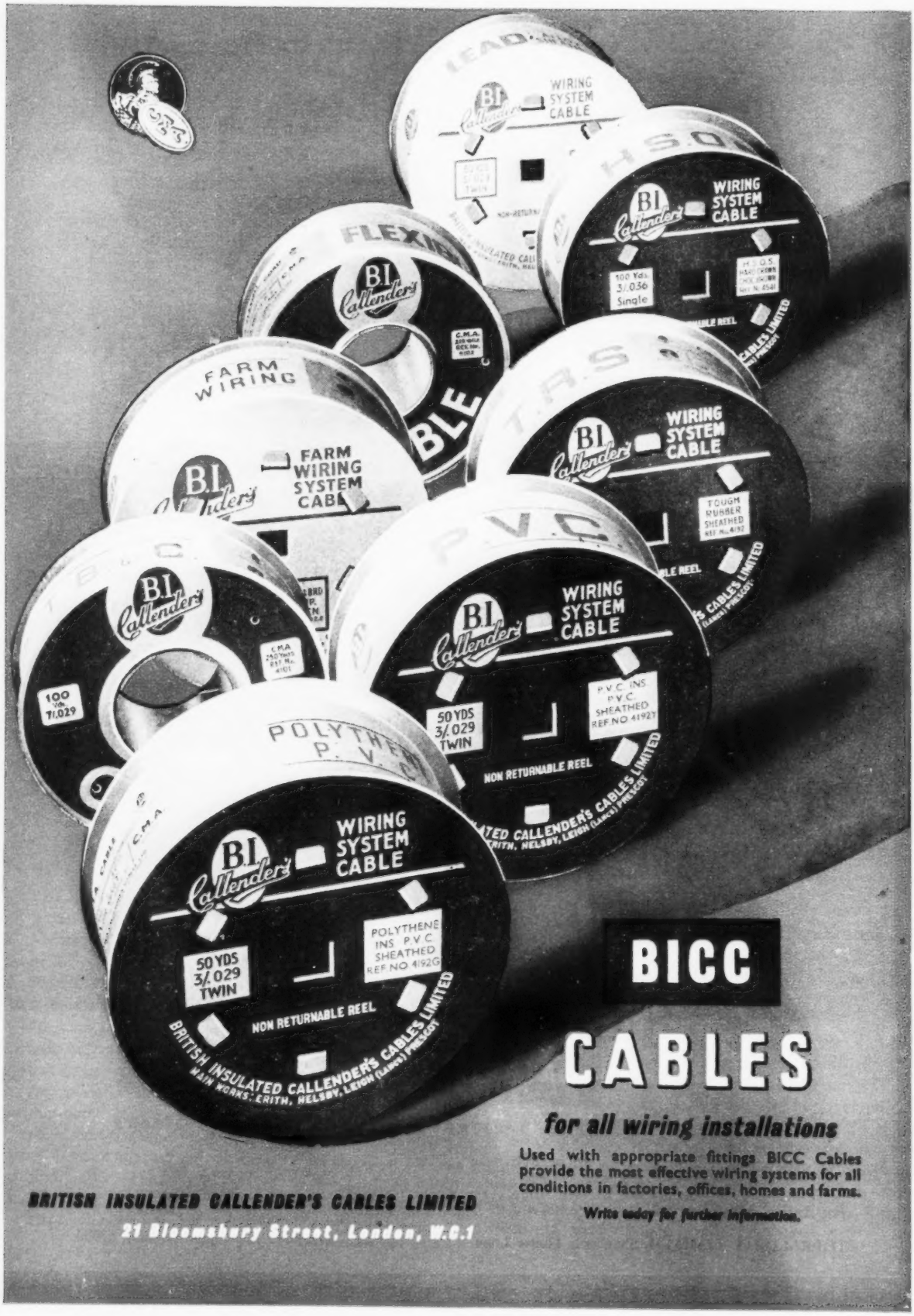
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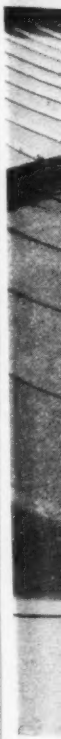

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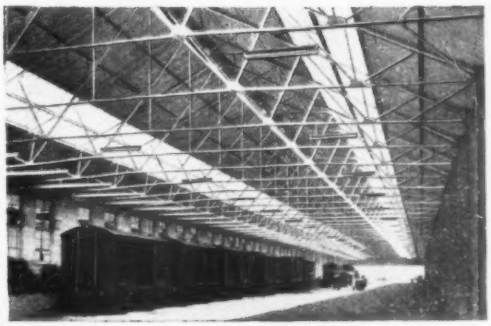
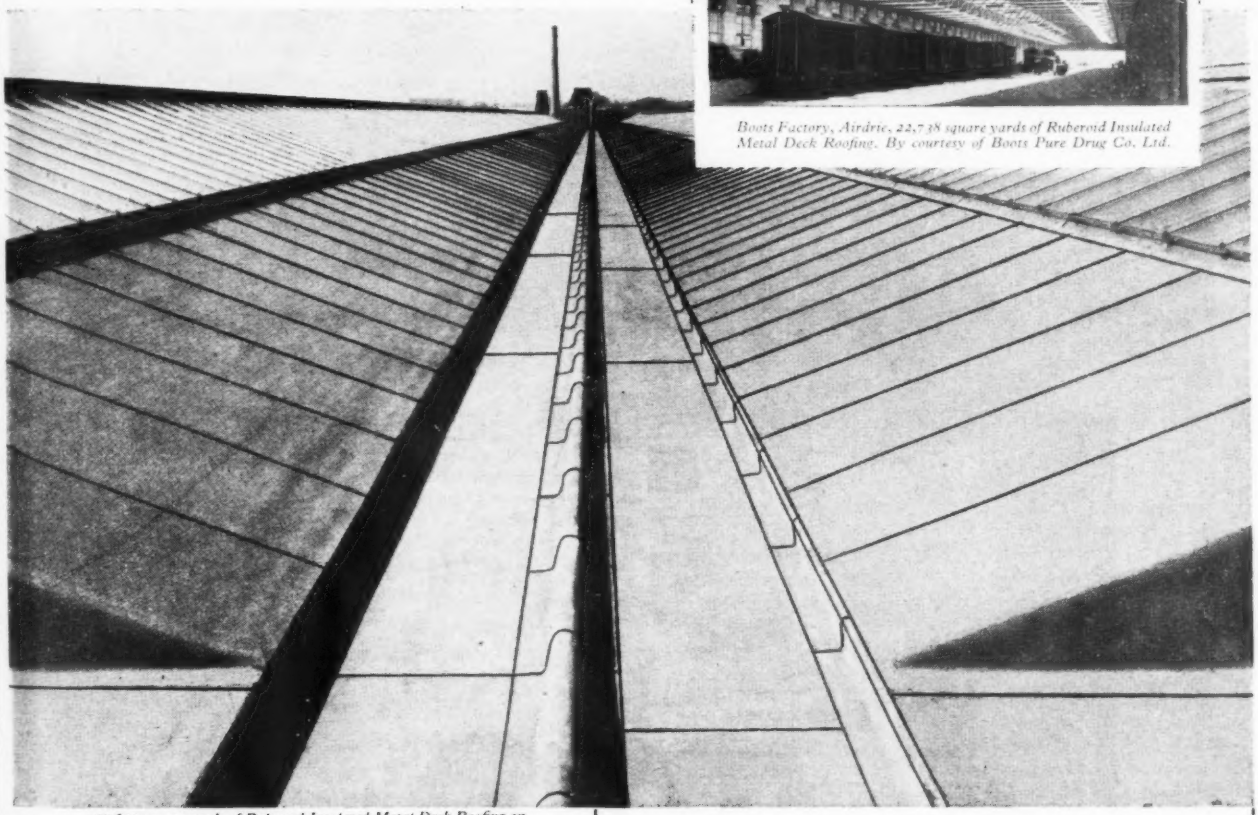


Boots Factory, Airdrie, 22,738 square yards of Ruberoid Insulated Metal Deck Roofing. By courtesy of Boots Pure Drug Co. Ltd.



20,623 square yards of Ruberoid Insulated Metal Deck Roofing on Messrs. Harris Lebus Ltd. warehouse, Tottenham. Architects: Clifford, Tee & Gale, London. Main Contractors: Y. J. Lovell & Son, Ltd.

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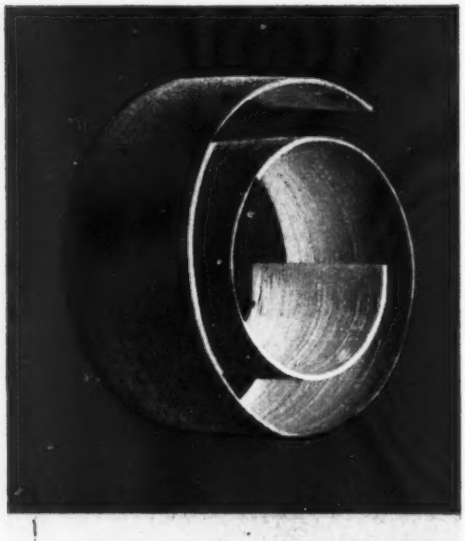

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TIME *and...*

The Music Room, Chatsworth House, Derbyshire. Photograph by A. F. Kersting. Reproduced by courtesy of the Trustees of the Chatsworth Settlement.

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Whether exponent of the traditional or contemporary, the Architect cannot ignore time. His works are judged through the passage of years, so too, the materials he uses.

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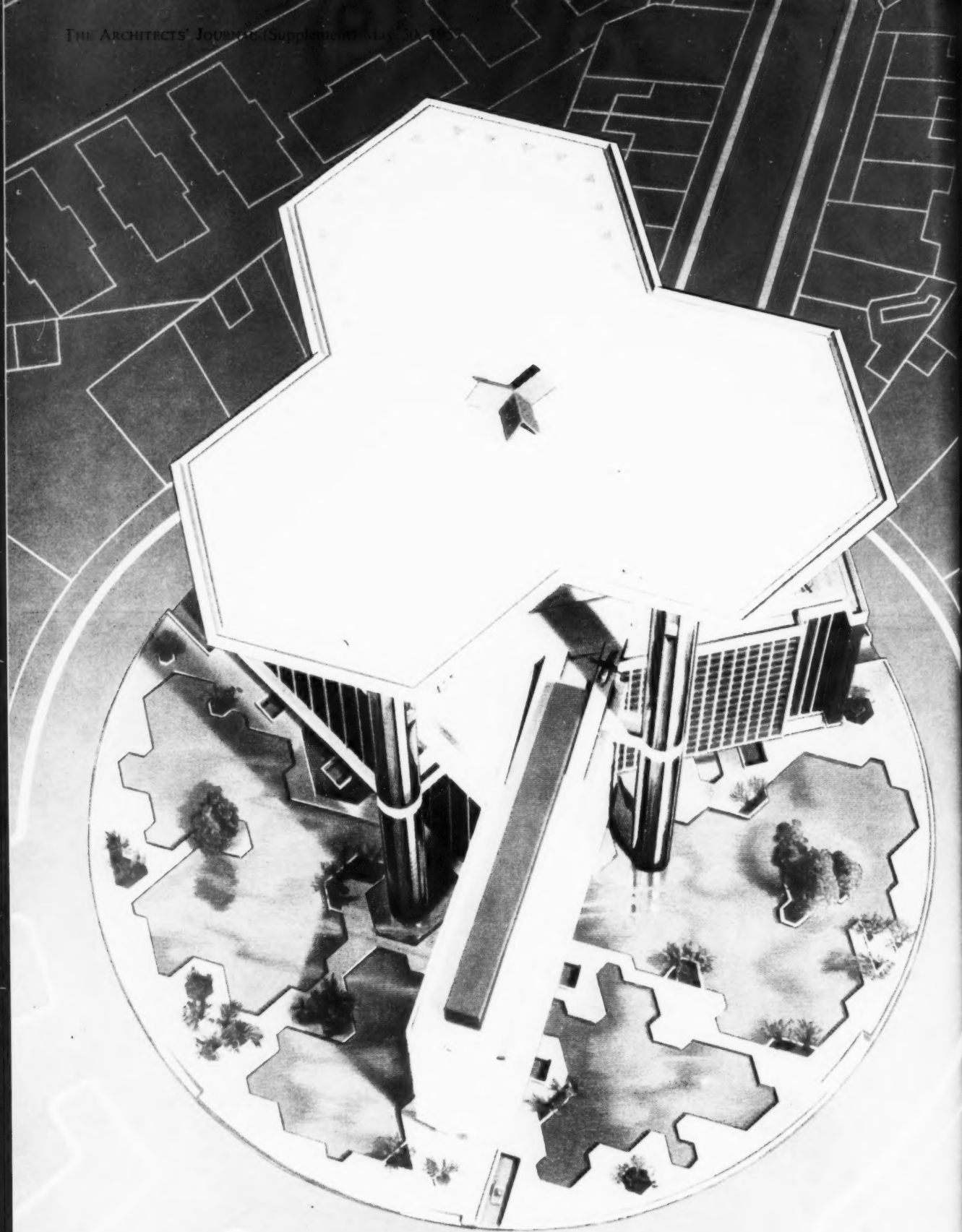

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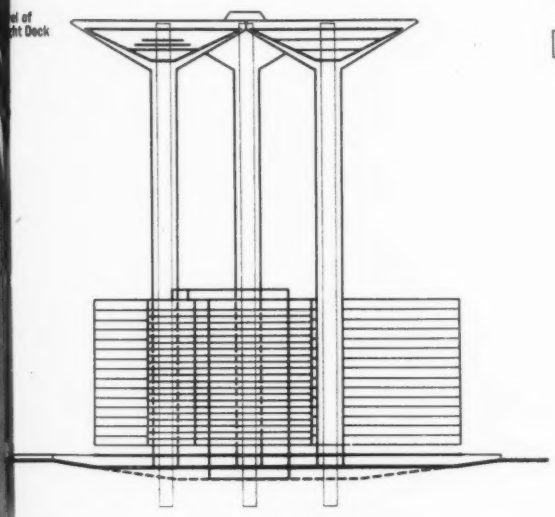
SKYPORT ONE

THE FLIGHT DECK

YPORT ONE is a *Glass Age Development Committee project. has been designed by James Dartford, A.R.I.B.A. as an ample of the city-centre air station which will be needed in e year 2000. These drawings describe a purely imaginary ilding which would occupy a site at St. George's Circus, ndon, but they are also intended as basic plans for a standard pe of Skyport, which, with local variations — especially in gard to height — would serve any large centre of population. essence SKYPORT ONE consists of a 500 ft. high landing-deck pported by three shafts which, in this example, straddle a o ft. high triple-wing building.

TURNAROUND AND AIR MOVEMENT

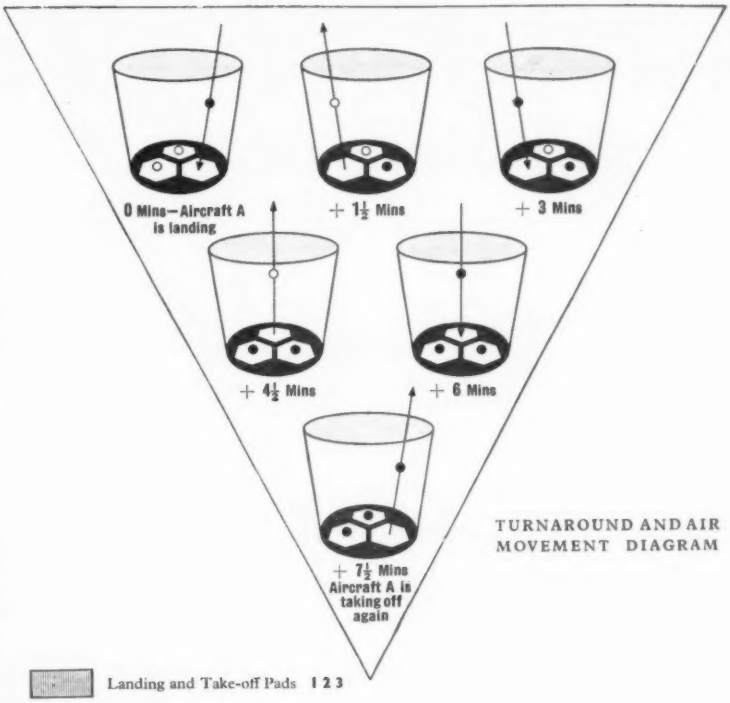
he landing deck has been designed as a *triple-turnaround* air op. It forms the floor of a 500 ft. high approach 'cone' to hich aircraft are directed by automatically-operated homing acons, descent being guided by electronic landing beams cated under each of the three pads. Vertical ascent or descent rough the cone takes approximately one minute with a safety terval of 30 seconds during which there is no aircraft movement side the cone. This timing permits each aircraft remaining deck 7½ minutes before taking off again. Assuming the aircraft rry 30 passengers, this schedule means that SKYPORT ONE can ndle a peak traffic of 720 passengers per hour. Daily totals ight well be something between 7,000 and 10,000.



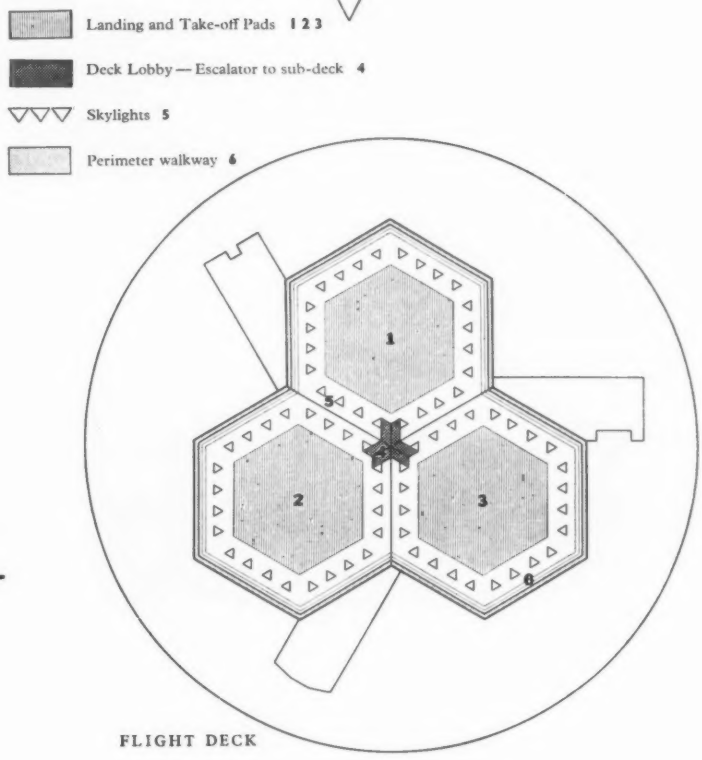
he size of the landing and take-off pads is approximately 120 ft. ameter. The deck is formed of a tetrahedronal space structure redistribute impact loads and has a non-skid, non-reflecting rface. Air and Skyport Control rooms are located immediately der the deck, skylights being provided where required. calators carry passengers to the flight deck from reception ntres at the top of the lift shafts. Special screens, telescopically used in the superstructure, protect passengers against rain d high wind.

The design of the superstructure, framed in steel or light oy, lends itself to the use of helicopters in erection. Clusters deck units would be lifted into the sky and lowered into sition above previously formed platforms.

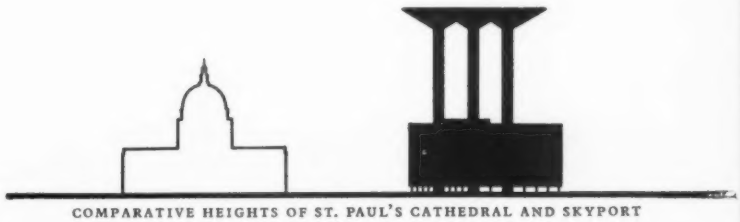
he Glass Age Development Committee is convened by Pilkington others Limited and consists of G. A. Jellicoe, F.R.I.B.A., Edward lls, F.R.I.B.A. and Ove Arup and Partners.



TURNAROUND AND AIR MOVEMENT DIAGRAM



FLIGHT DECK



COMPARATIVE HEIGHTS OF ST. PAUL'S CATHEDRAL AND SKYPORT

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COX are specialists in the design and manufacture of tip-up seating for all types of auditoriums and have been responsible for many important installations in this country and overseas. Some of the styles are shown on these two pages, but an illustrated catalogue giving full details is available on request.

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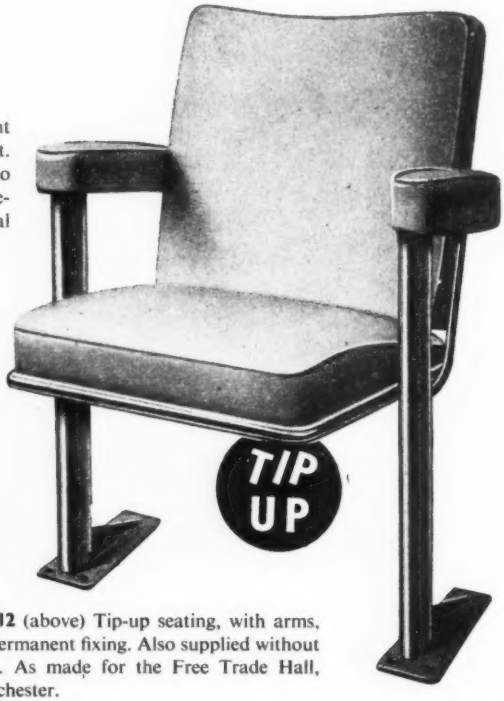
R.F.H.1 (above) Tip-up chair for permanent floor fixing, with automatically-tipping seat. Back and seat upholstered in Dunlopillo foam rubber. Frame rust-proofed and stove-enamelled in colour. As made for the Royal Festival Hall, London.



G.1312 (above) Tip-up seating, with arms, for permanent fixing. Also supplied without arms. As made for the Free Trade Hall, Manchester.

M.313 (right)
A new style nesting chair designed for maximum comfort, the seat being upholstered in foam rubber and the back in rubberised hair.

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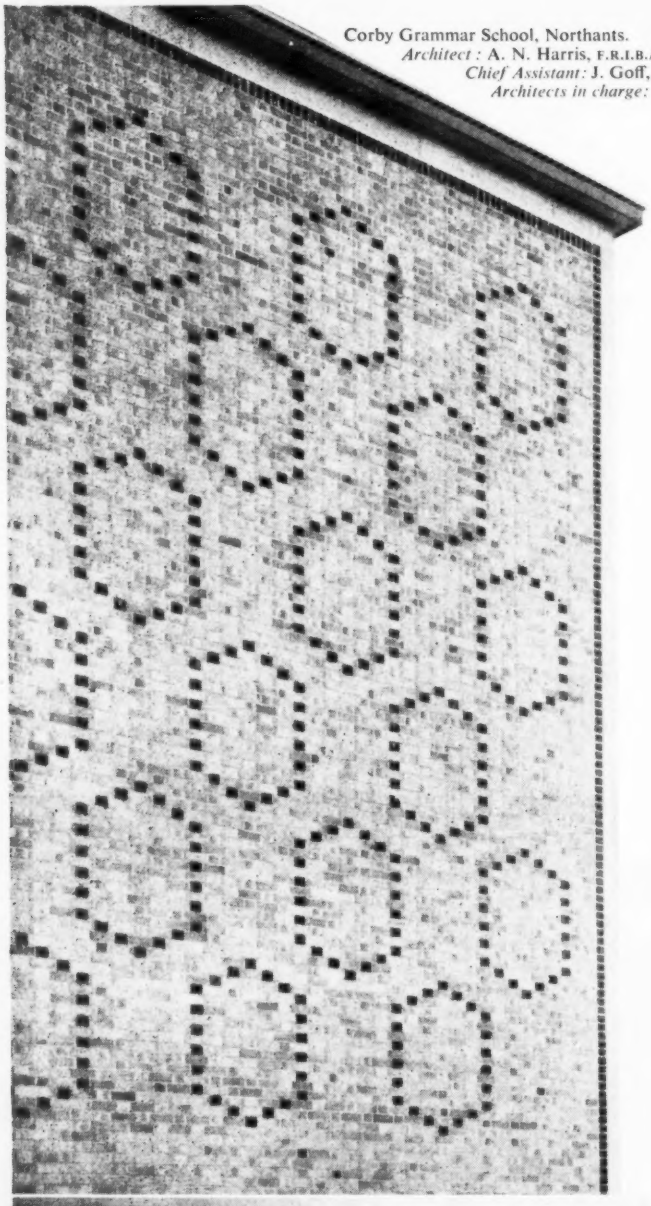

Corby Grammar School, Northants.
Architect: A. N. Harris, F.R.I.B.A., County Architect, Northants C.C.
Chief Assistant: J. Goff, A.R.I.B.A.
Architects in charge: P. Manning, A.R.I.B.A., and B. W. H. Claypole, L.R.I.B.A.

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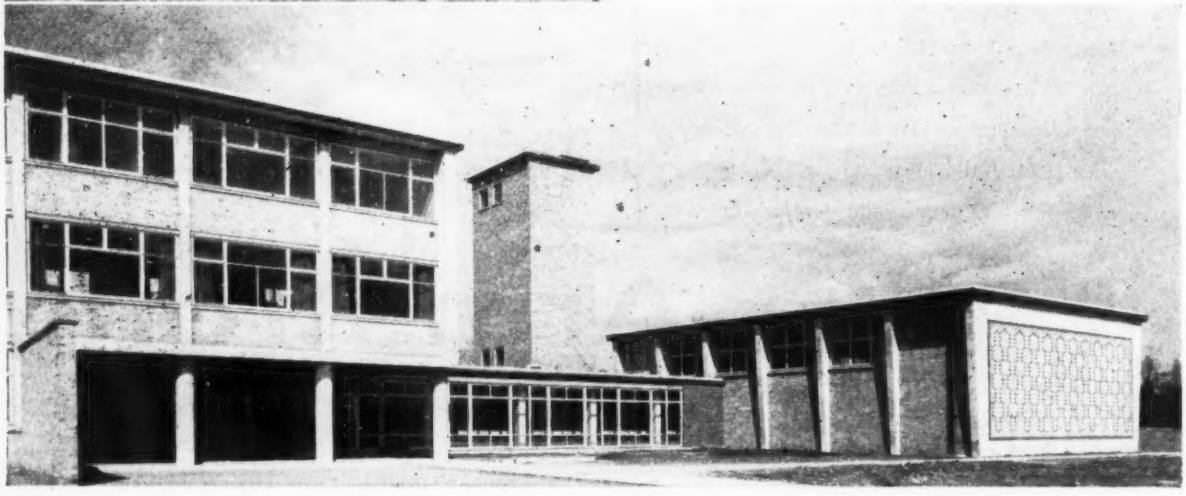

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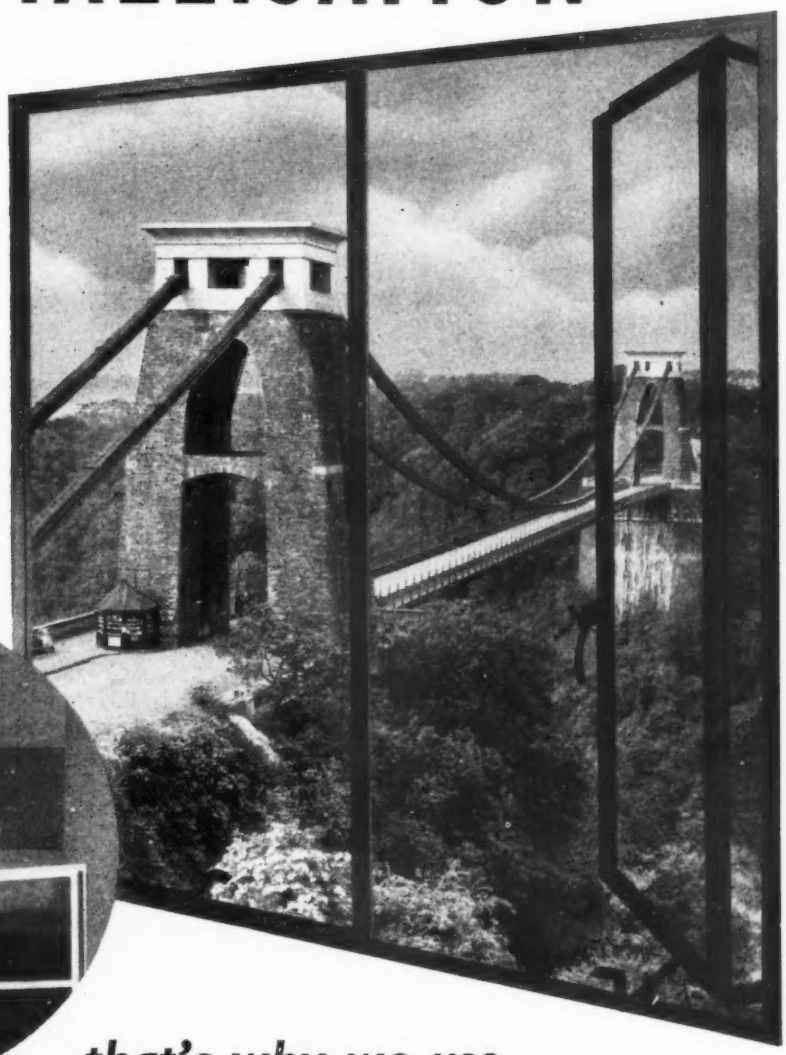

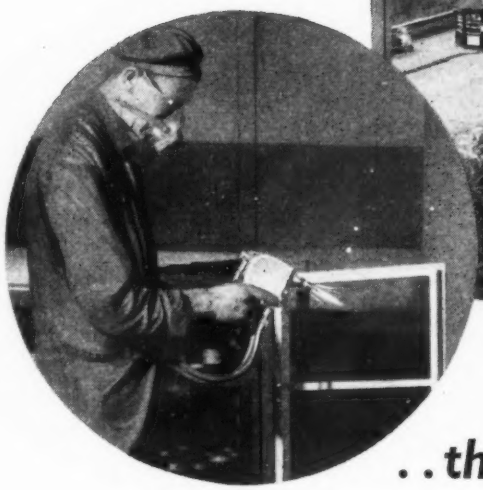

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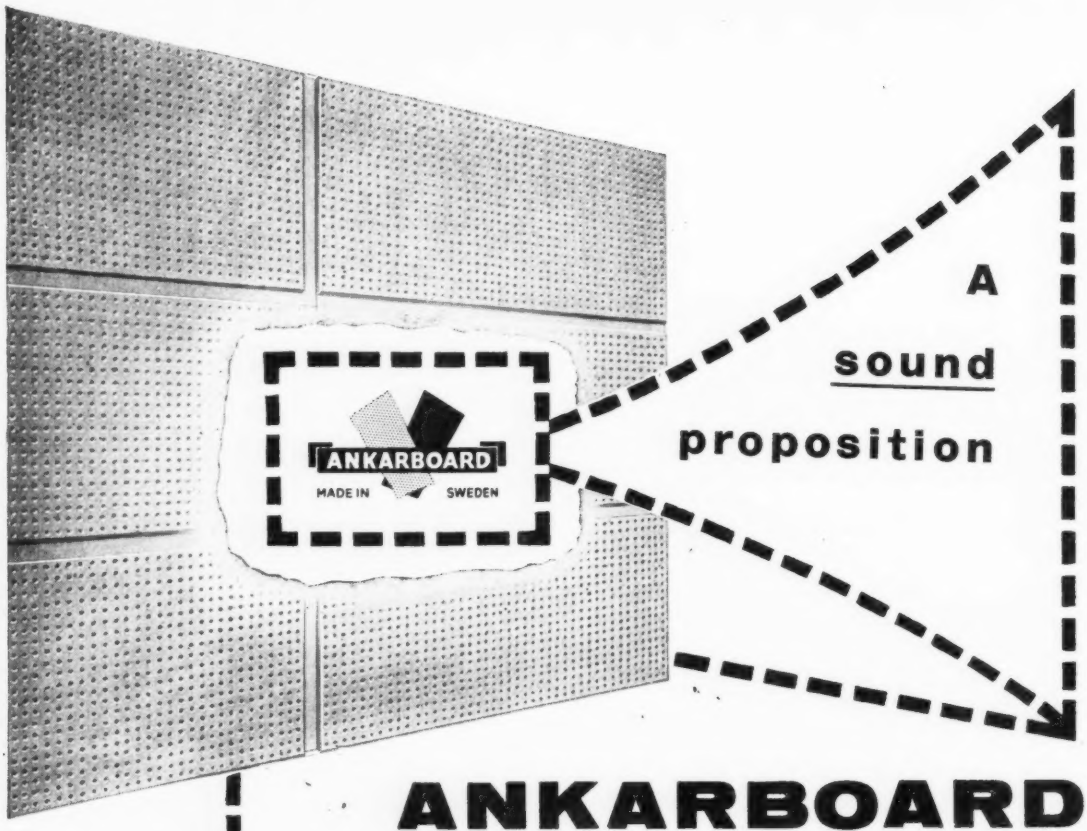

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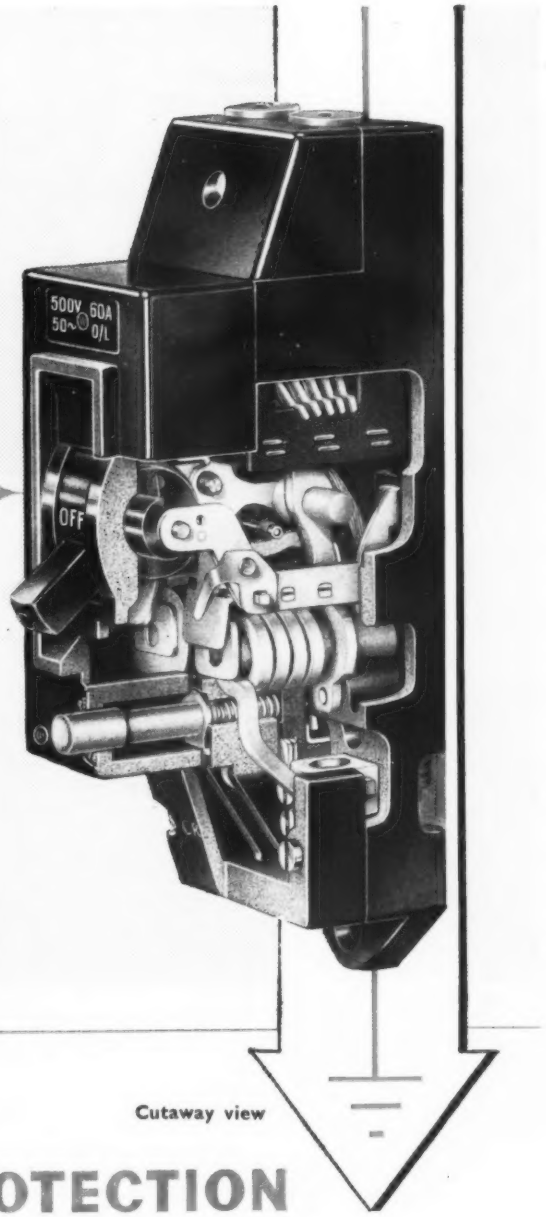

Cutaway view

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Architects, Leonard Manasseh and Partners. *Photographs by courtesy of Sam Lambert.*

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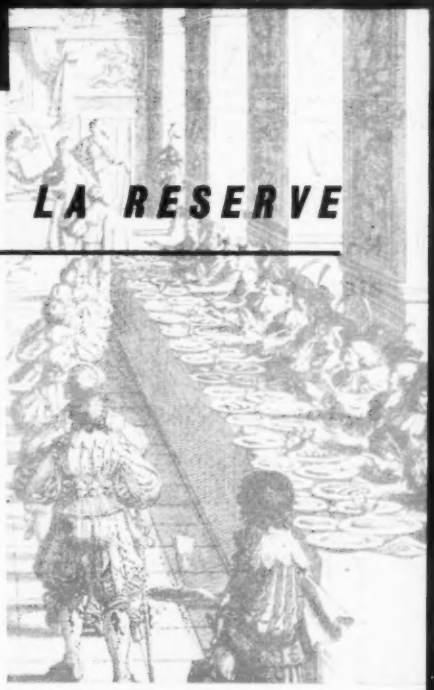

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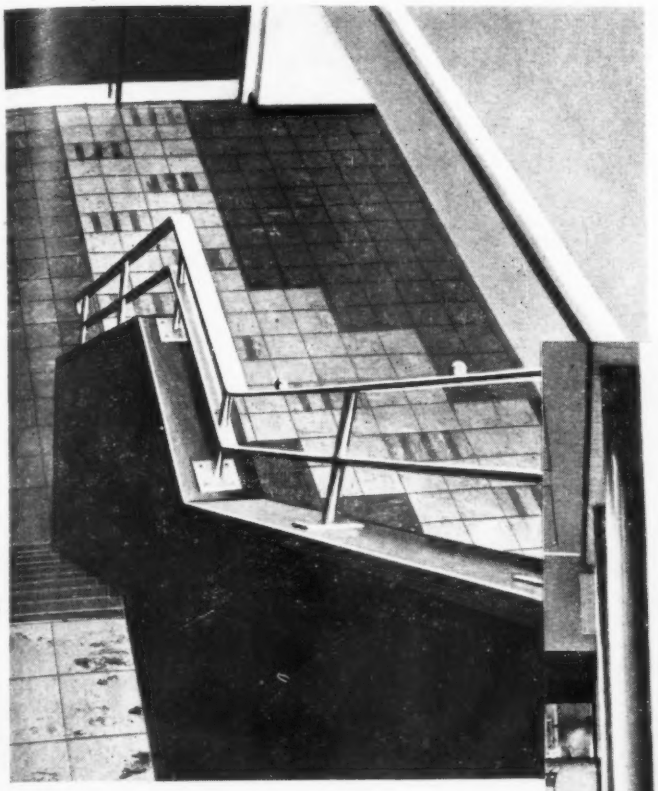
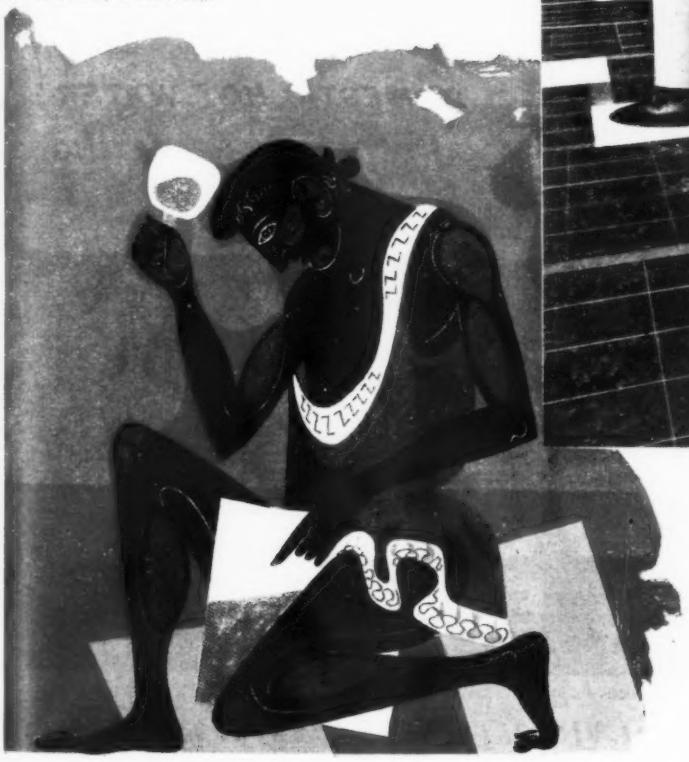
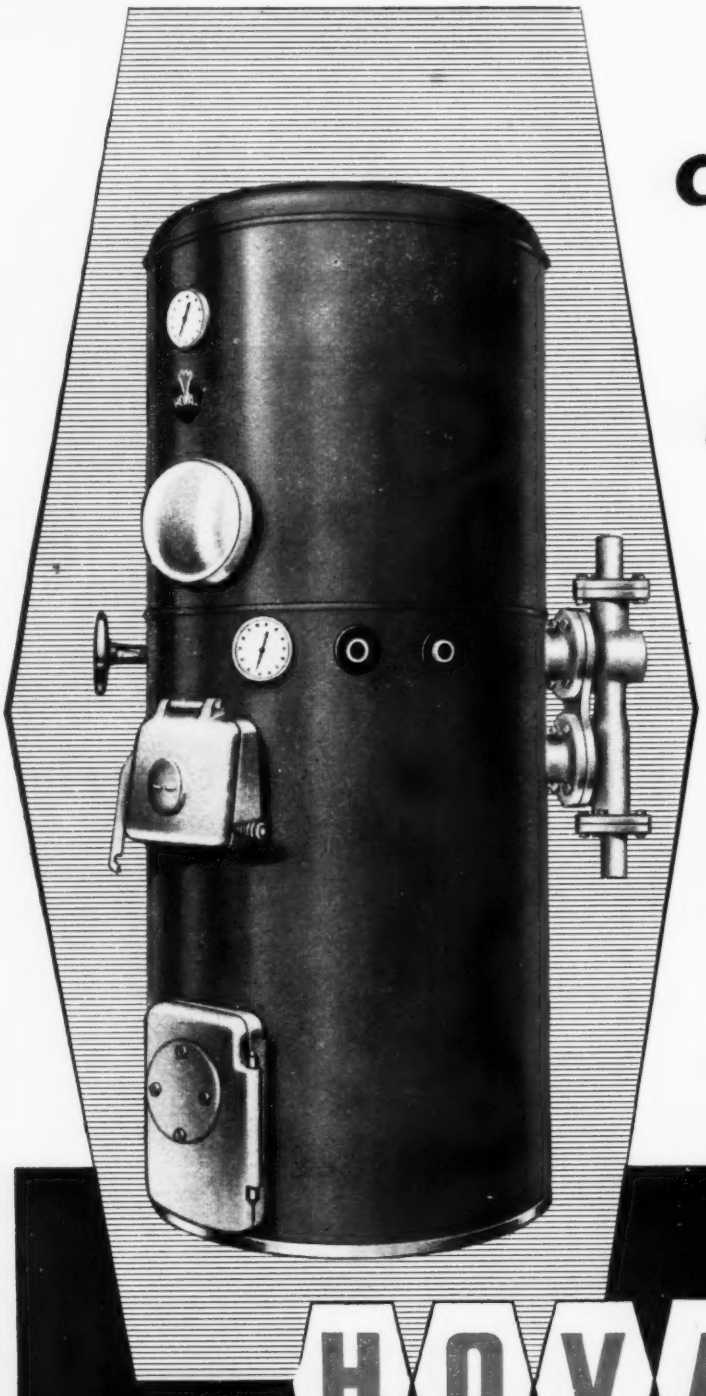


The Odeum of Herod Atticus stands on the southern slopes of the Acropolis and was large even by present-day standards. Built about A.D. 116, its 32 tiers held an audience of 5,000. It is still in occasional use today.





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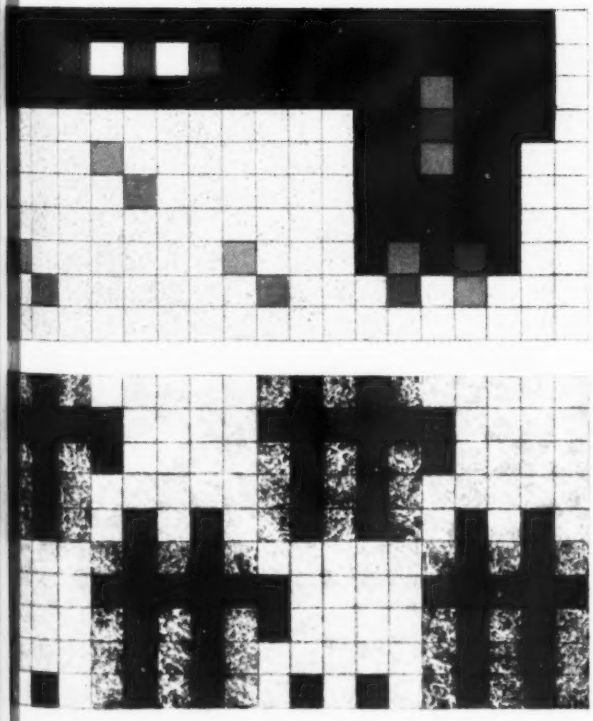

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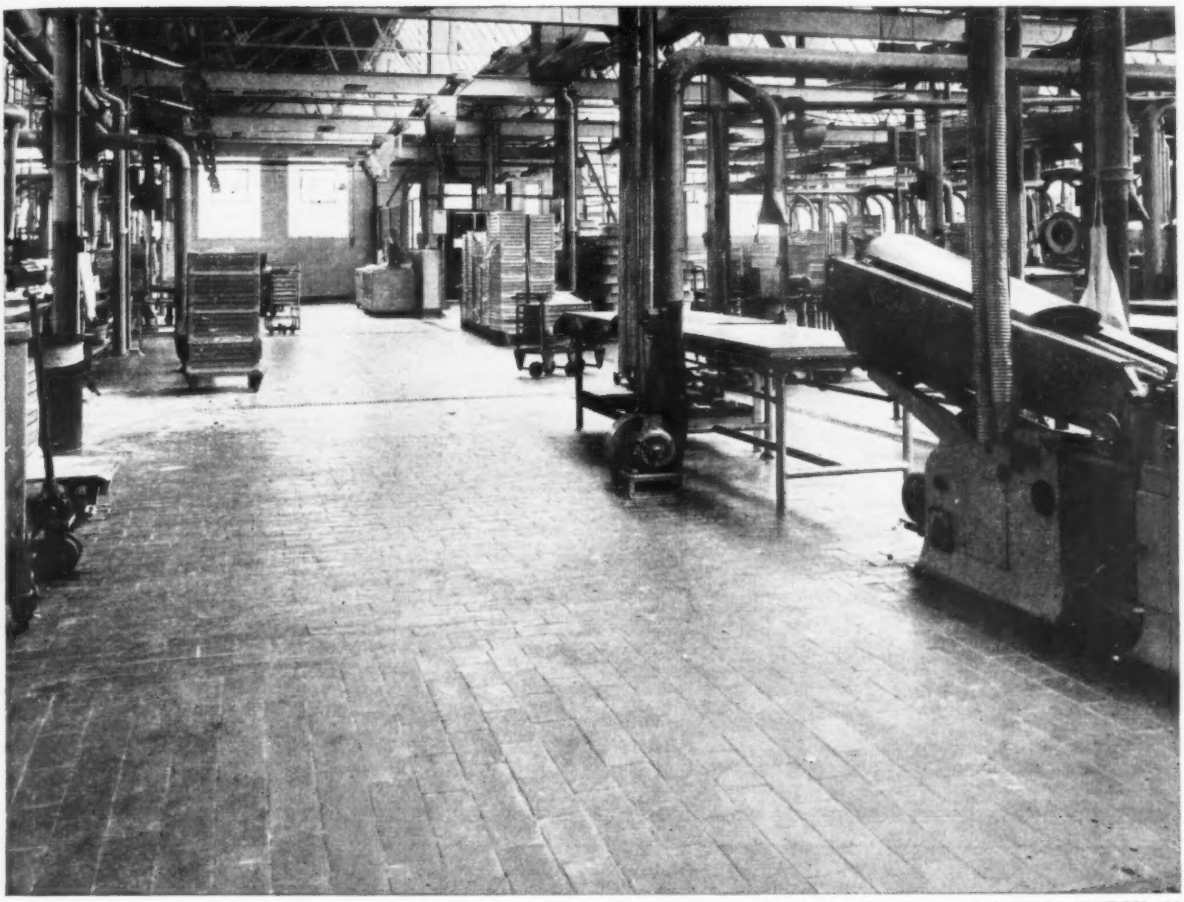

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KINGSWINFORD - STAFFS
& STOKE-ON-TRENT

GOLDEN LANE HOUSING
City of London.
Architects:
Chamberlin, Powell & Bon.

Aluminium Curtain Walling and Windows by

QUICKTHO

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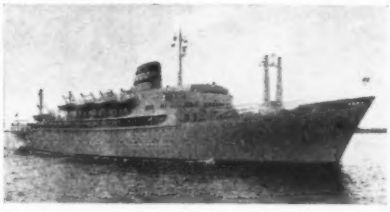
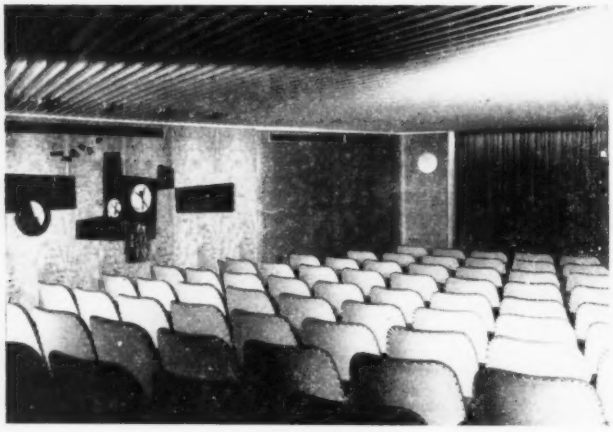
NOT QUITE ARCHITECTURE

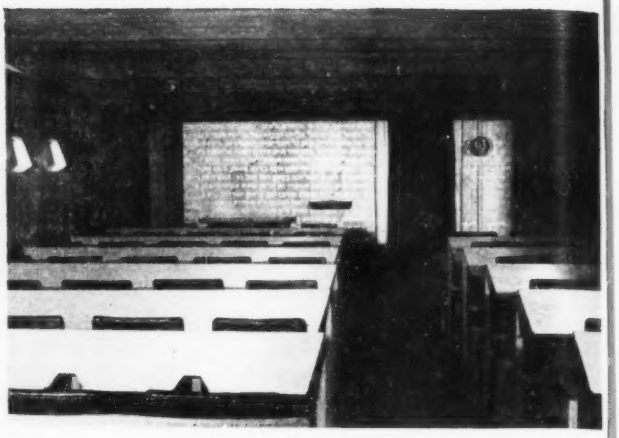
S.S. Theodor Herzl

Largely as a result, no doubt, of ASTRAGAL'S longstanding scathing criticism and the superb and devastating article by Ian McCallum in the *Architectural Review* of February, 1956, invitations to inspect new passenger liners have been few and far between in recent years for representatives of both periodicals. It was therefore somewhat of a surprise to be invited by the ZIM Israel Navigation Company to have



luncheon on board S.S. *Theodor Herzl*, lying at West India Docks, just before her maiden voyage to Israel. Were the hosts merely ignorant of what they were letting themselves in for, or had they decided to ignore criticism? Neither reason was correct. We had not borne in mind that Israel was a poor country. There was little chance of its ships being spoilt not " for a ha'porth of tar but . . . by a thousand barrels worth, in the form of satins and silks and Empire wood " to quote Ian McCallum's description. The amount spent was not a halfpenny—in terms of design—above or below the right price. This would not have been surprising if we had known that two of the four architects of the ship's interior, Yecheskel and Debora Gad (the other two are Messrs. Weinraub & Mansfeld) had travelled on, and were great admirers of, that delightful Danish ship the *Kron Jrins Frederik*. The *Theodor Herzl* was

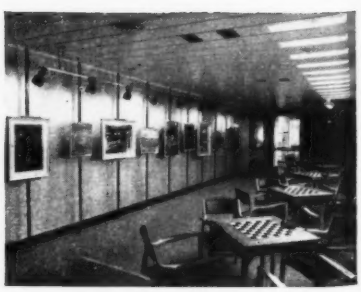


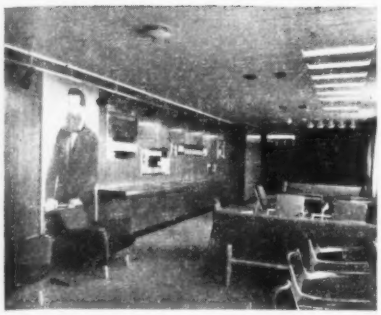


built by Deutsche Werft, Hamburg, to a design by the naval architects Sir J. Isherwood & Co. of London and New York.

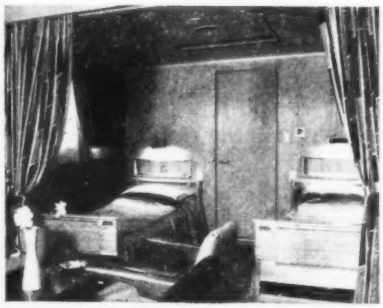
*

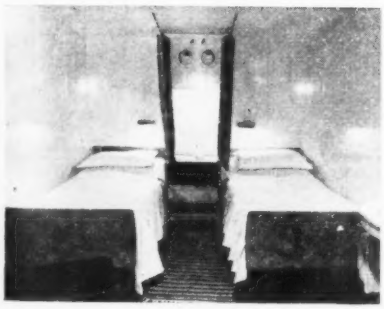
The *Theodor Herzl* is a two-class ship—first and tourist—but there is very little difference in the standard of comfort of the public rooms. Indeed the dining room, bottom left, has only a portion partitioned off for the tourist passengers, and the tourist lounge, bottom centre, is only slightly less luxurious than the first-class lounge, below. This photograph shows clearly the quality of achievement of the designers. The great virtue of this ship's interior is the freedom from fussy detail, and the retention of nautical character. The necessarily low ceilings are treated with a simple grooved pattern, either in a natural wood, or painted plaster on metal panel, and with the minimum of recessed light fittings and air-conditioning vents. This simplicity of treatment is also demonstrated in the luxury cabin (opposite page, centre) and in the tourist cabin (opposite page, bottom). When one compares these restrained designs with the glitter, fuss and folly of recent British ships one realizes how valuable it is to have to work to a strict budget. The less satisfactory aspects of the design of the lounge are as follows: the floor finish is glaringly reflective. The zig-zag of the dividing screen on the left is too





timid and indecisive, and lastly, the coloured Perspex screen in the background has a garishness out of keeping with the rest of the room. Indeed the works of art which have been liberally commissioned for this ship are the least satisfactory aspects of her. Top, opposite page, are two smaller public rooms. The cinema seats ninety. It has a pale blue ceiling and light wood veneer walls on one of which is a white metal sculpture, partly enamelled. The synagogue





has a stepped ceiling covered with grass cloth, light oak walls, purple hangings, and the wall behind the shrine covered with a prayer for seamen in Yiddish and made from inset brass letters. The pews are of oak, and the chairs are of black leather. Two other public rooms remain, the games room and art gallery (opposite page, bottom right) where pictures are hung on freestanding black columns, and the reading room, this page, top, where a photo mural, and various documents, commemorate Theodor Herzl, the spiritual founder of the Jewish State, and after whom the ship has been named.

AYDON

The Editors

THE PROGRAMME AS ARCHITECTURE

THE subject of architectural theory occupies a curious place for the architect. He feels it to be of great significance, yet it has no obviously direct relevance and those who pursue it most are not generally architects.

John Summerson, exploring the case for a modern theory in a talk at the RIBA last week disposed at once of the idea that it can be abstracted from the characteristic forms of modern buildings. He said: "The programme as the source of unity is, so far as I can see, the only new principle involved in modern architecture" and ". . . the programme has ceased to be evaluated merely quantitatively and has come to be evaluated qualitatively." And again (quoting Bruno Zevi) "The organic conception of architecture is based on a social and not on a figurative (i.e., formal) idea."

In other words theory is not only a matter of the grammar of architectural language, but of its meaning also. It is not only a set of principles for the guidance of designers but an account of why it is that buildings take the form they do. Summerson's paper set out, by implication, the ground that a theory should cover—not as a subject ranking with structures, design and professional practice but as a study which shows the order of which these things are part; which identifies the architect's place and purpose in society and which can yield a set of values to guide the individual architect.

John Summerson's demonstration of qualitative evaluation of the programme as the new source forces us to enquire more specifically what the programme is, and whether our capacities and procedures for evaluating and exploiting it are sufficient. In his description of the programme, there is a possible scope for misunderstanding. He described it as "a description of the spatial dimensions, spatial relationships and other physical conditions required for the convenient performance of specific functions." In fact, because of the new role of social critic which the times have forced upon him the architect has to begin, not with the schedule of accommodation which the client thinks he wants, but with an examination of what the client wants to do in his building.

But "programme" does not only mean "client's requirements" or needs, for requirements can only be fulfilled to the extent of the technical means available. Historically, the growth of needs and of the technical means of fulfilling them have always been interdependent, just as, on the smaller scale of the particular design problem, the working out of solutions is interdependent with both programme and technical resources to hand. Programme thus also means building methods.

Thus it is that John Summerson's demonstration of the *programme* as the source of unity has shown us anew that the realization of unity in our buildings depends on the quality and extent of user-research and of architect-builder co-operation. He has made us see again as did Richard Llewelyn Davies in his excellent article published in last week's JOURNAL how woefully underdeveloped we are in these two spheres.

THE CODE OF CONDUCT

Lord Goddard, in his judgment in the case of Hughes versus the Architects' Registration Council (reported on page 802), emphatically upheld the right of the Council both to lay down and to enforce a Code of Conduct. The Queen's Bench Divisional Court, in restoring the name of Mr. Hughes to the register on Appeal, has not conferred on architects generally the right to practise as estate agents or auctioneers. Only those, like Mr. Hughes, who were already estate agents or auctioneers at the time of registration, and before the Code of Conduct was introduced, will be entitled to do so. And when these few older members of the profession have retired, a practice which is rightly regarded as undesirable throughout the profession will come to an end. The Council was clearly unwise to attempt to speed up this process in the way it did, and seems to have been badly advised in requiring Mr. Hughes, as a condition of re-registration at the end of his suspension, to pass an examination. Whatever the intention behind it, this inevitably appeared to the Court like an attempt to bar Mr. Hughes for life.

This case does show very clearly the limitations of the existing machinery for maintaining high professional standards. As the Court pointed out, the only penalty that the Council can impose is to strike an architect's name off the register for " disgraceful " conduct in his capacity as an architect. Would it not be desirable for the Council to possess, in addition, less draconic powers. Only the most " disgraceful " infractions of the Code can be dealt with. The Court's decision also carries the unwelcome implication that the Code of Conduct cannot be enforced against an architect who has acquired, as it were, a vested right to a practice which the Registration Council and the profession as a whole deem undesirable, and want to stop. These points might well be considered by the Council when it reviews the Code next month.

THE COID MAKES AMENDS

Two weeks ago the writer of our " Not Quite Architecture " column described the extraordinary snub which designers received when they went along to the COID's presentation ceremony for the " twelve outstanding designs of the year." While diplomas were presented to directors of the manufacturing firms by the Duke of Edinburgh, the designers were shut away behind a barrier. Last week we published, beneath a letter from Sir Gordon Russell (who said the COID had acted " with its eyes open "), a reproduction of one of the diplomas. It contained a reference to the product and the producer, but there was no mention of the designer.

It is too late for the COID to go back on its decision to play down the designer on prize-giving day. But Sir Gordon, we are glad to hear, has had second thoughts about the diploma itself. Manufacturers have been asked to return the scrolls that were handed to them by the Duke, and to accept revised versions which will include the designers' names.

SUMMERSON AT THE RIBA

John Summerson's critical excursion into twentieth-century theoretical writing at the RIBA last week was far from being what its title promised, the case for a theory of modern architecture (what do you expect for your money?), but it was an event, for all that. Though no more than a scouting foray into the two most accessible areas of theory, the *Bauhaus* and *L'Esprit Nouveau*, and a brief account of the view from their most outstanding eminences, Moholy-Nagy and Le Corbusier, the reconnaissance was the work of a master of historical range-finding and target-naming.

*

Most notable was his identification of a diametrical opposition between Corb and Moholy; the former grounded on tradition, history, geometry and all that; Moholy anti-historical, aiming for a biological or organic approach. Somewhere between the two he pin-pointed a change of mind—that he himself described as " almost too violent to be credible "—about the ultimate source of architectural authority. This used to be the legacy of the past—its forms and methods—now it is the actual functional programme of the building to be designed.

*

Put like that, we all knew it already,

of course, but the Summerson approach haloed the bald statement with overtones of historical reference that we didn't know, and made his version of the change of mind a good deal more interesting than the Ruskin-Morris-Gropius version we were brought up on.

*

But, as he—and several speakers from the floor—pointed out, the functional programme can only indicate in a very general way the kind of architectural decisions that must be made when one sets out to turn it into a building, and at this point theory has nothing to say. Michael Pattrick, seconding the vote of thanks, underlined the absence of a "language of design," Reyner Banham insisted that formal solutions were now wide open to personal choice by the architect, and Peter Smithson pointed out that formal decisions have a back-influence on the programme anyhow. Clearly, if theory has nothing to say on this subject, then John Summerson was not obliged to say anything either, but several members of the audience seemed to think afterwards that they would have been grateful if he had exceeded his brief and taken the matter a little further.

GOODNESS, HOW SADE!

The only "cultural event" of the past couple of weeks that can rank with John Summerson's lecture, was the cinematic jape at the ICA, in which a large number of egg-heads were taken for a carefully calculated ride on a largely blank film. ASTRAGAL was not present—to his regret—but an inside man says that the whole point of the exercise was the studied accuracy with which outraged sensibilities were played upon. The title "Hurlements en faveur de Sade" (in English, roughly, "*Three cheers for the vicious Marquis*") was bait for a certain kind of ICA customer who makes a point of being broadminded about X-certificate films—and the fact that it was said to have been banned in France brought in a few more, no doubt. The film, if that is the word, consisted almost entirely of unexposed stock, interrupted by glimmerings of light, and dull or obscure remarks on the sound-track. The alternation of light and dark was accurately timed to allow protest groups to form under cover of the gloom, and then catch them in the act of writing rude words on the screen, and so forth, when the light came through again.

*

Subsequent reactions have been entirely predictable; circular letters, resignations, protest meetings—and, of course, sage pronouncements about "serious pioneer contributions to non-cinema."

GLOSSY FOR THE TRADE

A new periodical that fills one of those wants that everyone declares to have been long-felt as soon as it has been filled, is *Contract Furnishing*, which looks a bit like a cross between the *Architectural Review* and *Design* magazine, but has a brash, blustering, businesslike air that is all its own, and proper to the bustling field it sets out to cover. The first issue does substantially what you would expect it to do: it starts with a piece by Sir Hugh Casson; surveys a zone of discomfort, waiting rooms; mulls over some recent big jobs; has an article on chairs; does a lightning tour of miscellaneous interiors at home and abroad, and presents new materials and products.

*

The field covered by this magazine needs covering so urgently that one is a little surprised to find that *Contract Furnishing* will appear only at quarterly intervals. After all, in three months a couple of hundred new shoe-shops could open, and a revival of "contemporary" could come and go.

A DISAPPOINTING EXHIBITION

Trollope's seem undecided about the purpose of their exhibition currently being held at their International Modern showroom in West Halkin Street. Wall hangings by two Scottish artists, Margery Clinton and Martin Jennings, are the only really new and exciting things on show. These well-designed hangings are made of pieces of brightly-coloured felts bonded together. They are moth-proofed and can be cleaned, but it seems a pity that the artists did not choose more enduring materials. I should like to see them experiment with other media.

*

The furniture shown is in two categories—the work of students of the Central School of Arts and Crafts and imported Continental furniture. It is not representative either of students' work or of the work of Continental designers. If the aim of Trollope's is to encourage young designers then the work of students in other schools should have been included. If they are

Above: two of the seventeen modern wall hangings by Margery Clinton and Martin Jennings which can be seen at Trollope's International Modern showroom. Below: a German tea-trolley, also on view. It has a matt black top with an inlaid metal pattern, a gilt magazine rack and woodwork of white and ebonized sycamore. See ASTRAGAL's *note on the left.*

trying to show the best of imported furniture they have failed. They could hardly go wrong with Scandinavian design, of course, but the few well-made and carefully-detailed pieces on view are very well known, and the German designs are downright ugly.

FACTORY INSULATION

Gerald Nabarro's Bill to make the thermal insulation of factories obligatory is now to be sponsored by the Government. This will speed up the rate at which it is likely to become law, but in the process of persuading the Government to adopt it much of the effectiveness of the original Bill has been lost. Thermal insulation will only be required for factories erected after 1958 (presumably so as not to delay buildings now being designed) and the Bill will not apply to existing factories. This seems a most unfortunate concession to industrialists. The individual firm may be able to waste fuel, but the nation most certainly cannot.

FLOWERS AND FOOD

Two items remain to which ASTRAGAL had no space to refer last week. First: the Chelsea Flower Show. It is sad to see that the specially-designed gardens which soothe eyes jaded by the raw, hot, colours on display under the marquees, yearly dwindle in number.

*

This year, apart from the usual rockeries there were only two, of which the poor best was by Gillian. The most extraordinary exhibit was a pseudo-Roman peristyle, complete Parks and Gardens Department, and with murals, and planted with lilies, gladioli and irises, the whole thing about half life-size. It was executed by the Rhyl Urban District Council was such a pathetic example of misdirected earnest effort that one could weep. The Institute of Landscape Architects' Exhibition showed some of the work of the AJ's versatile Research Fellow, Dargan Bullivant. The photographs of his landscaping for the Woodlands and Lyng Hall Schools at Coventry were the finest on view.

*

The second item was the admirable lunch given by the LMBA in honour of Sir Cullum Welch, the Lord Mayor. The food was excellent—particularly the Stilton, served instead of the usual pudding—and the speeches short. Kirby Laing, the president, asked for tall buildings—but not drab and uninteresting ones—so that every foot of land was fully used; and pointed out that in building education, training for management had been overlooked. Most people would agree.

ASTRAGAL

LETTERS

I. Chaikin, A.R.I.B.A.

R. D. Brines

C. F. J. Thurley, F.R.I.B.A.

Sir Patrick Dollan,
chairman of East Kilbride Development Corporation

"Anti-Pooh"

Norman Fraser

E. M. Ackery,
of the British Electrical Development Association

Max Lock, F.R.I.B.A.

A Timely Message

SIR,—As spring is the time for courting (and cleaning), so is it the time for entreaties from prospective members of the RIBA Council.

Words of endearment and encouragement for the underpaid and overworked architect come to mind—especially for those architects who work for the engineer and surveyor—or who feel that the RIBA does not represent them.

Commiseration, too, for those public bodies and others who find difficulty in procuring the services of well-qualified men at low salaries.

As a member of the Council of the Association of Building Technicians, I cannot let the occasion pass without a special entreaty to those members of the RIBA Council who have ears, to set up or sponsor negotiating machinery for the profession of the British Medical Association type.

If I may be permitted to conclude with a slogan, mine is "Architecture for the Architects"—that is, not for those who consider architecture as a tiresome adjunct to the business of making money.

I. CHAIKIN.

Surrey.

Salary Scale

SIR,—To all would-be council members—please note. It is time the RIBA did something to protect its majority from the "State salary required," "What did you get in your last place," and "I never pay more than . . . ."—namely a RIBA *Scale of Salaries* on the same lines as the scale of fees. The scale of fees protects the minority. So how about the majority—!

R. D. BRINES.

Is our Future in the Provinces?

SIR,—I believe the RIBA should concern themselves to a far greater degree with the cause of the provincial architect, bearing in mind that the future of architecture in this country may well lie with the provinces. At present in many areas the countryman is having a thin time.

The amendment of the Registration Act must be our ultimate aim, when every building must be designed by a qualified man, whether he be private or salaried. Only then shall we get the standard for which we are trained, and stop the despoliation of our countryside.

C. F. J. THURLEY.

Torquay.

HRH's Little Joke

SIR,—Owing to illness it has not been possible for me to reply to the journalistic fiction you published about Princess Margaret and shopping in the new town of East Kilbride. The jocular reference made by HRH to shopping was connected with multiple stores which do not open up in new towns or elsewhere until there is a minimum population of 20,000 or thereabouts. This is being remedied gradually, and some of these multiple stores will be opened before the end of the year. There are 71 other shops in East Kilbride, including three self-service shops equal to the best in Glasgow or Edinburgh, and branches of well-known West of Scotland firms. Another 30 shops are building, while there are also 50 mobile firms trading in and out of the town. The shopkeepers are all doing very well, judging by the rents they offer for premises to let, and it is unfortunate that a humorous comment by a Royal visitor should have given the impression that there is a scarcity of shopping facilities in the new town.

PATRICK DOLLAN.

East Kilbride.

Planning Control

SIR,—You comment on the danger of giving planning powers to towns of over 60,000 people. Most towns of that size, and some smaller, are county boroughs and thus already have planning powers. Some, including the smallest of them all, have made excellent use of those powers; others, including some of the biggest, have made a thorough mess. Size is no criterion.

I would rather see all planning under the control of architects than under half-contemptuous borough surveyors. But surely the proper person to be in charge is the qualified planner himself, the member of the TPI.

Unfortunately the profession is heavily weighted with Pooh-pooh planners. They are still suffering from the reaction against the hey-day of Sharp and Abercrombie with their "grandiose" and "unrealizable" plans. The Pooh-pooh planners' favourite phrases are "airy-fairy," "unrealistic," "too costly" and the like; they forget that their own muddling is in the long run often far more nebulous, impractical and uneconomic than the dreamers' dreams. The younger generation has reacted against the Pooh-poohers; now silently critical and frustrated, they will rise to the top one day. Till then a great deal of harm can be done. That is why the older, wiser architectural profession must keep an ever watchful eye for many a long year yet, and be ever critical till the distant day when criticism can be safely left to the planners themselves.

ANTI-POOH.

Elemental Bills

SIR,—Your comments on the RICS discussion on elemental bills (AJ, May 2) sound to me like the petulant wails of a disillusioned infant trying to persuade his elders that his hobby horse is real and not just a toy.

From personal experience, I can assure you that elemental cost analyses can be prepared very quickly and accurately from trade bills, without having to involve tenderers in the difficulties inseparable from the suggested new format. Such analyses need only be prepared on the rare occasions when they would really be of some value, *i.e.* when a similar type of building is to be designed by the architect at a pre-stated maximum cost.

Would it not be better now to consider "elemental drawings" and find out whether they could contribute in any way to the efficiency of the building industry?

NORMAN FRASER.

Hastings.

The 150-Gallon Family

SIR,—My letter merely objected to the implication that the 150-gallon family could not have a high standard of cleanliness because they did not take enough hot baths

but as Mr. E. W. Wignall suggests (AJ, April 18), let us come right out into the open.

Is it in the interests of the electric supply industry to persuade people that 150 gallons of hot water per week; a quantity that gives a revenue of only about 5s. 3d. a week at 1½d. per unit, is an adequate standard? A larger quantity would improve our load factor, give us more business and still be far removed from "very expensive." A solid fuel appliance is unlikely to have a weekly consumption of under 1 cwt., costing in London about 8s. 6d., and at 1½d. per unit this sum will buy 81 units, which will give about 270 gallons of hot water per week at 140 deg. F. It is true that hot water at 140 deg. F. is the same whether heated by solid fuel or electricity, but is it easier on the housewife and more likely to be always at 140 deg. F. if electricity is used.

And what, after all, is the "Egerton standard"? It certainly does not have the authority of Holy Writ. In fairness to the Committee it should be remembered that at the time little or no factual information as to the heating and hot water habits of the population at large was available. It was for this very reason that the elaborate Abbots Langley experiment was conducted; the experiment that gave the disputed 150 gallons a week. Even so, the Committee's recommendations were somewhat qualified by this statement: "For example, the standards of heating set out in the leaflet are considerably higher than were customary in the past and some of us feel that they represent more than what most people will be able or willing to pay for."

E. M. ACKERY.

London.

The AJ Should Go Out of Town

SIR,—It was noble of the JOURNAL to devote such splendid pages to my lecture-recital at the Architectural Association.

Pleased and grateful though I was to see such a serious and well-presented account of the evening, I could not help regretting that no mention was made of the part that the Bristol and Somerset Society of Architects played in bringing this lecture into being—which was repeated at the Architectural Association six weeks after this (to me) memorable occasion.

The Bristol and Somerset Society, as part of a well-directed public relations programme, got together a large lay and university audience of 450 in the acoustically-excellent reception room of the University. It was Terence Snailum, the president of the society, who last year suggested to me the title for this public lecture-recital, which, without the aid of the incomparable slide collection of the AA, could not have been presented.

What a pity it is that because of both distance and the limitations of available JOURNAL-space, many events outside London, often skilfully organized by individual architects or vigorous local societies, do not get recorded. I do not suppose, for instance, that any account of the first class slide lecture entiled "The Visual Aspect of Planning," given at Buxton recently by Rolf Hellberg at a joint meeting of the North Midlands Branch and North of England Division of the TPI, will appear in your columns. However, I hope the AA will invite him to give a repeat presentation in London; it could then be reported as it deserves.

One would not want the JOURNAL'S resources to be unduly strained, but whenever I go back to "the provinces" I find architects engaged in most stimulating activity which would be "good copy" for London and the rest of the architectural world—if only the right means could be evolved to bring it immediately to the ears of the JOURNAL.

MAX LOCK.

London.

N E W S

BAN REMOVED . . .

. . . *on Working for Regional Planning Association*

Readers of the JOURNAL will remember that a large number of delegates was forced to withdraw from the first congress, held in 1955, of the Association for Regional Planning and Development. This was due to a Home Office ban which prevented civil servants taking part in the work of the Association. The ban was strongly criticized in the JOURNAL and elsewhere because of the implication that its sponsors had Communist affiliations.

The removal of the ban was announced in the House of Commons last week. R. A. Butler, Home Secretary, replying to a question by Austen Albu, said there would be no objection to civil servants taking part in an official capacity, provided they obtained the consent of their departments.

RIBA

Subtopia Exhibition

The RIBA has prepared a travelling exhibition about Subtopia. Before it goes on tour it will be on view on week-days (10 a.m. to 7 p.m.) at 66, Portland Place, W.1, from June 5 to 13. (Closed on June 8 to 10 inclusive.) Two editions of the exhibition are available for borrowing, free of charge.

VALUE FOR MONEY . . .

. . . *in Flat Construction*

In a paper read before the Housing and Town Planning section of the recent congress of the Royal Society of Health, C. N. Craig, of BRS, gave some valuable information and suggestions about multi-storey dwellings which had emerged from a study of 72 blocks of six to 12 storeys in height.

Table I below shows that 52 of the blocks were in contracts for one or two blocks only. Table II illustrates the very wide range of prices and what might be called utilization factors discovered; Table III compares house and flat floor areas and Table IV shows both existing average prices of element groups and, perhaps most significant of all, the target prices which BRS suggest that designers might set themselves.

TABLE I

no. of blocks in contract	no. of blocks in BRS survey
1	41
2	11
3 or more	20

TABLE II

Survey of 72 blocks of 6-12 storey flats and maisonettes

	no. of dwellings per lift in 6-12 storey blocks	ratio of gross floor to external wall area	non living area as percentage of total	access area as per centage of total (typical upper floor)	price range in shillings per sq. ft. net
Max.:	62	1·8 : 1	35%	29%	85/-
min.:	14	0·7 : 1	11%	9%	50/-
average:	30	1·2 : 1	20%	17% (balc. access) 15% (stair access)	63/-
target:	20-25	1·2 : 1	18%	12%	53/-

TABLE III

Average floor areas of dwellings

	flats and maisonettes	houses
bed sitting room	320	—
1 bedroom	480	—
2 bedroom	680	770
3 bedroom	820	910

TABLE IV

Element group	Existing average prices				suggested targets for 700 sq. ft. dwelling 6-12 storey
	houses (London Region)	5 storey	6-12 storey		
	s. d.	s. d.	s. d.		s. d.
Substructure	3 6	4 9	5 0		4 6
Superstructure	10 6	19 6	24 0		20 0
Finishings and fittings	17 6	22 6	22 6		18 6
Heating and plumbing	6 6	8 0	8 3		7 0
Lifts		3 9	3 3		3 0
Totals	38 0	58 6	63 0		53 0

The broad conclusion we draw from this information is that designers and builders of multi-storey dwellings are working in the dark. If one designer can make a lift serve 60 dwellings, how can another manage to serve only 14? Why does one designer need three times as much area as another for staircases, landings and balconies? Ranges of this extent revealed by Table II cannot be wholly explained by local problems. It is clear that for multi-storey dwellings there are no recognized design criteria.

In his paper Mr. Craig said that data had not yet been collected to enable targets to be set for three- or four-storey blocks, but that in one London borough prices of 44s. 6d. for three-storey and 46s. 6d. for four-storey had been achieved. Internal corridor-access blocks were becoming more popular, he said, they permitted "double depth" blocks with a good wall-to-floor-area ratio and higher densities or wider spacing of blocks. The omission of the secondary fire escape stair by cross-ventilation of the stair-access lobby was a valuable economy, and there was one 19-storey block with an open lobby between the enclosed lobby and the single protected staircase. Maisonettes showed little economy over flats—although there was scope for it if timber intermediate floors were used. The use of internal bathrooms was increasing—often with natural draught ventilation, but even with the extra cost of mechanical ventilation the economic gains in planning were still not outweighed. Costs of individual space and water heating by solid fuel, gas or electricity were broadly similar. Central space heating with individual gas or electric water heating should be obtainable for an extra 2s. 0d. per sq. ft. From three to five storeys load bearing brick was still the cheapest structure, but pre-cast concrete systems might compete with this if they could eliminate plastering. Two 10-storey, load-bearing no-fines concrete blocks had been built for the target price shown in Table IV. In ballast concrete structures, the best value for money came from a composite form with structural party walls, and columns primarily in outside walls. There was little to choose, said Mr. Craig, between various floor systems. Staircases offered a saving if they could be pre-cast in quantity to fit standardized floor heights. External walls of brick-cavity-clinker blocks were still the cheapest.

SHOPPING . . .

. . . *at Crawley New Town*

The misleading character of standard tables, which showed that so many shops were required per thousand of the population, was stressed by Col. C. A. C. Turner, chief executive, Crawley Development Corporation, in a recent talk at the Housing Centre on shopping facilities. At Crawley, he said, they had through over-caution in many cases underestimated the number of shops required, and further shops had had to be built. Many shops had also had rearward extensions, to provide more trading space, and it was important that the plan should allow for such additions. It was very difficult to estimate the number of shops required per thousand of the population, because it depended on a number of factors.

The prime requirements for a successful central shopping area were, in his view:

(*a*) Ease of access by train, bus, car or cycle. This includes adequate and convenient means for parking cars and cycles whilst shops, restaurants or places of entertainment are being patronized.

(*b*) A first class range of stores and shops operated by energetic and capable traders.

(*c*) Compactness without crowding. Once off the train, off the bus, or out of the car, the shorter the distance to be traversed to cover the centre's facilities, the easier it is for shoppers to obtain necessities or enjoy leisure.

(*d*) An inherently pleasing design character, conveying substance without heaviness; a sense of space without draughtiness; a sense of enclosure without confinement; and above all, an atmosphere of aliveness in daylight and in darkness.

(*e*) Pavements wide enough to take a crowd without crush, and to accommodate the parked pram; shop fronts protected from the weather by canopies or arcades; the occasional concourse where there is space and facility to sit down and watch the crowds or listen to the band; an absence of visual monotony, but a sense of visual surprise (often helped by the use of colour) without a jar to the senses.

"NOT DISGRACEFUL" . . .

. . . *to be Estate Agent and Architect*

The Queen's Bench Divisional Court on Friday quashed an order by the Architects' Registration Council of the United Kingdom that the name of Thomas Hughes, an architect and a Fellow of the Royal Institution of Chartered Surveyors, of Boreham Wood, Hertfordshire, be removed from the Register of Architects, and that Mr. Hughes be disqualified from registration for two years from December, 1956, and not be entitled to re-admission unless he passed one of the recognized examinations.

The Council were ordered to pay the costs of Mr. Hughes' appeal.

Giving judgment, the Lord Chief Justice (Lord Goddard) said the Council's decision was on December 17, 1956. It followed on an inquiry by the Discipline Committee of the Council which reported that Mr. Hughes had been guilty of conduct disgraceful to him in his capacity as an architect.

"Considering that the appellant is over 60 years of age and has been in practice without any sort of complaint as to his professional competence for 35 years, it is indeed remarkable that the suspension imposed should only be determined if he passed an examination, especially as his suspension had nothing to do with his professional competency," said Lord Goddard.

"I can only suppose that the reason was that the Council in fact meant to suspend him for life, for it is inconceivable that at his age the appellant would be willing to submit himself for examination. I have the greatest doubt whether such a condition for reinstatement could be lawfully imposed."

The question raised by the appeal was important although it would not affect more than a dwindling number of the profession.

A Register of Architects and the Architects' Registration Council were established by an Act of 1931. The qualifications for registration were that the application was made within two years of the Act coming into force and that the applicant was or had been practising as an architect in the United Kingdom. Mr. Hughes was registered under that provision in 1932. He had entered into articles in 1919 and had been in practice since 1922, describing himself as an architect, chartered surveyor, land and estate agent and valuer, and in fact was a Fellow of the Institution of Chartered Surveyors. The 1931 Act did not forbid a person to describe himself as an architect or to practice as such although he might not be registered. The Act gave power to the Council to remove the name of a person convicted of a criminal offence and anyone found guilty of conduct disgraceful to him in his capacity as an architect.

In 1938 a short Act was passed with the main object of prohibiting under penalties anyone from describing himself as an architect unless he was registered. Before this Act, which adds considerably to the dignity of the profession, the Council issued a code of professional conduct for registered architects, and one of the things laid down was that the business of auctioneering or house agency must not form part of the registered architect's practice.

Persons in practice before 1931 had a right to be registered under the 1938 Act whether or not they were also carrying on business as house agents. Parliament did not limit the right of a person so registering or make it a condition that he would not engage in any other business. "The legislature has conferred powers on several professional bodies to control admission to the profession and giving them disciplinary authority, but at the same time preserving the right of persons who had been practising before this privilege was conferred to carry on as before though they might not possess the particular qualification by examination or otherwise that would be required from new entrants," said Lord Goddard.

"Gradually these practitioners would disappear by retirement or death, but I cannot agree that the governing body of a particular profession can necessarily impose on those persons all that they could on new entrants."

In 1932 Mr. Hughes was carrying on those other activities and there was nothing in the Act to disentitle him to registration on that account, and once he was on the register he could describe himself as a registered architect. It was clear that the Council in 1936 were hoping to get additional powers and were promoting a Bill, which became the Act of 1938, with that object. They were anxious to prevent the carrying on of a business of surveyor or house agent with that of an architect. This was a matter of concern to those who, like Mr. Hughes, practised both as surveyors and architects.

In January, 1937, the president of the Architects' Registration Council wrote to the Royal Institution of Chartered Surveyors referring to the proposed legislation, saying: "There is nothing in the Bill to interfere in any way with the activities of any person save that he may not call himself 'architect' unless qualified to do so by registration."

Mr. Hughes had been found guilty of conduct which was "disgraceful" in that he had refused to comply with the standard of which the profession as a whole approved that the business of house agent ought not to be carried on by an architect, and had thus flouted the standard set by the profession for itself and incorporated in the code of conduct.

"Disgraceful conduct in his capacity as an architect is attributed to Mr. Hughes because he is doing and asserting his right to do the very thing which the president of the Council informed the other professional body of which Mr. Hughes is a Fellow, that the proposed Act would not interfere with," said the Lord Chief Justice. "It seems to me that the appellant is entitled to say: 'You tell the professional institute of which I am a Fellow, when you are seeking further powers, that I and others like me can continue as before and then allege that it is disgraceful if we do'."

The Council fixed a date beyond which it was said it would be regarded as misconduct to continue in that way, and it was because the appellant asserted his right to continue that he had been adjudged guilty of disgraceful conduct.

Lord Goddard said that the provision in the 1931 Act for appeal to the High Court by any person whose name was removed from the register, conferred a right of appeal as wide as one from a judge to the Court of Appeal. The appeal was against the finding against Mr. Hughes, not against the degree of punishment, for the only sentence that could be imposed was removal from the register.

"Here we have the case of a man who was given by the statute a right to be registered and it is not contended that in 1932 the Council could have refused him registration because he was then practising also as a house agent. If the action of the Council can be upheld it means that they could have registered him one day notwithstanding that he practised also as a house agent, and on the next day removed him on that ground, which would be plainly absurd," said Lord Goddard. "The appellant openly practised as before for more than 20 years after registration, so how can it reasonably be said it was disgraceful for him to continue to do so after a particular date which the Council chose to appoint?"

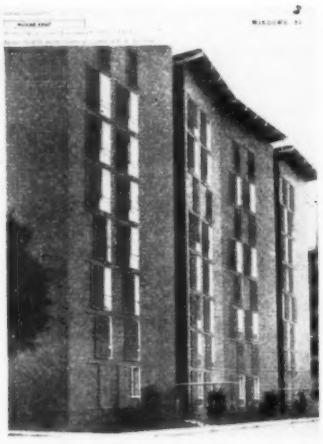
It had been submitted for the Council that it became disgraceful for an architect to practice as a house agent once the general opinion of the profession decided against such practice, but if for reasons applicable to the individual concerned his conduct could not fairly be considered disgraceful as an architect, a disapproval of that conduct by other members of the profession could not make it disgraceful. "I do not doubt the right of the profession to lay down rules of professional conduct and enforce them, but here we are dealing with a transitional state of affairs," continued the judge. "They were obliged to register persons whose only qualification was that they were actually practising as architects."

The number admitted under this provision would in time disappear, but for a time the profession included qualified members and unqualified members admitted without examination or a degree in lieu. "I do not wish it to be thought that I am saying that architects admitted to the register as was Mr. Hughes are not bound by any rules of professional conduct, and nor has he contended that.

"There are rules of conduct which all professional men must observe, and refraining from advertising would I think clearly be one. But considering the ground on which Parliament gave the appellant the right to be registered, in my opinion he cannot be held guilty of conduct that by any standard can be said to be disgraceful because he continued to practice in exactly the same way after registration as he had done before, and that practice did not disqualify him for registration."

Justices Hilbery and Devlin agreed.

Work your passage with Working Details



An AJ holiday (abroad) with pay

(a) for students: a cash present plus payment-by-results

(b) for architects: payment (larger) by results only

As last year's Working Detail competition was a success, we are repeating it this year. Once again we invite students and architects to help us collect material for Working Details from abroad. The terms we offer are outlined below. Broadly speaking, they are the same as last year. The only difference is that we are asking our envoys to make a rough pencilled drawing of each detail and to fill in a questionnaire which we will provide. We have found that it is virtually impossible to be sure about all the finishes and fixings and other minutiæ unless you go through the motions of drawing a detail out and, as it were, of writing a sort of specification in reverse. We are also insisting that our envoys shall obtain a photograph from the architect or commission a professional photographer to take one. We hope that these modifications will save us from adding to our extensive graveyard of details —details in which vital facts are missing and have proved too difficult to get. Our offer, therefore, is this:

To students

We are prepared to make a limited number of awards, to an aggregate of £250, each separate award to be between £20 and £40, to students who wish to go abroad and who would be prepared to spend part of their time assembling information for Working Details. They will not have to prepare drawings for publication, but they will have to supply the architects' and, if need be, the manufacturers' working drawings, and to supplement these with a rough pencilled drawing of their own, annotated in English, and to fill in a questionnaire. They will also have to obtain a photograph from the architect or commission one from a professional photographer. The drill for this is too complicated to set out here, but it will be explained to successful applicants. The important point is that the JOURNAL will pay all expenses incurred.

In addition to whatever award we may make, we will pay a further six guineas for any detail which is ultimately published in the JOURNAL. Students who wish to apply for an award must write in to the Editors stating where they are going, the nature of any contacts they may have in the places they are going to, any particular buildings they wish to detail or architects they wish to visit, and how they propose to surmount the language difficulty. They should also indicate whether they are asking for an award to travel to their destination and back, or to enable them to stay there longer, or whether their proposed visit is dependent on a grant which will cover all their expenses.

All applications should be accompanied by a letter from the principal of their school of architecture or from one of the principals of their firm, and must reach this office not later than the first post on Monday, June 17. The Editors will base their decisions (which will be final) on the likelihood of producing useful material. At the same time they have one word of advice to give: since the compilation of details can be time-consuming, itineraries ought not to be too ambitious. The student who plans to dash through Rotterdam, Cologne, Düsseldorf, Basle, Lucerne, Milan, Rome, Turin and Paris in a fortnight is not likely to come back with as much useful material as one who plans to go to Stockholm or Helsinki for a month.

To architects

Any architects who are going abroad this summer and think they may find themselves near some good buildings with time to spare are also invited to assemble Working Detail material for us. They will not be paid for going there, but we will be glad to pay a fee of eight guineas for any detail published, plus, of course, any expenses they may have incurred in getting photographs, whether we publish or not. To guard against possible duplication of effort (which is not likely) or choosing buildings which we don't fancy (which is), they are asked to write in and tell us their plans before they go. The Editors reserve the right to refuse any material submitted.

D

CRITICISM

by J. M. Richards

PUB at PECKHAM RYE
designed by WESTWOOD, SONS and PARTNERS

The critic often has difficulty in obtaining a helpful opinion about a new building from those who use it. This particular critic has already talked to schoolmistresses, clergymen, policemen and others in pursuit of information for this series of articles, and was delighted to realize that, in the case of the building chosen for this week, the user is in fact himself. For although the landlord and the other people who work in a pub must naturally be properly planned for, the success of a pub stands or falls by whether it caters satisfactorily for the enjoyment and convenience of those who go there for a drink.

I hope I shall not give offence if I say that in some senses the problem of designing the inside of a pub resembles the problem of designing the inside of a church. As I said in a recent article, a church, in order to be successful, must create a devotional atmosphere, which means one that the church-going public can readily respond to. And this is hardly at all a matter of architectural æsthetics. It is much more a matter of what is familiar and has the right associations. The architect's difficulty is how to produce the right associations without recourse to imitating the past.

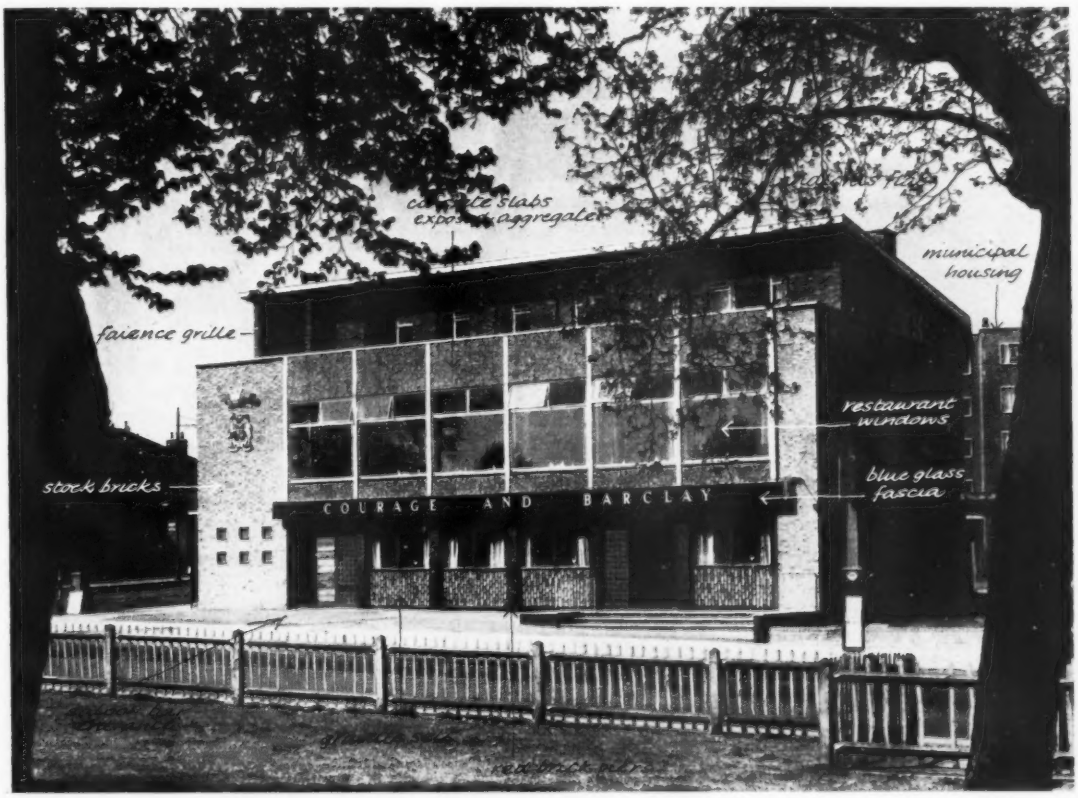
So it is with a pub, but there is one vital difference. The associations that make church-goers feel at home are created by features like Gothic arches, which are essentially part of a period style; whereas the effects that make one feel at home in a pub are not, in spite of the belief of many brewers, period effects at all. It is perfectly true that the old Tudor pub seems to be more successful than any others in creating a cheerful and welcoming atmosphere, but that is not due to the fact of its being Tudor, so much as to the dark woods, the sparkle of leaded windows, the broken surfaces of walls and ceilings and the capacious fireplaces. The same applies to the Georgian bar-parlour with its warm-tinted panelling and high-backed settles, and even more to the Victorian gin-palace with its baroque mahogany fittings, its polished brass-work and its multiplication of mirrors. What creates the atmosphere is not the antiquity but the colours used, the rich and glittering surfaces and the sense of intimacy and enclosure, and there is no reason why the modern architect should not achieve the same combination of qualities by modern means, instead of resorting to imitation of the antique.

That, as I see it, is how the design of pub interiors should be approached. I would say there are three qualities essential to real pub character: dark rich colours to give an effect of warmth and cosiness; the breaking-up of the plan into small, distinct areas to give an effect of intimacy and enclosure, and richness of texture to give a sense of plenty and well-being, which can be contrived functionally by an imaginative display of the articles proper to the proper furnishing of a pub, like bottles and barrels and the like. While on the subject of materials, one should, of course, add that those used in a pub must be robust and hard-wearing; nothing looks less attractive than shabbiness. Now, how does this pub at Peckham Rye (the King's Arms, built for Courage and Barclay) stand up to this test? As far as the materials and colours are concerned, it does so very well. They are well chosen; robust in effect and warm in tone. The bars do not, it is true, have that dark ceiling which adds so much to the atmosphere of the best old pubs, but they have wooden ceilings painted glossy white, a practice which is itself a recognized pub tradition. I, personally, am sorry that mirrors which, plain or decorated, have been part of the pub tradition for a hundred years, are not used here too. I may say in this connection that architects are prone to imagine that the purpose of using mirrors is to add to the impression of space, and this is indeed the reason why they are used in other types of building. But in pubs you don't want an impression of space, and the mirror tradition, I believe, grew up because it helped to produce a friendly atmosphere by multiplying the number of people visible and, in particular, made the solitary drinker feel at home by reflecting every movement and creating the suggestion of a crowd. It was designed, therefore, to have the reverse effect of creating extra space.

This brings me back to my third pub quality and to my first serious criticism of the Peckham Rye pub. There is too much wide open floor space in the bars. I must say at once that this is not the architects' choice nor, I suspect, is it the brewers'. It is the licensing magistrates who in recent years have destroyed the intimate quality of the traditional pub, with its rambling sequence of small secluded bars, by their passion for supervision and their consequent insistence that every corner of the pub must be directly visible to the landlord standing behind the bar. This is what has made many new pubs (this one is, comparatively, a minor offender) a desert of floor space, with the dreary characterlessness of a railway-station waiting-room. And incidentally, has not the mirror a part to play here? Is it not part of its traditional rôle to allow the landlord to see, as it were, round corners—or do the licensing magistrates not recognize the laws of optics?

At Peckham Rye the architects have done their best to overcome the disadvantages of this official insistence on wide open spaces by dividing the wall opposite the bar into bays (another venerable pub tradition), where parties of people can sit together, and by breaking up the floor space as much as possible elsewhere; for example, they have placed a free-standing stove in the middle of the floor, which provides a welcome rallying point. It takes the form of a brazier surmounted by a conical hood of polished copper, which is taken right up to the ceiling—and indeed goes through it as a tubular flue. This sounds

Above: inside the saloon bar of the King's Arms, Peckham Rye: in foreground, one of the bays with built-in-seating; left background, free-standing stove. Below: the main front overlooking Peckham Rye.



Side view, showing the varying planes and angles criticized in this article.

a somewhat arty contrivance, but is in fact rather successful. The reflecting value of the copper provides some of the glitter and movement that the Victorian pub used to achieve with mirrors. I should add that when the brazier is alight the surface of the copper does not become, as one might fear, too hot. It is only pleasantly warm to the touch.

One final point about materials: the desirable complexity of effect has been achieved by the use of a variety of decorative materials, even including stained glass, and wood has been used exactly as it should be in a pub. The only material I take exception to is the wallpaper. I don't feel wallpaper is suitable for a pub bar; it has too domestic a character, besides being easily damaged. Perhaps the architects felt that since all materials get damaged, wallpaper has the advantage of being cheap to renew.

Now to the planning of the bars. This is usually dictated very largely by the brewers, so it is no criticism of the architects to express one's surprise that at the King's Arms there are only two, instead of the usual three bars (South London is very much a three-bar district). One is sorry to see the intimate private bar disappear, but I suppose the brewers know whether there is any longer a demand for it. Also, it is surprising to find the main saloon bar entered from one side only, except for a secondary swing door on the opposite side, leading out of the stair-case hall which serves the upstairs restaurant. The corner of two streets is a favourite place for a pub because of the passing custom it attracts. The King's Arms is a corner site, and one would expect direct entry into the bars from both streets.

As I began by saying, the landlord's convenience must be studied as well as the customer's, and the behind-the-bar area of the King's Arms seems to be very well planned except that there is too little room for crates of bottles and empty crates awaiting removal. These are stacked in the little courtyard at the back and in any other corner that will hold them. This is an easy criticism to make and a most difficult problem to solve; for the fact is that an inexplicable increase is taking place in the demand for bottled beer as against draught beer, so that more and more space is needed for crates, but one cannot expect a brewer to give up more than a certain amount of a valuable site for storage purposes, thereby diminishing the bar space available. Perhaps the solution is not more storage space but a more frequent collection and delivery service to clear the accumulating crates out of the way quickly.

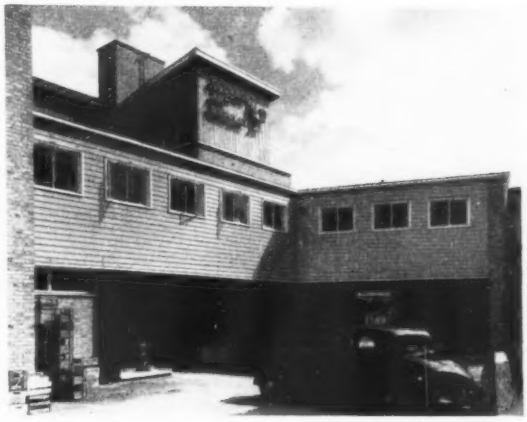
If it were not for the piles of crates, the little courtyard that has been formed at the back of the King's Arms (approached through an archway in traditional coaching-inn style, and overlooked by white weather-boarded walls) would be a charming place, suitable for use as a beer-garden in the summer, though it badly needs some planting to screen the crudely designed housing estate that is visible from it.

The pub building has three floors in addition to the basement, which is, of course, largely given over to stillage, but also contains the heating chamber. The provision of central heating in pubs creates, incidentally, a technical problem not yet perfectly solved here. However well the heating chamber is insulated it is difficult to keep the adjoining cellars at the right temperature. The ground floor of the building is entirely occupied by the pub. On the first floor is a large restaurant, where lunches are served and which can be hired for dinners and meetings in the evening. It is a handsome room lined with a somewhat overpowering wallpaper and has a delightful outlook, through a range of broad windows, over Peckham Rye. The restaurant is reached by way of a separate entrance hall and staircase and so is self-contained. It has a particularly well-planned and well-equipped kitchen.

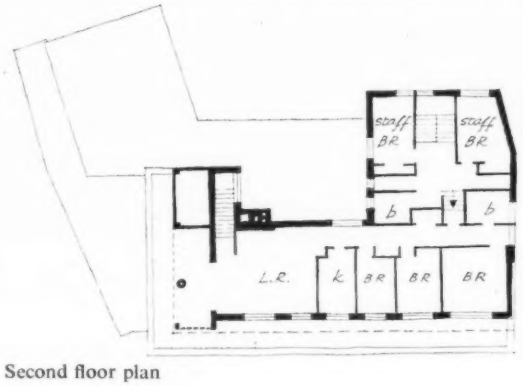
The top floor is a flat for the landlord, and in a mezzanine floor behind are a couple of independent staff bedrooms. The landlord's flat has a very good living-room opening on to a terrace but the other rooms open off a rather grim hall-corridor. It is a spacious flat nevertheless, even though it does not occupy the whole area available over the restaurant. This makes the building in effect a two-storey structure crowned by a set-back penthouse with a butterfly roof.

Which brings us to the outside. The butterfly roof, though it conforms to a modern fashion, seems to be a quite logical consequence of the layout of the flat with the main rooms ranged along the same side of the corridor, and of the need for the roof also to cover large water tanks and the like. The set-back

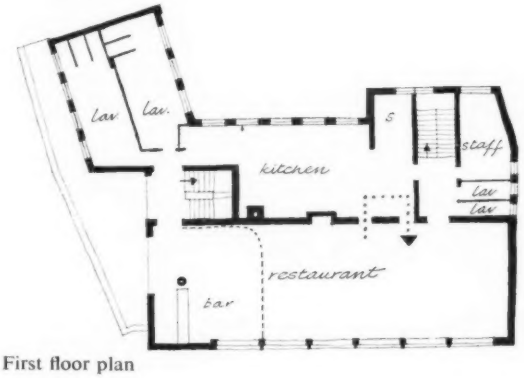
roof and the odd angle at which the side elevation and the main elevation meet have created rather a difficult geometrical problem at the side of the building, where a number of planes and surfaces run into each other and form a somewhat confusing picture, except when seen from straight in front. It is always difficult for architects to visualize in advance exactly how such a complicated arrangement will look and in this case I expect they would admit that the result is not very happy. The main front, as seen from Peckham Rye, is simpler and perfectly satisfactory in its general lines and is given quite enough interest by the canopy of the penthouse recessed behind it. The walls are brick, except for the panels between the large restaurant windows, which are filled with concrete slabs with a darkish exposed aggregate. I should have mentioned that the building is constructed of load-bearing brick throughout. The base is faced with granite sets which used to be on the road before the tram lines were taken up. These are laid vertically, giving a fine bold texture and a pleasant colour, although there is some conflict between these and the horizontal brick courses of the dividing piers.



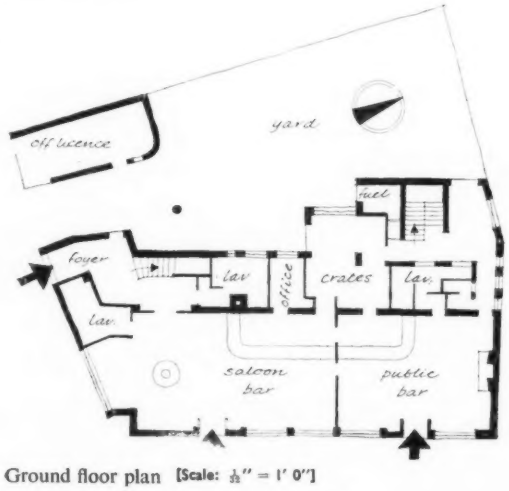
The courtyard with weather boarded walls. Behind the car is the way through to the street.



Second floor plan



First floor plan



Ground floor plan [Scale: $\frac{1}{8}$" = 1' 0"]

One problem in designing a pub is that of scale. Too many modern pubs are completely domestic in scale (this happens particularly in the new towns; the pubs look merely like houses with an odd fenestration); whereas the best old pubs have a slightly larger-than-life appearance, given them by the use of a style of architecture normally employed for larger and more imposing buildings, and this I think is part of their essential character. I don't know how this element of oddity can be recreated in a modern idiom. The Peckham Rye pub does not attempt it, but with its large windows and the broad treatment of its façade, it does achieve the required boldness of scale, though at the cost of a certain dullness, due perhaps to a polite attempt to conform to a street façade, when the street is in fact not there.

This is not really a criticism that can be held against the architects; it is a criticism of what has happened to this corner, and I mention it because it has happened to so many other corners in London. The line of the street has been broken by setting back the adjoining buildings (in this case municipal blocks of flats) behind wide green verges, so that the pub, instead of being on the corner of two fully built-up streets, has the character of a corner building with its neighbours on either side removed, leaving the nearly blank end walls looking a little unhappy. Nevertheless, the main thing is that the whole building does look like a pub, to which effect well disposed signs (a little too small and genteel, however) and well-designed lettering enhance as they should. This can be said of too few new pubs, owing not only to architects' timidity but also to brewers' misunderstanding of what modernization should and should not mean. So credit for the good qualities of this one must be shared between the architects for taking the chances given to them and Messrs. Courage and Barclay for giving them the chances.

CRITICISM: *what readers think*

The church designed by Burles and Newton for Basildon New Town was criticized by J. M. Richards on March 28. Architects' reply: April 4. Correspondence: April 11 and May 2.

The letter from Mr. Maguire and Mr. Fendall, published in your issue of May 2, raises questions of such importance it surprises me that no one appears to have recognized them in a larger context. Briefly, the writers seem to be saying to Mr. Richards that it is no longer possible for the client to conceive the programme for a new building. And Mr. Richards appears to agree. The implication is that the architect must research to define problems his building should solve.

It seems clear to me that if we accept this thesis:

1. We can make a real contribution to the economics of building.
2. We may produce *generally* flexibly-planned and functionally-efficient buildings without "fat."
3. By avoiding "plan waste" we may justify the spending of money on finishes which satisfy real standards of æsthetics and durability.
4. We might produce buildings requiring the minimum of staffing and maintenance. Pioneer work in the research field was done by Dr. J. L. Martin for the LMS under Mr. Hamlyn and, later, Mr. Llewelyn Davies' work for the Nuffield Foundation has shown the full method in operation.

The successful economic outcome of the work of the group at the Ministry of Education under S. Johnson-Marshall has been widely acknowledged, but the *method* of achieving the result appears to have been overlooked and might with advantage now be applied in other fields.

If I read this method correctly it is NOT to set out solutions (for copying) to problems which are not stated. This latter procedure must be the way most buildings are planned today because the briefing of the architect for a large modern building is a highly skilled and specialized job. People of experience and intelligence who might undertake the work of drawing up the brief are too involved with their own work. The result is that architects are encouraged to work within their own experience or to repeat solutions which are known to the client.

Publication of research must clearly be systematized for the profession and, most important of all, the research and its publication must be a continuing thing—always questioning and revising and meeting, scientifically, the needs of the day.

JACK NAPPER.

The warehouse and offices at Nottingham designed by J. M. Austin-Smith and Partners were criticized on April 18. Architects' reply: April 25. Correspondence: May 16.

You have invited us to reply to the letter from Grenfell Baines and Hargreaves which appeared in the JOURNAL of May 16.

The placing of the offices between the warehouse and the road was suggested by the client. We were able to show him that this did not save any area of the site since a turning circle had to be constructed either at the front or back of his land, and that it completely hampered any expansion of the separate elements of the building. It was on these facts that the client accepted our proposals and the fact that the site was on a corner did not come into the client's reasonings, though to us as architects it was a valuable asset to the visual groupings of the building.

From the site plan published in the JOURNAL on April 18, it will be seen that the site slopes up from the main road frontage. By a simple balance of cut and fill a natural raised loading dock was available.

It is perfectly true that if the accounts office were moved, then corridor space would have been saved. From our client's point of view this would not have met their particular requirement. It is also true to say that paint is cheaper and less durable than slate. This is just the point since the high capital cost of one will require low maintenance cost, while the low capital cost of the other will require higher maintenance costs, and in the long run roughly be equal. The building, however, is kept, as a result, fresh and lively in appearance for the whole of its life.

There appears to be some confusion over the junction of the canopy with the main structure. This may be caused by the angle of the top photograph on page 569 (April 18). The canopy stops in prolongation with the second column, and does not extend to the rear of the office block as the photo suggests.

The design for the caretaker's house was most carefully refined until the tightest and most economical plan possible was evolved. We do not consider winders in a house, even if it is a four-bedroom house, to be a functional aberration. We rather like high windows for bedrooms and this may have helped in solving the æsthetic problem of keeping the house in the same architectural family as the warehouse. It could undoubtedly have been achieved by other methods, and the high windows were not, therefore, a must from this point of view.

J. M. AUSTIN-SMITH AND PARTNERS.

The police headquarters in Earl's Court Road, London, designed by Innes Elliott, chief architect of the Architects' Department, Scotland Yard, was criticized on May 9. Architects' reply: May 16.

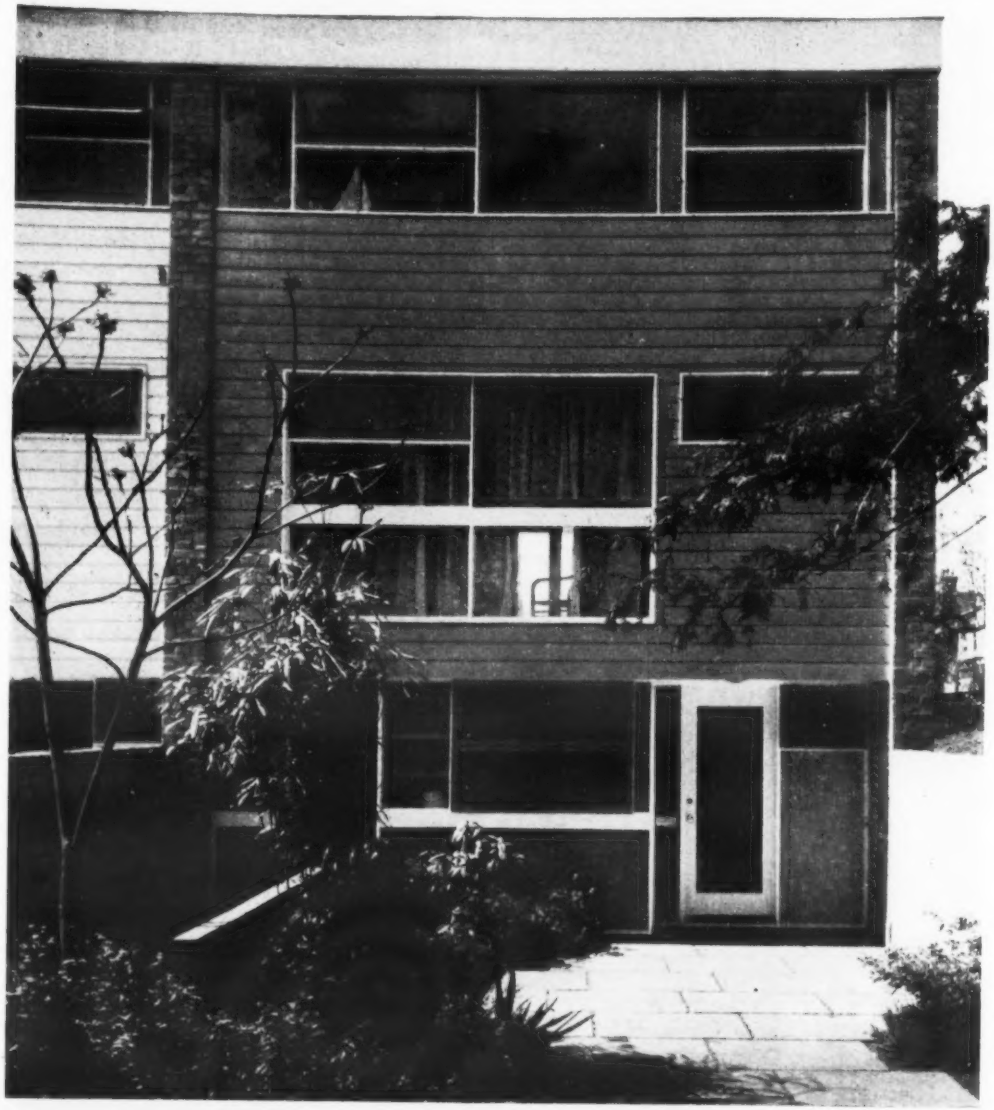
Having recently been concerned in the design of a divisional Police Station which is now under construction, I was interested to read J. M. Richards's criticism of the police headquarters in Earl's Court Road, which I consider was very fair and just.

I noted in the analysis, however, that a module or planning grid was not used, the reason given being that apart from the bedrooms, the rooms varied greatly in size. I consider that a suitable module could have been found which with a more logical treatment for the office windows would not only have expressed the functions of the building more clearly but allowed greater adaptability. The numbers of occupants of offices invariably change from time to time and new duties are taken over. It is a great advantage to be able to vary room sizes and for this reason we have adopted a 3 ft. 4 in. module.

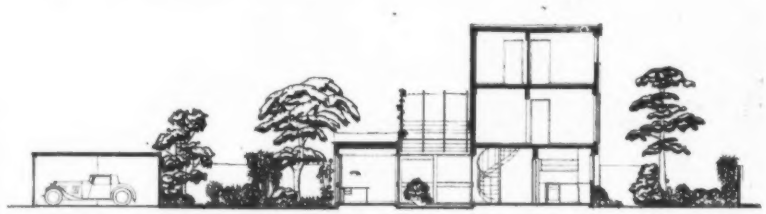
G. E. WEBSTER.

SPECULATIVE TERRACE HOUSES AT BLACKHEATH, DESIGNED BY ERIC LYONS

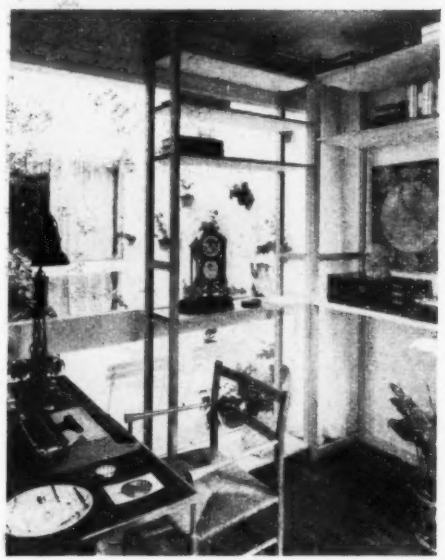
SPECULATIVE TERRACE HOUSES AT BLACKHEATH, DESIGNED BY ERIC LYONS



The spec. building group known as Span Developments, which is responsible for the well-known housing schemes (mainly flats) at Richmond, Twickenham and Blackheath, has turned its attention to three-storey terrace houses. The first of these—one of a row of three at Blackheath—has been furnished (see overleaf) by House and Garden *as the magazine's* 1957 *House of Ideas. (Last year's was a project by Kenneth Capon.) The furnished house, at Foxes Dale, Blackheath, will be on view during the summer from* 10.30 *a.m. to* 6 *p.m. on Tuesdays to Saturdays, and from* 2 *p.m. to* 6 *p.m. on Sundays. A furnished mock-up can be seen at the Tea Centre, Lower Regent Street, on Mondays to Fridays* (10.30 *a.m. to* 6 *p.m.,*) *and on Saturdays* (10.30 *a.m. to* 1 *p.m.*). *Attractive features of the house are the sun terrace (see picture above) over the single-storey wing, the space-saving spiral staircase and the internal, glass-walled patio which brings light to the building's core. The large photograph shows how a screen wall and planting have been used to define the entrances to the front door and the kitchen door. None of the three houses already constructed has a garage at the foot of the garden, as shown in the section below and the plans overleaf, but this is how the garage will be sited in the twenty-house terrace to be built later this year on a site nearby. (The garage is included in the price of £5,975 for a 999-year lease.)*



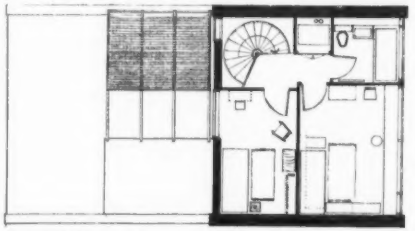
Section [Scale: $\frac{1}{8}$" = 1' 0"]



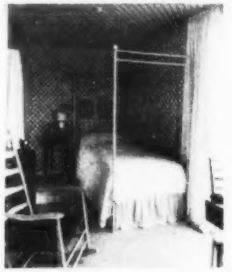
The pictures above show two of the most interesting features of the house: right, the spiral stair and left, the glass-walled patio. The top-left picture is of the study area in the living room with the patio wall in the background. Muhuhu wood blocks are used for the floors of the study, dining room and sitting room (below, left). These, like the thermoplastic tiles in the kitchen (left) and the ceramic tiles in the hall and cloakroom, are bedded directly in a waterproof membrane on to the concrete floor slab. 4-in. tongued and grooved boarding is used on the upper floors, which contain one main bedroom-cum-dressing room (first floor) and two smaller bedrooms (second floor). The first-floor room can be divided into two at the purchaser's request. And in fact several different planning arrangements can be made on the ground floor. Each bedroom floor has a bathroom. These are on top of each other, immediately above the small ground-floor cloakroom. All pipes, wastes and drains are grouped in internal ducts and junctions are accessible through removable panels. The

brane on to the concrete floor slab. 4-in. tongued and grooved boarding

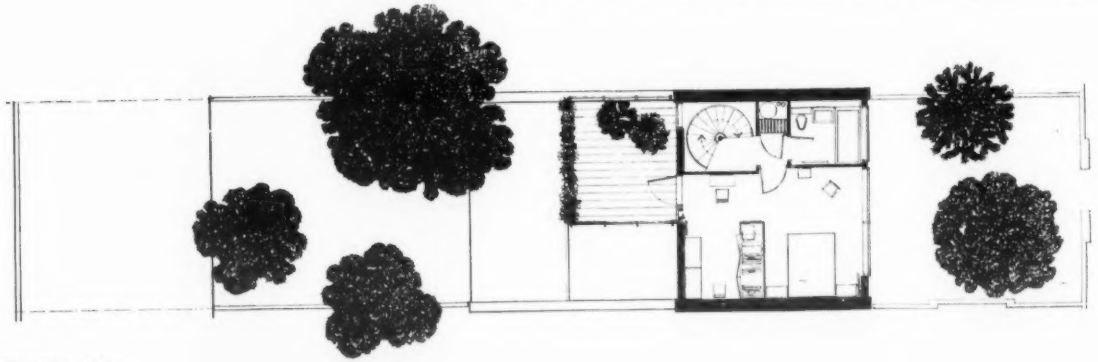
ducts and junctions are accessible through removable panels. The



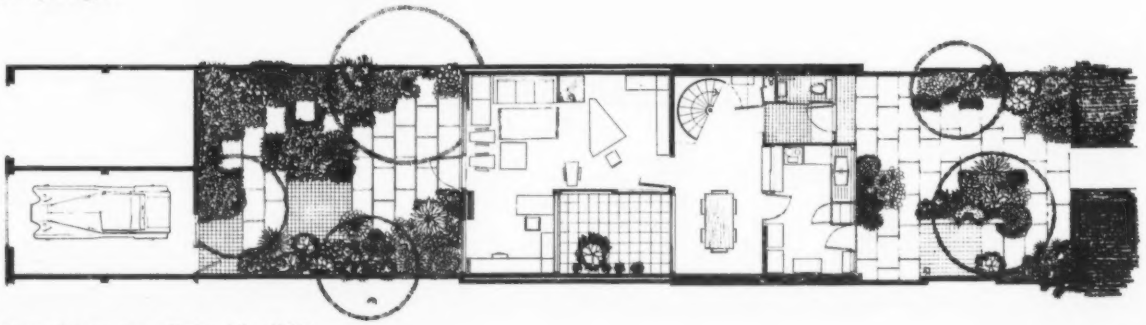
Second floor plan



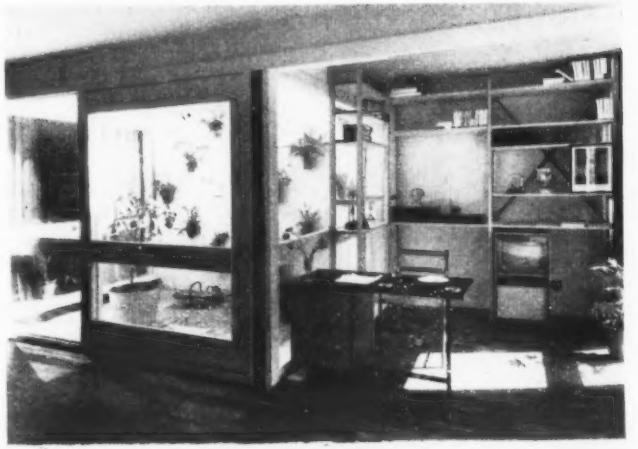
roof construction is similar to that of the floors, with 2-in. thick insulating wood wool slabs set on the wooden joists to carry the three-layer bituminous felt finish. The roof of the ground floor extension has asbestos tiles set on the bituminous felt to provide a surface strong enough to be walked on. Non-load-bearing walls are constructed of 6-in. and 4-in. thick insulating blocks, faced with painted boarding. Panels under windows are faced with ribbed asbestos boarding and painted. The purchaser is given the choice of four types of heating—electric, gas-fired, oil-fired or solid fuel. The house shown here relies on electricity for space and water heating. A 50-gallon heater, fitted in the airing cupboard on the first floor, serves the two bathrooms and the cloakroom. For general household use, there is a 5-gallon heater in the kitchen. Principal rooms have a fan heater convector. All the built-in equipment, such as sink units, cupboards and serving hatch, were specially designed by the architect. Most windows are pivot-hung. The large windows are of ¼-in. plate glass. Aluminium window and door furniture have been used throughout. [*All photographs except the large one on page* 809 *and the one below are the copyright of* House and Garden.]



First floor plan



Ground floor plan [Scale: $\frac{1}{16}$" = 1' 0"]



RIBA

Family Life in High Density Housing

The design of space about high buildings, to cater for the needs of families in high density housing, was the subject of a symposium at the RIBA last week. It was attended by a large number of housing managers as well as architects, and was notable for a splendidly-illustrated talk by Holger Blom, Chief of the Stockholm Parks Department.

Some of the problems associated with bad design of the space around high density flats are illustrated in these photographs, taken from a small exhibition arranged by the RIBA. Above left, cars and motor cycles litter the road, because the local authority failed to provide garages or parking space. Above centre, ugly and repelling, as well as noisy for the tenants on the lower floors: a hard-surface playground for ball games. Above right, nowhere to play, and asphalt or brick as far as the eye can see: carpentry and motor car game at the front entrance.

Above, playground St. Pancras (architects: Davies and Arnold), showing seats for mothers, sandpits, stepping stones and a tree for climbing in addition to the usual fixed apparatus. Below, Scandinavian influence is evident in this small playground at Pimlico, London (architects: Powell and Moya) in the boat-sandpit, viewing platform and tunnel.

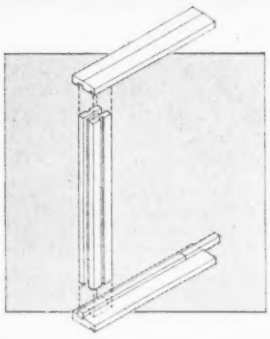
Mr. G. A. Jellicoe summed up this conference at the end by saying that if it had been held 10 years ago he would have been extraordinarily ashamed. But in the last 10 years the work had picked up immensely and he now felt that we were half way to producing an answer to this question. In another ten years, if we all persevered, our standard would be as high as anything in Europe.

Rather more than 300 slides were shown during the day; while they greatly enhanced the quality of the papers, the strain of seeing so many slides, and the rather excessive number of papers, had the effect of limiting severely the time for discussion and the desire of people to take part in it. But the slides of work at Coventry and by the LCC did to a large degree bear out Mr. Jellicoe's conclusion, even if he did appear to err on the side of optimism.

The spirit animating the conference was expressed by Mr. Blom when he asserted that houses only catered for one side of life, and that parks were equally necessary to cater for the other. But the financial implications of the high standards illustrated by Mr. Blom's slides were not discussed, except by Arthur Ling, who pointed to the damaging effects of the cuts in housing subsidies and interest rates, and urged the Ministry of Housing and Local Government to give more financial encouragement and inducement to the tackling of the problem.

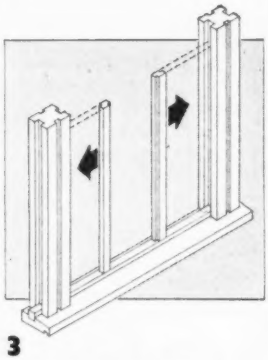
Sir William Holford, who was in the chair in the morning, put "high density" for purposes of discussion at above 25 houses or 100 habitable rooms to the acre. This seemed to be the point at which a difference of degree became a difference of kind.

Mr. J. P. Macey, the Birmingham Housing Manager, said it was the general consensus



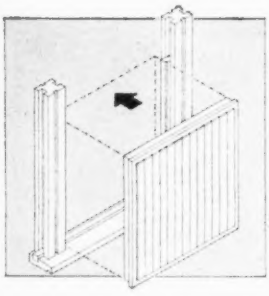
1

First, cill and head pieces are fixed, then mullions are positioned and secured.



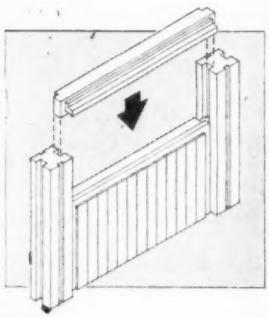
2

"Locking pieces" slide into the mullion grooves. A framed opening is created to.....



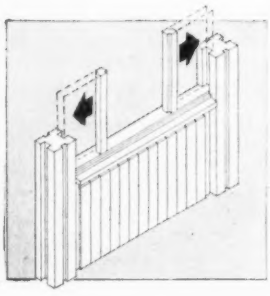
3

... receive a "Sub frame", in this case a prefabricated infilling panel.



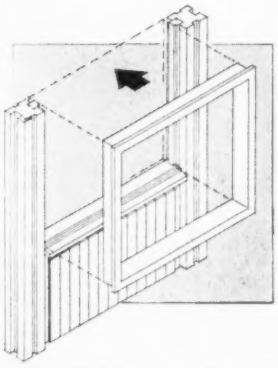
4

The transome goes into place.



5

"Locking pieces" are positioned as before, see (2) to provide the framed opening for.....



6

... the sub frame, in this instance, to receive direct glazing.

NOTE

These few simple operations are repeated until assembly is complete.

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Above, a Stockholm playground, illustrating a paper given by H. Blom. This playground is supervised and divided into areas for different ages and activities. Left, an imaginatively designed children's playground at Zurich.

of opinion among housing managers that 80 per cent of their prospective tenants would prefer houses to flats in tall blocks. But, as circumstances forced them to provide a fairly high proportion of new accommodation in flats at a fairly high density, they must use their best endeavours to make up to the tenants for the advantages which they lost by having to accept a flat.

To give privacy and protection from noise lawns should be provided round the base of all tall blocks as an amenity not open to traffic. They were best protected by enlisting the co-operation of the tenants rather than by high fences. Amenity greens could not be protected unless there were some grass areas for the young children under 7 to play on away from the blocks, in addition to paved playgrounds.

He would expect to see provided for toddlers a small area of rough grass with one end marked off for digging, and a paved area equipped with stimulants to imaginative play. For children of 7 to 12, in really high density development, grass areas became mud patches: it was generally better to provide a tarmacadam area surrounded by a fence and large enough for netball and similar games, and adjoining it a certain amount of equipment. Older children could not be catered for on estates of less than 500 dwellings: they should be expected to walk or ride to the nearest recreation ground.

Mr. J. H. Westergaard, of the London School of Economics, said that our housing estates had been designed for a prototype family consisting of father, mother and two or three children, and it was with such families in mind that the absence of individual gardens in most high density estates had been deplored. Yet there was a good deal more variety, even in the earliest stages of settlement, than was allowed for in the prevalent stereotype. Although more than a third of those who moved into Lansbury were children under 15, almost a third of the households were "adult" households with no children of school age or younger. In Lansbury households with children under five accounted for 44 per cent of all households. If to these were added those families whose youngest child was aged between five to nine the figure came to just over 60 per cent. This was an extremely high proportion, but not such as to prevent at least a good many of them from being housed with a private garden or at ground floor level. In a balanced population young and growing households with children under 10 might account for no more than a fifth of all households, and in the long run it would be feasible in high density areas to provide houses and lower maisonettes for all such households.

The varying need for uses made of open space in its different forms were still largely matters of guesswork. Direct access to an unenclosed lawn might serve the needs of families with very small children as well as a garden. It seemed clear that the advantages attributed to individual gardens as playspace for older children were somewhat illusory. Most children would play in groups in the relative freedom of playgrounds, parks, drives, streets or bomb-sites, rather than in the restricted areas of gardens. It was necessary to discover the variations in the use made of gardens, for it was possible that the effective "irreducible" demand for enclosed gardens might prove considerably smaller than at first sight, and thus be more easily solved by mixed development at high density. The information needed should be designed not to show the expressed desire for individual gardens, but the diverse uses to which gardens and other forms of space about buildings were in fact put.

There seemed to be equally little empirical information to guide the rational allocation of space for such purposes as playgrounds, and especially playing fields. Various standards had been put forward, but they appeared to be of a rather abitrary character, and when expressed in terms of so many acres per 100 or 1,000 population were misleading because they failed to allow for differences in the composition of the population, and for variations in it. In several new areas of high density mixed development no playgrounds had been provided near the houses and maisonettes with back gardens—with the result that the children in fact played in the streets or on access balconies.

Mr. H. Blom's lecture and slides showed the all-embracing meaning given to "parks" in Stockholm, where it includes all the space between buildings and forms part of a continuous parkway system. To people who said there was no money for parks, as it had all gone on the buildings, Mr. Blom retorted that the buildings provided space for only one side of life: for the other, the park was equally important. And he gave figures showing that Stockholm spends £21,200 on a playground, and £3,000 on its annual maintenance.

Children's needs must dominate park activity: for if children were not given their place, other activities would not be left in peace. Children soon wearied of the sterile pre-constructed playground and even went out on to the street. It was a question of making the playground a living thing, where the children found an outlet for their imagination. The playground should be provided with play implements of various kinds, but also with material that could be built up and formed. In their play centres they had a considerable amount of buildable play material—and that required the playgrounds to be staffed with play supervisors.

The play supervisor's work had become an institution of very great importance, which had made the playgrounds effective and caused parents to have confidence in them. At about 85 playgrounds located in housing areas there were from two to five supervisors at each, a total of about 200, under a head supervisor who was subordinate to the parks director. The supervisors were for the most part young women with some pedagogic social training. The first point of their instructions was that they were first and foremost to inspire the children to activities of their own: maybe park hostesses would be a more adequate and up-to-date expression.

The play supervisors had no responsibility for the children, who could come and go as they wished, except for the infant pens. These were low movable pens on the grass where mothers left their infants from two to five years for one or two hours while they went shopping. They had found that the playground should be not more than 300 to 400 yards from the dwelling for the medium-sized children, and very much less for infants.

In laying out the newer city sections the Parks Department had had close and productive collaboration with the Town Planning Department, so that space has been acquired for playgrounds on central and accessible sites that facilitated their practical and architectural layout.

But a town did not consist of children alone: the grown-ups too should have their open-air spaces. The through park roads provided a little open air to be enjoyed to and from work. For several years they had been working to provide the central market places with benches, flowers, pergolas, sheltering walls, fountains, and sculptures. Squares laid out at the underground station, shopping centre and public buildings in the neighbourhoods were most often given up entirely to pedestrians. The square became

a place where people could meet by appointment. Particular care was devoted to the paving, which could give a harmonious intimacy and pleasantness. For the inhabitants of the modern city sections, three things contributed to their well-being: the green belt round the city section, the playgrounds in the local park stretches, and the central square—the open-air hall.

Mr. Peter Shepheard said that of all the things that the architect or landscape architect had to remember in dealing with high-density landscapes the most important was to avoid optimism. Nobody could do good landscape unless they faced up to the realities of high-density housing. The feasibility of good living conditions at high-densities grew steadily less as densities increased. Although high density was a necessity, and had come to stay, it was the duty of architects to decide how far density ought to go before one had to sacrifice basic necessities. Over 100 to the acre one started having to lop off necessary things. To build at much higher densities—200 and 400 to the acre had been mentioned—was not possible without serious damage to the pleasant life for everyone.

Mr. Shepheard was loudly applauded when he urged the need for architects to look at their own English tradition of "hard-wearing landscape" in place of the tradition that had grown up of a "municipal God-wottery—a Park Superintendent's idea of what a lovesome thing a garden is, that delicate, over-flowered, over-ornamented garden that actually invites destruction." There were very strong similarities between the professions of landscape architect and architect. They both had to ask: what's it going to look like, how is it going to stand up to its functions, and how is it going to wear? Mr. Shepheard stressed the importance of designing things in perspective: when one drew a line on the plan for a fence, it could be either 4 ft. or 6 ft. high: if 4 ft. one could see over it, and 6 ft. one could not. It was things of this kind that trapped designers into making mistakes. If one constantly held up the plan to eye level one saw how strong the influence of perspective was.

It was no good exclaiming: "of only we had Sweden to deal with!" or "if only we had better maintenance, things would be quite different." By far the greatest contribution could be made by designing in the right way. One must face the fact that one could only have grass in places where people were not going to walk on it much, and trees if we were going to educate people to look after them.

Illustrated talks were also given by Mr. Paul Edwards, deputising for Arthur Ling, on recent work in Coventry; Lady Allen of Hurtwood, who emphasized that we had both the means and the legal powers to provide supervised "adventure" and other playgrounds on the Swedish model; by Mr. John Stillman, the conference organizer on nursery schools; and by Mr. E. Knight on the work of the LCC.

SHOWROOM IN TOTTENHAM COURT ROAD, LONDON, W.C.1

New showrooms at 251-6 Tottenham Court Road were opened on Tuesday for the Marley Tile Co. The architects were Howard Lobb & Partners and the display was carried out by James Gardner, designer, assisted by James Symons. The architects and designers were asked to provide all furnishing and equipment, down to typewriters and cups and saucers. The main ground floor display area is shown right, seen through the showroom window. The ceiling consists of a grid of aluminium flats holding up panels incorporating tungsten and fluorescent light fittings. All the panels are interchangeable. The grid also acts as a support to the display frames shown in the photograph. The uprights have grooved tops which fit over the grid, and adjustable screw bases, which, when extended, cause the top and bottom of the frame to press firmly and rigidly against ceiling and floor. Below is the basement showroom. At the far end is a display of Marley products: paving, roof tiles and blocks; and on the left are panels of various thermoplastic tiles.

technical section

THE INDUSTRY

This week Brian Grant reviews new gas water heating and cooking equipment, a filing system and a new boiler.

NEW RADIATION EQUIPMENT

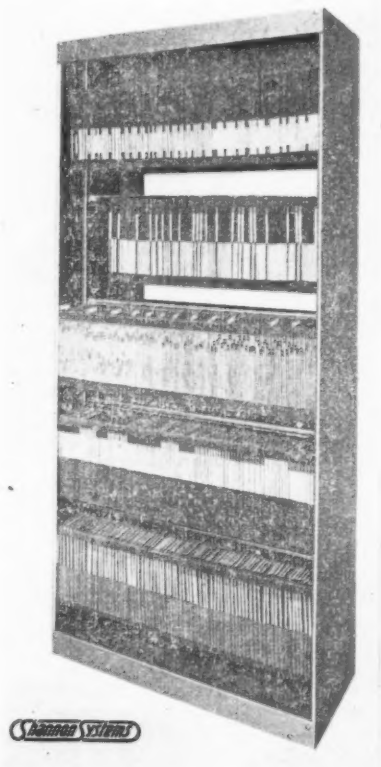
Radiation have just introduced a gas water heater, known as the Stratalyn, for fixing to hot water cylinders by a single connection, in much the same way as an electric immersion heater. The connector fitting has combined flow and return water ways and a flexible flow pipe inside the cylinder which ends close to the top so that hot water is injected direct to the top of the cylinder and mixing is avoided. Output is 5½ gallons per hour raised 80 degrees F. on a gas input of 6,000 B.T.U. and the heater is made either with a direct outlet, if it is installed with a cylinder under the draining board, or with a flue connection for use in airing cupboards. Standard fittings include a gas governor and a flame failure device, and a scale reducer should be fitted in hard water districts. Price is £14.

There is also a new cooker, known as the Cadet, which has been designed primarily for a household of two or three people and has only two boiling rings, plus, of course, a grill and oven. The oven door is bottom hinged and the dimensions of the cooker are 19¼ in. wide by 18¼ in. deep. Hotplate height is 33¾in. Price is £21 18s. The model 71TT cooker, the one with the oven alongside the hotplate, is now available with a pair of cupboards underneath instead of the usual pot rack. Price is £59 7s. (*Radiation Ltd., 7, Stratford Place, London, W.1.*)

FILING SYSTEMS

A new Shannoblic system of filing consists of T section carrying bars running laterally, and from these are suspended the individual files. Standard units occupy only 3¼ sq. ft. of floor space and a 6-tier model provides 18 feet of filing space, or about 2¼ times as much as the usual four drawer cabinet.

Below left, the Radiation 71TT cooker, which can now be had with a pair of cupboards underneath. Below right, the Cadet cooker, also by Radiation, which has only two boiling rings.

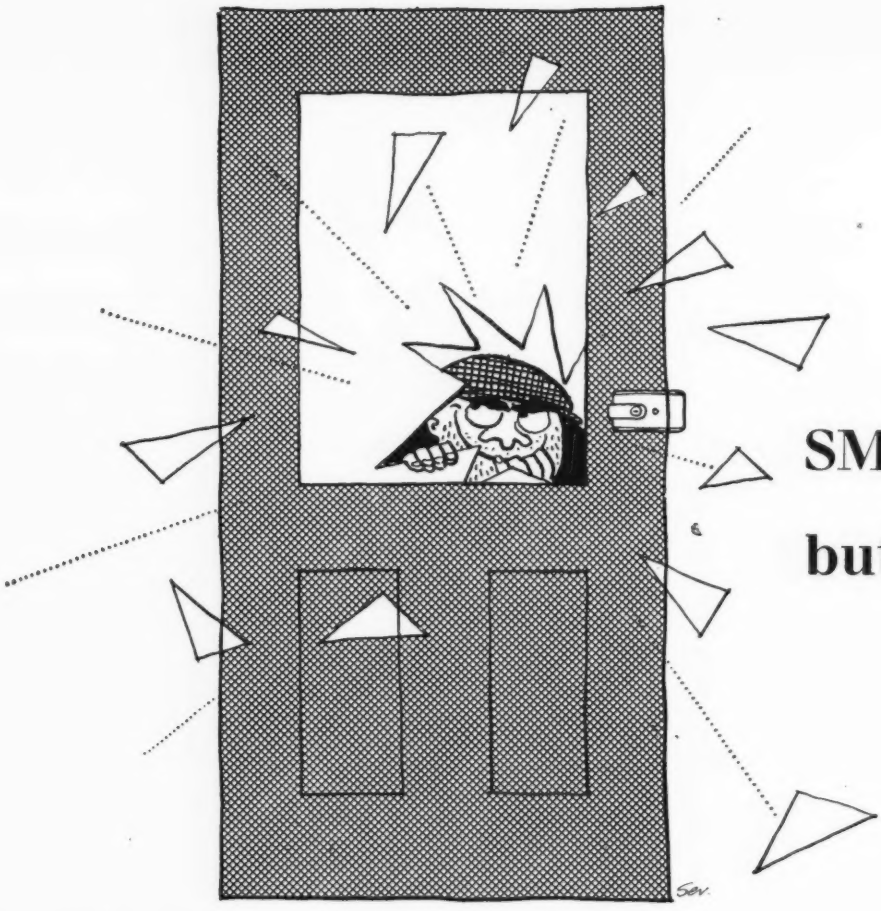


A filing cabinet built up with five tiers of Shannoblic units.

Each file is instantly removable and both open and closed cabinets are produced. (*The Shannon Ltd., Shannon Corner, New Malden, Surrey*)

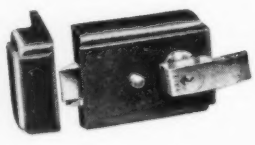
FIREBACK BOILERS

Architects who have had trouble with corrosion in fireback boilers will be interested to know that a stainless steel model known as the Silver Hawk is now available. The manufacturers claim that one of the boilers, after two year's use in an all-night burning fire fuelled with coke, showed no internal rust when removed and sawn in half, although it had been used with very soft water. Moreover, there was no corrosion on the face which had been exposed to the fire.—(*Hawkhead, Bray & Sons, Ltd., Phoebe Lane Mills, Halifax, Yorks.*)



SMASH...

but no grab!



"Another unsolved case of 'breaking and entering' for the bogies ", says Larry the Latchman, putting his hand through the broken pane to open the door. But Larry is in for a shock ! This latch won't turn, and a jemmy won't force it either. No, here's one crib that can't be cracked because the door is fitted with a Yale Number One Cylinder Automatic Deadlatch — yet another Yale lock that frustrates the uninvited guest.

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10 DESIGN: BUILDING TYPES

user requirements for laboratories. 1 The assessment of site services

Though laboratories are fast becoming one of the predominant building types of this decade, available references for architects on laboratory design are almost non-existent. Further, the problem is made more difficult for the architect by the fact that what goes on in a laboratory is usually unfamiliar to him, and because the kind of man who works there—his ultimate client—has been trained in an altogether different discipline and "speaks a different language." In order to enlarge the architect's understanding of laboratory work we have asked a scientist, W. H. Pritchard, to set forth what we might describe as " the client's side " of laboratory design. This he is particularly well qualified to do, as he has, at different times, been concerned in drafting the user requirements for the laboratories of the Admiralty, of Courtaulds Ltd., and of other large industrial concerns. He has made a study of laboratory design in both Europe and America, and recently collaborated with Richard Sheppard & Partners in preparing a brochure* on planning school science laboratories for the Industrial Fund for the Advancement of Scientific Education in Schools. He is at present chairman of the BSI's Technical Committee on Laboratory Furniture and Fittings. In this, his first article, he describes the different types of laboratory and gives figures on which to base service requirements. In later articles he will discuss the all-important question of the specialized services—what they are used for and how they should be provided; the design of laboratory benches and fume cupboards; and lastly the problems peculiar to the three main classes of laboratory: teaching, research and control.

The initial step in planning a new laboratory is correct assessment of its category and the more precisely this can be established the less arduous will be the tasks of determining such general requirements as space per individual, circulation areas, optimum levels of lighting and heating, and the provision of ancillary services.

At first sight the job appears ridiculously easy, but examination of a particular instance will often reveal unexpected difficulties. For example, for reasons of prestige or ignorance of true definitions, some industrial " research laboratories " are in fact *routine control laboratories* and their basic design would be more appropriate to their functions if this definition had been agreed from the conception of the scheme.

Classification of the laboratory

Attempting the classification of the laboratory raises at once the common dual employment of the word. By common use it is employed to describe both an individual room and a building housing a number of rooms for experiments in natural science. For instance, the National Physical Laboratory comprises a range of buildings and rooms in which experimental work of widely varying nature is carried out and this is frequently the case in many scientific and technological institutions.

It is rare in a scientific establishment of any size that every room is used for experiments in the same branch of science. Should, for example, the over-all aims of the establishment be predominantly chemical it is probable that a minority of individual laboratory rooms will be used for supplementary investigations that are entirely physics and therefore postulate different basic requirements.

As an aid to classification, and thence to the clarification of details of requirements, we may use the term *laboratory establishment* to cover the building or groups of buildings and the definition of *laboratory room* for the individual laboratory.

Traditionally, attempts at definition are by branches of science. That is insufficient and can be misleading. The complex and stringent requirements of an advanced industrial chemical research laboratory have little in common with those for a school laboratory used for teaching chemistry up to the Advanced Level of the General Certificate of Education.

Classification must be by both type of use and branch of science. The chart on page 817 shows one possible way of classifying the types of laboratory which may

* *The Planning of Science Laboratories in Schools.* Obtainable free from The Industrial fun l for the Advancement of Scientific Education in Schools, 20 Savile Row, W.1.

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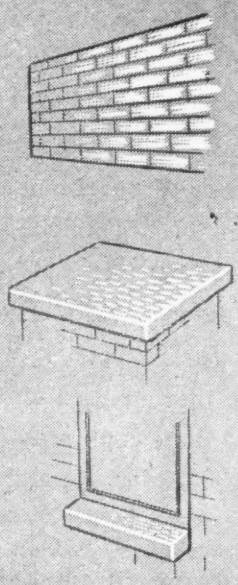
PLYCOMOR does not affect the rate of set and eliminates the use of lime.

PLYCOMOR is recommended for use in all internal and external renderings, brick laying and pre-cast products.



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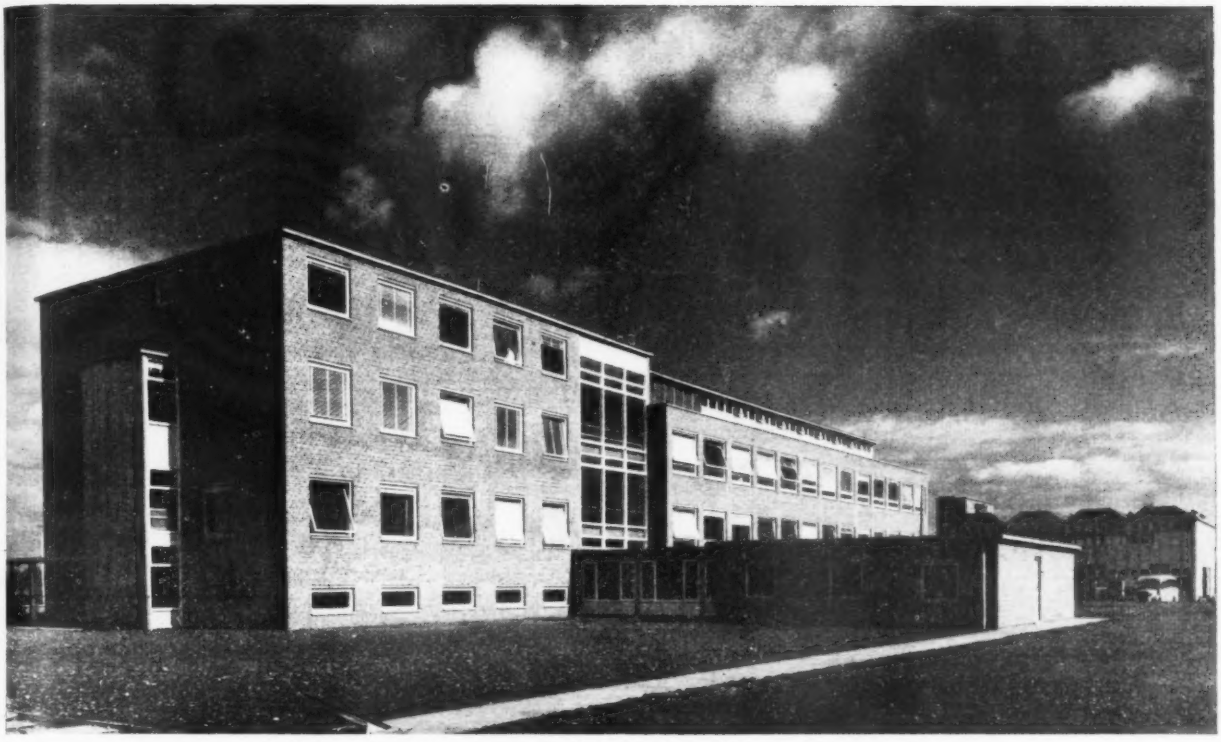

Fig. 1. General view of the recently completed Chemical research laboratory for Messrs Fisons, at Levington near Ipswich (Architects, Johns, Slater and Haward). This building, which will shortly be illustrated in full in the JOURNAL, *was the subject of unusually thorough architect/client collaboration.*

CHEMISTRY	ANALYTICAL INORGANIC ORGANIC PHYSICAL	SECONDARY MODERN SCHOOL TECHNICAL SCHOOL PUBLIC AND/OR GRAMMAR SCHOOL UNIVERSITY	TEACHING
ENGINEERING	AERONAUTICAL AUTOMOBILE CIVIL ELECTRICAL ELECTRONIC MECHANICAL	CALIBRATION AND CHECKING CONTINUOUS SHIFT PROCESS CONTROL PUBLIC SERVICE ROUTINE EXAMINATION OF PRODUCTS OR RAW MATERIAL	CONTROL
MEDICAL & RELATED SUBJECTS	BACTERIOLOGY BIOCHEMISTRY BIOLOGY PATHOLOGY PHARMACOLOGY PHYSIOLOGY		
PHYSICS	ACOUSTICS NUCLEAR OPTICAL TEXTILE VACUUM X-RAYS & OR INFRA-RED	INDUSTRY RESEARCH ASS. AND GOVT ESTABLISHMENTS SPONSORED RESEARCH UNIVERSITY	RESEARCH & DEVELOPMENT

Fig. 2. Table showing the main laboratory types tabulated, in the two left-hand columns according to the different disciplines and in the two right-hand columns according to function.

be met. The two left-hand columns represent respectively the main branches of science and their subdivisions (though neither of these can be taken as exhaustive), while the two right-hand columns represent, on the extreme right, the three major laboratory uses of teaching, control and research, and to the left of this the main user sub-divisions into which each of these can be divided. By using this chart it should be possible to "locate" a laboratory project. Some laboratories, of course, will have to accommodate more than one discipline, and many will have to comply with more than one "use" (*e.g.* a research laboratory in which the firm's products are also "controlled"); but the answers which the architect must insist on obtaining from his client in order to "locate" his project in respect of each of the four columns should go a long way towards clarifying the nature of his brief.

The planning team

Like the doctor, the architect is frequently brought into the case too late; often the broad scheme has been crystallized, and decisions made on matters of functional arrangement before the architect has the opportunity of proffering advice. Alternatively, he may be given a very general outline of the scheme

A floor a week with

BISON
WIDE SLAB

Wimpey's 8 storey flats, Kirkcaldy
Contractors: George Wimpey & Co. Ltd., Edinburgh

" Bison Wide Slab played an important part in achieving spectacular progress with these 8 storey flats ", says Mr. McQueen, Messrs. Wimpey's agent on the site. 3642 sq. yds. of 5" Bison Wide Slab Precast hollow flooring were used.

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and informed that "We will get in touch with you again when we have got our ideas clearer."

The absolute necessity for bringing the architect into frequent and close consultation from the very beginning cannot be emphasized too strongly. It is far from being a waste of the architect's time and the slight extra cost incurred by his preparing a few initial studies for discussion is more than outweighed by time spent on attempts at the reversal of ill-considered planning decisions taken without competent professional advice.

The decision to construct a new laboratory is usually made at a higher management level than that of its future occupants but unless it is based upon comprehensive technical advice the detailed implementation may present a host of costly difficulties. Comprehensive technical advice cannot be given by the architect alone but is best arrived at by a team after careful examination of all aspects of the problem.

Representation of the users or future occupants of the laboratory is important but research scientists do not always readily appreciate space and constructional details when expressed in conventional architectural drawings. Furthermore, preoccupation in their own highly specialized field may limit their range of vital interest to their particular groups of laboratory rooms and even within that compass they may not express or foresee future requirements with sufficient clarity to ensure the complete success of the project.

When there is any likelihood that the architect and scientist will not completely understand the technicalities of each other's craft a co-ordinating member of the team is essential. The co-ordinator must have an understanding of the scientific work to be undertaken so that he is able to discuss with the scientist both immediate requirements and their probable future implications.

It is axiomatic that he must also have an understanding of building techniques and materials and be able to express scientific requirements in a manner that can be easily understood by the architect.

In large organizations this person may be a member of the technical staff who has gained experience from previous projects of a similar character, alternatively a consultant with this background may have to be found.

Policy and finance will often influence purely technical decisions and a representative of top level management who is able to give or obtain immediate decisions in these matters is an indispensable member of the planning team.

Immediately the general outlines of the laboratory have been established and the site and type of building decided upon, the electrical, heating and general services engineers should join the team.

The complete team should meet regularly and frequently with entire freedom in discussion but with the firm understanding that when a decision has been reached it will only be altered by agreement of each member. Strict honouring of this principle will avoid wasted effort, time, and materials.

Minutes of team meetings should be kept both as aids to memory for its members and for circulation to others who may wish to be kept informed of progress. The committee should operate from the inception of the project until the building is ready for occupation. The planning committee should function entirely in that capacity and not in any way interfere in the customary relationship between the architect and contractors.

Accessibility to services

Correct classification of the laboratory will provide guidance on particular requirements but these should not obscure basic needs. Almost without exception the laboratory will need electricity, water, gas, and drainage. Unless the establishment is sufficiently large to provide, at economic rates, some or all of these services the availability of public supply systems is a first consideration. Attractive sites in rural and suburban fringe areas are often at a distance from adequate supply mains and connection costs must be fully ascertained at a very early stage as they may more than off-set obvious advantages such as the conversion of a large house.

The apparent existence of main services in such areas should not lead to the possibly false assumption that they will have sufficient margin to supply the proposed establishment and the supply authorities must be consulted as to ability to meet demands envisaged. Before advancing even a rough estimate of cost of connection the public service undertakings will require information on (*a*) distances, (*b*) probable peak demands of the establishment.

Forecasting service loads at initial stages of planning is difficult, but assuming that the laboratory work has no very unusual features, experience with a number of widely differing laboratories has shown that initial estimates made on the following basis have proved to be remarkably accurate. The observations are subject to two over-riding provisos, firstly that general heating is not by gas or electricity, secondly that in estimating numbers the total staff of all grades is considered. For a variety of reasons estimates based solely on the number of graduates have been found to be less reliable.

1. *Electricity:* Alternating current as the generally distributed supply is essential. Most detailed electrical distribution in this country is by the 3-phase, 4-wire, 50-cycle, alternating current system at pressures of 230/240 volts from line to neutral for single-phase supply for domestic appliances, and 400/415 volts, 3-phase supply for power. A small amount of direct current distribution still remains, the supply being distributed from rectifier converter sub-stations. Supplies taken from these obsolescent systems are not suitable for most laboratory purposes. Unless there is well-founded evidence to the contrary, the maximum demand for all purposes, experimental work, lighting, fume cupboard fans, etc., may be taken as 1 KVA for every member of the staff. Estimating the probable load on this basis will enable some consideration

to be given as to the adequacy of existing mains and the voltage drop that may be expected under peak load conditions.

2. *Water:* Adequate water pressure is important; it should be verified that a minimum pressure of 15 lb. per sq. in. will be available at the highest point in the laboratory. It is preferable, and in many cases insisted upon by the water company, that laboratory taps should not be connected directly to public supply systems but should be fed from an intervening storage tank. Locating the tank at a height to give sufficient head of water may be impossible and a pressure booster pump will then be necessary. Estimated water consumption may be based upon 10 gallons per hour for every member of the staff. Experiments using cooling water will probably be left running during meal breaks, and in some cases overnight, and daily consumption figures should be on a 10-hour basis. Mineral content of the water should be ascertained and if high the installation of water-softening plant considered.

3. *Gas:* Town gas supply is desirable but not absolutely indispensable. Reaction heating can be carried out by electrical methods but a gas flame is required for glass blowing and the traditional Bunsen burner is convenient for many laboratory jobs. Chemical composition of the gas supply is rarely important and where town supply coal gas is not available, installation of producer or rechargeable cylinder equipment will meet most requirements entailing the use of a flame, but in such cases gas distribution within the building will usually be restricted. With normal laboratory distribution served by a town gas supply consumption will probably average 4 cub. ft. per hour for every member of the staff. Allowance should be made for some appliances functioning outside normal working hours and an average day of 10 hours assumed for estimating consumption. A minimum gas pressure of 3 in. Water Gauge should be available at all times.

4. *Drainage:* Preliminary consideration of effluent disposal will be restricted to whether existing facilities are adequate to cope with the volume of liquid. It is probable that septic tank or similar private systems serving property that was formerly of a residential nature will be swamped by the volume of effluent from a laboratory establishment. For assessment of capacity of drains it may be assumed that all water will be run to waste, *i.e.* that the outflow will be 10 gallons per hour per individual. Chemical contamination of effluent should be considered but not over-rated, since extensive dilution will occur before the effluent reaches the public system.

Thus, in assessing a site for a laboratory establishment having a total staff of 80, service requirements estimated on the above basis would be:

Electricity (maximum demand), 80 KVA.
Water, daily consumption, 8,000 galls.
Gas, daily consumption, 3,200 cub. ft.
Effluent, daily output, 8,000 galls.

If the public services within easy access to a site are inadequate to meet these demands, plus a reasonable margin for future expansion, the otherwise apparent suitability of the site is questionable.

Distribution of services within the laboratory building and probable diversity factors will need detailed consideration as planning progresses and will be discussed in a later article.

Good public transport facilities within easy walking distance of the establishment will prove a major asset both to staff and visitors. For many reasons visitors to a laboratory are an important consideration and it should not be assumed that they will all come by car. Specific requirements applicable to particular types of work will either be so exacting as to be outstandingly clear from the start or be capable of being met by methods applicable to almost any site.

The type of building

Construction of a new laboratory establishment frequently presents a range of possibilities including: (*i*) conversion of a large country house, (*ii*) erection of prefabricated unit material, and (*iii*) the design of a building expressly suited to the requirements of the scientific work to be undertaken therein. There is little doubt that the latter is the wisest course to adopt. Difficulties and restrictions on new building brought about by war and post-war conditions gave impetus to the conversion of domestic type buildings into laboratories. The de-requisitioning of numbers of country houses that were no longer "desirable residences" provided apparent opportunity for maximum space at minimum initial outlay. The idea that a country house provides the cheapest type of laboratory dies hard; but has frequently been proved wrong. Experience has shown that the cost per unit area of useful laboratory space is approximately the same whether it is obtained by conversion of an existing building or erection of a new one.

The same is true of the other common makeshift solution: the use of small, completely prefabricated unit buildings. Though these are quick to put up, they were originally designed for school or domestic uses and cannot easily be made to accommodate the complex distribution of services. For this reason they, too, are seldom cheaper than comparable buildings designed for the purpose.

Modular planning

Whether the building is to be wholly prefabricated or not, one subject which is sure to come up at an early stage is that of modular planning. Modular planning of the laboratory has many advantages, particularly where a degree of flexibility is sought. The importance of correct establishment of modular dimensions cannot be over emphasized. To the scientist the use of metric and decimal systems appears both normal and logical. Should he be asked to provide a rough sketch plan of his requirements it will often be found that he has adopted a 10 ft. spacing unit. Careful review of building arrangements and laboratory layouts will usually confirm that a module more nearly divisible by 3 or 4 affords more all round convenience.

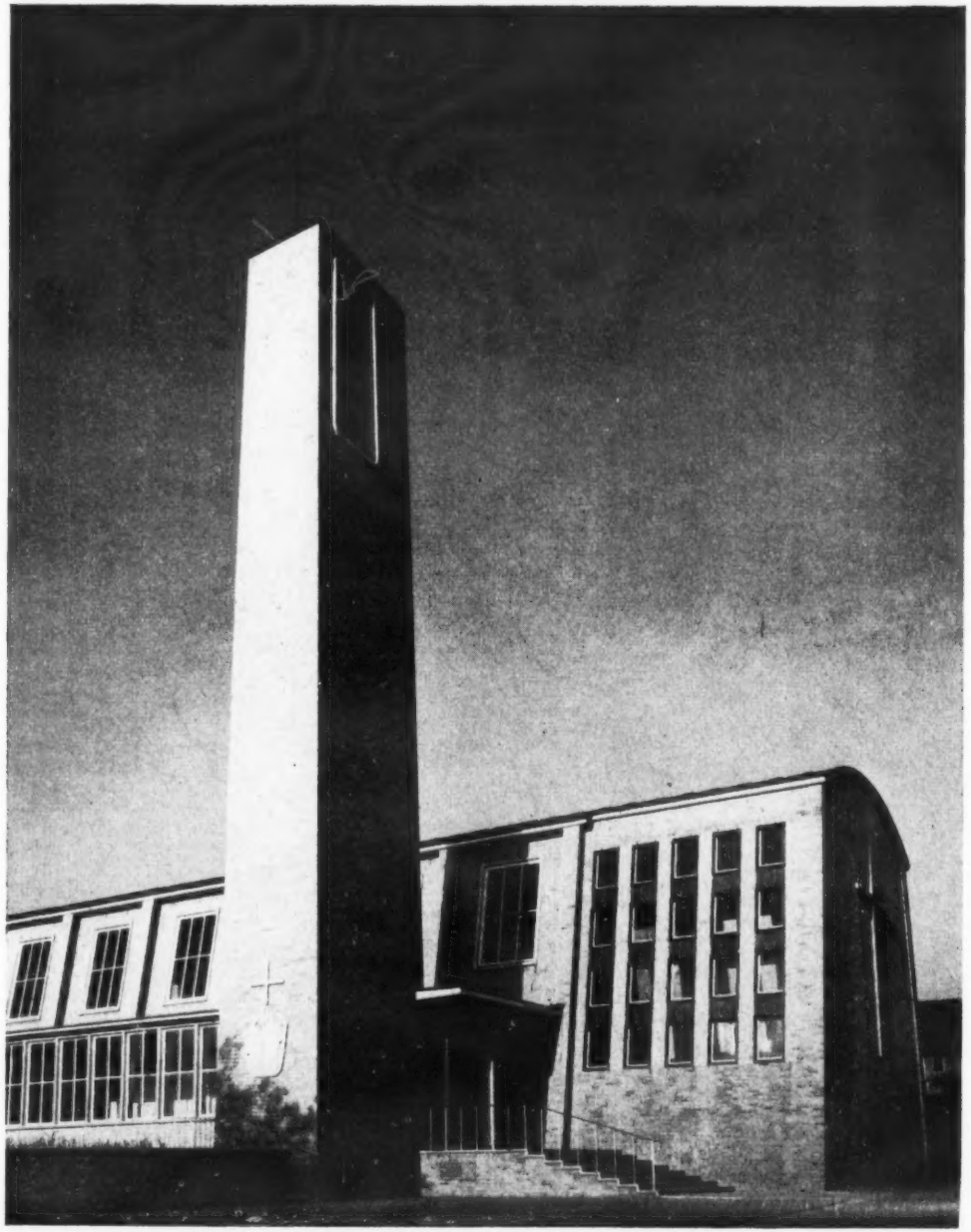
wall, is faced with Doulting stone. Between the windows lighting the sanctuary are panels of green slate.

building illustrated

CHURCH

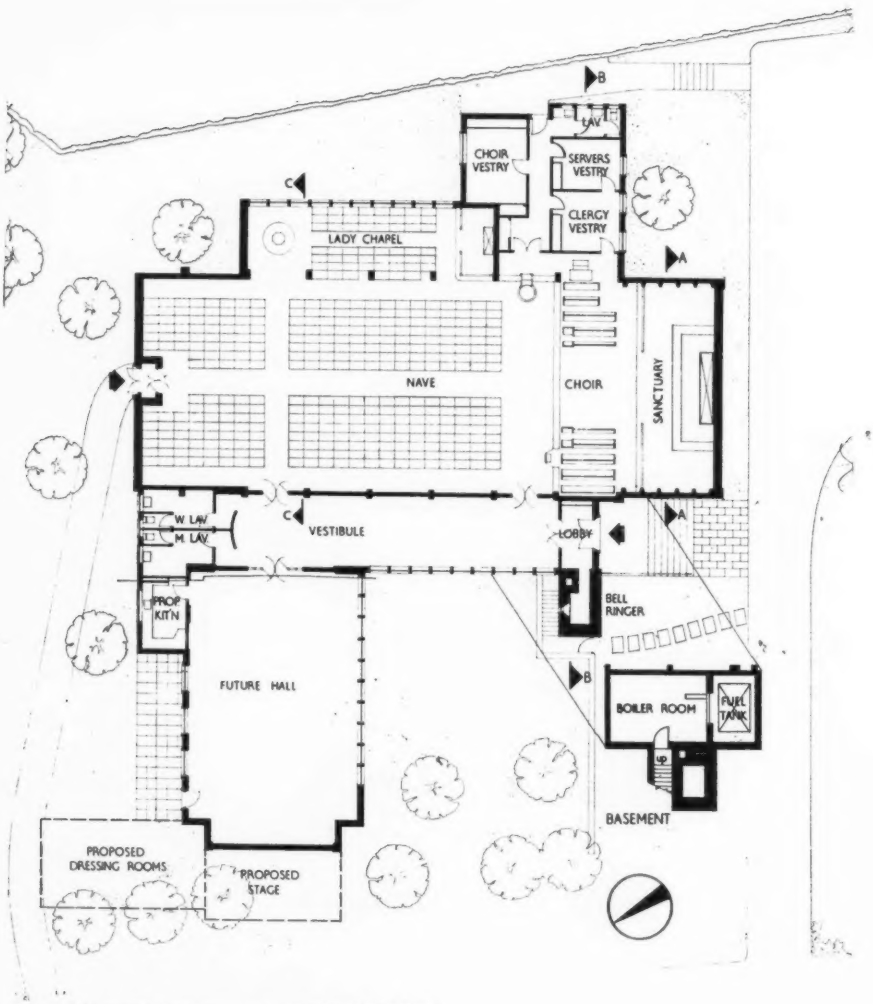
at RADFORD, COVENTRY; designed by LAVENDER, TWENTYMAN and PERCY; assistant architect R. H. FELLOWS
consultant (acoustics) HUGH CREIGHTON
quantity surveyors HENRY VALE and SON

The church of St. Nicholas at Coventry—the first church to be analysed in the JOURNAL—has replaced the original parish church, which was destroyed during the air raids in 1940. The architect hopes that the use he has made of materials with a high quality of natural finish will result in low maintenance costs. Under-floor heating is used in the church and vestibule, served by an oil-fired boiler.

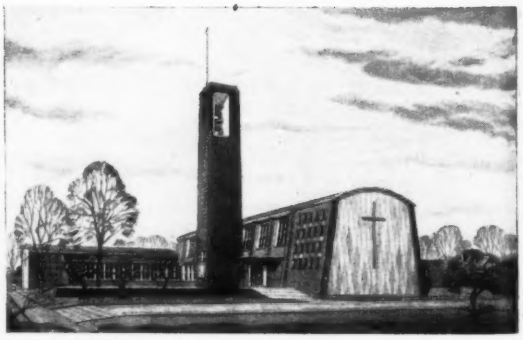


Viewpoint 1 : *the main entrance to the church from the west. The entrance lobby links the free-standing bell tower with the nave. The axis of the nave is north-east to south west, with the altar against the wall on the right of this photograph. This wall, is faced with Doulting stone. Between the windows lighting the sanctuary are panels of green slate.*

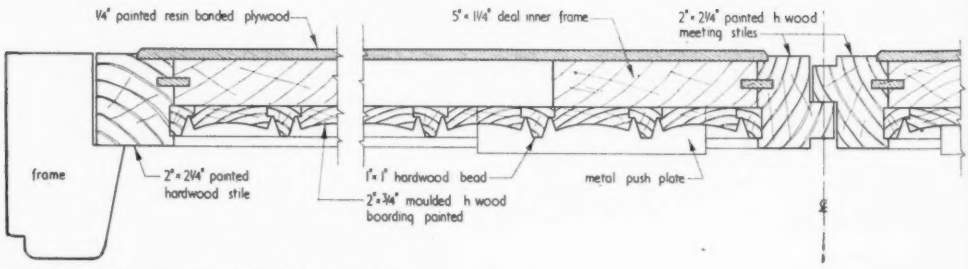
building illustrated



Ground floor and basement plan [Scale: $\frac{1}{8}$" = 1' 0"]



Viewpoint 2: a perspective of the church and future hall, on the left, from the south-west.



Part plan, main entrance doors [Scale: 3" = 1' 0"]

Site plan showing photographic viewpoints

Viewpoint 3: the entrance to the church lies between the tower and the main church building and opens into a large vestibule running the length of the nave, from which access can also be gained to the lavatories and the future church hall. The steps, leading from the tarmac forecourt, are in York stone. The canopy, an extension of the flat roof above the vestibule, has the soffit lined with fluted mahogany strip. The dark surround to the opening is formed with large panels of slate with a cast-stone frame trimming the entrance. The hardwood doors are painted dark blue, and have a pair of dished bronze plates on to which pear-shaped hardwood hand grips are fitted.

analysis

CLIENT'S BRIEF: his stated requirements

A church to accommodate about 440 including a choir of 48 and a lady chapel to seat 50. The choir to be placed between the congregation and the sanctuary. A large vestibule was to be planned with lavatory accommodation connected, to serve both the church and its hall when built. Vestries for clergy, servers and choir.

SITE: topography, surroundings, access and planting

A corner site enclosing an old orchard and a number of condemned dwellings. Surroundings—suburban development. Vehicular access from north, pedestrian access from east. There are a few existing fruit trees. New lawns planted but major landscaping to take place when church hall has been completed.

PLAN: general appreciation and relation of units

Two factors determined the planning arrangement. 1, the position and size of the vestibule. 2, the position and size of choir.
To maintain the congregation's unobstructed view of the altar, the choir was made the same width as the nave. This posed an aesthetic problem concerning the proportion through the nave. The architect's solution was a section with sloping walls which has the effect of producing a reasonable height/width ratio without resorting to the more costly solution of maintaining vertical walls and raising the roof.

MAIN CONSTRUCTION: general appreciation

Church—reinforced concrete portal frames supporting a 4-in. thick in situ reinforced concrete barrel roof. Vestibule and vestries—flat in situ concrete roof supported by load-bearing brick walls or concrete window mullions. Tower—load-bearing brickwork.

cost per sq. ft.	s	d
preliminaries and insurances	1	3½
contingencies	1	4

STRUCTURAL ELEMENTS

Work below ground floor level — 14 4½
Foundation type, basement: heating chamber under entrance lobby, reinforced concrete brick, fairface walls, granolithic floor; strip footings generally, and pad bases to portal frames, reinforced concrete.

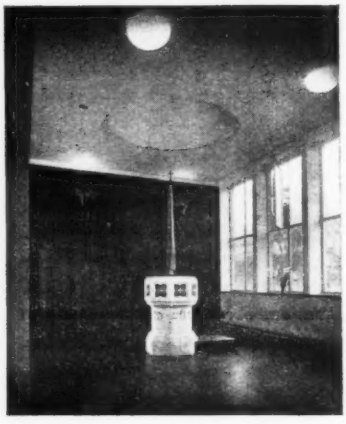
External walls and facings — 10 11½
Side walls, nave and choir: 5-in. concrete damp-proof membrane and a brick fairfaced finish.
Side walls to sanctuary; concrete grid faced with brick or green slate, fairface finish. East wall of sanctuary, brick faced with Doulting stone, fairface finish. Elsewhere, generally, brick, fairfaced finish.
Comments: sloping walls to sanctuary and nave required special precautions against water penetration (damproof membrane). External materials chosen for good weathering qualities and with a view to maintenance cost.

Frame or load-bearing element — 10 0½
Portal frames in nave, and window mullions in vestibule and chapel both reinforced concrete.

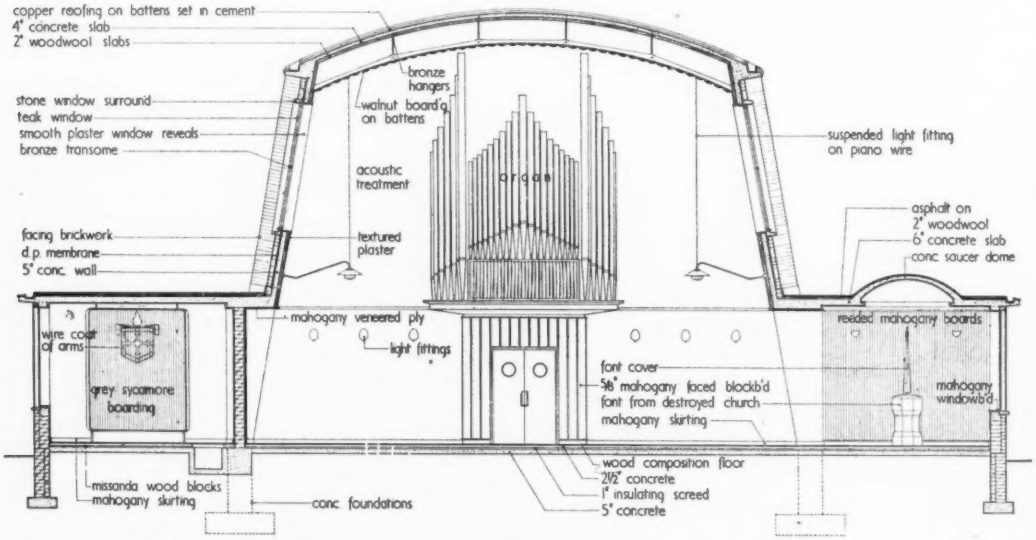
	Beam spans	*Column grid*
Portal frames	39 ft. 9 in.	12 ft. 0 in.
Mullions		4 ft.

Upper floor construction — 7 6½
Tower: load bearing brick walls, fairface finish; reinforced concrete roof, copper finish; bells hung from reinforced concrete beams, trowelled smooth spanning between walls. Tower contains central heating flue, and walls are battered 1 : 57.

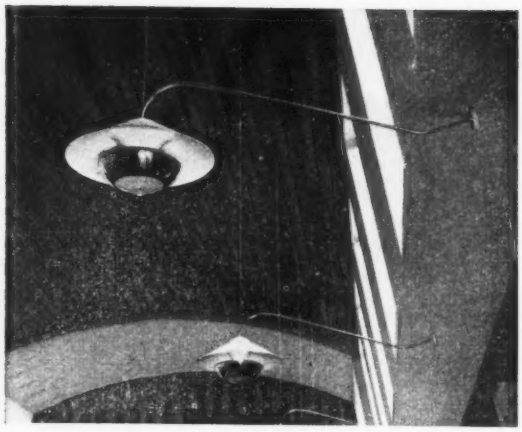
building illustrated



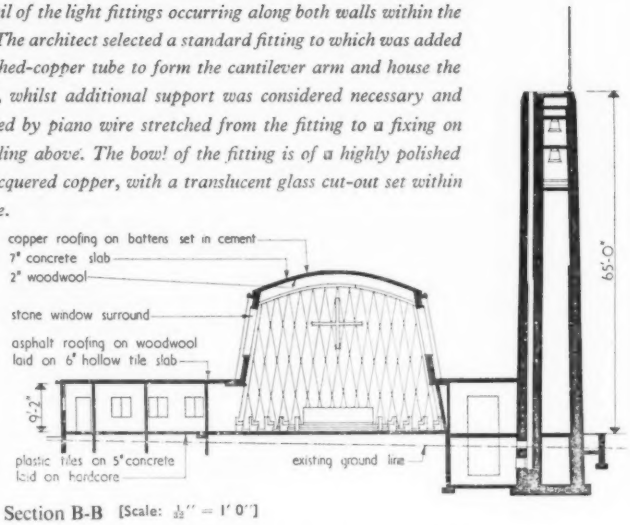
Above left: the nave, seen from the sanctuary with choir stalls in the foreground. The "west" door is beneath the battery of organ pipes and is finished and surrounded with sapele panelling. The floor to the sanctuary is in Hornton stone while elsewhere in the nave, composition blocks have been used. The lectern, choir stalls, communion rail, pulpit and console casing were designed by the architect and constructed in mahogany, sycamore and polished lacquered brass. Top right: looking towards the sanctuary from the "west" door of the nave with the Lady Chapel on the left. The floor to the nave and the Lady Chapel is finished with composition blocks which have been wax polished. The reinforced-concrete portal-frame columns exposed along the length of the nave on both sides are plastered and decorated. The inner concrete skin to the walls at high level are rendered with a rough-textured plaster which has had a light-brown pigment added to the mix. The hardwood ceiling is made up with boards of African walnut screwed to suspended softwood bearers in the ceiling space, with ½-in. gaps maintained between each line of boards. The air-space and woodwool lining to the roof assist in the sound reduction necessary to achieve a reasonable reverberation time. Painted hardwood framed and mullioned windows occur at clerestory level with bronze transomes and continuous drip trays at sill level to cater for condensation. Above right: the font, at the "west" end of the Lady Chapel, was salvaged from the bombed church and provided with a new cover designed by the architect. The short spire is in grey sycamore. Immediately above the font is a saucer dome formed in the in-situ *concrete roof and painted light-blue.*



Section C-C [Scale: ½" = 1' 0"] For section A-A see page 827



A detail of the light fittings occurring along both walls within the nave. The architect selected a standard fitting to which was added a polished-copper tube to form the cantilever arm and house the wiring, whilst additional support was considered necessary and provided by piano wire stretched from the fitting to a fixing on the ceiling above. The bowl of the fitting is of a highly polished and lacquered copper, with a translucent glass cut-out set within its base.



Section B-B [Scale: $\frac{1}{32}$" = 1' 0"]

The vestibule seen from the main entrance doors. The curved hardwood screen, at the end of the hall, conceals the entrances to the male and female cloakrooms. Access to the nave is gained through double-doors situated at the end of the vestibule and to the right. The floor finish is wax-polished gurjun wood blocks laid with a proprietary end-grip metal strip. Skirtings and window boards are also in hardwood. The under-floor heating system, described on page 828, *extends to this area. Standard light fittings have been used, and the twin-wall bracket fittings on the right hand wall have spun-copper reflectors. The heavy concrete mullions to the window walls on the left transmit the loads from the* in-situ *concrete roof over this area.*

analysis

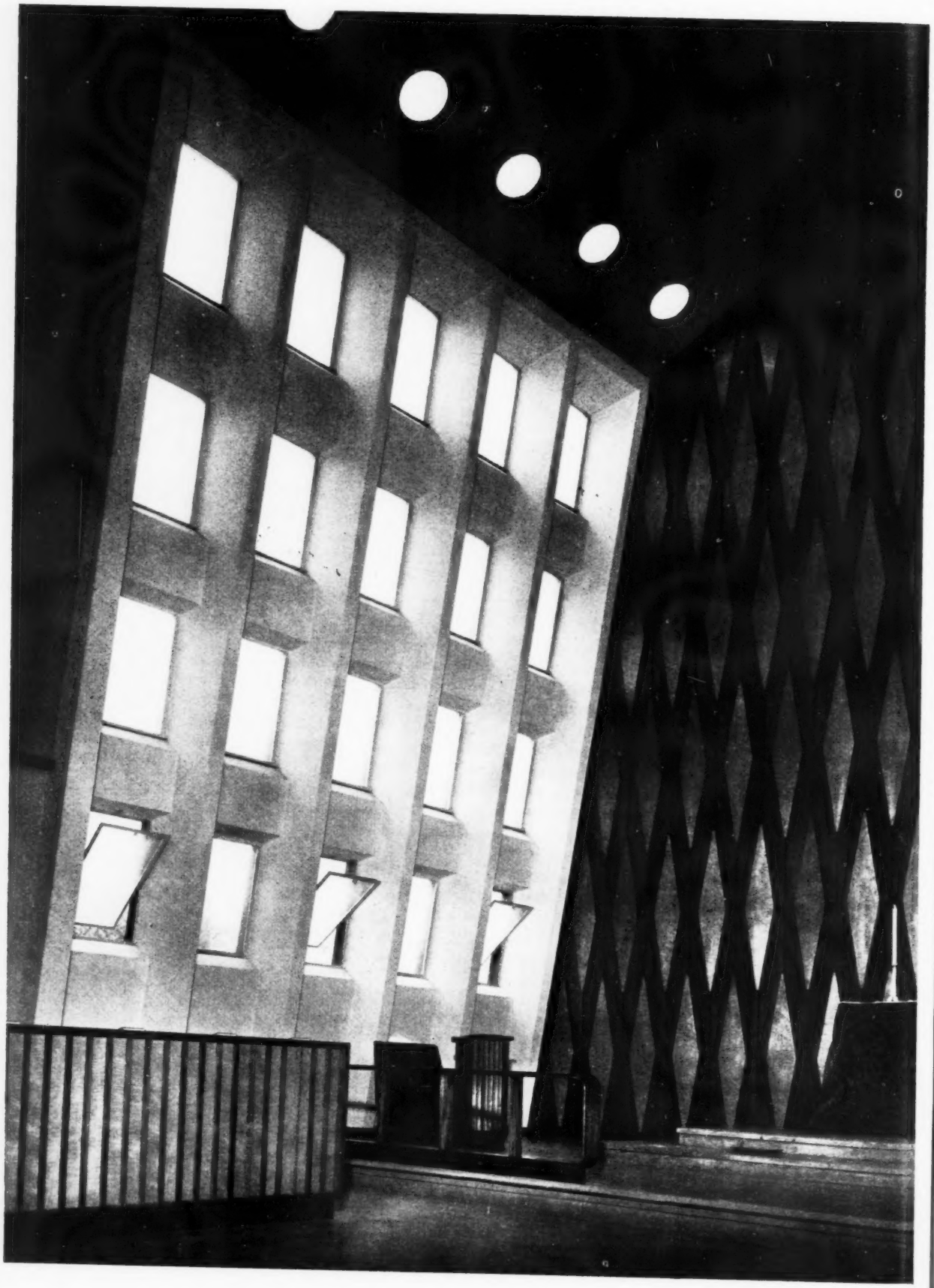
	s	d
Staircases		3¼
External staircase to heating chamber: plain concrete, granolithic finish.		
Roof construction	14	2½
Barrel roof to nave and sanctuary: *in situ* concrete and copper sheet.	9	8½
Reason: least maintenance worries although expensive.		
Flat roof to vestibule and vestries, *in situ* concrete and asphalt.	4	5¾
Reason: more easily maintained and cheaper initially.		
Roof lights		1½
Dome lights in vestibule, glass with plastered reveals.		
Windows	3	4
High level windows. Teak frames and bronze transomes in nave, galvanized steel and slate surrounds in sanctuary, painted.		
Low level windows in vestibule and chapel, galvanized steel and cast stone surrounds, painted.		
Condensation channels to all windows.		
External doors	1	1¾
Vestibule entrance and nave exit, solid hardwood (fluted) painted; vestry entrance, half obscured glass and softwood, painted.		
Glazing		3
Windows generally: obscured in lavatories, elsewhere, clear sheet.		

PARTITIONING

Internal partitions		9
Non load-bearing brick, plastered generally, faced with hardwood veneered blockboard within nave.		
Screens		3
Freestanding screen at "west" end of vestibule, moulded grey sycamore strip on softwood framing with mahogany edging, waxed: bearing Diocesan coat of arms designed by architects and made by local college of art.		
W.c. doors and partitions		1¾
Plastered breeze partitions and solid flush doors all painted.		
Internal doors		6¼
Flush doors with semi-solid core, veneered sapele, waxed, generally, and painted plywood in vestries.		
Ironmongery to internal doors		9¾
Mortice locks, and floor springs to double doors, bronze with bronze metal alloy finish.		

FINISHINGS

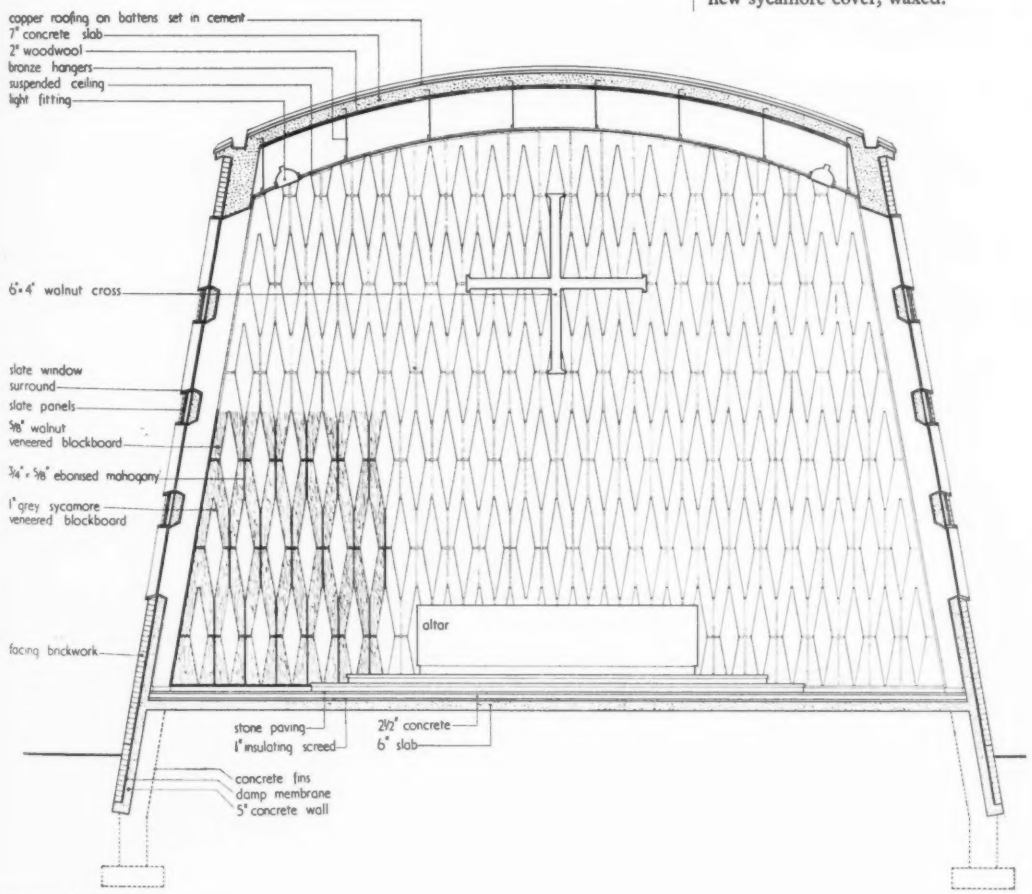
Floor finishes					4 8
	Cost per sq yd.		*Cost per sq. ft. floor area*		
Vestibule: gurjun blocks, waxed	40	0		7	
Nave and chapel: composition block, waxed	33	0	2	6½	
Choir and sanctuary: Hornton stone, waxed	53	0	1	3¼	
Vestries; thermoplastic tiles, waxed.	14	9		3¼	



Opposite: this concrete grid is used on each side of the sanctuary and houses metal-framed fixed and opening lights. The internal face of the grid is plastered and decorated. The flush circular light-fittings are set in a continuous suspended plaster ceiling. The floor to the sanctuary is of Hornton stone, and the many fittings designed by the architect are of African mahogany, sycamore and lacquered brass. The diamonds, which stand proud of the base lining of the "east" wall to the sanctuary, are in blockboard veneered with grey sycamore. The base lining, also in blockboard, is veneered in French walnut with vertical and horizontal mahogany dividing strips. The whole of the panelling has been lightly wax polished. The contrast between the walnut and sycamore veneers is not as pronounced as the photograph suggests.

analysis

		s	d
Wall finishes		**5**	**10¼**
Nave, lower level: mahogany panelling, waxed.	1	8	
Upper level: textured plaster, painted.		5¾	
Nave, "west" end upper level: acoustic board, scrimmed and painted.	2	4¼	
Sanctuary ("east" end): hardwood, panelling, waxed.		3¼	
Vestibule: plaster, painted or papered: elsewhere generally plastered, painted.	1	1	
Ceiling finishes		**3**	**11½**
Vestibule and chapel: plastered, painted.		8	
Sanctuary, plaster on metal lathing, painted.			
Nave and choir: hardwood boards, acoustic slots, waxed.	3	3½	
Decorations		**1**	**8¾**
Vestibule: emulsion, white walls, lilac ceiling, green and grey patterned paper to "north" wall.			
Nave and sanctuary: pale grey and brown water paint on textured plaster, white emulsion generally with blue ceiling on smooth plaster.			
Chapel: white emulsion generally with green ceiling.			
Vestries: off-white water paint.			
FITTINGS		**2**	**7**
Lectern organ console		0½	
Altars, altar rails		9¾	
Choir stalls: mahogany and sycamore, waxed.	1	4	
Pulpit: plastered concrete base, mahogany above, waxed.		4¼	
Font: (from previous bombed church), new sycamore cover, waxed.		0½	



Section A-A [Scale: ½" = 1' 0"]

analysis

	s	d
Cupboards		9
In vestries: deal and plywood, wax doors, painted frames.		

SERVICES

External plumbing and rain water disposal		5½
Copper flashings and gutters; rainwater disposal from main roof by asbestos cement rwp cast inside each frame; from lower roof externally by copper rwp.		
Plumbing internal, cold water installation and sanitary fittings		9¼
Waste disposal from lavatories: copper. Cold water mains and supply, copper pipe painted, 40 gall. galvanized steel storage tank above lavatories. Lavatory basins and w.c.s: white glazed earthenware; urinals, white glazed fireclay.		
Heating Installation	6	4¼
Central heating: floor panels (copper pipes) in vestibule and church (criteria temp. 60): reasons, good comfort and cheap to run. Cast-iron radiators, painted, in vestries. Electric tube heaters in chapel: reason: quick to warm up. Cast-iron sectional boiler oil fired, automatic stoking with thermostatic control and time switch, in heating chamber.		
Drainage	3	11
Separate system: salt glazed pipes, brick manholes internally rendered, cast-iron covers.		
Electrical installation	1	10¼
Tungsten lamps: special fittings approximately 5-ft. candles in nave, standard fittings elsewhere. VIR cable in galvanized iron, screwed conduits in chases or voids. Power supply type; 400/415 volts, 3 phase from standard distribution board to boiler house and organ; 230/240 volt single phase elsewhere.		
Paved areas		
Main paths and steps, York stone.	3	6
Minor paths, concrete flags; car park and drive, gravel on hardcore.	1	5½
total cost per sq. ft. of floor area £39,909 10 8	105	1¾

7,585 sq. ft.
(including basement area)

Cost exclusive of organ and chairs for congregation, but include choir stalls, altars, lectern, pulpit, kneeling desks, bells and all other furniture and fittings

SPECIAL ACOUSTICAL TREATMENT

Gaps in timber ceiling with air space and woodwool beyond nave and ceiling to reduce reverberation period calculated to be 1·2 seconds full and 1·4 seconds half full at 500 c.p.s. Fibre tiles covered with scrim on west wall of nave to prevent reflection.

Sound insulation
Solid brickwork stone, faced to east wall (street elevation).

THERMAL INSULATION

Vermiculite layer to church floor	0·10
Woodwool slabs to side walls of nave	0·13
Woodwool slabs to church roof	0·15
Woodwool slabs to lower roofs	0·15

TIME SCHEDULE

Tender date	*Contract signed*	*Work commenced*
December 23, 1952	May, 1953	May, 1953
Work completed	*Type of contract*	
September, 1955	Lump sum—RIBA	

RATIOS

Area of enclosing walls / Total floor area	= 1·54 / 1	Area of windows / Total floor area	= 0·272 / 1
Area of solid wall / Total floor area	= 1·27 / 1	Area of roof / Total floor area	= 1·045 / 1

COST SUMMARY

Total floor area (excluding basement)
7,225 ft. super.

Total basement floor area
360 ft. super

Storey heights of basement
9 ft.

Price of work above ground floor level
£30,984 10s. 8d.

Price of foundations and basement
£5,475

Price of ancill. buildings and price of ext. works
£3,450

Gross total price
£39,909 10s. 8d.

Cost per ft. cube including basement
3s. 7d.

COST COMMENTS

This is the first analysis of a church building to be published in the JOURNAL. The study of the distribution of costs is therefore of considerable interest. Although work was completed in September, 1955, the cost of each element is based on tender figures. The architect points out that the difference between tender cost and final cost is expected to be about £1,430.

As might be expected, approximately half the net cost of the building has been spent on the structural elements:

foundations	14s. 4½d.
external walls	10s. 11¼d.
frame	10s. 0½d.
roof	14s. 2½d.
	49s. 6½d.

14s. 4½d. represents a foundation resting on sub-soil of gravel, with a small amount of clay, load-bearing capacity of about 3 tons per sq. ft. The wall to floor area ratio of 1½ : 1 is unusually high compared with that of other buildings published in this series because the church has 26 ft. high nave walls.

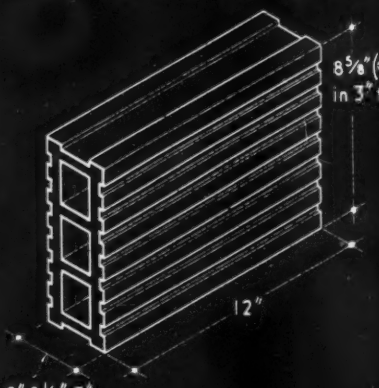
Note that the cost of 7s. 6½d. shown against " upper floor construction " also includes the cost of the tower.

The relative importance of the " heating " element is shown by the analysis figure of 6s. 4¼d. per sq. ft. Despite the difficulties involved in providing intermittent heating without full-time supervision, a fair balance appears to have been struck between capital outlay and running and maintenance costs.

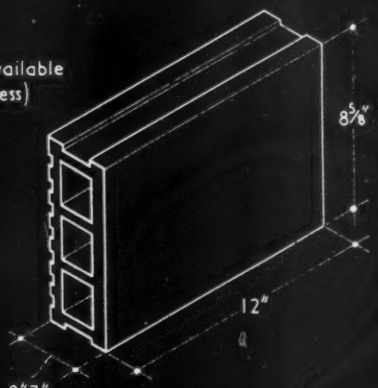
The analysis shows how much consideration has been given to the question of maintenance, the finance for which is often a problem in a building of this kind. In particular, note the choice of materials for the external face of the building, the main roof construction, floor finishes, external plumbing and heating system.

BUILDING BLOCKS HOLLOW CLAY GENERAL DATA

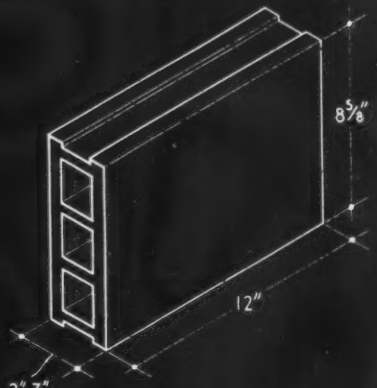
The Architects' Journal Library of Information Sheets 621. Editor: Cotterell Butler, A.R.I.B.A.



2", 2½", 3"
KEYED BOTH FACES.

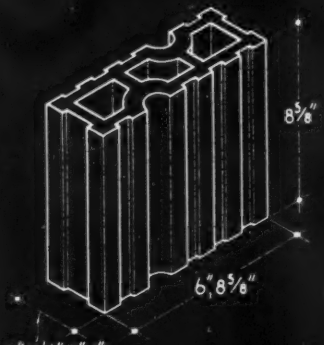


2", 3"
KEYED ONE FACE.

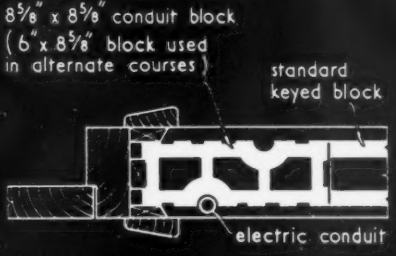


2", 3"
SMOOTH BOTH FACES.

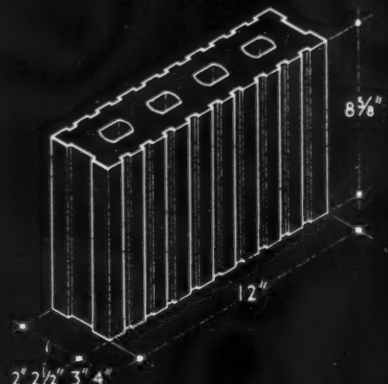
STANDARD PARTITION BLOCKS. (half blocks also available)



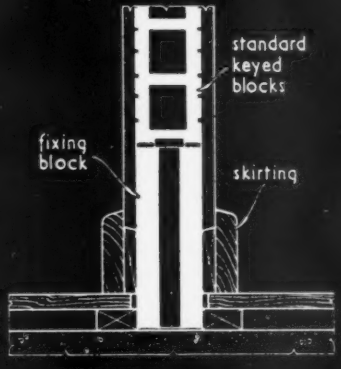
2", 2½", 3", 4"
CONDUIT BLOCK.



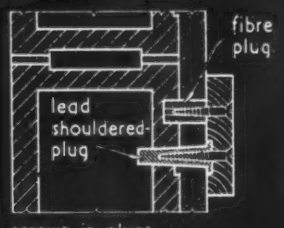
application of conduit blocks



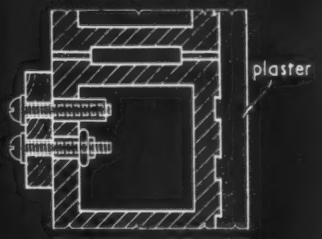
2", 2½", 3", 4"
FIXING BLOCK.

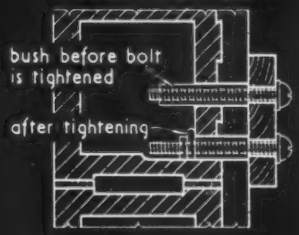


typical application of fixing block

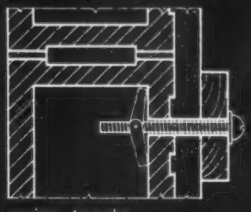


screws in plugs





bolts in rubber bushes



spring toggle
ALTERNATIVE FIXING DETAILS.

PHORPRES HOLLOW CLAY BLOCKS FOR PARTITIONS. Manufacturer : London Brick Company Limited.

14.B1 ·PHORPRES· HOLLOW CLAY BLOCKS FOR PARTITIONS

This Sheet is one of a series on Phorpres hollow clay blocks, and describes their use for partitions: it supersedes all previous Sheets on this subject. Sheets 14.B2 and 14.B3 deal with the use of Phorpres blocks for forming walls and Sheet 14.B4, with floor blocks.

Materials

Phorpres partition blocks are manufactured from gault (buff in colour) and also weald clay (terra cotta in colour), the latter being a high-quality engineering clay.
The clays are extensively tempered and extruded into hollow blocks, which are then entirely mechanically handled throughout a strictly controlled drying and burning process. The clays are generally free from injurious particles of lime or salts and the burning process renders the material entirely inert, minimising the occurrence of shrinkage or cracking in the finished plastered surface. The finished product is uniform in size and shape and free from excessive winding and bowing (see B.S. 1190:1951 for tolerances) ensuring minimum laying and plastering costs.

Sizes and Weights of Partition Blocks (Keyed)

Size	Wt. of blocks (lb. per sq. yd.)*		Yards per ton	
	Gault	Weald	Gault	Weald
12″ × 8½″ × 2″	89	97	25¼	23¼
12″ × 8½″ × 2½″	94	97	23¾	23¼
12″ × 8½″ × 3″	108	116	20¾	19½
12″ × 9⅛″ × 3″	111 (11 blocks)	—	20¼	—

* 12 blocks per sq. yd. except where otherwise stated.

Crushing Strength

Average crushing strengths of individual blocks (weald and gault) tested on edge.

Type of block		Crushing strength (lb. per sq. in.)
Non-loadbearing partition blocks	2½″–3″	500 (B.S. requires 200)
	2″	1,100 (B.S. requires 200)

From routine crushing strength tests by the Technical and Research Laboratories, London Brick Company Limited.

Strength of Walls

For the purposes of test, wall panels 9 ft. high × 4 ft. 6 in. wide were built in 1:3 rapid-hardening cement and the following results were obtained:—

Load tests on wall panels	2″ blocks	3″ blocks
Failing load—tons	44·1	65·0
Failing load per ft. run—tons	9·53	13·91
Failing stress—lb. per sq. in	890	866
tons per sq. ft.	57·2	55·7
Failing stress in wall of blocks—lb. per sq. in. ..	1420	1890

Fire Resistance

3 in. block .. .. grade C (2 hours)

Applications

Phorpres hollow clay blocks are adaptable building units for all types of partition work, and are manufactured to comply with the crushing strength tests laid down in B.S. 1190 : 1951. Their strength is combined with lightness in weight and high fire-resisting qualities.

The course heights of 8⅝ in. and 9⅛ in. enable the blocks to be bonded perfectly with 2⅝ in. and 3 in. brickwork respectively.

Key for plaster: The bond or physical adhesion of a rendering or plaster is dependent upon the inherent porosity of the backing material, and in this respect Phorpres blocks possess a balanced absorption or suction value. This is further assisted by the mechanical keying provided by grooves of definite dovetail form. This mechanical key is of first importance in the early stages of drying and setting, when cracking may result from vibration, inevitable during construction. Such vibration without the support provided by mechanical keying may also interfere with, or even prevent, the development of the necessary physical adhesion.

Fixing to blocks: The drawings on the lower face of the Sheet show alternative methods of fixing to standard hollow blocks. Holes should be drilled with a durium carbide tipped masonry drill.

Laying Instructions

The general practice is to lay Phorpres hollow blocks in 1:1:6 cement/lime/sand. This mix can, of course, be varied to suit particular conditions but too rich a mortar and thick joints should be avoided. Elasticity of joint is of great importance in all partition work. The amount of water in the mix is reduced to a minimum owing to the texture of the material. At floor and ceiling, partitions should be wedged in accordance with the recommendations in B.S. Code of Practice CP 122:1952.

Conduit Partition Blocks

While in general practice clay blocks are readily chased in the work, these blocks have been specially designed to eliminate chasing for electrical conduits in finished construction and to bond in with main partition walls.
The groove in each block coincides with that of the blocks above and below it to form a continuous channel. In this way a conduit can be provided for on one or both sides of the partition.

Fixing Blocks

These are manufactured for use with the standard partition blocks, to be built in where fixings for skirtings, picture rails, etc., are known to be required.

Patents

Conduit partition blocks: The manufacturers are the patentees of these blocks.

This Series of Sheets on bricks and blocks covers general data on, and applications of, common, facing, cellular and keyed bricks, hollow walling, partition and floor blocks.

Compiled from information supplied by:

London Brick Company Limited.
Head Office : Africa House, Kingsway, London, W.C.2.
Telephone : Holborn 8282.
Telegrams : Phorpres, Westcent, London.

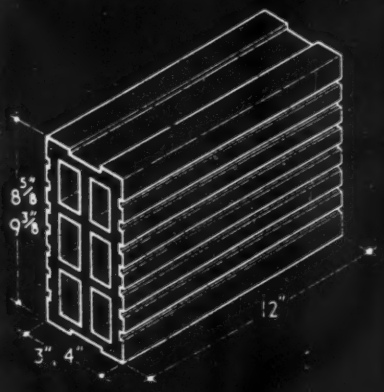
Midland District
Office : Prudential Buildings, St. Philip's Place, Birmingham, 3.
Telephone : Central 4141.

South Western
District Office : 11, Orchard Street, Bristol, 1.
Telephone : Bristol 23004/5.

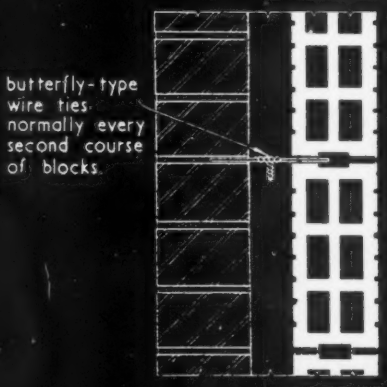
Northern District
Office : St. Paul's House, St. Paul's Street, Leeds, 1.
Telephone : Leeds 20771.

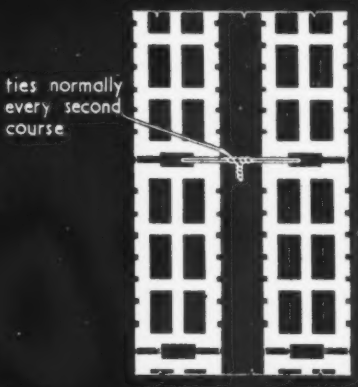
BUILDING BLOCKS | HOLLOW CLAY | GENERAL DATA

The Architects' Journal Library of Information Sheets 622. Editor: Cotterell Butler, A.R.I.B.A.

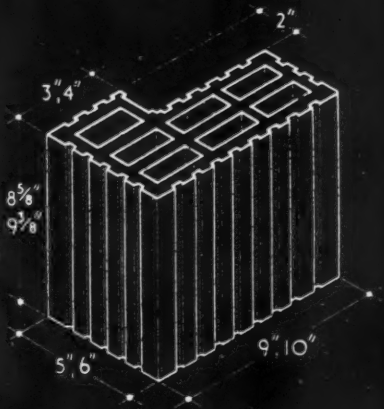


STANDARD SIX-CAVITY BUILDING BLOCK.
(also supplied smooth both faces or keyed one face, half and three-quarter blocks also available)

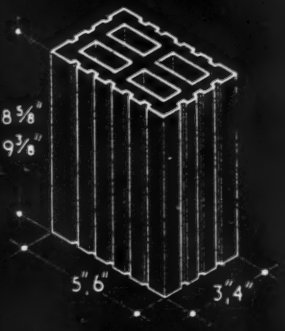




applications of six-cavity blocks



CORNER BLOCK.
(smooth face also available)



CLOSER.

APPLICATION OF CORNER BLOCKS AND CLOSERS.

PHORPRES HOLLOW CLAY BLOCKS FOR WALLS | Manufacturer London Brick Company Limited

14.B2 ·PHORPRES· HOLLOW CLAY BLOCKS FOR WALLS : 1

This Sheet is one of a series on Phorpres hollow clay blocks and together with 14.B3 describes their use for walls: these Sheets supersede all previous Sheets on this subject. Sheet 14.B1 deals with the use of Phorpres blocks for forming partitions and Sheet 14.B4, with floor blocks.

Materials

Phorpres building blocks are manufactured as described on Sheet 14.B1.

Sizes and Weights of Building and Partition Blocks (Keyed)

Size	Wt. of blocks (lb. per sq. yd.)*		Yards per ton	
	Gault	Weald	Gault	Weald
12" × 8½" × 3" (6-cavity)	110	124	20½	18
12" × 9½" × 3" (6-cavity)	116 (11 blocks)	—	19½	—
12" × 8½" × 4" (6-cavity)	137	155	16½	14½
12" × 9½" × 4" (6-cavity)	138 (11 blocks)	—	16½	—

* 12 blocks per sq. yd. except where otherwise stated.

Crushing Strength

Average crushing strengths of individual blocks (weald and gault) tested on edge.

Type of block		Crushing strength (lb. per sq. in.)
Loadbearing building blocks	4" (6-cavity) ..	600 (B.S. requires 500)
	3" (6-cavity) ..	690 (B.S. requires 500)

From routine crushing strength tests by the Technical and Research Laboratories, London Brick Company Limited.

Strength of Walls

For the purposes of test, wall panels 9 ft. high × 4 ft. 6 in. wide were built in 1:3 rapid-hardening cement and the following results were obtained:—

Load tests on wall panels	3" blocks
Failing load—tons	65·0
Failing load per ft. run—tons	13·91
Failing stress—lb. per sq. in.	866
tons per sq. ft.	55·7
Failing stress in wall of blocks—lb. per sq. in.	1890

Thermal Transmittance

"U" value of unventilated double-skin cavity walling:

	B.t.u./ft.² h deg. F. diff.
4½ in. brick + 4 in. building block*	= 0·24
4½ in. brick + 3 in. building block*	= 0·27
4 in. block (rendered) + 4 in. building block*	= 0·21
3 in. block (rendered) + 3 in. building block*	= 0·27

* Plastered internally.

Preliminary results from full-scale tests at the Technical and Research Laboratories, London Brick Company Limited, in co-operation with the Building Research Station.
It should be noted that the generally accepted standard "U" value for domestic housing is 0·30.

Fire Resistance

3 in. block .. .. grade C (2 hours)
Two skins 4 in. building blocks .. grade B (4 hours)

Applications

Phorpres hollow clay building blocks are adaptable units for partition work, internal linings, two-skin and party wall construction. They are manufactured to comply with the crushing strength tests laid down in B.S. 1190 : 1951, and can therefore take a full structural and loadbearing part in building construction in accordance with the requirements of the Model Byelaws Series IV Third Schedule. Their strength is combined with lightness in weight and high fire-resisting qualities.
The course heights of 8⅛ in. and 9⅛ in. enable the blocks to be bonded perfectly with 2⅝ in. and 3 in. brickwork respectively.

Key for plaster: The bond or physical adhesion of a rendering or plaster is dependent upon the inherent porosity of the backing material, and in this respect Phorpres blocks possess a balanced absorption or suction value. This is further assisted by the mechanical keying provided by grooves of definite dovetail form. This mechanical key is of first importance in the early stages of drying and setting, when cracking may result from vibration, inevitable during construction. Such vibration without the support provided by mechanical keying may also interfere with, or even prevent, the development of the necessary physical adhesion.

Fixing to blocks: Details of alternative methods are given on Sheet 14.B1.

Laying Instructions

The general practice is to lay Phorpres hollow blocks in 1 : 1 : 6 cement/lime/sand. This mix can, of course, be varied to suit particular conditions, but too rich a mortar and thick joints should be avoided. Elasticity of joint is of great importance in all partition work. The amount of water in the mix is reduced to a minimum owing to the texture of the material. At floor and ceiling, partitions should be wedged in accordance with the recommendations in B.S. Code of Practice CP122:1952.

Corner and Closer Blocks

These units enable closures to be made at jambs, reveals, corners and internal angles, without cutting. As the blocks are laid in the vertical plane they have greater crushing strength, thus giving added strength at point loadings.

Conduit Partition Blocks

While in general practice clay blocks are readily chased in the work, these blocks have been specially designed to eliminate chasing for electrical conduits in finished construction and to bond in with main partition walls.
The groove in each block coincides with that of the blocks above and below it to form a continuous channel. In this way a conduit can be provided for on one or both sides of the partition. Details are given on the face of Sheet 14.B1.

Fixing Blocks

These are manufactured for use with the standard partition blocks, to be built in where fixings for skirtings, picture rails etc. are known to be required. Details are given on the face of Sheet 14.B1.

Patents

Conduit partition blocks: The manufacturers are the patentees of these blocks.

This Series of Sheets on bricks and blocks covers general data on, and applications of, common, facing, cellular and keyed bricks, hollow walling, partition and floor blocks.

Compiled from information supplied by:

London Brick Company Limited.
Head Office: Africa House, Kingsway, London, W.C.2.
Telephone: Holborn 8282.
Telegrams: Phorpres, Westcent, London.

Midland District
Office: Prudential Buildings, St. Philip's Place, Birmingham, 3.
Telephone: Central 4141.

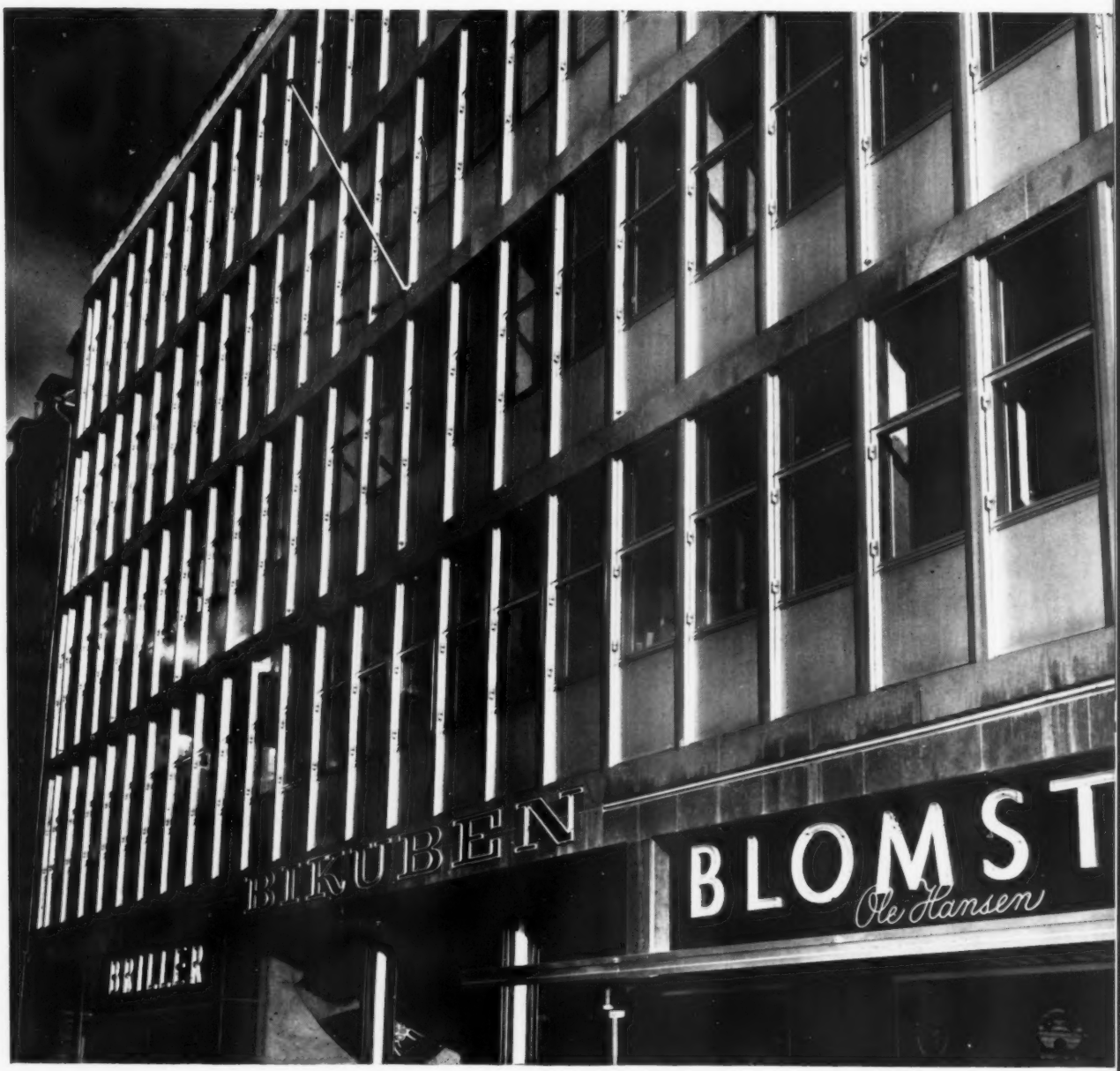
South Western
District Office: 11, Orchard Street, Bristol, 1.
Telephone: Bristol 23004/5.

Northern District
Office: St. Paul's House, St. Paul's Street, Leeds 1.
Telephone: Leeds 20771.

working detail

CURTAIN WALL: OFFICE BLOCK IN COPENHAGEN

Frits Schlegel, architect

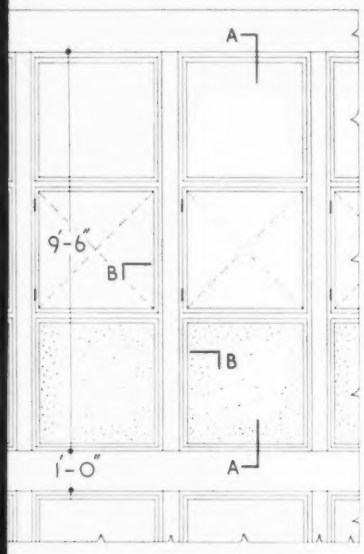


This is an unusual, highly-insulated version of the curtain wall. The mullions are formed of precast concrete clad with anodised aluminium, but are non-structural. The windows contain factory-made vacuum-sealed double glazing bedded in a substantial wad of mastic contained in the channel formed between the aluminium extrusion which forms the external frame and a timber internal frame. The top light in each window is fixed and the bottom light is a side-hung opening casement—not a sliding sash as the proportion would lead one to assume. The internal wood finishes are of a high standard, each member comprising a number of separate pieces in a manner typical of continental joinery.

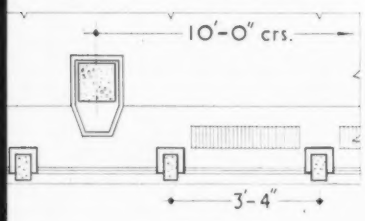
working detail

CURTAIN WALL: OFFICE BLOCK IN COPENHAGEN

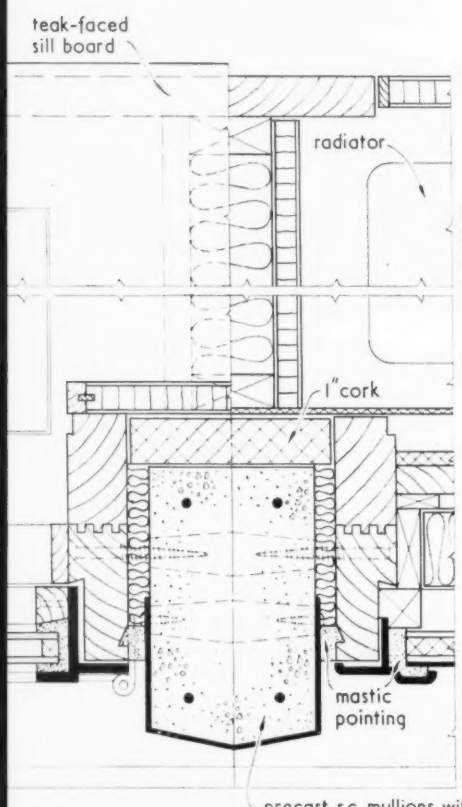
Frits Schlegel, architect



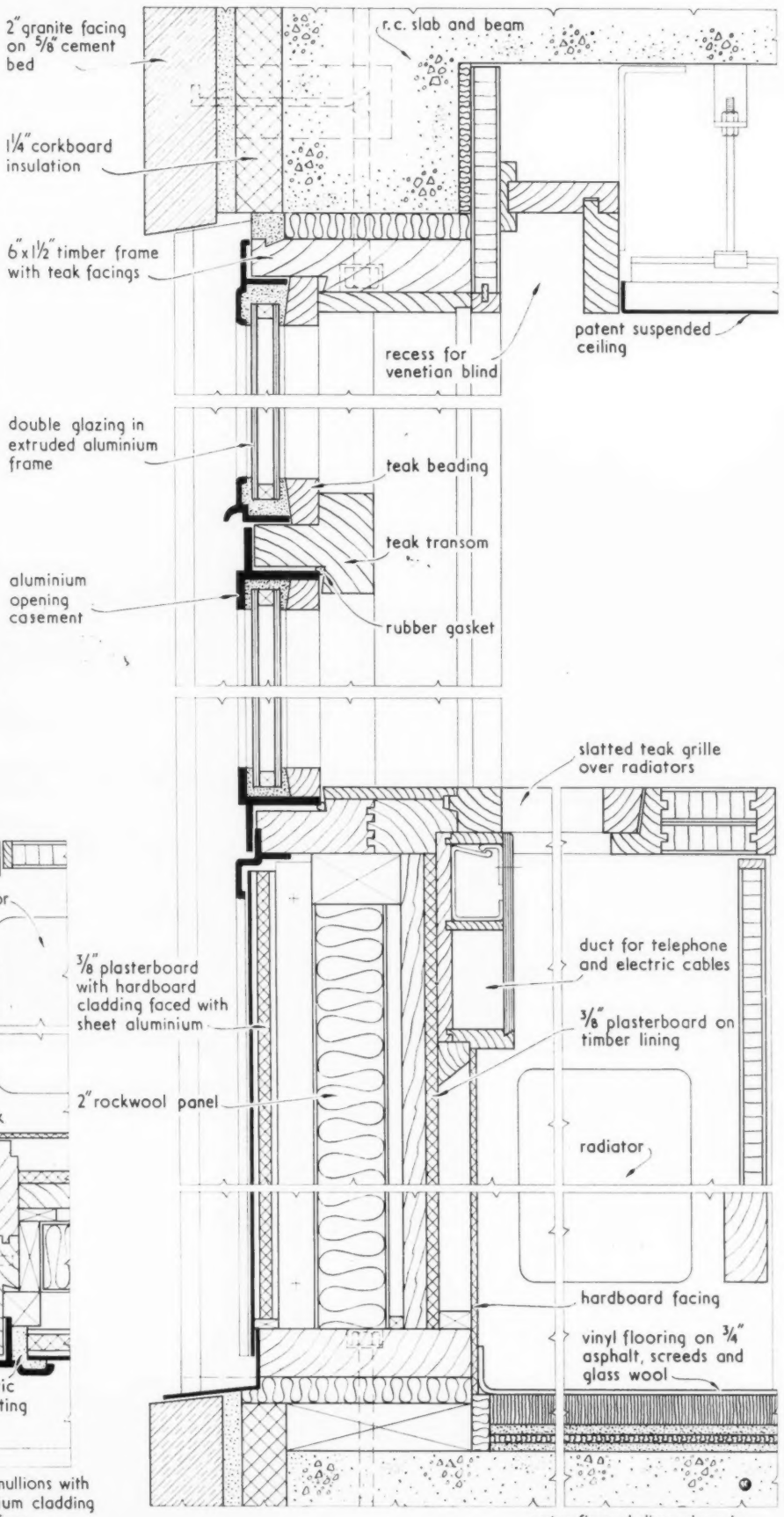
ELEVATION. scale 1/4" = 1'-0"



PLAN. scale 1/4" = 1'-0"

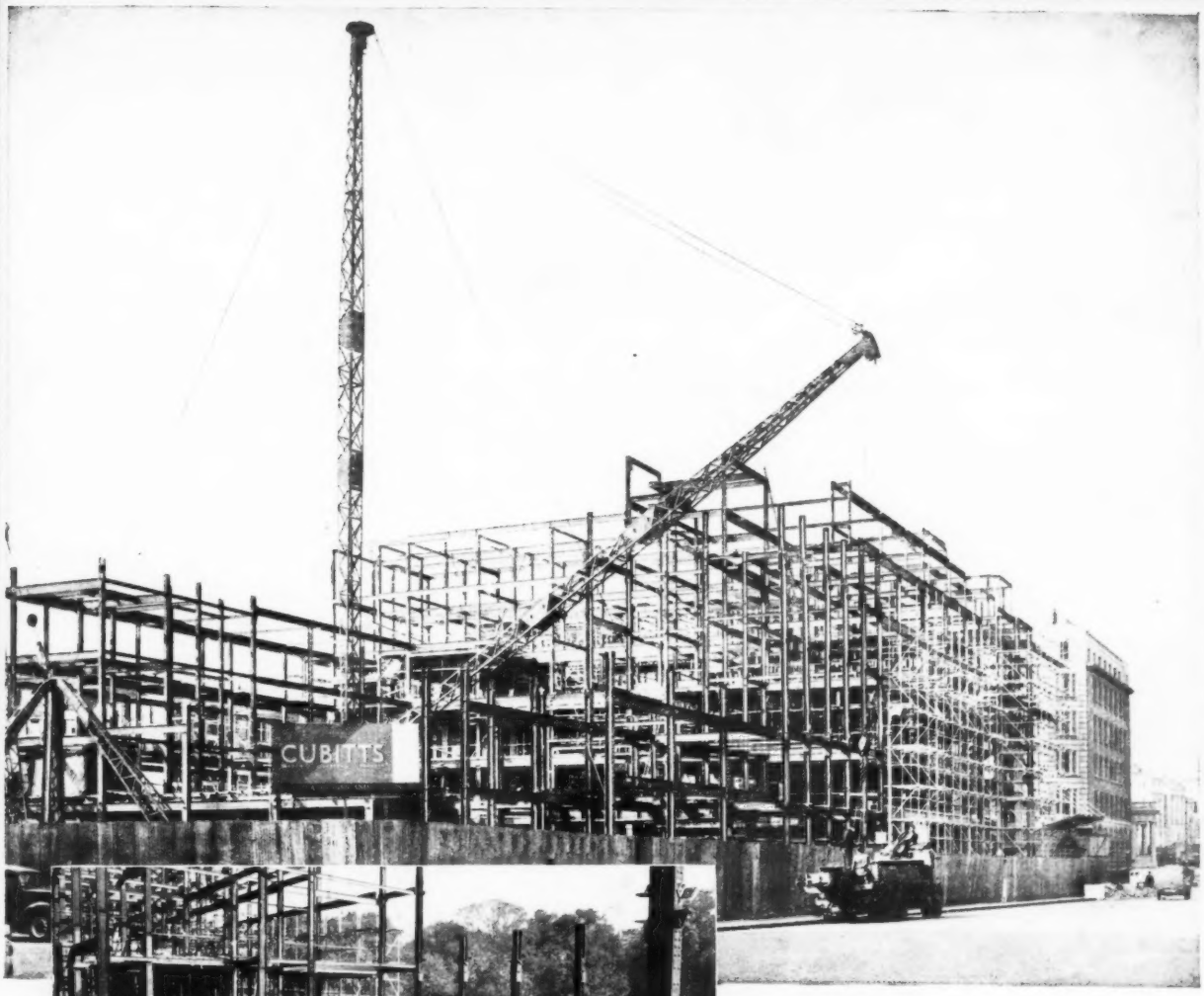


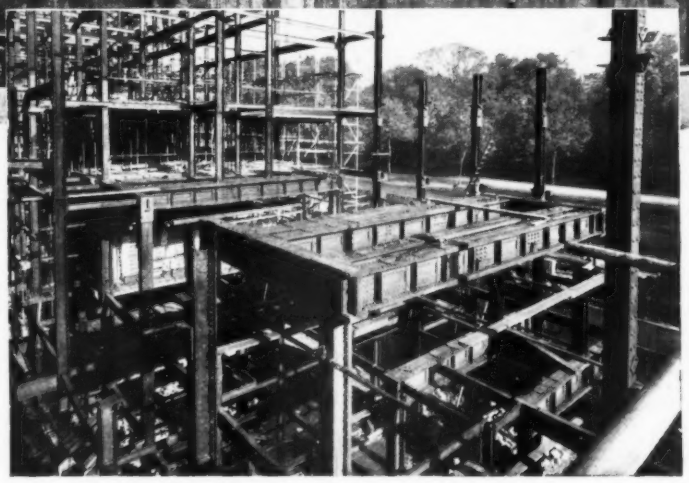
PLAN AT B-B.



SECTION A-A. scale 1/4 full size

note: figured dimensions in feet and inches are approximate





On the right of the top illustration is Iron Trades House, built by Dorman Long before the war.

Architects: Wimperis, Simpson & Fyffe.
Consulting Engineers: R. T. James & Partners.
General Contractors:
Holland & Hannen and Cubitts Ltd.

STRUCTURAL STEELWORK

The illustrations show the office building in Grosvenor Place being erected for Associated Electrical Industries Limited. Steelwork by Dorman Long (Bridge & Engineering) Ltd.

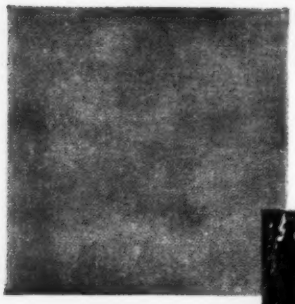
DORMAN LONG

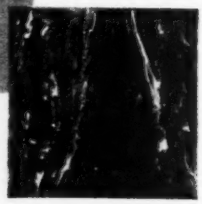
DORMAN LONG (*Bridge & Engineering*) LTD. DORMAN LONG (*Steel*) LTD.

All steel fabricated by us is produced in our own works and, when required, is erected in any part of the world.

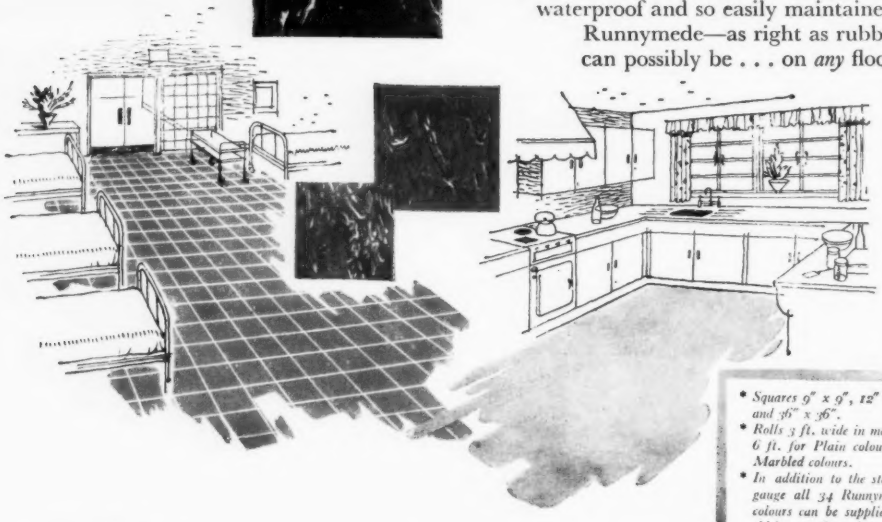
RUNNYMEDE

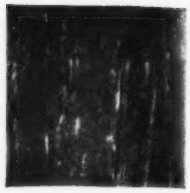
is so right – again, again and again!

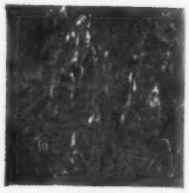


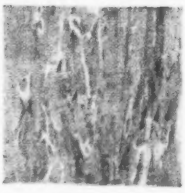


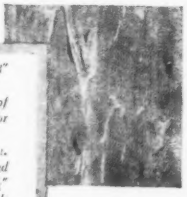
Colours both plain and marbled, to lend richness to an infinity of decorative schemes; conveniently-sized squares or yard-wide rolls, in various thicknesses to meet the needs of differing conditions—at a cost inside the budget. Laid with ease to start a long life of quiet efficiency; a safe, non-slip surface always; non-buckling, non-stretching, hygienic, waterproof and so easily maintained. Runnymede—as right as rubber can possibly be . . . on *any* floor.



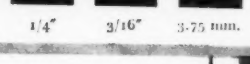








- *Squares 9" x 9", 12" x 12", 18" x 18" and 36" x 36".*
- *Rolls 3 ft. wide in maximum lengths of 6 ft. for Plain colours and 80 ft. for Marbled colours.*
- *In addition to the standard 3.75 mm. gauge all 34 Runnymede patterns and colours can be supplied in $\frac{1}{8}$" and $\frac{1}{4}$" thicknesses for orders of 50 square yards or more. Delivery: 3.75 mm. (available from stock), $\frac{1}{8}$" and $\frac{1}{4}$" (one month from date of order).*



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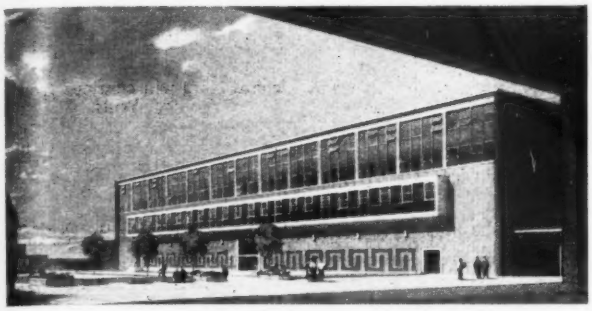
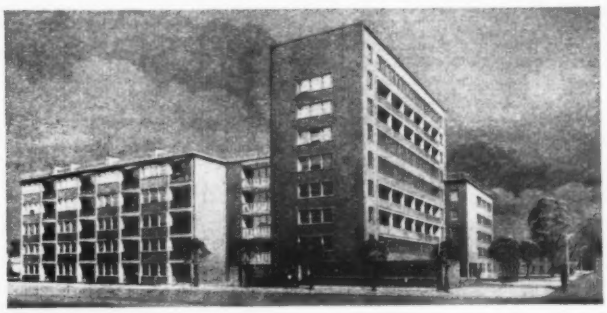
MORE DRAWINGS FROM THE ROYAL ACADEMY EXHIBITION





Above left: proposed new building at Welwyn Garden City for Murphy Radio Ltd. Above right: proposed development at Pier Street for the Isle of Dogs Housing Society. The architects for both these schemes are Louis de Soissons, Peacock, Hodges and Robertson. Left: pithead baths at the Pye Hill Colliery, for the National Coal Board; architect, Elie Mayorcas.

CRICKET

Vitruvians beat AA

The Vitruvians beat the AA by one wicket in an exciting game at Elstree on May 8. In reply to the AA's 168 for five declared, Franklyn and Case and, later, Case and Mudie pulled the game round for the Vitruvians after the first five wickets were lost for 14 runs. Case hit one six and eight fours in his 80 runs.

A A	
J. Thompson b Mudie	26
M. Mallinson c and b Franklyn	4
D. Thomas b Franklyn	1
S. K. Sharma not out	59
K. K. Kwan c Boswell b Adams	19
B. Nicholls b Barnett	16
G. St. George not out	28
Extras	15
Total for 5 wkts. declared	168

R. Gibson, F. Linder, Raines and Beech did not bat.

BOWLING

Franklyn 2 for 39, Case 0 for 32, Rathbone 0 for 19, Mudie 1 for 17, Adams 1 for 18, Barnett 1 for 29.

VITRUVIANS	
D. Boswell c Beech b Gibson ...	0
F. H. C. Tatham b Nicholls ...	2
A. Boyd b Gibson	0
F. Adams c and b Gibson ...	10
M. Rathborne c Thomas b Nicholls	2
W. Franklyn c St. George b Kwan	26
R. Case c Gibson b Thomas ...	80
R. D. Mudie not out	39
A. Barnett b Thomas	4
W. A. K. Faldo b Thomas ...	0
R. Binfield not out	0
Extras	9
Total for 9 wkts.	172

BOWLING

Gibson 3 for 28, Nicholls 2 for 51, Sharma 0 for 27, Kwan 1 for 28, Thompson 0 for 16, Thomas 3 for 13.

CRICKET FIXTURES, 1957

May 29, AA *v.* Palladians at Old Paulines, Thames Ditton. June 5, Vitruvians *v.* Palladians at Old Paulines, Thames Ditton. June 5, AA *v.* Oxford School of Architecture at Oxford. June 12, RIBA *v.* AA at Wimbledon, 2.15 start. June 13, Vitruvians *v.* NFBTE at Richmond, 11.30 start. June 19, R. D. Mudie's XI *v.* AA at Elstree, 2 o'clock start. June 26, Vitruvians *v.* RIBA at North Middlesex, 2.15 start. July 3, AA *v.* CEM at Elstree. July 10, RIBA *v.* Blue Circle at Bromley, 11.30 start. August 28, RIBA *v.* CCC at Wimbledon, 11.30 start. September 11, RIBA *v.* RICS at Cheam, 11.30 start.

Announcements

PROFESSIONAL

Westwood, Sons & Harrison, F/F/F.R.I.B.A., have dissolved their partnership by mutual consent. Two new partnerships have been formed: Bryan and Norman Westwood, F/F.R.I.B.A., with Gilbert Chapman, A.R.I.B.A., and Noel Brandon-Jones, A.R.I.B.A., as associate partners, are now practising under the title of Westwood, Sons & Partners, from 21, Suffolk Street, S.W.1 (telephone: Trafalgar 4411). J. E. K. Harrison, F.R.I.B.A., and A. A. Macfarlane, A.R.I.B.A., A.M.I.P.I., with Robert Potter, F.R.I.B.A., and Richard Hare, A.R.I.B.A., are practising under the title of J. E. K. Harrison, Potter, Hare & Macfarlane, from 19, Broadstone Place, Baker Street, W.1 (telephone: Welbeck 0694). The existing practice of Robert Potter and Richard Hare will continue from De Vaux House, Salisbury, Wilts.

Philip Hicks, A.R.I.B.A., has moved to 11, Duke Street, Manchester Square, W.1 (telephone: Welbeck 6343).

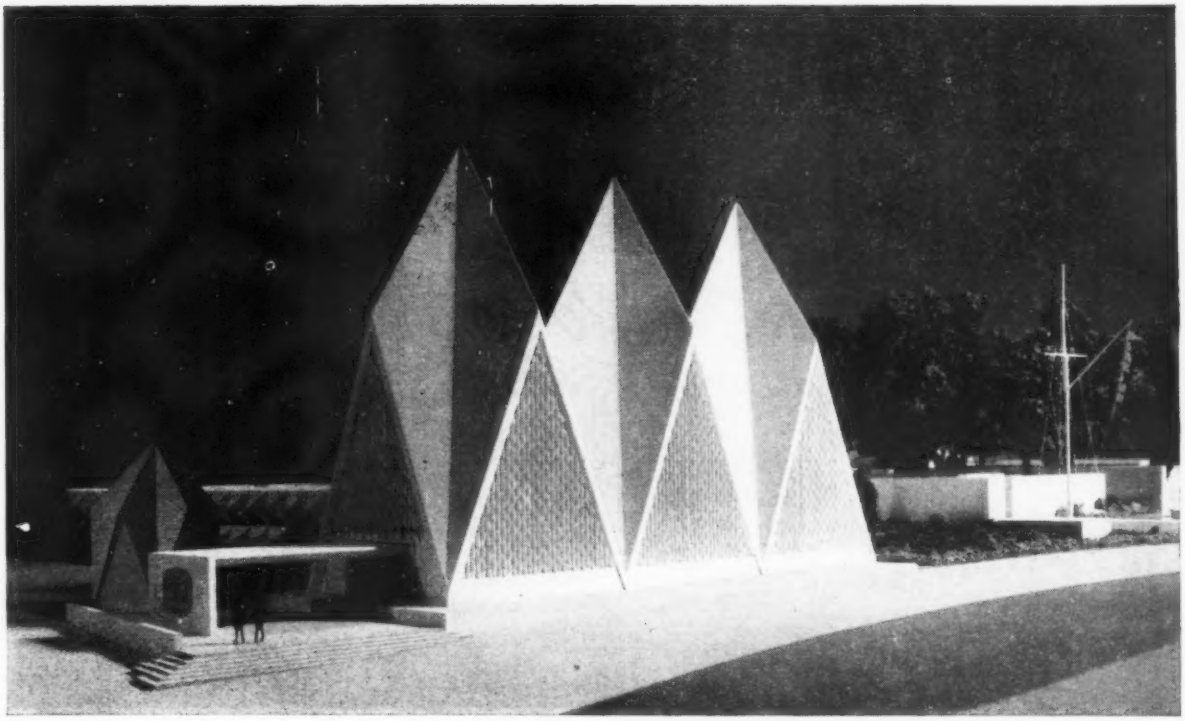
Orman & Partners, F/F.R.I.B.A., of 43, Bedford Row, W.C.1, have opened a new office at P.O. Box 7407, Pearl Assurance House, Nairobi, Kenya (telephone: Nairobi 21649).

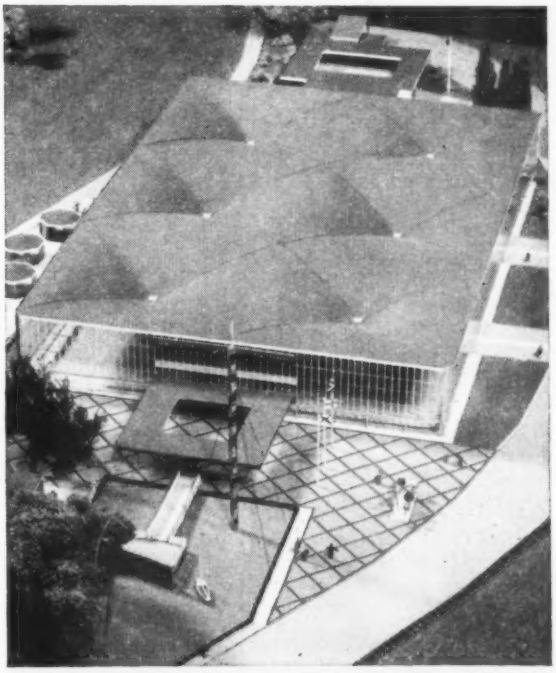
TRADE

Rowe Bros. & Co. Ltd., manufacturers and stockists of catering equipment, have opened a new sheet plastic warehouse and trade counter at 29-45, Victoria Street, Bristol. A comprehensive price list of plastic sheets and accessories is available to enquirers.

Albi-Willesden Ltd., manufacturers of fire-retardant chemical coatings, announce that Mervin Alembik, president of Albi Chemical Corporation, New York, has been appointed to the board of directors.

Treetex Ltd., manufacturers of fibreboard acoustic tiles and sheets, have changed their name to Treetex Acoustics Ltd., of 8, Guildford Street, W.C.1 (telephone Holborn 2084). A leaflet and samples are available to enquirers.





All U.K. buildings at Brussels Exhibition

At the 1958 World Exhibition at Brussels the British Government Pavilion and the British Industries Pavilion will occupy approximately five acres.

The Architects for the Government Pavilion are Messrs. Howard V. Lobb & Partners, who are also the co-ordinating Architects for the whole of the U.K. site.
The Architects for the British Industries Pavilion are Messrs. Edward D. Mills & Partners, and the Consulting Engineer for both Pavilions is Mr. Felix J. Samuely, B.Sc., M.I.C.E.

to be constructed by

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COUNTER ATTACK GROTESQUE OLIVETTI

Ian Nairn, of *Outrage* fame, will contribute a first essay on the aims and objectives of the newly-formed **Counter-Attack Bureau,** to the June issue of the ARCHITECTURAL REVIEW, and make proposals for positive anti-Outrage policies for the threatened suburban village-centres of Ewell, Colnbrook and Huyton.

Subtopian Mess at Colnbrook.

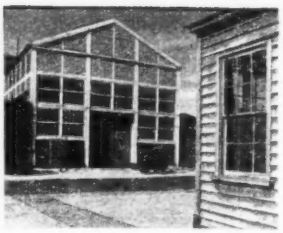
Two widely diverse Italian subjects to be discussed in the same issue will be the grotesque statuary and architecture of the Orsini garden at **Bomarzo,** considered iconographically by Dr. S. Lang, and the impressive and intelligent record of patronage in architecture, the arts, and design, of **Adriano Olivetti,** considered biographically by Georgina Masson. New buildings in this issue will be as different in type and place as the **Golden Lane** development by Chamberlin, Powell and Bon, and the **Museum at Accra** by Drake and Lasdun; the old buildings of the month will be **Balmes House,** Hackney, a forgotten, but representative piece of artisan mannerism which will be described and discussed by Priscilla Metcalf, and those in **Halifax Street,** Sydenham, another threatened area that comes within *Counter-Attack's* purview. *Skill* features of the month include a broad survey of food-preparation equipment, and in *Miscellany* Robert Melville contributes, as

Golden Lane, by Chamberlin, Powell and Bon.

usual, his column of off-beat opinions on the world of art-galleries and exhibitions.

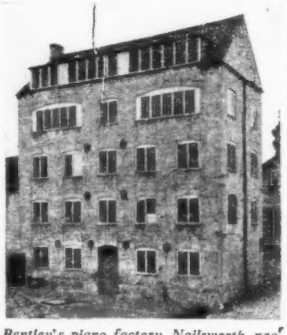
EARLY INDUSTRIAL

Mills, docks and harbours, warehouses, fences and gates, railways and canals—all bear witness to the theme of July's special issue of the REVIEW, *The Functional Tradition,* compiled and edited by J. M. Richards. In our present need to consolidate the results of the technical revolution that has overwhelmed architecture in this century, we need the discipline of an unconscious vernacular, a simple way of doing things simply, and we have no better guide for this than the monu-



Sheerness Naval Dockyard: cast iron frame extension, 1858

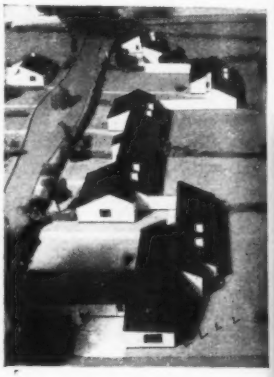
ments of the functional tradition that dot the country from end to end, even in the most remote and rural areas. The tradition is not limited to any material—with its wooden water-mills, its brick warehouses, its iron framed naval boatsheds, its stonework by canal and railway—it had the adaptability we admire in the great masters of today, fitting together material, function and form, but into an unselfconscious unity. Most architects know of the great tradition's existence, have seen one or two textbook examples illustrated, have discovered one or two favourites of their own, but in *The Functional Tradition* they will find for the first time a systematic analysis of the nature and value of the tradition, supported by the results of an extended photographic campaign by Eric de Maré, which has rescued many unknown and forgotten buildings from undeserved obscurity, and also set on record for the first time the little known architecture of the warehouses, rope walks and other buildings in the dockyards of the Royal Navy.



Bentley's piano factory, Nailsworth, near Stroud.

CURTAIN WALL BAUHAUS VILLAGE HOUSING

Identified by Ian McCallum in the May issue as a dominant feature in U.S. architecture, and likely to become so in other technologically advanced countries. **The Curtain Wall** will be the subject of an important survey in the August REVIEW, with a study of materials and methods, products, problems and prospects by Michael Brawne and Alan Craig, and illustrations of recent examples by British architects. Vital aspects of Townscape will be featured in articles on **Housing at Rushbrooke,** where



Model of a village at Rushbrooke, Suffolk, by R. Llewellyn Davies, to be illustrated with photographs of pilot houses.

Richard Llewellyn Davies is developing rational and creative solutions for rural re-development, and on **Advertising and Lettering at Stevenage,** where the New Town architect is proposing a more open-minded and creative approach to commercial displays and signs—an approach that the REVIEW feels to be worthy of more general application. Other Townscape features cover **Shepton Mallet** and its split-level centre (a continuation of Gordon Cullen's studies for Bristol University) and Ian Nairn casts an eye over **Hampstead Garden Suburb,** prototype of so much good and so much evil, to see how it has stood the test of time—it celebrates its half-century this year. In historical features, the August REVIEW covers such divers communities of men and architecture as the Weimar **Bauhaus,** recalled by Helmut von Erffa, and Akbar the Great's capitol at **Fatehpur Sikri,** described by Jacqueline Tyrwhitt, as well as a sheaf of notes on minor, but not necessarily negligible, aspects of Italian architecture of past centuries.

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.

Public and Official Announcements

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

ARCHITECTURAL ASSISTANTS with three years' training, experience in Architect's Office, of Intermediate R.I.B.A. standard and with a keen interest in Historic Architecture required by Ministry of Works Historic Buildings and Ancient Monuments Drawing Offices, London. Applicants must have surveying experience and a sound knowledge of construction. Work involves Surveying and Preservation of Ancient Monument and Historic Buildings.

Pay between £500 and £790 per annum, according to age and experience. Five-day week, 3½ weeks annual leave. Prospects of promotion and permanency.

State age, qualifications and experience to Chief Architect, Ministry of Works (D), Room 439, Abell House, London, S.W.1. 6255

COUNTY BOROUGH OF SOUTHEND-ON-SEA
BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the undermentioned posts of:—

SENIOR ASSISTANT ARCHITECT, Grade A.P.T. VI, £902 × £41—£1,107.

ASSISTANT ARCHITECT, Grade A.P.T. IV, £727 15s. 0d. by annual increments of £35 17s. 6d. to £907 2s. 6d. per annum.

ARCHITECTURAL ASSISTANT, Salary Scale rising to a maximum of £691 17s. 6d. per annum.

ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. IV, £727 15s. 0d. by annual increments of £35 17s. 6d. to £907 2s. 6d. per annum.

ASSISTANT QUANTITY SURVEYOR, Special Classes Grade, £707 5s. 0d. by annual increments of £30 15s. 0d. to £861 0s. 0d. per annum.

Candidates must be suitably qualified and experienced.

The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service so far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith.

Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

ARCHIBALD GLEN,
Town Clerk.
6300

METROPOLITAN BOROUGH OF CAMBERWELL
ASSISTANT ARCHITECT
BOROUGH ARCHITECT'S DEPARTMENT

Salary in one of the A.P.T. Grades ranging from Grade A.P.T. III to Grade A.P.T. VII according to qualifications and experience (salary range £686—£1,260). The work of the department includes design and construction of public buildings, housing estates, including multi-storey construction. Application form from Town Clerk, Town Hall, Camberwell, S.E.5. Closing date Wednesday, 5th June, 1957. 6337

ISLE OF WIGHT COUNTY COUNCIL

Applications are invited for the following established appointments in the County Architect's Department:—

(*a*) HEATING ENGINEER—Grade VI A.P.T., salary £902—£1,107. Candidates should hold the A.M.I.H. and V.E. or equivalent and be capable of supervising the working of existing and of designing all new major installations (experience in connection with electrical installations would be an advantage). Travelling allowance on Council's scalé payable for use of car.

(*b*) SENIOR ASSISTANT ARCHITECT—Salary within range A.P.T. V-VI (£814 17s. 6d.—£1,107). Candidates should hold the A.R.I.B.A. or equivalent and preferably have had considerable experience in the planning, design and construction of schools and other local authority work.

(*c*) ARCHITECTURAL ASSISTANT—Grade III A.P.T. (£656—£784 2s. 6d.). Candidates should be good draughtsmen, capable of preparing plans, details and specifications for general architectural work and possess as a minimum the R.I.B.A. Intermediate or equivalent.

Application forms, obtainable from the Clerk of the County Council, County Hall, Newport, I.W., must be returned not later than the 10th June, 1957. 6303

AIR MINISTRY Works Designs 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 £925 p.a. for men and £849 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. 3 weeks 3 days leave a year. Liability for overseas service. Normally natural born British subjects. Write stating age, qualifications, employment details including type of work done, to any Employment Exchange, quoting Order No. Borough 1000. 5602

CITY OF LEEDS
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

Post No.	*Post*	*Grade*	*Salary Scale*
1	CHIEF ASSISTANT ARCHITECT	APT.VII	£999.7.6 to £1,230.0.0
2	CHIEF ASSISTANT ARCHITECT	APT.VI/VII	£902.0.0 to £1,230.0.0

Each of the above officers appointed will be responsible for the work of a section of the Architectural staff. Candidates must be members of the Royal Institute of British Architects and have had a wide experience of large schemes and be capable of programming work and controlling staff.

3	SENIOR ASSISTANT ARCHITECTS	APT.VI	£902.0.0 to £1,107.0.0
4	ASSISTANT ARCHITECTS	APT.V	£814.17.6 to £994.5.0
5	ASSISTANT ARCHITECTS	APT.IV	£727.15.0 to £907.2.6
6	ASSISTANT ARCHITECTS	APT.III	£656.0.0 to £784.2.6
7	ARCHITECTURAL ASSISTANTS	APT.II	£609.17.6 to £691.17.6
8	ARCHITECTURAL ASSISTANTS	APT.I	£543.5.0 to £625.5.0
9	DRAUGHTSMAN (STRUCTURAL)	APT.II	£609.17.6 to £691.17.6
10	SENIOR ASSISTANT HEATING ENGINEER	APT.V	£814.17.6 to £994.5.0
11	DRAUGHTSMAN (HEATING)	APT.II	£609.17.6 to £691.17.6
12	ASSISTANT SURVEYOR (LAND)	APT.IV	£727.15.0 to £907.2.6

Candidates for Post 12 must have had town planning experience.

13	ASSISTANT SURVEYOR (LAND)	APT.III	£656.0.0 to £784.2.6
14	ASSISTANT SURVEYOR (LAND)	APT.II	£609.17.6 to £691.17.6
15	CHIEF CLERK OF WORKS (SECTIONS)	APT.V	£814.17.6 to £994.5.0

The officer appointed to Post No. 15 will be responsible for controlling a section of the staff of Clerks of Works supervising all types of new building work. Candidates should have had a long and varied experience as a Clerk of Works.

16	SENIOR ASSISTANT QUANTITY SURVEYOR	APT.VII	£999.7.6 to £1,230.0.0

Candidates for Post No. 16 should hold a recognised qualification, be fully experienced in the preparation of Bills of Quantities for all types of buildings and the preparation of estimates. Duties will also include the supervision of staff dealing with work in progress.

17	ASSISTANT QUANTITY SURVEYOR	APT.V	£814.17.6 to £994.5.0
18	ASSISTANT QUANTITY SURVEYOR	APT.IV	£727.15.0 to £907.2.6
19	ASSISTANT QUANTITY SURVEYOR	APT.II	£609.17.6 to £691.17.6
20	SENIOR CLERK (QUANTITY SURVEYORS)	CII/III	£594.10.0 to £722.12.6

The officer appointed to Post No. 20 will be attached to the Quantity Surveyor's Section. Duties will be of a clerical nature, but experience in the handling of building contract documents and a knowledge of contract law would be an advantage.

21	COMPTOMETER OPERATOR	STO/B	Salary according to age with max. of £512.10.0

Applicants are asked to clearly indicate the post for which they wish to be considered.

The commencing salary may be at any point within the salary scales as indicated except in the case of Post No. 21.

The payment of salary increments will be subject to satisfactory service and will be granted normally with effect from the 1st April following the completion of six months' service.

The appointments are subject to the Local Government Superannuation Acts 1937—1953 and the successful applicants will be required to pass a medical examination.

Application forms may be obtained from the City Architect, Priestley House, Quarry Hill, Leeds, 9, to whom they should be returned, together with copies of three recent testimonials, by 12 noon on Saturday 15th June, 1957.

Canvassing in any form, either directly or indirectly, will be a disqualification.

R. A. H. LIVETT.
City Architect.

Priestley House,
Quarry Hill,
Leeds, 9.
23rd May, 1957. 6436

BOROUGH OF KEIGHLEY
BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the position of ASSISTANT ARCHITECT in the Department, Grade A.P.T. I. Salary scale £543—£625.

Applicants for the appointment should have received a sound architectural training. Intermediate standard of the R.I.B.A. will be an advantage. Conditions of service and salary are in accordance with the National Joint Council Scheme for Local Authorities.

Application to be made upon the prescribed form to be obtained from the undersigned, to whom same must be returned, accompanied by copies only of two recent testimonials, not later than first post Wednesday, 12th June, 1957.

E. G. FELGATE, A.R.I.B.A.,
Borough Architect.

Borough Architect's Department,
College Street, Keighley. 6390

NATIONAL COAL BOARD
SOUTH WESTERN DIVISION

Applications are invited for the following appointments in the Divisional Architect's Branch, Cardiff, for work on industrial and welfare buildings, housing and offices, etc.

ARCHITECTURAL ASSISTANTS—Grade I. Salary—Males £625×£25—£750, Females £520×£20—£620. In exceptional circumstances these scales can be increased to—Males £900, Females £770. Applicants should have passed the Intermediate Examination of the R.I.B.A. Applications will also be considered from those who have not passed the Intermediate Examination but have had considerable practical experience.

JUNIOR ARCHITECTURAL ASSISTANT. Salary—Males 55/- to 175/- per week, Females—55/- to 144/- per week according to age. Applicants should be prepared to study for examinations of the Royal Institute of British Architects and should have completed Articles or received some training at a recognised school.

QUANTITY SURVEYING ASSISTANTS—Grade 1. Salary—Males £625×£25—£750, Females—£520×£20—£620. In exceptional circumstances these scales can be increased to a maximum of Males—£900, Females—£770. Applicants should have passed the Intermediate Examination of the Royal Institution of Chartered Surveyors, Quantities Section. Applications will also be considered from those who have not passed the Intermediate Examination but have had considerable practical experience.

QUANTITY SURVEYING ASSISTANT—Grade 2. Salary—Males £520×£20—£615, Females £432×£16—£507. Applicants should have passed the Intermediate Examination of the Royal Institution of Chartered Surveyors. Applications will be considered from those who have not passed the Intermediate Examination but have had some practical experience.

JUNIOR QUANTITY SURVEYING ASSISTANTS. Salary—Males 55/- to 175/- per week, Females 55/- to 144/- per week according to age. Applicants should be prepared to study for examinations of the Royal Institution of Chartered Surveyors and have passes in General Certificate of Education at ordinary level in five subjects which must include (1) English Language (2) Mathematics (3) one of the following, Geography, History, English Economic History or Ancient History and three of five subjects must be passed at the same examination.

Point of entry into the above scales will be according to qualifications and experience. The appointments are subject to provisions of the Board's superannuation scheme.

Applications in writing stating age, education, qualification, experience, previous and present appointments, present salary, the names and addresses of two referees, and the desired appointment, should be sent within fourteen days of the publication of this advertisement to the Divisional Chief Staff Officer, National Coal Board, South Western Division, Cambrian Buildings, Mount Stuart Square, Cardiff. 6437

GLENROTHES DEVELOPMENT CORPORATION

Applications are invited for the following appointments:—

(*a*) TWO ARCHITECTS (one with industrial experience).

(*b*) ONE ARCHITECT/PLANNER.

Salaries on the grade £728/£1,107 with advancement to £1,230 in special cases. Placing according to qualifications and experience.

Applicants for posts (*a*) must be corporate members of the R.I.B.A. and for post (*b*) preferably corporate members of both the R.I.B.A. and T.P.I. Housing accommodation available. Medical examination under superannuation scheme. Application with full details of experience and qualifications to the Secretary, Glenrothes Development Corporation, Glenrothes, not later than 8th June, 1957. 6448

SURREY EDUCATION COMMITTEE
GUILDFORD COUNTY TECHNICAL COLLEGE
STOKE PARK, GUILDFORD

Applications are invited for the post of LECTURER in the BUILDING DEPARTMENT to teach Structural Engineering and Reinforced Concrete, and to assist with Building Science and/or Building Construction. A degree and/or suitable professional qualifications (not less than A.M.I.Struct.E.) with industrial experience and preferably some teaching experience necessary. To commence 1st September, 1957, or as soon thereafter as possible. Salary scale £1,200 × £30 to £1,350 p.a.

Further particulars and form of application from the Principal on receipt of stamped addressed foolscap envelope to be returned within 14 days of date of advertisement. 6440

ESHER URBAN DISTRICT COUNCIL
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment. Salary grade A.P.T. IV—£727 15s.—£907 2s. 6d. plus London weighting allowance. Commencing salary dependent upon qualifications and experience.

Qualifications: Final examination R.I.B.A. or Registered Architect.

The Council are prepared to assist with the provision of housing accommodation. Form of application and further particulars may be obtained from the Engineer and Surveyor, Council Offices, Esher, to whom applications must be returned by 10th June, 1957.

FREDERICK EDWARDS,
Clerk of the Council.

Council Offices,
Esher. 6441

CITY AND COUNTY OF THE CITY OF EXETER

Applications are invited for the following appointments in the City Architect's Department :—

(*a*) PRINCIPAL ASSISTANT ARCHITECT (Education Section). Salary A.P.T. Grade VI (£902 to £1,107).

(*b*) SENIOR ASSISTANT ARCHITECT. Salary A.P.T. Grade IV (£727 to £907).

(*c*) ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade II (£609 to £691).

(*d*) ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade I (£543 to £625).

Applicants for posts (*a*) and (*b*) must be Associate Members of The Royal Institute of British Architects, and for appointments (*c*) and (*d*) must have passed the Intermediate R.I.B.A. Examination.

For post (*a*) applicants must have had considerable experience in all phases of modern design and construction related to School Buildings and Civic Buildings.

For post (*b*) preference will be given to those experienced in the design and construction of schools and houses.

All appointments will be subject to one month's notice on either side. The successful applicants will be required to pass a medical examination. Posts (*a*), (*b*) and (*c*) are subject to the provisions of the Local Government Superannuation Acts 1937 and 1953.

Canvassing will disqualify, and applicants must disclose whether to their knowledge they are related to any member of the Council or to the holder of any senior office under the Council.

Applications, stating age, qualifications, previous and present appointments and salaries, with full details of experience and earliest possible date when available, should be sent to Harold B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, Municipal Offices, Exeter, not later than 15th June, 1957.

C. J. NEWMAN,
Town Clerk.

Exeter.
May, 1957. 6419

PEMBROKESHIRE COUNTY COUNCIL

Applications are invited for the following vacancies :—

(1) On the Permanent Staff of the County Architect's Department.

(*a*) SENIOR ASSISTANT ARCHITECTS, A.P.T. GRADE V (£815—£994 per annum).

(*b*) ASSISTANT ARCHITECTS, A.P.T. GRADE IV (£728—£907 per annum).

(2) On the Permanent Staff of the County Planning Department.

(*a*) SENIOR PLANNING ASSISTANT (ARCHITECT), A.P.T. GRADE IV (£728—£907 per annum).

(*b*) ARCHITECTURAL DRAUGHTSMAN, A.P. GRADE I (£543 5s.—£625 5s. per annum).

Commencing salary in each case according to qualifications and experience.

Applications for appointments (1) (*a*) and (1) (*b*) should be Members of the R.I.B.A. by examination or hold equivalent qualification with experience of contemporary architectural or structural design.

For appointment (2) (*a*) Corporate Members of the R.I.B.A. or of the Town Planning Institute with architectural training and experience, knowledge of Landscape Architecture and preparation of Development Plans.

For appointment (2) (*b*) neat and expeditious draughtsmen and colourists, experience in illustrating, landscape model making and preparation of designs from sketches.

Appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service, and will also be subject to a satisfactory medical examination, and terminable by one month's notice on either side.

Forms of application can be obtained from the undersigned and should be returned, duly completed, to him not later than Wednesday, 12th June, 1957.

H. LOUIS UNDERWOOD,
Clerk of the County Council.

County Offices,
Haverfordwest.
17th May, 1957 6382

LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Selections for appointment are now being made from students at architectural schools who will take their final examinations this summer. Starting salary up to £676. Vacancies also for ARCHITECTS of experience at starting salaries up to £1,036. Full programme of houses, flats, schools and many other interesting buildings.

Application forms and full particulars from the Architect (Ref. AR/EK24/572), The County Hall, S.E.1. (895) 6290

COUNTY BOROUGH OF SUNDERLAND

Applications are invited for :—

SENIOR ASSISTANT ARCHITECTS, A.P.T. GRADE V (£814 17s. 6d.—£994 5s.).

ASSISTANT ARCHITECTS, A.P.T. GRADE IV (£727 15s.—£907 2s. 6d.).

Commencing salaries according to qualifications and experience.

Particulars of these appointments obtainable from the Borough Architect's Department, Grange House, Stockton Road, Sunderland.

Applications to be received by me at the Town Hall by 17th June, 1957.

Canvassing will disqualify.

G. S. McINTIRE,
Town Clerk.
6418

CITY OF WORCESTER CITY ENGINEER AND SURVEYOR'S DEPARTMENT APPOINTMENT OF BUILDING MAINTENANCE SURVEYOR

Applications are invited for this appointment on the staff of the City Engineer & Surveyor within Grade A.P.T. II (salary £609 17s. 6d. × £20 10s. 0d. to £691 17s. 6d.).

Candidates should have a good knowledge of building works and should be capable of preparing reports, estimates and specifications and of supervising all types of building maintenance and minor building works.

The post is superannuable and the successful candidate will be required to pass a medical examination.

Housing accommodation will be made available if required and a contribution towards the payment of removal expenses will also be made where reasonably incurred.

Further particulars of this appointment may be obtained from the City Engineer and Surveyor, 22, Bridge Street, Worcester, to whom all applications should be made stating age, experience, and present appointment, together with the names of two referees. Applications are to be delivered to the City Engineer and Surveyor not later than 4th June, 1957.

BERTRAM WEBSTER,
Town Clerk.

Guildhall,
Worcester. 6296

BOROUGH OF OLDBURY BOROUGH SURVEYOR'S DEPARTMENT ARCHITECTS' SECTION

Applications are invited for the following appointments in the Architects' Section of the Borough Surveyor's Department :—

(*a*) CHIEF QUANTITY SURVEYOR, Grade A.P.T. V (£814 7s. 6d.—£994 5s.).

(*b*) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. III (£656—£784 2s. 6d.).

Candidates for appointment (*a*) should be qualified Quantity Surveyors with a practical knowledge of building contract procedure and experience in the preparation of estimates, bills of quantities, valuations for interim certificates and settling final accounts for all types of local authority building contracts.

Candidates for appointment (*b*) should have reached Intermediate standard of the Royal Institute of Chartered Surveyors, with practical experience in the preparation of bills of quantities and the settlement of builders' accounts.

The appointments will be superannuable, subject to the National Conditions of Service and to the selected candidates passing a medical examination.

Applications, giving particulars of age, qualifications and experience and the names of two referees should be delivered to the undersigned not later than Friday, 7th June, 1957.

Housing accommodation may be considered if desired.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings,
Oldbury,
Nr. Birmingham.
10th May, 1957 6287

CITY OF BRADFORD APPOINTMENT OF SENIOR TOWN PLANNING ASSISTANT

Applications are invited for the superannuable appointment of SENIOR TOWN PLANNING ASSISTANT (Post No. 14) in the City Engineer and Surveyor's Department at a salary in accordance with A.P.T. IV (£727 15s./£907 2s. 6d.).

The successful candidate will be required to have experience in dealing with applications for development for new housing, industrial and commercial building and advertisement control. Should be A.M.T.P.I. or equivalent and should preferably in addition be A.M.I.Mun.E., A.M.I.C.E., or A.R.I.B.A.

All applicants should have completed their National Service No housing accommodation can be provided by the Corporation.

Applications on forms to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, 1 (quoting post number) together with three testimonials must be received by the undersigned by 30th June, 1957.

W. H. LEATHEM,
Town Clerk.

Town Hall, Bradford, 1. 6417

CITY AND COUNTY OF NEWCASTLE UPON TYNE CITY ARCHITECT'S DEPARTMENT

The City Architect will be pleased to receive applications for the following established post in the Quantity Surveying Section of his Department :—

SENIOR QUANTITY SURVEYOR

A.P.T. Division, Grade V (£814 17s. 6d.—£994 5s. per annum).

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

Further particulars and form of application may be obtained from George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1.

Closing date for receipt of completed applications :—Friday, 14th June, 1957.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
May 17th, 1957. 6406

GLOUCESTERSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

(A). DIVISIONAL ARCHITECT, Grade "A" (£1,210 × £55—£1,320). Applicants should be associated members of R.I.B.A. and have wide experience in projects usually dealt with by a County Council. The successful candidate will be in charge of a Division of the County and will be responsible for all work carried out in that Division.

(B). ARCHITECTURAL ASSISTANTS (Qualifying Class) in A.P.T. Grade II (£609 17s. 6d.—£691 17s. 6d.) III (£656—£784 2s. 6d.). Special (£707 5s.—£861), or IV (£727 15s.—£907 2s. 6d.) according to qualifications. Applicants for Grades II and III must have passed Intermediate Examination of R.I.B.A. and for Special and Grade IV the Final Examination.

N.J.C. Service Conditions, Superannuation, Medical Examination.

Apply giving age, present position, salary and date of appointment, previous appointments, names and addresses of two persons for reference to County Architect, Shire Hall, Gloucester, by 8th June, 1957.

GUY H. DAVIS,
Clerk of the County Council.
6335

KENT COUNTY COUNCIL

Applications are invited for appointment of an ASSISTANT ARCHITECT at a salary within the scale £814—£994 a year. Candidates must be Associates of the Royal Institute of British Architects and have had good experience in the design and construction of modern buildings. Application forms from the County Architect, Springfield, Maidstone. Closing date 6th June, 1957. 6339

NEWCASTLE REGIONAL HOSPITAL BOARD SPECIAL AREA COMMITTEE FOR CUMBERLAND AND NORTH WESTMORLAND

Applications are invited for the following permanent (superannuable) appointments in the Carlisle Area-office of the Regional Architect's Department in connection with the development of the Hospital Service in Cumberland and North Westmorland.

(*a*) ARCHITECTURAL ASSISTANT, Grade £510 (at age 21 or over) × £20 (5) × £30 (1) × £20 (1) × £25 (2) to £710 per annum.

(*b*) DRAUGHTSMAN, Grade £415 (at age 21 or over: £20 shall be deducted for each year below that age) × £20 (2) × £25 (3) × £35 (1) × £25 (2) to £615 per annum.

Commencing salary will depend on the applicant's age and amount of practical experience.

Applicants for post (*a*) should have passed the Intermediate Examination of the Royal Institute of British Architects and be studying for the Final Examination, and applicants for post (*b*) should have had suitable training, including three years' technical experience in architectural drawing.

Applications stating age, qualifications, past and present appointments, present salary and details of experience and training, together with the names of three referees (of whom at least two should be architects) should be forwarded to the Clerk of the Special Area Committee, 72, Warwick Road, Carlisle, within 14 days of the appearance of this advertisement.

W. J. BALL,
Clerk of the Special Area Committee.

72, Warwick Road.
Carlisle. 6438

CITY OF BELFAST

Applications are invited for the following posts in the Education Architect's Department.

ARCHITECTS, Class I

Applicants must be Registered Architects, qualified by examination. Preference will be given to those with experience in modern school design and construction.

Salary : £930 × £30—£990 × £40—£1,190.

ARCHITECTURAL ASSISTANTS, Class I (Men)

Applicants must have passed the Intermediate Examination of R.I.B.A. and should have a sound practical experience in design and construction and preparation of specifications.

Salary : £540 × £25—£665 × £30—£755 × £35—£790.

The commencing salary in each case will be fixed according to qualifications, ability and experience. Superannuation contributions of approximately 6% of remuneration will be payable. Reciprocal pension arrangements exist between the Corporation and other Public Authorities.

Favourable consideration will be given to the recoupment, up to a limit of 50%, of the removal expenses of a newly appointed officer coming to reside in Belfast.

Canvassing will disqualify.

Application forms, etc., are obtainable from the Education Office, Academy Street, Belfast. Completed applications must reach the undersigned by Wednesday, 5th June, 1957.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast
P.O. Box 234.
20th May, 1957. 6411

LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Vacancies exist in the Furniture and Display Section for FURNITURE, EXHIBITION and INTERIOR DESIGNERS, Grade III up to £1,036, and Assistant up to £817 16s., according to experience and qualifications. Architectural or similar qualifications desirable.

Application forms returnable by 8th June, from Architect, AR/EK/33/57, The County Hall, S.E.1. (927). 6404

CITY OF LEICESTER
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following posts:
(*a*) ASSISTANT ARCHITECT, Grade A.P.T. VI, Salary £902—£1,107 p.a.
(*b*) ASSISTANT ARCHITECT (Housing Section), Grade A.P.T. V, Salary £814 17s. 6d.—£994 5s. p.a.

The successful applicant for (*a*) would become leader of a small group working principally on an interesting programme of Further Education projects, involving some central area redevelopment. Previous local government experience not essential.

Applications, with copies of two recent testimonials should be sent to the undersigned not later than Thursday, 6th June, 1957.

J. H. LLOYD OWEN,
City Architect.

10, Loseby Lane,
Leicester. 6383

AMENDED ADVERTISEMENT
BOROUGH OF CHELMSFORD
TOWN PLANNING ASSISTANT, A.P.T. V

Applications are invited for the above appointment, commencing salary according to experience. Essential users car allowance is payable and housing accommodation is available. Further particulars may be obtained from the Borough Engineer and Surveyor, Municipal Offices, Chelmsford. Closing date 12th June, 1957.

B. A. FRANCIS,
Town Clerk.
6389

BOROUGH OF WILLESDEN
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT

Applications are invited from suitably qualified and experienced persons for the following permanent appointments:—
(*a*) ASSISTANT ARCHITECTS (two posts), Grade A.P.T. V (£814 17s. 6d.—£994 5s. p.a.).
(*b*) ASSISTANT ARCHITECTS (three posts), Grade A.P.T. III (£656—£784 2s. 6d. p.a.).
(*c*) ASSISTANT ARCHITECT, Grade A.P.T. I (£543 5s.—£625 5s. p.a.).

London weighting, maximum £30 p.a., is payable in addition to the above salaries.

The Council is unable to assist with housing accommodation.

Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, N.W.6. Applications to be returned to the undersigned not later than 9 a.m. on Monday, 17th June, 1957.

When writing for application forms candidates must state for which appointment they wish to apply.

R. S. FORSTER,
Town Clerk.
6413

METROPOLITAN BOROUGH OF WANDSWORTH
ARCHITECTURAL STAFF

Applications invited for posts of:—
(*a*) SENIOR ASSISTANT ARCHITECT (A.P.T. VI, £932—£1,137 per annum).
(*b*) ARCHITECTURAL ASSISTANT (A.P.T. IV, £758—£933 per annum).

Applicants for (*a*) must be Associates of R.I.B.A. and/or the R.I.C.S. (Building) with architectural experience. Practical knowledge required in preparation of working drawings and half-inch details for multi-storey blocks of flats and/or other framed buildings, and supervision of their erection.

Applicants for (*b*) must have passed Parts I and II of the R.I.B.A. Final or Special Final examination or their equivalent at one of the recognised schools of architecture, and had at least five years experience, including training.

Application forms from Borough Engineer, Surveyor and Architect must reach me by Monday, 10th June, 1957.

R. H. JERMAN,
Town Clerk.

Municipal Buildings,
Wandsworth, S.W.18. 6414

BASILDON DEVELOPMENT CORPORATION
DEPARTMENT OF ARCHITECTURE AND PLANNING

Applications are invited for the post of MODEL MAKER on Grade A.P.T. II within the salary range £610—£692 per annum. Experience in construction of scale topographical, landscape and building models of New Town Development. Ability to read drawings essential.

Appointment subject to the provision of the Local Government and Other Officers Superannuation Act and medical examination.

Housing available in approved cases.

Applications on the special form (obtainable from the Chief Architect) to be made to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, by Friday, 14th June, 1957. 6416

COUNTY BOROUGH OF NORTHAMPTON

Applications are invited for the post of ARCHITECTURAL ASSISTANT (HOUSING), A.P.T. III (£656—£784).

Applications, on forms obtainable from the Borough Architect, Guildhall, Northampton, must be returned by 15th June.

C. E. VIVIAN ROWE,
Town Clerk.
6439

DEVON COUNTY COUNCIL require SENIOR ARCHITECT, A.P.T. V (£814 17s. 6d.—£994 5s.). Particulars and application form, returnable by 11th June, 1957 from County Architect, 97, Heavitree Road, Exeter. 6386

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT, GRADE IV, £727 15s.—£907 2s. 6d. p.a. plus £30 p.a. London Allowance.

2. ARCHITECTURAL ASSISTANT GRADE II, £609 17s. 6d.—£691 17s. 6d. p.a. plus London allowance up to £30 p.a. Must be of good general training, preference given those who have passed Intermediate R.I.B.A.

Full details of experience and qualifications, present salary and three copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 6415

GOVERNMENT OF NORTHERN IRELAND
ASSISTANT ARCHITECT CLASS II

Applications are invited for pensionable posts in the Chief Architect's Branch, Ministry of Finance. Candidates must be Registered Architects by examination, with at least two years' experience in an Architect's office in the preparation of working drawings. Salary scale £744 (at age 25)—£1,002 (age 34 and over)—£1,160. Preference will be given to suitably qualified candidates who served in H.M. Forces during the 1939-45 War, provided the Ministry is satisfied that such candidates are, or within a reasonable time will be, able to discharge the duties of the post efficiently. Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast. 6381

THE CORPORATION OF LONDON
require for
CITY PLANNING OFFICE
(Civic Design Section)
TEMPORARY PLANNING ASSISTANT

£512 10s. by 10 increments £814 17s. 6d. point of entry dependent on age and experience. Candidates should have sensitive and contemporary approach to design and preferably an architectural background; duties include assistance with redevelopment proposals for Barbican and other areas in the City of London as well as work of a general nature.

Local Authority experience not essential. Applications with details of training, experience, age, present salary and names and addresses of two referees, to The City Planning Officer, 55/61, Moorgate, London, E.C.2, within fourteen days of the date of this advertisement. 6422

CITY OF LIVERPOOL
ARCHITECTURAL AND HOUSING DEPARTMENT

Applications are invited for the appointment of SENIOR ARCHITECT. Salary, £999 7s. 6d. to £1,230 per annum (A.P.T. VII).

The person appointed must have had experience of Redevelopment Work be an A.R.I.B.A. and preferably an A.M.T.P.I.

Application form, returnable by 7th June, 1957, may be obtained from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Kingsway, Liverpool, 2.

The appointment is superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk.
(J.4793). 6421

ESHER URBAN DISTRICT COUNCIL
APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment from persons with previous training and experience in architectural work in the office of a private Architect or Local Authority.

Salary according to qualifications and experience, Grade A.P.T. I—£543 5s.—£625 5s. per annum plus London weighting allowance of £10, £20 or £30 according to age.

Form of application and further particulars may be obtained from the Engineer and Surveyor, Council Offices, Esher to whom applications must be returned by 10th June, 1957.

FREDERICK EDWARDS,
Clerk of the Council.

Council Offices,
Esher. 6442

FULHAM BOROUGH COUNCIL
ASSISTANT ARCHITECT A.P.T. III OR IV

Borough Architect's and Housing Department. £686/£814 2s. 6d. or £757 15s./£937 2s. 6d. per annum including £30 p.a. London Weighting, according to qualifications and experience. The work will be primarily concerned with the layout and design of housing schemes comprising multi-storey dwellings. Application form from Town Clerk, Town Hall, S.W.6. Closing date: 11th June. 6420

PERTH AND KINROSS JOINT COUNTY COUNCIL require ARCHITECTURAL ASSISTANTS for work on New Schools. The appointments will be in two grades, *viz.* (*a*) A. & P. III/V (£635—£780) for experienced assistants commencing not lower than £730 for those with A.R.I.B.A. qualification or equivalent and (*b*) A. & P. I/III (£565—£680) for Junior Assistants commencing not lower than £635 for those with R.I.B.A. Intermediate qualification or equivalent. Particulars of appointments and forms of application from the County Clerk, P.O. Box 15, County Offices, York Place, Perth. Applications to be lodged by 15th June, 1957. 6459

Architectural Appointments Vacant

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

LARGE London commercial office requires ASSISTANTS, with experience of commercial work.—Box 5924.

KEEN JUNIOR ASSISTANT required in London office. Should be good draughtsman with sound knowledge of building construction. Box 6951.

CO-OPERATIVE WHOLESALE SOCIETY LTD.
ARCHITECT'S DEPARTMENT, MANCHESTER

APPLICATIONS are invited for the following appointments:—(*a*) SENIOR ASSISTANT ARCHITECTS with experience of work on commercial and industrial projects (salary range £820 to £975 per annum). (*b*) ASSISTANT ARCHITECTS capable of preparing working drawings from preliminary details (Salary range £550 to £820 per annum). There is a five-day week in operation and both appointments offer prospects of upgrading. Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester 4. 6023

JUNIOR AND INTERMEDIATE ARCHITECTURAL ASSISTANTS required by Monro & Partners for their London and Watford Offices. Salary by arrangement. Five-day week. Apply 32, Clarendon Road, Watford. 6458

THE MILK MARKETING BOARD require an ASSISTANT in their Architect's Department capable of preparing working drawings and details and able to make field surveys and surveys of existing buildings. Preference will be given to applicants who have already passed their Intermediate R.I.B.A. examination. Salary £650 per annum. Applications in writing stating age and previous experience to the Senior Personnel Officer, Milk Marketing Board, Thames Ditton, Surrey. 6460

ASSISTANT ARCHITECTS required by The English Electric Group of Companies to work in their Central Architects Department at Preston, on office blocks, canteens, laboratories, workshops and other types of industrial buildings (new and conversions). The posts are permanent, pensionable and offer good prospects to suitable applicants, who should be qualified, or at Finals R.I.B.A. standard. Previous industrial experience is not essential. Apply in writing to the Chief Personnel Officer, Strand Road, Preston. 6461

WELL KNOWN Home Counties Chartered Architects, with large and varied practice, require a capable experienced ASSISTANT for Drawing Office, salary by arrangement. Box 5859.

COURTNEY, POPE LTD. require SHOP-FITTING DRAUGHTSMEN. Write, giving details of experience and salary required to: Amhurst Park Works, London, N.15. 5704

TWO ARCHITECTURAL ASSISTANTS required in varied practice in Buckinghamshire, 30 miles from London. One at Final R.I.B.A. and one at Intermediate R.I.B.A., also QUANTITY SURVEYOR at intermediate standard. Five-day week. Salaries according to age and experience. House available. Please write giving full particulars to Box 6362.

GOLLINS, MELVIN, WARD & PARTNERS have vacancies for JUNIOR and INTERMEDIATE GRADE STAFF. 5-day week—quarterly bonuses. Pension scheme. Telephone WELbeck 9991. 6351

ASSISTANT ARCHITECT. Co-operative Wholesale Society, Ltd., invite applications for the position of Assistant Architect. Must be capable of preparing working drawings from preliminary details. The post is superannuable, subject to medical examination. 5-day week in operation. Applications, giving details of age, experience and salary required, to—W. J. Reed, F.R.I.B.A., Chief Architect, C.W.S. Ltd., 99, Leman Street, London, E.1. 6350

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. Five-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 851 c/o 7, Coptic Street, W.C.1. 6376

ARCHITECTURAL ASSISTANT required by old-established firm in Gray's Inn. Intermediate Standard. Varied work, responsibility and prospects. Holiday arrangements honoured. Commencing salary £600 a year.—Box 6372.

ARCHITECTURAL ASSISTANTS, Junior and Senior, required for varied and interesting practice. Excellent prospects. Holiday arrangements met.—Box 6368.

JUNIOR and Senior ARCHITECTURAL ASSISTANTS required with imagination and experience for contemporary commercial work in London. Holidays honoured this year.—C. H. Elsom, 10, Lower Grosvenor Place, S.W.1. VIC 4304. 6366

W. H. WATKINS, Gray & Partners require ASSISTANTS up to Final Standard for interesting hospital work, pension scheme in operation.—Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 6365

ASSISTANT of Intermediate standard required for varied and interesting work with considerable opportunity to gain experience. Apply stating age, experience and salary required: George Bains & Syborn, A.R.I.B.A., 121, Victoria Street, Westminster, S.W.1. 6292

ASSISTANT, Intermediate standard, required, busy West End office. State age, experience, and salary required.—Box 6046.

ASSISTANT required by Liverpool Architect. Good draughtsman with general experience essential. 6431

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SIEMENS EDISON SWAN RESEARCH LABORATORY
SIEMENS-EDISWAN LIMITED

ARCHITECTURAL ASSISTANT of Intermediate standard and contemporary outlook, required for work on Research Laboratories and Industrial Buildings.

Please write, in the first instance, quoting ref. A/3, giving full details of experience and salary required to: Architect's Department, Siemens Edison Swan Research Laboratory, c/o The Edison Swan Electric Co., Ltd., Cosmos Works, Brimsdown, Enfield Middlesex. 6302

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. 6297

SHREWSBURY. ARCHITECTURAL ASSISTANT (Intermediate standard) required. Practical knowledge of building construction essential. Good prospects for the right man. Excellent offices, work in pleasant area. Comfortable two-bedroom flat with river view available if required. Applications to: R. & D. Hall, Bowdler's House, Town Walls, Shrewsbury. 6308

LEADING Firm of Building Surveyors (City) require JUNIOR ARCHITECTURAL DRAUGHTSMAN, age 22/27. Must be well educated and keen to progress in profession. Box 6314.

SENIOR ARCHITECTURAL ASSISTANT required. Experience in Licensed premises, including interior decoration, an advantage. Apply in writing to Secretary, Benskin's Watford Brewery Ltd., P.O. Box 105, Watford, Herts. 6320

RONALD WARD & PARTNERS require ARCHITECTURAL ASSISTANTS with contemporary outlook and willing to use own initiative. Salary range £600 to £850. Congenial working conditions. Apply 29, Chesham Place, Belgrave Square, S.W.1. Telephone Belgravia 3361. 6322

QUALIFIED ASSISTANT with practical experience required for small busy varied practice. Holiday arranged. Salary £750 to £950. Flat can be arranged if necessary. A. Victor Farrier, A.R.I.B.A., 7, Thornton Hill, Wimbledon, S.W.19. 6323

ARCHITECT'S ASSISTANT required in the Chief Architect's office of a large multiple retail firm with offices in London. Five-day week, pension scheme, dining room available for use of staff. Applicants should state age, qualifications, experience and salary required. Box 6332.

ARCHITECTURAL ASSISTANT required in private practice in central London, capable of surveys, working drawings, details, etc. Exceptionally varied work. Salary £600 p.a. Apply stating age, experience, etc.—Box 6331.

RAMSEY, MURRAY, WHITE & WARD require recently qualified ASSISTANTS, with two to five years' practical experience, to work on interesting industrial and office buildings. Salary by arrangement.—Apply 32, Wigmore Street, W.1. 5929

INTERMEDIATE ASSISTANT required, to run smaller jobs under minimum supervision. Contemporary office and pleasant working conditions. 5-day week. Good prospects for hard worker with initiative. Salary £650—£750 p.a.—Apply Morris de Metz, F.R.I.B.A. CITy 4086. 6227

QUALIFIED CHIEF ASSISTANT required thoroughly experienced in provincial town practice. Salary £800 to £1,000.—F. J. Lenton & Partners, Stamford. 6226

CHIEF ARCHITECTURAL ASSISTANT required for Architects' Department of London Firm of Architects and Surveyors. Holiday arranged.—Write, stating age, experience, and salary required, to Box 6221.

CHARLES B. PEARSON & SON require, both at their Lancaster and Manchester offices, SENIOR QUALIFIED ASSISTANTS, with experience, to be engaged on interesting Hospital and Civic Schemes. Please state salary required. —Application in the first instance to be made to 18, Dalton Square, Lancaster. 6239

HASKER & HALL, L./F.R.I.B.A., require ARCHITECTURAL ASSISTANT, with 4 to 5 years' office experience.—Write or telephone, giving full particulars, including age and salary, to 13, Welbeck Street, W.1 (Welbeck 0061). 5824

ESTABLISHED practice in Charing Cross area requires SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS. Interesting and varied work. Good salaries offered commensurate with experience. Apply giving particulars, Box 6379.

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required. Superannuation scheme. Apply Abbey & Hanson, Chartered Architects, 11, Cloth Hall Street, Huddersfield. Tel. 225. 6384

ARCHITECTURAL ASSISTANTS, up to Final and Intermediate standard, required for design work on home and tropical buildings. Salary according to experience. Apply E. J. D. Mansfield, A.R.I.B.A., Sir William Halcrow & Partners, Stanhope House, 47, Park Lane, London, W.1. 6385

JUNIOR ASSISTANT required, with some office experience. Mainly church work. Apply to Pamela M. Cunnington, A.R.I.B.A., 53, Great Ormond Street, W.C.1. 6387

ASSISTANTS required in West End office in salary range £700—£1,000 p.a. according to experience. Box 6391.

ARCHITECTURAL ASSISTANT, Intermediate-Final standard, required for St. Albans office. Work mainly industrial and hospital at home and overseas. Five-day week. Telephone St. Albans 56011 extension 14 for appointment. 6393

MORRISON & PARTNERS require a QUALIFIED ASSISTANT ARCHITECT for their London Office, to work on industrial projects and new housing developments. Applications to be addressed to 30b, Wimpole Street, London, W.1. 6395

ARCHITECTURAL ASSISTANT with experience required for Design and Contractors office, Manchester area. Intermediate or Final standard. Interesting work of industrial and commercial nature. Salary £800/£850. Apply Box 6399.

GOTCH, SAUNDERS & SURRIDGE require ARCHITECTURAL ASSISTANTS, preferably school trained. Write giving full details to Bank Chambers, Kettering. 6398

ARCHITECTURAL ASSISTANT required, qualified or Intermediate standard, for London office with varied practice. Five-day week. Salary according to qualifications and experience. Box 6397.

ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. standard, required in Engineer's Office of large Brewery Company in the Midlands. Work involves maintenance and alterations of Brewery Buildings, Maltings, Cooperage and Bottling Stores. Sound knowledge of building construction, preparation of working drawings, surveys. State age and salary required. Apply Box 6430.

ARCHITECTURAL ASSISTANTS (Junior and Senior) required by provincial firm in Northern Ireland; housing, hospitals, schools, etc. Contributory pension scheme available. Salary by arrangement. Box 6426.

WELL-KNOWN ARCHITECTS require ASSISTANTS between Intermediate and Final standard in their London Office. Interesting projects. Box 6435

F. W. WOOLWORTH & CO. LTD., Architect's Department, Kensington District Office. Applications are invited for the following appointment:—

ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details.

The appointment is permanent and pensionable. Five-day week. Dining room facilities. Application stating age, experience, qualification and salary to District Architect, F. W. Woolworth & Co., Ltd., 26/40, Kensington High Street, London, W.8. 6396

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REQUIRED immediately. SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS for industrial, ecclesiastical and educational works. Sound knowledge of construction and ability to draw essential. Write or telephone, E. Howard Sadler, A.R.I.B.A., A.M.I.Struct.E., 14, Hadley Road, New Barnet, Herts. BARnet 2191. 6444

LIBRARY OF BARTLETT SCHOOL OF ARCHITECTURE (University College London, Gower Street, W.C.1) requires LADY ASSISTANT interested in Architecture; library quals. and exp. unnecessary; knowledge of typing and some shorthand essential, five-day week and good holidays. Applications to Assistant Secretary of the College. 6446

ARCHITECTURAL ASSISTANT of intermediate standard required in busy London Office. Must be good draughtsman with thorough knowledge of construction. JUNIOR ASSISTANT with some Drawing Office experience also required. Might suit young man having just completed his National Service. Applications to be in writing, stating age, experience and salary required. Box 6247.

ARCHITECTURAL ASSISTANT required, intermediate standard with office experience, varied work, salary £12 to £15 according to ability. Phone: London Wall 3826. 6455

EXPERIENCED and competent DRAUGHTSMAN required in Architect's office in South Kensington. Reply to box number 6452 giving full particulars and salary required.

SENIOR ASSISTANT required in busy West End Office, interesting commercial work and must be prepared to take responsibility. Please write giving details of experience etc. Box 6447.

UNFURNISHED COTTAGE and job for experienced ASSISTANT, Intermediate to Final standard. Edgington, Spink & Hyne, 52, High Street, Windsor. Country practice. Write details. Salary by arrangement. 6434

SENIOR ASSISTANT required in busy West of England Office. Must be fully capable of handling Contracts at all stages. Salary according to experience. *Free use of Car.* Details to Box 6451.

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Candidates must be fully qualified, with sound Office experience and be capable of supervising a small number of junior staff.
(b) ARCHITECTURAL ASSISTANTS. Salary Range. £790—£880
Candidates must be qualified to R.I.B.A. Intermediate standard and have previous Office experience.
(c) ENGINEERING ASSISTANTS (Structural Design) Salary Range £790—£880.
Training and practical experience in design of steel and/or reinforced concrete as applied to buildings essential.
Duties include calculations for and preparation of working drawings for steel and reinforced concrete frames and other constructional details of buildings, under supervision.
Free Travel. Medical Examination. 38 hour week. Good dining club and sports facilities. Applications within 14 days to Recruitment and Training Officer, London Transport, 55, Broadway, S.W.1., quoting vacancy number F/EV 634 (a, b or c). 6449

ARCHITECTS—Jackson & Edmonds—require SENIOR ASSISTANT, ASSISTANT of Intermediate standard and JUNIOR ASSISTANT. Pension scheme. Write stating age and experience to 116, Colmore Row, Birmingham 3. 6432

BRITISH RAILWAYS : EASTERN REGION MODERNISATION PLAN
ASSISTANT ARCHITECT required in the Office of the Architect, Eastern Region, King's Cross Station. Applicants should preferably be qualified, skilled and enterprising in design with a sound knowledge of modern building practices and ability in administration. Salary range £809—£877 per annum. Five-day week and concessionary rail travel. Apply in writing giving full particulars as to age, education and experience, previous positions held and any special qualifications possessed to Chief Civil Engineer, British Railways, Eastern Region, King's Cross Station, London, N.1. 6409

GUILDFORD. ASSISTANT, Intermediate standard, private office. High standard draughtsmanship and sound knowledge of construction. Able to prepare detailed drawings and specifications. Angus McDonald & Partners, 156, High Street, Guildford, Surrey. Guildford 3760. 6408

ARCHITECT, Intermediate standard, required as Assistant to partner Edgbaston, Birmingham office. Varied practice giving wide experience. Five-day week. Holiday arrangements honoured. 6425

ARCHITECTURAL ASSISTANT of Intermediate standard required for busy Worcester Office. Sound knowledge of construction and ability to handle the smaller type of job essential. Salary according to experience. Apply in writing to Llewellyn Smith & Waters, 103, Old Brompton Road, London, S.W.7. 6407

BASIL SPENCE & PARTNERS require qualified ASSISTANTS with some experience for their Edinburgh office. Salary according to experience. Apply to 40, Moray Place, Edinburgh. 3. 6405

WEST END STORE requires young DRAUGHTSMAN for departmental layouts and modernisation. Architectural training and experience in Shop Fittings an advantage. Permanent, pensionable position with prospects of advancement. Please write, stating previous experience and salary required to Box 6403.

PLAYNE & LACEY urgently require ASSISTANTS for varied and interesting work on new University Buildings. Five-day week. Salary by arrangement. Ring WHI 2552 for interview, or write 19, Queen Anne's Gate, Westminster, S.W.1. 6423

INTERMEDIATE and JUNIOR ARCHITECTURAL ASSISTANTS required for Cotswold Office with varied practice. State age, experience and salary required. Pyle & Saint, Chartered Architects, Thomas Street House, Cirencester, Glos. 6270

ARCHITECTURAL ASSISTANT, Final or near Final standard, with office experience, required by F. G. Frizzell, 80, Portland Place, W.1. Please write, or phone LANgham 1732. 6402

ASSISTANT between Intermediate and Final R.I.B.A. standard required immediately, Architect's West End office. Five-day week, lunch vouchers, varied work. Phone TEMple Bar 3765 for interview. 6401

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ARCHITECT (32), married, public school, school trained, A.R.I.B.A., 1953, requires partnership (or position leading to one in agreed period) in London or provinces. Limited capital. Unlimited energy and ambition.—Box 5865.

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ACCOUNTANT/OFFICE MANAGER, with Architectural experience, seeks responsible post; London or Provinces.—Box 6222.

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THE WALPAMUR COMPANY will shortly have vacancies in their London and Bristol Interior Design Studios. Candidates must be experienced in perspective watercolour rendering and trained in Interior Design.—Write in confidence to The Manager, Interior Design Department, The Walpamur Co., Ltd., Darwen. 6249

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R.I.B.A. and T.P.I. EXAMS.—Stuart Stanley (Ex. Tutor Sch. of Arch., Lon. Univ.), and G. A. Crockett, M.A./B.A., F./F.R.I.B.A., M./A.M.T.P.I., prepare Students by correspondence, 10, Adelaide Street, Strand, W.C.2. TEM 1603/4

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