THE ARCHITECTS' JOURNAL

standard contents

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

No. 3053] [VOL. 118

THE ARCHITECTURAL PRESS

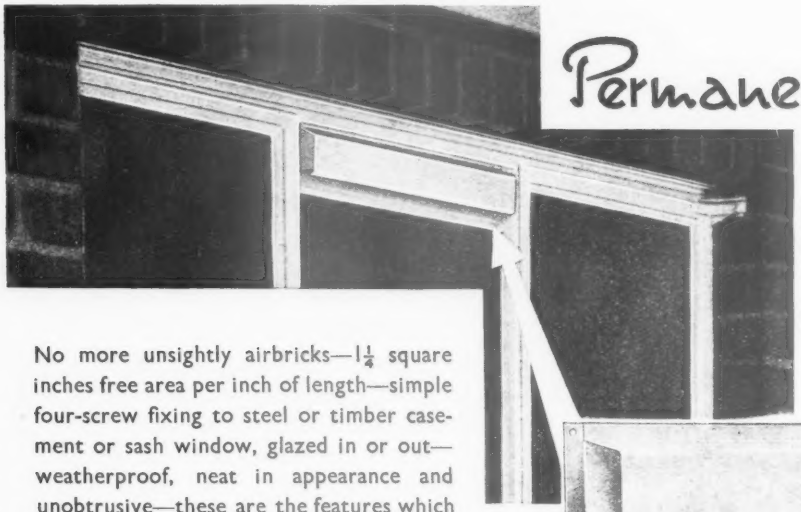
9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1. 'Phone: Whitehall 0611

Price 1s. 0d.

Registered as a Newspaper.

★ 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, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 5491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architect and Surveyors. 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, London, S.W.1.	Abbey 7232
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. 67, Oxford Street, W.1.	Gerrard 0021
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215



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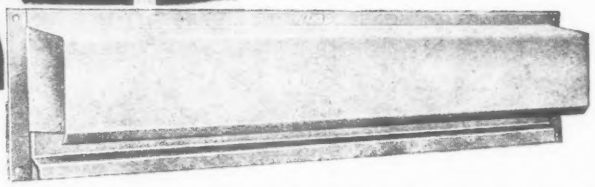

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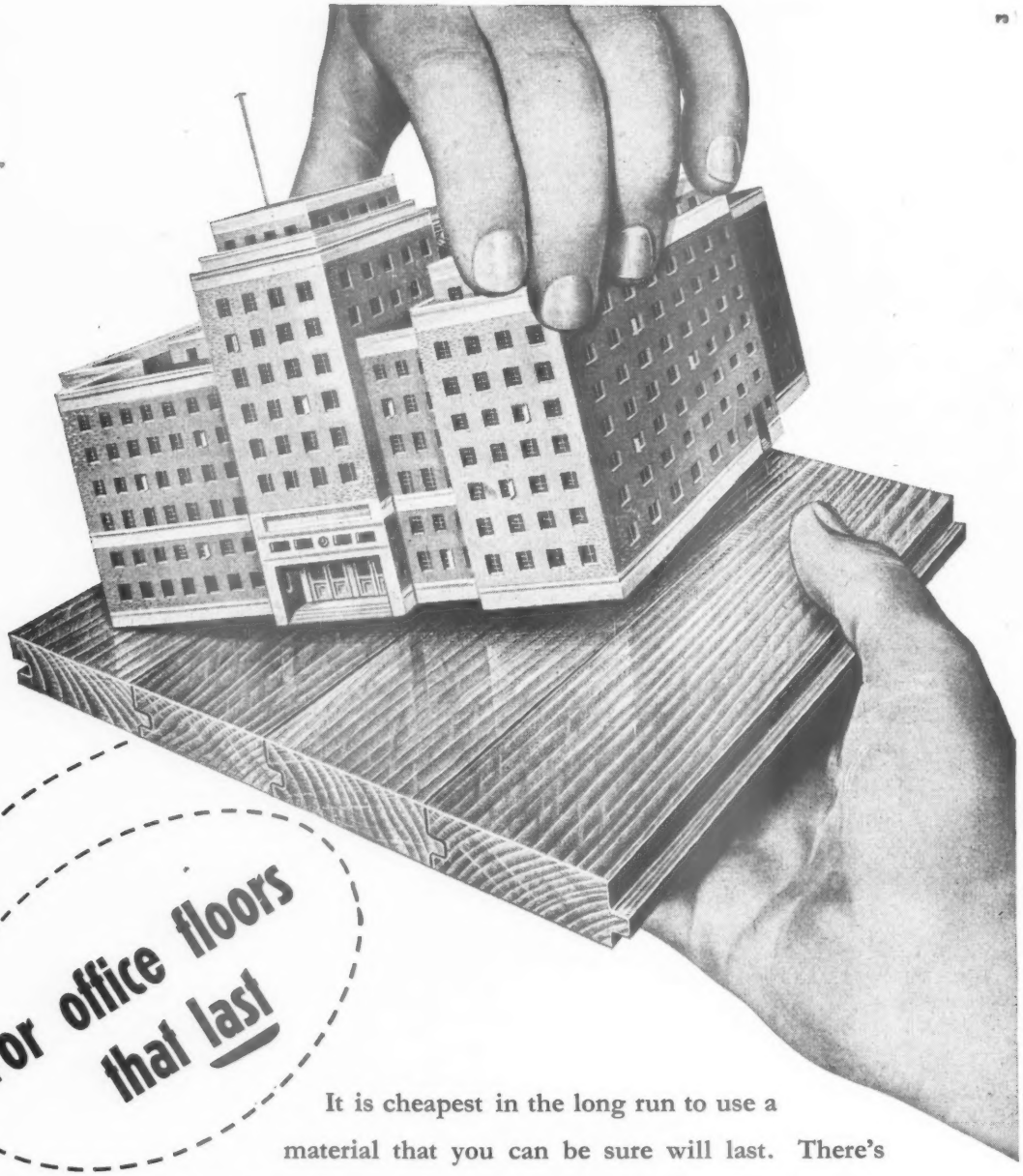

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P34

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P.4

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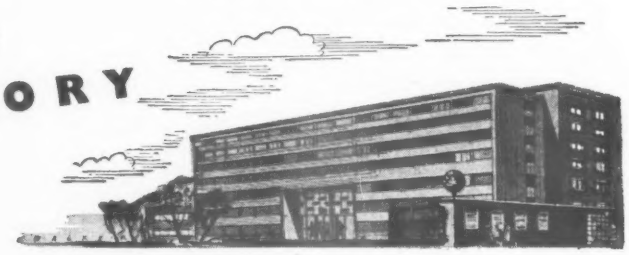

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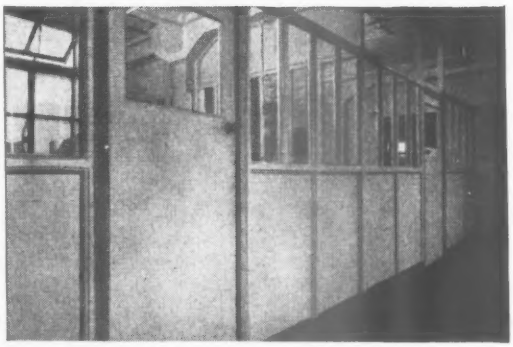

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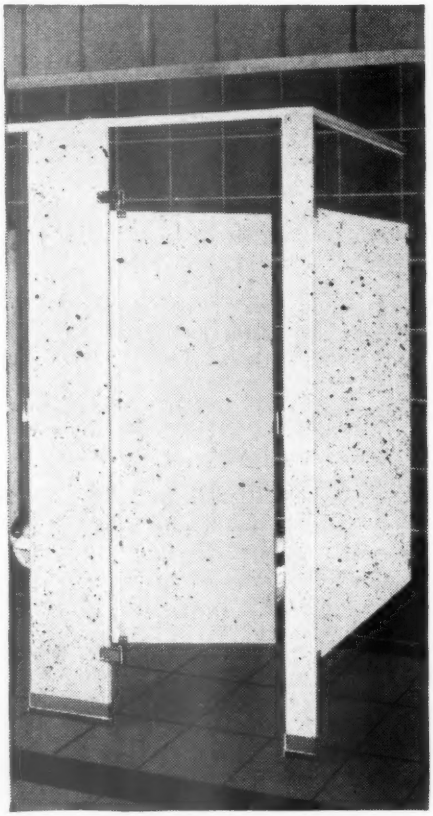

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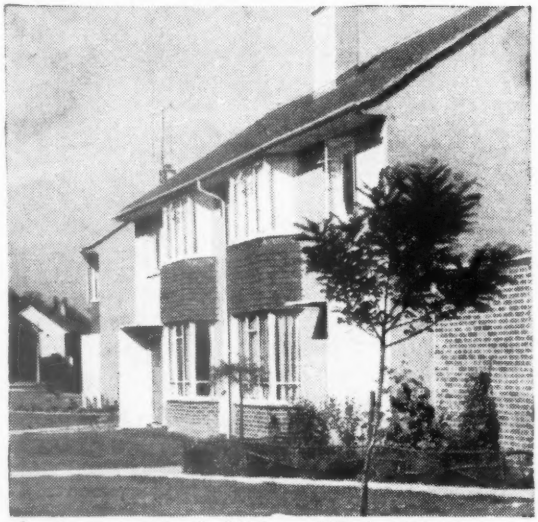
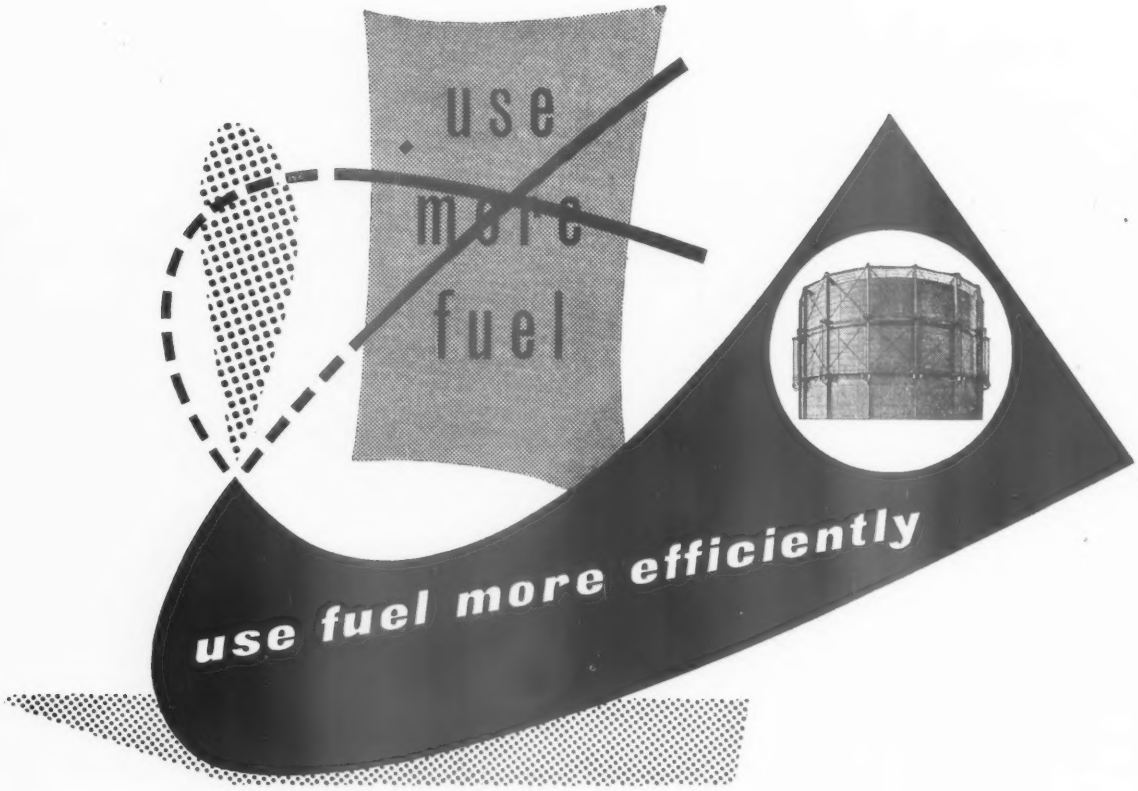
Housing contract for the Ministry of Works, Newbury



Housing contract for the Ministry of Works, Aldermaston

Private houses at Edgware



Cut-throat salesmanship has little relevance to present day publicity for a fuel industry. If there is to be any possibility of achieving the improved standards of heating visualised in post-war building studies and reports, the resources of each fuel industry must be used to solve those parts of the total problem of fuel usage to which they can make the most effective contribution.

The recommended uses of Gas in the domestic field are clear cut. It is normally complementary to solid fuel for general winter space heating and water heating, representing the greatest economy in fuel when used for supplementary and intermittent space heating, summer water heating, all-the-year-round cooking, clothes washing and drying, and refrigeration. Used for these purposes it makes the most efficient use of the coal required to produce it.

When it comes to larger buildings, the choice of fuel is inevitably decided to a greater or lesser extent by such factors as: the number of hours a day, and days a week, for which heating is required; the flexibility of control required; the amount of space available for fuel storage; and the importance which is attached to the question of labour-saving.

But, whether it is the heating of individual houses or large public buildings, Gas and Coke have their parts to play and the Gas Industry is anxious to co-operate to the full with those who desire to find the best way of achieving improved standards of heating with the most economical use of basic fuel resources.

Where to go for information about Gas

If you are considering the use of Gas, however tentatively, your first move should be to get in touch with the Gas Undertaking serving the area in which the job is situated. Through it you have access to the combined technical resources of the entire Gas Industry. The following list gives the addresses and telephone numbers of the Area Boards. Where there is any uncertainty as to which Area Board is concerned, The Gas Council will be pleased to give you the correct address.

Scottish Gas Board: 26, Drumsheugh Gardens, Edinburgh, 3. Edinburgh 34331/5. *Northern Gas Board:* 30, Grainger Street, Newcastle-upon-Tyne, 1. Newcastle-upon-Tyne 26101. *North Western Gas Board:* Bridgewater House, 60, Whitworth Street, Manchester, 1. Manchester Central 8121. *North Eastern Gas Board:* Bridge Street, Leeds, 2. Leeds 32571/8. *East Midlands Gas Board:* Beverley House, University Road, Leicester. Leicester 23201/5. *West Midlands Gas Board:* 6, Augustus Road, Edgbaston, Birmingham, 15. Edgbaston 3616. *Wales Gas Board:* 1 and 2, Windsor Place, Cardiff. Cardiff 28621. *Eastern Gas Board:* 2, The Abbey Garden, London, S.W.1. Trafalgar 5373/7. *North Thames Gas Board:* 30, Kensington Church Street, London, W.8. Western 8141. *South Eastern Gas Board:* Katharine Street, Croydon, Surrey. Croydon 4466. *Southern Gas Board:* 164, Above Bar, Southampton. Southampton 76362. *South Western Gas Board:* 9a, Quiet Street, Bath. Bath 60411/5.

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		per sq.	per sq. yard	per sq.	per sq. yard	per sq.	per sq. yard
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12¼"	4"	100	9.0	98	8.8	1,100	99
11¼"	5"	109	9.8	107	9.6	1,200	108

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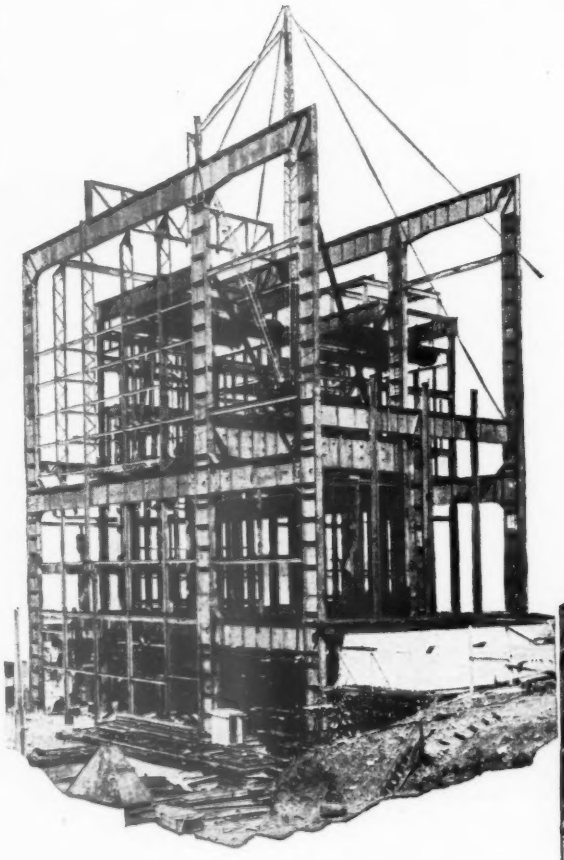

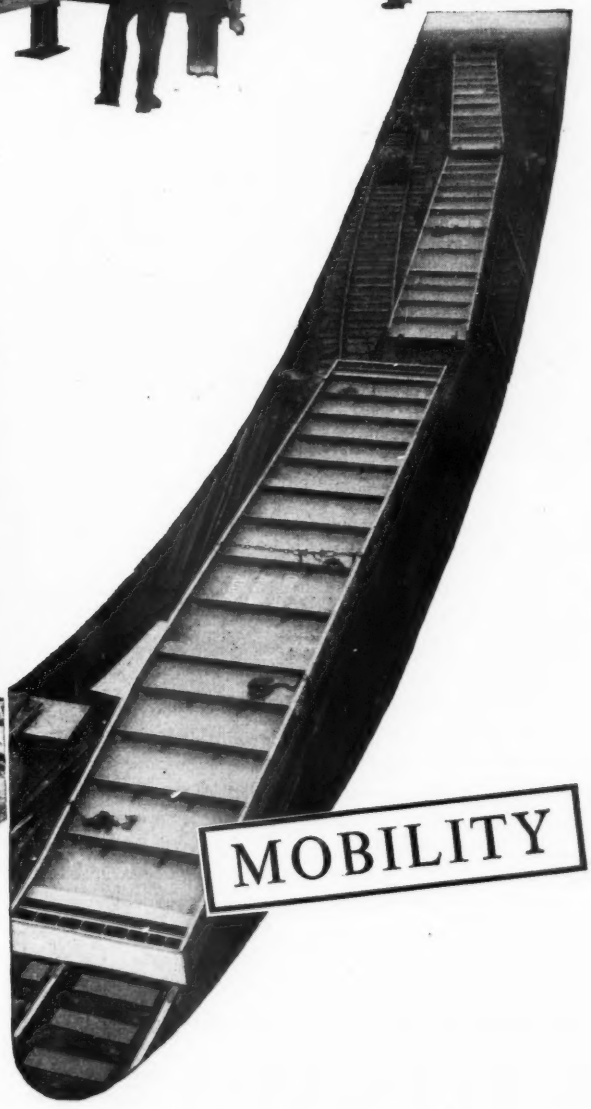

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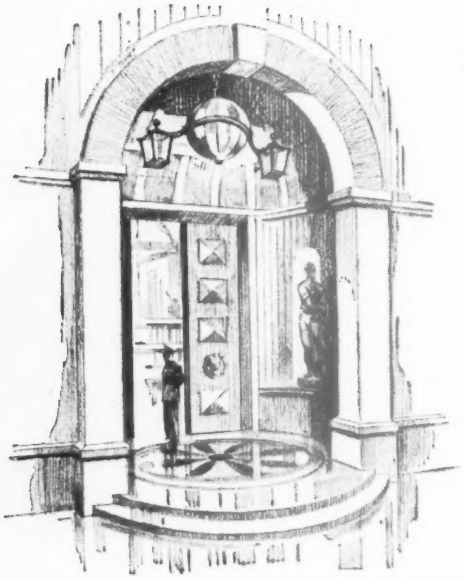

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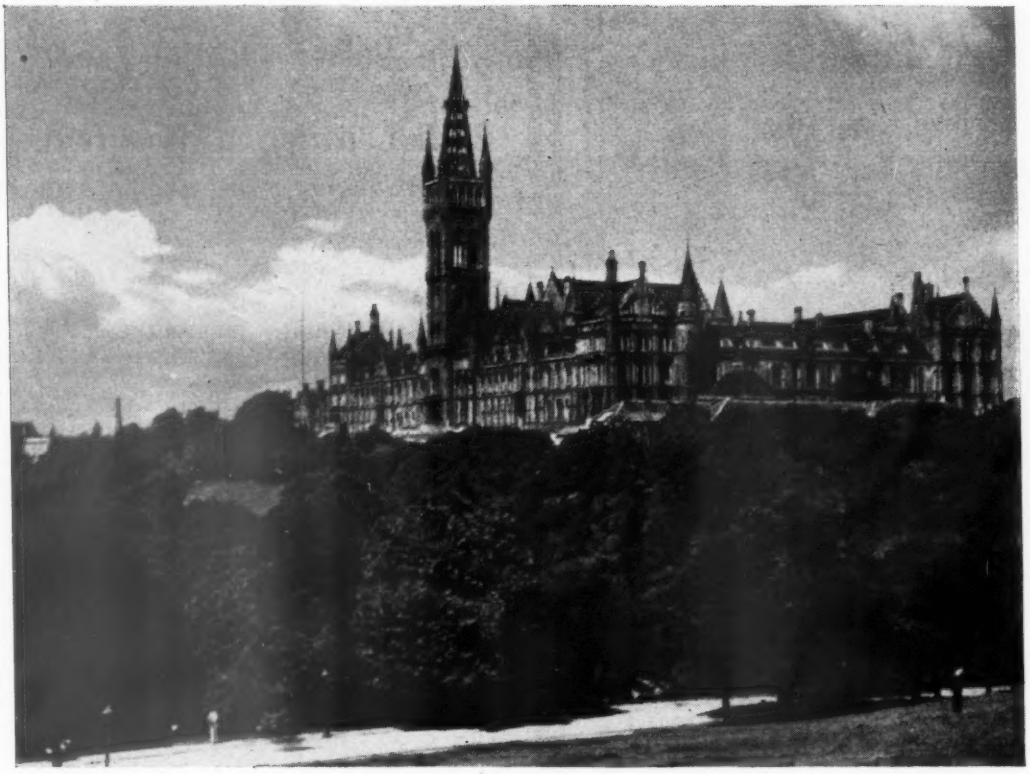

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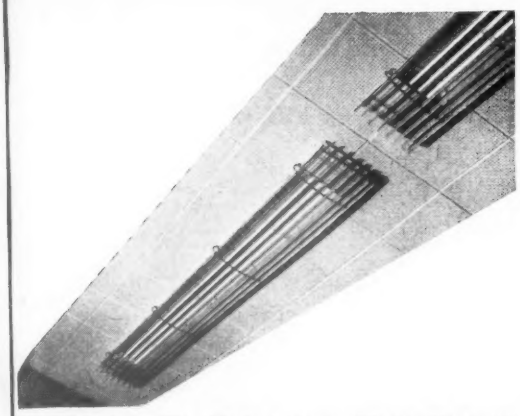

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Architects :
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Above :
Lighting fixtures with satin brass framing, and sycamore wood slats.

Right :
A revolving door, special features of which are the wide armour-plated glass leaves, satin chromium framing, and panels of anodised aluminium.

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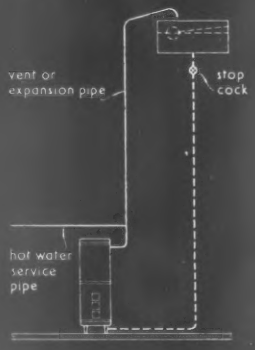
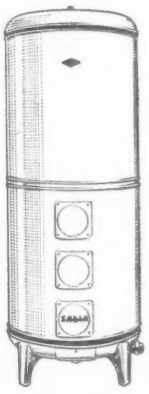


SADIA AUTOMATIC ELECTRIC WATER HEATERS : FLOOR MOUNTED PRESSURE TYPE
40 gallons 50 gallons 60 gallons capacities



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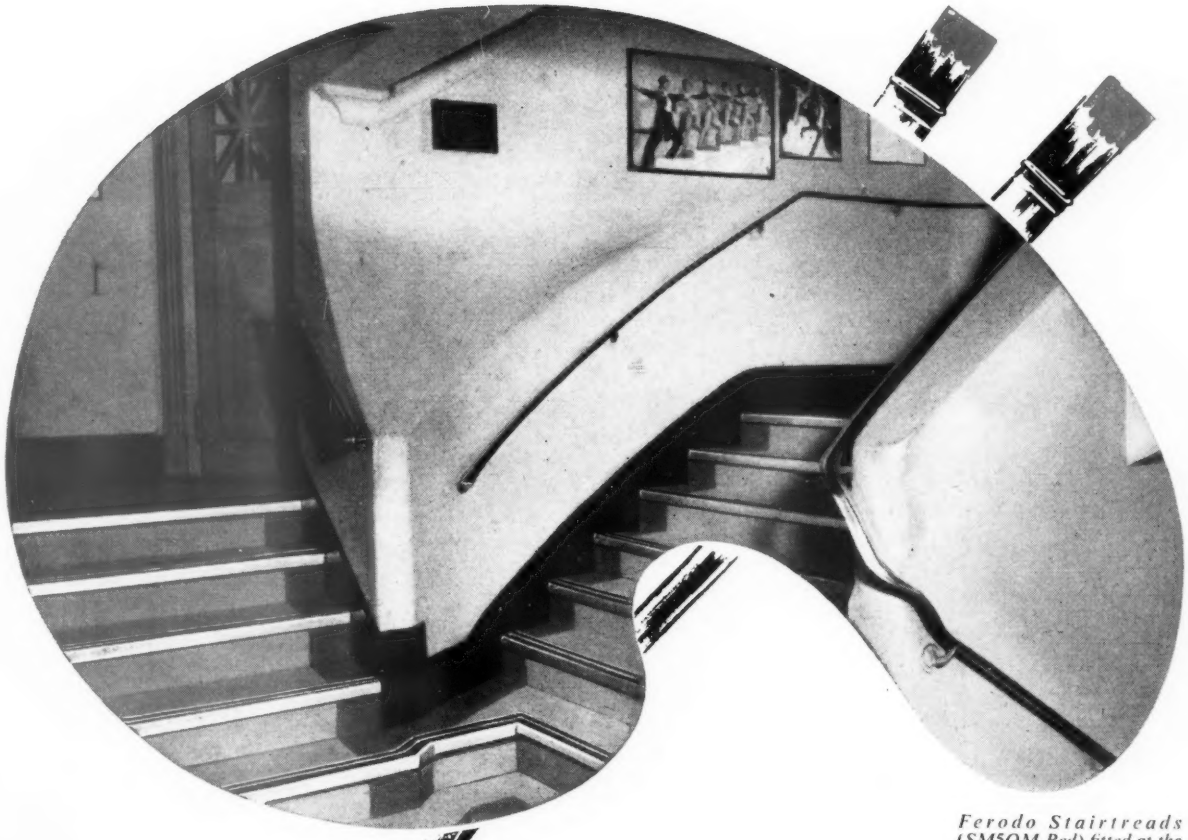

Ferodo Stairtreads (SM5OM Red) fitted at the Windmill Theatre, W.1. Flooring Contractors: Catesby Limited. (Photo by courtesy of Windmill Theatre Ltd.)

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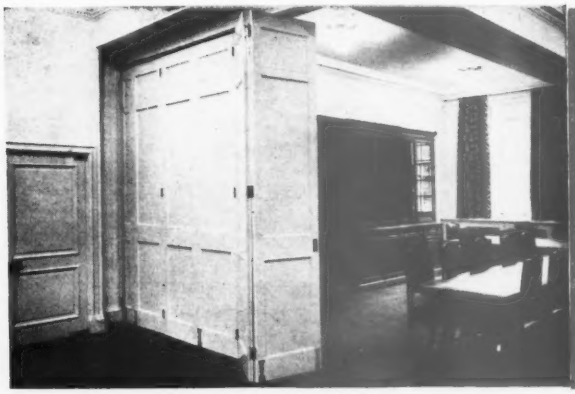

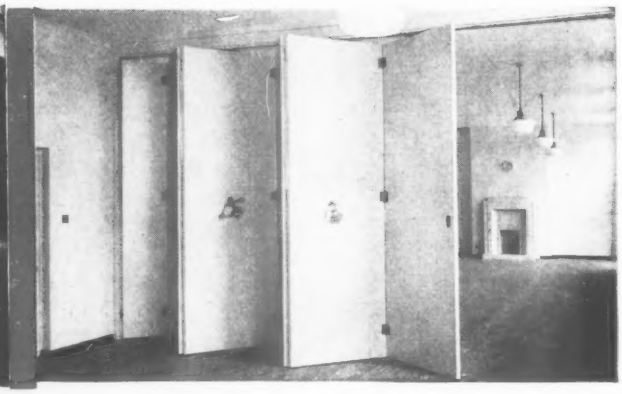

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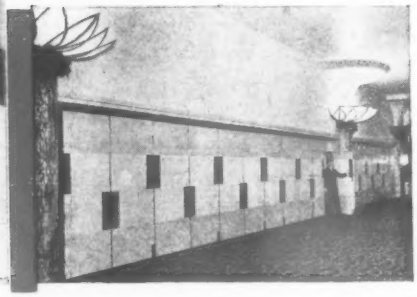

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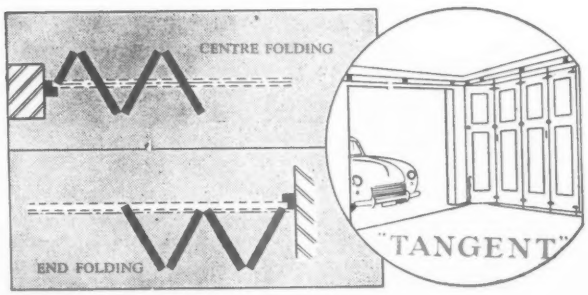

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THE ARCHITECTS' JOURNAL

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No. 3053 September 3, 1953 VOL. 118

Subscription rates: by post in the U.K. or abroad, £2 10s. 0d. per annum. Single copies, 1s.; post free, 1s. 3d. Special numbers are included in Subscriptions; single copies, 2s., post free 2s. 3d. Back numbers more than 12 months old (when available), double price. Half yearly volumes can be bound complete with index in cloth cases for 25s. 0d.; carriage, 1s. extra.

MINISTERIAL COMMON SENSE

What a fuss and pother there has been over the proposed City offices known as Bucklersbury House. No doubt you have imagined the design as something more Corb. than Brazil, or of more bankers-Georgian dullness than even No. 1, Cheapside, shown over the page (your choice depending, of course, on which side of the æsthetic fence you crouch). The Lords have debated, the RFAC criticized, eminent architects condemned and, finally, the Minister of Housing and Local Government, Harold Macmillan, has pronounced (as reported in last week's JOURNAL): "No grounds for intervention."

Now, leaving æsthetics out of it, what were the objections of the RFAC? That the building would be too high in relation to St. Paul's Cathedral and the City skyline, and that the building was too large for the site. Let's take the last point first. The line drawing overleaf shows the relationship between St. Paul's (the one with the hump, silly) and Bucklersbury House. You'll never see them like this, of course, but at least it shows that Bucklersbury, being on ground twenty feet below St. Paul's, only tops the proposed immediate neighbour to St. Paul's, the Bank of England offices, by about another twenty feet, and it is another two hundred yards further away. (Maybe the Bank's too tall, but that's another story.)

*

One might well argue that Bucklersbury, being a building which clearly expresses its frame and glass and stone cladding, will compete less, as regards bulk, than the mock load-bearing mass of the Bank of England. And this, surely, is where contemporarily designed framed structures score, by acting as a foil, a contrast, to the great mass of load-bearing traditional work—such as, in this case, St. Paul's. Bucklersbury will, of course, heighten the City skyline for the man (literally) in the street. As far as the City churches are concerned, the skyline is already too high—the Victorians achieved that. Might not the solution be to make a bold move and allow buildings (save around St. Paul's) to go very much higher (and further apart) so that the City churches can come into their own again as small gems in big settings? This, the Bucklersbury design, illustrated in this issue, is well on the way to achieving.

*

As regards density on the site, according to the Minister, the scheme does not conflict with total plot ratio of 5 to 1 (6 to 1 on sites over one acre with open layout plan) which was laid down by consultants Holden and Holford in their plan for the City, and the site is more than a quarter of a mile from St. Paul's and outside the area of special control over the placing and height of buildings. However, the RFAC is not concerned with approving principles but with judging each case, as it comes along, on its merits.

*

Even if the RFAC has now to accept a bulkier building on the site than it felt was wise, the two years of negotiating between architect and Commission and planning authorities will not have been wasted if the architectural qualities of the building shown in the illustration can be maintained in the event. They are a great improvement on other recent City architecture, both projected and constructed.

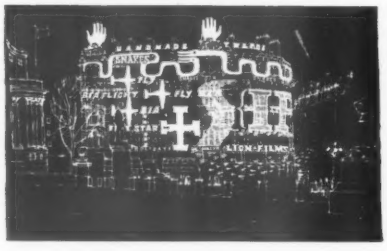
MORE MACMILLINERY

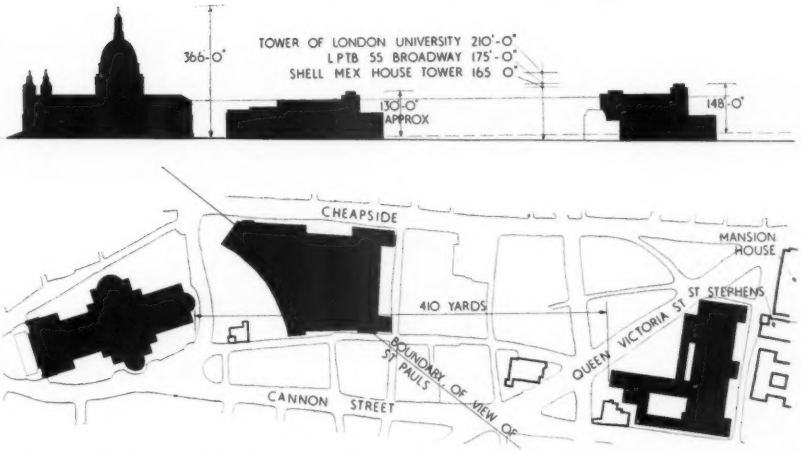
The Minister has also published his decisions on the advertisers' appeals against having their neon signs banned from Trafalgar Square—and at first sight they are rather inconclusive. The whole basis of decision seems to have been confused from the outset by the fact that, while Mr. Macmillan found himself in "broad agreement" with the City of Westminster in regretting the appearance of advertisements in "this

historic square" (how old is historic, anyway?), he felt bound to have regard for the fact that these signs are now accepted as part of the London scene; and, further on in the same letter, he concludes that some display of night-signs need not be excluded if they are reasonably inconspicuous by day.

*

Now Mr. Macmillan really can't have it both ways, and his two provisos make nonsense of the original absolute objections. But they also suggest that Mr. Macmillan is being more broadminded than the City of Westminster on this matter, for these provisos would, in fact, make it possible for Trafalgar Square to keep what little character it has by day, and to become a blaze of light by night. A pair of sketches by Gordon Cullen, which the JOURNAL published some time back, and are reproduced, much reduced below, show how this could be achieved, and may—who knows?—have been brought to the Minister's notice by someone. In the meantime, the immediate prospect for Trafalgar Square is dim, with one of the signs banned outright and others permitted only for limited periods of time, pending discussions. But the long-term prospects, if the principles enunciated by the Minister are intelligently applied, are better, and the problem should be soluble in such a way as to satisfy the advertisers, the defenders of the Square's amenities, and the rest of us who would hate to see this popular centre plunged into nightly gloom.





Above, block plans and elevations showing the relative positions, and heights of St. Pauls, left, the proposed Bank of England offices, centre, (also known as redevelopment unit No. 1, Cheapside; architect, Victor Heal and Smith) and Bucklersbury House, right, designed by Owen Campbell Jones. Below, the Bank of England offices. Bottom, a sketch of Bucklersbury House with the Mansion House in the foreground.

A Stronghold Breached

The first design in a contemporary style for that stronghold of conservatism, the City of London, is shown above. It is contemporary not only in the simple expression of structure and function in the elevations and in the avoidance of period frills, but also (and this, perhaps, is an even greater triumph) because the design is based on an open plan. For once perimeter development has been abandoned and the gloom of small internal courts and dismal areas largely avoided. The war-time hopes that, as a result of the blitz, the opportunity would be taken to disentangle much of the conglomeration and tangle of the City's streets and buildings have, in recent years, largely been dashed. The design above, by Owen Campbell Jones, of the much-discussed block of offices known as Bucklersbury House is a distinct step forward. The model shows the building viewed from near the Mansion House, with the Church of St. Stephen's, Walbrook, on the left. The design has been generally approved by the LCC and the City Corporation, but rejected on grounds of planning density by the Royal Fine Art Commission who have, however, advised on the elevations. The design has not been completed in detail, but as it stands it can be assessed as a straightforward and simple expression of the building's function of which the architect, the owner, the future occupants, and London, may well be proud. For further views of Bucklersbury House see page 277.

OUTSIDE SCRUTINY

Now that the Banks drowse behind their brazen grilles and there are more stockbrokers in Capri than Throgmorton Street, even *The Economist* has found time to relax, and let its flashing pince-nez pass sternly over our professional field in an article entitled "The Architects' Dilemma." (Yes, I know it's the July 25 issue, but weeklies have to take their turn in the In-tray.) It says nothing that hasn't already been discussed in the professional press, but it encourages me to find that *The Economist* thinks the whole subject is of sufficient general interest to be worth fairly full treatment, and it is good to be reminded that all our arguments about education and whether architects should be directors of building firms isn't the private affair that some of us seem to think.

A FAR-FROM-SILLY-SEASON BOOK

Having adopted a pretty elevated tone of voice in discussing Martin Briggs's book on Wren a few weeks ago, ASTRAGAL will have positively to leave the ground to do justice to John Summerson's *Brief Life** of the same great man. A new Summerson would be an event in any case, but this seems to be a particularly good one. It is a compact study of the great Surveyor General, not only as architect, but in all the aspects of his all-round genius, written in Mr. Summerson's most straightforward manner.

*

Wren the scientist gets a really excellent showing, the practical and mathematical foundations of his thought are kept clearly in view, and some intelligent hypotheses are put forward for his turning from astronomy to first, anatomy, and then to architecture. For a book not primarily concerned with the buildings there are some extraordinarily acute and sensible discussions of the architectural qualities of his designs. Above all, it seems informed throughout by a real understanding of the man himself.

*

Don't give it to your friends for Christmas, give it to yourself this weekend and read it before next Monday.

ASTRAGAL

* *Sir Christopher Wren* by John Summerson. Collins "Brief Lives" series. 8s. 6d.

POINTS FROM THIS ISSUE

The Editors

AN EXAMPLE SET

THE City Corporation, the LCC, the RFAC and the architect Owen Campbell Jones all deserve to be congratulated on the result of the intricate processes of designing, advising, consulting and approving which had to be undergone in order to produce a design for Bucklersbury House. The not unattractive result is shown on the opposite page, and now awaits the final approval of the client.

It has taken *four years* to achieve.

It is not often that the JOURNAL feels prompted to argue on behalf of the wealthy private developer, but in this case some protest should surely be made. Over £30,000 have apparently been paid by the client in professional fees over the four years in order to produce a mere sketch design. An expensive site has been bought and not even a trial-hole for the foundations has yet been dug, no licence for such trivial expenditure having been granted. It has taken two years for the RFAC and the architect to reach general agreement on the design—an example of patience in negotiation which can only be matched by the patience of the client, one A. V. Bridgland.

It is no doubt difficult for some people to feel much sympathy for the trials of millionaire clients, but our main concern, surely, is to get the City rebuilt (when other priorities are satisfied) and the office workers working in healthier and more efficient surroundings. This aim fits in with the aims of client Bridgland. Other property-owners in the city, however, may not have his monumental patience, and may feel tempted to invest their money in property in some place where a slightly quicker return on their investment can be expected.

So, with the example on the opposite page of the relatively high standard of design which four years negotiation can achieve, is it not possible for architects, planners and administrators to profit from this four-year lesson, and to cut away the miles of red tape and achieve similar, or even higher standards of design, in terms of *months* instead of years?

The present procedure is not *planning* in its true sense, even though it may be called such, and if failings such as these continue to be tolerated (and lessons not learnt) the term planning will become even more debased.

A FORUM FOR READERS

Overleaf we are taken to task by an eminent, but anonymous, official architect for publishing an article in the JOURNAL of July 16 which proposed a new salary scale for architects in

public offices. The main criticism implied is that we were irresponsible in so doing. Perhaps we were, but that is a risk we gladly run if by so doing we can provide a debating ground, in print, for the profession. There are many vital issues in addition to the question of salaries which architects should now be discussing amongst themselves and forming opinions upon, and there are all too few places, and too little time, in which to do it. If the JOURNAL can help to form sound and progressive opinion we can bear with cheerful resignation the charge of irresponsibility.

A local authority architect put forward a proposal for a new salary scale for salaried architects in the JOURNAL *of July 16. He proposed that such architects should receive a proportion of the fees "saved" by not employing architects in private practice. We now put forward the case for the local authority, as seen by an architect (he must remain anonymous), who has spent the greater part of his life in local government and public administration.*

SALARIED ARCHITECTS

THE CASE FOR THE LOCAL AUTHORITY

THE author of the article in the JOURNAL for July 16 introduces a novel concept of local government and public administration, which I, who have spent the greater part of my professional life as an architect in the service of both, find either unbelievably disingenuous or utterly irresponsible. If I understand him aright, one of the main premises of the writer's proposals is this:—

> *Local authorities and other public bodies would have to pay x per cent. of public moneys more in fees to private practitioners than they do in salaries to their salaried architects for their architectural work. This x per cent. is* net profit *and that part of it which is in excess of* 20 *per cent. should be shared proportionately among the salaried architectural staff.*

Such an argument strikes me as being utterly lacking in a sense of public responsibility, professional ethics, and reality. The kindest comment I can make on it is that it emerges from ignorance of the basic principles of public administration and from confused—and somewhat greedy—thinking. Firstly, the writer would appear to ignore that the funds from which his salary—and major pension contributions—are paid are public moneys and, therefore, trust moneys. These moneys his employers, as trustees, have to use in the most economical, efficient and productive manner *for the benefit of the community*, who have entrusted them with their administration. Secondly, the full-time salaried employment of a professional and technical staff by every public body the world over is expected and intended to cost less than the employment of independent practitioners. And, thirdly, it borders on the grotesque to reckon as *profit* the difference between what a local authority pays its architectural staff and what it would have to pay in fees (according to the RIBA Scale of Charges) to private architects for the same work. To designate this difference as *profit* is to distort and stretch the meaning of the word beyond recognition. If local government architects are to share in these *profits*, why should not town clerks also take a rake-off on the same basis of computation of the solicitors' and barristers' fees that would have been charged by independent practitioners? Why should not the Medical Officer of Health not have his rightful portion of the fees that would have been paid to a private consultant? And joining the queue for this bountiful share of public moneys would be the engineer, the surveyor, the public analyst, and Uncle Tom Cobley and all!

The publication of this article in a responsible professional journal and the indication that its proposals have received wide support fills the older official architect with apprehension as well as surprise. In the first place a journal, which last year boasted a team of guest editors of high rank in official architectural practice, takes seriously an utterly fantastic and irresponsible proposal. To support it, figures relating to a department with an architectural staff varying from 4·22 to 9·33 in number are quoted, which not only include a vital element of cost, admitted to be "probably low," but which are not even arithmetically accurate. This is surprising. The fact that this unrealistic idea is advanced by one who is presumably a qualified architect with some responsibility for the expenditure of large sums of public money, supported by a considerable number of other architects, presumably in similar positions, fills one with alarm. Can it be possible that members of our profession holding positions of public trust are so lacking in responsibility? Are these the men for whom we are fighting to be recognized as heads of independent departments?

The immaturity of the proposition is reflected in the suggested scale of salary ranges, which betray the author's unfamiliarity with the intricacies of the subject. There can be no such person as a "Junior Architect, unqualified," as the designation of architect (even with "Junior" preceding it) is restricted by law to the qualified; neither is there an "RIBA scale for Borough Architects."

The blithe announcement that "if there is enough support for the suggested scales or an amended version of it, a Salaried Architects' Association will be formed for its establishment," and the promise that it will also "try to restrict entry into the architectural profession" emphasizes the shallowness of the thought behind these proposals. The idea that a newly formed association would have the competence to negotiate the proposed salary scales—restrospectively, too!—and control entry into the profession, raises false hopes in the uninitiated. It has obviously been put forward without any serious study of its implications. A few moments of consideration of the structure and organization of the negotiating machinery in operation in central and local government and in the nationalized industries and services, would quickly reveal the long and hard way that lies ahead of any new professional association before it is able to obtain recognition as a negotiating body. Without such recognition, it can achieve nothing. As to restricting entry into the profession, this would be a novel aspect of our civil liberties! Who is going to wield the enormous power of deciding, and by what tests, who shall be or shall not be an architect? Presumably, a committee of the Salaried Architects' Association, to whom, by a wave of its chairman's magic gavel, the ARCUK, the BAE and the RIBA would become subservient overnight.

I would in all seriousness urge those who are inclined to commend the proposals not to blast their claim for higher salaries out of court by founding it on such completely unrealistic and arbitrary premises, or to adopt an attitude inconsistent with that sense of public responsibility which they are expected to display as members of a great profession holding positions of public trust.

COMPETITION

Awards for Kampala Offices

The first prize for the design of a headquarters office for the Uganda Electricity Board at Kampala, Uganda, has been won by E. I. Graaf, of Johannesburg. The building is to be five storeys high and will cost approximately £350,000. The second prize of £250 was won by Thomas Peatfield. Joseph Mayo and Geoffrey Bodgener, of London.

Church for Edinburgh

The Church of Scotland Home Board invites architects resident in Scotland to submit designs in competition for a church and ancillary buildings for a site at Sighthill, Edinburgh. There will be five prizes—£750, £450, £300, £200 and £100. The assessors will be Professor Robert H. Matthew, Harry Taylor, architect to the Church of Scotland Home Board, and the Rev. Professor J. G. Riddell, Convener of the Church of Scotland National Church Extension Committee. The closing date for submission of designs is 12 noon, Saturday, January 30, 1954, and the last date for questions is Thursday, October 15, 1953. Competition conditions and a plan of the site may be obtained from the Rev. Ivan F. Tibbs, The Church of Scotland Offices, 232, St. Vincent Street, Glasgow, C.2, on payment of a deposit of £2 2s., which will be returned on receipt of a *bona fide* design, or on the return of the competition documents at least four weeks before the last day for the submission of designs.

SCR

Architects Visiting USSR

A party of ten British architects, town planners and students left for a two to three week visit of the USSR on August 29, as guests of the Union of Soviet Architects. The party flew to Prague and from there to Moscow. The itinerary will be arranged by members of the party and will probably include some of the big reconstruction centres. The party includes:—C. C. Handisyde; A. D. Jones, director of the Birmingham School of Architecture; B. Lubetkin, lecturer at London University; Colin Penn, lecturer at the AA; F. P. Tindall, chief planning officer, East Lothian; R. S. Ellis, Scottish Special Housing Association; Nares Craig; C. R. Whittaker, president of the Architectural Students' Association; F. R. Yerbury, director of the Building Centre, and F. R. S. Yorke.

Houses at East Kilbride receive Saltire Society's Award

The four-apartment 950-sq. ft. semi-detached houses, above, are one of six types built in the Murray 1st development area at East Kilbride. The 206 houses in this area, which are the first permanent houses in the new town, received the Saltire Society award (see page 252, for August 27). There are also 98 flats on this site, of 23·1 acres, which has a density of 50 persons to the acre. The new town will eventually have about 14,000 houses. The Development Corporation architect when the houses were designed was Donald Reay; architect-in-charge, R. C. Stones.

BUILDINGS IN THE NEWS

The Schindler System Used for Mineworkers' Houses

The Schindler system (precast inner skins and partitions, traditional exterior) is being used to build 434 houses for the Coal Board at Park Lane, Biddulph, near Stoke-on-Trent. Below, one pair of the first twelve houses to be completed, with 3 bedrooms and 844 sq. ft. in area. Site area, 34,051 acres; density, 49·5 persons per acre. Contract price, £1,420 per house. Designed by Venables and Williams.

RIBA

Architectural Photography

Between 80 and 90 entrants have sent in over 300 photographs from which a selection will be made for the exhibition to be held at the RIBA headquarters, between October 9 and 29.

SCOTLAND

Progress in New Towns

Over 7 hundred houses were completed in the new towns of East Kilbride, West Lanarkshire and Glenrothes, Fife, in Scotland in the year ending March 31. At East Kilbride the number completed was 458, making 801 completed between 1948 and 1953. At the end of March 1,326 houses were under construction and factory space amounting to 493,000 sq. ft. had been completed. Glenrothes had 270 houses completed during the year, bringing the total to 336. There were 531 houses under construction at the end of the year.

LMBA

Brains Trust

The general meeting of the LMBA on September 9 will take the form of a brains trust to consider questions relating to current problems in the building industry. The professional side will be represented by Charles Woodward and R. H. Francis. The contractors' side will be represented by D. F. Woodbine Parish (of Holliday & Greenwood Ltd.) and S. J. Gosland (of Gee, Walker & Slater Ltd.). The question-master will be I. M. Leslie, editor of the *Builder*. The meeting will take place at Derry & Tom's restaurant, Kensington High Street, W.8, at 2 p.m. The meeting will be preceded by a lunch, at 1 p.m.

NEW ZEALAND

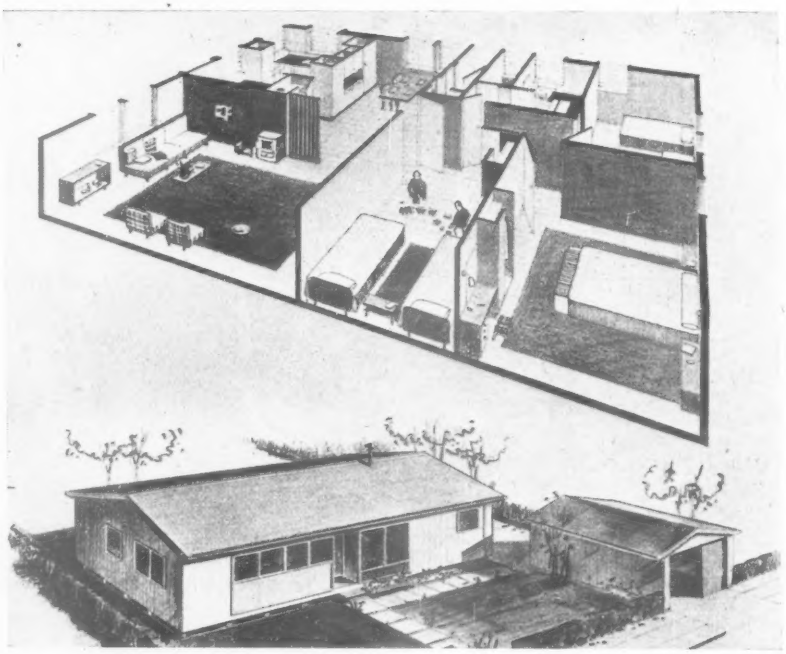
Housing Conference

The provision of sets of plans and specifications for private house builders at a cost of not more than £5, was one of the suggestions put forward at a recent housing conference convened by the New Zealand Government. Over 200 people, representing all sections of the building industry and financial interests, met at Wellington to discuss the problem of how to produce more houses at a lower cost. It is estimated that New Zealand will need 20,600 houses each year for the next ten years. The average rate of building for the last three years has been 16,000 houses per year.

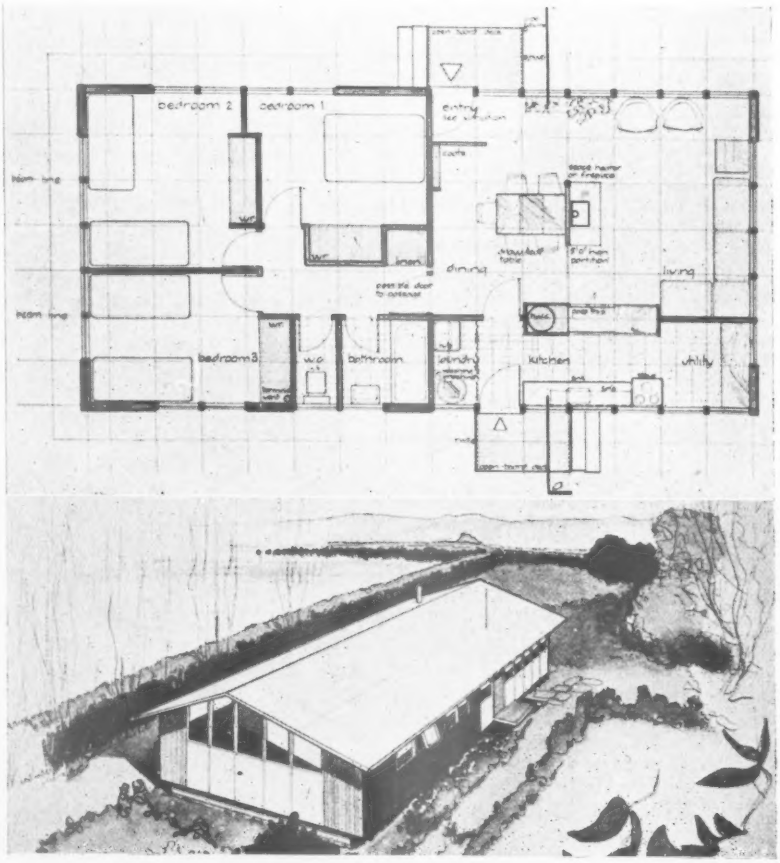
The proposals put forward by the government included the following:—A mortgage guarantee scheme, by which the government would provide the difference between the proportion usually lent by private institutions and 90 per cent. of the valuation of the new house; extension of the terms of housing loans to 35 or 40 years; assistance to private building organisations to develop housing schemes; encouragement to those wishing to build their own houses and employers building houses for their employees; reduction in the price of land; relaxation of the minimum area of 32 perches in suitable rural areas.

The New Zealand Government has erected four pairs of houses at Auckland, Wellington, Dunedin and Christchurch (see opposite) to demonstrate that up to £400 can be saved on an average-sized house of about 900 sq. ft. by the dual use of space and the economic use of materials. A competition has also been held for the design of low

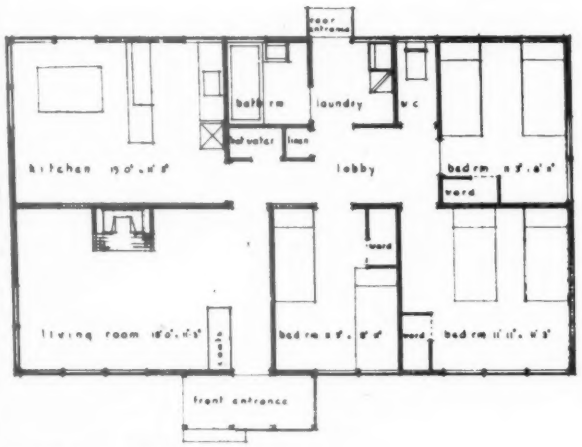
NEW ZEALAND HOUSING: COMPETITION



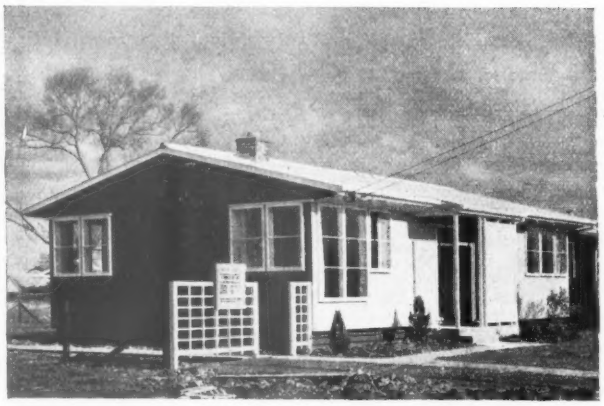
Above, the first prize-winning design, by Wellington architect Keith Cooper, in the New Zealand Government's low cost house competition (see page 221, JOURNAL for August 20). Below, the second prize-winning design, by Patience and Gabites. The cost of building either house is estimated at £2,000 to £2,200.

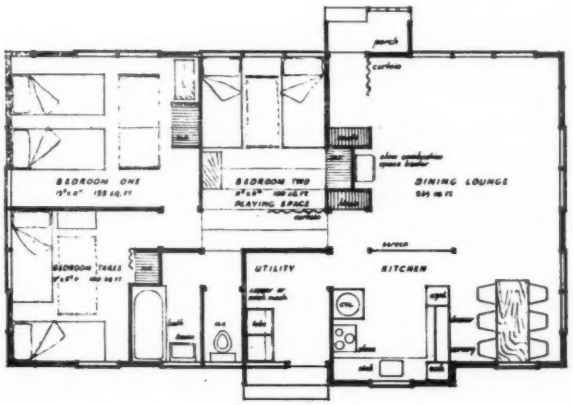


WINNERS AND GOVERNMENT-SPONSORED DESIGNS



Wilson House, ground floor plan





Hammond House, ground floor plan [Scale : $\frac{1}{12}$" = 1' 0"]

Four pairs of prototype houses have been erected at Auckland, Wellington, Dunedin and Christchurch by the New Zealand Government, to the designs of R. B. Hammond, director of housing construction for the government, and F. Gordon Wilson, government architect. The houses demonstrate ways of saving up to £400 on conventional designs. These three-bedroom houses, of about 935 sq. ft., should cost £2,100, exclusive of land, fencing and paths. The Wilson House (left-hand column) uses 25 per cent. less timber than normal, uses only standard sizes of timber and less expensive roofing (corrugated asbestos). The dining area is included in the kitchen (below left). The Hammond House (right-hand column) has fewer internal doors and less passage area than normal. The children's bedroom is used as a playroom by day. The front door of both houses opens directly on to the living room. Below, the living room of the Hammond House.

cost houses of from £2,000 to £2,200 (for winning designs see page 282).

The delegates suggested that an organization should be formed to stimulate the building of houses, to keep the public in touch with developments, to keep the building industry in touch with public demands and maintain contact with the Government. Other decisions made at the conference were:—That while flats did not warrant high priority, consideration should be given to their erection in large towns where a demand existed; that the standard code of building byelaws should be adopted by local bodies and government departments; that building controls should be administered in a liberal way; that rural housing should be encouraged and the greater use of pre-cut timber and prefabrication examined.

ACTON

Demolishing Prefabs

The Borough of Acton has so far demolished 18 prefabs. A group of 3 prefabs is making way for a four-storey block of 12 flats, seven prefabs are making way for a five-storey block of 20 flats and a group of 8 prefabs is making way for a four-storey block of 16 flats and a three-storey block of 6 flats.

MOHLG

Enquiry

Harold Macmillan, Minister of Housing and Local Government, has appointed an architect, H. G. Warren, to hold an enquiry into the BBC's proposal to erect a television station on North Hessary Tor in the Dartmoor National Park. The enquiry will begin on September 29 at the Castle, Exeter.

BOT

Paint Advisory Committee Changes

The BOT has made certain changes to the composition of the Paint Advisory Committee. It is to include members representing the three trade associations and the export group as well as the independent members. Trade union representation will be widened. The chairman will continue to be a senior BOT official. The committee advises the BOT on all matters affecting the paint industry. It was set up ten years ago.

Independent members of the committee, who act in an advisory capacity, are H. W. Bidgood, J. Clarkson, C. A. F. Hastilow, R. B. E. Jackson, C. R. Petrie and E. P. Reynolds. J. W. Cole will represent the National Paint Federation, C. A. Carter will represent the SBPM and D. E. Roe the Paint Manufacturers and Allied Trades Association. S. W. Greig will represent the Export Group of the Paint Industry.

Incentive to Save Fuel

An incentive to use fuel more efficiently arises as a result of the relaxation of restrictions on the hire purchase conditions of gas and electric water heaters. Persons who have up to now heated water with solid fuel appliances will because of this relaxation have the opportunity of buying heaters which supply the same amount of hot water with a national saving in coal.

All water heaters were exempted from the provisions of the Hire Purchase (Control) Order from August 21, 1953. Hitherto anyone buying a gas or electric water heater on hire purchase terms has been required to pay a minimum initial deposit of 33⅓ per cent. and to pay off the balance in not more than 18 months.

The BOT point out that this step has been taken as part of the Government's measures for improving fuel economy. As the Ridley Committee stated, the use of gas and electricity requires less coal than solid fuel appliances do in providing summer or occasional hot water supplies for the average household. The wider installation of these appliances is therefore expected to assist in the saving of coal and in general fuel economy.

The Order giving statutory effect to this relaxation of control is the Hire Purchase (Control) (amendment No. 4) Order, 1953 (SI 1953 No. 1264).

EXHIBITION

Entries Invited

The Museum of Modern Art at Sao Paulo is to hold another International Exhibition of Architecture this autumn.

Architects and officially recognized schools of architecture are invited to submit entries. A number of prizes will be awarded.

The Brazilian Embassy will pay the costs of forwarding entries to Brazil. Entries must reach the British Council by September 30. Full details can be had from G. S. Inglefield, c/o The British Council, 65, Davies Street, W.1.

MOW

Lancaster House Opened to Public

The MOW has opened the state apartments at Lancaster House to the public from 2 p.m. to 6 p.m. on Saturdays and Sundays. The apartments include the long gallery, state drawing room, music room and grand staircase. Unless public interest is sufficient they will close at the end of September. Lancaster House may, however, be closed at short notice if required for a government function. Admission price will be 1s. ASTRAGAL'S note on Lancaster House appears on page 187 in the JOURNAL for August 13.

OBITUARY

Paul Phipps

Paul Phipps died on August 23, at the age of 73. He was articled to Sir Edwin Lutyens. After practising in Canada and the USA, he set up a practice in London with O. P. Milne, which lasted from 1919 to 1924. Mr. Phipps, who designed many country houses and farm buildings and extended and restored such important houses as Alderley Park and 4, St. James's Square, is best known for the Seventh Church of Christ Scientist in Kensington. He became a fellow of the RIBA in 1921 and retired in 1951.

DIARY

The Adam Style. John Summerson. BBC repeat talk on Third Programme, 6.30 p.m.

SEPTEMBER 3

Charles Rennie Mackintosh. Exhibition at the Saltire Society, Gladstone's Land, 483, Lawnmarket, Edinburgh. Weekdays, 10.30 a.m. to 12.30 p.m., 2 p.m. to 5 p.m.; Sundays, 2 p.m. to 5 p.m.

UNTIL SEPTEMBER 12

Home and Surroundings. RIBA travelling exhibition at the Art[s] Gallery, Public Library, Dudley Road, Tunbridge Wells, Kent.

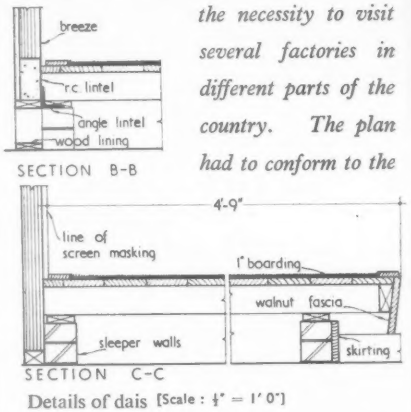
UNTIL SEPTEMBER 16

Entertaining in the Home. Exhibition at the House and Garden Decoration Centre, 16, Grafton Street, W.1. Weekdays, 10 a.m. to 5 p.m.; Saturdays, 10 a.m. to 12 noon.

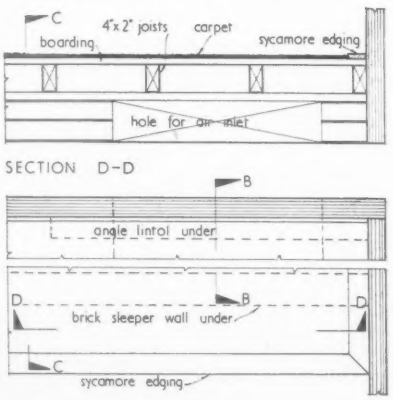
UNTIL DECEMBER

PRIVATE CINEMA

A private cinema and conference room for Rubery, Owen & Co., Ltd., at their offices, Kent House, near Oxford Circus, has been designed by C. H. Elsom (assistant, R. Nicholls). The cinema, which seats 32, is designed for the showing of 16 mm. films of the clients' products to home and overseas buyers, thus in many ways overcoming the necessity to visit several factories in different parts of the country. The plan had to conform to the



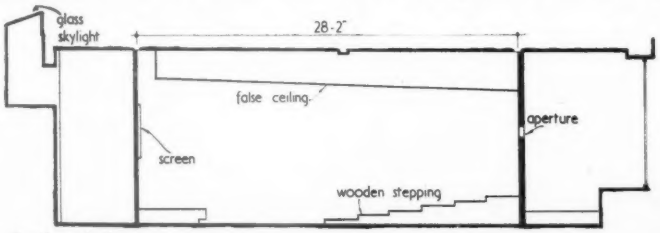
Details of dais [Scale : ½" = 1' 0"]



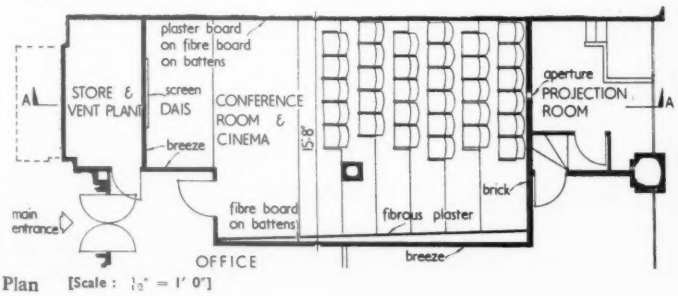
Plan and section D-D of dais

AND CONFERENCE ROOM, MARKET PLACE, LONDON, W.1

limitations imposed by the existing building and LCC regulations that required the projection box to be sited on an external wall. Due to these factors the entrance door, seen in the photograph on the opposite page from the entrance lobby, is at the screen end. Above is a view of the auditorium, looking towards the dais; the curtain is designed by Eduardo Paolozzi. Bottom, right, looking towards the projection window and right one of the seats of pressed steel and aluminium, upholstered with latex foam and covered with vermilion material. Warming and ventilation is by a plenum system. The general contractors were Yeomans & Partners, Ltd. Sub-contractors page 304.



Section A-A



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

SECONDARY SCHOOL

at STANFORD-LE-HOPE, ESSEX

designed by GERALD LACOSTE, in association with HAROLD CONOLLY, County Architect, assistants, KENNETH DOD and CAMPBELL ROSS; consulting engineers: structural, W. S. ATKINS and PARTNERS; heating and ventilating, ROGER PRESTON and PARTNERS; electrical, BARLOW LESLIE and PARTNERS; quantity surveyor, OSWALD PARRATT

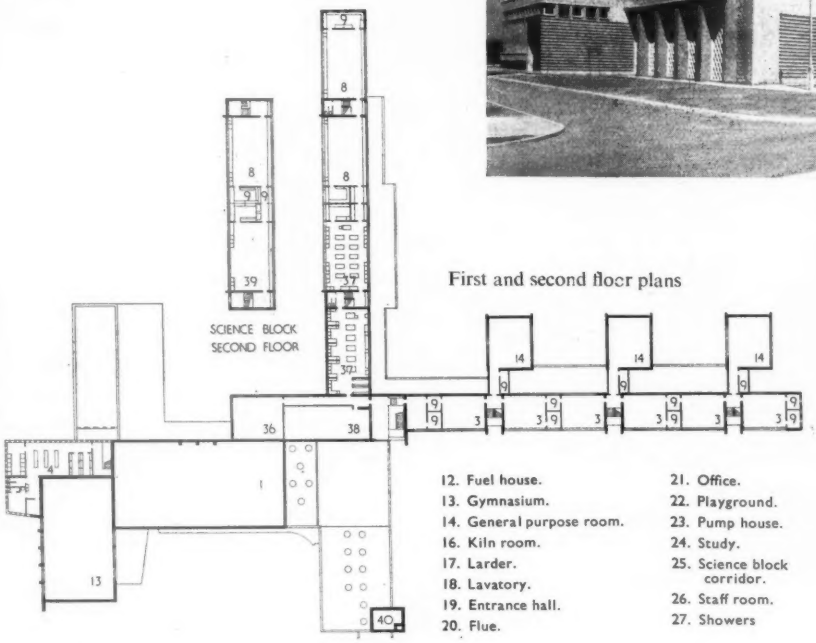
Hassenbrook Secondary School, for the Essex County Council, was one of the first to be completed under the MOE recommendations of October, 1949, and in accordance with the provisions of pamphlet No. 209. Work was begun in March, 1951, the classroom block, lavatories, kitchen and dining hall were handed over within 18 months. The total building period was 22 months, including time lost due to changes in construction necessitated by the shortage of steel. The school accommodates 600 pupils.

The gymnasium block.

The main entrance from the south.

PLAN.—A compact plan with close inter-relation of units was considered essential to reduce costs. First floor corridors have been omitted entirely, with access from staircases provided to classrooms and science rooms and there are connecting doors between rooms for staff and as means of escape. Cloakroom space is provided in ground floor corridors. For reasons of economy the classroom block is on two floors and the science block on three.

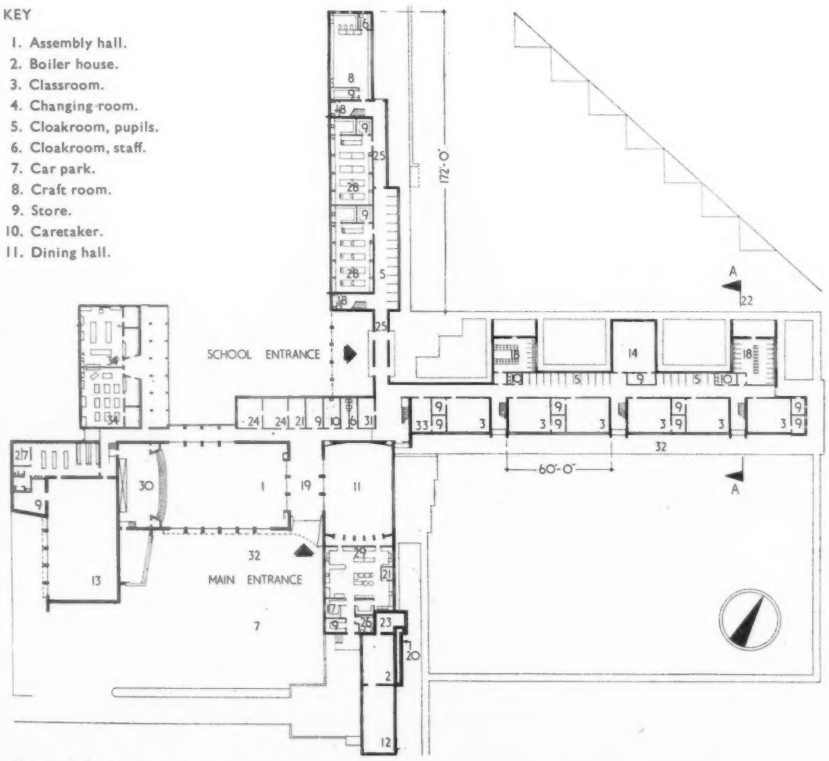
First and second floor plans



12. Fuel house.
13. Gymnasium.
14. General purpose room.
16. Kiln room.
17. Larder.
18. Lavatory.
19. Entrance hall.
20. Flue.
21. Office.
22. Playground.
23. Pump house.
24. Study.
25. Science block corridor.
26. Staff room.
27. Showers

KEY

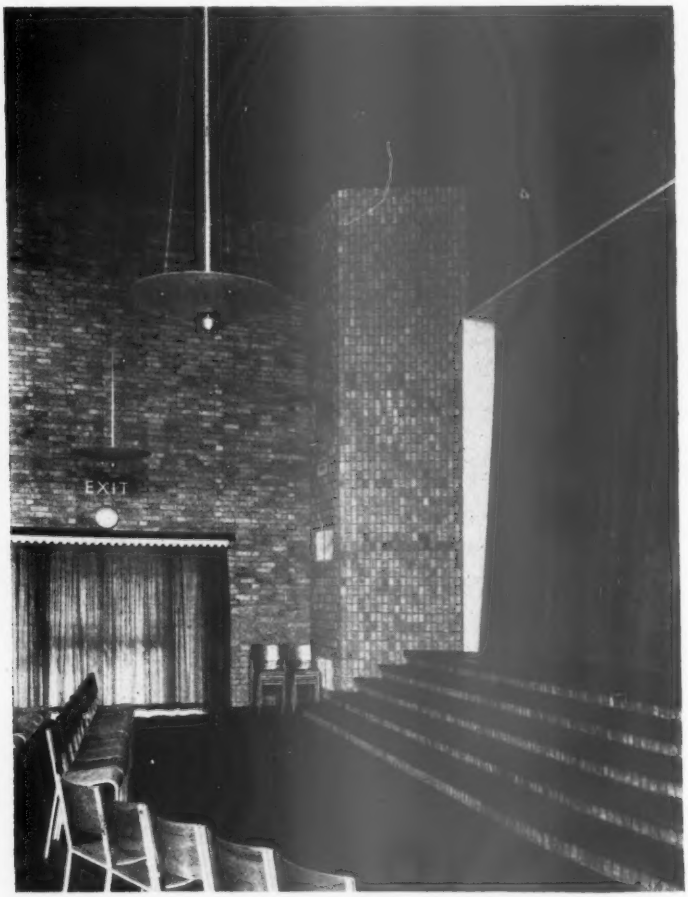
1. Assembly hall.
2. Boiler house.
3. Classroom.
4. Changing room.
5. Cloakroom, pupils.
6. Cloakroom, staff.
7. Car park.
8. Craft room.
9. Store.
10. Caretaker.
11. Dining hall.



28 Science laboratory.
29. Servery.
30. Stage.
31. Switch room.
32. Terrace.
33. Warden.
34. Workshop.
36. Common room.
37. Domestic science.
38. Library.
39. Art room.
40. Tower.

Top, a general view from the south-west. Above, a part of the main staircase in the administrative block, which forms an emergency escape from classrooms. The ceiling is finished with papier-mache egg trays, painted off-white, between insulation - board panels painted red.

Ground floor plan [Scale : $\frac{1}{96}$" = 1' 0"]



SECONDARY SCHOOL

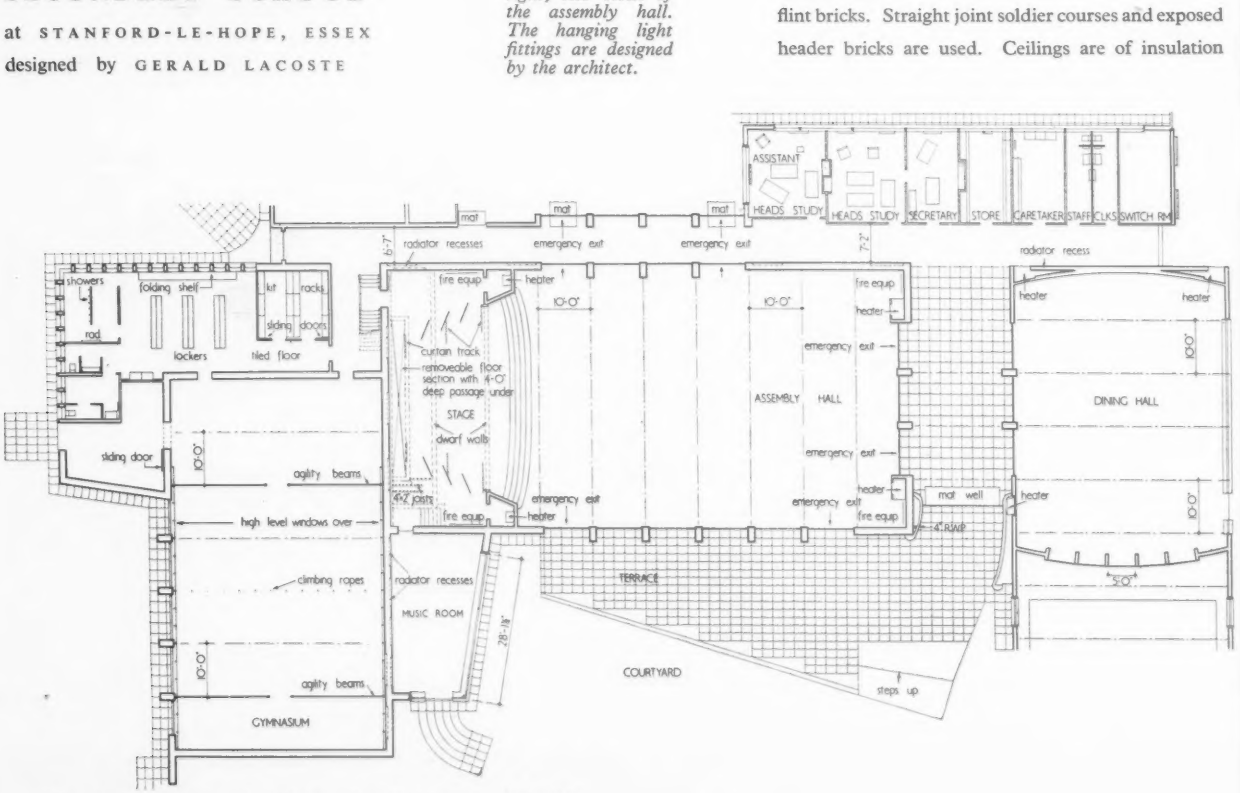
at STANFORD-LE-HOPE, ESSEX

designed by GERALD LACOSTE

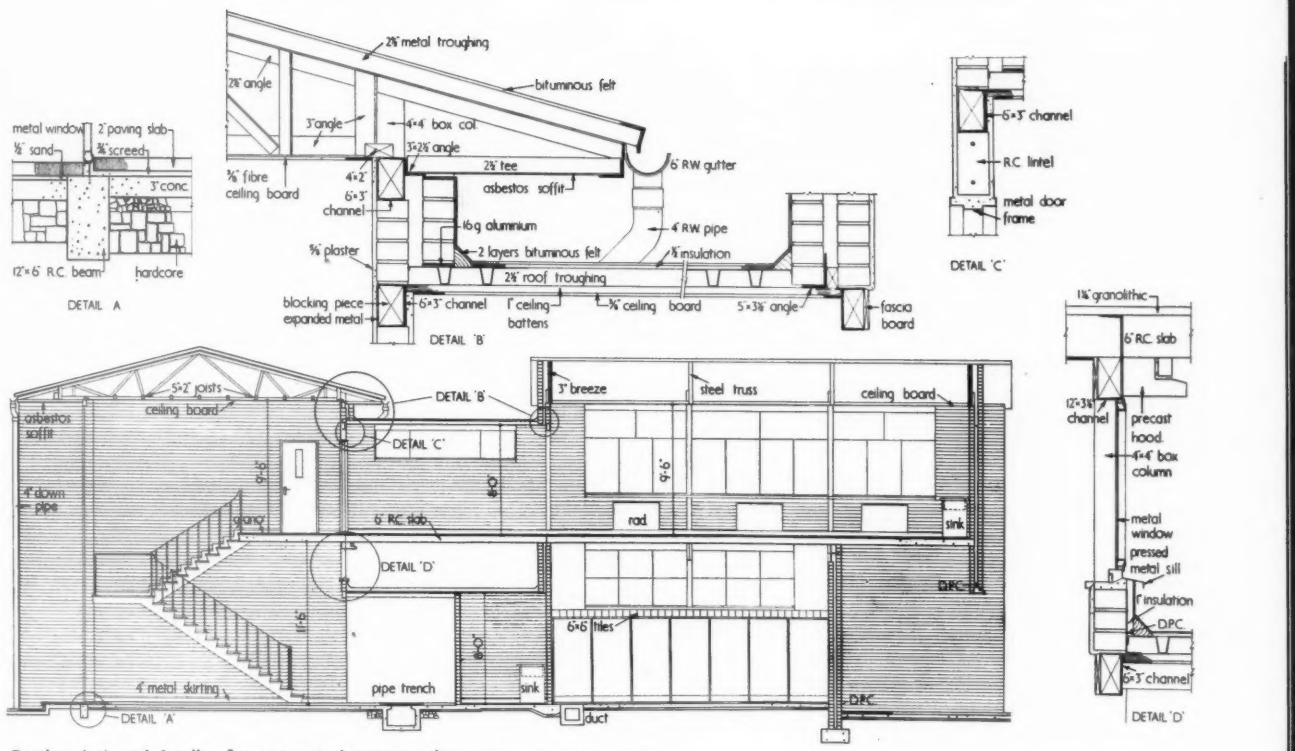
Above and above right, two views of the assembly hall. The hanging light fittings are designed by the architect.

CONSTRUCTION.—The building is steel framed with external cladding of 11-in. cavity brickwork, with the exception of the assembly hall and gymnasium block which, to save steel, are in 18-in. load-bearing brickwork. Roofs are constructed of aluminium decking supported on light steel trusses or r.s.j's.

FINISHES.—The architect has endeavoured to make a feature of the brickwork and revive interest in its combined decorative and structural uses. There are panels of basket and dog-tooth patterns to the entrance and on the gymnasium block. It was found that bricklayers took well to the unusual brick treatment. The assembly hall, dining room, staircases and corridors are finished internally with facing bricks, either Ibstocks or coloured Uxbridge flint bricks. Straight joint soldier courses and exposed header bricks are used. Ceilings are of insulation



Plan of assembly hall and administrative offices [Scale : $\frac{1}{32}$" = 1' 0"]



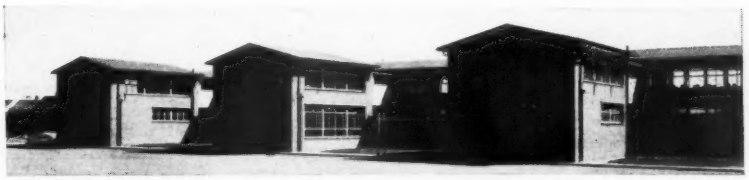
Section A-A and details of two-storey classroom wing [Scale : $\frac{1}{2}$" and $\frac{1}{8}$" = 1' 0"]

board in 4-ft. squares. Floors are finished with hardwood blocks, linoleum or concrete paving.

The school forms part of the MOE 1949 programme and instructions were received in January, 1950, when the nett cost per place limit was £290. The total cost on the tender (which was dated November 4, 1950) of building and site works is £161,744 which proved to be nearly £6,000 less than the original estimate. There are 90 sq. ft. per place and the nett cost per place on tender is £270.

The general contractors were E. H. Smith (Croydon), Ltd. For sub-contractors see page 304.

Below, the two-storey classroom wing from the north-west. Bottom, the three-storey science block from the south-west.

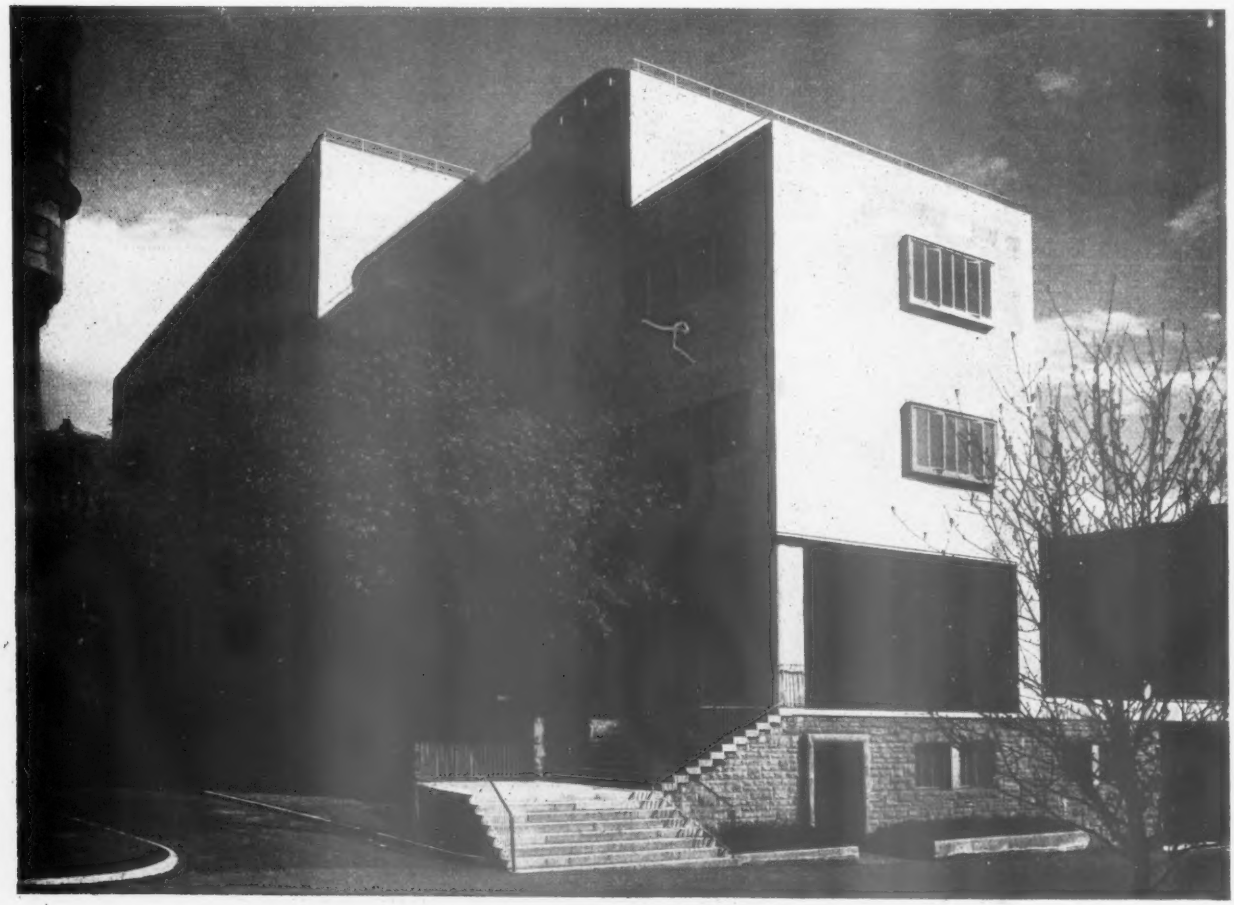


RESEARCH BUILDING

at the DEPARTMENT of NATURAL PHILOSOPHY, UNIVERSITY of GLASGOW
designed by BASIL SPENCE and PARTNERS
consultants: structural engineers, CROUCH and HOGG; heating and ventilation, DONALD SMITH; SEYMOUR and ROOLEY; acoustics and sound insulation, R. B. GREY; sliding slab, heavy doors and lifts, G. K. JENSEN & CO.; quantity surveyors, JAMES BARR and SON

The extensions to the Natural Philosophy Department at Glasgow University have been built to house the 300 million volt synchrotron and give facilities for nuclear research and the teaching of nuclear physics, all in conjunction with the original natural philosophy building. There are very special provisions made to give complete protection from radiation and noise transmission, and to obtain this there is a 150-ton sliding roof over the synchrotron machine. A future wing will accommodate teaching rooms, which are not included in the present scheme.

From the north-west, showing steps leading to the main entrance.



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MILD STEEL | WELDED | APPLICATIONS

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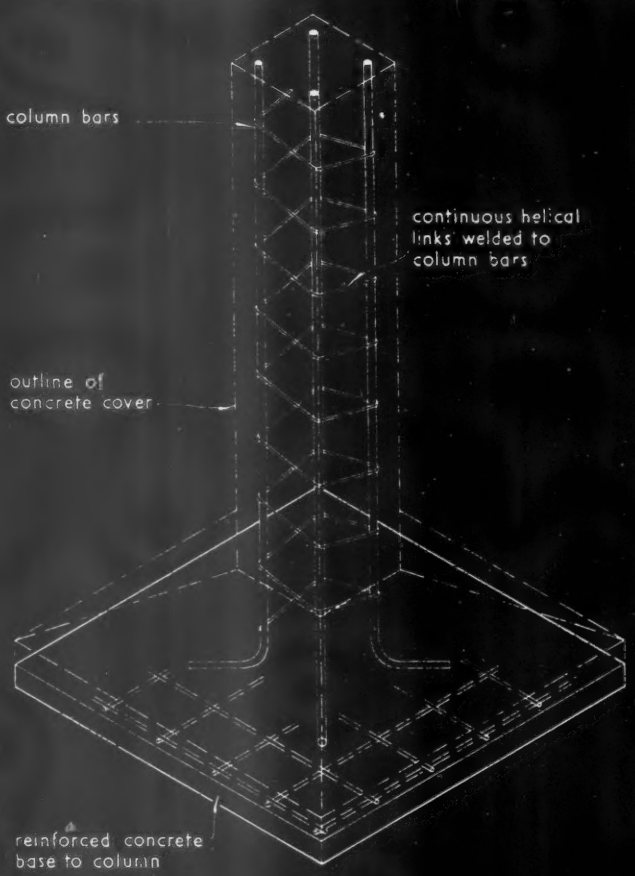
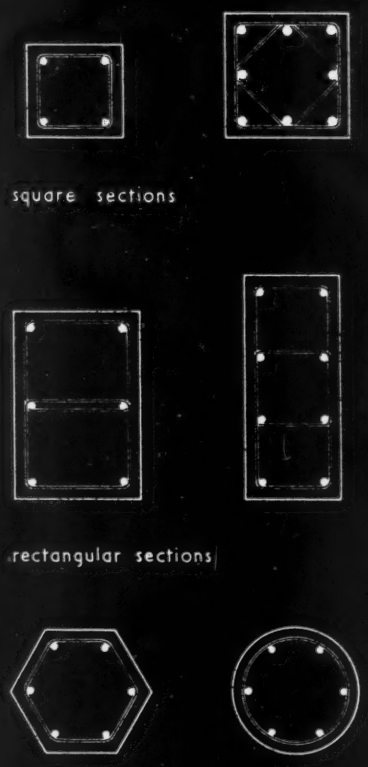


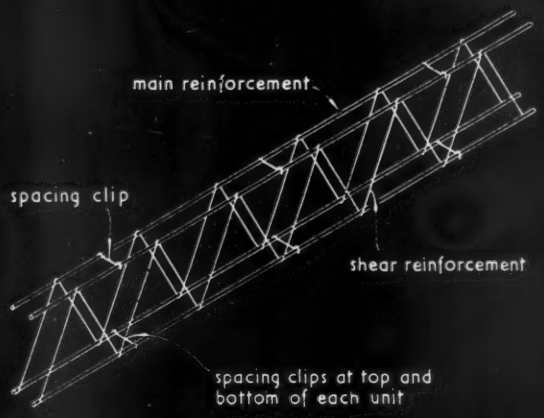
TYPICAL COLUMN AND BASE.



ALTERNATIVE COLUMN SECTIONS.

standard unit with nominal shear reinforcement

unit with special shear reinforcement



typical beam of two units with nominal shear reinforcement

TYPICAL BEAM UNITS AND ASSEMBLY.

·FRAMEWELD· SYSTEM OF REINFORCEMENT.

Manufacturer: T. C. Jones and Co. Ltd.

9.C1 · FRAMEWELD · SYSTEM OF REINFORCEMENT

This Sheet is the first of two describing Frameweld system of reinforcement for concrete. The drawings on the face show typical reinforcement for columns and beams. Sheet 9.C2 shows details of the fixing methods used.

General

The reinforcement is accurately prefabricated by the electric welding together of bars in steel jigs so that a rigid unit is formed. These are designed to provide a self-supporting structural frame which may be erected before the shuttering. Problems relating to the level and position of the steel are worked out at the drawing stage.

Simple fixing devices are used for connecting lengths of column reinforcement and for securing the beam units to each other and to the columns. The assembly on the site is therefore simple and rapid.

Once the units have been plumbed and levelled, the shuttering may be positioned from them. The rigidity of the units ensures that the final position of the reinforcement is exactly as planned, because there is no chance of displacement before or during the pouring of concrete.

The prefabricated units may be erected without delay which is a particular advantage on sites where there is restricted storage space.

Description of Units

Column units : These units are composed of four or more vertical bars to which a continuous helical link is spot welded at every point of contact.

The lowest unit is designed for casting into the concrete base. Joints in the height are made where a reduction in column section is required, at each floor level or at alternate floor levels. The height of one unit should not normally exceed the height of two storeys of the building or it may become too long for easy handling and transport.

Columns of various section can be made, as illustrated on the face of the Sheet, to suit different design requirements.

Beam units : Each of the vertical frames is a rigid unit composed of two horizontal bars to which is welded at each point of contact a continuous lattice spacing rod. The ends of the main bars are not hooked as the complete welded unit has adequate anchorage in the concrete.

The spacing rods provide reinforcement against shear stresses. Their diameter may be increased and/or their horizontal spacing decreased to suit any condition of shear.

The reinforcement to a beam may be composed of any number of units set side by side and held in correct position by clips fitted to the horizontal bars. Where it is necessary to form cantilevered beams the reinforcement may be prefabricated in units similar to those described above.

Beams are connected to columns by a special type of fixing which is described on Sheet 9.C2.

Further Information

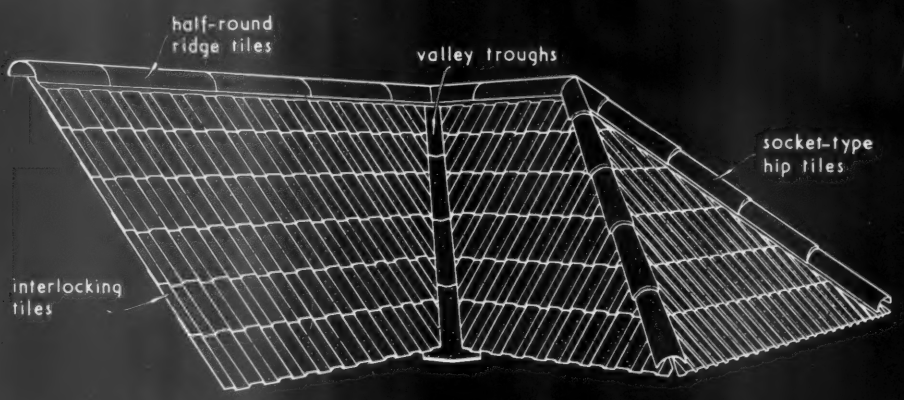
The manufacturer maintains a technical department which is prepared to advise on problems relating to this system of construction and which will prepare detailed structural designs for any scheme.

Compiled from information supplied by :

T. C. Jones and Co., Ltd.

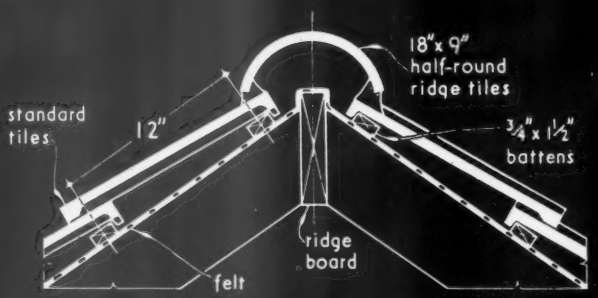
Address : Wood Lane, London, W.12.
Telephone : Shepherds Bush 2020.
Telegrams : Speediserv, Telex, London.

The Architects' Journal Library of Information Sheets 432. Editor: Cotterell Butler, A.R.I.B.A.

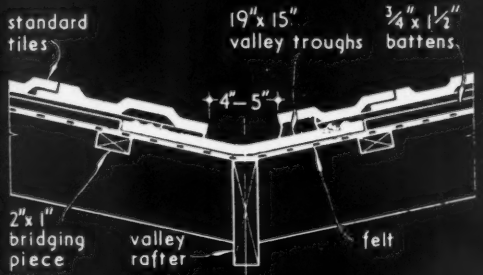


PERSPECTIVE SKETCH SHOWING TYPICAL DETAIL OF ROOF.

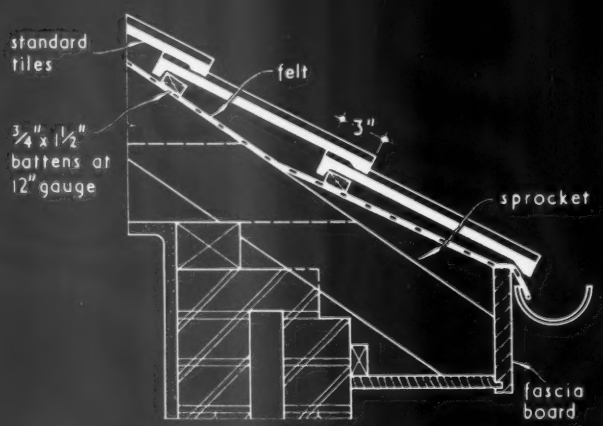
STANDARD TILE.



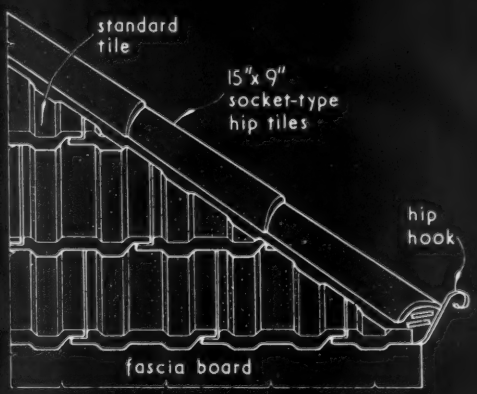
SECTION THROUGH RIDGE.



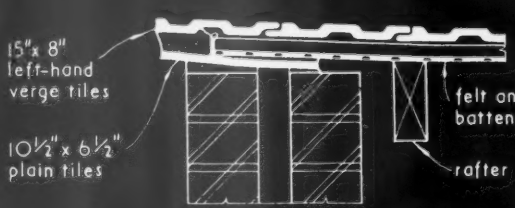
TYPICAL DETAIL OF VALLEY.



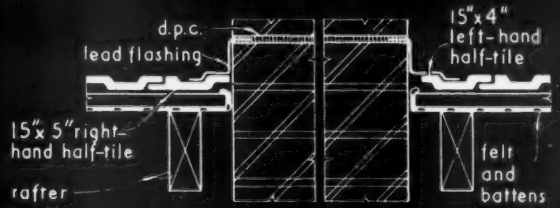
TYPICAL DETAIL OF FINISH AT EAVES.



ELEVATION SHOWING FINISH AT EAVES.



TYPICAL DETAIL OF VERGE.



TYPICAL DETAIL OF ABUTMENTS.

ROOF TILING: REDLAND INTERLOCKING TILES.

Manufacturer: Redland Tiles Ltd.

17.D1 REDLAND INTERLOCKING TILES

This Sheet describes Redland interlocking tiles, which conform to B.S.550 : 1945 *Concrete Interlocking Roofing Tiles.* The drawings on the face show the standard tile and details of its application to a roof.

General

The standard tile is 15 in. by 9 in. and may be obtained with or without a slight longitudinal camber. Each tile has nibs, 1¼ in. long by ¾ in. thick, giving an adequate hold on the battens. Nailing should, however, be carried out as recommended below as a precaution against lifting by the wind. The tiles may be laid with a straight or broken bond and, in the latter case, special left- and right-hand half-tiles are available to provide a neat finish in the alternate courses at verges. Left-hand verge tiles are used in the alternate courses to the left-hand half-tile.

Gauge : The recommended maximum gauge is 12 in., but owing to the adjustable head lap this may be reduced where necessary to suit the length of rafters in order to obtain courses of equal gauge.

Lap : The side lap is 1 in. and the recommended minimum head lap is 3 in.

Roof pitch : The minimum pitch recommended is 35 degrees where a 12-in. gauge is used and 30 degrees where the gauge is reduced to 11 in.

Covering capacity : The net covering capacity is 153 tiles per square (100 sq. ft.) when a 3-in. lap is used and 165 with a 4-in. lap.

Weight : The weight per square is approximately 900 lb. (8 cwt.) when a 3-in. lap is used and 975 lb. (8¾ cwt.) with a 4-in. lap. One thousand tiles weigh approximately 2 tons 13 cwt.

Nailing : It is generally recommended that each tile in alternate courses be nailed with 1¼-in. by 12-g. galvanised iron nails. Where the site is very exposed or the roof pitch unusually steep every tile should be nailed. All eaves and ridge course tiles and those adjacent to verges, hips and valleys should always be nailed.

Colour : The tiles are available in a range of red, brown and grey shades.

Roof Preparation

A small sprocket, as shown in the drawing on the face, should be fixed to the rafters, in order to slightly raise the eaves course tiles.

The normal preparation is to lay untearable felt or reinforced building paper directly over the rafters. This should be lapped at least 3 in. horizontally and 6 in. vertically, lapped well into gutters and secured with galvanised nails. Tiling battens are then fixed, these being 1½ in. by ¾ in. where the rafters are at not more than 18-in. centres or of a larger section where the rafters are more widely spaced.

Details

Ridge : The batten at the top of the roof should be fixed 2 in. clear of the ridge board. A fillet of mortar is laid on top of the ridge course tiles to form a bedding for the half-round ridge tiles which are also jointed and pointed with mortar. The detail shows the section through the raised portion of the tile on the left and through the hollow on the right.

Valley : A complete width (3 ft.) of felt should be laid down valleys before tiling. Where roof pitches are approximately 35 degrees, Redland valley troughs may be used. Where roof pitches are substantially greater or less than this, metal valleys on boarding, with slate or tile undercloak, are recommended.

The drawing on the face shows the use of the Redland valley trough. This tile, 19 in. by 15 in., is rebated to provide a 3-in. head lap. A complete weather seal and cushion for the next trough is obtained by laying a piece of asbestos yarn across the trough, 2 in. from the top. Bridging pieces, formed of short lengths of 2-in. by 1-in. battens, are fixed between the jack rafters, parallel to the valley rafter. These support the ends of the tiling battens and the edges of the valley troughs, rendering valley boards unnecessary.

The roofing tiles are cut so that an open valley, from 4 in. to 5 in. wide, is obtained. The tiles are bedded on mortar on the inside of the raised water checks of the trough and the cut edges of the tiles are neatly pointed with mortar, preferably coloured to match the tiles. The bedding to the raised portion and to the hollow of the tile are shown on the right and left of the section respectively.

Eaves : The bottom course of tiles should be laid with the nibs at the tail of the tiles projecting over the fascia board into the gutter. No special tile, under eaves course, or mortar bedding are necessary.

Hip : The edges of the roofing tiles are cut on the line of the hip and socketed hip tiles, which are tapered in their length and have 1-in. sockets, are bedded on mortar over them. Alternatively, third round hip tiles laid with butt joints are bedded in a similar manner.

Verge : Tiling should overhang approximately 2 in. and be bedded on mortar over an undercloak of one course of plain tiles. The detail shows a section through a left-hand verge tile.

Abutments : The details on the face of the Sheet show the method of flashing the joint between the tiling and a wall or the side of a chimney stack. Lead flashings are recommended and should always be taken over one of the raised portions of the tile and dressed down into the hollow beyond. Left- and right-hand half-tiles are shown against the walls but the standard tile may easily be cut to suit any situation.

Further Information

The manufacturer maintains a technical advisory department which is available to answer questions and advise on problems dealing with this subject generally.

Compiled from information supplied by :

Redland Tiles Ltd.

Address : Moorhouse, near Westerham, Kent.
Telephone : Limpsfield Chart 3206/7.

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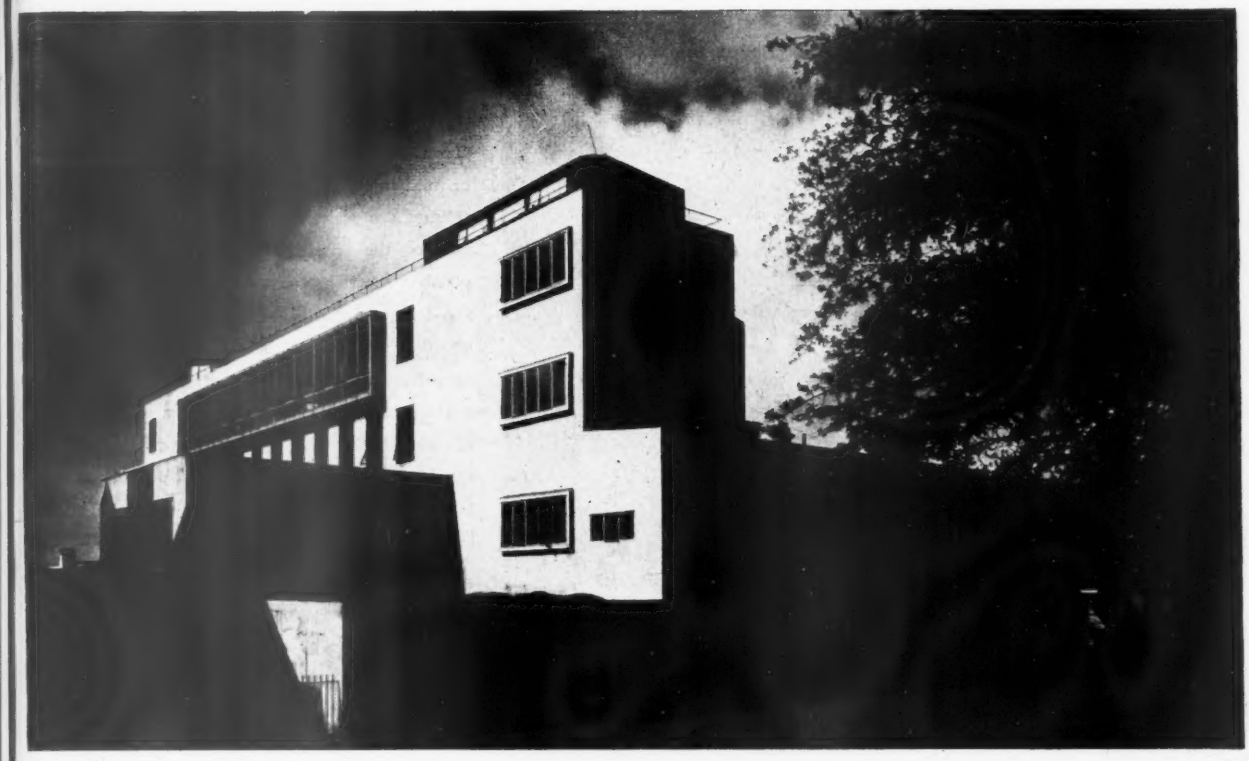
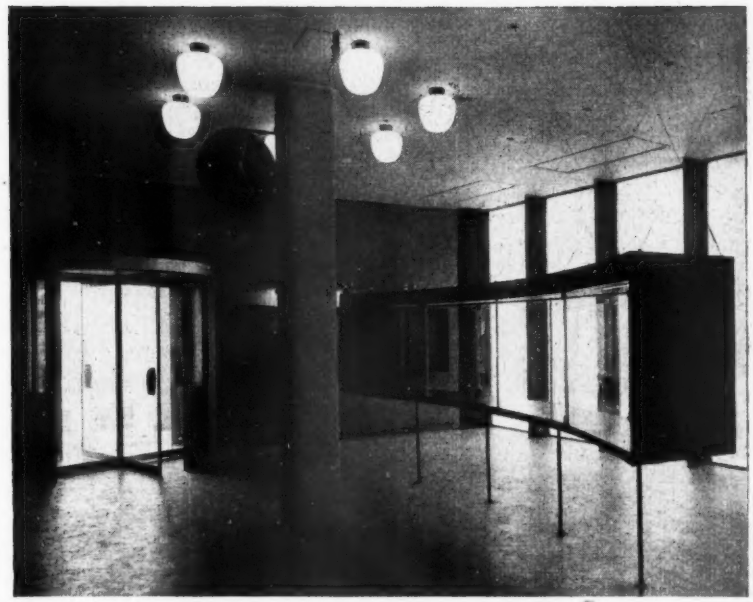


SITE.—The site, previously occupied by tennis courts, is in the middle of the university and is very restricted. Access was only permitted on the north and west sides and adequate light had to be left for the botany building to the north and on this side access had to be allowed for very heavy loads to the synchrotron rooms. When deep excavations had to be made, old mine-workings were discovered extending under the whole site and these had to be underpinned, keeping in mind the possibility of vibration.

PLAN.—Since the synchrotron beam had to be directed into the hillside, the synchrotron rooms were placed underground. The clients required that the synchrotron and all associated gear had to be accommodated as soon as they were built, regardless of the state of the building as a whole. The plan followed naturally from the restrictions of the site and the clients' requirements. The standard research room unit on a 16-ft. grid is repeated on certain floors on either side of a central corridor, where services are carried in the ceiling. Because of the risk of vibration and noise when the synchrotron is working, it had to be isolated as far as possible from the rest of the building.

CONSTRUCTION.—The building has an encased steel frame and walls which have a 9-in. brick inner lining and a 2½-in. Portland stone outer skin. Floors are of hollow tile construction and partitions are of brick, stud or hollow tiles.

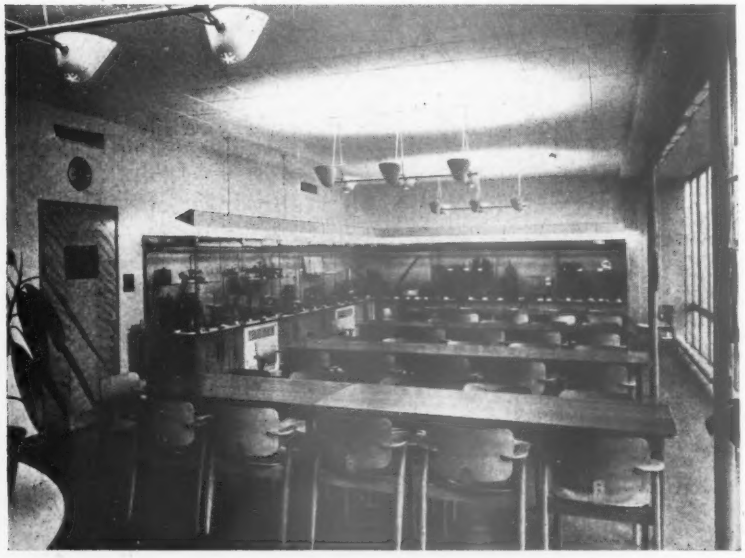


Top, the south and east facades seen from the professor's gardens. Above, the main entrance hall. On the right is the display cabinet and on the left the revolving entrance doors. The latter will be illustrated as a Working Detail in a later issue of the JOURNAL.

RESEARCH BUILDING

for the DEPARTMENT of NATURAL PHILOSOPHY, UNIVERSITY of GLASGOW

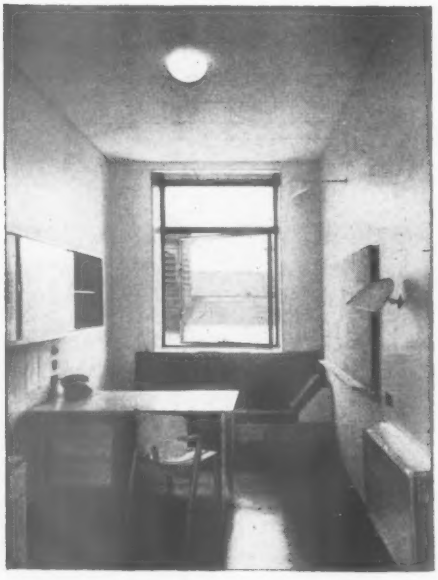
designed by BASIL SPENCE and PARTNERS



FINISHES.—Bricks, where used as facings, are Southhook bricks and the rubble base to the building is of Blaxter stone. Window frames are in anodised aluminium and balustrades are in aluminium or mild steel, painted, with mahogany or mild steel handrails. Internally, most walls and ceilings are plastered and painted, except for one wall of the entrance hall, which is faced with polished Inmosthay (a type of Portland stone revealing fossilised formations). There is a terrazzo slab floor and stair treads are terrazzo on concrete or pressed metal structure. Research rooms have ceilings covered with acoustic tiles and work tops of oiled teak. The furniture, which is mostly specially designed by the architects, throughout the building is ash-veneered. Birch and mahogany panelling is used in the lecture room and third floor administrative rooms. Floors are covered with rubber in the lecture room, cork or linoleum in administrative rooms. Some floors have a granolithic finish, which has been hardened and dust-proofed by a special process.

SERVICES.—There is a five-ton goods lift and a passenger lift. In the synchrotron chamber there is a 50-ton travelling crane with 50 or 5 ton hooks and there is one 5-ton and two 30-cwt. general hoists. Special requirements for the synchrotron system include cooling the machine, silencing the output and ventilating the chamber. There is a

Above left, part of the south facade showing the long window to the third floor museum and library. Left, the common room and museum. In the cabinets are Kelvin's apparatus. Below left, the library. Below, a mathematician's room on the third floor.



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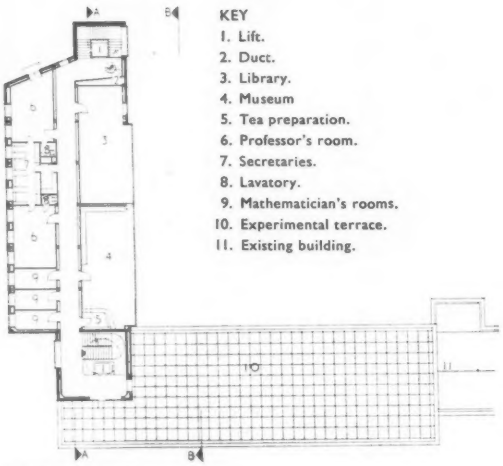
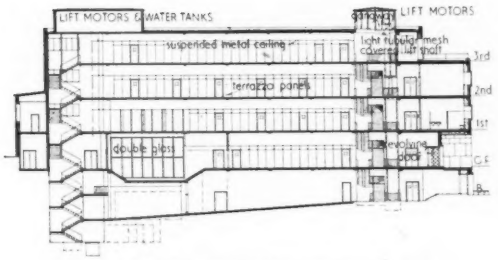
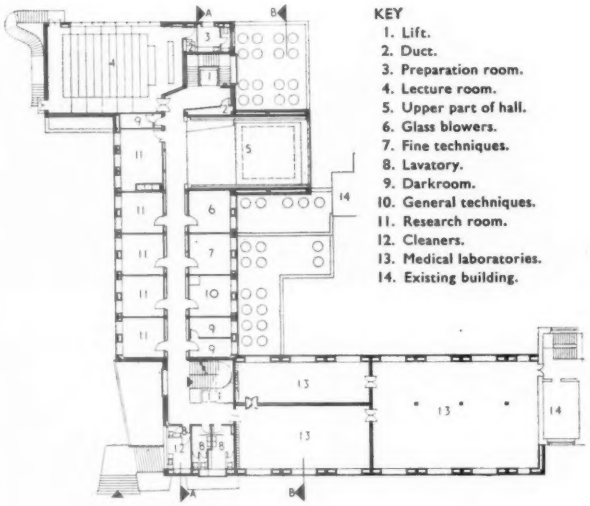


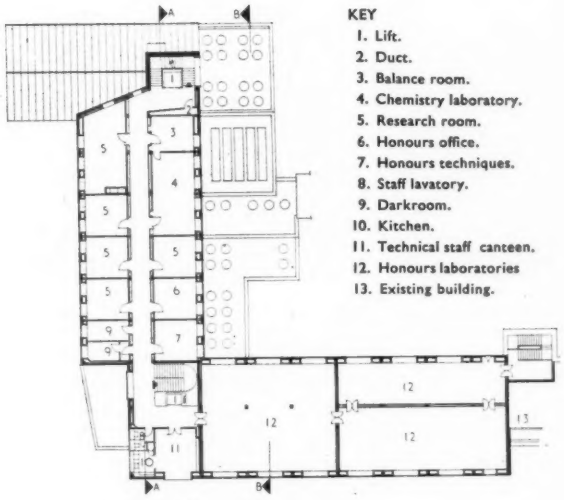
Third floor plan



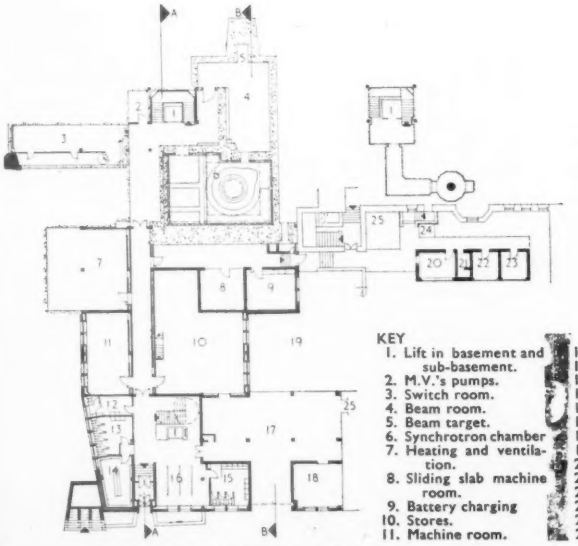
Section A-A [For Section B-B see next page]



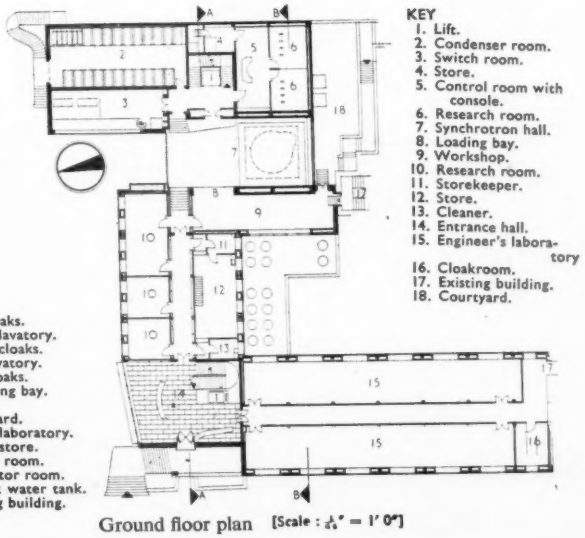
First floor plan



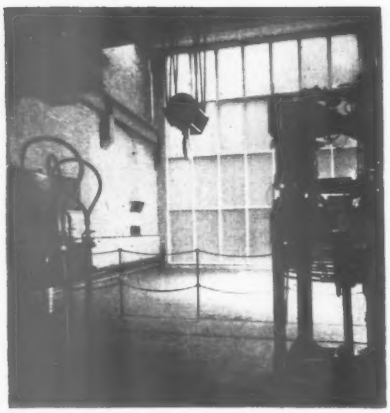
Second floor plan



Basement and sub-basement plans



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



Left, the synchrotron hall, with the 150-ton sliding slab in open position. Above, the sliding slab closed over machinery when in operation. Below, control room, showing console for operating synchrotron and synchrotron hall window.

RESEARCH BUILDING

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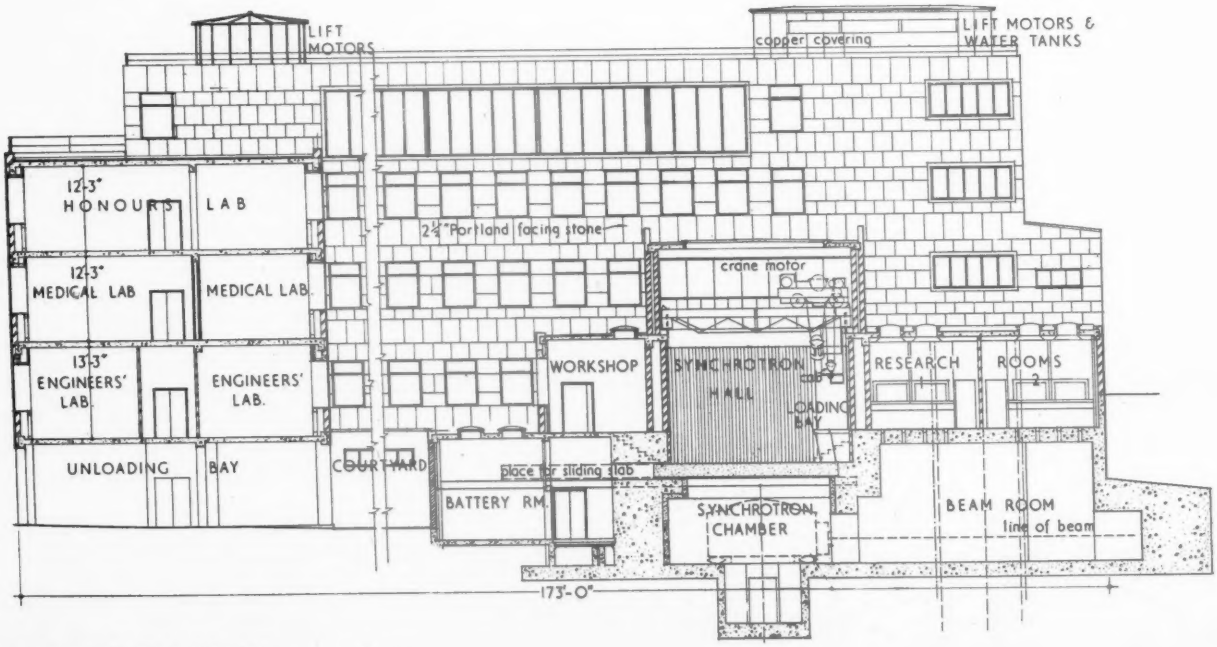
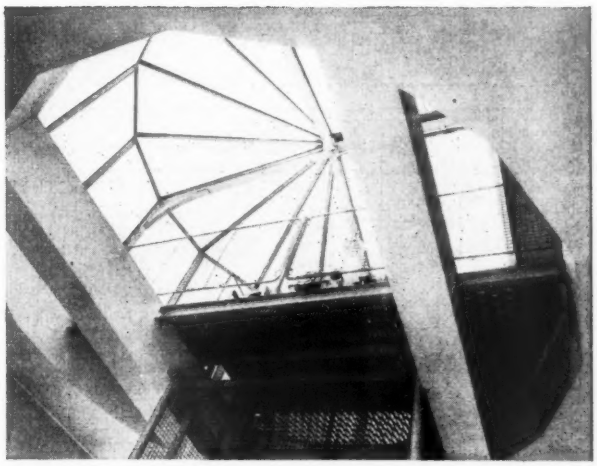


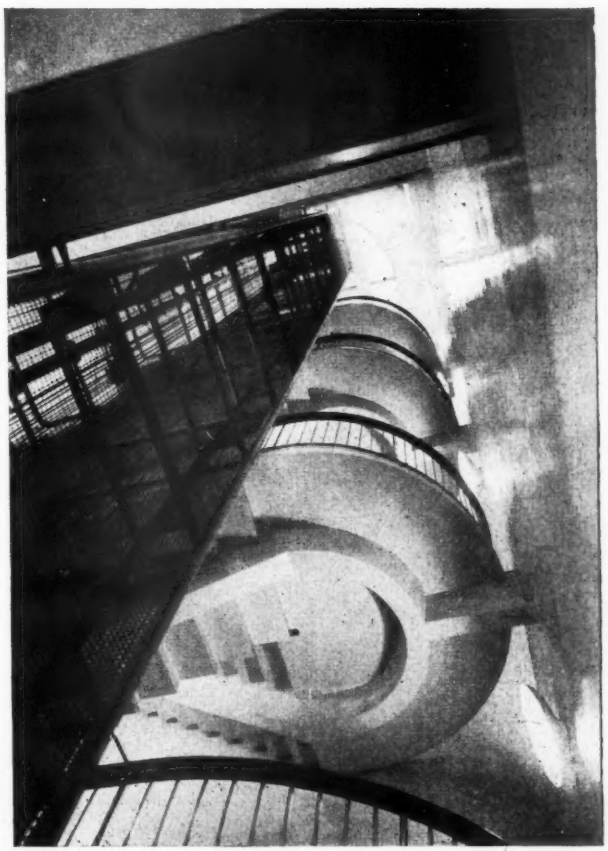
Section B-B [Scale: $\frac{1}{16}$" = 1'0"]

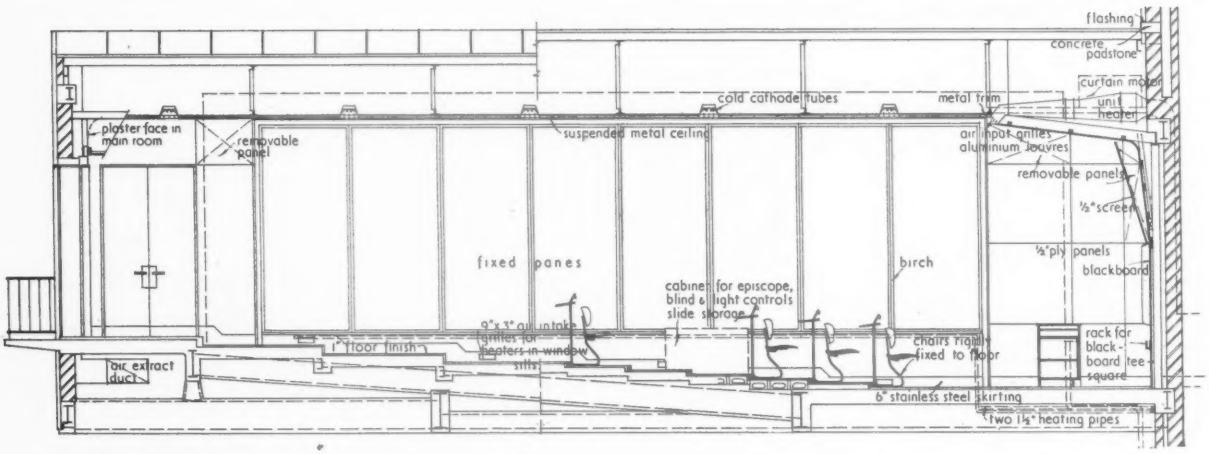
completely separate plant for the remainder of the block, consisting of a plenum system with room heaters. Hot water is supplied from a central university boiler house. There is a 50-line internal automatic telephone exchange and in the synchrotron area a special automatic intercommunication telephone system. Vertical pipe runs in corridors are behind removable terrazzo panels and horizontal runs in rooms are behind removable timber panels under the shelving. All research rooms are supplied with gas, compressed air, hot and cold water and electricity. Oxygen is available in the glass-blowing room. To avoid noise and vibration as much as possible, the synchrotron is mounted on springs. The contract price was £325,000.

The general contractors were Thaw & Campbell, Ltd. For sub-contractors, see page 304.

Below, front lift glazed penthouse and lift motor. Bottom, left, main staircase and lift shaft looking down. Bottom right, the monobeam stair which rises from the main entrance hall at the north-west corner of the extension.







Longitudinal section through lecture room [Scale : ⅛" = 1' 0"]

RESEARCH BUILDING

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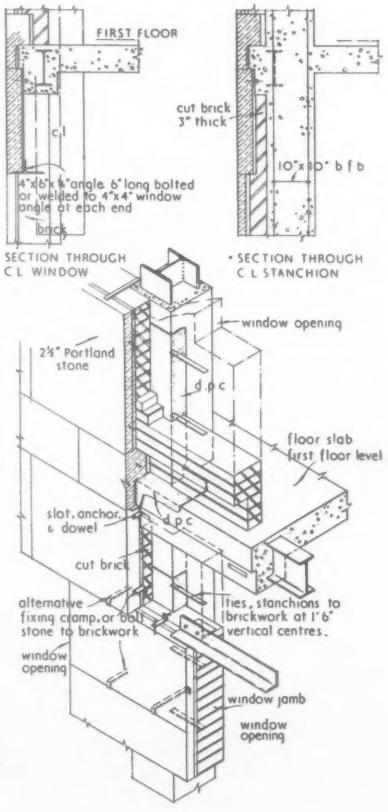
Top left, ■ professor's room on the third floor, showing desk and chair specially designed by the architects. Top right, seating of plywood and tube steel in the lecture room. These are also specially designed by the architects, as are all built-in furniture, laboratary fitments, desks, tables, etc., throughout the building. Left, door leading to the back of the lecture room at the north-east corner of the building, which is approached by an outside staircase.



Isometric drawing and sections of typical stanchion on north external wall.
[Scale : ¼" = 1' 0"]

TECHNICAL SECTION

Further information has now been made available to the Technical Press concerning the experiment in which a tower crane was used on a housing site in Norwich (see JOURNAL for Dec. 18, 1952 p. 749). It will be remembered that the use of the crane reduced man-hour requirements on this particular site from 2,800 to 1,800 per house.

It was clear that all the 1,000 man-hours saving could not have been due *directly* to the use of the crane, since, even without a crane, materials handling would not account for 1,000 man-hours of labour.

It is now revealed that the saving in materials handling time represented only one-fifth of the total saving—the remaining four-fifths being due to the improved site organization for which the use of the crane was *indirectly* responsible. (Using the crane effectively had necessitated running the site like a production line.)

While these figures in no way detract from the importance of the direct savings which the use of a tower crane can effect, they emphasize once again the importance of site organization, including, of course, drawing up a programme and using progress schedules. The immense variation in site efficiency (as demonstrated by the variation—from 1,500 to over 4,000—in the number of man-hours expended on typical two-storey houses on different sites) is one of the problems at present being investigated by the Operational Research Unit of BRS.

This week's special article

9 DESIGN: GENERAL
design for mechanical-handling equipment

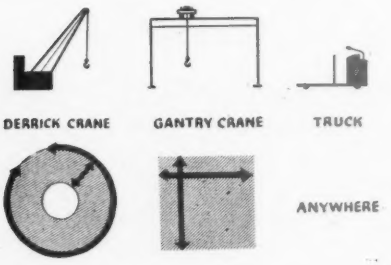
The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by refering to the index published free each year.

In designing modern industrial buildings, the architect must take into account the fact that some form of mechanical-handling device will probably be employed. In the following article, a production engineer describes some up-to-date mechanical handling equipment and explains how the architect can ensure that his design will facilitate the most effective use of this equipment.

In the report, *Materials Handling in Industry*, issued by the Anglo-American Council on Productivity,* it was shown that between 15 and 85 per cent. of the cost of manufacturing a product may be represented by the cost of handling, which, itself, adds nothing to the value of the product. It is not surprising, in view of this high percentage, that many production engineers believe that only by making handling more efficient can substantial increases in output be obtained from existing plant.

It is clearly the architect's responsibility to design new factory buildings,

* (HMSO 1950. 2s. 6d.)



Type.	PT	PP	PPR	PSR	PF 155	PF 20T
Length.	39 in.	61½ in.	75½ in.	101½ in.	80½ in.	92½ in.
Width.	31½ in.	31 in.	31 in.	31 in.	32 in.	32 in.
Wheels.	8½ dia x 5 in.	10 dia x 5 in.	10 dia x 5 in.	10 dia x 5 in.	10 dia x 5 in.	10 dia x 5 in.
Service Weight	1300 lb.	1300 lb.	1300 lb.	1400 lb.	2200 lb.	2400 lb
Lifting Capacity	Tows 7 Tons	4500 lb.	4500 lb.	6000 lb	1700 lb.	2250 lb.
Turning radius	24 in.	67 in.	81 in.	107 in.	43 in.	55 in.
				Min. height	83 in.	83 in.
				Max. height	83 in.	151 in.

Above, diagram showing comparative range of movement of the three principal types of mechanical-handling device (excluding the conveyor belt). The capacity of the crane is normally greater than that of the truck, but its range of movement is, of course, limited. Right, Fig. 1, six types of mechanical-handling truck, with their dimensions and weights. Type "PT" is designed solely for towing; "PP" is a pedestrian-controlled pallet truck; "PPR" is a similar truck with a platform for a driver; "PSR" is a stillage truck with a platform for a driver. (Pallet trucks merely have two forks which slide under and lift standard containers; stillage trucks have a solid platform; both raise their loads only a few inches above floor level.) "PF 155" and "PF 20T" are fork-lift trucks; the latter has a telescopic twin mast and can raise goods to about twice the height of the former.

warehouses, dock buildings, airport buildings and abattoirs so that mechanical handling equipment can be used in them effectively. This task is simplified in this country by the nature of most British industry. When factories are organized on the basis of "batch production" (as contrasted with "mass production"), as they usually are in this country, the main mechanical handling aids used are cranes and trucks (not conveyors, which are usually associated with a fixed production line). We will not, therefore, deal here with conveyors. In any case, as far as installations in existing buildings are concerned, it is necessary only to choose the type of conveyor and then work to standard and constant data.

CRANES AND TRUCKS

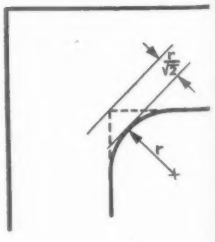
Cranes and trucks are, to some extent, interchangeable, since the former provide a means of moving a load between any two points in a certain area, while the latter, being more flexible, can ply between the bays of a building or even between different buildings, without it being necessary to transfer the load from one piece of equipment to another.

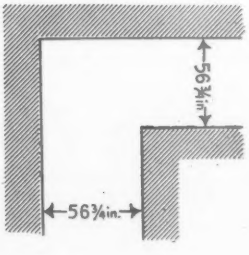
Because their flexibility suits ideally the ever-changing requirements of batch production, trucks are becoming increasingly popular in this country. Nevertheless, cranes still have many uses and, wherever there is a possibility of their being installed, it is essential to design the framework of the building to carry the appropriate load.

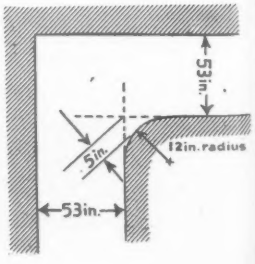
In many modern warehouses, cranes have been replaced by fork-lift trucks. The complete load on a fork-lift truck is, of course, taken by the floor, so that such warehouses, if they have only one storey, do not require the heavy and expensive superstructures which would be required to support overhead or other cranes. Fork-lift trucks, in addition to their normal use, are valuable in case of fire, when they can be used to take goods out of the building and stack them away from danger. It would be impossible to do this with a fixed type of crane.

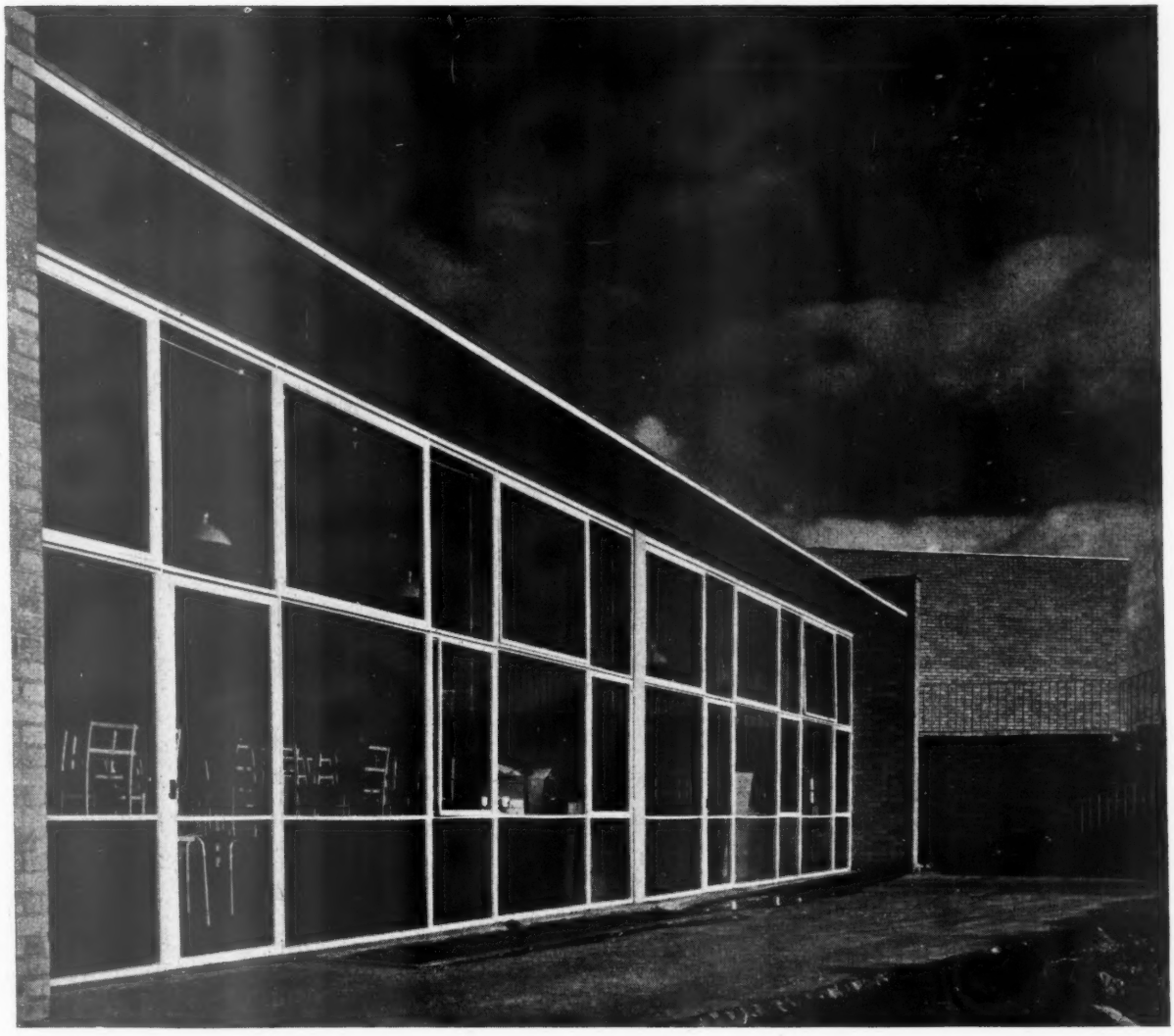
In view of the widespread use of both power and fork-lift trucks, it is wise to consider the width of all aisles and gangways in relation to these machines. Dimensions of some typical trucks are shown in Fig. 1, and a typical pallet truck is shown in Fig. 2, this being the longest one in this particular firm's range. It is 27 in. wide and the outer part will turn in a radius of 94 in. about the instantaneous centre. It is interesting to note that, in a right-angle bend, as indicated in Figs. 3 and 4, rounding-off the corner will have the effect of adding 0·414 × the radius to

Left, Fig. 2, electric pallet truck with rider platform. This truck has 60-in. forks and, with the space required for the platform, it is the longest truck, 99½ in., in this firm's range. It has an 83½-in. wheelbase. Right, Fig. 3, and below, Fig. 4, rounding off the corner makes it possible to reduce the width of the aisles by approximately the amount by which the bend is widened. The aisle width required for the truck shown in Fig. 2 is reduced from 56¾ in. to 53 in. when the width of the bend is increased by 5 in.









Architects: F. R. S. Yorke, E. Rosenberg and C. S. Mardall, in association with F. W. B. Yorke and H. M. Barker.

New School at Oldbury

THE Causeway Green County Primary School, illustrated above, is yet another example of the many fine buildings recently completed with BISON Prestressed. Since the war, BISON has been specified for more than 1,000 new schools—an achievement of which we are proud.

BISON precast units are in Prestressed or normal R.C., or a combination of both to use the advantages of each according to design conditions.

BISON units are *complete floor sections;* and three simple operations finish the job:

1. Hoist the slabs to floor level.
2. Lay them on their bearings.
3. Grout the joints.

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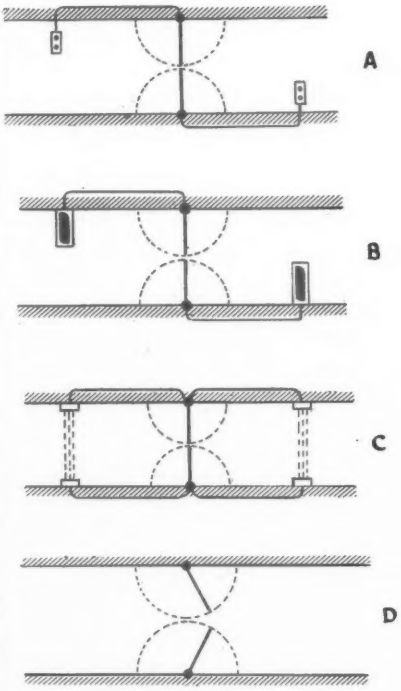
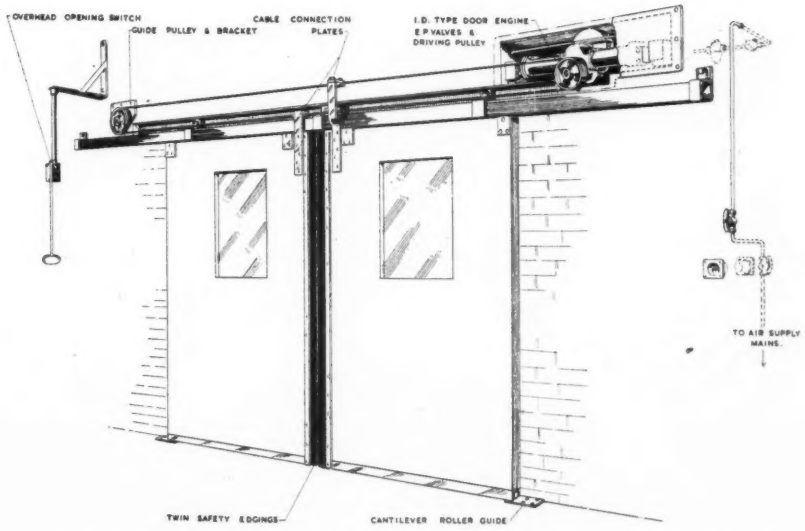




Left, Fig. 5, four ways of opening doors without the driver leaving his truck—"A," electrical control gear with pendant switches; "B," pneumatic control gear with traffic signal type floor pads; "C," photo-electric cells; "D," swing doors nosed open by the truck and closed by springs. Sliding doors suspended from a rail, are best suited for power-operation. The door shown above, Fig. 6, is operated off the compressed-air mains of the factory. A release valve can be incorporated so that, in the case of an emergency, the door can be converted to manual operation within a few seconds. Rubber edges prevent injury and damage if the doors are accidently closed on personnel or goods.

the width of the bend. Thus, a 12-in. radius on a square corner will give an extra 5 in. on the bend. This may be extremely valuable in reducing the required width of the gangways. In the example shown in Fig. 4 the rounding-off of the corner makes possible a reduction in the width of the gangways of 3¾ in.

DOORS

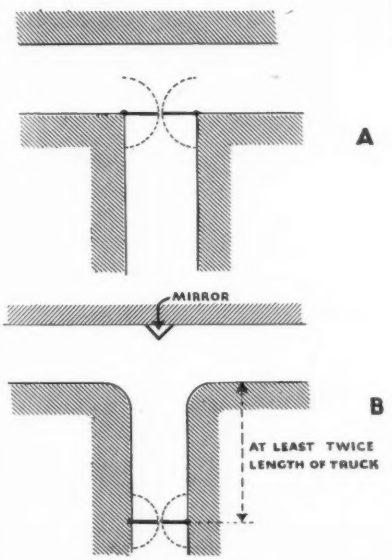
Doors often form bottlenecks in the flow of production, and they can certainly slow down trucks. It is possible to manœuvre trucks through narrow openings, but this wastes time, and exposes the door, the truck and the load to the danger of damage. All doors through which goods are to be transported should be sufficiently wide (never less than 4½ ft.), and should be easy to open. Labour-saving ways of opening doors for the passage of trucks (see Fig. 5) include remote-control electric switches hanging both sides of the gangway and within reach of the driver (without his leaving the truck), contacts in the floor, similar to those used for operating traffic lights, and photo-electric-cell devices.

Fig. 6 shows a typical example of a well-designed electrically operated pair of doors. Worthy of note is the overhead operating switch, which enables the driver to open the door without dismounting, and the large window of safety glass in each door which enables him to do this in complete safety. Another important safety device is the rubber edging on the mating edge of each door. This protects both personnel and equipment from damage should the door be accidentally closed while either is in the way.

Also of interest is the door made of heavy rubber sheet, which is self-closing and can be easily "nosed open" by the advancing trucks. It is advisable to provide adequate windows in all automatic doors of this type, so that the driver can see on-coming traffic through the closed door. Rubber skirtings can usually be fitted to doors in external walls, to prevent draughts.

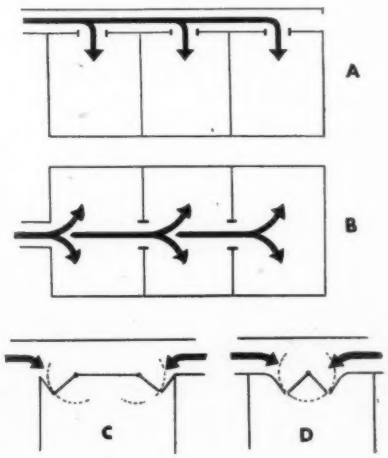
If possible, doors should not be arranged at the ends of passages; trucks should be able to proceed at least two truck lengths straight ahead after passing through a doorway instead of having to turn immediately (see Fig. 7).

External doors often have to be very large, so that the largest product made in the factory can be taken through them. Opening the whole door takes a long time and, in winter, lets in a lot of cold air. Such doors should, therefore, be fitted with a smaller door through which all the smaller traffic can pass.

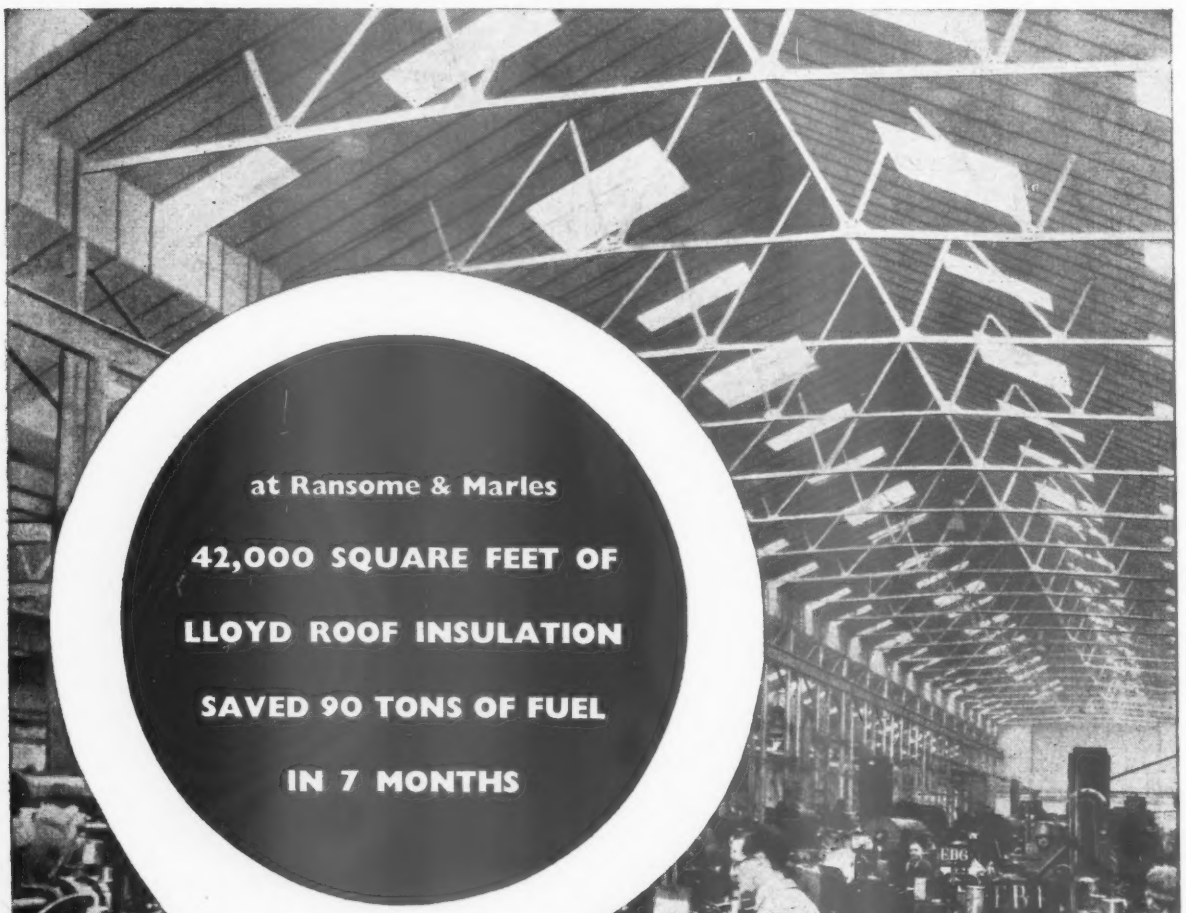


Above, Fig. 7, doors should not occur at points where the driver has to turn. Doors should be placed at least two truck-lengths away from corners. A mirror placed as in "B" helps the driver to see on-coming traffic.

Below, Fig. 8, trucks should not have to turn in order to enter storerooms or workshops, as in "A." The arrangement shown in "B" is best, but if the plan must be as in "A," the doors should be arranged as in "C" or "D." Large windows should be provided in the doors to prevent collisions.



A machineshop bay with Lloyd roof insulation at the Ransome & Marles Bearing Company's works at Newark-on-Trent



BUT NOT ONLY THAT . . .

. . . Ransome & Marles found that insulation paid other dividends. The boiler plant, previously over-loaded and unable to keep the shops warm, has now enough reserve capacity to heat a considerable works extension. Draughts which, in the uninsulated shops, were caused by downward currents of air chilled by contact with the single-skin asbestos sheeting of the roof, have disappeared. The shops are much cleaner for the roof lining is an excellent seal against dust. (Most important, this, in the manufacture of ball and roller bearings). It is also an excellent reflector and the lighting is better and more even. These improvements in working conditions have had a direct effect on the health of the employees. Absenteeism has dropped and so has the accident rate: output has gone up. The whole of this roof insulation was installed in a few weeks without interrupting the work in the shops.

For more information about Lloyd insulation, have a word with

BOWATERS BUILDING BOARDS LIMITED

BOWATER HOUSE, STRATTON STREET, LONDON, W.1. Telephone: GROSVENOR 4161

When the structure of the building does not permit the building of doors between adjacent bays, it is often possible to run a short length of conveyor through the walls. A truck with a power-lift platform can then be used to load and unload materials on to the conveyor. These trucks are now available with a roller-type platform which, when it has been elevated to the correct height, makes them, in effect, a continuation of the conveyor. With this system, the fixed route of the conveyor is given flexibility by the truck, thus giving us the best of both worlds.

RAMPS

In receiving and despatch bays, or piers, all loading ways should be of the appropriate height for the vehicles to be loaded. If the type of vehicle to be used is not known in advance, a good average height is 3½ ft. Any slight difference between this figure and the actual height of the lorry to be loaded can be made up by one of the portable ramps at present on the market. The ramp can be brought and dropped into position by the truck that is to handle the cargo of the lorry before it starts work.

The surface of the loading pier is often at a different level from that of the factory floor, thereby necessitating a ramp, up or down which the trucks can run. The approach and crest of ramps should always have as large a radius as is practicable, since trucks used for mechanical handling (pallet trucks in particular) have very little clearance. The truck shown in Fig. 2, for instance, has a maximum ground clearance of only 1⅛ in., with a 10-in. diameter driving wheel and two 3¼-in. load wheels. If we assume the ramp to have a maximum slope of 1 in 10, a radius of 380 in. will be needed at the crest to give adequate clearance (¾ in.) to the underneath of the truck. Since there will be no interference at the foot of the ramp, such a large radius is not required, but it should be as great as possible to permit smooth running. The radius of curvature at the foot of the ramp should always be greater than that of the largest wheel of the truck.

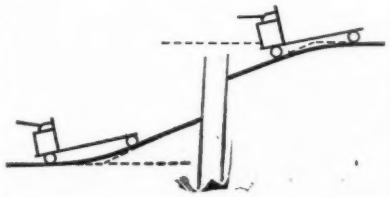


Fig. 9, "the approach and crest of ramps should always have as large a radius as is practicable." (N.B. the angle of the ramp is exaggerated in the sketch.)

Ramps between one floor and another make it possible to use trucks for vertical handling, thereby eliminating the cost of installing and running a goods lift and the delay that is inevitable when a lift is used. Again, amply large radii should be provided at the foot and the crest of each ramp and the incline should not exceed 1 in 10, since about six times as much power is required to haul a load up a ramp as on the level. When the incline is increased above 1 in 10, the power consumption goes up rapidly and the saving in space due to the steeper incline would not justify the extra running costs. The inner radius of a spiral ramp should never be less than 3 ft.

FLOORS

Floor surfaces greatly affect the efficiency of mechanical-handling equipment—far more so than is usually realized. In theory, a force of only 23 lb./ton is required to start a trailer with metal wheels, running on a good concrete floor, without cracks or pits in the surface. Once the trailer is in motion, a force of only 14 lb./ton is required to keep it going. For the same trailer on a concrete floor, with the smooth surface worn off, these figures go up to about 54 and 31 lb. respectively, *i.e.*, roughly twice as much. The figures for a trailer with rubber tyres would be slightly higher for the good floor, but considerably less for the worn floor, rubber being more uniform in performance and giving better results under poor conditions. Thus, to start a trailer with steel wheels placed in ½-in. wide cracks needs a force of about 125 lb./ton, whereas the same trailer with rubber wheels would require a force of only about 75 lb./ton.

Under normal operating conditions, vehicles running on concrete floors require about 10 per cent. less fuel than vehicles on wooden floors; hence, concrete is recommended wherever dust-free operation is not essential. (The use of rubber-tyred vehicles reduces considerably the formation of dust.)

For general purposes, a suitable wearing surface is provided by granolithic—½ in. laid at the same time as the concrete subfloor, or not less than 1½ in. laid in panels at a later date.

STRUCTURAL CONSIDERATIONS

In designing the floor structure, a suitable allowance must be made for impact and braking loads. Failure to do this resulted recently in the complete collapse of a storage building in which American army trucks were unloading cans of beer.

Moreover, it should be borne in mind that in considering the suitability of an existing factory building for the use

Above, Fig. 10, heavy industrial tractor, pulling a 40-ton "train." The maximum load on the rear axle of the tractor is about 3,000 lb. Each of the 16 axles in the "train" will carry a load of about 6,000 lb.

Below, Fig. 11, pedestrian-controlled, electric fork-lift truck (type "PF" in Fig. 1). This will raise loads of up to 2,400 lb. to a height of about 14 ft.

of mechanical-handling trucks, not only the weight of the trucks, but also the consequent concentration of goods in the storage areas and the higher floor loadings resulting from this, must be taken into account. Experience has shown that many old buildings cannot withstand the loads which may arise if modern fork-lift trucks are used. Often an existing building will cope with the additional weight of the trucks and a certain amount of extra goods, but not sufficient to make it possible to use the trucks to their full advantage. Moreover, there is always the danger that, if there is room, loads exceeding the safe load will be imposed. The savings which may result from the use of trucks are so great, however, that even costly reinforcement of weak structures will usually be an economical proposition in the long run.

FORK-LIFT TRUCKS.

When carrying a load, fork-lift trucks are normally driven from place to place with the forks at their lowest position, for reasons of stability. However, all openings, doors, etc., should have a minimum height of about 7 ft. to clear the tops of the masts. A typical fork-lift truck is shown in Fig. 11. This type of vehicle will stack up to 13 ft. or more. The height to which fork-lift trucks will reach should always be borne in mind—a low-pitched or curved roof, curtailing the reach of the trucks, not only reduces their efficiency, but also prevents the factory owner from taking advantage of the considerable savings in area (and hence building costs) effected by the high stacking height of these trucks.

The use of fork-lift trucks reduces considerably the area required for storage, particularly if incoming materials delivered on pallets are carried direct into the factory from the goods receiving bay. Part of the area saved can be used to increase the width of gangways, etc., above the minimum, since this makes for quicker and easier handling. As shown in the table below,* a 10 per cent. increase in gangway area can be made, without seriously affecting the increase in storage capacity made possible by using fork-lift trucks.

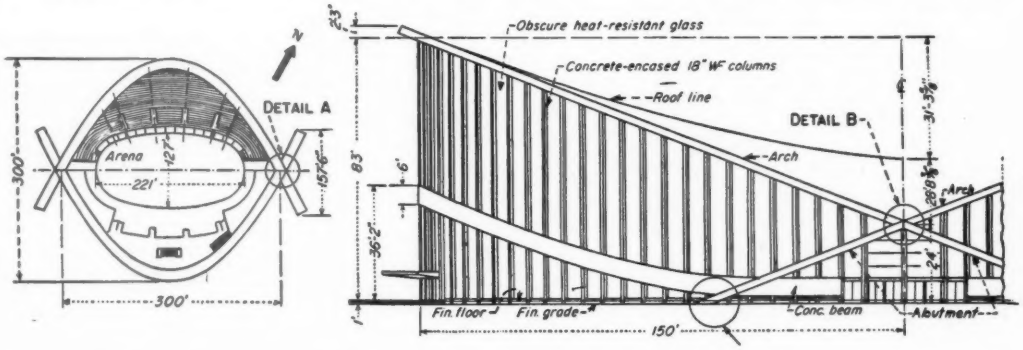
—	Old method (man-handling)	New method (fork-lift truck)
Storage area (in sq. ft.) ..	7,035	6,195
Gangways (in sq. ft.) ..	8,365	9,205
Capacity (in containers) ..	1,755	2,440

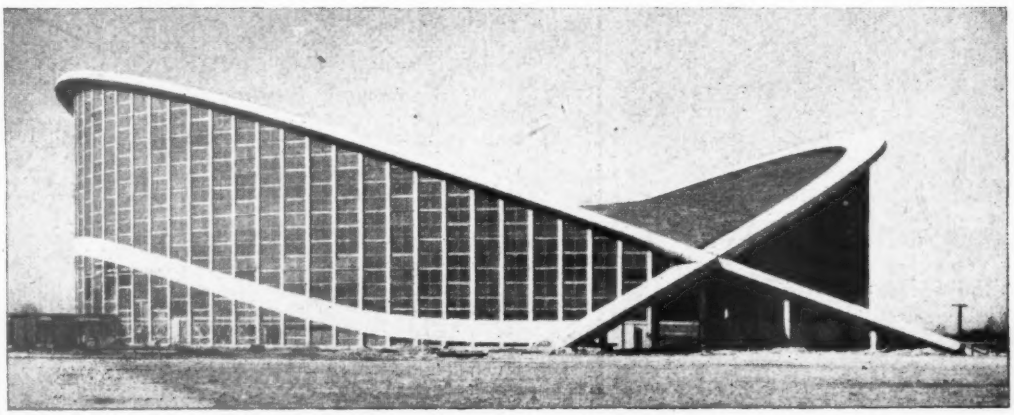
The storage area has been *reduced* by 11·8 per cent. ; the space devoted to gangways has been *increased* by 9·9 per cent., yet as a result of the change, there has been a rise in the storage capacity of 39 per cent.

* Reproduced from *Material Handling in Works Stores*, L. J. Hoefkens. Published for *Mechanical Handling* by Iliffe & Sons, Ltd.

CURVED SUSPENDED ROOF COVERS LARGE-SPAN AMERICAN ARENA

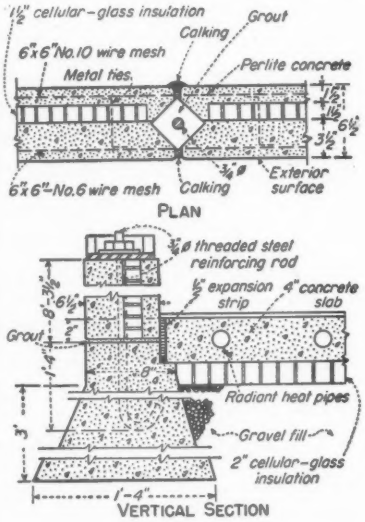
The photo below shows a livestock-judging pavilion at Raleigh, Carolina. The pavilion is roughly 300 *ft. in diameter and the use of a unique method of suspending the roof has made possible an uninterrupted view of the judging floor from every seat in the stands. The roof consists of asbestos-protected, metal roof decking covered with* ½*-in. fibreboard and built-up roofing. It is supported on cables stretched between a pair of inclined reinforced-concrete arches. The arches carry only the pull of the cables in their planes, as their own weight is supported on steel columns at* 8*-ft. centres, which also act as window mullions. The planes of the arches are at* 22 *deg. to the horizontal, and the arches are supported at their common springing point by an inverted, V-shaped abutment, the legs of which continue the lines of the arches down to ground level. The cables stretched between the arches form a* 6*-ft. square grid over the arena which, when covered with the decking, has a surface shaped like a saddle. Most of the cables were prestressed to avoid slackening during hot weather. Above the general view on the left, is a key plan and a half elevation. For details, see* Engineering News Record *[USA] for February* 5, 1953.

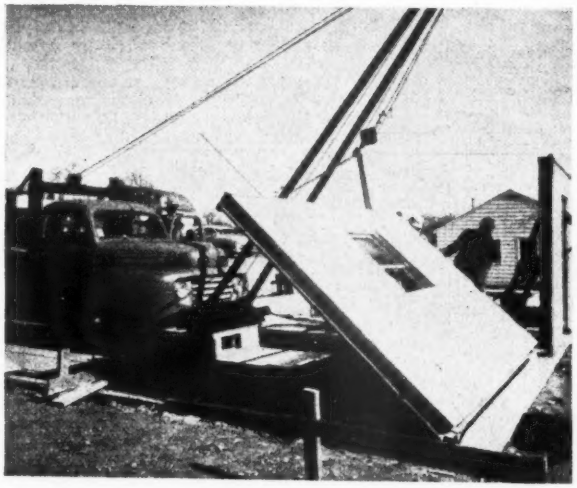




PRECAST CONCRETE WALL PANELS USED FOR SMALL HOUSES IN USA

The use of precast wall panels for small houses at Allentown, Pennsylvania, proved to be an economical and speedy system of construction. The work was carried out by a local contractor and the panels were of "sandwich" construction, with an outer skin of 3½-in. concrete, an inner skin of 1½-in. perlite concrete and 1½-in. cellular glass insulation blocks between. They were cast in a plywood mould on the ground floor slab of the house. The reinforcing mesh, the window and door frames, and the lifting attachments were placed on the plywood, and the 3½-in. thick concrete poured and screeded. The 1½-in. thick insulation blocks were then placed on this layer of concrete and the perlite concrete was poured and steel floated to a smooth hard finish capable of taking paint directly. The two skins of concrete were tied together by metal ties at 18-in. centres. Ring bolts were placed in the lifting attachments and a truck equipped with a boom tilted the wall panels into position (see photo). When the panels were in position, a pre-formed V-shaped groove in adjacent edges provided a diamond-shaped void which was grouted (see plan left). The three 12-ft. by 8-ft. panels required for the front of each house took only four days to cast and erect. For further information see Engineering News Record *[USA] for April 23, 1953, pp. 46 and 47.*





THE LIBRARY OF INFORMATION SHEETS

43.E12. *REFERENCE BACK*

Readers are asked to note the following amendments and to correct their copies of the Information Sheet in question; Face of Sheet—In the drawing of the unit for large kitchens the upstanding waste overflow and corner strainer should be in the back left corner of both sinks.

Buildings Illustrated

*Private Cinema at Kent House, Market Place, London, W.*1, for Rubery, Owen & Co. Ltd. (Pages 284-285.) Architect: C. H. Elsom, A.R.I.B.A. Assistant: R. Nicholls. Curtain design: Eduardo Paolozzi. Quantity surveyors: Veale & Sanders. General contractors: Yeomans & Partners Ltd. Sub-contractors: partitions, Veneercraft Ltd.; central heating, ventilation, Hope's Heating & Engineering Ltd.; electric wiring, bells, Leaf & Carver Ltd.; electric light fixtures (entrance hall), Troughton & Young Ltd.; door furniture (special handles) by H. N. Barnes Ltd.; decorative plaster, G. Jackson & Sons Ltd.; curtain, printing and block cutting by Elizabeth Taylor; furniture, S. Hille & Co., G. B. Kalee Ltd. (cinema seating); sprinklers, Mather & Platt Ltd.; signs, carpets, cinema equipment, G. B. Kalee Ltd.; photomural, Aerofilms Ltd.; wall veneer, William Mallinson & Sons Ltd.

Hassenbrook Secondary School at Stanford-le-Hope, Essex, for the Essex County Council. (Pages 286-289.) Architect: Gerald Lacoste, M.B.E., F.R.I.B.A.; Assistants: Kenneth Dod and Campbell Ross, A.R.I.B.A., in association with Harold Conolly, F.R.I.B.A., County Architect. Consultants: (heating and ventilating engineers) Roger Preston & Partners; (structural engineers) W. S. Atkins & Partners; (electrical engineers) Barlow Leslie & Partners. Quantity surveyors: Oswald Parratt. General contractors: E. H. Smith (Croydon) Ltd. Clerk of works: H. Blundell. General foreman: H. Blair. Sub-contractors: asphalt, Chittenden & Simmons Ltd.; concrete blocks, reinforced concrete, artificial stone, tiles, stairtreads, The Croft Granite Brick & Concrete Co. Ltd.; bricks, Finnis Ruault & Nicholls (Agents for Ibstock Brick & Tile Co. Ltd.); structural steel, John Booth & Sons Ltd.; special roofings, roofing felt, Wm. Briggs & Co. Ltd.; partitions, Mosaic & Terrazzo Precast Co. Ltd.; glass, Pilkington Bros. Ltd.; patent glazing, Lenscrete Ltd.; cast lead, Eastern Plumbing & Heating Co. Ltd.; woodblock flooring, Hollis Bros. Ltd.; linoleum, P. Holden & Co. Ltd.; central heating, ventilation, Deane & Beal Ltd.; stoves, Flexaire Ltd. (hot air circulators); gas fixtures, gas fitting, Deane & Beal Ltd.; boilers, Ideal Boilers Ltd.; electric light fixtures, Wm. Pickford Ltd., Troughton & Young Ltd., Falk Stadelmann & Co. Ltd.; plumbing, Eastern Plumbing & Heating Co. Ltd.; sanitary fittings, W. H. Froy & Sons Ltd.; door furniture, Comyn Ching & Co. (London) Ltd.; casements, window furniture, Williams & Williams Ltd.; rolling shutters, Geo. W. King Ltd.; iron staircases (balustrades), Wm. Pickford Ltd.; sunblinds, J. Avery & Co. Ltd.; insulation and acoustics board, Merchant Trading Co. Ltd.; storage tanks, Braithwaite & Co.; cycle racks, Alfred Odoni Ltd.; decorative plaster, C. Jackson & Sons Ltd.; metalwork, Wm. Pickford Ltd.; joinery, W. H. Gaze & Sons Ltd.; textiles, R. C. Twitchett Ltd.; furniture, school fittings, Educational Supply Association, Ltd., Spencer Heath & George Ltd. (gymnasium equipment), Wilson & Garden Ltd. (blackboards), Hall Manufacturing Co. Ltd. (stage equipment); Perspex rooflights, Wm. J. Cox Ltd.; paint suppliers, Mander Bros. Ltd.; cloakroom fittings, R. W. Whittle Ltd., and Comyn Ching & Co. (London) Ltd.; clocks, The Synchronome Co. Ltd.; signs, The Lettering Centre.

Extensions to Natural Philosophy Department, at the University of Glasgow. (Pages 290-296.) Architect: Basil Spence & Partners. Consultants: engineers, Crouch & Hogg; heating and ventilation, Donald Smith, Seymour & Rooley; electricity, Sayers & Crum; acoustics and sound insulation, R. B. Grey, A.M.I.MECH.E., F.INST.P.E.T., M.I.MAR.E.; 150-ton sliding slab, heavy doors and lifts, G. K. Jensen & Co. Ltd.

Readers requiring up-to-date information on building products and services may complete and post this form to the Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1

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I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please.)

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Please ask manufacturers to send further particulars to:—

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AJ 3.9.53

General contractors: Thaw & Campbell Ltd. Sub-contractors: asphalt, Val de Travers Asphalte Paving Co. Ltd; hollow tile floors and encasures, Diespeker & Co. Ltd.; clay bricks, Messrs. Patterson; facing bricks, Messrs. Southook; stone, Thaw & Campbell Ltd., Bath & Portland Stone Firms Ltd.; terra-cotta, Thaw & Campbell Ltd., J. W. Howie; structural steel, Fleming Bros.; fireproof construction, CO_2 installation by Pyrene Ltd.; "Thermotile" roof, Messrs. Andersons; ICI copper roofs, Messrs. Hugh Twaddle; roofing felt, Andersons Ltd.; glass, National Glass Co.; patent glazing, window furniture, Williams & Williams Ltd.; waterproofing materials, Evode Ltd.; central heating, Steeles Ltd.; convectors and unit heaters, Copperad Ltd.; plumbing and gas fixtures, A. MacDougall Ltd.; electrical wiring, electrical heating, Osborne & Hunter Ltd.; electric shelving and switchboards, Messrs. Younger; electric light fixtures, Troughton & Young Ltd., Merchant Adventurers of London Ltd.; ventilation, Steeles Ltd.; sanitary fittings, Shanks Ltd.; (Adamsez Ltd. drinking fountains); stairtreads, Toffolo Jackson Ltd.; pressed metal stairs, Frederick Braby & Co. Ltd.; door furniture, Bell Donaldson Ltd.; telephones, Siemens Bros. & Co. Ltd., G.P.O.; folding gates, Bolton Doors Ltd.; rolling shutters, Haskins "Roladors" Ltd.; "Durasteel" fireproof doors, John Cochrane Ltd.; spiral stairs, Walter MacFarlane & Co. Ltd.; iron staircases, hung stairs, Bell Donaldson Ltd.; revolving doors, John Cochrane Ltd., Messrs. Newman's (glass for revolving doors, Pilkington Bros. Ltd.); sunblinds, Messrs. Bryden; pumps, Drysdale Ltd.; plaster, G. Rome Ltd.; railings, Messrs. Ch. Henslow; joinery, John Cochrane Ltd.; shuttering, Messrs. Laidlaw; terrazzo and marble, Toffolo Jackson Ltd.; tiling, Messrs. Shaws, Messrs. Johnstones; wallpapers, signs, decoration and all paintwork, Bowie Fisher Ltd.; furniture, James D. Bennett Ltd. (school fittings), John Cochrane Ltd., Scottish Furniture Manufacturers Ltd., N. Morris Ltd., Neil Justice (Dundee) Ltd.; shrubs and trees, Sportsworks Ltd.; office fittings, Roneo Ltd., Pel Ltd. (chairs), Messrs. Watsons (steel bins), "Stormer" rolling bins, J. Glover; cloakroom fittings, Bell Donaldson Ltd.; lifts, G. K. Jensen Ltd.; lift enclosures, Frederick Braby & Co. Ltd.; travelling cranes, Whorton Cranes & Hoists Ltd.; clocks, Gents Ltd.

Design for Mechanical Handling Equipment (pages 267-271). Figs. 1, 2, 11 and 12 are reproduced by courtesy of Messrs. Lansing Bagnall Ltd. (the manufacturers of the trucks shown). Fig. 6 is reproduced by courtesy of Messrs. G. D. Peters & Co. Ltd. (the manufacturers of the power-operated sliding doors shown).

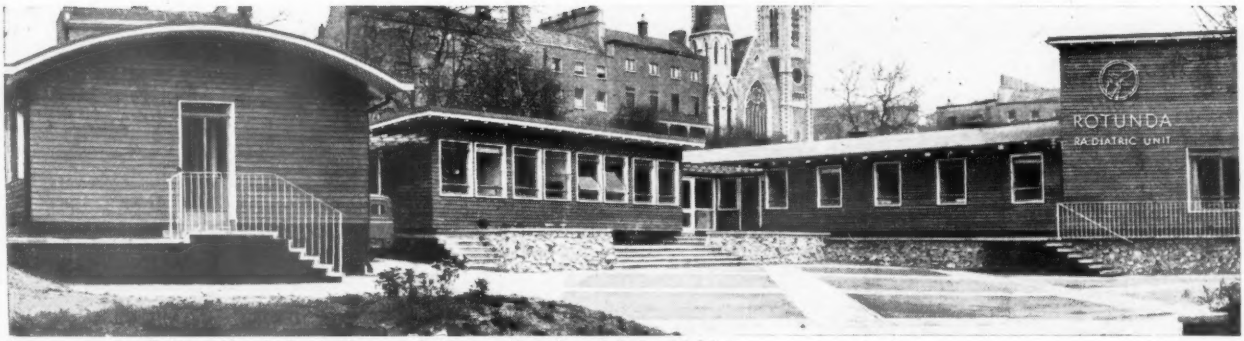
House at 56, Bradmore Way, Brookman's Park, Hatfield, Herts. (Page 220; AJ August 20, 1953.) Architects: Walter W. Fisk, F.R.I.B.A., and Sidney H. Fisk, L.R.I.B.A. General contractor: Stanwal (Finchley) Ltd. Sub-contractors: bricks, roof tiles, W. T. Lamb & Sons; stoves, boilers, Aga Heat Ltd.; electric wiring, Thos. Smerdon; door furniture, Yannedis & Co. Ltd.; casements, Ideal Casements (Reading) Ltd.; wall tiling, B. Finch & Co. Ltd..

Correction

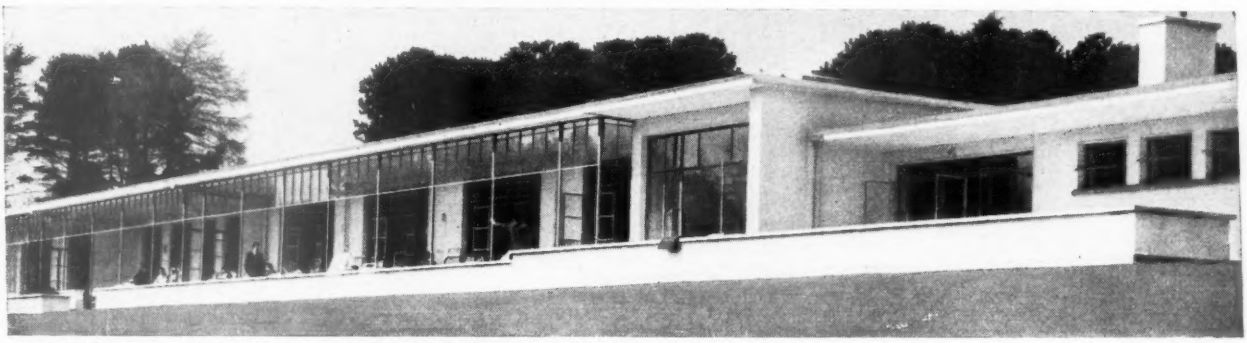
Furniture for the Clarendon School at Oxhey, Herts., illustrated on pages 231-236, in the JOURNAL for August 20, was designed by Dennis White, not Denys White, as stated on page 244.

Announcements

The address of Northern Aluminium Company Ltd. in Newcastle is now Groat House, Collingwood Street, Newcastle-upon-Tyne, 1. (Tel.; Newcastle 20878/9).



Rotunda Hospital, Dublin: New Radiatric Unit. *Architect: Alan Hope, B.Arch., A.R.I.B.A.*



Newcastle Sanatorium, Co. Wicklow. *Architect: Alfred Phillips, M.R.I.A.I.*

COMPANY MEETING · OLDHAM & SON LTD

NEW EMERGENCY LIGHTING A PRODUCT OF RESEARCH

THE 34th annual general meeting of Oldham & Son Limited was held on August 27th at Denton, Manchester, Mr. John Oldham, O.B.E., J.P. (the chairman), presiding.

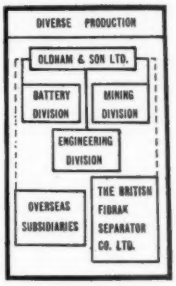
In his statement circulated with the accounts the chairman reported a net profit for the year of £262,541. After provision for taxation there was a balance of £109,247. A final dividend of 10 per cent. on the Ordinary Shares was proposed, which together with the interim dividend paid made a total distribution on the Ordinary Shares of 17½ per cent. During the year the Ordinary Share Capital was doubled by a share issue of £200,000 from reserves. Thus the amount of the dividend (last year expressed as 35 per cent.) remained unchanged.

FOR PUBLIC AND INDUSTRIAL BUILDINGS

During the course of his speech Mr. Oldham said:—The considerable sums of money we continue to spend on new developments are our best investment to build a reservoir of basic knowledge, new ideas, materials and technique so as to constantly improve the breed and diversify the Company's productions.

The introduction, recently, of a range of emergency lighting equipment for use in hospitals, public buildings, and industrial concerns is an illustration which will suffice to indicate the diversity of the long-term research and technical development programme which has been laid down to ensure the healthy and continuous flow of new ideas and improved technique.

The year's results underline the value of the Company's policy of diversifying its production and developing overseas manufacture.



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

Public and Official Announcements

25s. per inch; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

WORCESTERSHIRE COUNTY COUNCIL.
EDUCATION COMMITTEE.
CLERK OF WORKS.

Required immediately for Droitwich Proposed Secondary School. Salary £12 12s. 0d. per week. Applications to undersigned before 14th September, giving full details of experience, age, etc.

The County Architect,
14, Castle Street,
Worcester. 9442

BRITISH ELECTRICITY AUTHORITY.
EAST MIDLANDS DIVISION.

Applications are invited for the following positions within the Division :—

CIVIL ENGINEERING DRAUGHTSMEN, CONSTRUCTION DEPARTMENT.
VACANCY No. 22/53.

Candidates should have experience in design and detail of reinforced concrete structures, piled and slab foundations for heavy plant, culverts, cable subways, etc., for general building construction, drainage and sanitation schemes, associated with office and administrative buildings.

The salary will be in accordance with Grade 5 (£567—£671 per annum) or Grade 6 (£433—£567 per annum) of Schedule D of the National Joint Board Agreement.

ENGINEERING DRAUGHTSMEN (MECHANICAL), CONSTRUCTION DEPARTMENT.
VACANCY No. 44/53.

Senior Draughtsmen are required in the Mechanical section of the Construction Department at North Wilford Power Station. Candidates should have experience in one or more of the following :—

(i) Design and layout of Power Station equipment, including Turbo-alternators, Boiler Plant, Coal and Ash Plant, and General Station Auxiliaries.

(ii) H.P. and L.P. steam and feed pipework. Condensing plant and feed heating systems.

(iii) Conveyor plant, coal handling systems and material handling of station auxiliary equipment.

Salary and conditions of service will be in accordance with the National Joint Board Agreement Grade 5 (£567—£671 per annum) and Grade 6 (£433—£567 per annum) of Schedule D according to experience.

ENGINEERING DRAUGHTSMEN (ELECTRICAL), CONSTRUCTION DEPARTMENT.
VACANCY No. 61/53.

Candidates should have experience in the preparation of layouts and diagrams for the installation of E.H.T. and L.T. Switchgear, transformers, E.H.T. and L.T. cables; knowledge of protective gear systems would be an advantage.

The salary will be in accordance with Grade 5 (£567—£671 per annum) or Grade 6 (£433—£567 per annum) of Schedule D of the National Joint Board Agreement.

The above positions will be pensionable within the provisions of the British Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the official form which may be obtained from the Divisional Establishments Officer, British Electricity Authority, Barker Gate, Nottingham, and should be returned to the undersigned. Please Quote Vacancy Number.

L. F. JEFFREY,
Divisional Controller.
9439

CHELTENHAM COLLEGE OF ART.
LISTED SCHOOL OF ARCHITECTURE.

Full-time Studio Master and Lecturer required immediately, temporary post. Full particulars of appointment from Principal. 9450

CITY ARCHITECT'S DEPARTMENT, MANCHESTER.

Applications are invited for the following appointments :—

PERMANENT STAFF.

(*a*) Assistant Architect. Salary Grade A.P.T. V £595 to £645 per annum. Candidates must be registered architects and Associates R.I.B.A.

(*b*) Architectural Assistant. Salary Grade A.P.T. IV £555 to £600 per annum. Candidates must be Students R.I.B.A.

TEMPORARY STAFF.

(*c*) Architectural Assistant. Salary Grade A.P.T. III £525 to £570 per annum. Candidates must be Students R.I.B.A.

Further particulars and Forms of Application may be obtained from the City Architect, Town Hall, Manchester, 2. The completed forms to be returned to the same address by 19th September, 1953.

Canvassing is prohibited. 9457

BOROUGH OF BARKING.
DEPARTMENT OF THE BOROUGH ARCHITECT.
APPOINTMENT OF QUANTITY SURVEYING ASSISTANTS.

Applications are invited for the appointment of two quantity surveying assistants, Grade A.P.T. II, at a commencing salary of £495 per annum, plus London weighting. Further particulars and form of application may be obtained from the Borough Architect, Town Hall, Barking.

Completed applications should reach the undersigned not later than 9 a.m. on Friday, 11th September, 1953.

E. R. FARR,
Town Clerk.
9449

LINDSEY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Vacancy on the permanent staff for Junior Architectural Assistant A.P.T. III £525—£570, commencing salary £525. Applicants should have passed intermediate examination of R.I.B.A. or equivalent. N.J.C. Conditions of Service. Canvassing will disqualify. Any applicant related to Member or Senior Officer of Council to disclose that fact.

Applications, stating age, qualifications and experience, with copies of two recent testimonials, to be sent to the undersigned not later than 11th September, 1953.

A. RONALD CLARK, A.R.I.B.A., A.M.T.P.I.,
County Architect.
County Architect, Lincoln. 9455

SOUTHAMPTON C.B.C.

Appointment of Group Architect, Grade VIII (£760—£835 per annum). Senior Quantity Surveyor, Grade VII (£710—£785 per annum). Junior Architectural Assistant, General Division (£160—£450 per annum). Junior Quantity Surveying Assistant, General Division (£160—£450 per annum). Application forms from Borough Architect, Civic Centre, Southampton, to be returned by 14th September, 1953. 9458

COUNTY COUNCIL OF HUNTINGDON.
APPOINTMENT OF COUNTY ARCHITECT.

Applications are invited from persons not exceeding 45 years of age for the vacant position of County Architect at a salary on an awarded scale of £1,450 rising subject to satisfactory service by annual increments of £50 to £1,650 per annum There will be travelling allowance on the official scale.

Candidates must have passed the Associate Membership examination and be Corporate Members of the Royal Institute of British Architects.

The person appointed will be required to have had considerable experience in the administration of a County Architect's Department and in the design, construction and maintenance of County Buildings including Schools. Police Stations and Public Health properties.

The position will be subject to the terms of the Local Government Superannuation Act, 1937 (as amended by the Act of 1953) and the person appointed will be required to pass a Medical examination.

The appointment will be terminable by three calendar months' notice in writing on either side.

Applications giving the names of three referees and stating age, technical qualifications and details of experience are required to be submitted so as to reach the undersigned by not later than first post on Monday, 21st September, 1953.

Canvassing in any form will be prejudicial to the applicant.

JOHN KELLY,
Clerk of the County Council.
9459

NORTH RIDING COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited from Registered Architects for appointment on permanent staff of ASSISTANT ARCHITECT, A.P.T. Grade V (£595—£645.

Post superannuable and subject to medical examination.

No form of application is issued but further information may be obtained from County Architect, County Hall, Northallerton. Applications, stating age, qualifications and experience with particulars of present and previous appointments, and names and addresses of three referees, to be received by undersigned not later than 14th September, 1953.

Canvassing, directly or indirectly will disqualify and candidates should state whether they are related to any member of, or senior officer under the Council.

H. G. THORNLEY,
Clerk of the County Council.
County Hall, Northallerton, 24th August, 1953.
9454

METROPOLITAN BOROUGH OF CHELSEA.

ARCHITECTURAL ASSISTANT, Grade VI (£670—£735 per annum, plus "weighting") required on the staff of the Borough Engineer and Surveyor. The person appointed will be required to assist with the design of new dwellings and the conversion of existing houses into flats, and must be competent to prepare working and detail drawings. Candidates should have had sound architectural training and experience. Preference will be given to candidates who have already passed the Final Examination of the R.I.B.A. Apply stating age, qualifications, experience and training, naming three referees to the Town Clerk, Town Hall, King's Road, Chelsea, S.W.3, by 18th September, 1953. Endorse "Architectural Assistant." Canvassing disqualifies. 9466

LANCASHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the permanent staff :

(a) Senior Quantity Surveyors, salary £760—£835.

(b) Assistant Quantity Surveyor, salary £670—£735.

(c) Assistant Architects, salary £670—£735.

(d) Senior Assistant Heating Engineer, salary £760—£835.

(e) Senior Assistant Land Surveyors and Valuers, salary £710—£785.

Application forms, to be returned by Saturday, 19th September, obtainable from the County Architect, County Hall, Preston. 9440

CORPORATION OF THE CITY OF ABERDEEN.
TOWN PLANNING DEPARTMENT.

Applications are invited for the post of Planning Assistant in the salary grade £460 to £650 per annum. Placing in accordance with qualifications and experience.

Further particulars and forms of application obtainable from the Director of Town Planning, 5 Bon-Accord Crescent, Aberdeen, to whom applications should be returned on or before 18th September, 1953.

J. C. RENNIE,
Town Clerk.
9448

HAMPSHIRE.

Applications are invited for the appointment of a Technical Assistant in the County Planning Department on A.P.T. Grade III—IV (£525—£600) of the National Salary Scales.

Applicants should have had a thorough architectural training, have passed at least the Intermediate examination of the Royal Institute of British Architects, and have had previous Local Government experience in the design and layout of neighbourhood units and housing schemes, preferably in a Planning Department.

The appointment is pensionable and will be subject to a satisfactory medical report. Officers using their own cars when travelling on County Council duties will receive travelling allowances on the County Scale for the time being in force.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names and addresses of two persons to whom reference may be made, should be sent to the County Planning Officer, Litton Lodge, Clifton Road, Winchester, not later than the 11th September, 1953. 9446

METROPOLITAN BOROUGH OF FULHAM.
ASSISTANT QUANTITY SURVEYOR.

Housing and Public Buildings Dept. A.P.T. V/VA. £595—£685 per annum plus London weighting £30 per annum over 26 years. Main duties "taking-off" for large blocks of flats and other public buildings, measurement of works on site and finalising accounts. Preference given to applicants who have passed the Final R.I.C.S. (Quantities) exam. or equivalent. Forms from Town Clerk, Town Hall, S.W.6. Closing date 14th September. 9456

CITY OF SALFORD.

Applications are invited for the appointment of Architectural Assistant. Salary A.P.T. Grade IV (£555—£600 per annum).

Candidates must have passed the Intermediate Examination of the R.I.B.A. or its equivalent at one of the recognised Schools of Architecture and have had at least two years' experience in an Architectural Office.

The post is subject to the National Scheme of Conditions of Service, the passing of a Medical Examination, and is superannuable.

Detailed particulars with the names of three referees to be sent to the City Engineer and Surveyor, Town Hall, Salford, 3, endorsed "Architectural Assistant (Ref : A.J.)", so as to be received not later than Monday, 14th September.

Applicants must disclose in writing any known relationship to Members or Officers of the Council.

H. H. TOMSON,
Town Clerk.
9447

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF ASSISTANT BUILDING INSPECTOR.

Applications are invited for the above appointment, at a commencing salary within the range of £465-£555 p.a., according to ability and experience.

Applicants should have a thorough practical knowledge of the building trade and experience as a Clerk of Works or General Foreman. They should be good specification writers and be able to make clear concise reports. The successful candidate will be required to reside in or near Stafford and to provide a car for the performance of his duties, for which travelling allowances will be payable in accordance with the County Scale.

Application forms may be obtained from C. M. Coombs, F.R.I.B.A., County Architect, Martin Street, Stafford, to whom they should be returned after completion.

T. H. EVANS,
Clerk of the County Council.
County Buildings, Stafford.
26th August, 1953. 9473

COUNTY BOROUGH OF EAST HAM.
ARCHITECTURAL ASSISTANT. Salary: £595-£645 (Grade A.P.T., V).
ARCHITECTURAL ASSISTANT. (Salary: £555-£600 (Grade A.P.T., IV).
SENIOR ENGINEERING ASSISTANT. Salary: £670-£735 (Grade A.P.T., VI).
ENGINEERING ASSISTANT. Salary: £595-£645 (Grade A.P.T., V).
QUANTITY SURVEYOR. Salary: £555-£600 (Grade A.P.T., IV).
CLERK OF WORKS (Road and Sewer Works) (Temporary). Salary: £555-£600 (Grade A.P.T., IV).
London weighting is paid in addition. Salaries in excess of the minima may be paid, according to the qualifications and experience of successful candidates.
Subsistence allowances may be paid to persons appointed if unable to obtain suitable housing accommodation.
Further details and form of application (returnable by Monday, 14th September, 1953), obtainable from the Town Clerk, Town Hall, East Ham, E.6. 9476

BOROUGH OF BARNES.
Temporary ARCHITECTURAL ASSISTANT, A.P.T., Grade III.
Applications are invited for the above appointment, at a salary of £525×£15—£570, plus London weighting allowance.
Candidates should be good draughtsmen, and be capable of preparing plans and details for general architectural work.
Applications, giving the names of three persons to whom reference can be made, must be sent to the undersigned not later than Friday, 18th September, 1953.
W. R. SHEPHERD, A.M.I.C.E., F.R.I.C.S.,
Borough Engineer and Surveyor.
Municipal Offices, Sheen Lane, S.W.14. 9475

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
ASSISTANT QUANTITY SURVEYOR.
Applications are invited for the post of Assistant Quantity Surveyor in the Architect's Branch of the Education Department. (Architect to the Committee, Mr. J. R. Sheridan-Shedden, Dip.Arch., A.R.I.B.A.) Salary scale A.P.T. II (£495 × £15 × £540). Experience in working up and abstracting with a good knowledge of building construction essential.
Application forms which may be obtained from the undersigned (s.a.e.) must be returned not later than 16th September.
E. L. RUSSELL,
Chief Education Officer.
General Purposes Branch,
Education Office,
Margaret Street, Birmingham, 3. 9467

Competition

6 lines or under, 12s. 6d.; each additional line, 2s.

COMPETITION IN EDINBURGH.
The Church of Scotland Home Board invites Architects resident in Scotland to submit designs in competition for a church and ancillary buildings for a site at Sighthill, Edinburgh.
There will be five prizes: £750, £450, £300, £200 and £100.
The Assessods will be: Professor Robert H. Matthew, C.B.E., M.A., A.R.I.B.A., A.R.I.A.S., Mr. Harry Taylor, A.R.I.B.A., A.R.I.A.S., Architect to the Church of Scotland Home Board, and the Rev. Professor J. G. Riddell, D.D., Convener of the Church of Scotland National Church Extension Committee.
The closing date for submission of designs is 12 noon, Saturday, 30th January, 1954, and the last date for questions is Thursday, 15th October, 1953.
Competition conditions and a plan of the site may be obtained from the Rev. Ivan F. Tibbs, M.A., The Church of Scotland Offices, 232, St. Vincent Street, Glasgow, C.2, on payment of a deposit of £2 2s., which will be returned on receipt of a *bona fide* design or on the return of the competition documents at least four weeks before the last day for the submission of designs. 9474

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she is, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

ASSISTANT ARCHITECT, preferably school trained, three to five years' office experience, wanted in London office. Write giving details of experience and salary required to Box 9438.

ASSISTANT required for large general Architectural Practice with offices in Maidenhead. Some experience in specification writing essential. Salary £300 to £500, according to experience. Box 8933.

ARCHITECTURAL ASSISTANT required immediately for South Coast Brewery. Must be good draughtsman and have sound knowledge of building construction and specification writing. Salary £400—£600 p.a. according to age and experience. Apply Box 9415.

JUNIOR ARCHITECTURAL ASSISTANT required, some office experience essential. State experience and salary required. Deane Skurray, 22, Minster Street, Reading. 9409

ARCHITECTURAL ASSISTANTS, Senior and Junior, required in Architects' office, Victoria district. To work under supervision of Principals. Flats, housing and church work. Please write stating experience, qualifications and salary required. Box 9405.

ARCHITECTURAL ASSISTANT required in country practice in North Essex. Salary £350. Write stating experience, etc., to Box 9436.

ARCHITECTURAL ASSISTANTS — Simon-Carves Ltd., have several vacancies for achitectural assistants interested in reinforced concrete industrial structures. The main fields covered are coal preparation plant, coke ovens, chemical plant, and power stations. The work offers excellent experience and good scope. A Pension Fund and D.O. Bonus Scheme are in operation. Apply, giving age and details of experience, to Staff and Training Division (Ref. T.E. 12), Simon-Carves Ltd., Cheadle Heath, Stockport. 9449

ASSISTANT required for busy practice. Capable preparing Working Drawings and Details. Previous office experience essential. Salary £350—£450. Meredith & Partners, 6, Victoria House, Goodmayes, Essex. 9445

ASSISTANTS required in Architect's Department of large commercial organisation. Sound all round training in the profession essential including supervision of work. Excellent opportunities for men of initiative. Apply in writing, giving details of experience, age, and salary required, to Box 3675, c/o Foster, Turner & Everetts, 11, Old Jewry, London, E.C.2. 9453

ARCHITECTURAL ASSISTANT required in Architect's Office, British Railways, Eastern Region, at King's Cross Station. Applicants should be of Intermediate R.I.B.A. standard. Salary according to age and experience. Free residential railway travelling within specified limits and other reduced rate travelling facilities after qualifying period of service. Permanency to suitable applicant after probationary period. Five-day week and canteen facilities. Apply in writing giving full particulars as to qualifications, experience, etc., to the Civil Engineer, Eastern Region, British Railways, King's Cross Station, London, N.1. 9452

ARCHITECTURAL DRAUGHTSMAN required in Multiple Shop Company. Experience in ⅜-in. and ½-in. working drawings, able to work on own initiative. Five-day week, staff canteen, superannuation scheme, permanent position after qualifying period. Please reply stating age, salary required, when available to Box 9469.

VACANCY arises for Articled Pupil (Architectural or Building Surveying) in City firm. Box 9468.

ARCHITECTURAL DRAUGHTSMAN required for large engineering works, Birmingham. Must be capable of preparing full working drawings for new buildings and ability to sketch plans for factory maintenance work. Permanent, superannuated position. Box 9470.

ARCHITECTURAL ASSISTANT, Intermediate standard with office experience, required by a Birmingnam practice carrying out a wide variety of work. Details of experience and salary required to Box 9460.

ARCHITECTURAL ASSISTANT, Inter. R.I.B.A. Standard, required in 2 months, Country Practice, 45 miles north of London. Previous office experience essential and good, quick Draughtsman. Write stating age, experience and salary required. Box 9461.

ARCHITECTURAL ASSISTANT, at least Inter. R.I.B.A. standard, required for busy country practice. Write stating age, experience and salary required, to Edwin H. Earp & Badger, L./A.R.I.B.A., Scholars Lane, Stratford-on-Avon. 9462

ARCHITECTS in South-East Scotland require ASSISTANT, qualified or final standard. Apply, stating age, experience, and salary required. Box 9472.

Architectural Appointments Wanted

CHARTERED ARCHITECT (Canadian), age 36, seeks responsible position. 8 years' experience (4 years as Chief Assistant). Box 747.

B. ARCH. (Lvpl.), A.R.I.B.A. (33), 3 years' experience, 6 years' Military, 2 years' Govt. service, educated, travelled, *Nomo universale*, wants London job. Capable contemp. and RC and Steel struct. design. M. Box 758.

ASSISTANT (25), Inter., School Trained to final yr., some office exp., N/S R.E. Wks., seeks post, small, prog. office, North, Midlands or Cambridge. Box 759.

A.R.I.B.A., (26), three years, experience, seeks responsible position in Northern or Southern Rhodesia. Married, no children. Box 757.

ARCHITECTURAL ASSISTANT, with experience of several years, seeks position in London. Box 756.

ARCHITECT, A.R.I.B.A., Dip. Arch. (Distinction) (30), 5 years' experience on flats, housing, industrial work at present in L.A., seeks responsible position, preferably with small contemporary minded firm. Salary desired, £750 per annum (£780 in London). No objection to temporary engagement. Suggestions welcomed. Box 755.

ASSISTANT (24, B.A., A.R.I.B.A., ex-R.E. N/S Commission) seeks position in contemporary office. General past experience over short periods. Considerable perspective experience. Box 753.

SCULPTOR and Architect's Assistant, Final standard, 5½ years' varied experience, requires position where integrity, enthusiasm and interest are not stifled. Box 9422.

Other Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

QUANTITY SURVEYOR. Provincial Architects have vacancy for competent Surveyor; measuring and adjusting final accounts essential. State age, experience, salary. Box 9444.

REQUIRED. — DRAWING OFFICE MANAGER AND TECHNICAL EDITOR for Architectural Magazine. Applicants must be first-class draughtsmen, possess a sound knowledge of building practice, and be interested in the preparation of technical data; salary according to experience. Applications in writing only, to the Organising Secretary, The Architectural Press, Ltd., 9-13, Queen Anne's Gate, London, S.W.1. 9158

EDITOR required, part-time, for Architectural Magazine. Someone between 25 and 35 years of age. Write stating architectural or other qualifications and experience. Box 9413.

OLD-ESTABLISHED Mutual Life Assurance House wants a few men of initiative and integrity to act as AGENTS. Architects and Surveyors have the necessary knowledge and contacts to make business most profitable to us and them. Further details from Box 8283.

SENIOR DRAUGHTSMAN required for Architects with extensive general practice, chiefly commercial, in all parts of the United Kingdom, with offices in Maidenhead. Reply, giving full details of experience and salary required, to Box 9477.

QUANTITY SURVEYORS' ASSISTANT required by Architects with extensive general practice, chiefly commercial in all parts of the United Kingdom, with offices in Maidenhead. Reply, giving full details of experience and salary required, to Box 9478.

For Sale or Wanted

4 lines or under, 7s. 6d.; each additional line, 2s.

RECONDITIONED EX-ARMY HUTS, and manufactured buildings. Timber, Asbestos, Nissen type, Hall type, etc. All sizes and prices. Write, call, or telephone, Universal Supplies (Belvedere), Ltd., Dept. 25, Crabtree Manorway, Belvedere, Kent. Tel.: Erith 2948. 6803

TYPEWRITERS.—All makes and prices. Office or Portable. Most language keyboards. Also Adding, Listing and Calculating Machines for sale—H.P. or Hire. Nu-Bilt Typewriters, Ltd. (London's Largest Stockists), 25, Southampton Row W.C.1 (near Holborn Tube Station). CHA. 8172 (8 lines). 9280

FOR SALE: Drawing Office and Photo-printing going concern. Area 1,000 sq. ft. Optional lease on building. Rent £125 p.a. City area. Suitable for Consulting Engineers or Architects requiring additional drawing office accommodation with printing machinery. Reply to Box 9465.

Services Offered

4 lines or under, 7s. 6d.; each additional line, 2s.

SURVEYS of Buildings and Sites. Accurate Drawings, Reports on Buildings, Quantities, Schedule of Repairs. Qualified Surveyor. LIV 1839 or Box 9356.

ARCHITECT requires free-lance work. Perspectives and Architectural Models. Box 9464.

ARCHITECT'S MODEL MAKER. Typical work in hand, House Types, Factories, Churches, Bridges and Contours to all scales. Excellent references. North Herts. Box 9428.

STAINED GLASS ARTIST AND MURAL PAINTER free to undertake Commissions at reasonable terms. W. F. Lowe, 52, Derwent Road, N.13. 9451

Miscellaneous

4 lines or under, 7s. 6d.; each additional line, 2s.

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works, 96/107, St. Paul's Road, N.1. Canonbury 2061.

FREE advice on better heating by oil filled radiators (rental terms), central heating, draught proofing, insulation, etc. Consult Hurseal, 229, Regent Street, W.1. (Regent 1051.) 8445

ARCHITECT desires share offices, two rooms, etc., and clerical assistance. Lease, good position, Godalming. Box 9463.

ACCOMMODATION.—Responsible 5th year, December-July, finalists invited to share flat. Ring Putney 9923. 9471

Educational Announcements

4 lines or under, 7s. 6d.; each additional line, 2s.

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. (Prof. Sir Patrick Abercrombie in assn.), prepare Students by correspondence. 10, Adelaide Street, Strand, W.C.2. TEM. 1603/4.

R.I.C.S., I.A.A.S., and I.Q.S. Exams.—Postal Courses conducted by the Ellis School (Principal: A. B. Waters, M.B.E., G.M., F.R.I.B.A.), 103B, Old Brompton Road, S.W.7. KEN. 4477/8/9. Descriptive Booklet on request 7020

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
COLLEGE OF ARTS AND CRAFTS.
BIRMINGHAM SCHOOL OF ARCHITECTURE.
POST GRADUATE COURSE OF LECTURES: STRUCTURES, CLADDING AND INTERNAL DRAINAGE.

A post graduate Course consisting of seven lectures will be given on alternate Wednesday evenings during the Winter term—September to December 1953, in the School of Architecture at the College of Art and Crafts, Margaret Street, Birmingham. All lectures will begin at 6.0 p.m. in Room No. 9.

Wednesday, 23rd September.—"Structural Systems I," Mr. F. J. Samuely, B.Sc., A.M.I.C.E., M.I. Struct. Eng.

Wednesday, 7th October.—"Structural Systems II," Mr. F. J. Samuely, B.Sc., A.M.I.C.E., M.I. Struct. Eng.

Wednesday, 21st October.—"Weathering and Cladding Materials," Mr. H. J. Eldridge, Building Research Station.

Wednesday, 4th November.—"The Cladding of Framed Structures," Mr. E. D. Mills, F.R.I.B.A.

Wednesday, 18th November.—"Use of Prestressed Concrete in School Construction," Mr. M. Lee, Dip. Arch (Birm.), A.R.I.B.A. Min. of Education Architects Department.

Wednesday, 2nd December.—"Problems of Internal Plumbing and Single Stack Drainage I." Mr. H. Golder of Econa Ltd.

Wednesday, 16th December.—"Problems of Internal Plumbing and Single Stack Drainage II." Mr. H. Golder of Econa Ltd.

Enrolment will take place in Room 9 before the first lecture.

The fee for the course, which must be paid at the time of enrolment, will be £1 11s. 6d.

E. L. RUSSELL,
Chief Education Officer.
9441

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Printed in Great Britain for the Proprietors of "THE ARCHITECTS' JOURNAL" (The Architectural Press Ltd.), 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, by HARRISON & SONS LTD., Printers to the late King George VI, London, Hayes (Middx.), and High Wycombe. Editorial illustrations engraved by THE ENGRAVERS' GUILD LTD., Windsor House, 23/26, Cursitor Street, London, E.C.4.