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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	Sloane 3158/1601
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851	
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
IWA	Inland Waterways Association. 11, Gower Street, W.C.1.	Museum 9200
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	MARS Group (English Branch of CIAM). Secretary: Gontran Goulden, Building Centre, 9. Conduit Street, W.1.	Mayfair 8641
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James's Square S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOTCP	Ministry of Town and Country Planning. 32-33, St. James's Square, S.W.1.	Whitehall 8411
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94-98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 37. Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers. 10, Princes Street, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association, 14, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	Central 4444
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1.	Langham 1984
SNHTPC	Scottish National Housing & Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Ruthlergen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	City 4771
TGC	The Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 69, Cannon Street, E.C.4.	City 4444
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866
WEDA	Welfare Equipment Development Association. 74, Victoria Street, S.W.1.	Victoria 5783
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford	Oxford 47988

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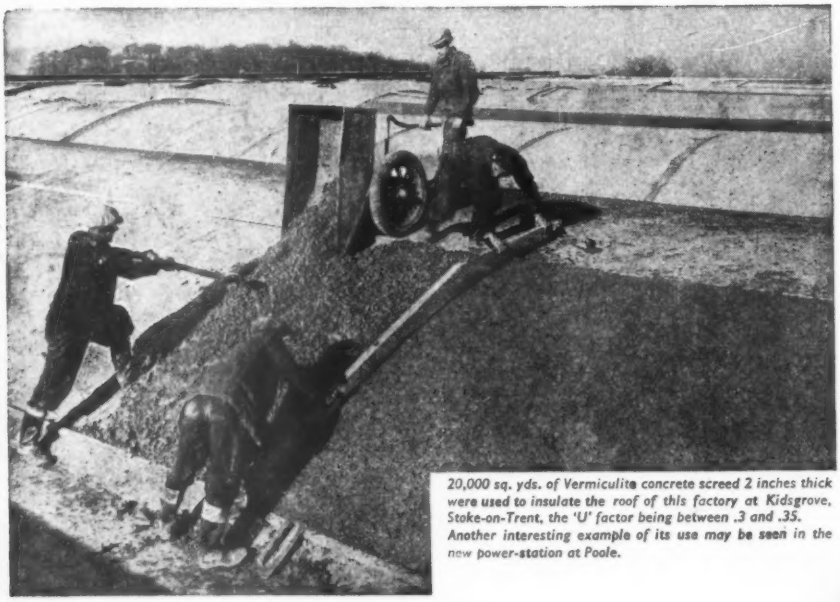


20,000 sq. yds. of Vermiculite concrete screed 2 inches thick were used to insulate the roof of this factory at Kidsgrove, Stoke-on-Trent, the 'U' factor being between .3 and .35. Another interesting example of its use may be seen in the new power-station at Poole.

VERMICULITE

for lightweight, low-cost concrete with remarkable insulating power

Owing to its combination of light weight with high insulation value, concrete employing VERMICULITE as aggregate has proved a real economy, particularly as a roofing material for factories, schools and power-stations. Experience in typical buildings shows that :—

1. The cost of the concrete is more than covered by the saving which is made possible on the heating installation.

2. The light weight (24lb. per cubic ft.) of the Vermiculite concrete allows of further economies in the cost of the structure.

3. For each 1,000 sq. ft. of roof insulated with Vermiculite concrete the calculated fuel saving is 6 tons per annum.

24 lb. per cubic foot

A typical mix of Vermiculite and Portland cement in the ratio of 6—1 by volume gives a concrete with a bulk density of 24 lb. per cubic ft. and a 'K' factor of 0·65, but the relative factors of weight, strength and insulating power vary with the proportion of large and small Vermiculite granules and the amount of cement. William Kenyon & Sons can supply the correct grade of aggregate to meet any specified requirements, and architects are invited to consult our technical staff, who have complete data at their disposal.

★ *Vermiculite concrete has also been used with complete success in the insulation of mains for district heating, for fire-proof doors and partitions and for coating Steel joists and columns.*

WHAT VERMICULITE IS

VERMICULITE is an aluminium-magnesium-silicate belonging to the Mica group of minerals and similar in appearance. The laminae which compose it have the peculiarity of expanding enormously and exfoliating when subjected to heat, thus reducing the bulk density of the material to something like 5 lb. per cubic foot.

Supplies of high-quality Vermiculite from South Africa are now available and the raw material is being expanded, ground, sieved and graded at our plants at Dukinfield and in the London area, from which Contractors can be supplied with the correct mix for any purpose.

Summary

of the properties of

"KISOL"

Vermiculite Concrete

Light Weight

24 lb. per cu. ft. (6—1 mix)

Good Insulation

Thermal conductivity ('K') is only 0·65 B.T.U.s per sq. ft. per 1" thick. per 1°F per hour.

Fire Resistance

Up to 2,000° F.
Classified 'Incombustible.'

Sound Treatment

Average transmission loss 42·5 db.

Workability

Can be mixed in an ordinary mixer and poured like any other concrete, sprayed on walls and wallboards, pre-cast into blocks, roofing-slabs or curved sections.

Stability

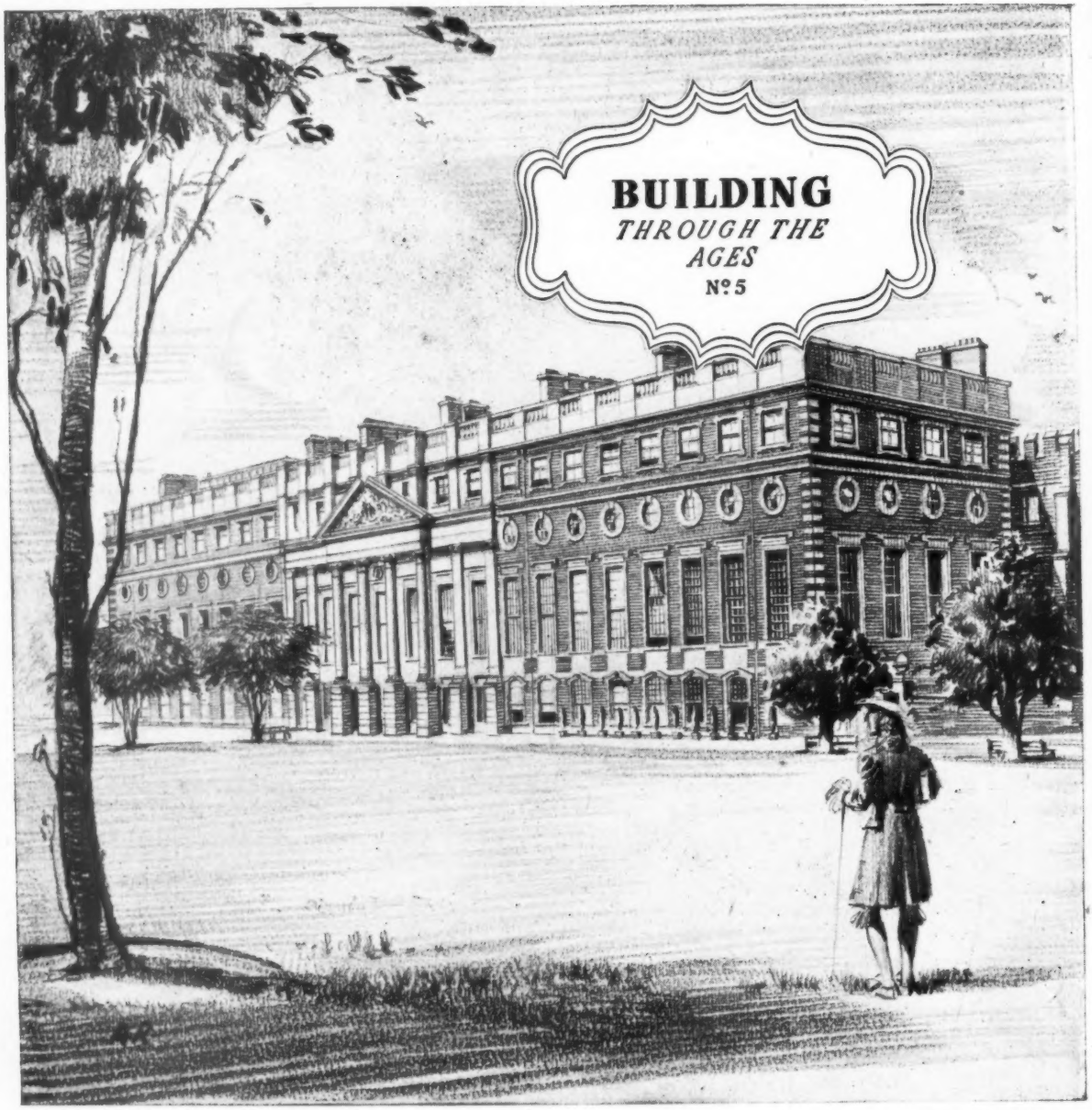
Low shrinkage on drying.
Unaffected by heat, moisture frost or acids.

In order to provide the fullest possible data on the use of Vermiculite concrete, William Kenyon & Sons, Ltd. have initiated a comprehensive series of tests which are now being carried out by the Building Research Station.

WILLIAM KENYON & SONS LTD.

INSULATION ENGINEERS

DUKINFIELD TELEPHONE: Ashton-under-Lyne 1614 CHESHIRE



Hampton Court Palace

THIS famous structure probably immortalises more history than any other building in Britain. Not the cold history of figures and dates but the continual rich adventure of a place tenanted for centuries by men and women of renown and notoriety.

Apart from its long story of human occupation, Hampton Court is unique as an outstanding piece of architecture, linking together two distinctive patterns of building—Tudor and Late Renaissance.

It is unfortunate that to-day a great deal of the lovely Tudor palace, built by Cardinal Wolsey has vanished. Enough is left, however, of its warm, mellow brickwork and oriel windows to indicate the charm of the original building.

William the Third was largely responsible for the extensive alterations which destroyed so much of the earlier Tudor erection. To his credit, however, the reconstruction was placed in the talented hands of Sir Christopher Wren.

The east side of Hampton Court is now a monument to Wren's genius, excelled only by St. Paul's Cathedral. Its wide sweep of classical stonework forms a facade offering perpetual challenge to the simpler but beautiful Tudor construction on the western side.

LIGHTING

In the new schools that will be built emergency lighting will be installed. Not, it is hoped, as an afterthought. The installation of the standby system which guards against all the risks of mains interruption should be planned, as the main lighting is planned, by the architect. Chloride Batteries Limited, makers of Keepalite, the automatic emergency lighting system, offer the advisory services of their engineers to architects in any part of Great Britain.

Keepalite FOR SCHOOLS

A Product of Chloride Batteries Limited 77 King Street Manchester 2 and 137 Victoria Street London SW 1

B.44

HIGGS AND HILL

LIMITED

LONDON

LEEDS COVENTRY

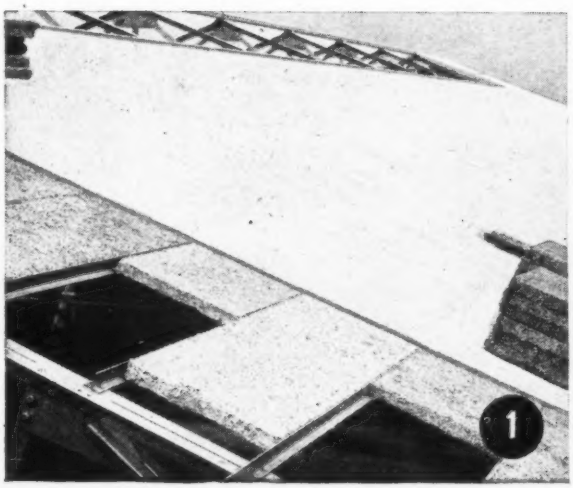
'EXPAMET' EXPANDED STEEL

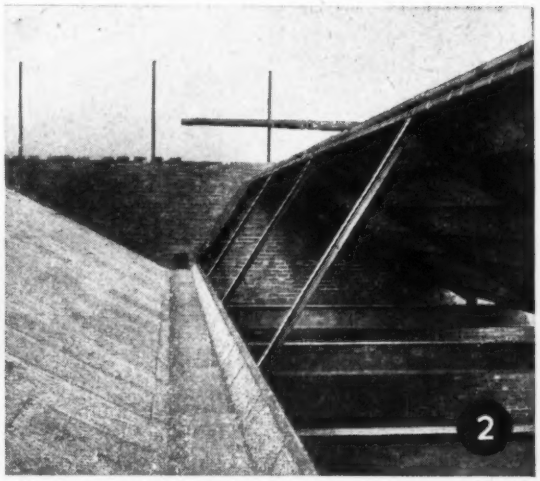
The Expanded Metal Company, Ltd.,
Burwood House, Caxton Street, S.W.1. WHItehall 1736

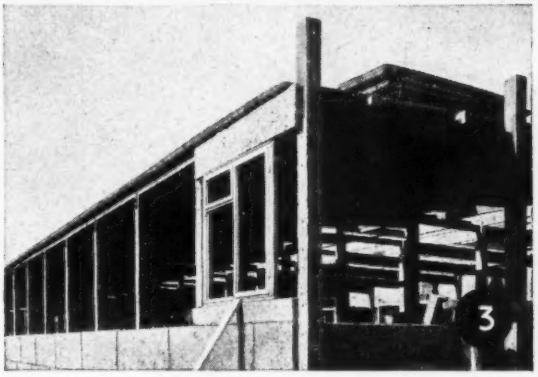
STRANTON WORKS, WEST HARTLEPOOL, HARTLEPOOLS 2194

ALSO AT: ABERDEEN, BELFAST, BIRMINGHAM, CAMBRIDGE, CARDIFF, EXETER, GLASGOW, LEEDS, MANCHESTER

These photographs illustrate the structural adaptability of "Gypklith" *light-weight* building slabs







THE TOP PHOTOGRAPH shows "GYPKLITH" used on a factory roof, supported between purlins of inverted "T" section. The top surface of the "GYPKLITH" is screeded with "GYPROC" Metropolitan Stucco ready for finishing with bituminous roofing.

THE SECOND PHOTOGRAPH shows another method of factory roof construction in which 3 inch "GYPKLITH" is laid transversely across and clipped to the purlins, and then finished in similar way. The thermal transmittance "U" value of these roof constructions, using 3 inch thick "GYPKLITH", is 0.15.

THE THIRD PHOTOGRAPH shows an exterior view of a building where "GYPKLITH" is used for the roof, partitions and external walls. For the walls, it is bolted to the outside of the reinforced concrete column framework, plastered internally with PARISTONE Gypsum plaster and rendered externally with water repellent cement. For the roof, it is nailed over timber purlins and finished with a ½ inch cement screed and built-up bituminous roofing. The free-standing, partitions are plastered on both sides with PARISTONE Gypsum plaster. Thermal transmittance "U" values are : external walls 0.2 ; partitions 0.19 ; roof and ceiling structure ("GYPSTELE" suspended ceiling) 0.17. *Further particulars of these and other* "GYPROC" *products and systems will gladly be supplied.*

GYPROC PRODUCTS LIMITED

HEAD OFFICE: Westfield, Upper Singlewell Road, Gravesend, Kent.
Tel.: Gravesend 4251-4. *'Grams:* Gyproc, Gravesend.

GLASGOW OFFICE: Gyproc Wharf, Shieldhall, Glasgow, S.W.1.
Tel.: Govan 2141-3. *'Grams.:* Gyproc, Glasgow.

LONDON OFFICE: Morris House, 1-5 Jermyn Street, London, S.W.1.
Tel.: Whitehall 9821-5.

Makers of "GYPROC" *Plasterboard,* "GYPKLITH" *Light-weight Building Slabs,* "GYPSTELE" *Partitions and Ceilings* "PLAXSTELE" and "ACOUSTELE" *Ceilings,* "GYPROC" *2-inch Solid Partitions.*

GK.15

The Bratt Colbran Cloakroom Incinerator

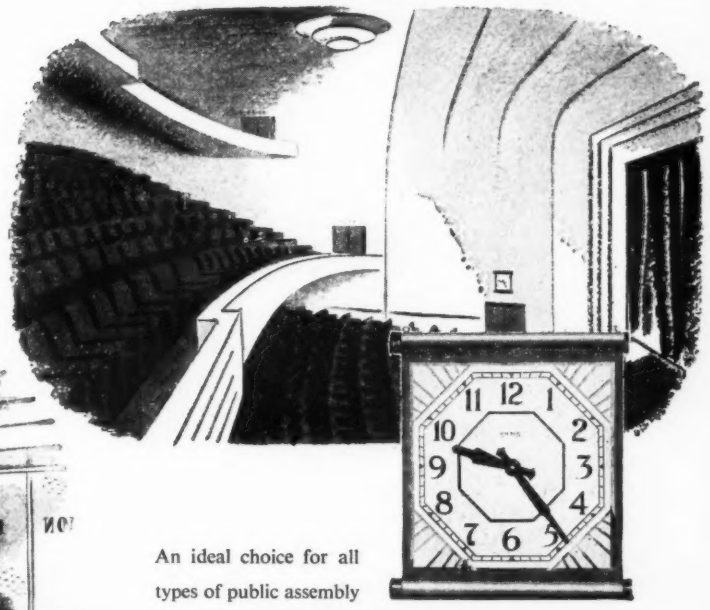
The Bratt Colbran Incinerator provides an efficient hygienic service for the destruction of sanitary towels and small first aid dressings. Each operation of the lever initiates intense heat for three minutes, completely reducing the contents to ash. Desirable on hygienic grounds alone, the incinerator also saves the annoyance of blocked drains. Initial cost and running expenses are both low and the model will work reliably in continuous use. The finish is white vitreous enamel and chromium plating. Obtain full particulars from

Bratt Colbran

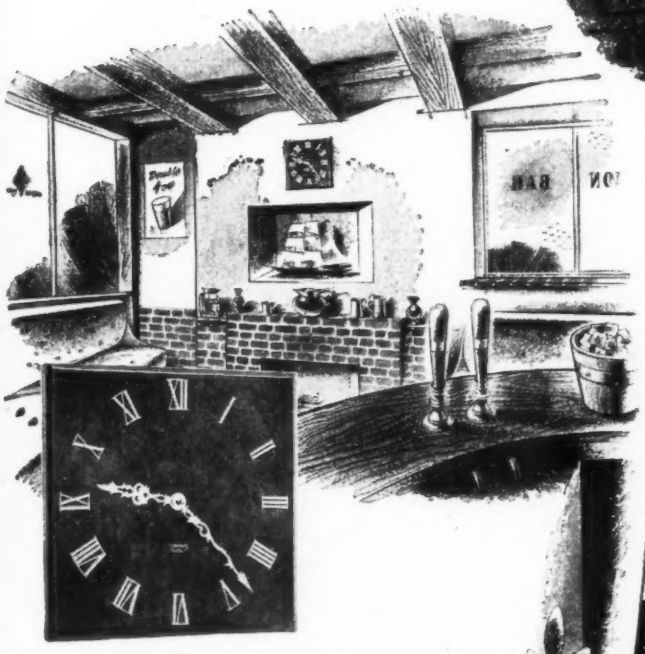
BRATT COLBRAN LIMITED 10 MORTIMER STREET LONDON W1 TELEPHONE: MUSEUM 9411

The right Clock in the right place

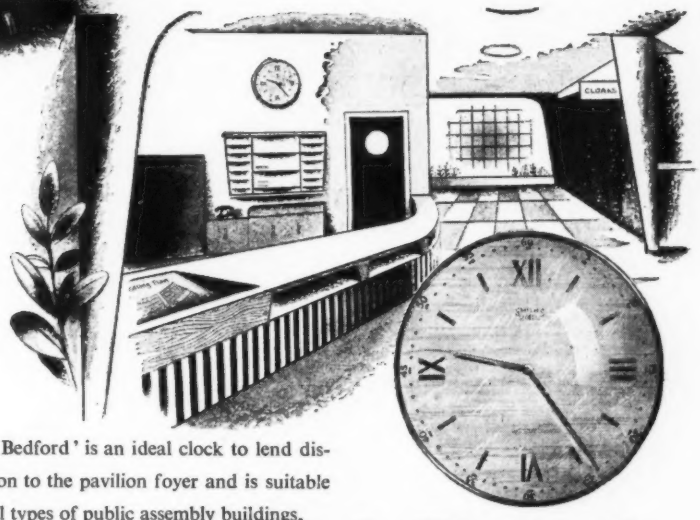
The wide range of Smiths 'Sectric' Interior Wall Clocks gives the greatest scope for the selection of a clock which will be in true harmony with its proposed surroundings. Some typical examples are shown in this advertisement.



An ideal choice for all types of public assembly buildings is the Smiths "Internalite" which has diffused lighting and is visible throughout an entire auditorium.



A dignified 'welcoming' is suggested by the 'Windsor', a clock in harmony with the best innkeeping traditions.



The 'Bedford' is an ideal clock to lend distinction to the pavilion foyer and is suitable for all types of public assembly buildings.

SMITHS

SMITHS SUPPLY THE WORLD WITH TIME

SMITHS ENGLISH CLOCKS LTD., SECTRIC HOUSE, LONDON, N.W.2 The Clock & Watch Division of S. Smith & Sons (England) Ltd

INDUSTRIAL FLOORING PROBLEMS

INDUSTRIAL FLOORING LAID FOR
Messrs. J. Miller Ltd.
Chiswick Mall, London, W.4
Consulting Engineers:
Sir Alexander Gibb & Partners

MARTYN BITUMINOUS FLOORS

offer many advantages . . .

One of the main features of Martyn Bituminous flooring is its resiliency, a quality which enables it to stand up to the heaviest traffic conditions and to any amount of vibration. In fact, the flooring actually improves with wear, becoming more compact; marks and indentations which may appear when the floor is first laid, soon work out with use. Martyn Bituminous is damp-proof, dust-proof, ductile, warm and noiseless to the feet. It is laid cold; is completely odourless at all stages; is resistant to fire and unaffected by changes in temperature. The floor can be laid direct on to a clean concrete base without screeding. The colours available are black, dark red, middle red and dark brown.

OTHER CONTRACTS INCLUDE :—

JOINERY WORKS,
ENGINEERING WORKS,
PRINTING WORKS,
BAKERIES,
SHOP FITTING WORKS.
CANTEENS,
OFFICES, ETC.

Our Technical Staff are always ready to advise on your problems

BRUCE MARTYN LIMITED

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SPECIALISTS IN INDUSTRIAL FLOORING

PICCADILLY HOUSE, REGENT STREET, S.W.1. · PHONE REGENT 6296-7

K

Loading Bay at the works of MESSRS. LATHAM & CO. *Bromborough.* *Architect:* KENMURE KINNA F.R.I.B.A.

WORKS RADIANT HEATING BY SUNZWAY PANELS

RICHARD CRITTALL

RICHARD CRITTALL & COMPANY LIMITED, 151 Great Portland Street, London, W.1. Tel. Museum 3366
and at Martins Bank Building, Liverpool, Central 3283, *Prudential Buildings, St. Philip's Place, Birmingham, Central* 2478. *and* 136 *Wellington Street, Glasgow, C.2. Douglas* 8761

B

Unwritten letters to a young architect

No. 7

ANGLO-SCOTTISH
CONSTRUCTION CO. LTD.
BUILDERS & PUBLIC WORKS CONTRACTORS
1, THE RIDGWAY
WIMBLEDON, S.W.19
WIMBLEDON 5277–8

My dear Roger,

In my last letter I gave you some fatherly advice on Architect, Client relationship. That the relations should be good seems axiomatic, but I came across a case some years ago which was far from it. The Architect had a superiority tendency towards client, builder and most regrettably, works foreman. (Even a foreman may be of use to an Architect, though he may not always speak the King's English.)

Things went from bad to worse—the client got annoyed, so did the builder, even the building inspector got involved. The showdown came when a somewhat robust "Brickie" said if there was any more dictation he'd throw the said architect off the so and so building—he'd walk off the job and so would his mates. The result was that a job which should have taken a year to complete, took nearly two. A bad show for all concerned !

Don't think I think you are liable to act in a similar way, such attitudes are fortunately rare amongst architects, nevertheless, there is a danger, Roger, of knowing everything when one is young, reasonably successful, and not lacking in finance !

Maybe I should have been a parson—not a builder !

There's more to come—but you asked for it.

Yours

J. W. Christie

The Bull Hotel, Sonning, Berks.

Cheapest – or Best?

SOMEWHERE, there is a cheaper substitute for everything you put into housebuilding.

The balancing of appearance and durability against cost is a matter of experience, observation and personal taste. The *Clay* Roofing Tile remains pre-eminent because it not only resists exposure to all climatic conditions, but actually improves in appearance as the years go by. In all parts of the country there is ample evidence that the *Clay* Roofing Tile is the best roofing material for the British climate, and

THE CHEAPEST IN THE LONG RUN

Clay Roofing Tiles

Issued by The National Federation of Clay Industries, Drayton House, W.C.1

We can deliver without delay to your site almost any quantity of standard joinery. What quality? The timber is the best we can buy and well seasoned at our Melton Mowbray works. The standards we work to are very high—for instance, our specification for priming is coating any knots with Shellac Knotting and then applying 100 per cent genuine lead paint by hand; and our window hinges are specially made of non-ferrous metal. May we send you our comprehensive catalogue?

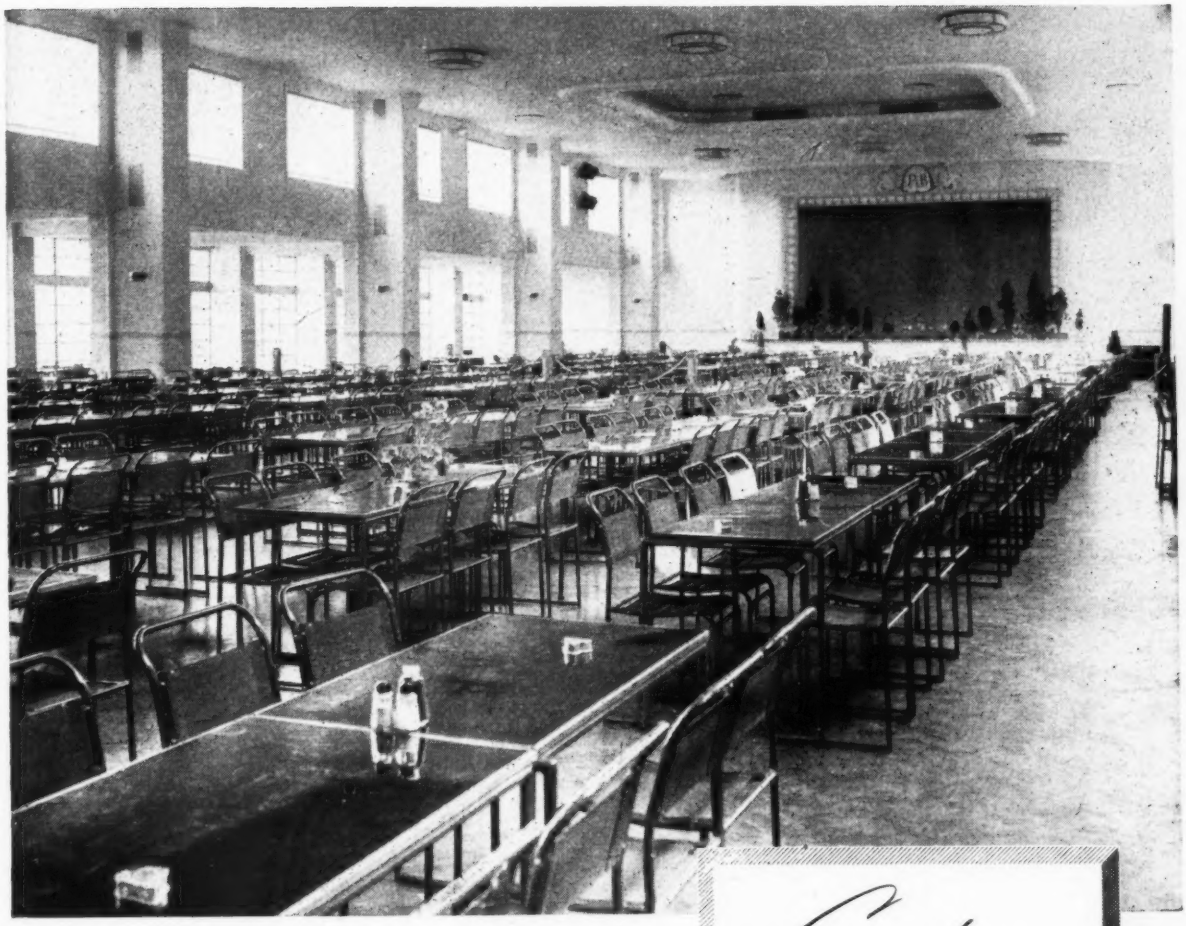
Midland Woodworking

Standard Joinery where you want it, when you want it

THE MIDLAND WOODWORKING COMPANY LIMITED * MELTON MOWBRAY

CRC 12

Paton & Baldwin Ltd., Canteen—Darlington
Photograph by courtesy of Paton & Baldwin Ltd. Architects: Sir Alex Gibbs & Partners, Queen Annes Lodge, London, S.W.1.



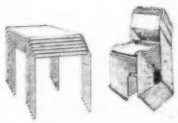
NOWADAYS the works canteen often serves a dual purpose and for that reason permanent furniture is undesirable. When the last meal is served as likely as not preparations will commence for an evening concert or maybe a staff dance. In these circumstances Kingfisher space-saving furniture is the perfect answer. Strong, light and easy-to-handle it facilitates re-arrangement, removal and stacking in a matter of minutes and at the same time provides that degree of comfort which is looked for in furniture of a more permanent character.

The attractive and colourful appearance of Kingfisher Tubular Steel Nesting Chairs and Tables, the unmistakable mark of quality which withstands the most arduous conditions, and the remarkable economy of storage space make them ideal for use in canteens as well as in public halls, civic restaurants and other public buildings.

Kingfisher experience and productions are invaluable to Architects when preparing new designs.

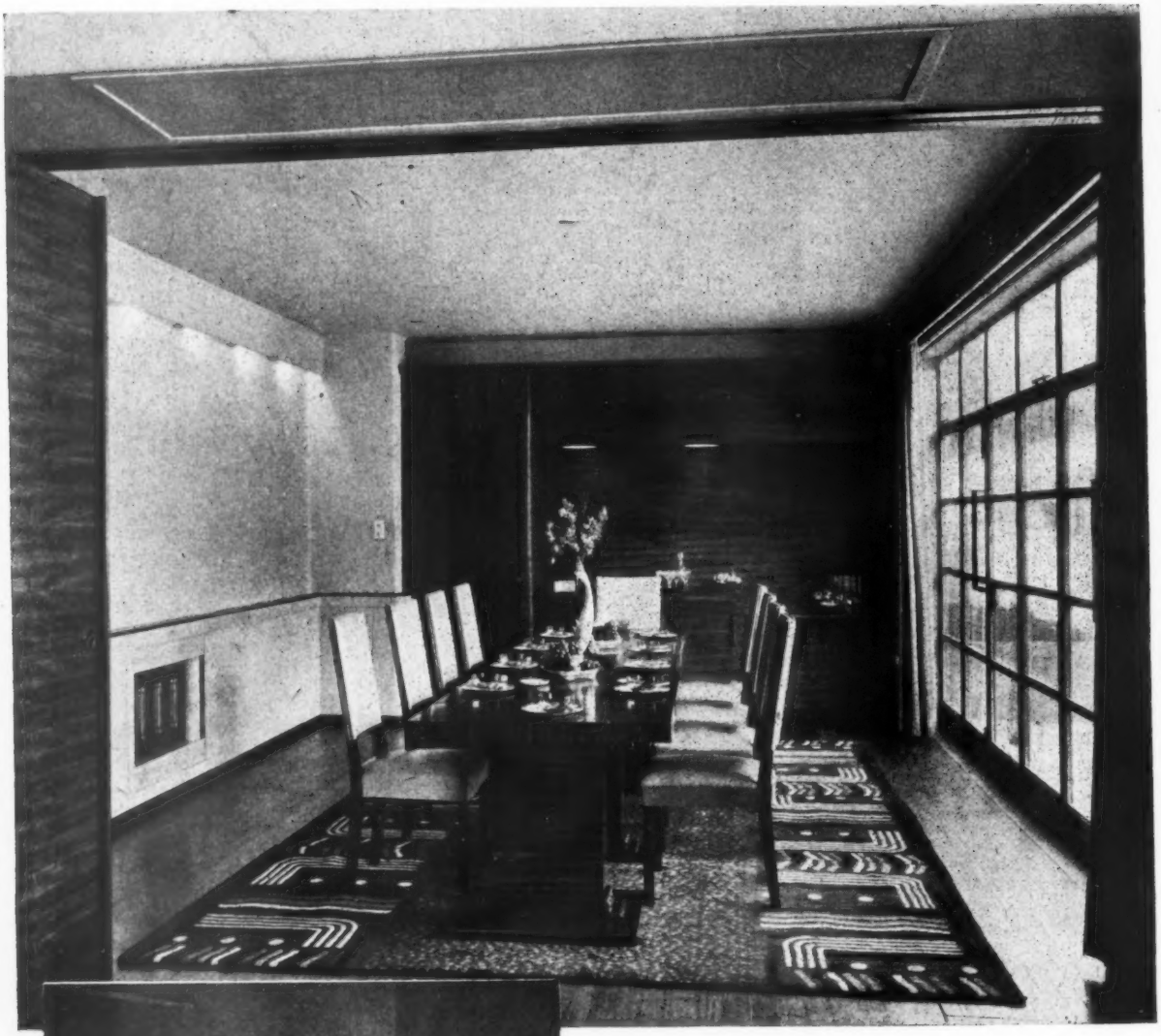
Comfort
+
convenience

Kingfisher



CANTEEN FURNITURE AND EQUIPMENT

KINGFISHER LIMITED. Charles Street and Phoenix Street, West Bromwich, Staffs. Phone: Tipton 1631. Grams: Kingfisher, Phone, West Bromwich.
London: 139 Knightsbridge, S.W.1. Telephone: Kensington 1331

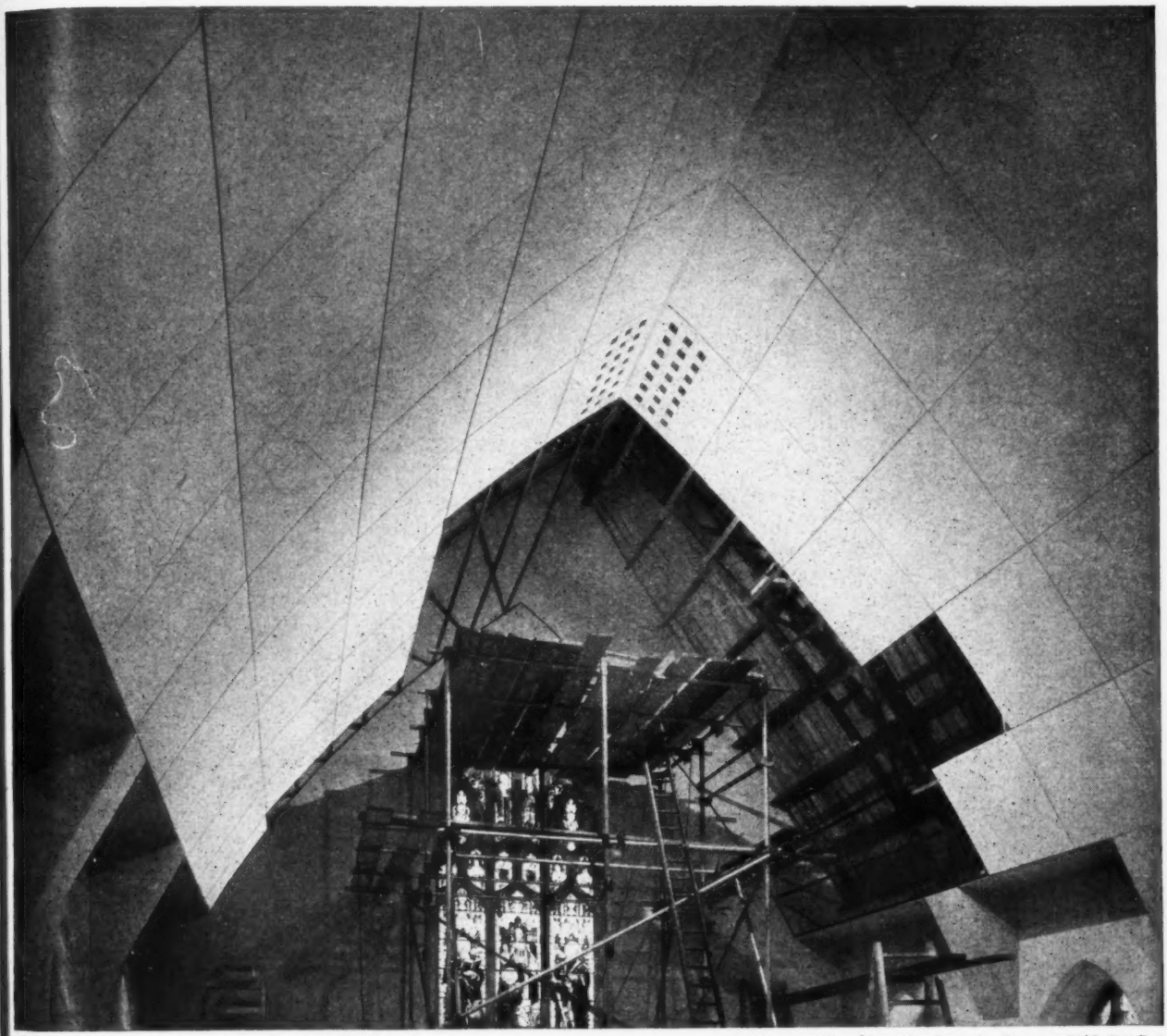


Consistently, for many years, the Bath Cabinet Makers have interpreted architects' conceptions with outstanding taste and quality and further evidence of the Company's creative craftsmanship will gladly be forwarded on request to any architect interested.

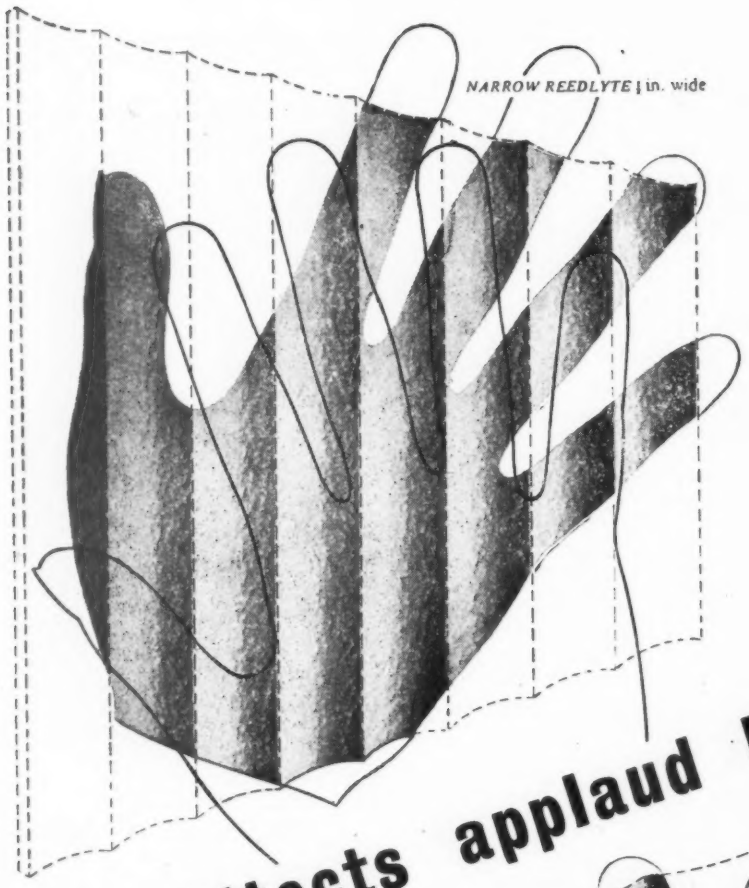
Bath
CABINET MAKERS
AND ARTCRAFT LTD

CONTRACTORS FOR MODERN INTERIORS

LOWER BRISTOL RD., BATH. LONDON SHOWROOMS: 1 GRAFTON ST. W.1

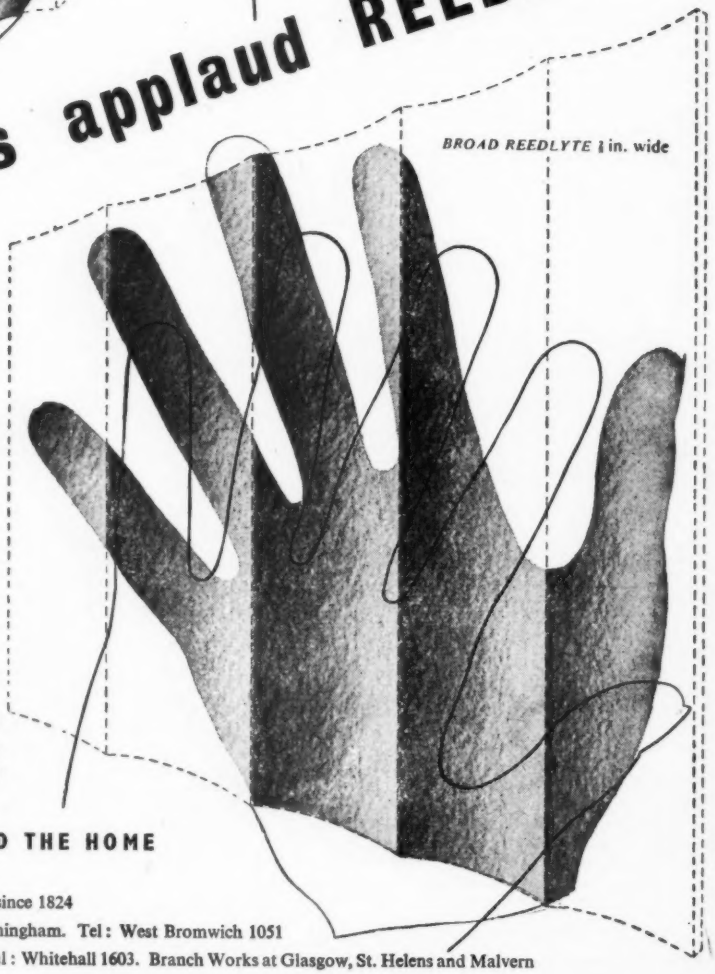


Westminster College, Horseferry Road, S.W.1 — *Architects : Houchin, Harrison & Stevens, F.I.L.R.I.B.A.*



Reedlyte has all the attributes of normal Reeded Glass . . . plus greatly increased obscuring power. It is available at the same price and in the same sizes and thicknesses as Reeded Glasses and is supplied in two patterns; NARROW ¼ inch and BROAD ⅞ inch reeds.

architects applaud REEDLYTE



Easy to cut;
one surface is smooth and flat.
Easy to keep clean.
Perfect for lighting fittings (particularly for fluorescent lighting), used either flat or bent into troughs.
Ideal for executive offices, bathrooms and other places where privacy is essential.

Chance
* * * * GLASS

FOR SCIENCE, INDUSTRY AND THE HOME

CHANCE BROTHERS LIMITED, Glass-makers since 1824
Head Office : Glass Works, Smethwick 40, Birmingham. Tel : West Bromwich 1051
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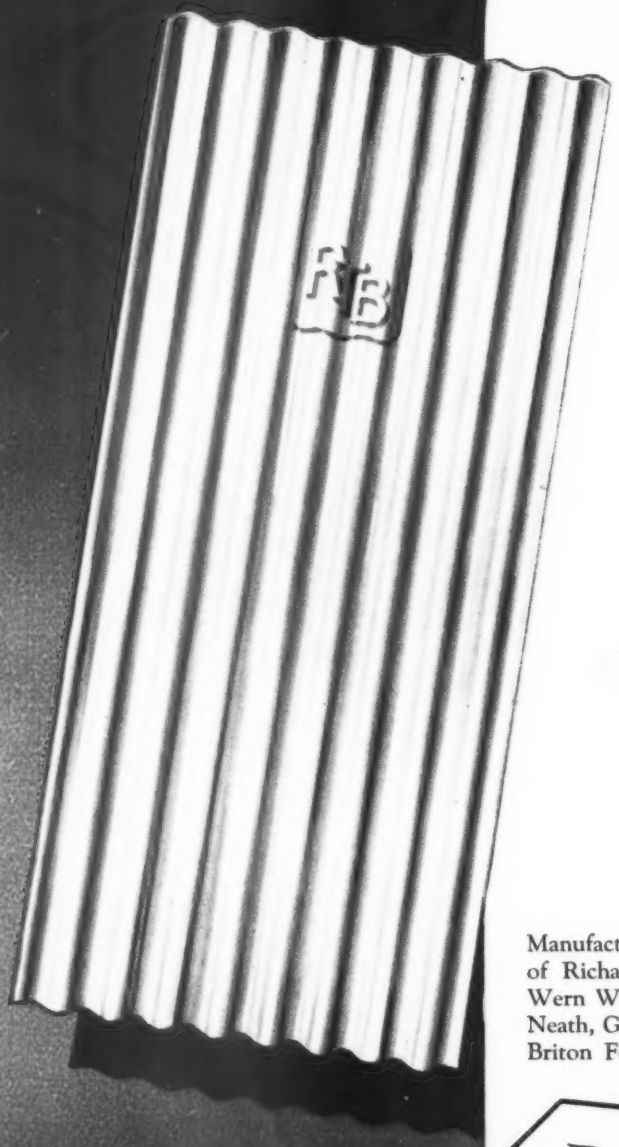
LIGHT AND STRONG



Aluminium

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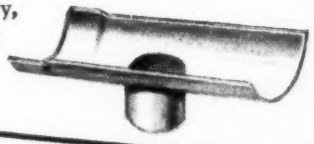

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AJ

THE ARCHITECTS' JOURNAL

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BLACK MARK FOR CHELSEA

Some weeks ago I commented as severely as I could on the retrograde architectural policy of the Chelsea Council. I am glad to learn that the Chelsea Arts Club have now taken up the same question. I quote the declaration issued by their Council because it puts the whole regrettable issue in a nutshell:—

"This Council notes with regret that the Chelsea Borough Council has decided to entrust its current building schemes to the Borough Engineer in place of employing independent architects as hitherto.

"This official has no architectural qualifications and, although he is to be assisted by qualified architects, the final responsibility will be his and the designs will go out in his name.

"The Council of the Chelsea Arts Club consider that it is wrong in principle that a person without architectural qualifications should be in charge of an architectural department and feels strongly that the new arrangement is unworthy of the artistic tradition of Chelsea and hopes that it will be brought to an end as soon as possible."

I trust that Chelsea's pride will be touched and that the Council will think better of a decision that should never have been taken.

DURHAM TAKES THE LEAD

In 1948 the University of Durham instituted the first lectureship in landscape architecture in this country. Now they are taking another step forward, under the energetic leadership of J. S. Allen, and starting a new course leading to a diploma in landscape design.

*

It will be a post-graduate course, open to people already holding qualifications in town-planning, architecture, forestry or horticulture. There is a growing need for specialists in landscape, and it is fitting that the first university to cater for this need should be in the north-east, near the proposed Lake District National Park and the Farne Islands bird sanctuary and within reach of the Peak District and Roman Wall—probable future national parks—and several of the largest state afforestation projects.

CEMENT SUPPLIES

Complaints from builders about cement shortages and denials by opposing interests and government departments get nobody very much further. ASTRAGAL has made a few inquiries, and the position appears to be roughly as follows. At the start of each year the government estimates the needs of the home market, presumably after some reference to the current building programme, and any surplus left after the home market is supplied is presumed to be available for export. This year the government estimate seems to have gone somewhat awry, even though the cement industry has so far supplied 150,000 tons *more* for the home market than the estimates demanded. Since British cement is efficiently and cheaply produced, it is comparatively easy to export to hard currency areas, and although it may seem an untidy method, there is nothing essentially wrong in exporting to hard currency areas and at the same time buying cement in soft currency countries. But it falls down when the building industry here is held up.

*

One of the answers given by the cement industry is that controls, steel shortages and other factors have delayed their expansion programme, and that extra capacity for a million and a half tons a year could have been provided pre-war in about 18 months, but has taken three years or more, and capacity for only 300,000 tons or so a year is so far in operation.

*

The Minister of Works says cement shortages will *not* hold up the housing programme, but we really need an assurance that the rest of the programme can go ahead as well. Either export quotas must be cut or the cement industry must have some degree of priority for new plant.

PADDINGTON GROAN

Paddington groan,
Worst ever known,
He gave a sepulchral
Paddington groan.

So goes the old song. And no wonder when you look at the way Paddington Borough Council has been messing up its environment. I remember that stretch between Lancaster Gate and the Edgware Road, which includes Sussex Gardens and the Oxford and Cambridge Terraces, as a pleasant thoroughfare. Its simple freshly painted stucco houses were set back on accommodation roads separated from the main traffic route by strips

Battery of 6 UNITA Cookers, installed in a National Coal Board Canteen by the Wombwell undertaking of the East Midlands Gas Board.

For efficient and economical cooking facilities to meet a wide range of heavy duty requirements

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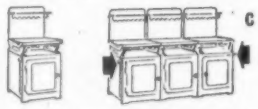
UNITA

UNIT GAS COOKERS

Parkinson UNITA Gas Cookers are designed for the specialised requirements of Canteens, Hotels, Boarding Houses, etc. Being "unit" designed, further Cookers can be added both simply and rapidly, as catering requirements expand.

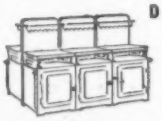


A *UNITA Gas Cookers can be installed as a separate self-contained unit.*

C *In batteries of 3 or more, in which case the end cookers are fitted with Thermostats.*

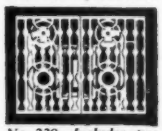
B *In pairs, with oven doors opening left or right.*

D *In back-to-back series as shown above in the National Coal Board Canteen at Wombwell.*

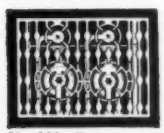


DIMENSIONS OF SINGLE UNIT COOKER: Height to Hotplate, 38″. Height Overall, 59½″. Width Overall, 31⅛″. Door Opening High, 22″. Wide, 21″. Oven: Wide, 25″. Deep, 21″. High, 28″. HOTPLATE: Width, 27½″; Deep, 24″.

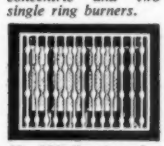
"UNITA" Hotplates meet all requirements.



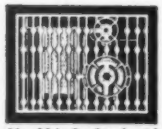
No. 220. Includes two large and two small ring burners and short double grill.



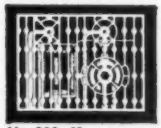
No. 221. Feature: two concentric and two single ring burners.



No. 222. Consists of an all-grilling arrangement



No. 224. Is fitted with one concentric, one single burner and long grill.



No. 223. Has one concentric and two single ring burners and short grill.

THE PARKINSON STOVE CO. LTD. BIRMINGHAM 9

of lawn and plane trees. The strips were protected by those typical iron railings that gave London a great deal of its character, but during the war the railings, like so many others, were removed to make guns—or so we were told.

*

Now look at my illustration at the bottom of this page and see what they have done. The railings have been replaced by crude and clumsy concrete posts supporting a wire mesh barrier, which stretches away in grim perspective for half a mile. And Paddington does not stop at uncouth fencing. It has just erected some other eyesores in the form of concrete lamp standards. They are not the worst I have seen, but are bad enough. Why do our utilities have to be so insensitively conceived—so symbolic of cultural decay?

Martin Platt (left) and Denys Hinton in the AA Dramatic Society's presentation of "This Way to the Tomb." (See "AA Play".)

AA PLAY

Although I am a keen theatregoer I invariably go out of my way to avoid watching amateur productions. The average would-be actor reminds me too much of that unfortunate Greek gentleman who was always trying to roll a stone to the top of the hill but could never quite make it. So please don't think that my presence at the AA students' recent performance of *This Way To the Tomb* betrays an addiction to dramatic feasts in the village hall, with plenty of jugs of wholesome lemonade in the intervals. And don't imagine that I went out of a sense of duty. If the students had been performing *Quiet Week-End* (and I wouldn't insult them by suggesting they would do such a thing) I certainly wouldn't have obtained a five-shilling ticket (complimentary) to see them.

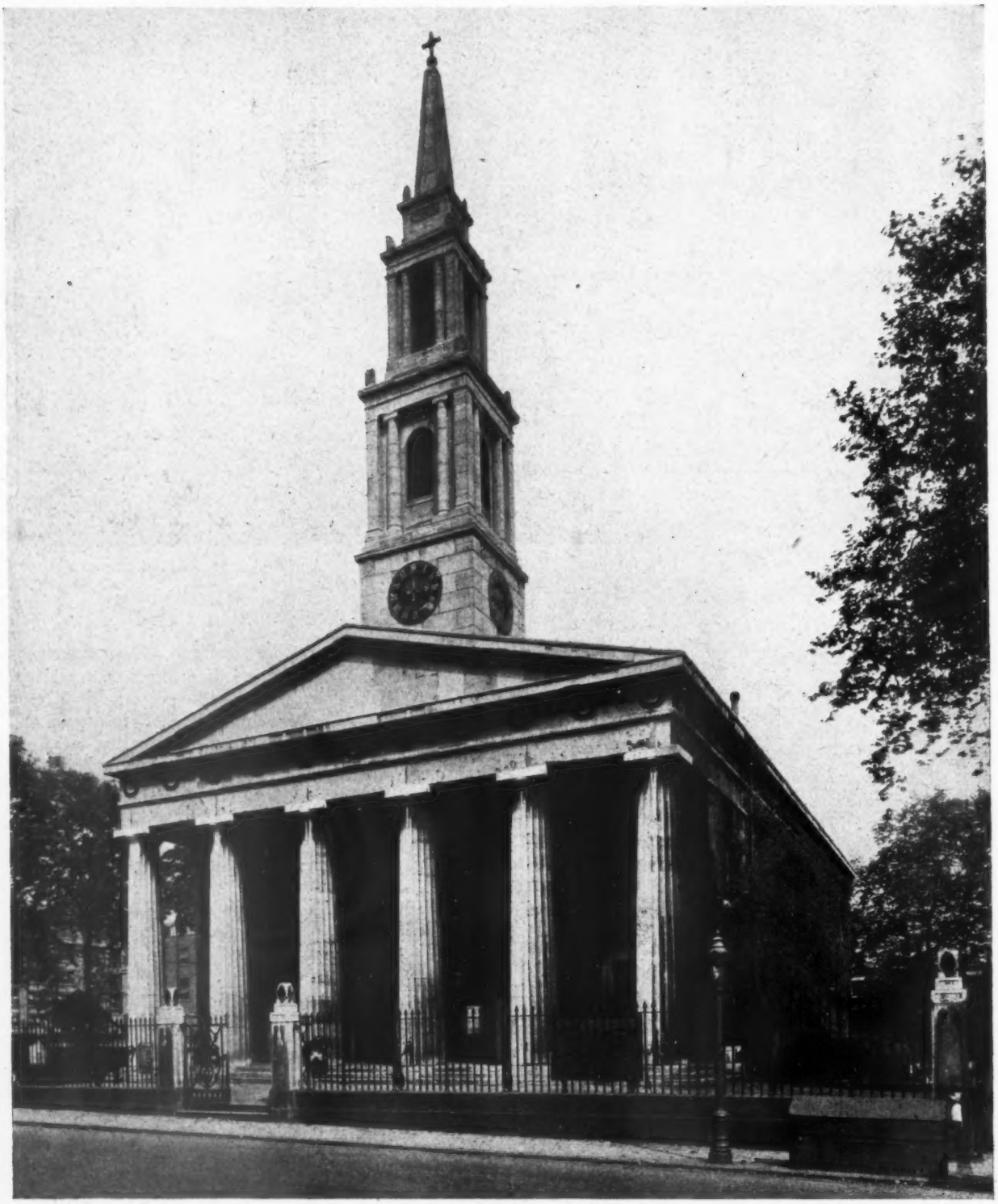
*

The fact is that I missed Ronald Duncan's verse drama when it was produced in London five years ago, and I wondered if this play, which has been accepted as a contribution to the dramatic literature of our time, could possibly be as puerile as the author's new work, *Stratton*. I was delighted to find that the plays couldn't be compared. Mr. Duncan can't write dialogue, but he *can* write philosophic soliloquies and satirical revue material. And that's what this play consists of. But let me get to the point. Not only did the AA players provide their audience with a play that is intellectually stimulating, but they performed it remarkably well.

*

Let me hasten to say that it was not without faults. The students made blunders that should be avoided by the most amateur of amateurs. For instance, nearly all of them suffered from pallid hands, which contrasted strangely with their rosy features and matched the white patches peeping above their collars. But one could forgive them for these mistakes because the principal actors were so competent. The part of St. Anthony is difficult to sustain, with its long introspective soliloquies; but Denys Hinton succeeded in hold-

The defacing of Paddington. In his note "Paddington Groan," Astragal comments on the crude concrete posts above, and the concrete "eyesore" on the right.



Festival Church

The Church of St. John, in Waterloo Road, one of the State-built "Waterloo" churches, which was designed by Francis Octavius Bedford and erected in 1823-24, is being rebuilt after extensive damage by bombing. It will be used next year as the Festival Church. Visitors will have the opportunity of hearing lunch-time addresses by leading preachers of all denominations from all over the country, and, in addition, the church will be used for daily services and for sacred concerts, religious plays, missionary addresses and lectures. The photograph shows this typical product of Greek revivalism as it was before the war. The Greek Doric portico and the steeple are still standing, but the interior of the church, which contained some notable modern fittings by J. N. Comper, was largely destroyed. The architect for the reconstruction of the building is T. F. Ford.

ing one's attention continuously, in spite of an unfortunate tendency to make strange sensuous movements with hands that belied the age of the man he portrayed. And Martin Platt gave an extremely professional performance both in the mediaeval scenes, as Bernard, and in the contemporary setting, as a worldly priest of the Television Age.

*

If I had more space to spare I would tell you of Miss so-and-so, who scored heavily, and of others who also did well. But let me just add a word of thanks to Enrico de Pierro, Geoffrey Speyer and Anthony Alexander for their excellent handling of the Benjamin Britten score for piano and percussion, and congratulate the AA Dramatic Society on its good work.

THE COST OF MAKING GOOD

Everyone who has seen a portion of Northamptonshire immediately after extraction of the underlying ironstone will be saddened if not horrified, and will certainly feel that somehow or other the devastation must be made good. To that extent MOTCP's impending order will be welcomed everywhere.

*

A special article in *The Manchester Guardian* has now described some of the difficulties. Hitherto the practice of Stewarts and Lloyds (whose works at Corby consume most of the ore) has been to leave the huge ridges and furrows, and plant them with conifers. The ridge and furrow is an advantage for afforestation and the whole job can be done for £50 an acre. To restore the land—and especially deep workings—to agriculture would cost up to £1,000 an acre; and if three-quarters of the cost is to be borne by the producers the cost of ironstone production will rise by a half and production must fall until much new equipment can be obtained.

*

For once there is likely to be no dispute about an addition to the cost of living. 80,000 acres of Northamptonshire—for that is the total area that will eventually be worked—cannot be left permanently devastated. It must be turned into good forest or be reclaimed for agriculture in due proportion; and we must pay. How we pay is a subject for a nice long argument.

ASTRAGAL

The Editors

THE QUANTITY SURVEYOR

IN this issue Mr. Owen Davis has contributed an article to the Arcon series in which he explains the function of the quantity surveyor and the part that quantities play in contemporary building procedure. It will be seen that Mr. Davis has prepared a most lucid presentation of his case for the quantity surveyor, based on the present-day pattern of the building industry. But it may be asked whether this pattern, which has evolved largely out of the present system of competitive tendering as practised in this country, is ideal.

The present day bill of quantities is prepared with the object of obtaining a competitive tender and of making sure that, once the tender has been obtained, there are no loopholes through which the successful contractor can find a way of claiming extras. It is widely known that the majority of the medium and large sized building firms normally prepare a second, though considerably modified, bill of quantities for the purpose of costing and bonusing their own work from day to day. There are thus two documents being prepared, although it would appear that, from the point of view of getting the job done, one should suffice.

This leads to the question as to whether it might not be possible to modify the form of the present bill in order to make it more useful to the builder in his day to day work and at the same time provide the architect, who should take a keen interest in builders' costings, with a more easily applied cost barometer.

The answer may well be that this is not possible where competitive tenders are required. But we are prompted to ask whether the present system of competitive tendering is the best method of selecting a builder, and whether it is, in fact, the only way of obtaining an efficient and economic building.

WHOLE HOUSE WARMING

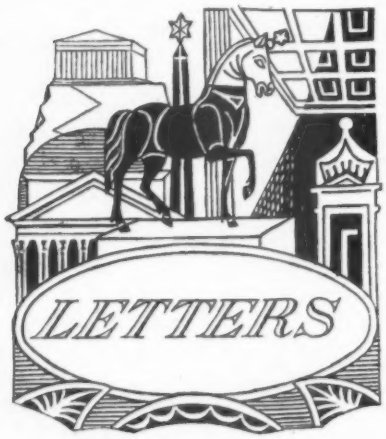
It has been noted in the JOURNAL that the question of the size of houses is intimately bound up with the way in which the space is used. Space costs money, and unheated space is "unusable" space for a very considerable part of the year. A great deal of experimental work has been done in connection with the various possible combinations of house heating, but mainly based on the premise that the way of life of the occupants of the houses will follow the familiar pattern.

In the article on *Whole House Warming* which appears in this issue we see the first applications of a new conception of the way of living, in terms of a method of heating which can provide warmth for a "whole house" at a running cost

not incompatible with the normal expenditure incurred by a family in a modest way of life.

The experiment described has been based on a great freedom in planning. The technical thesis is that it is not necessary to use hot water as a means of distributing heat round the average house. Basically, this must be true and the simplification which results has obvious advantages. The method has the merit of great flexibility ; the response on heating up is rapid and equally the cooling phase is readily adaptable. Changes of outdoor temperature are always an important problem in this country.

It remains to be seen from social studies how British occupants take advantage of this newly developed facility, and it is hoped that in due course it will be possible to report in the JOURNAL on their reactions.



P. M. Nairn

Phillip O. Reece

Mark Hartland Thomas, F.R.I.B.A.

Timber

SIR,—I thought the bogey of timber shortage had been laid, but, as the editorial "Timber Substitutes" in your July 13 issue reveals, it has left behind "sucker shoots" which occasionally pop up their misleading little heads.

On what grounds, for instance, do you claim "it is becoming gradually apparent that there is a world shortage of timber"? Are Scandinavia, Finland, Russia, North America, or even Europe, short of timber? Hardly. True there are restrictions on the use of softwood in Britain, but Britain is hardly the world, and the shortage here is an artificial one caused by currency problems which are not beyond solution. Even so, the architect who uses his allocation efficiently should not require to augment his supply with costly substitutes.

And why say "is becoming gradually apparent"? These conditions have prevailed in Britain for about ten years! What has become gradually apparent is the fact that the majority of the hardwood species are now free from all control, and excellent use the architects and designers are making of them. The fact that you publish in the same issue as your editorial details of various substitute materials for laying over concrete sub-floors suggests a shortage of timber flooring. This is not so. Hardwood timber is freely available for all flooring purposes as well as for joinery and panelling. Finally, to suggest that we shall never again be able to purchase timber at a moderate price is the purest speculation, which a complete return to free competitive buying in the great world markets (a not too distant prospect) would soon reveal.

P. M. NAIRN,
Editor, Wood.

London.

SIR,—In your issue of July 13 you state "It is gradually becoming apparent that there is a world shortage of timber, and it is very much open to question whether we shall ever revert to pre-war conditions which enabled the United Kingdom to take its pick of the world's timber at a moderate price."

This statement is incorrect and, coupled with the inferences you have drawn from it, merely reflects a policy which has been responsible for high building costs, which threatens to bring our building programme to a standstill, and which, in view of events in the Far East constitutes a very grave danger to our national security. In these circumstances I believe it to be in the public interest to put the following facts before your readers:—

(i) The world output of roundwood in 1948 (the latest year for which records are available) was 3 per cent. higher than the peak pre-war year of 1937. The trend of world production since 1945 may be gauged from the following indices:—1945, 100; 1946, 120; 1947, 128; 1948, 134.

(ii) The 1948 output referred to above represents about 58 per cent. of the estimated annual increment of forest growth.

(iii) The wood distributed in 1948 in one form or another through international channels of trade represented only about 7 per cent of the total output.

(iv) By 1946 (the last year for which this particular record is available) every major importing country in the world was using more timber than it did before the war, with the exception of the United Kingdom, Ireland, Belgium, Netherlands, Germany and Hungary. Taking the 1937 consumption of these countries as 100 per cent. in each case, the comparable figures for 1946 are:—United Kingdom. 65.5 per cent.; Ireland, 99.5 per cent.; Belgium, 84.5 per cent.; Netherlands, 46.7 per cent.; Germany, 92.5 per cent.; Hungary, 66.0 per cent. By 1948 we had the lowest consumption per head with the exception of Ireland and Hungary.

(v) We probably have in the country sufficient timber to keep us going at our present low rate of consumption for about two months, with no prospect of improvement for at least three months, and that prospect contingent upon receiving supplies from behind the Iron Curtain.

When we revert to the practice of selecting our building materials by reference to their cost and suitability for the job instead of by Whitehall doctrine, when we restore the levels of timber consumption appropriate to an industrialised nation, when we purchase timber from countries in whose interest it is to sell it to us, when we realise that timber importing is a seasonal activity and purchase our timber each year at the right time instead of six months late, when we refrain from informing European suppliers that we have no intention of purchasing from Canada, when we discard a long out-moded method of bulk-buying—then, and then only, can we hope to recover the advantages we used to have as the world's principal buyer of timber, and revert to pre-war conditions which enabled the United Kingdom to take its pick of the world's timber at a moderate price.

PHILLIP O. REECE,
Director,
Timber Development
Association.

London.

[It may have been noticed that US has recently announced a building programme increase of 1,000,000 houses annually. The US house uses a lot of timber, and it does not require a vast effort of imagination to realise that the timber resources of the American continent may well be swallowed up in this programme and, even, that US may invade other markets. The great question is what Russia may be prepared to export. If this were known the world position could be predicted. As it is, no prediction is sure. With this uncertainty it is a matter of elementary wisdom to develop suitable alternatives with indigenous materials against a rainy day, and to push ahead with all the resources we can command in the use of such timber as we can get in the most intelligent way possible. —ED.]

London's Traffic Problem

SIR,—To many of us who have been speaking against the ring road or bypass for years, with its accentuation of the constricting spider's-web town pattern, the announcement that London's ring road has been abandoned and your timely publication of Bertram Carter's flexible grid for central London bring the promise that city planning, which has been sadly bogged down of late, will get moving again on better lines. Too many town plans up and down the country include a ring road just because it is the fashion.

Traffic prefers to aim at its destination, not to lose its sense of direction on a ring. Bertram Carter shows that this necessary sense of direction can be maintained, while at the same time opening out the tight congestion at the centre of the web. This is done by joining together convergent main roads, short of the centre, before they actually converge. When this is done all round the centre, an irregular grid-like pattern results. Such a pattern is better for building, as well as for traffic.

The new method should appeal to city engineers and surveyors who actually have to do the work, after the planners have planned, because it lends itself to piecemeal application and the tentative approach.

MARK HARTLAND THOMAS.

Kent.

The EDITORS reserve the right to shorten letters from readers. Whenever possible, however, they are published in full.

RFAC

Commission reports on Standard of Architecture

The ninth report of the Royal Fine Art Commission, published last week (Cmd. 7988, 4d.), emphasizes the need for striking a balance between the competing claims of preservation and the creation of new works.

The commissioners state that there is a growing appreciation of the case for preservation, but there is not yet the same interest in the case for opportunity. In their view perhaps the graver doubt today is not so much whether we can preserve what should be preserved as whether we are not through over-anxiety in danger of stifling enterprise.

Referring to the powers of control of design vested in the planning authority under the Town and Country Planning Act, the report states that the exercise of these powers can help to raise the general standard of architecture, but they can also go far to stultify creative energy and imagination.

On changes in the layout of Parliament Square, the commissioners comment that they would have preferred a simpler treatment. They hold that the proposed design should, in view of its enclosing buildings, be as simple and serene as traffic arrangements will allow, and they speak of the possibilty of achieving this without much amendment.

WALES

Eisteddfod Competition Results

Following are the results of the competitions organized by the Royal National Eisteddfod of Wales Arts and Crafts Committee:—(1) Pithead Baths and Canteen (with a colliery employing 2,000 men): winning entry, F. G. Frizzell, A.R.I.B.A., and A. A. Coombe, The Patch, Crossways, Shenfield, Essex; honourable mention, Philip Lionel James, 52, Myrddin Road, Bonymaen, Swansea, and Derek J. Ware, 27, Brockenhurst Way, Norbury, London, S.W.16. (2) National Theatre for Wales, comprising Theatre for 1,200 and a Little Theatre for 400, the latter to be used by a repertory company or to serve as a lecture hall: four entries; no award. (3) Neighbourhood Unit for a population of 5,000: winning entry, Richard Clough Symonds, Oakwood House, Balmoral Park, Chester; honourable mention, W. Smigielski (Assistant Professor in Town Planning, Polish University College, London), 37, Avenue Gardens, Acton, London, W.3. (4) Hotel of Medium Type, having 20 bedrooms, in a small town: winning entry, R. W. Warner, 32, Park Town, Oxford.

Ernst May, the German architect, who is visiting Britain and lecturing on his work in East Africa, is seen here (left) with H. Thornley Dyer, Town Planning Adviser to the Kenya Government. The building is a house, near Nairobi, designed by Ernst May.

ARTS COUNCIL

Artists to Exhibit at 1951 Festival

To mark the 1951 Festival the Arts Council of Great Britain has invited 60 artists each to paint a large works, not less than 45 in. by 60 in., on a subject of their own choice. Five of these paintings will be bought by the Arts Council for £500 each, and the entire 60 will be exhibited in London and elsewhere to provide the opportunity for other purchases to be made.

RIBA

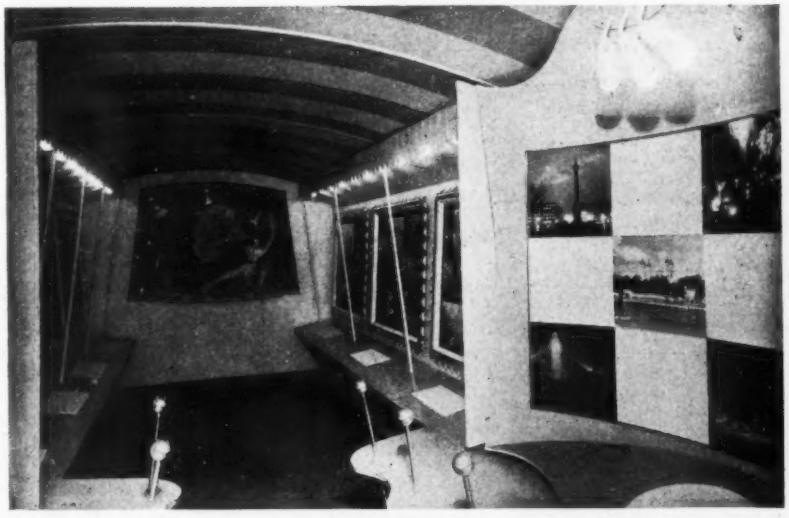
Exemption from Final Exam

The RIBA Council, on the recommendation of the Board of Architectural Education, have recognized the five years' full-time Diploma Course for the purpose of exemption from the RIBA Final Examination under the usual conditions.

CAS

Officers Elected

At the annual general meeting of the County Architects' Society, held in the RIBA Head-



The interior of one of the four London double-decker buses which will leave London on Friday, July 28, on a 4,000 mile tour of Western Europe to publicise the Festival of Britain. The travelling exhibition is designed by Arthur C. Braven. This interior, on a lower deck, shows something of Britain's art festivals and contains descriptions of the festivals planned for 1951 in twenty-three towns and cities.

SHOE SHOP, OXFORD STREET, LONDON

This shoe shop for men was designed by Ellis E. Somake, staff architect to Dolcis; Exterior: hand-made sand-faced 2-in. Dorking bricks, 2½-in. agricultural drain pipes, extruded bronze window frames, vertical teak boarding. Basement sales area: floor, two layers felt, pile carpet; walls, 4½-in. pitch vertical shiplap Parana pine boarding, burr elm veneer panels, sycamore insets; suspended ceiling, 3-in. pitch sycamore boarding. Above, the staircase leading to the ground floor. Below: left, part of the exterior; right, basement sales area. Contractors: *page* 100.

quarters on June 15, 1950, tributes were paid to the work of the retiring officers, namely: retiring president, C. G. Stillman, county architect of Middlesex; retiring hon. secretary, A. G. Chant, county architect of Shropshire; retiring hon. treasurer, H. Carr, county architect of Montgomery.

The following officers were unanimously elected for the ensuing year:—president, A. G. Chant, county architect of Shropshire; vice-president, J. Harrison, county architect of Surrey; hon. secretary, F. R. Steele, county architect of West Sussex; hon. treasurer and assistant secretary, G. R. Hutton, county architect of Oxfordshire.

LONDON

Housing Architects form Society

The directors of housing and borough architects of the metropolitan boroughs have formed an association to be known as "The Society of Metropolitan Housing Architects and Directors."

The objects of the Society are:—(*a*) to discuss all architectural, technical, administrative and allied matters in connection with housing work affecting metropolitan borough councils served by members of the Society; (*b*) to arrange for the collation of information, and to provide a means whereby the knowledge and experience of its members can be made available to other such members and/or, if by resolution, their councils; (*c*) to promote discussion on professional, administrative, technical and other matters of concern to the Society, and to afford help to members in their duty and problems; (*d*) to make representations where appropriate, and through the most suitable channels on technical, administrative and allied matters affecting the work of members, either to councils or government departments.

Membership of the Society is open to designated borough or chief architects, directors of housing, and housing directors of metropolitan boroughs, who are principally employed in the service of their councils as such, or, if not so exclusively employed, are approved by the Society for membership. The officers so designated shall in all cases rank as chief officers and shall have responsibilities for the design, construction and administration of housing work in their own boroughs.

It will be permissible on a majority vote to co-opt for a specific period to the Society such other officers or individuals whose duties may be closely allied to that of the members and who may be able to contribute to the objects already referred to.

DIARY

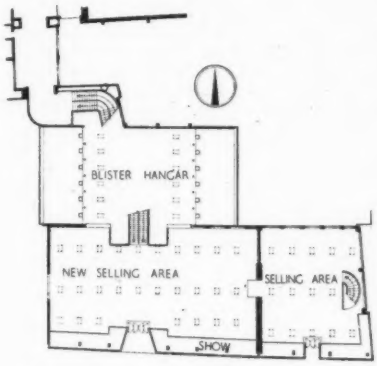
Exhibition of Work by Students and Staff of the Royal College of Art. At RBA Galleries, Suffolk Street, S.W.1. Daily, 10 a.m. to 5 p.m., except Sundays. Admission 1s. UNTIL JULY 29

Exhibitions of Handpainted Tapestries and Small Sculpture. Colour, Design and Style Centre, 19, York Street, Manchester 2. (Sponsor, The Cotton Board). UNTIL AUG. 19

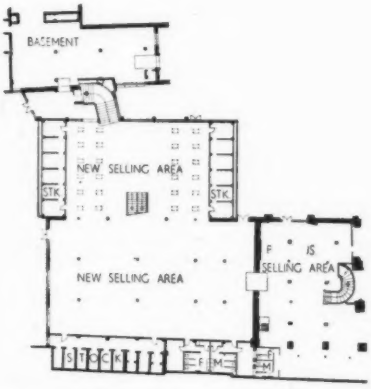
Exhibition: William and Mary and Their Time. At V and A Museum. (Sponsor, Arts Council.) Weekdays, 10 a.m. to 6 p.m.; Sundays, 2.30 p.m. to 6 p.m. UNTIL AUGUST 20

TDA Instructors Course. Cambridge. AUG. 19-26

TEMPORARY SHOP EXTENSION IN OXFORD STREET, LONDON

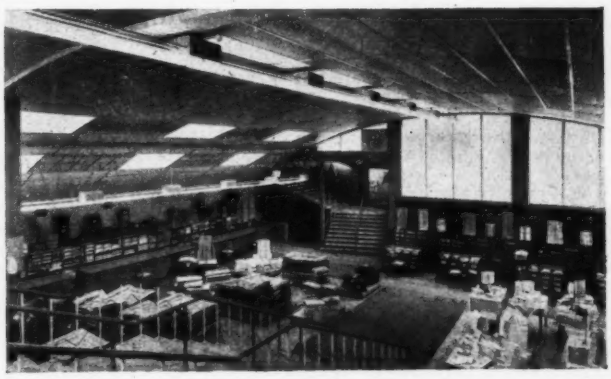


Ground floor plan



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

An extension to the temporary shop of the John Lewis store in Oxford Street has been designed by R. H. Pearson, of the Directorate of Building, John Lewis Partnership. A 96-ft. span blister hangar covers part of the basement selling area. A 24-ft. section on either side of the inner ribs has been reinforced and cased in concrete. The remaining 48-ft. section has been strengthened. The two end ribs have been totally cased in concrete. Roofing is of asbestos sheets. The underside of the arch is faced with $\frac{1}{4}$-in. fibre board held by aluminium cover strips. Above, the staircase connecting the blister hangar with the existing store. Below left, the blister hangar with the staircase leading to street entrance level. Below right, the blister hangar from the ground floor, looking north. The general contractors were John Lewis Building Ltd. List of sub-contractors : page 100.



SOCIETIES AND INSTITUTIONS

Speeches and lectures delivered before societies, as well as reports of their activities are dealt with under this title, which includes professional societies, trade associations and government departments. To save space they are represented by their initials—see front cover. Lectures cannot usually be reported in full, but the extracts given are in the speaker's own words.

AA

Frank Lloyd Wright

July 14. AA SCHOOL ANNUAL PRIZE-GIVING, Bedford Square, W.C.1.

Frank Lloyd Wright: I have had experience of a great many imports in my own country, but I stand here today an import, by way of the AA, and a very happy thing I find it. It is a very nice thing to be an import as an architect, and I hope that all of you young people will some day grow up and be imported yourselves.

Some of the young people who are starting out to practise architecture are receiving prizes today. In the giving of prizes it is just as it is in any competition. First of all the judges are selected from among those upon whom the circumstances, whatever they may be, can agree, so that you get the average of an average, and then they always go through them and throw out the best ones and the worst ones, and then they get together and average upon the average, so that the prize or the result of the competition is an average of an average of averages. It does not matter if they do throw out the best ones, but it is important that they should throw out the worst ones.

You are coming into this field of architecture. I do not know what else to call it; I do not like to call it a profession, because I think that the profession of architecture in our country—and it is probably the same in all other countries—is no longer the refuge of the great in experience and of really developed individuals which it was once upon a time. Perhaps the handing out of tickets to little boys to sit around for four years studying and reading about architecture may have something to do with it—a degree, I think they call it, saying that they are fit to practise architecture. That was the first blow that our profession got in our country, and another blow was that it is now considered a very nice occupation for a gentleman, and the favoured sons of fortune are barging in on the profession. I should like to see the profession as a profession honourably buried with due ceremony, and the field left more open to youngsters who are willing to make the sacrifices that are essential to practise architecture.

The architect is the form-giver of his civilization, of his society. There is no way of getting culture into shape except by way of this worker that we call an architect. It is essential, then, that the very best material we can find we send into the ranks of the architects. It is the blind spot of our civilization, the blind spot of our culture. No one knows anything today about architecture. The thing is so confused. For five hundred years the thing has been going downhill, until it is all so mixed and so much a matter of habit that I think no one knows a good building from a bad building. That must be so so long as it is a matter of taste, a matter of fashion, so long as we have the 57 varieties to choose from and never do a thing for ourselves.

Now, it is my fear, as I stand here today before you, that the little prophetic insight into the nature of building which organic architecture represents, having produced effects at the beginning of an era which was ushered in, I think, by Mr. Louis H. Sullivan and alongside him myself, may become, by way of these effects which were produced, another effect, another fact. I think that you can see all over the world today indications of a new style. But we do not want another style; we have had enough of styles in architecture. We want a new reality; we want to face reality.

What would reality be in a civilization committed to the ideals of democracy? What would it be? A style? No. That commitment would be a commitment to the ideal of freedom, would it not? Freedom in architecture—what would it be like? Every man for himself and the devil take the hindmost? No; that would be licence. Where does this freedom come from that we profess as the normal aim of our democratic life? It comes from within you. It is not something that can be made for you, that can be handed to you, but it is something in which you can be allowed to develop and in which you can be protected, and that protection is what we need now for the individual.

I think you will realize now that when you speak of individuality you are not speaking of personality. That distinction is usually missed. Our personalities we have nothing to do with; they are accidents. It is by what we do to develop our personality into a true individuality that we begin to differ from animals and become really man-like, really human beings, capable of being. Democracy is the championship and the protection of the individual *per se*, as such. That means that organic architecture is of the individual for the individual by way of individuals. There is lots of room for error, lots of room to go astray, very little to go upon except inner ideas, except that from within the nature of everything must come whatever you do in the way of making a form or making a plan or whatever you do as an architect.

Comes now the nature of materials, comes now the nature of the being inhabiting the building and the nature of the society and the circumstances for which the building is created in a free spirit. The most difficult thing of all is to keep the spirit free, not to imitate, not to copy, not to follow unreasonably and blindly and unthinkingly, but whenever you see an effect which appeals to you to get behind and inside that thing to try to find out why it is as it is; and, knowing that from the inside out, you become a competent member of the society in which you live, and that should be your authorization to practise architecture.

ARCHITECTURE AND RELIGION

Now, of course, this inner ideal, this sense of what is within being projected into a harmonious and beautiful exterior as a circumstance, is, I suppose, a religion, isn't it? I was talking to the boys over here the other day, and, as I was going out, one of the little boys said: "Mr. Wright, you believe this, that a good architect has to believe in Jesus." Well, I knew what he meant, but he did not get what I meant. I said "Yes, he must," but I added "but I do not know where he is going to find out about Jesus, how he is going to find out what it was that Jesus represented." What Jesus really preached has been lost by the Church and has been lost by modern practice. You will have to go back into that thought of Jesus from which we can say that we got our ideal of organic architecture; "The kingdom of God is within you."

From within comes everything that you will ever have. From within comes that development which will make all the difference be-

Frank Lloyd Wright, whose address at the AA School's annual prize-giving is published on this page, is seen here talking to two students as he leaves the school after the ceremony. With him, on his left, is S. E. T. Cusdin, president of the AA.

tween you and an animal, and therefore the core, the essence, of the new architecture for democracy. Up-to-date democracy has built nothing. We have talked about it and pretended to be democratic, but I do not think that any of us have looked that definition in the face or made one for ourselves; so let us say that democracy is the highest form of aristocracy that the world has ever seen, because it is innate, it is of the individual. It cannot be transmitted; it cannot exist by privilege; it is the gospel of the doer and the be-er.

Well, that is the new architecture; that is the spiritual basis of the new forms and the new life that we may gain when we have had enough of, and become sick enough of, the superficial pretence which surrounds us in the rubbish heaps in which we live and we try to clear the decks and really live like men and women, like individuals, not mere personalities.

First of all, let us have the human being, capable of bossing himself around. To get that, let us make use of the best material that we have in our social fabric today, and I think you will all agree with me that it will be none too good. Then let us work upon it by working with it, by not trying to teach it anything, by merely opening the doors and windows, with what vision we have, so that we do what is possible by way of encouragement; but only in one way can we get this thing which is so essential to the life of a democracy, and that is by experience—experience that you see, experience that you hear, experience that you feel.

At the invitation of Arcon, Mr. O. Davis, their quantity surveyor, has written the following article on the necessity for the existence of the independent profession of quantity surveyor. The firm of Arcon entirely endorses his views.

ARCON

The Relationship of Architect and Quantity Surveyor

The firm of Arcon asked me to write about the relationship of architect and quantity surveyor. First, they said, consider the bill of quantities; why is it considered so essential here when it is by no means always used abroad? Why, if we must have one, is its scope so limited; could it not be adapted to serve other purposes, for example, that of a specification? Next, consider the quantity surveyor himself; is it really less costly to pay quantity surveyor fees than to get the builder to prepare his own quantities? If so, is the independent quantity surveyor the real answer or is the next development, say, the merging of the architect and surveyor in group practice? Finally, what services can the quantity surveyor render to the community and what co-operation does he require from the architect if he is to give of his best?

These, if I remember rightly, were my terms of reference and it occurred to me that if one was allowed space for about 20,000 words one might attempt to do them justice; however, as about one tenth of that is to be my target, a rather sketchy outline must suffice.

THE BILL OF QUANTITIES

The first point I should like to make, is that some form of bill of quantities is *essential* if lump sum estimates or tenders are required. Those who refer to the absence of bills of quantities abroad are probably thinking of the nicely printed and bound bills prepared by independent surveyors to which they are accustomed. In the wider sense, bills of quantities *must* exist, for how can one estimate the cost of a brick wall without ascertaining at some stage, the amount of brickwork involved?

Even the method of measurement adopted here is not merely a whim of the quantity surveying profession, it is the method which the builders themselves agree best enables them to estimate the cost of building work. In fact, estimators left to their own resources prepare bills essentially the same as those prepared by independent quantity surveyors. They may take short cuts but the chief difference is in the wording, as the estimator only has to convey to himself or his colleagues what it is that he wants priced, whereas the quantity surveyor must attempt to word his bill so that no builder can ever claim to have misunderstood his intentions.

It has been put to me that with a little adaptation the bill of quantities could be brought into line with a progress chart, or be a reliable basis for ordering materials and valuing incentive payments or (and how often has this been repeated) could do the job of the specification. These considerations cannot be dismissed lightly, but a dissertation upon the technical difficulties involved is beyond the scope of an article such as this, and I would merely like to emphasize that the bill of quantities is a necessary part of estimating procedure and that its chief function must always be that of providing, in a convenient form, a reliable basis for estimating.

THE QUANTITY SURVEYOR

Under this heading I would like to discuss the next part of the problem, which really resolves itself into two parts. First, should bills of quantities be prepared by the builders themselves or by some independent person? And second, who should the independent person (or firm) be?

The first is a simple case of economics. If builders, who are only successful in obtaining one in ten or even one in five of the jobs for which they tender, were asked to prepare their own bills of quantities, they would have to allocate the cost of preparing ten (or five) bills to the one job they succeeded in obtaining. It was primarily this fact which led to the bill of quantities sponsored by the employer, although it was presumably realized that a single bill would also produce more uniform tenders and minimize errors.

It does seem clear that bills of quantities sponsored by the employer are a logical and almost inevitable development, if lump sum competitive tenders are required, and that different practices abroad are either less advanced or based upon entirely different conditions.

The question of who should be responsible for the preparation of the bills remains. One argument put forward in favour of the independent firm of quantity surveyors is that when it comes to finance, no architect responsible for ordering the work can display quite the same impartiality as someone who has not that responsibility. It is also argued that the " official " architect, who is an employee of a party to the contract, is not in a position to exercise as much freedom of judgment as an independent firm. It was probably the latter that caused the government to employ quantity surveyors in private practice during the war, while relying largely upon salaried architects in government departments.

Before leaving this question one should consider the other possibilities —the architect in private practice who does his own quantities, the architect who has a quantity surveyor on his staff, and group practice. As regards the architect-cum-quantity surveyor, I would only venture to suggest that an architect's training and temperament are not normally suited to quantity surveying (and *vice versa*), that no architect able to devote his time to architecture would choose to spend his time preparing quantities, and thus, that the practice is only really suited to isolated districts where a man must be a Jack-of-all-trades.

Those who advocate the employment of a quantity surveyor on the staff or group practice do not, in my opinion, attach sufficient importance to the fact that quantity surveying consists of a series of operations which, to be done economically, require staff ranging from highly skilled surveyors to

competent juniors or comptometer operators. To be reasonably flexible the staff must be of some size and to maintain a proper balance this would mean an excessively large architectural section, with all the attendant difficulties of an unwieldy organization. This, however, is not an argument against a large firm of architects having a quantity surveying assistant, for specialized advice, estimates, etc.

I am, of course, biased, but I would sum up by saying that in my opinion the specialized nature of the work, the need for strict impartiality and the benefits derived from having a surveyor of wide experience, are sufficient justification for the existence of the independent quantity surveyor.

THE QUANTITY SURVEYOR'S SERVICES

As a guide to what follows, I give here a list of the more usual services which the quantity surveyor is qualified to render. I have included "advising on contracts," not because I think the quantity surveyor should aspire to the role of legal adviser, but because he is sometimes best able to recommend the type of contract most suited to a particular scheme. *Lump Sum Contracts* :—Preparing approximate estimates; preparing licence applications; advising on the cost of alternative materials and forms of construction; advising on contracts; settling specification queries and writing specifications; preparing bills of quantities and forms of tender; checking and reporting on tenders; preparing reduction estimates; assisting in preparation of contract documents; measuring and valuing variations; checking dayworks and "recoverable expenditure"; preparing valuations for interim certificates; preparing and agreeing final accounts; preparing interim financial reports and reporting on final accounts and contractor's claims. *Other Work* :—Making land surveys; preparing level plans; preparing schedules of rates; preparing approximate bills of quantities and subsequently measuring and valuing contract works; checking payments under prime cost contracts; reporting on the condition of existing buildings; preparing schedules of condition; preparing schedules of dilapidations and valuing repairs; settling war damage claims; acting as expert witnesses; conducting party wall cases; acting as arbitrators.

I have not mentioned some of the quantity surveyor's unofficial roles, but I think that his value as a general consultant to the architect and client should rank fairly high. After all, the quantity surveyor's training is largely complementary to the architect's and if, in addition, he has a wide experience of building, of contracts, of architects, builders, clients and officials, his contribution should not be negligible. However, it is probably only necessary for me to say, that in common with other professional men, the average quantity surveyor frequently puts more into his work than his terms of employment or scale of fees demand.

When referring to the bill of quantities I might also have mentioned the value, to the architect, of having his drawings and specifications examined in minute detail by an independent person. Queries and ambiguities inevitably arise and if it were not for the independent quantity surveyor many of them would undoubtedly find their way into the contract.

CO-OPERATION OF ARCHITECT AND QUANTITY SURVEYOR

Co-operation is a mutual affair and is a subject on which I should feel a little diffident but for the fact that I have been asked to say what the quantity surveyor really wants to enable him to give of his best. The special services classified as "other work" need no particular comment, but I will attempt to summarize the conditions under which the average quantity surveyor would like to work, when dealing with an ordinary lump sum contract.

My own idea, at any rate, of ideal working conditions is:—(1) Plenty of warning and a reasonable programme agreed well in advance. (2) Early notification of any modifications and a final programme agreed at least a month before the quantity surveyor is required to start work. (3) Reasonable information if an estimate of cost is required, and just enough consultation during the early stages to make additional expenditure, as far as possible, a matter for prevention rather than cure. (4) The completion of all the drawings and a full specification before the bill of quantities is started and the production of actual quotations for all pc's. (5) Contract drawings identical to those from which the bill of quantities was prepared. (6) Finally, receipt (by the quantity surveyor) of all drawings and instructions sent to the builder after the signing of the contract, as and when they are issued, all variations (including instructions to place orders with nominated sub-contractors and suppliers) being covered by written variation orders numbered consecutively.

This may be perfection but some architects manage to achieve it. The commonest and greatest difficulty with which the quantity surveyor has to contend is that of trying to work in advance of proper information.

The quantity surveyor *can* start work before all the drawings are finished, although the saving in time is much more apparent than real. If he really must make an early start there are two things that he would like the architect to remember—(1) alterations to drawings (which may appear trivial to the architect), made after the work has been measured, can cause the quantity surveyor an immense amount of extra work and delay; and (2) small scale drawings, superseded by large scale drawings can be just as bad if the quantity surveyor has not been forewarned. I would recommend that the quantity surveyor be furnished, at the outset, with a complete list of the drawings that he will eventually receive; that, whenever possible, items which are to be detailed be shown in diagrammatic form on small scale drawings with a reference to the detail and that all alterations, unless really vital, be held back and treated as variations on the contract.

Before leaving the question of drawings. I would like to add that it would be very helpful if revised drawings carried not only a distinctive number, but also the clearest possible reference to the alterations involved. Quite apart from the possibility of some revision being missed, a lot of time may be spent in trying to ascertain exactly what has been varied. This applies not only to the correction of drawings during the early stages, but also to variation drawings issued after the contract is signed.

The quantity surveyor *can* also start work without a full specification—indeed he frequently has to, as specification writing by architects in private practice is rapidly becoming a thing of the past. Usually the quantity surveyor agrees, with reasonably good grace, to write the specification himself although he regards it as something of an imposition. Unfortunately the sense of injustice is out of proportion to the amount of work involved, and is no less real because it is seldom ventilated. It is to be hoped, in the interests of a really good relationship, that this problem will be resolved in due course.

What prevents the quantity surveyor from giving of his best, to return to my terms of reference, is not so much the lack of a full specification as lack of adequate specification notes. Anyone preparing a bill of quantities should, of course, have both drawings and specification notes before starting work, and the notes should briefly cover every item to be found in a full specification, even if it is left to the quantity surveyor to amplify them. Failure to appreciate what needs to be specified, quite apart from the inability to write detailed specifications, is becoming a problem which might well receive the attention of the architectural schools.

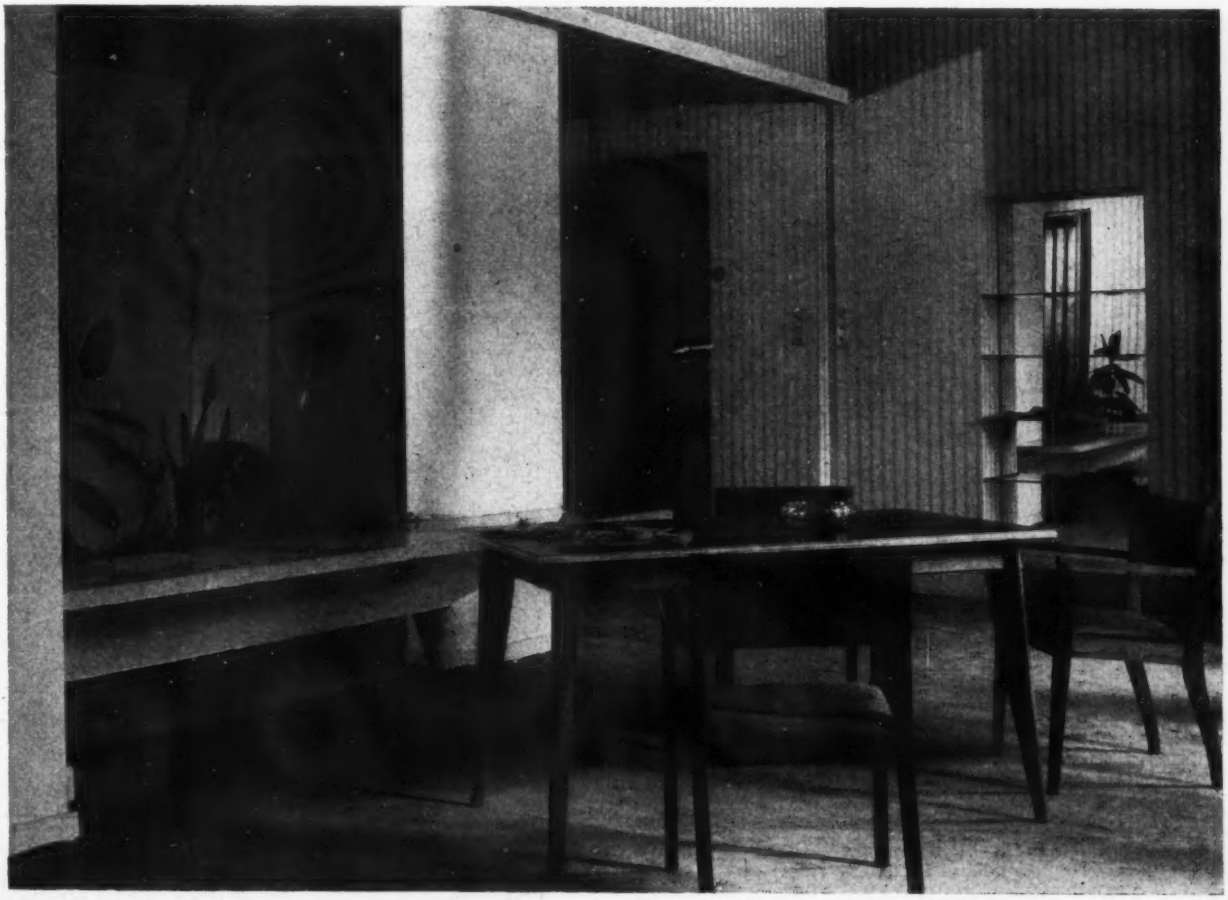
To sum up then, I think that the two things which not only give the quantity surveyor the most trouble, but also have a serious effect upon his work are undoubtedly the tendency to insist upon the bill of quantities being started at too early a stage, and the lack of a specification or adequate specification notes.

HOSTEL

in BRYANSTON SQUARE, W.1.
designed by JAMES CUBITT and PARTNERS

Three Georgian houses on the east side of Bryanston Square have been converted for a post-graduate students' hostel and the new restaurant, common room and staircase details are illustrated here. The restaurant has been formed at basement level in the back areas of two of the houses, with the kitchens occupying a similar position in relation to the third house. There will be a roof garden above the restaurant with access from the ground floor of the main building.

The general lounge on the ground floor.

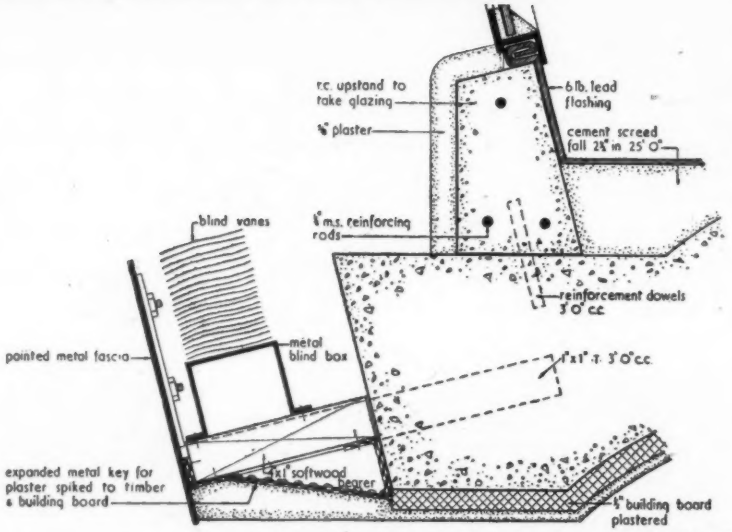


Left, the restaurant showing the low barrel vault roof and clerestory lighting. Below, a corner of the restaurant.

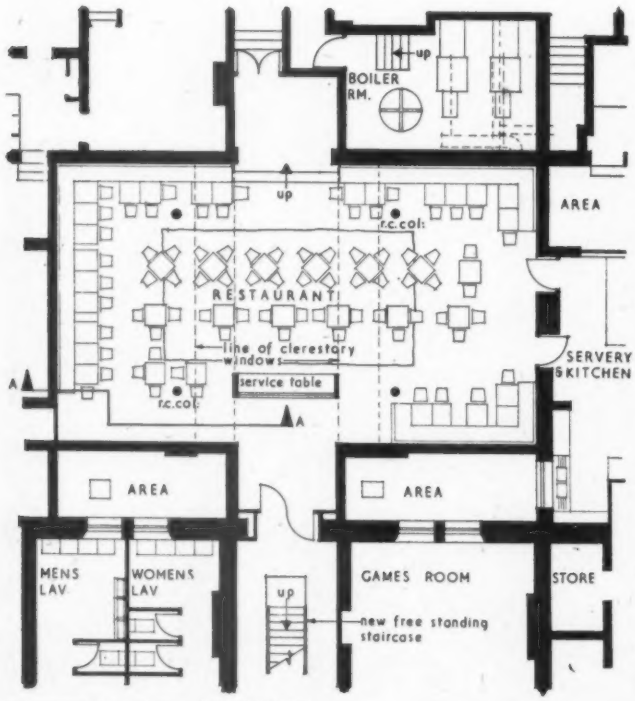
HOSTEL

in BRYANSTON SQUARE, W.1.
designed by JAMES CUBITT and PARTNERS

GENERAL.—The restaurant, with the exception of the small areas, has no external walls; consequently, to obtain top lighting without the normal lantern or lay-lights it was necessary to lower the centre portion of the roof to provide two clerestorys. The general lounge on the ground floor, has now been opened up by removing non-structural walls and partitions. In order to screen the rooms from people passing through and to enable the smaller room to be closed off for television, a double glazed screen containing a venetian blind and curtain has been placed on one side and a low concrete flower



Section through edge of barrel vault [Scale: 3"=1'0"]



Basement floor plan [Scale ⅛"=1'0"]

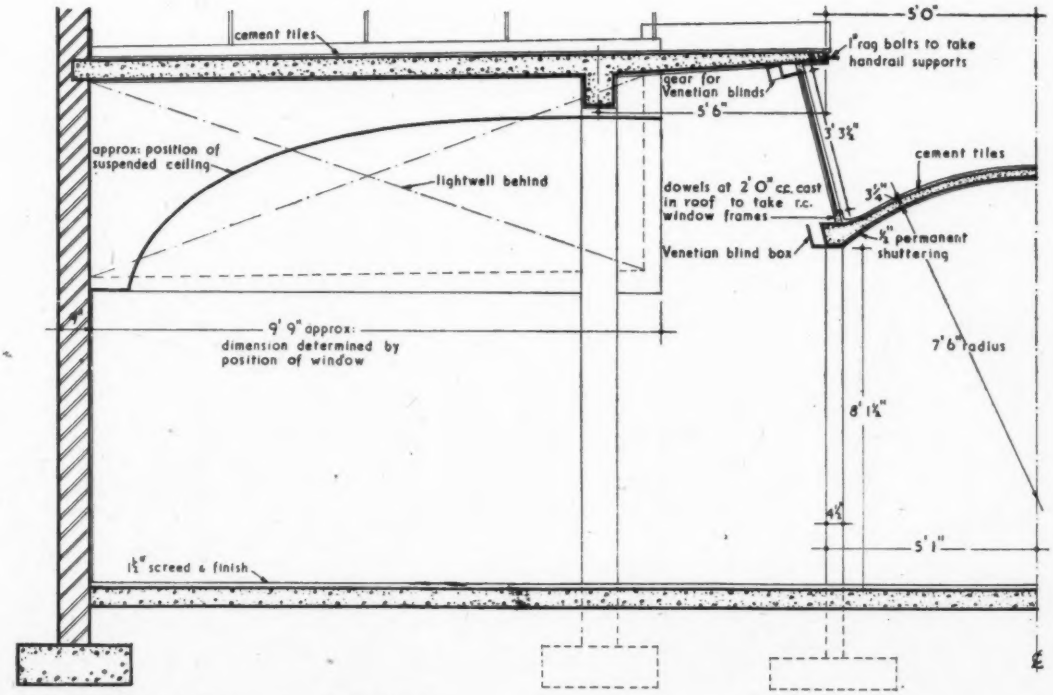
Above, left, the new restaurant staircase from ground floor level. Above, right, the staircase from basement level.

box on the other side of the original corridor.

CONSTRUCTION.—The restaurant has a reinforced concrete barrel vault roof in the centre which, because it has a smaller span than is normal for this type of construction, is supported on two narrow reinforced concrete columns at one end. There are reinforced concrete roof slabs on either side of the barrel vault and false ceilings of expanded metal lathing.

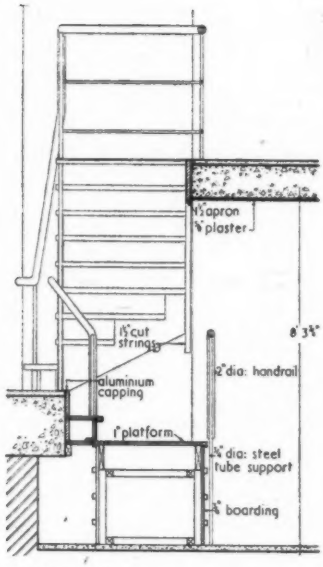
FINISHES.—The restaurant floor is of blue tiles with a beechwood area for dancing. The serving table is of sycamore and mahogany, with a glazed screen above it. The mezzanine stair is finished in white cellulose and natural Oregon pine. The reinforced concrete piers are distempered white and claret red on alternate sides.

The general contractors were Griggs & Son, Ltd. For list of sub-contractors, see page 100.

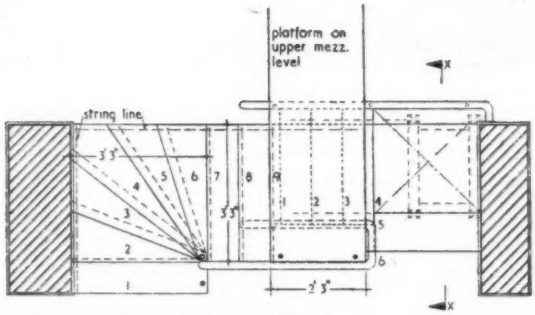


Section A-A through Restaurant [Scale: ½"=1'0"]

Left, the mezzanine staircase. Below, the same staircase, also showing galley handrailing.



Section X-X

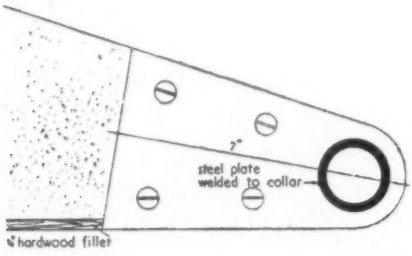


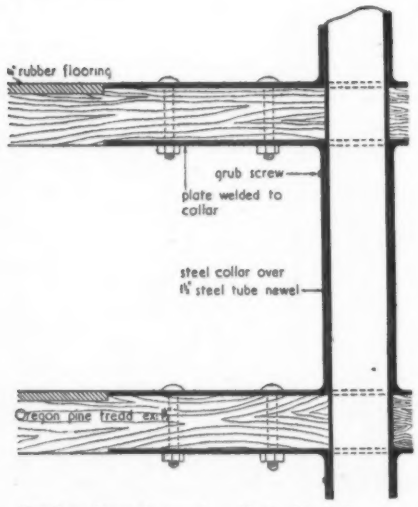
Plan of staircase [Scale : ½" = 1'0"]

HOSTEL

in BRYANSTON SQUARE, W.1.
designed by JAMES CUBITT and PARTNERS

Part plan of tread





Section through tread [Scale : 3" = 1'0"]

INFORMATION CENTRE · INFORMATION SHEETS
QUESTIONS AND ANSWERS · CURRENT TECHNIQUE
THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

This article is to be followed next week by a paper on Intermittent Heating—thus giving the reader an opportunity to compare two opposing views on the same subject.

WHOLE HOUSE WARMING

The Stanmore Development

If you were asked to state the most important feature of a heating system you would probably say that it should be capable of giving, at any time, the desired comfort conditions in each room of the house. You may at one time require the whole house to be heated to 65-70° F., at another time to 55° F., while at times you may want part of the house at 65-70° F. and the remainder at 55° F. In other words, you want a flexible system capable of supplying varying but controlled amounts of heat to the different parts of the house. The temperature distribution in each room must be uniform; the heat supply controlled by thermostat and the capital and operating costs of the system reasonable. Being an architect you will also naturally require that the heating system places no restrictions on the planning of the house.

In order to examine the possibility of satisfying these requirements with a single heating system, a pair of experimental houses were built at Stanmore, Middlesex, in 1948, and two independent heating systems were installed in each house. The research laboratories where the necessary prototype appliances were designed had reduced the number of heating systems apparently worthy of further investigation to four.

THE STANMORE PLANNING AND CONSTRUCTION

Arthur W. Kenyon was consultant for the planning and construction of the houses, and the opportunity was taken in planning them to give the maximum freedom of use to the family.

The whole of the ground floor area, apart from the kitchen, has been left open as a single living space. Here, meals are taken in a dining recess as part of the living room instead of in a separate room. This is in keeping with the contemporary trends influenced by several social and economic factors; for example, the design of furniture and other equipment suggesting the function of various parts of the house, rather than cutting it up into conventional but arbitrary subdivisions serving purposes largely obsolete, like the "drawing room" or "parlour" of former days. It will be recognized that the benefits of this pooling of the actual living space can be increased by whole-house warming; bedrooms, for instance, can be maintained at comfortable temperature by day and used for hobbies, children's homework or other occupations needing concentration away from radio or other distractions.

A further departure from tradition is the omission of the open fire or other radiant focal point in the living room. With whole-house warming the open fire is no longer required for other than psychological reasons and its place might conceivably be taken by the television set, or alternatively the living room may be furnished so that no special focal point is required.

As far as possible the construction of the two houses is normal and traditional, but insulation has been provided to conform with the Egerton standards (Post War Building Studies No. 19).

The outer walls, 11-in. cavity, have an outer leaf of customary 4½-in. brick and an inner leaf of 4½-in. multi-cavity blocks. A fibreglass quilt completely covers the bedroom ceiling joists. In one house, the floor is solid and covered with wood blocks while in the other it is normal joist and boarding construction except that a fibreglass quilt is placed between the boarding and the joists. The provision of this insulation in the Stanmore houses gives an increased comfort standard and a 25 per cent. fuel saving.

VENTILATION

In both houses ventilation is provided in the kitchen, bathroom and cloakroom, but there is no flue in the living room and no air-bricks in the bedrooms while the outside doors are weather-stripped and particular attention was paid to the fit of the windows. Even so, the ventilation rate in the living room and bedrooms, with windows and doors closed, is 1½ to 2 air changes per hour, 12,000 to 16,000 cu. ft. of fresh air entering the house every hour. It will be noted later that the ducted warm air system gives a circulation of air throughout the house and a stimulating sense of freshness is maintained in all rooms.

In a living room heated by an open fire there will normally be 4 or 5 air changes per hour, and the excessive flow of air from the room not only reduces the effectiveness of the fire as a room heater but causes draughts and discomfort. The elimination of this over-ventilation shows a fuel saving of 15 per cent.

THE HEATING SYSTEMS

The heating systems examined at Stanmore may be briefly described as follows:—

1. *Forced warm air ducted system—low level registers.* In this method air is drawn in by fan, from the living room and landing, down through the heater, where it is warmed and ducted to each room, the air being discharged at low level in each case. The duct and register areas are so balanced as to give the same temperature in every room when desired.

2. *Forced warm air ducted system—high level registers on ground floor and low level registers on first floor.* In this system air is drawn by fan from a low level register in the living room and from the first floor landing, passed through the heater, warmed, and delivered to the living room through high level registers and to the bedrooms and bathroom through floor level registers.

3. *Warm Air Panel System.* Here warm air is circulated in a "closed" system—passing from the heater it flows through the interspace between the ground floor ceiling and the bedroom floor, down wall ducts and returning in floor ducts to the heater for re-heating and re-circulation. In this case the rooms on the first floor are warmed by conduction through the floors, while the living room and dining space are warmed by low temperature radiation from the ceiling and wall.

4. *Hot Water Radiator System.* This system was installed solely for comparison with the warmed air methods. The radiators are placed in the positions best calculated to give the most uniform temperature distribution in each room throughout the house. Additionally, floor hot water coils are used inside the front and back entrances.

The heating appliances used with each system were rated at 30,000 B.Th.U./hr. and were capable of maintaining throughout the house (1,000 sq. ft. total floor area) a mean temperature of over 40F° above outside air temperature under typical winter weather conditions.

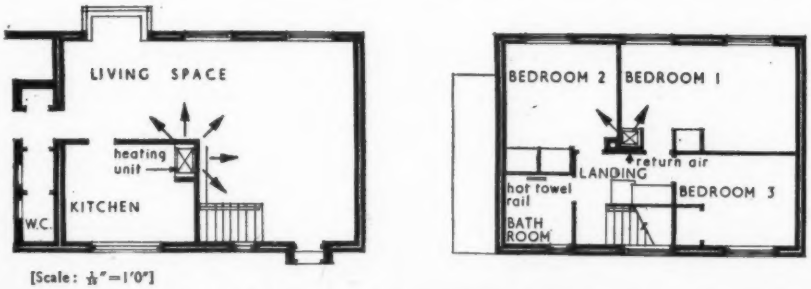
FORCED WARM AIR SYSTEM WITH LOW LEVEL REGISTERS

This system was found to possess many advantages over the other methods examined, giving in particular greater uniformity of temperature distribution and greater flexibility. With the room thermostat at a constant setting and all warm air registers fully opened, the temperatures in the different rooms of the house do not vary by more than 2F°, while the temperatures in any room do not vary by more than ± 1F° as a result of the cutting in and out of the room thermostat.

When the bedroom warm air registers are closed and the doors opened slightly, a good circulation of warm air is maintained and the bedroom temperatures are only 2F° or 3F° below those of the living room.

For maximum comfort it is not sufficient to be able to warm all rooms to the same mean temperature; the distribution in each room should be uniform. This condition is well satisfied by this type of installation.

In any room of the house the temperature on any horizontal plane does not vary by more than 2F°. In the living room the vertical gradient from floor to ceiling varies between 3 and 6F°. In the bedrooms and bathroom the floor to ceiling temperature gradient is between 2F° and 3F°.



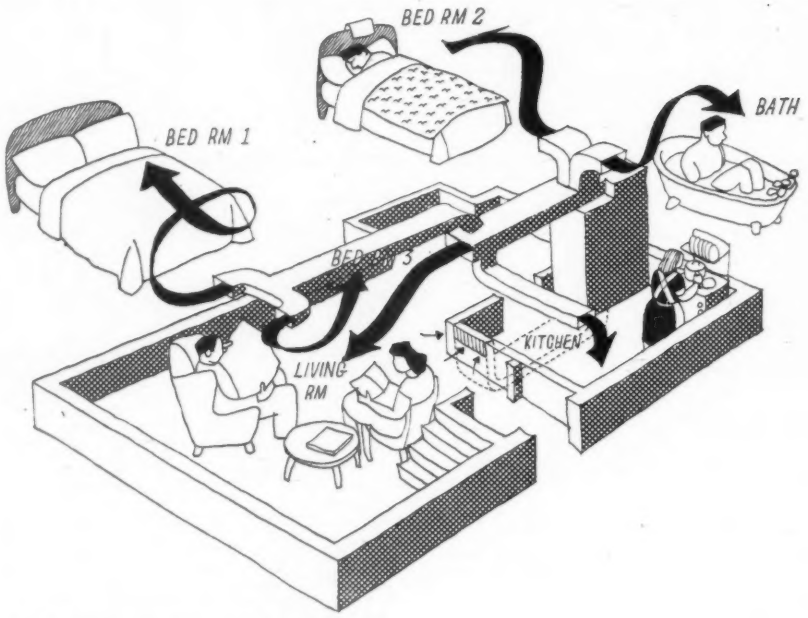
LCC plan, designed by S. Howard and Cyril H. Walker, for whole house warming.

FLEXIBILITY OF HEATING SYSTEM

For maximum economy of fuel it is necessary that the room thermostat setting should be reduced during unoccupied and overnight periods. This will not cause inconvenience if the heating system is flexible, and the desired temperatures can be quickly recovered.

For an average condition of use the following results are obtained with the gas chimney furnace. In the evening the desired comfort standard is achieved with a living room temperature of 65-67° F. The room thermostat may be set down to 60° F. for overnight running and, owing to the effective insulation of the house, there will be very little call for heat from the appliance during this period, the heat reserve of the structure supplying most of what is necessary. A temperature of 60° F. is usually found adequate until the afternoon or evening when the desired temperature of 65-67° F. can be regained in 20 to 30 minutes.

As most people prefer to sleep in a cool bedroom this can be arranged by closing the bedroom door and the warm air register and opening the windows. In the morning when the window is closed and the door and warm air register opened, comfortable temperatures can be quickly regained, a temperature rise of 10°F. being obtained in less than 10 minutes.



Whole house warming : an artist's impression.

FUEL CONSUMPTIONS

The heat required to maintain various house temperature rises, with different weather conditions, has been determined and from this basis the fuel requirements for an average year calculated. The BRS method, based on wide experience in this field, has been adopted for this computation.

From the tests made at Stanmore and elsewhere it has been shown that for a house of 1,000 sq. ft., insulated and ventilated to the Egerton standards, the following fuel consumptions are required for the given standards of service.

To maintain the whole house at 60° F. at all times, the living room and dining space at 67° F. for 8 hours per day and the bedrooms at 65° F. for 4 hours per day and to provide 250 gallons per week of hot water at 140° F. at the tap would require:

850 therms of gas per annum using a gas cabinet heater or a gas chimney furnace and a gas storage water heater.

4 tons of coal, coke, anthracite, etc., using a solid-fuel cabinet heater. In addition 90 therms of gas are required for summer water heating provided by the built-in gas circulator.

Higher or lower standards of heat service can be obtained as desired with correspondingly increased or reduced fuel consumptions.

It is interesting to compare the standard of the heat services obtained in a house of 1,000 sq. ft. total floor area with traditional and Egerton standards of insulation and ventilation, using on the one hand the normal open coal fire with back boiler and on the other, this warm air ducted system.

The standards of space and water heating obtained throughout a full heating season for each set of conditions when burning 4 tons of coal are shown in diagram II.

For these estimates the overall efficiency of the open coal fire with back boiler is taken as 35 per cent. and the heat dissipated from the hot water storage cylinder, flow and return connections, etc., has been credited as useful space heating. The overall efficiency of this house warming system is taken as 70 per cent., this average operating efficiency having been obtained in house tests.

The actual "useful" efficiency of the open fire will be substantially less than the assumed value since the burning rate cannot be controlled to give exactly the desired standard of heating. Frequently the living room will be overheated with consequent waste of fuel. The control of the house warming unit on the other hand is automatic, the space heating output being controlled by the room thermostat to meet the needs of the occupants.

It will also be appreciated that the more uniform temperature distribution given by the forced warm air system still further ensures that the heat generated is used effectively.

The increased comfort standard obtained by insulating the house to the Egerton standards and eliminating over-ventilation is clearly illustrated by the diagram.

It is interesting to note that the Stanmore results check with those obtained from the more extensive experiments made by the BRS at Abbots Langley. The results of these tests are recorded in "Heating Research in Houses" by Dr. J. C. Weston (JIHVE Vol. 17 No. 169, Aug. 1949).

Perhaps the most outstanding conclusion is that using highly efficient thermostatically controlled appliances, it is economical to heat the whole house, the fuel consumptions being in some cases actually less than for the partial heating provided by the more traditional appliances. This is in line with the Stanmore results. In the BRS tests, too, full credit was given for all heat generated even although in many instances rooms, particularly kitchens, were excessively overheated. In practice the excess heat would be dissipated by opening the windows and it would therefore be lost. Had only the useful heat been credited the case for whole house heating would have been even stronger.

THE APPLIANCES

One of the chief objects of the Stanmore experiment was to obtain additional data relating to the design of the heating appliances. Two appliances have now been developed and are in production—a gas cabinet heater and a solid fuel cabinet heater. The space heating rating of both is of the order of 30,000 B.Th.U./hr. This rating has been chosen to provide full heating up to 65° F. in houses and flats of up to 1,500 sq. ft. floor area, or background heating to 55°-60° F. in somewhat larger dwellings when these are insulated to Egerton standards.

Additionally the solid fuel cabinet heater

Diagram I—Comparison of Heating Systems

Heating system	1 Forced warm air. Low level registers	2 Forced warm air. High level registers ground floor low level registers first floor	3 Warm air panel	4 Hot water radiators
1. Uniformity of temperature distribution :				
a. From room to room ..	Very good	Very good	Good	Very good
b. In each room :				
i. Horizontal	Very good	Good	Very good	Very good
ii. Vertical	Very good	Poor on ground floor, very good on bedroom floor	Good	Good
2. Flexibility (heating up rate)	Very good	Very good	Very poor	Poor

will supply the equivalent of 50 or more gallons per day of hot water at 140° F. when operating either the solid fuel furnace or the gas circulator provided for summer water heating. A gas circulator is particularly suitable in conjunction with the gas house warming appliance for providing the domestic hot water supply.

The *gas cabinet heater* is designed so that it can be used either as a "built-in" unit connected to ducting for the forced circulation of warm air to more than one room, or as a free-standing unit without ducting. The latter model is particularly suitable for background heating in existing houses, the unit being placed in the hall and the warm air allowed to "spill over" into the various rooms by opening the doors of these rooms. The free-standing model can also be used in open-plan houses, the unit being placed in the living room, the warm air diffusing to the upstair rooms.

The gas cabinet heater is completely thermostatically controlled and is fitted with a safety limit control and a flame-failure device. A fan is also built into the unit.

The gas-operated unit requires virtually no day-to-day attention whatsoever. The only manual operation required is the setting of the room thermostat to give the desired temperature.

The *solid fuel cabinet heater* is a self-contained unit which has been designed to provide as effectively and economically as possible the means of heating either air and water together, or water alone.

This simply-designed insulated cabinet—the "core" of the installation—contains a furnace operating on the down-draught principle, a heat exchanger, a fan and motor, and hot water storage cylinder with either a gas circulator or other alternative.

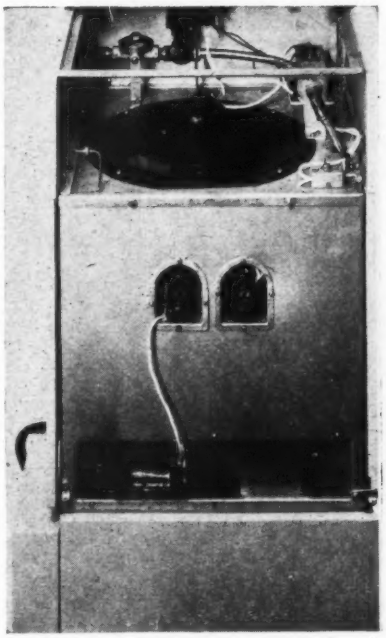
In full operation, the heating unit is connected to ducts through which air can be drawn from suitable points, passed through the heating cabinet and returned to the various parts of the house which are to be warmed. The control of this unit is fully automatic, and a thermostat within the cabinet regulates the burning rate of the furnace so as to give a constant cabinet temperature. The output for space-heating purposes is further controlled by a room thermostat, usually placed in the living space where it can most conveniently be set at the desired temperature. This temperature is quickly achieved, as when the room thermostat "calls" for heat, the fan in the cabinet is automatically switched on and a steady flow of air at constant temperature equivalent to the full rated output of the heater is ducted to all parts of the house until the required temperature is reached, when the fan is switched off automatically. Lower temperatures can be maintained in any room by closing off the register supplying warm air to that room.

(*a*) The down-draught furnace.

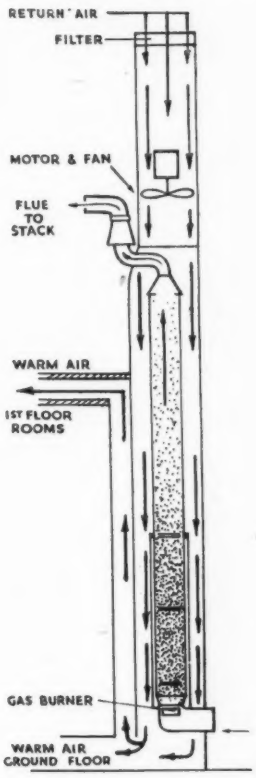
The furnace is designed to burn ordinary household coal as nearly smokelessly as possible and with high thermal efficiency, using the down-draught principle. Primary down-draught and cross-draught air as well as secondary air is admitted in automatically controlled amounts at the necessary points.

(*b*) The heat exchanger.

The conditions of combustion are necessarily such that the products leave the furnace completely burned at a very high temperature. In order fully to utilize their heat they are passed through the heat exchanger, around which the air to be heated is passed. By this means the flue loss is reduced to the lowest practical level. This heat exchanger consists of a simple three-pass system, and although it is normally self-cleaning, access can if necessary be gained from the fire-box.



Above, gas cabinet heater.

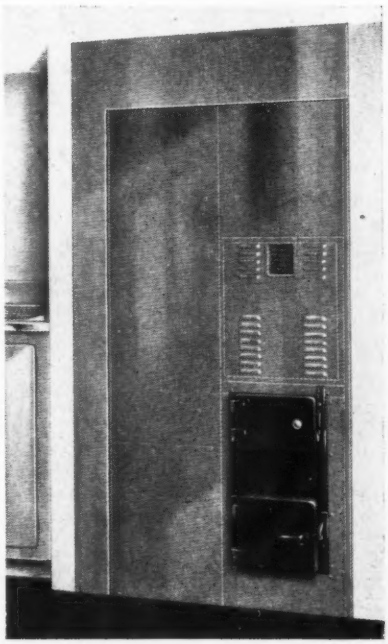


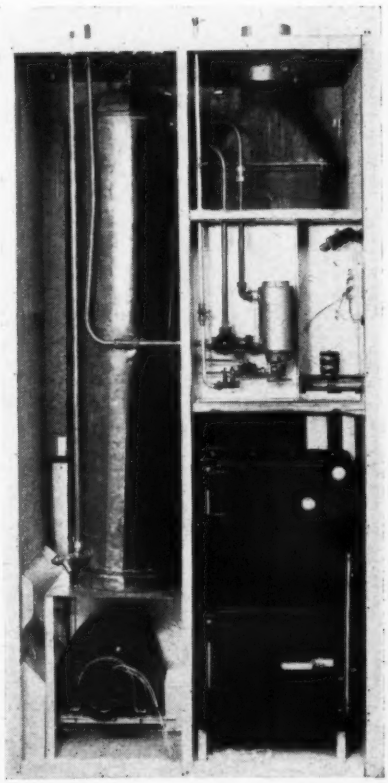
Right, gas chimney furnace, diagrammatic section.

(*c*) Water heating.

The 40-gallon hot water storage cylinder is free-standing within the insulated cabinet. In heating the water a new principle has been brought into play, in which both contact with the surrounding air and radiation from the furnace and heat-exchanger are employed. The maintenance by thermostatic control of the cabinet temperatures ensures a constant output of hot water (upwards of 50 gallons per day of water at 140° F. at the tap) whether the space-heating system is in full operation or not. This method of water heating shows an advance over the more orthodox type of combined space and water heater which has a boiler built into the firebox. With the

Solid fuel cabinet; below, external view from kitchen; right, interior view.





latter the space and water heating output cannot be entirely divorced, with the result that in cold weather when a lot of space heating is required, an excessive amount of hot water is given with consequent waste of fuel. In summer or when no space heating at all is required, a gas heated circulator can be employed as an alternative means of water heating.

OPERATION AND MAINTENANCE

The control of the whole house warming unit is automatic; very little attention is required and the system is virtually foolproof. Three manual operations only are involved—setting the room thermostat to the desired room temperature, clearing the fuel-bed and refuelling. Clearing is a simple matter since a shaking grate is provided for the removal of the ash, stones, etc. Refuelling is required once or twice only in each 24 hours when using coal, anthracite, or other dense fuel and from twice to four times in that period when burning coke. The furnace possesses the advantage of effectively burning any domestic solid fuel, including household coal, steam coal, anthracite, coke and briquetted fuels. Moreover, a wide range of sizes of these fuels is suitable and equally good results are obtained, for examples, with coals containing considerable proportions of slack or of oversize lumps.

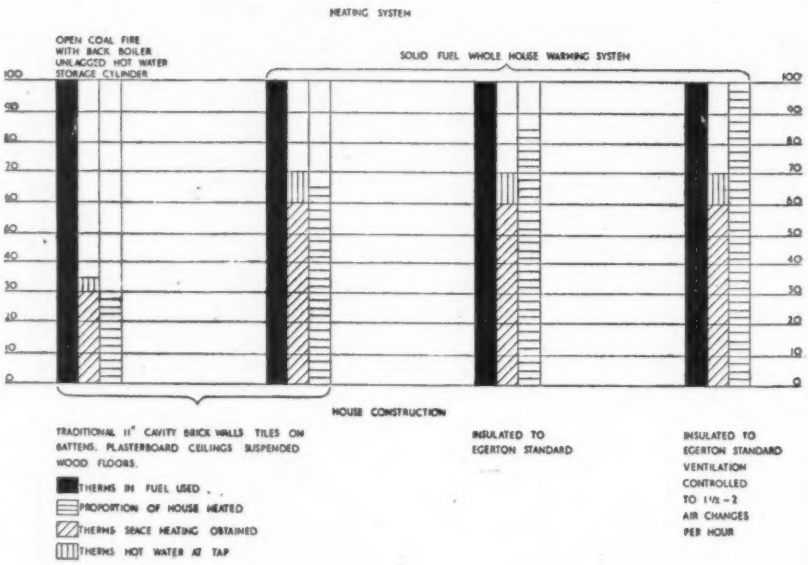


Diagram II

This feature answers any question connected with building confidentially and free of charge. Questions to the Technical Editor, The Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1.

QUESTIONS AND ANSWERS

3026 HEATING—OVERCOMING DRAUGHTS

Q *I find that my lounge, which is 18 ft. by 12 ft., is very draughty and cold in the winter. I am having the window, door and French window sealed and wish to install an open-type convector fire in place of the existing open sunk hearth fireplace. The fireplace opening is 2 ft. 1 in. high × 1ft. 4 in. wide × 11 in. deep. Can you recommend a type of fire to fit that opening, with which a great percentage of the heat now lost up the flue can be deflected by means of vents into the room? As the chimney now tends to smoke I imagine that this nuisance can be overcome by using a fire of this type. Have you any other suggestions for making this room bearable in winter?*

A It is probable that an important source of the inconvenience you have experienced is due to the very large volume of air which your present type of fire draws up the chimney above the fire. This might easily amount to five or six complete room air changes per hour. It is not commonly appreciated that the normal open fire acts as an air-pump, and that a very large capacity for radiant heat is necessary to compensate for the volume of cold air drawn into the room to replace the air expelled by the chimney.

By sealing the door and French windows you will oppose a considerable resistance to the intake of cold air, but, as your fire already tends to smoke, it will probably be worse in this respect when you have sealed the air intakes.

A modern type of convector fire will afford an appreciable improvement since its thermal efficiency is much superior to the simpler open fire. The rate of air change it will induce may still be considerable and you could obtain a considerable amelioration of the comfort in the room by making an opening, say 9 in. × 3 in., in the floor immediately in front of the hearth, opening to the space below the floor, assuming that you have a ventilated suspended floor. Even better would be two openings, one on either side of the hearth. These openings would be covered with metal grilles so designed as to afford the minimum obstruction to air flow. In this way you would supply a large proportion of the air which is drawn over the fire direct from the outside of the building without drawing the warm air from the room. Another alternative is to fit an openable stove in the existing fireplace. This would probably give a higher thermal efficiency, a high value of convection heating, and would draw less air over the fire.

3027 TILING ON TIMBER FLOOR AND STOOTHED PLASTERED WALLS

Q *We have been asked to convert a dressing room into a bathroom and it is desired that the walls and floor should be tiled. Two of the walls are plaster on stooths and the existing floor is of wood. We shall be glad to know if there is a satisfactory method of* securely *attaching tiling to a stoothed plastered wall, whether tiling laid on a wood floor will be successful and whether any particular type of tile is suitable for this work.*

A The problem regarding the floor is easy. Use a layer of waterproof building paper all over the floor, allowing a lap of 6 in. to 9 in. and seal the lap with a brush coat of bitumen. On this lay 1 in. of dry sand and bed the tiles in cement mortar in the usual way.

Since tiling on a strong background may induce considerable stresses in the backing material we would recommend for the walls that you fix a layer of expanded metal on blocks over the existing plaster and cement render over this. The tiling can then be fixed in the ordinary way. You would have a strongly reinforced unit which would not require any support from the background.

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.

ENQUIRY FORM

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

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Please ask manufacturers to send further particulars to:—

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PROFESSION or TRADE .....

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A.J. 27.7.50

Hills Lantern Lights at new factory for Messrs. W. Canning & Co. Ltd. Architects: Harry Bloomer & Son.

STANDARD LANTERN LIGHTS

The above illustration shows Standard and Purpose Made Lantern Lights recently installed on the water-cooled roof of a new factory for Messrs. W. Canning & Co., Birmingham. Hills Lantern Lights incorporate special lead clothed Ridge and Hip Bars which eliminate the heavy cost of separate lead flashings. Interlocking cast iron corner posts and malleable iron finial connections impart rigid strength to each unit. These are available in a wide range of Standard Sizes, and can also be made to specific dimensions. Hills also specialise in Lead and Aluminium Roof Glazing; any degree of ventilation can be incorporated, from cord-operated single pane opening lights, to continuous stretches, electrically operated by tension rod gearing. List No. 209, giving full details of the complete range of Standard Lantern Lights, will be sent free on request

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INFORMATION CENTRE

4.56 **planning: urban and rural**
PLANNING OF EDINBURGH

A Civic Survey and Plan for the City and Royal Burgh of Edinburgh. Prepared for the Town Council by Sir Patrick Abercrombie, and Derek Plumstead. (Oliver and Boyd, 1949. 25s.)

A monumental volume. Handsomely treated historical sketch and civic and social survey likely to be of permanent interest. To the general reader most valuable proposals are those which are concerned with quality in urban planning. (115 pp. 25 folding maps, 54 plates, approx. 50 line drawings.)

4.57 **planning: urban and rural**
UNIVERSITY PLANNING

Proposals for the Development of a Site for the University of Liverpool. William Holford. (Liverpool University Press. 1949. 15s.)

The consulting architect's proposals for the long-term development plan of a precinct for Liverpool University and united Liverpool Hospitals. (41 pp., 15 illus.)

The proposals have been carefully studied up to and including the third-dimensional stage.

10.75 **design: building types**
7-STOREY GARAGE BUILDING

Garage to Relieve New York Traffic Jam. John J. Dwyer (Engineering News Record [USA], May 18, 1950, pp. 44/45).

Double-threaded screw ramps between parking floors. Up to 1,500 cars. RC floors and beams, concrete encased steel stanchions. First of a series of public garage buildings.

The building is irregular in plan, 234 ft. long and 172 ft. wide. There are 7 parking levels, including the roof area. Standard column spacing is 32 ft. by 58 ft., the reinforced concrete beams spanning 58 ft. They are reinforced with additional steel to allow them to carry safely the loads from the floor above during concreting. This was found more economical than shoring and careful wedging down to the ground for newly poured floors. 75 lb. per sq. ft. superimposed load was the basis of design. The circular columns have an H-section steel core with spiral reinforcement. Column forms were stripped the day after pouring, while four days were allowed for floor slabs, beams and girders. The ramps, at one end of the building, form a separate structure. Light and ventilation are provided by glass block panels and metal louvres in the concrete walls. Normally one of the spiral ramps is used for going up, the other for going down. At peak hours however both ramps may be operated in the same direction. Maximum grade is 8 per cent., minimum width 9 ft. 8 in. and minimum curvature along centre line 33 ft. 4 in. It is interesting to note that 1,050 cars can be accommodated if parked by customers, but 1,500 if parked by the attendants!

13.59 **materials: timber**
TIMBER: GRAIN, TEXTURE AND FIGURE

Grain, Texture and Figure. H. E. Desch. (Wood, April, 1950, pp. 119-121.)

Clarification of the confusion over the use of the words "Texture" and "Grain," particularly when they are used in connection with different methods of sawing. Description in detail of the circumstances which produce straight, diagonal, spiral, interlocked, wavy and irregular grains, and the types of figure which these produce, and of some of the characteristics such as strength which timber in these different conditions is likely to possess.

14.29 **materials: concrete**
MAKING CONCRETE

Making Concrete. D. C. Teychenné. (Building Industries and Scottish Architect, Vol. 61 No. 719, Feb., 1950, pp. 49-53.)

Building Research Station paper, addressed to contractors and Clerks of Works. Deals with the fundamental points to which attention must be paid if good concrete is to be made, in particular with the choice of materials, quantity of mixing water, measuring of cement and aggregate, mixing and placing, and curing. There are photographs showing examples of badly made concrete, etc. Also illustrated by graphs showing strengths under different conditions, and the effect of sand-bulking.

14.30 **materials: concrete**
HIGH-STRENGTH CONCRETE

The Principles of Making High-Strength Concrete. A. R. Collins. (Reinforced Concrete Review, Jan. 1950.)

Requirements mainly in prestressed concrete construction. The factors affecting concrete strength. Controls in practice. 20 pp., 6 graphs, 2 tables.

In prestressed concrete construction high ultimate strength is not the only requirement, but high strength at an early age is often equally important, so that costly delays in construction can be avoided. By refinements of technique and control a minimum strength of 8,000 lb. per sq. in. or more can be obtained, as compared with 2,500 to 5,000 lb. per sq. in. cube strength after 28 days in ordinary concrete work. Graded requirements are suggested in this paper, and the effects of mix proportions discussed. Special cements and accelerators, *e.g.*, calcium chloride, may increase the rate of hardening and save valuable time in construction. Even the most careful design can be completely wasted by a few minutes' negligence in control and supervision—this would equally apply to other materials but checking of workmanship after the job has been completed is particularly costly in concrete work.

15.76 **materials: applied finishes and treatments**
WAX POLISH

Wax Polishing. (The Decorator, May, 1950. pp. 77-78 & 119.)

Brief summary of the characteristics and uses of beeswax, and of Carnauba, paraffin and ceresine waxes, montan and Japan wax and a description of the finish known as "Wax and Iron." Also notes on the cleaning and removal of old polish. The article is addressed to those concerned with finishing floors and large surfaces.

19.94 **construction: details**
LIGHTWEIGHT STEEL CANTILEVERS

Lightweight Steel Cantilevers. (Architectural Record [USA], May 1950, p. 167.)

To the architect and builder in the USA many types of steel products are available which quite obviously make construction a good deal cheaper and better. The lightweight so-called "junior" rolled steel joists are just one of many examples. They are rolled in a wide range of sizes and are particularly useful where deflection is the limiting consideration, *e.g.*, for purlins, roofing and flooring with long spans and light load. For a school in Austin, Ohio, the roof framing consists of 12-in. deep beams 30 ft. long, at 4-ft. centres, notched over the lintel beams and cantilevering 3 ft. beyond the outside walls. A permanent sun shield is thus provided for the classroom windows. Structural steel connections are bolted on site and the steel roof deck is welded to the joists. Considerable depth of overhang is made easy and the appearance further improved by tapering the cantilever beam by cutting and welding.

19.95 **construction: details**
SMOKY CHIMNEYS

Smoky Chimneys. (Building Research Digest No. 18, May, 1950.)

An account of the principles governing the proper functioning of smoke flues, together with an illustrated description of the method of construction for fireplaces and flues recommended by the BRS to overcome smoky chimneys.

There is much misunderstanding and superstition about chimneys and flues, and much money is wasted in vain efforts to cure smoky ones. It is claimed that the effectiveness of the principles outlined in this Digest has been tested and that given certain conditions the design recommended will almost always be successful. Nevertheless, this design incorporates a fire back which is non-standard and which is more difficult to build in than the usual fire back: and it also incorporates a "smoke shelf" which is thought by many to be a source of danger from fire.

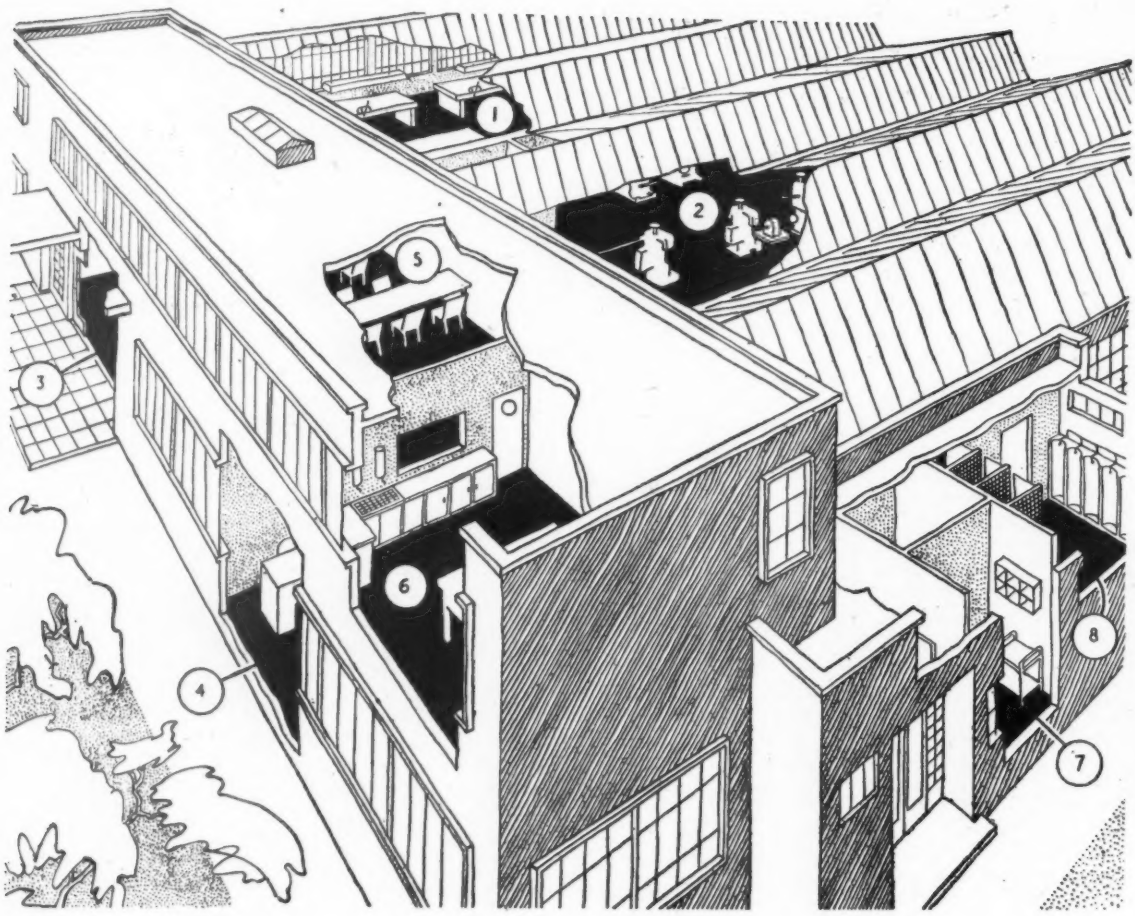
If these characteristics are essential, then they should become part of the stock designs held by the manufacturers, and they should be included in the recommendations made in the relevant code of practice.

19.96 **construction: details**
80-FT. WELDED TRUSSES

Test of H-Section Welded Truss. A. D. Waidelich (The Welding Journal [USA], May, 1950, Research Supplement, pp. 252-258.)

Strain-gauge loading tests on 80-ft. span steel trusses composed of RSJ and broad flange beam members with their webs in the vertical plane. No gusset plates. Type of truss made possible by welding. (13 illus.)

While this type of welded truss is not entirely novel, it has in recent years found wide application for roofs of industrial



FLOOR FINISHES AVAILABLE FOR FACTORIES

The table below indicates the principal floor finishes which in normal circumstances are available for consideration for various parts of a factory. In any particular instance, special factors might weigh in favour of one or other of the alternatives shown. Semtex Ltd. is equipped to advise on all floor finishing problems, and to undertake contracts for all the finishes mentioned other than terrazzo, wood block or granolithic.

(The information panel has been prepared without prejudice to any special claim made by manufacturers of the materials listed).

	SEMASTIC TILES	FLEXIMER FLOORS	RUBBER FLOORS	LINOLEUM	TERRAZZO	QUARRY TILES	GRANO-LITHIC	WOOD BLOCKS
1. LIGHT FACTORY FLOORS	*	*	—	—	—	*	*	*
2. HEAVY FACTORY FLOORS	—	—	—	—	—	*	*	*†
3. ENTRANCE HALLS	*	*	*	*	*	—	—	*
4. OFFICES	*	*	*	*	—	—	—	*
5. CANTEENS	*	*	—	*	*	*	—	*
6. KITCHENS	*†	*	—	—	*	*	—	—
7. FIRST AID ROOMS	*	*	*	*	*	*	—	*
8. LAVATORIES	*†	*	—	—	*	*	—	—

† SPECIAL GRADE AVAILABLE FOR INSTALLATION IN THESE SPACES

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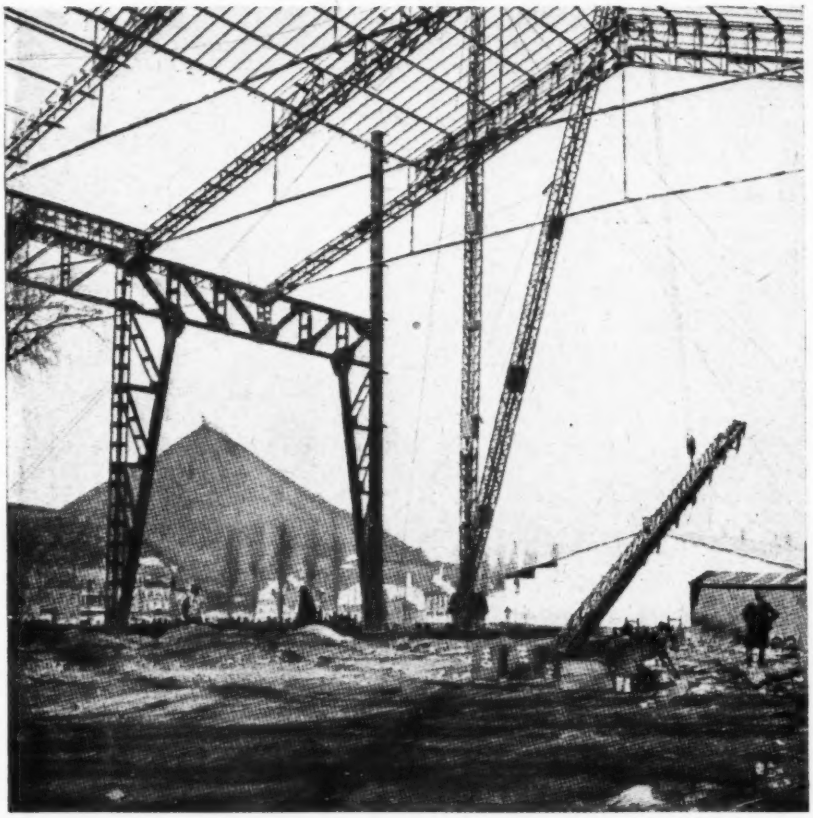

Exhibition building, Liege. End bay; note stiffly braced side panel. See 20.184.

buildings. No details such as gusset plates, cleats or packings are required, as all the members are directly joined by fillet welds all around their sections. The joints are thus completely sealed against corrosion, only the original rolled surfaces being left exposed. Only straight line saw cuts are necessary for preparing the ends of members and the use of standard jigs makes mass production of these trusses easy. Electric resistance gauges were extensively used in the loading tests. Two of the 80-ft. trusses were coupled so as to provide lateral bracing for the top chords in compression. The test load, maximum 127 tons of rolled steel, was so arranged that predetermined loads at panel points were obtained, and the measured stresses and deflections were compared with those computed by the normal truss theory (assuming hinged joints) and including the secondary effect of the rigidity of welded joints. It is claimed that observed and computed stresses agreed very well, mainly because the cross section and the moment of inertia remains constant for the full length of the member, as there are no gusset plates or other details.

20.184 construction : complete structures
EXHIBITION BUILDING, LIEGE

Le Hall de la Métallurgie de la Foire Internationale de Liège. G. Dedoyard and L. Musette (L'Ossature Métallique [Belgium], April 1950, pp. 173-179).

Large size building, 33 ft. clear headroom, in very light steel construction. Interesting architectural effects.

The total area of 300 ft. by 530 ft. had to be covered at minimum first cost, at the same time giving satisfactory appearance inside and out. Ample daylight had to be provided, and the number of interior columns had to be kept to a minimum. The choice was a lattice type steel structure, in four bays of about 75 ft. span each, the roof avoiding the effect of the industrial type triangulated truss by using light latticed rafters and thin ties, the latter consisting of a single angle about 2½ in. by 2½ in. by ¼ in. Interior columns are at 33 ft. centres, their tops held by lattice girders which support intermediate roof trusses at 16 ft. 6 in. centres. These columns are of 12 in. square cross section, formed by four angles connected by batten plates and diaphragms with a circular hole for down pipes. These welded columns of the Vierendeel type look light and clean. Galvanized corrugated sheets cover the roof, half of its area being occupied by glazing. The bottom half of the 30 ft. high walls is in brickwork, the upper half glazed. About 700 tons of steelwork were used, which works out at about 10 lb. per sq. ft. of covered area, a good result considering the spans.

21.33 construction : miscellaneous
SUBSIDENCE DAMAGED STRUCTURES

Subsidence in Long Beach Harbour. - Area Requires Special Engineering Construction. (Civil Engineering [USA], June 1950, pp. 17-22.)

Large-scale sinking of existing buildings and structures. Counter measures to provide protection against high tides.

A coastal area near Los Angeles, 5 miles long by 3 miles wide, has been sinking for some 12 years. The present annual rate of subsidence is 18 in., the maximum total 11 ft., which brings certain areas to a level 6 ft. below high tide. Oil wells are said to be in part responsible. The area is industrially congested and buildings and structures are affected in many ways. Grades of streets are changed to such an extent that new methods of drainage are required. Gravity sewage has to be replaced by pressure mains and fractures occur in water, oil and gas mains. A steam power plant had to be protected against earth pressure, all drainage has now to be pumped as gravity disposal is no longer possible. A 220-ft. clear span bascule bridge had to be jacked up 7 ft. 6 in., as the subsidence has caused the bridge rockers to be awash at high tide. While the examples given refer to special engineering construction the architect and town planner will be interested in the effects of subsidence, whether caused by oil extraction or coal mining.

26.68 services and equipment : miscellaneous
CESSPOOLS

Cesspools. BS C of P 302.200 (1949). (British Standards Institution, 2s.)

BS C of P covering design, construction and use of cesspools.

Sooner or later, most architects find that for one of their buildings no other means of drainage is possible, and they are faced with the nauseous task of providing a cesspool. This BS C of P will help them.

Section 1 deals with definitions; drawings and information to be submitted to the Local Authority; survey of wells and watercourses in the locality; the making of proper arrangements for clearance.

Section 2 deals with the BSS relevant to the parts and materials.

Section 3 deals with design considerations. In all cases impervious cesspools are preferable to overflowing or pervious cesspools, the latter being most liable to foul the ground. They should not be used except in suitable subsoils, and where development, not exceeding one house to the acre is envisaged. Impervious cesspools should be sited no nearer than 50 ft. from a habitation, or 60 ft. from a well; preferably, in ground sloping away from buildings, and down the prevailing wind. There should be vehicular access to wthin ten yards; the possibility of future connection to a public sewer should be considered. For capacity, 10,000 gallons will probably be the maximum for economy. As a rule, not less than 45 days dry weather flow at 30 gallons per head per day should be allowed. House drainage must be on a separate system, and surface and subsoil water rigorously excluded. The cesspool should not be more than 14 feet deep, and the level of the cover no more than 2 ft. above the invert of the drain. A circular plan is generally most convenient; construction may be of 9 in. hard brickwork in cement mortar, not less than 6 in. of first class 6:1 concrete, or precast concrete sewer pipes, with 4 in. concrete all round externally. The base should be of not less than 6 in. concrete as above, on a good bottom. The inside should be rendered in cement and sand, or asphalted, and in wet soil, the outside should be surrounded with 9 in. of well puddled clay. There should be an interceptor between house drain and cesspool, with FAI; the inlet pipe should terminate in a bend 3 in. clear of the wall. The cesspool should have a separate 4 in. FAI with suitable inlet 2 ft. 6 in. above ground, and a separate vent stack, 4 in. diameter, at least 10 ft. clear of the cover, with height not less than 10 ft. or more when trees, etc., make it necessary. The cover for access should not be less than 24 in. by 24 in.; a portable ladder should be used for access, not built-in step irons. Emptying may be carried out by special vehicle (1,000 gallon tanker with suction equipment) which carries contents to central plant for treatment; the cost may be very high. Alternatively, apparatus may be fitted to the cesspool to raise contents to the surface and spread over adjoining land, which is insanitary and disgusting. The completed cesspool should be filled with water and allowed to stand for 24 hours, when it should be topped up. The water level should then drop no more than 1 in. in 48 hours.

Buildings Illustrated

Man's Shoe Shop for Dolcis Ltd., 55-59, Oxford Street, London, W.1. (*page* 84). Staff Architect: Ellis E. Somake, F.R.I.B.A. Assistant: Rodney W. Freeborn, A.R.I.B.A. General Contractors for shop-fitting: Sycamore (Brentford) Ltd. Sub-contractors: Electrical installation, Courtney, Pope (Electrical) Ltd.; cash tubes, Lamson Engineering Co. Ltd.; heating alterations, Hopes Heating Co. Ltd.; special paints, Thomas Parsons & Son; carpets, F. G. Minter (Decorations) Ltd.; chairs and fitting stools, G. A. Sawyer Ltd.; furnishing material, Donald Brothers (Dundee); pottery, Donald Mills.

Extension to temporary shop for John Lewis & Co. Ltd., Oxford Street, London, W.1. (*page* 85). Designer: R. H. Pearson, L.R.I.B.A., A.I.A.A. Consultant, steelwork: Dr. H. Gottfeldt, M.I.STRUCT.E., M.INST.W., in collaboration with Hurst, Pierce and Malcolm, Chartered Civil Engineers. General Contractors: John Lewis Building Ltd. Sub-contractors: Joinery, electrical work, heating, decorations, John Lewis Building Ltd.; fabrication of structural steel, Advance Welding Co. Ltd.; reinforced concrete work, Helical Bar Engineering Co., Ltd.; dismantling and erection of structural steel, Richard Abel (Steel Erectors) Ltd.; bricks (external facings), A. H. Herbert & Co., Ltd.; bricks (internal facings), Dumbrik Ltd.; supply and erection of Blister Hangar, including roof sheeting, J. Thorn & Sons, Ltd.; asbestos roofing in front section, E. H. Smith; external pre-cast concrete work, Malcolm McLeod & Co., Ltd.; asphalte, Firenzi Asphalte; tubular work to show-windows, Carlton Metal Moulding Co., Ltd.; metal lettering, Signcraft Ltd., canopy edging, Bull (Ely) Ltd.; shop-window blinds, E. H. Fisher & Sons; metalwork to centre telescopic blind, The Artistic Blind Co.; pavement lights and patent glazing, Haywards, Ltd.; sanitary fittings, Associated Clay Industries Ltd.; roller steel shutters, Haskins Ltd.; glazing, Jas. Clark & Eaton, Ltd.; ironmongery, Taylor Pearse & Co.; fibre-board ceiling linings, The Merchant Trading Co., Ltd.; staircase balustrades, H. & C. Davis & Co., Ltd.; plastering, Proberts Bros. Ltd.; paint and distemper, W. & J. Leigh, Ltd.; "Snowcem" to external brickwork, Cement Marketing Co.; non-slip tiles, Adamite Co., Ltd.; treatment to oak steps, Watco Ltd.; temporary ramp to site, Scaffolding (Gt. Britain) Ltd.; demolition work, Metropolitan Construction Co., Ltd.; scaffolding, London Midland Steel Scaffolding Ltd.; electrical fittings, fluorescent fittings, ground floor front section, Wembley Appliances Ltd.; tungsten fittings basement, Harcourts Ltd.; spotlights, Crompton Parkinson Ltd.; fluorescent louvres, Courtney Pope (Electrical) Ltd.; cold cathode fluorescent lighting, General Electric Co.; window reflectors, Utility Lamp & Fitting Co., Ltd.; mechanical ventilation, Benham & Sons Ltd.; gas radiant heaters, Radiant Heating Ltd.; fans, Woods of Colchester, Ltd.; gas radiators, Cannon Iron Foundry Ltd.; shop-fittings, Kandya Ltd.; George Parnell & Co., Ltd.; D. R. Carter (Shopfitters) Ltd.; G. M. Kingsmill Ltd.; John Lewis Building Ltd.; metal display arms, Frederick Sage (display fittings) Ltd.; show-window enclosures, H. Hartley & Co., Ltd.; chairs, Forward & Donnelly, Ltd.; Ernest Race, Ltd.; tubular metal stands, W. P. Eglin Ltd.; carpets, John Crossley & Sons Ltd.; directional signs, Church & Co. (fittings) Ltd.

Hostel 16-18, *Bryanston Square, W.1.* (*pages* 89-92). Architect: James Cubitt & Partners. General Contractors: Griggs & Son, Ltd. Quantity Surveyor: W. J. F. Tillyard, A.R.I.C.S. Sub-contractors: Reinforced concrete, Diespeker Ltd.; structural steel, Twisteel Ltd.; tiles, tiling, Camden Tiles Ltd.; Paropa roofing, Frazzi Ltd.; glass, Jay-Cee & Co.; woodblock flooring, Vigers Bros.; patent flooring, Semtex Ltd.; central heating, ventilation, plumbing, Ellis (Kensington), Ltd.; electric wiring, P. A. Neale Ltd.; electric light fixtures, Hume Atkins Ltd.; door furniture, Knight & Co.; casements, C. E. Welstead Ltd.; window furniture, Arens Control Gear; rolling shutters, Shutter Contractors Ltd.; iron staircases, railings, George Wright (London) Ltd.; venetian blinds; J. Avery & Co.; joinery, Welwyn Builders Ltd.; (service table); Morgan & Partners Ltd.; (staircases), Lindsay & Son, Ltd.; metalwork on internal staircases, Kingsmill Metal Co.; wallpapers, John Line & Sons, Ltd.

Whole House Warming (*pages* 93-96). The whole house warming methods referred to were designed and developed by Radiation Ltd., and the various appliances manufactured for them by John Wright & Co. Ltd., Aston, Birmingham, 6; Wilsons and Mathiesons Ltd., Armley, Leeds, 12; and Bratt Colbran Ltd., Wembley, Middlesex.

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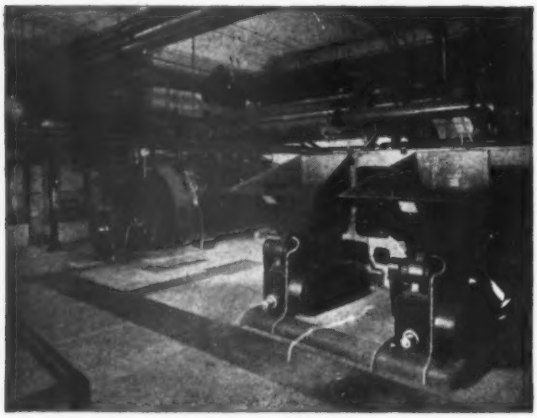
Part of the Reading Room, Institution of Gas Engineers, 17, Grosvenor Crescent, S.W.1. The tables, designed by Heal's, under the direction of the architect, Robert Bostock, M.A., L.R.I.B.A., are of waxed oak, and the bookcases with adjustable shelves, of English chestnut. The chairs are covered in Niger goatskin, and the curtains of yellow printed rayon, have a brown and white design, whilst the Wilton carpet was dyed a special shade of brown.



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

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THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: EMPLOYMENT REGISTER, WREN PARK, WESTHEATH. Tel.: Uplands 0935. 991

NORTH THAMES GAS BOARD.

Applications are invited for the following appointment in the Architects' Section of the Chief Engineer's Department of Westminster: SENIOR ARCHITECTURAL ASSISTANT, minimum starting salary £650 per annum.

Applicants, who must be Registered Architects and should be studying for or have passed the Final Examination of the R.I.B.A., should be capable of preparing working and detailed drawings and specifications, and supervising and controlling the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

The appointment is of a permanent nature, and pension arrangements will be discussed with short list candidates.

Applications, stating age, qualifications, and particulars of previous appointments held, must be submitted to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 9787. 4341

LONDON COUNTY COUNCIL.

Applications are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £680 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope reqnired and quote reference A.A.1). Canvassing disqualifies. (816) 4558

KENT COUNTY COUNCIL.

Applications are invited from Fellows or Associates of the Royal Institute of British Architects for appointment in the Buildings Department as a PRINCIPAL ASSISTANT ARCHITECT, at a salary of not exceeding £900 a year, to be fixed according to the qualifications and experience of the successful candidate.

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

Candidates must have had wide experience in the planning, designing and construction of public buildings, be used to staff control, and have had considerable administrative experience.

Applications, on forms obtainable from the County Architect, Springfield, Maidstone, must be delivered to him, duly completed, by not later than 12th August, 1950.

W. L. PLATTS,
Clerk of the County Council.

County Hall, Maidstone.
12th July, 1950. 4833

COUNTY BOROUGH OF BIRKENHEAD. APPOINTMENT OF "BOROUGH ARCHITECT."

Applications are invited for the appointment of "Borough Architect."

The commencing salary will be £1,250 per annum, and a motor car allowance of £90 per annum will be paid. No other remuneration will be payable in connection with any of the duties of the office.

The appointment will be terminable by three months' notice on either side, is subject to the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination. He will not be allowed to engage in private practice.

Forms of application and particulars of the conditions and duties of the office may be obtained from the undersigned.

Applications, in envelopes endorsed "Borough Architect," stating age, experience, and qualifications, and accompanied by copies of three recent testimonials, must reach the undersigned by not later than 10 a.m. on Friday, the 25th August, 1950.

Canvassing, directly or indirectly, will disqualify, and applicants must disclose to the undersigned in writing if they are related to any member or senior officer of the Council.

DONALD P. HEATH,
Town Clerk.

Town Hall, Birkenhead.
24th July, 1950. 4878

BOROUGH OF GRANTHAM. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade A.P.T., V (£520-£570 p.a.), on the permanent staff of the Borough Engineer and Surveyor.

Preference will be given to applicants who are Registered Architects, or who have passed parts of the Associate Membership Examination of the R.I.B.A.

The person appointed will be required to devote his or her time to the Council's programme of house building, and previous experience of similar work will be an advantage.

A house will be made available, if necessary, and the appointment is subject to the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1937, and the successful passing of a medical examination.

Applications, stating age, qualifications and experience, together with the names of two persons to whom reference may be made, should reach Mr. T. J. Livesey, M.C., A.M.I.C.E., A.M.I.Struct.E., A.M.I.Mun.E., Guildhall, Grantham, not later than noon on Monday, 31st July.

JOHN F. GUILE,
Town Clerk.

Guildhall, Grantham.
8th July, 1950. 4821

COUNTY OF LINCOLN—PARTS OF KESTEVEN. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of DEPUTY COUNTY ARCHITECT. Salary will be in accordance with A.P.T., Grade IX. of the National Scales, *i.e.*, £750 rising by annual increments of £50 to a maximum of £900 per annum. Commencing salary will be in accordance with experience. Car and subsistence allowances will also be paid.

A.R.I.B.A., or similar qualification, is necessary, and candidates should have had experience in the architectural work normally carried out by the Architect's Department of a County Council. Experience in connection with Educational architectural work is particularly desirable. Applicants should possess administrative experience and be capable of controlling staff.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, to a satisfactory medical certificate, and to termination by three months' notice in writing on either side.

Application forms may be obtained from the undersigned, to whom applications should be sent not later than 10th August, 1950, together with copies of two recent testimonials. Canvassing, either directly or indirectly, will disqualify.

J. E. BLOW,
Clerk of the County Council.

County Offices, Sleaford, Lincs. 4814

COUNTY BOROUGH OF WEST HAM. BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT.

Applications are invited from suitably qualified persons for the following permanent appointments:—

(*a*) QUANTITY SURVEYOR (Grade A.P.T., VIII, £685×£25—£760).

(*b*) ARCHITECTURAL ASSISTANT (Grade A.P.T., III, £450×£15—£495).

(*c*) ARCHITECTURAL ASSISTANT (Grade A.P.T., II, £420×£15—£465).

(*d*) ARCHITECTURAL ASSISTANT (Grade A.P.T., I, £390×£15—£435).

(*e*) GENERAL ASSISTANTS, TECHNICAL (General Division: at age 21, £220; £385 at age 32).

Plus London "weighting."

Applicants for post (*a*) should be Associates of the Royal Institution of Chartered Surveyors, and will supervise a section of the Department.

Applicants for posts (*b*), (*c*) and (*d*) should have had practical experience in an Architect's office, preferably on Housing and Schools.

Applicants for post (*e*) should be neat, quick draughtsmen.

Application forms (returnable by 11th August, 1950) obtainable from Borough Architect and Planning Officer, Thomas E. North, F.R.I.B.A., 70, West Ham Lane, Stratford, E.15. 4828

HOLLAND COUNTY COUNCIL. COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of PLANNING ASSISTANT, Grade IV (£480-£525), in the Boston office of the Department.

Candidates should have had good experience in planning survey and research work under the Town and Country Planning Act, 1947, and should have passed the Intermediate Examination of the Town Planning Institute: further qualification will be an advantage.

Candidates will be required to provide a motor car, for which they will be paid an allowance in accordance with the Council scale. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, education, qualifications and experience, accompanied by one recent testimonial and the names of two persons to whom reference may be made, should be sent to arrive not later than 14 days after the publication of this notice. Envelopes should be addressed to R. N. Whiston, Esq., A.M.T.P.I., 21, Haven Bank, Boston, Lincs.

H. C. MARRIS,
Clerk of the County Council.

County Hall, Boston, Lincs.
July, 1950. 4850

BOROUGH OF NUNEATON. ARCHITECTURAL ASSISTANT.

Applications are invited from Registered Architects or persons possessing other approved qualifications for the appointment of Architectural Assistant on the staff of the Borough Surveyor, at a salary in accordance with Grade A.P.T., V, of the National Scheme of Conditions of Service (£520-£570).

Further particulars and conditions of appointment may be obtained from the undersigned, by whom all applications must be received not later than the 19th August, 1950.

T. OLDROYD,
Town Clerk.

Council House, Nuneaton. 4852

COUNTY BOROUGH OF HALIFAX. BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the following appointments:—

CHIEF ARCHITECTURAL ASSISTANT (GENERAL). Salary A.P.T., VII (£635-£710).

ARCHITECTURAL ASSISTANT (GENERAL). Salary A.P.T., V (£520-£570).

ARCHITECTURAL ASSISTANT (SCHOOLS). Two positions. Salary A.P.T., V (£520-£570).

QUANTITY SURVEYOR. Salary A.P.T., VI (£595-£660).

Candidates should possess appropriate technical qualifications, and will be required to pass a medical examination. The appointments will be subject to the conditions of service adopted by the Corporation and to the Local Government Superannuation Act, 1937.

Consideration will be given to applications for housing accommodation made by persons appointed to these positions.

Candidates must disclose whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

Applications, stating age, qualifications, present position, salary and experience, accompanied by copies of three recent testimonials, should be appropriately endorsed and delivered to the undersigned not later than Saturday, 12th August, 1950.

RICHARD DE Z. HALL,
Town Clerk.

Town Hall, Halifax.
13th July, 1950. 4851

COUNTY BOROUGH OF SOUTH SHIELDS. APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for permanent appointments as Architectural Assistants on the Borough Engineer's Department.

The appointments will be superannuated, and salary will be paid up to A.P.T., Grade V, according to qualifications and experience, in accordance with the N.J.C. grading decisions.

The Corporation will consider housing accommodation for successful candidates.

Canvassing will be a disqualification, and candidates must disclose any relationship to members or senior officers of the Council.

Applications, on forms to be obtained from the Borough Engineer, Town Hall, South Shields, should be returned not later than noon on Wednesday, the 16th August, 1950.

HAROLD AYREY,
Town Clerk.

Town Hall, South Shields.
19th July, 1950. 4887

HARROW URBAN DISTRICT COUNCIL. ENGINEER AND SURVEYOR'S DEPARTMENT. APPOINTMENT OF TOWN PLANNING ASSISTANT.

Applications are invited for the above appointment in the Department of the Council's Engineer and Surveyor, at a salary in accordance with Grades A.P.T., IV/V. Salary scale: £480-£570, plus London "weighting" allowance.

Applicants must be Associate Members or Students of the Town Planning Institute, should possess a sound knowledge of Town Planning Law, be neat and expeditious draughtsmen, and have experience in the interim development control in urban areas.

The Council is unable to offer any assistance in obtaining housing accommodation for the successful candidate.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937; to the passing of a medical examination; and to the National Joint Council's Scheme of Conditions of Service.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Friday, 4th August, 1950.

H. WELLS,
Clerk of the Council.

Council Offices, Harrow Weald Lodge,
Harrow, Middx. 4841

EDINBURGH COLLEGE OF ART. SCHOOL OF ARCHITECTURE.

Applications are invited for the following full-time appointments on the Teaching Staff of the College:—

SENIOR ASSISTANT. Salary scale £700-£800.

ASSISTANT, Grade II. Salary scale £450-£700.

ASSISTANT (JUNIOR). Salary scale £375-£610.

Commencing salary according to qualifications and experience.

Forms of application and conditions of appointment can be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3, to whom completed applications should be sent not later than 12th August, 1950. 4846

CORPORATION OF THE CITY OF ABERDEEN.
TOWN PLANNING DEPARTMENT.

Applications are invited for the following posts :—

(*a*) DEVELOPMENT ASSISTANT. Salary scale £595, rising by annual increments to £660 per annum.

Applicants should possess one or other of the following qualifications, viz., A.R.I.B.A., A.R.I.C.S., A.M.I.C.E., A.M.I.Mun.E., or A.M.T.P.I. The successful applicant will be required to assist the Senior Development Assistant in dealing with development applications made to the Corporation under the Town and Country Planning (Scotland) Act, 1947, and the Aberdeen City Acts, with particular reference to the structural design and stability of building proposals. Experience in the design of steel-framed and reinforced concrete buildings is therefore desirable.

(*b*) PLANNING ASSISTANT. Salary scale £595, rising by annual increments to £660 per annum.

Applicants should hold one or other of the qualifications referred to in (*a*) above, and should have had considerable planning experience. The successful applicant will be required to assist in the preparation of the Statutory Planning Proposals for the City.

(*c*) JUNIOR PLANNING ASSISTANTS (TWO). Salary scale £390, rising by annual increments to £570 per annum.

Applicants should preferably hold one of the qualifications referred to above, and should have passed at least one or other of the Intermediate Examinations leading to these qualifications. Placing in the combined salary grade will be in accordance with qualifications and experience.

The appointments are superannuable and are subject to the passing of a medical examination.

Application forms (which should be submitted in duplicate) may be obtained from the Director of Town Planning, 5, Bon-Accord Crescent, Aberdeen, to whom they should be returned on or before 12th August, 1950.

J. C. RENNIE,
Town Clerk.

Town House, Aberdeen.
14th July, 1950. 4845

LANCASHIRE COUNTY COUNCIL.

ARCHITECTURAL ASSISTANT required in the Estate Development Section attached to the Headquarters' Office, County Planning Department, Preston. Salary £595-£660. A degree in Architecture or A.R.I.B.A. essential, and A.M.T.P.I. would be an advantage.

Duties : to prepare detailed layouts of comprehensive areas of development.

Applications, giving names, etc., of two referees, should reach the County Planning Officer, County Offices, Preston, by 12th August, 1950. 4879

HOLLAND COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of PLANNING ASSISTANT, Grade II (£420-£465), in the Boston office of the Department.

Candidates should have had good general experience in a planning office and should preferably have passed the Intermediate Examination of the Town Planning Institute or some other recognised professional institution. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, education, qualifications (if any) and experience, accompanied by one recent testimonial and the names of two persons to whom reference can be made, should be sent to arrive not later than 14 days after the publication of this notice. Envelopes should be addressed to the County Planning Officer, 21, Haven Bank, Boston, Lincs.

H. C. MARRIS,
Clerk of the County Council.

County Hall, Boston, Lincs.
July, 1950. 4894

COUNTY BOROUGH OF IPSWICH.
APPOINTMENT OF ARCHITECTURAL ASSISTANT (GRADE A.P.T., VI).

Applications are invited for the appointment of Architectural Assistant in the Borough Surveyor's Department.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

The salary will be in accordance with Grade A.P.T., VI, i.e., £595 p.a., rising by annual increments to a maximum of £660 p.a.

Candidates should have passed the Final Examination of the R.I.B.A. (or hold a similar qualification). Applicants should have had experience in general Architectural work and possess a sound knowledge of design and construction.

There is no form of application, but candidates must state age, experience, and any other relevant details, and submit the names and addresses of three referees. Applications must be received by the Borough Surveyor, 19, Tower Street, Ipswich, not later than Monday, 14th August, 1950.

Canvassing will disqualify. If the applicant is to his knowledge related to any member or senior officer of the Council, he must disclose that fact in writing when submitting his application.

J. G. BARR,
Town Clerk.

Town Hall, Ipswich.
20th July, 1950. 4892

CITY OF NOTTINGHAM.
HOUSING ARCHITECT'S DEPARTMENT.
JUNIOR ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of a Junior Assistant Quantity Surveyor, at a salary in accordance with A.P.T. Division, Grade III, commencing at £450, and rising to £495 per annum.

Preference will be given to applicants who have passed the Intermediate Examination of the R.I.C.S. (Quantities Sub-Division).

The appointment is in accordance with the National Joint Council's Scheme of Conditions of Service, and is subject to the Local Government Superannuation Act, 1937.

The successful candidate will be required to pass a medical examination.

Applications, giving details of age, training, qualifications, present appointment and salary, together with the names and addresses of two persons to whom reference can be made, should be forwarded to C. A. Pilkington, L.R.I.B.A., City Housing Architect, The Guildhall, Nottingham, not later than Friday, 4th August, 1950.

J. E. RICHARDS,
Town Clerk.

The Guildhall, Nottingham. 4865

METROPOLITAN BOROUGH OF HAMPSTEAD.

Applications are invited for the post of Temporary ASSISTANT TECHNICAL OFFICER (Maintenance) in the Housing Architect's Section of the Borough Engineer and Surveyor's Department, on salary Grade A.P.T., I (£390 to £435 per annum, plus London weighting).

Applicants should have a thorough knowledge of building construction, be able to prepare Specifications for maintenance repairs to Council and requisitioned houses and flats, and be able to supervise works in progress.

Applications, stating age, qualifications, present and past appointments, detailed particulars of experience and names of three persons to whom reference can be made, must be delivered to me, in a sealed envelope, endorsed "Technical Officer," not later than 12 noon on Tuesday, 8th August, 1950.

The Council are unable to provide housing accommodation.

Canvassing will disqualify.

P. H. HARROLD,
Town Clerk.
4864

BOROUGH OF WILLESDEN.
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Chief Architectural Assistant on the Permanent Staff of the Borough Engineer and Surveyor's Department.

The salary attaching to the post will be Administrative, Professional and Technical, Grade VIII, of the National Whitley Council's Scale for the London area, namely £715 to £790 per annum, rising by annual increments of £25.

Candidates must be Registered Architects and Associates of the R.I.B.A., and have had at least 10 years' previous Municipal experience in architectural design, construction and administration, subsequent to Articles or other period of training.

The person appointed will be required to devote all his time to the duties of the office, and will not be permitted to engage directly or indirectly in private practice. He will be responsible under the Deputy Architect for the control of all Drawing Office staff engaged on the design and construction of work and preparation of contracts.

It is desirable but not essential that the successful candidate should have a car for carrying out his duties. If a car is available the Council will pay a car allowance in accordance with the National Whitley Scale for essential users.

It will be necessary for the successful candidate to provide his own housing accommodation as the Council is not in a position to assist.

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

Applications, giving age, experience, etc., accompanied by copies of not more than three testimonials, should be addressed to the undersigned, endorsed "Chief Architectural Assistant," not later than 10 a.m. on Thursday, 10th August, 1950.

Canvassing, directly or indirectly, will be deemed a disqualification.

(Sgd.) R. S. FORSTER,
Town Clerk.

Town Hall, Dyne Road, Kilburn, N.W.6. 4862

COUNTY BOROUGH OF CROYDON.
BOROUGH ENGINEER'S DEPARTMENT.
ASSISTANT ARCHITECT.

Applications are invited for this appointment from persons having good general knowledge of housing work. Salary A.P.T., Va, £550×£20 to £610 p.a., plus London weighting.

If the successful candidate is unable to obtain reasonable living accommodation the Corporation will endeavour to assist him.

The appointment is pensionable, subject to medical examination.

Form of application may be obtained from the Borough Engineer, Town Hall, Croydon, and should be returned to him within 14 days after this advertisement is published.

Canvassing will disqualify.

E. TABERNER,
Town Clerk.
4888

HAYDOCK URBAN DISTRICT COUNCIL.
ENGINEER AND SURVEYOR'S DEPARTMENT.
ARCHITECTURAL ASSISTANT.

The Council invite applications for the above appointment, at a salary in accordance with Grade IV, A.P.T. Division, of the National Joint Council Scheme of Conditions of Service (£480 per annum, rising by annual increments of £15 per annum to a maximum of £525 per annum).

Applicants must have had experience in the carrying out of surveys, preparation of plans, specifications for architectural work usually undertaken by a Local Authority, and in particular housing. Proficiency in the complete process of taking off and billing quantities for new housing will be considered an advantage.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, the National Joint Council Scheme of Conditions of Service, and the person appointed will be required to pass a medical examination.

The Council will be prepared to allocate a Council house to the successful applicant, if desired.

Applications, endorsed "Architectural Assistant," stating age, present and previous appointments, and experience, together with names of two persons to whom reference may be made, should be received by the undersigned not later than Saturday, the 5th August, 1950.

C. LEDGER,
Clerk of the Council.

Council Offices, Church Road, Haydock.
17th July, 1950. 4860

COUNTY OF ESSEX.
ILFORD COMMITTEE FOR EDUCATION.

The Essex County Council invite applications for the post of ARCHITECTURAL ASSISTANT in the office of the Borough Engineer of Ilford. Applicants should have had good general training and experience.

The scale of salary will be in accordance with the National Joint Council, A.P.T. Division, Grade III, £450×£15 to £495, plus the appropriate London area allowance.

Application should be made on a form to be obtained from, and returned to, the Borough Education Officer, Education Offices, Town Hall, Ilford, together with copies of not more than three recent testimonials, within 14 days of the appearance of this advertisement. 4861

BURGH OF HAMILTON.
SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Senior Architectural Assistant in the Burgh Architect's Department.

Applicants should have a sound knowledge of contemporary design and be experienced in the preparation of layout plans and working drawings.

The salary will be in accordance with A.P.T., Grade V-Va (£520-£610). Placing within the Grade will be in accordance with the experience of the successful applicant.

Applications, stating age, and with full particulars of qualifications and experience, together with copies of recent testimonials, should be lodged with the undersigned not later than 12th August, 1950.

The appointment is subject to the Local Government Superannuation (Scotland) Act, 1937, and canvassing, either directly or indirectly, will be a disqualification.

JOHN R. McLEAN,
Town Clerk.

The Town House, Hamilton.
20th July, 1950. 4870

COUNTY BOROUGH OF WOLVERHAMPTON.
TOWN PLANNING STAFF.

Applications are invited for the following appointment in the Department of the Borough Engineer and Planning Officer :—

SENIOR PLANNING ASSISTANT, Grade A.P.T., IV or V (£480-£525 or £520-£570), according to qualifications and experience.

Applicants should have had good general planning experience, and preference will be given to a candidate who holds an appropriate qualification.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, to the passing of the necessary medical examination, and to one month's notice on either side.

Housing accommodation will be made available to the successful applicant, if required.

Applications, together with one testimonial and two names for reference, should reach the undersigned in suitably endorsed envelopes not later than 31st July, 1950.

J. BROCK ALLON,
Town Clerk.

Town Hall, Wolverhampton.
July, 1950. 4869

BOROUGH OF NEWCASTLE-UNDER-LYME.
ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in A.P. & T. Division, Grades II (£420-£465 per annum)-IV (£480-£525 per annum), of the National Scales of Salaries. The grading will be fixed in accordance with the successful candidate's experience and qualifications. Further particulars and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Lancaster Building, High Street, Newcastle, Staffs., to whom applications must be delivered not later than Tuesday, 8th August, 1950.

C. J. MORTON,
Town Clerk.

District Bank House, Penkhull Street,
Newcastle-under-Lyme, Staffordshire. 4827

HERTFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ONE SENIOR ASSISTANT ARCHITECT, Grade VII, £635-£710.

Applicants need not have had previous Local Government experience.

Applications, together with three references, should be addressed to the County Architect, County Hall, Hertford, Herts., to be received not later than the first post on Wednesday, 2nd August, 1950. 4863

BOROUGH OF ERITH.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with the National Scale, A.P.T., II, commencing at £420 and rising by annual increments of £15 to a maximum of £465 per annum, plus London area weighting.

Applicants, who should be capable of preparing plans, specifications, estimates and Bills of Quantities for building works, should have had a good architectural training and be neat draughtsmen.

The appointment will be subject to the National Conditions of Service, to the Council's Regulations governing staff, to one month's notice in writing, and to the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Applications must be on the form to be obtained, together with a list of duties, from the Borough Engineer and Surveyor, Council Offices, Erith, Kent, and be delivered to him not later than Saturday, 12th August, 1950.

Canvassing, either directly or indirectly, will disqualify.

J. A. CROMPTON,
Town Clerk.

Council Offices, Erith, Kent. 4877

NORTH RIDING EDUCATION COMMITTEE.

Applications are invited for the following permanent appointments:—(*a*) TWO ASSISTANT ARCHITECTS (Grade A.P.T., VII, salary £635, rising to £710). (*b*) ONE ASSISTANT ARCHITECT, Grade A.P.T., VI and VII, salary £595, rising to £710. Preference will be given to Associate Members of the Royal Institute of British Architects. (*c*) ONE ASSISTANT QUANTITY SURVEYOR (Grade A.P.T., VI and VII, salary £595, rising to £710). Preference will be given to Members of the Royal Institute of Chartered Surveyors. Previous experience will be taken into account in fixing the commencing salaries.

The posts are subject to the Local Government Superannuation Act, and the successful applicants will be required to pass a medical examination by the County Medical Officer. For further particulars and application form send stamped addressed envelope. Completed applications required by Saturday, the 12th August, 1950.

F. BARRACLOUGH,
Secretary for Education.

Education Offices, County Hall, Northallerton. 4876

BOROUGH OF WIDNES.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments:—

ONE ASSISTANT ARCHITECT. Grade A.P.T., VI (£595-£660). Applicants to be registered Architects, with Schools experience.

FIVE ARCHITECTURAL ASSISTANTS. Grade A.P.T., IV (£480-£525). Applicants to be preferably Student R.I.B.A., and have had at least two years' office experience.

The appointments will be subject to the National Scheme of Conditions of Service and the Local Government Superannuation Act of 1937, and to the candidate passing a medical examination.

Applications, stating full particulars of experience, qualifications, etc., together with the names of two referees, should be sent to T. A. Brittain, F.R.I.B.A., Borough Architect, Brendan House, Widnes Road, Widnes, not later than Saturday, 19th August, 1950.

Canvassing, directly or indirectly, will disqualify.

FRANK HOWARTH,
Town Clerk.

Town Hall, Widnes.
19th July, 1950. 4875

HARROW URBAN DISTRICT COUNCIL.
ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT (NEW WORKS).

Applications are invited for the above appointment in the Department of the Council's Engineer and Surveyor, at a salary in accordance with Grade A.P.T., VI/VIII. Salary scale: £595-£760, plus London "weighting" allowance.

Applicants should be Associates of the Royal Institute of British Architects, and have had wide experience in the design of Municipal Buildings, the organisation of works, and the supervision of staff.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937; to the passing of a medical examination; and to the National Joint Council's Scheme of Conditions of Service.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Friday, 4th August, 1950.

H. WELLS,
Clerk of the Council.

Council Offices, Harrow Weald Lodge, Harrow. 4842

BOROUGH OF LUTON.
BOROUGH ENGINEER'S DEPARTMENT.
TECHNICAL STAFF.

Applications are invited for the following appointments:—

(*a*) SENIOR ARCHITECTURAL ASSISTANT (A.P.T., Grade VII, £630×£25—£710 per annum). Applicants should be A.R.I.B.A., and have extensive Municipal experience, especially in housing and school works. Housing accommodation will be made available to the successful candidate if required.

(*b*) ARCHITECTURAL ASSISTANTS, in salary grades ranging between A.P.T., I (£390-£435) and IV (£480-£525), according to qualifications and experience. For example, for Grade III, applicants must have passed Inter. R.I.B.A. or equivalent, and have at least a year's office experience; for Grade IV, applicants must have passed Inter. R.I.B.A. or equivalent and have at least two years' office experience.

The appointments will be subject to the Local Government Superannuation Act, 1937, to the National Scheme of Conditions of Service, and to the successful candidates passing a medical examination.

Applications, appropriately endorsed, giving details of age, qualifications, experience, present appointment and salary, and accompanied by names of three persons to whom reference may be made, should be sent to the Borough Engineer, Town Hall, Luton, not later than first post on Monday, 14th August, 1950. Canvassing will disqualify. Applicants must disclose whether they are related to any member or senior officer of the Council.

W. H. ROBINSON,
Town Clerk.

Town Hall, Luton.
July, 1950. 4886

LEEDS REGIONAL HOSPITAL BOARD.

Applications are invited for the post of SENIOR ASSISTANT ARCHITECT on the Headquarters Staff of the Board. Salary in accordance with Grades A.P.T., VII-VIII, £635-£760 per annum. Candidates, who must be registered Architects with recognised architectural qualifications, must have had considerable experience in hospital design and construction.

The appointment will be subject to the National Health Service (Superannuation) Regulations, 1950, to such Terms and Conditions of Service as may be laid down from time to time, and the successful candidate (if not already in the National Health Service) will be required to pass a medical examination. The appointment will be terminable by one calendar month's notice on either side.

Applications, stating age, qualifications, experience and present salary, together with the names of two referees, should be forwarded to the Secretary, 29/31, Eastgate, Leeds, 2, not later than Saturday, 5th August, 1950.

Canvassing in any form, either directly or indirectly, will disqualify. 4830

THE URBAN DISTRICT COUNCIL OF CASTLEFORD.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments:—

(1) ARCHITECTURAL ASSISTANT. Salary in accordance with Grade A.P.T., VIII, of the National Scale of Salaries (£685-£760). Applicants must be Associates of the Royal Institute of British Architects or Registered Architects, and competent to undertake housing and general architectural work.

(2) QUANTITY SURVEYING ASSISTANT (Non-Established). Salary in accordance with Grade A.P.T., VI, of the National Scale of Salaries (£595-£660). Applicants must be Associates of the Royal Institute of Chartered Surveyors (Quantities Division), and have had experience in the preparation of bills of quantities for housing and road works, and the measuring of works in progress and on completion.

The appointments will be subject to the National Scheme of Conditions of Service and the Local Government Superannuation Act, 1937, and each of the successful candidates will be required to pass satisfactorily a medical examination.

An endeavour will be made to provide housing accommodation for the Architectural Assistant should it be required.

Applications, on forms to be supplied by the undersigned, must be returned endorsed "Architectural Assistant" or "Quantity Surveying Assistant," as the case may be, not later than 12th August, 1950.

Canvassing, either directly or indirectly, will be a disqualification.

W. E. S. BARNES,
Clerk of the Council.

Town Hall, Castleford. 4893

BOROUGH OF BARKING.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the position of TOWN PLANNING ASSISTANT, Grade V, £520-£570, plus London weighting.

Candidates must have had Town Planning experience and the possession of suitable qualifications will be an advantage.

Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Barking, Essex, and should be returned to the undersigned not later than 31st July, 1950.

E. R. FARR,
Town Clerk.

Town Hall, Barking.
4th July, 1950. 4808

METROPOLITAN BOROUGH OF HAMMERSMITH.
ARCHITECTURAL ASSISTANT.

Applications are invited for the above position—salary grade, A.P.T., II/III, £420/£15/£495 p.a., plus London weighting. Applicants must be suitably trained, good draughtsmen, and preferably experienced in municipal housing.

Applications, on forms obtainable from me, on receipt of a stamped addressed foolscap envelope, to be submitted not later than 9 a.m. on August 31, 1950.

HORACE SLIM,
Town Clerk.

Town Hall, Hammersmith. 4900

CROWN AGENTS FOR THE COLONIES.

TEMPORARY ARCHITECTURAL ASSISTANT required by the Nyasaland Government for one tour of two to three years. Fixed salary £790 a year. Outfit allowance, £30. Gratuity equal to 10 per cent. of total salary drawn on satisfactory completion of service. Free passages. Liberal leave on full salary. Candidates should be single, and have had sound drawing office experience preferably including the preparation of working drawings for hospitals. They must be neat and accurate draughtsmen. Apply at once by letter, stating age, full names in block letters and full particulars of qualifications and experience and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/26542/3A on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration. 4899

NORFOLK EDUCATION COMMITTEE.
APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE A.P.T., V.

Applications are invited for the post of Architectural Assistant at a salary of £520 per annum, rising by two annual increments of £15 and one of £20 to a maximum of £570 per annum.

Applicants should have had good architectural experience. Knowledge of school design and construction would be an advantage.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the successful candidate being required to pass a medical examination.

Form of application may be obtained from the undersigned on receipt of a stamped addressed envelope and should be returned within 14 days of the appearance of this advertisement. All communications with regard to this matter should be marked "Architectural Assistant Grade V."

W. O. BELL,
Chief Education Officer.

County Education Office,
Stracey Road, Norwich. 4898

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
BUILDING SURVEYORS.

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

SURVEYOR, GRADE II—£700×£35—£840.
SURVEYOR, GRADE III—£550×£25—£700.
TECHNICAL ASSISTANT—up to £580.

Candidates should be capable of making surveys and preparing plans of factories, formulating requirements for satisfactory means of escape and negotiating with factory occupiers. The Grade II Surveyor, who should be a qualified architect or surveyor, will be in immediate charge of this work.

Commencing salaries of Grade III Surveyors and technical assistants will be assessed after interview. All positions superannuable. Application forms from the Architect (AR/EK/BR), County Hall, S.E.1, enclosing stamped addressed foolscap envelope.

Canvassing disqualifies. (1002) 4897

CITY OF LEICESTER.
CITY ARCHITECT'S DEPARTMENT.

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

(*a*) ASSISTANT ARCHITECTS—A.P.T., Grade VII—£635—£710 per annum.

(*b*) ASSISTANT QUANTITY SURVEYORS—A.P.T., Grade VII—£635—£710 per annum.

Applicants for (*a*) must be Registered Architects and preference will be given to those holding a recognised architectural qualification.

Experience in the design and erection of large buildings is desirable.

Applicants for (*b*) must be A.R.I.C.S. (quantities sub-Division).

The appointments will be subject to the National Scheme of Conditions of Service and to the passing of a medical examination.

Applications, stating age, experience, qualifications, past and present appointments, with present salary, together with copies of two recent testimonials, should be sent to the undersigned not later than Friday, 11th August, 1950.

J. H. LLOYD OWEN,
City Architect.

10, Loseby Lane, Leicester. 4896

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for work on new housing, schools, and other public buildings. The positions are superannuable. Candidates for Grade III positions should possess professional qualifications. Application forms from the Architect (AR/P/S), The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (384) 3914

BOROUGH OF ACTON.
ARCHITECTURAL ASSISTANT.

Applications are invited for this permanent appointment at a salary in accordance with Grades A.P.T., V/Va of the National Scale (£520—£610 p.a.), plus London weighting. The commencing salary may be fixed within the Grades according to the qualifications and experience of the person appointed.

Applicants must be registered architects, experienced in the design, erection and maintenance of houses, flats and public buildings.

If necessary, housing accommodation will be made available to the person appointed.

An application form and a copy of the conditions of appointment may be obtained from the Borough Engineer, Town Hall, Acton, W.3, to whom applications must be delivered by 21st August, 1950.

Canvassing will disqualify.

H. C. LOCKYER,
Town Clerk.

Town Hall,
Acton, W.3. 4895

COUNTY BOROUGH OF WEST HARTLEPOOL.
ASSISTANT ARCHITECTS, GRADE A.P.T., VI.

Applications are invited for the appointment of TWO ASSISTANT ARCHITECTS, Grade A.P.T., VI (£595-£660), in the Borough Architect's Department.

The appointments are subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services (with the exception of paragraph 39), and the provisions of the Local Government Superannuation Act, 1937. The successful applicants will be required to pass a medical examination.

Applicants should be Associate Members of the R.I.B.A. and have good knowledge and experience of schools.

Applications, stating age, qualifications, previous and present appointments, details of experience, together with copies of three recent testimonials, are to be sent to the Borough Architect, Municipal Buildings, West Hartlepool, not later than Friday, 11th August, 1950.

The Council are prepared to consider the allocation of housing accommodation to the successful applicants if required.

ERIC J. WAGGOTT,
Town Clerk.

Municipal Buildings, West Hartlepool.
July, 1950. 4855

COUNTY BOROUGH OF CROYDON.
BOROUGH ENGINEER'S DEPARTMENT.
CHIEF QUANTITY SURVEYING ASSISTANT.

Applications are invited for this appointment, at salary A.P.T., VIII, £685×£25 to £760 p.a., plus London weighting.

If the successful candidate is unable to obtain reasonable living accommodation the Corporation will endeavour to assist him.

The appointment is pensionable, subject to medical examination.

Form of application may be obtained from the Borough Engineer, Town Hall, Croydon, and should be returned to him within 14 days after this advertisement is published.

Canvassing will disqualify.

E. TABERNER,
Town Clerk.
4889

Architectural Appointments Vacant

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

YOUNG ASSISTANT, interested in Ecclesiastical work required in private East Midlands office; student considered. Full particulars to Box 4167.

ARCHITECTURAL ASSISTANT, of Intermediate standard, required immediately by firm of Architects in West End of London; salary according to experience and qualification. Box 4403.

ARCHITECTURAL ASSISTANT (Senior and Junior) required; pref. Industrial Building experience. Write, stating age, experience, and salary required, to Winter & Pickering, 114/115, Holborn, London, E.C.1. 4788

ARCHITECTURAL ASSISTANTS, Intermediate standard, or good DRAUGHTSMEN with reasonable experience; good salary and conditions. Apply: 22, Parkway, Welwyn Garden City. 4789

REQUIRED, at Company's Head Office, Guildford, ARCHITECTURAL ASSISTANT, A.R.I.B.A.; varied work, mainly factory; 5-day week; salary by arrangement. Box 4746.

ARCHITECTURAL ASSISTANT, experienced, required at once. Write, stating age, experience, and qualifications, etc., to Messrs. Martin & Martin & W. H. Ward, 106, Colmore Row, Birmingham, 3. 4760

LONDON Firm of Architects, West End office, requires JUNIOR ASSISTANTS up to Intermediate standard for varied practice; salary by arrangement. Box 4837.

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS urgently required in busy office with all-round practice; very good prospects for suitable applicants. Send details of age, experience, training and present salary, to Naylor, Sale & Widdows, St. Mary's Gate, Derby. 4812

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