THE ARCHITECTS' JOURNAL

No. 3270] Vol. 126

THE ARCHITECTURAL PRESS

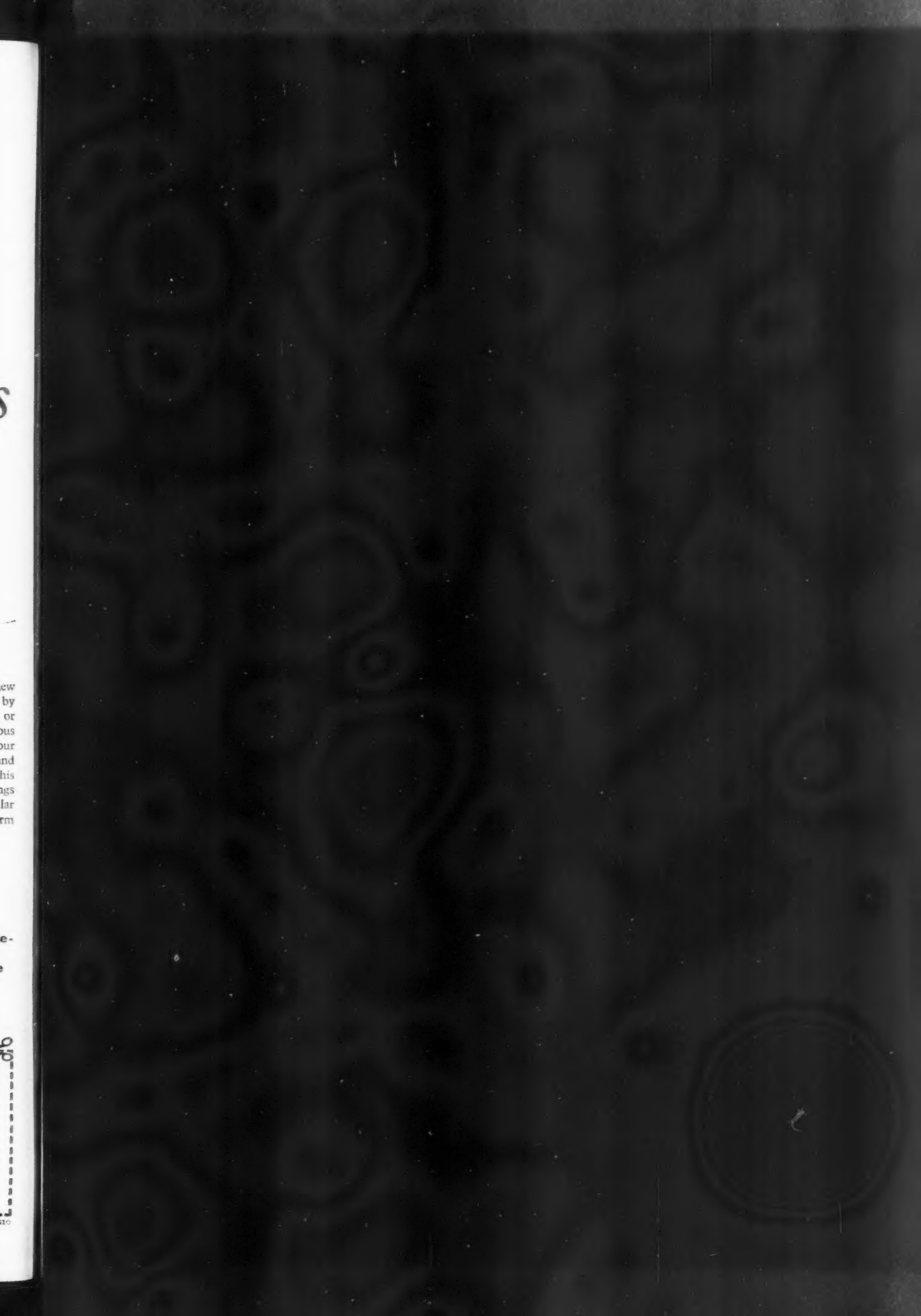
9, 11 *and* 13, *Queen Anne's Gate, Westminster, S.W.1.* *'Phone: Whitehall* 0611

Price 1*s.* 0*d.*

Registered as a Newspaper.

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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portland Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards' Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford: 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland	
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
	Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association, 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266



COLT AND THE NEW HORIZONS

The Kemsley Power Plant, Bowater Paper Corporation.
Architects: Farmer & Dark. *Consulting Engineers: Ewbank & Partners Limited.*
Colt Equipment: 32 S.R.C.3080 Ventilators.

Just as the squat, smoke-belching power houses of the industrial revolution have given way to power plants of such orderly austerity as those that serve the Bowater Organisation, so has the demand for more positive control over the ventilation of these buildings grown stronger. The provision of effective, controllable ventilation called for a revolution in ventilator design. The precise, aero-dynamic lines of the Colt SR Extractor, shown above, epitomise the achievements of that revolution.

In this photograph of the Bowater Power Plant at Kemsley near Sittingbourne in Kent, 32 Colt S.R.C.3080 Controllable Natural Extractors are utilising to the full the free power of the wind and thermal currents to change the air in the building 10 times in each hour. The effect of this is to ensure the maintenance of temperate, fume-free conditions demanded by modern industry, and without which maximum output can never be achieved.

The careful attention to detail that went to the formulation of this, and of the other similar systems at the Bowater Mills in Northfleet and Ellesmere Port, is common to every ventilation scheme, large and small, that Colt undertake. The technical service of the Advisory Staff is always available without charge or obligation. Let Colt solve YOUR problem.

COLT

Send for Free Manual on Colt Ventilation to Dept. L21/10C

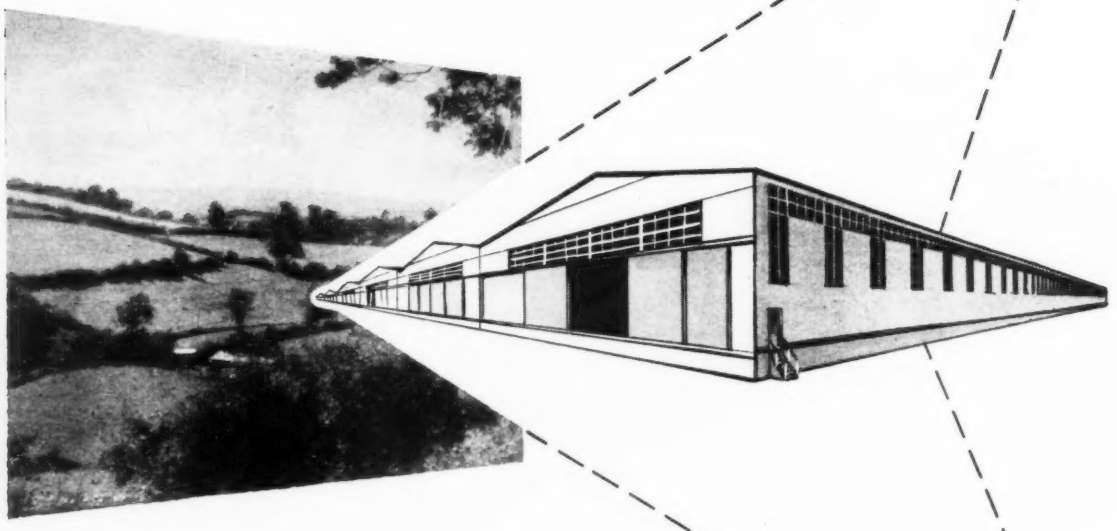
VENTILATION

COLT VENTILATION LTD · SURBITON · SURREY

TELEPHONE: ELMBRIDGE 6511 (10 lines)

U.S.A. Subsidiary: Colt Ventilation of America, Inc., Los Angeles.
Branches at: Birmingham, Bradford, Bridgend (Glam), Bristol, Dublin, Glasgow, Leamington Spa, Liverpool, London, Manchester, Newcastle-upon-Tyne, and Sheffield. • Agents in: Australia, Belgian Congo, Belgium, Burma, Canada, Cyprus, India, Indonesia, Madagascar, Malaya, Mauritius, New Zealand, Pakistan, Portugal, Rhodesia and Nyasaland, South Africa, and West Indies. G995

PUT IT THERE



QUICKLY AND CHEAPLY

Speed, Economy and Utility : these are the characteristics of Metsec buildings. Consider these facts : while the site is in preparation, the sections are being fabricated ready for speedy erection on the site : two coincident functions which save time and heavy labour costs.

A 100,000 square foot factory was recently constructed and ready for use in 17 weeks in Mid-Winter. A remarkable feat, but one quite commonplace to Metal Sections Ltd. Why not let them solve your construction problem ?

Metal Sections Ltd

OLDBURY · BIRMINGHAM

Telephone: BROadwell 1541

SM/MS 3068

THE BUILDING EXHIBITION 1957 Olympia, London November 13-27

See Our Exhibit

Stand No. 259/260.

Efficiency and economy in mortar composition

now expressed in three letters

. . . . . EMP — Evode Mortar Plasticiser gives efficient lean mixes without lime at a cost of 4½d. per bag of cement.

Have *you* considered EMP?

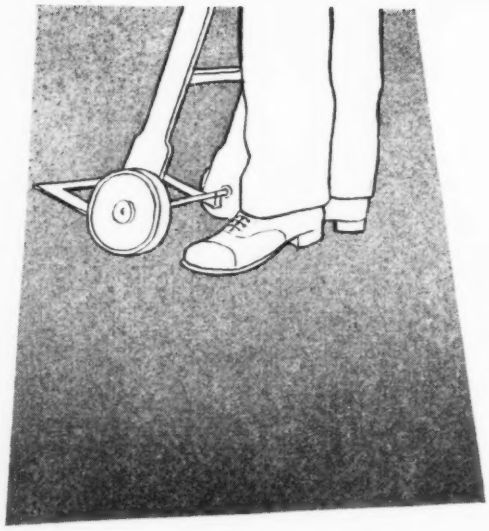
We shall be pleased to send you full technical details of the extra strength, plasticity and adhesion of limeless mortars made with the simple addition of EMP to the gauging liquid. EMP is now being specified for projects large and small throughout the world. It saves a lot of money, too.

EMP | EVODE MORTAR PLASTICISER

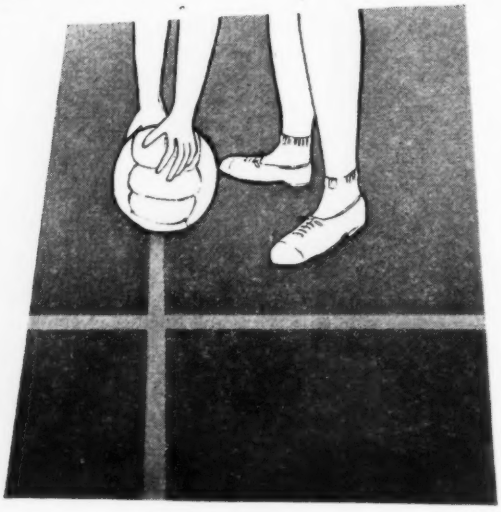
Pin business card here 14
NAME .....
ADDRESS .....
.....
COMPANY .....
BUILDING MANUAL AND DETAILS WILL BE SENT BY RETURN

A DIVISION OF EVODE OF STAFFORD

EVODE LTD. (BUILDING CHEMICALS DIV.), COMMON ROAD, STAFFORD
STAFFORD 2241 (5 LINES) · LONDON OFFICE: 1 VICTORIA STREET, S.W.1. ABBEY 4622/3



if there's a floor in the contract . . .



Different buildings, different floors—whatever the situation demands the architect can count on Haskel Robertson not only to supply and lay but to advise him, if need be, what material is best for the particular conditions. Only ONE contractor to remember, for the most competent and comprehensive flooring service in the trade.

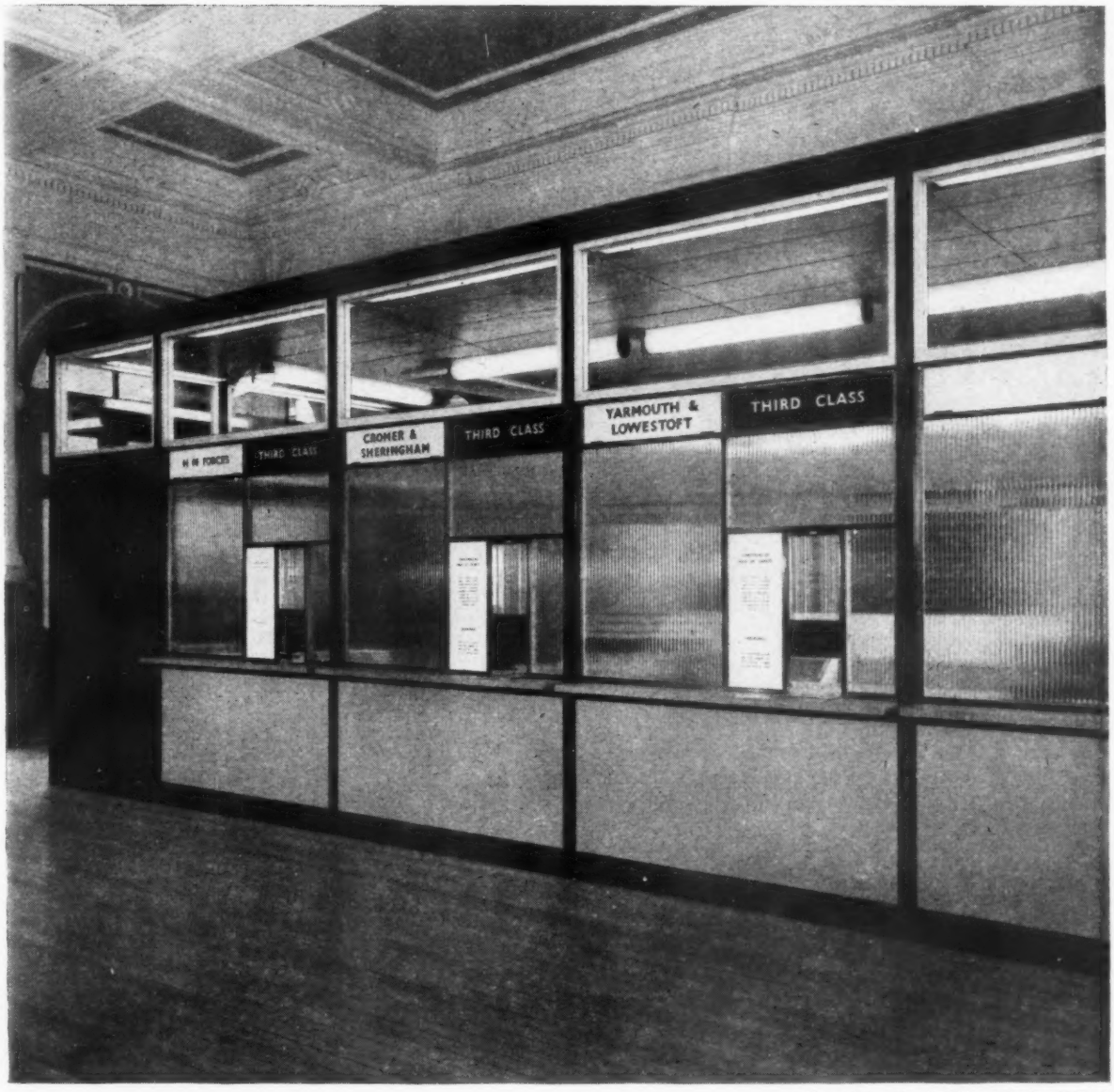
Haskel Robertson Ltd.

Specialist Flooring Consultants and Contractors,

19 Queen Street, Mayfair, W.1

Telephone : GROsvenor 8764-5

Resinoid
Linoleum
Cork
Crestaline (PVC)
Rubber
Latex/Cement
PVC Tiles
Thermoplastic Tiles
Vinyl/Asbestos Tiles
Quarry Tiles
Synthanite Anhydrite Screed
Duromit
Asphalte
Stair Nosings
Anti-Static Treatments



Ticket Office, Norwich Thorpe Station, B.R. ✻

Better Design with WARERITE Plastics —and a Better Fabrication service

You already specify WARERITE Plastics for hard wearing, attractive and maintenance-free surfaces. Now, for trouble-free, **permanent** veneering and **expert** fabrication, you should also specify "Veneering and Fabrication by a WARERITE *Specialist*".

There are almost 150 WARERITE *Specialists* covering the whole country. They will supply promptly to your specifications or drawings, complete bar, counter and fitment tops, shelves, panelling etc., in WARERITE Veneered Plywood. The WARERITE Veneers will be press-bonded with synthetic resin cement.

Write for a list of WARERITE Specialists.

✻ *The front panels of this Ticket Office are Grey Finaweave and Red Relief WARERITE Veneered Plywood. The interchangeable Destination and Class boards are WARERITE Pictorials.*

Architect: H. H. Powell, Esq., A.R.I.B.A., British Railways.

Contractors: J. Youngs & Son Ltd., Norwich.

Veneering and Fabrication: ***A WARERITE Specialist.***

WARERITE REGD. **PLASTICS** *with the lovelier patterns!* B LD.

BAKELITE LIMITED · 12-18 GROSVENOR GARDENS · LONDON SW1 · SLOane 0898

TGA WA48A

They have no choice....

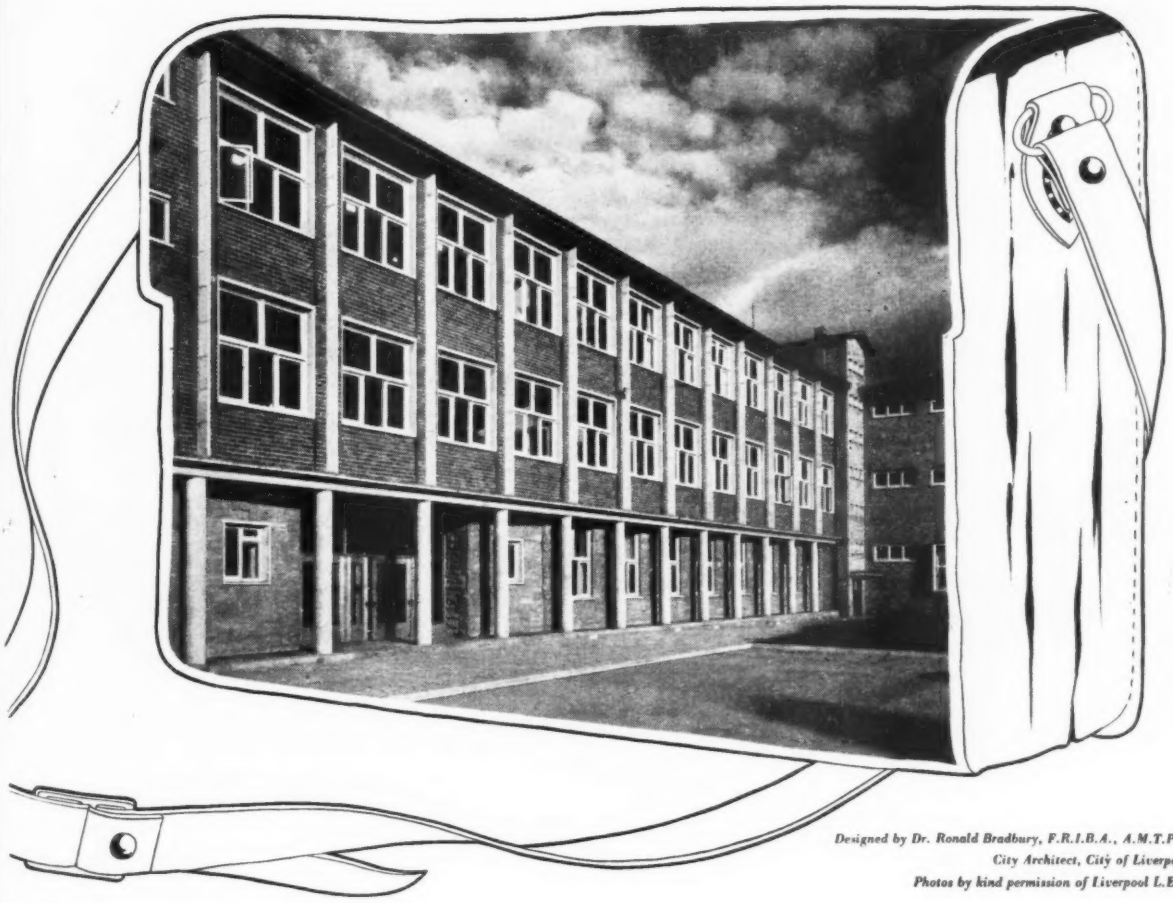
... and therefore no problem—they have to use the only fuel at hand—animal oil. *Your* problem arises because you have such a wealth of fuels to choose from; and today, with intense competition and ever-rising overheads, it is imperative that you choose the right one—the fuel that gives *you* maximum efficiency at minimum cost. Such an important decision warrants expert and completely impartial advice. As distributors of COAL, COKE *AND* ESSO FUEL OIL, Hargreaves are the best people to consult.

Write now to the Chief Technical Officer
BOWCLIFFE HALL, BRAMHAM, BOSTON SPA, YORKS. *Tel. Boston Spa 2081*

THE **HARGREAVES** GROUP OF COMPANIES
FUEL DISTRIBUTORS

Hargreaves (Leeds) Ltd. Hargreaves (West Riding) Ltd. Wm. Pepper & Co. Ltd. Hargreaves Quarries Limited Hargreaves Coal & Shipping Ltd. Hargreaves Motors Limited Chadwick Hargreaves Limited. G. W. Jackson (Transport) Ltd. Reliance Garage Co. (Brighouse) Ltd. Lepton Coal & Clay Limited. Wm. Wood & Sons (Huddersfield) Ltd. Tennant Rotherford & Co.

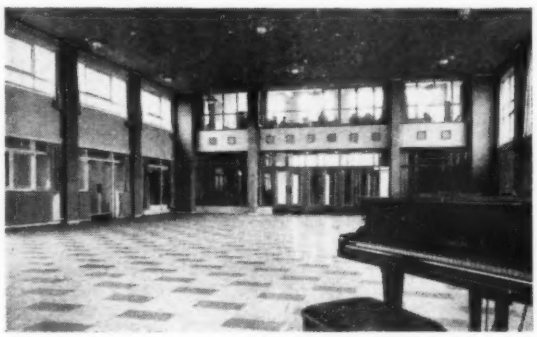
ndh 2982b



Designed by Dr. Ronald Bradbury, F.R.I.B.A., A.M.T.P.I., City Architect, City of Liverpool.
Photos by kind permission of Liverpool L.E.A.

Another Fine School for Merseyside

Croxteth County Secondary School for girls



Set in pleasant surroundings and with accommodation for 450 girls, this attractive modern school is one of many recently built for education committees all over the country by Henry Boot and Sons Ltd.

But schools are not the only concern of their building department with its skilled men and years of experience. Tribute to their efficiency in other directions has been paid by architects and engineers concerned with other projects. Henry Boot and Sons Ltd have also built factories, municipal buildings, post offices, reservoirs, dams and bridges.

HB

RAILWAYS. ROADS. BULK EXCAVATION AERODROMES. HOUSING ESTATES. WATER DISTRIBUTION SCHEMES. BUILDING PROJECTS OF EVERY DESCRIPTION.

Henry Boot

HENRY BOOT & SONS LTD. BANNER CROSS HALL. SHEFFIELD 11. PHONE 54331

London: 10 The Boltons, S.W.10. Birmingham: Pheasey Estate, Great Barr, Birmingham 22A.
Glasgow: Baillieston, Lanarkshire. Liverpool: Heysham Rd, Dunnings Bridge, Aintree, Liverpool 10.

BPL/D.67

Now this IS something to crow about!..

Tests recently made for one of the most exacting Regional Hospital Boards in the country proved beyond doubt that

SUPERLATIVE EGGSHELL FINISH

Leads for Appearance and Washability

This beautiful finish is ideal for hospitals—for all interiors where restful as well as decorative surfaces are essential. Furthermore, Superlative Eggshell Finish can be washed regularly during a long life without detriment to its appearance. This is most important when maintenance and renewal costs must be kept to a budgetary minimum.

Superlative Eggshell Finish offers exciting scope for carrying out contemporary schemes, fully satisfying practical, as well as aesthetic requirements.

'Superlative' EGGSHELL FINISH

NON-GLARE . . . NON-FLASH

BRITISH PAINTS LIMITED PORTLAND ROAD, NEWCASTLE UPON TYNE, 2
CREWE HOUSE, CURZON STREET, LONDON, W.1

BIRMINGHAM · BRADFORD · LIVERPOOL · MANCHESTER · SHEFFIELD · GLASGOW · AND ALL MAIN CITIES

'U' values have news value...

...away was ... votes to 34 at the ... Liberal Federation conference which ended at Southend yesterday.

Miss Eva M. Haynes, who moved the resolution, said that she had been fighting a personal war "ever since this ... of distributing coupons began." She urged housewives to tear the ... up and to refrain from buying ... of the products which "purported to give anything away."

"Surely no one ... day believes that these firms are philanthropists," she said, "and that they are ... something away? The cost of all ... schemes is borne by the consumer ... is included in the price of the article before the selling price is fixed. It is your money that manufacturers are wasting on this profligate fashion."

The conference was thrown open to anybody who wished to "let off steam" about a pet complaint. The first delegate to reach the microphone objected to "opalescent, incandescent, sight-destroying, inartistic, crude-coloured socks" worn by young people to-day, and the string of complaints which followed ranged from the "infiltration" of American programmes on Independent Television to the bus conductors who "... a bus away before you have ... widespread

INSULATION IN FACTORIES

GOVERNMENT TAKE OVER BILL

FROM OUR POLITICAL CORRESPONDENT

The Thermal Insulation (Industrial Buildings) Bill, a private member's measure introduced by a Conservative M.P., Mr. Gerald Nabarro, is now to be sponsored by the Government and is likely to become law this session. The Bill will provide that all new industrial buildings equipped for space heating must be insulated against loss of heat if they are erected after 1958.

The Bill was introduced under the 10-minute rule in the House of Commons and was given ... unopposed second reading on March 15. It has been awaiting its turn for consideration in ... committee.

... Atlantic ... er careful ... ons and d ... I am bot ... em to be ... of the ca ... and the ... and forw ... suggested ... nquiry in ... ot really ... ue is the ... it on thes ... ustice of ... uthorities ... e House th ... ps the mo ... beset this ... n was at ... fighting power ... uncertainty exis ... powerful Frenc ... enemy hands, ... would have turn ... naval power ag ...

FINAL ...

It is only fai ... those anxiou ... the position o ... the great decisi ... of that period ... formed the vi ... differed naval ... I must insist o ... of the Admiralt ... in positions of ... choose officers i ... dence ... momen ... other system wo ... and total in wa ...

A careful ex ... has led me to t ... are concerned th ... ships through ... Admiral North ... dereliction of du ... as he interprete ...

The Times, May 24th, 1957

With the increasing importance of factory insulation are you aware of the advantage of Thermalite-Ytong Building Blocks?

Having exceptional thermal resistance Thermalite-Ytong blocks, when used in the erection of industrial buildings—or for that matter any building project—have many other properties to recommend them.

They provide an exceptional degree of thermal insulation, they are lightweight yet fully loadbearing, they are incombustible and provide exceptional fire resistance, are easily handled and quickly erected.

Competitive in cost to brick and concrete construction, use of Thermalite-Ytong results in lower site labour costs and provides a rapid and entirely efficient method of integral insulation with which no other construction method can compare.

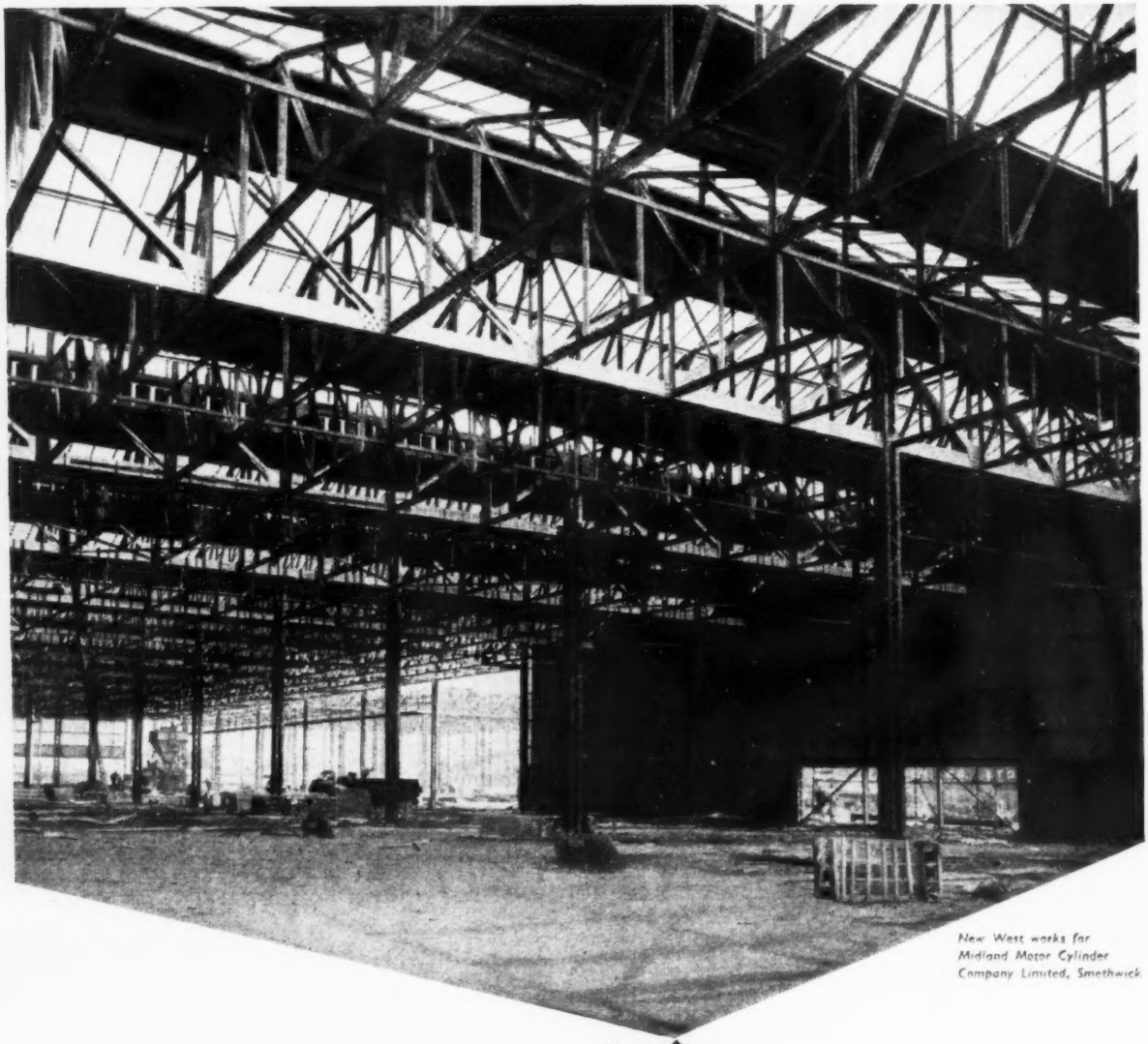
All the facts and figures are to be found in an illustrated brochure which we shall be pleased to send on request.

THERMALITE-YTONG

Load bearing insulating building blocks

- Thermal insulation
- Load bearing
- High speed of laying
- Light weight
- Workability
- Direct fixing
- Fire resistance
- Reduces the risk of condensation

THERMALITE LIMITED
Shepherds House Lane, Earley, Reading, Berkshire
Telephone: Reading 62694



New West works for Midland Motor Cylinder Company Limited, Smethwick

fabricators and erectors of structural steelwork

BOULTON AND PAUL

BOULTON AND PAUL LIMITED NORWICH LONDON BIRMINGHAM

AP/CE 29

BUT..

the majority of people prefer to use

LIFTS AND ESCALATORS

manufactured by..

J. & E. HALL Ltd.

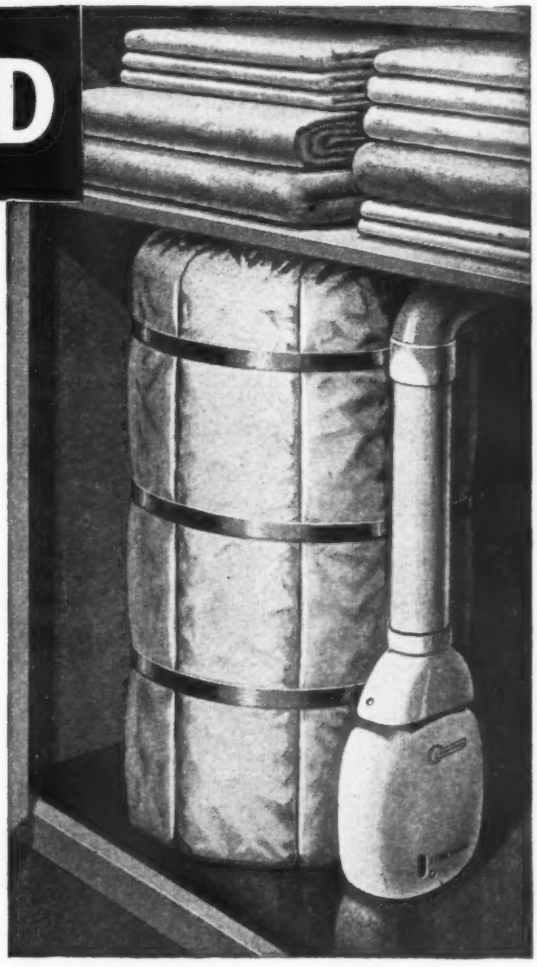
DARTFORD, KENT *Telephone: DARTFORD 3456*

London Office: 10 ST. SWITHIN'S LANE, E.C.4.
Telephone: MANsion House 9811

AP 14/15878

FOR NEW BUILDINGS, CONVERSIONS & IMPROVEMENTS

NEW WORLD



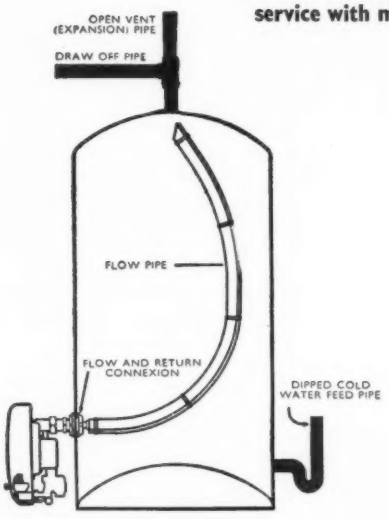
leads the way

with the ***STRATALYN***

INJECTOR

GAS WATER HEATER

The NEW WORLD Stratalyn Injector Heater is inexpensive to buy, economical to run, cheap to fit, and will give maximum service with minimum maintenance



The **NEW WORLD Stratalyn** is a Regulo-controlled gas water heater for attachment to a storage cylinder or tank by means of a single connexion. It is the GAS application of the IMMERSION HEATER.

The flow pipe terminates close to the top of the storage vessel and hot water is injected into the top ready to be drawn off. Mixing is avoided and the highest degree of stratification is attained.

Fit and Forget

NEW WORLD
PRODUCT OF Radiation Ltd.

Water Heaters

* *Gas Rating*—6,000 B.Th.U./hr.
Output—5½ gallons raised 80°F.
Complete with governor and T.C.O.
Available with flue cap or draught diverter. Finished in white vitreous enamel.

Write for a free copy of the ARCHITECTS' BROCHURE ON **NEW WORLD** WATER HEATERS *to:*
RADIATION GROUP SALES LTD., 7 STRATFORD PLACE, LONDON, W.1

A kind of mathematics that plays a part in making electric cables.

Given the elasticity and weight of the balls, the resilience of the cushion, the rolling friction of the cloth, it must be possible for a billiards player to calculate exactly where and how hard to strike the cue ball. But you never see him doing sums. Somehow his knowledge is instinctive, the result of much experience.

Similarly it ought to be possible to specify a product such as cable. Perhaps it is. But in practice, as everyone knows, it doesn't work like that: manufacture involves hundreds of decisions that are made on experience. Like the expert billiards player, a Company with years at the job is able to sum up rapidly and almost unconsciously the combined effect of a large number of variables: it has, in fact, something analogous to his 'skill', which comes out in the quality of its products.

That's why the name on a product can mean so much.

Crompton

ELECTRICAL EQUIPMENT

A GOOD NAME FOR CABLE

Made to the registered specifications of the Cable Makers Association

CROMPTON PARKINSON LIMITED, CROMPTON HOUSE, ALDWYCH, LONDON, W.C.2. TELEPHONE: CHANCERY 3333. TELEGRAMS: CROMPARK ESTRAND LONDON. CABLE WORKS: ALFRETON ROAD, DERBY. TELEPHONE: DERBY 45431

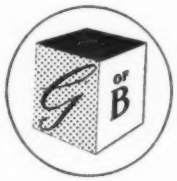
Look for this sign on our

STAND NO. 78, ROW D

at the Building Exhibition

Nov. 13th–27th, 1957

The name MURAGARD stands for what is believed to be the first Curtain Wall with a TWO-HOUR Fire Grading and is being exhibited by Gardiner of Bristol at the Building Exhibition. The exhibit shows various treatments for mullions, windows and panels, all of which can be fixed from inside the building without the aid of scaffolding. We shall be very happy to welcome you on our Stand where you will be able to see MURAGARD for yourself.



GARDINER

Gardiner, Sons & Co. Ltd., Midland Works, Willway Street, St. Philip's, Bristol 2, and 8 William IV Street, Strand, London, W.C.2

H-W.113

The top line on the chart shows the degree of temperature stability achieved indoors with Thermodare heating, compared with the variations outdoors (lower line).

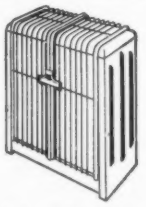
THERMODARE

off peak storage heating

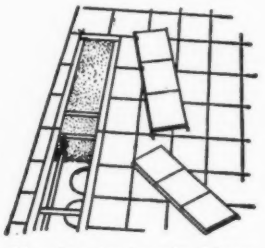
Whatever the weather, it's always uniformly warm inside with efficient Thermodare storage heaters. This clean and healthy method of heating also costs *less* because it can utilise 'off-peak' tariff rates.

Thermodare heating—available as compact cabinets or permanent underfloor installations in concrete—stores heat by night and radiates it evenly throughout the day. Control by thermostat and time switch is entirely automatic. There is no dust, mess or maintenance. Capital costs are low, and installation is simple.

We marketed the first night storage heater in this country, and are leaders in this rapidly-growing field. Ask for full particulars—the Thermodare Technical Service will gladly help you.



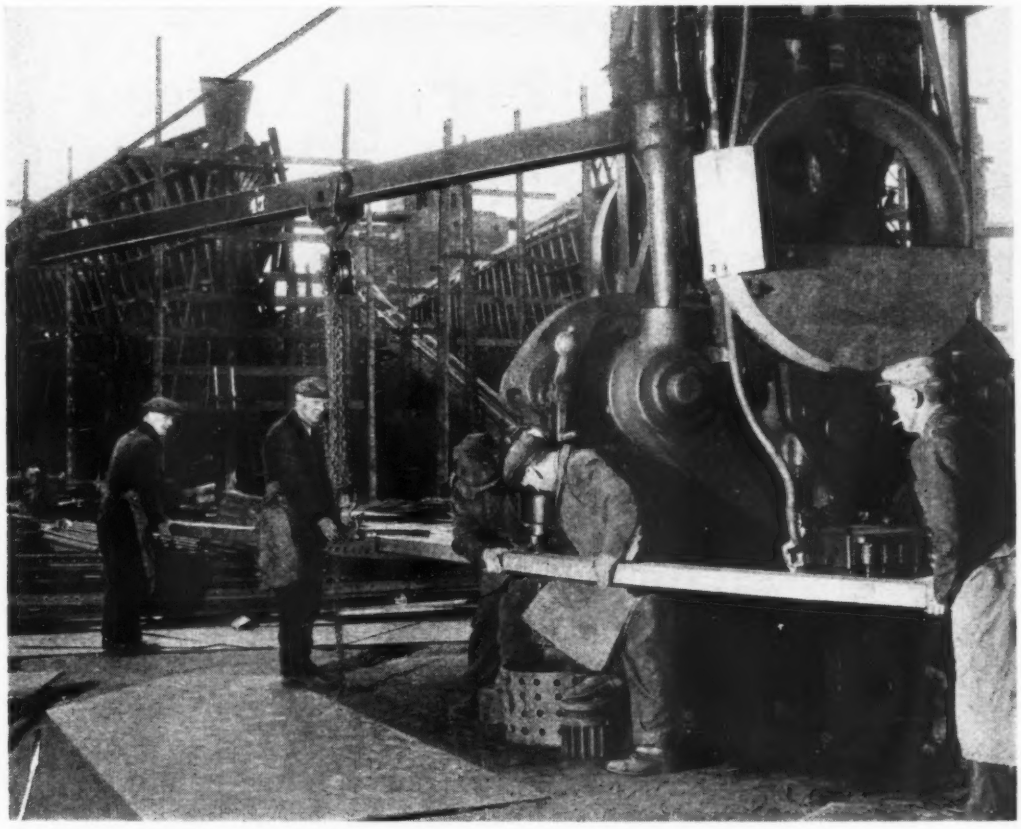
Designed for safety with built-in guard and thermal link. Clean, factory-built units. Will harmonise with any decor. A range to suit all applications.



Warm-floor heating with fully retractable element, embedded in concrete. Automatic and trouble-free. Various floor finishes can be employed after installation e.g. wood blocks, carpets. Technical publication available on request.

THERMODARE (GREAT BRITAIN) York Mansion, 94/98 Petty France, London SW1 Telephone: ABBey 6586/8. 700 Argyle Street, Glasgow C3 Telephone: Glasgow City 7715 10 Brunswick Street, Belfast, N. Ireland Telephone: Belfast 29087

TA 104



Building a ship. Rivet holes are being punched in the frames to match the holes which will be punched in the shell.

C.M.A. Cables at work

In the busy shipyards of the Clyde, in factories all over the country, at home or abroad, wherever you go C.M.A. cables are at work. In the air, underground or underwater, in ships, coalmines and powerhouses, C.M.A. cables are transmitting power, unobtrusively . . . reliably . . . year in year out. For over 100 years members of the Cable Makers Association have been concerned in all major advances in cable making. Together, member firms of C.M.A. spend over one million pounds a year on research and development. At every stage from raw material to finished cable, technical knowledge is pooled and research co-ordinated to avoid wasted effort. This highly-organized co-operative research activity has contributed largely to the world-wide prestige that C.M.A. cables enjoy. It has put Britain at the head of the world's cable exporters. Technical information and advice is available from any member.

MEMBERS OF THE C.M.A.

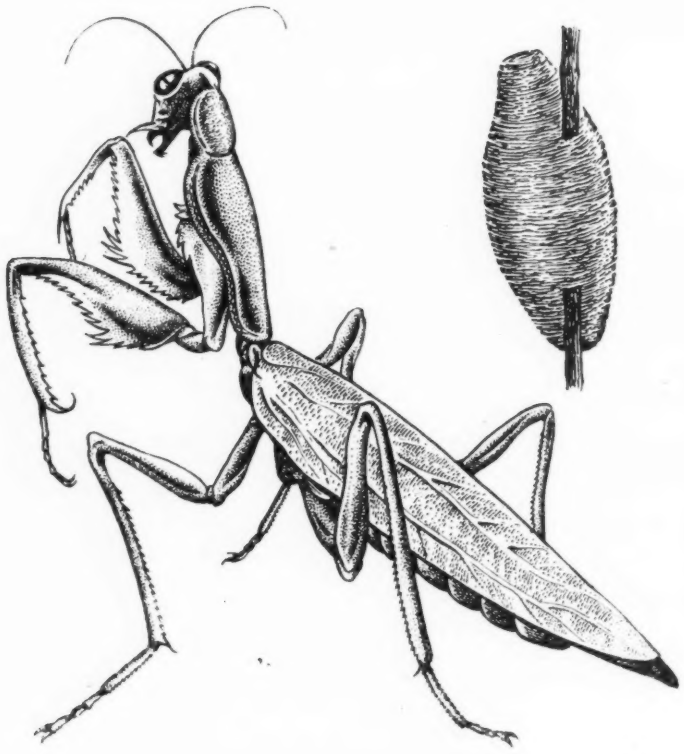
British Insulated Callender's Cables Ltd. Connollys (Blackley) Ltd. Enfield Cables Ltd. W. T. Glover & Co. Ltd. Greengate & Irwell Rubber Co. Ltd. W. T. Henley's Telegraph Works Co. Ltd. Johnson & Phillips Ltd. The Liverpool Electric Cable Co. Ltd. Metropolitan Electric Cable & Construction Co. Ltd. Pirelli-General Cable Works Ltd. (The General Electric Co. Ltd). St. Helens Cable & Rubber Co. Ltd. Siemens Edison Swan Ltd. Standard Telephones & Cables Ltd. The Telegraph Construction & Maintenance Co. Ltd.

Insist on a cable with the C·M·A label

CABLE MAKERS ASSOCIATION, 52-54, High Holborn, London, W.C.1. Telephone: HOLborn 7633

CMA 16

No. 4 MANTIS RELIGIOSA



Praying

MANTIS

is the

name. . .

. . . . but hardly its nature—it is an assassin, nevertheless to preserve its young it constructs a very strong fibrous cocoon, a form of protection which we humans have come to recognise as most effective . . . . as witness the successful use of the tough, non-stretch SISAL FIBRE in SISALKRAFT Not only is this renowned building paper unequalled in toughness, but it is clean, pliable and water-resisting. For sarking, wall and floor lining, etc SISALKRAFT is the ideal material. SISALATION Reflective Insulation has all the virtues of SISALKRAFT plus bright aluminium foil on one or both sides, providing highly effective THERMAL insulation.

SEE OUR EXHIBIT
STAND 583
BUILDING EXHIBITION
OLYMPIA NOV 13-27

Please ask for information and samples.

SISALKRAFT

The Supreme BUILDING PAPER

A product of BRITISH SISALKRAFT Ltd.

SOLE DISTRIBUTORS

J.H. SANKEY & SON. Ltd

Established over a Century

ESSEX WORKS, RIPPLE ROAD, BARKING, ESSEX

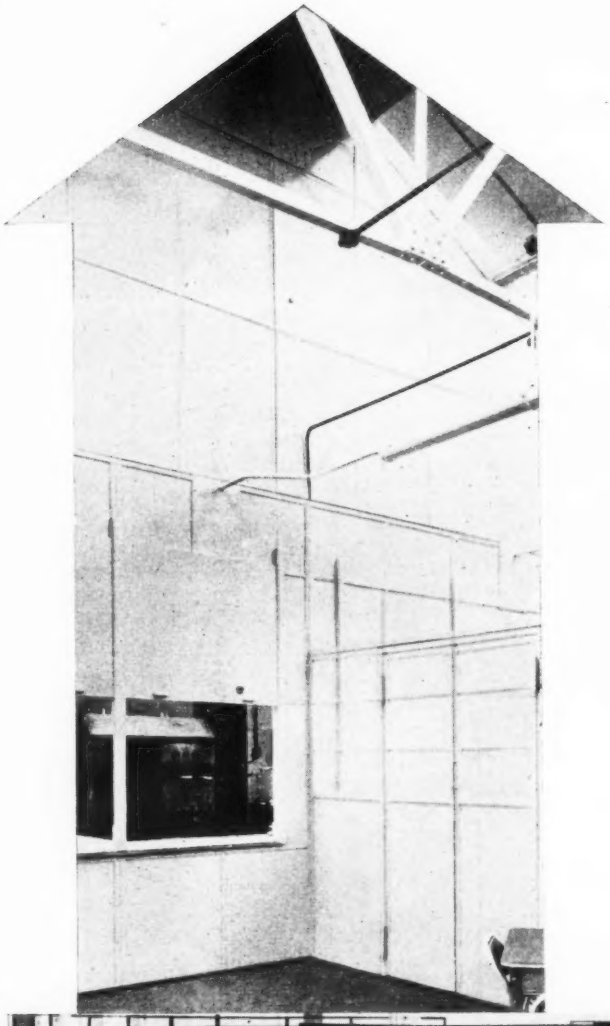
Phone: RIPpleway 3855 *Grams:* Brickwork, Barking.

Specify

ceramic glazed fireclay

sanitary ware for strength and durability

CLAY PRODUCTS TECHNICAL BUREAU DRAYTON HOUSE GORDON STREET LONDON W.C.1



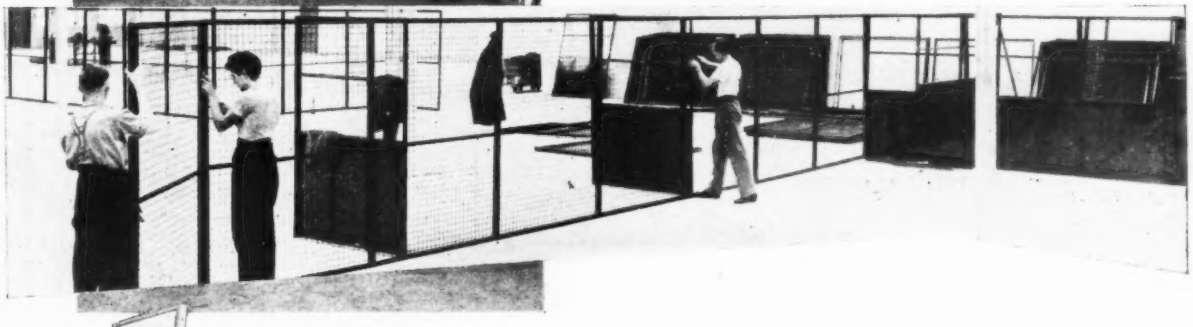
upwards . . . sideways . . .

STEELBRAC *fits*

STEELBRAC sectional steel partitioning fits any space, no matter how awkward, because its sections are individually " made-to-measure." Economically too, because STEELBRAC individual construction *frequently costs less than standard units* !

STEELBRAC partitions can be taken right up to meet a sloping ceiling, allowing for pipes or joists, or roofed over to form separate cubicles. Easily erected or dismantled by unskilled labour, any partition can be as permanent or as temporary as the situation requires.

STEELBRAC partitioning consists of strong welded steel sections filled with various combinations of sheet steel, glass and weldmesh according to customer's choice, including double skin construction where a high degree of sound and thermal insulation is desirable.



write for booklet B.6. today

STEELBRAC

SECTIONAL STEEL PARTITIONING

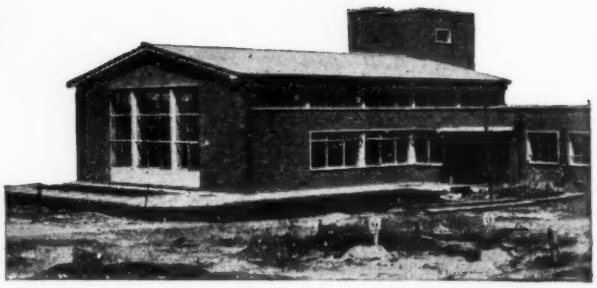
STEELBRAC LIMITED · WILLOW LANE · MITCHAM · SURREY · TELEPHONE: MITCHAM 4072-3-4

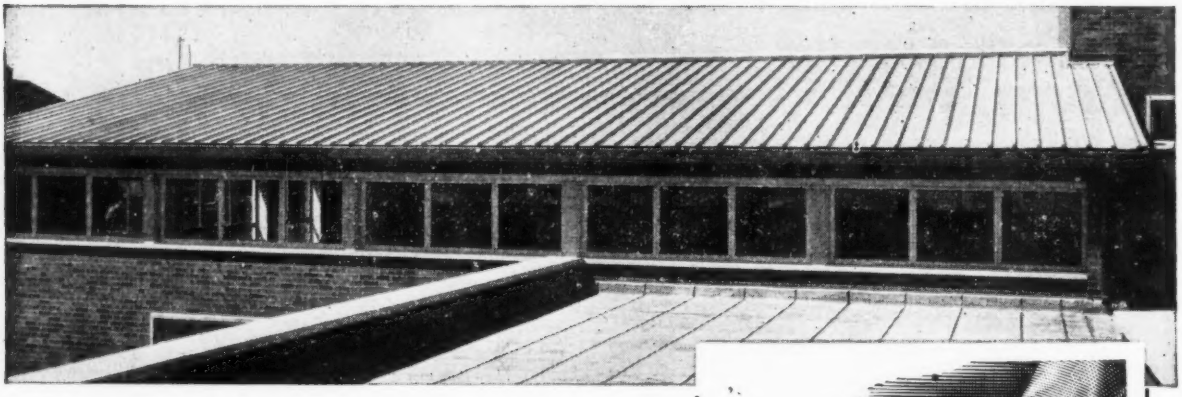
Manchester Office: 2 Sussex Street, Manchester, 2. Telephone: Blackfriars 9975

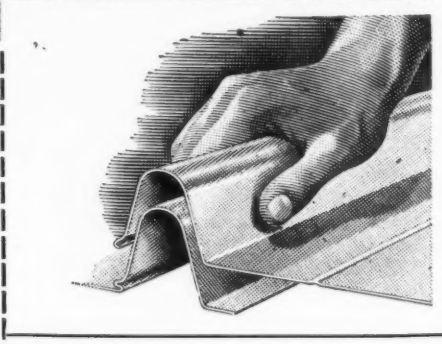
SNAPRIB

goes to school

Assembly hall of Wiltshire County Primary Infants' School, Swindon, roofed with Noral Snaprib Sheet Architect: F. I. Bowden, A.R.I.B.A. of Wiltshire County Council. Roofing Contractor: W.E. Humphries, Swindon. General Contractor: R. J. Leighfield & Sons Ltd., Swindon.







Noral Snaprib aluminium sheet has many substantial advantages: its laying technique is simple and rapid, no external fastenings mar its appearance and, because there are no bolt holes, it is completely leakproof. Aluminium's durability ensures a long-lived, maintenance-free roof.
If you would like to learn more about Noral Snaprib, why not write to the nearest of the listed roofing contractors for our descriptive brochure

The Snaprib system is fully covered by patents held by Cookson Sheet Metal Developments Ltd.

Accredited Roofing Contractors

BEAUMONTS (MANCHESTER) LTD. Anson Road, Victoria Park, Manchester 14. Tel: Rusholme 1484.

JOHN BLAND & CO. LTD. East Moors, Cardiff. Tel: Cardiff 24241. *Also at Bristol, Highbridge, Somerset and Weston-super-Mare.*

C. WALSH GRAHAM LTD. Perry Street, Wednesbury. Tel: Wednesbury 0521. *Also at Lichfield, Smethwick, Stourbort and Wolverhampton.*

HALL & COMPANY LTD. 33 Cherry Orchard Road, Croydon. Tel: Croydon 7294. *Also at Bristol, Cardiff, Folkestone, Hove, Ipswich, Portsmouth and Romford (and 45 other Branches).*

W. H. HEYWOOD & COMPANY LTD. Bayhall, Huddersfield. Tel: Huddersfield 6594. *Also at Belfast, Birmingham, Bristol, Glasgow, Leicester, Liverpool, London, Manchester, Newcastle, Nottingham and Sutton Coldfield.*

HOOPER & ASHBY LTD. *At Bournemouth, Godalming, Guildford, Newbury, Newport (I.o.W.), Portsmouth, Reading, Salisbury, Southampton, and Winchester.*

INDUSTRIAL ENGINEERING LTD: Mellier House, Albemarle Street, London, W.1. Tel: Hyde Park 1411. *Also at Bristol, Cardiff, Derby, Glasgow, Halifax, Kettering, Knowle, Manchester, Newcastle, Sheffield and Wolverhampton.*

MANCHESTER SLATE COMPANY LTD: Lancaster Road, Didsbury, Manchester 20. Tel: Didsbury 4806-9. *Also at Belfast, Chester, Liverpool, London, Middlesbrough, Preston, Wakefield and York.*

ROBERTS ADLARD & CO. LTD. 52 St. Stephen's House, Westminster, S.W.1. Tel: Whitehall 5232. *Also at Chelmsford, Croydon, Guildford, Maidstone, New Milton and Watford.*

RUDDERS & PAYNES LTD. Chester Street, Aston, Birmingham 6. Tel: Aston Cross 3071. *Also at Bristol.*

WIGGINS-SANKEY LTD. Marsh Green Road, Exeter. Tel: Exeter 59311/2. *Also at Brentford, Burgess Hill, Ealing, Fulham, Maidstone, Reading, Ryde I.o.W., and Southampton.*

Northern Aluminium

Northern Aluminium Company Limited,
Bush House, Aldwych, London, W.C.2. TEMpleBar 8430.

An ALUMINIUM LIMITED Company

Minerva

FIRE PREVENTION BY NUCLEAR DETECTION

guards Britain's most modern buildings

THE scientific application of nuclear physics to the problem of fire prevention has cut dramatically the time necessary for calling into action fire-fighting services and equipment. The first trace of combustion (before any flame or appreciable heat is generated) is sensed by the Minerva Nuclear Detector which immediately operates an alarm or brings automatic fire-fighting equipment into action. Exhaustive tests by independent public bodies have proved that in buildings, stores and factories protected by Minerva, fire is given no chance to establish a hold before the alarm is raised.

HOW MINERVA IS INSTALLED

One Minerva Detector guards up to 1,000 sq. ft. of floor space. Groups of Detectors, wired in a 2-wire system following normal electrical installation practice, are connected to a combined control unit and signal panel which indicates the area in which the alarm originates. From the signal panel, the alarm can be automatically transmitted to the Fire Station or watch office, or it can be arranged to activate fire-fighting equipment on the spot.

WHERE MINERVA IS INSTALLED

In addition to those listed on the right, other users of Minerva include the Admiralty, Air Ministry, Ministry of Supply, G.P.O., British Electricity Authority, London Transport Executive, U.K. Atomic Energy Authority and British Railways. In factories, department stores, warehouses, museums and offices, in hundreds of installations all over Britain, Minerva is continually on watch, consuming no power whilst on guard, but springing instantly to life and summoning aid the moment combustion products approach any of its radioactive Detector heads.

UNIVERSITY LIBRARY, CAMBRIDGE

BRITISH EUROPEAN AIRWAYS
FLIGHT SIMULATOR BUILDING,
SOUTHALL

MARKS AND SPENCER LTD.,
PRINCES STREET, EDINBURGH
(and many other Branches throughout Britain)

EXCHANGE TELEGRAPH CO. LTD.,
EXTEL HOUSE, E.C.4

BANK OF LONDON AND SOUTH AMERICA,
QUEEN VICTORIA STREET, E.C.4

METROPOLITAN-VICKERS ELECTRICAL CO. LTD.,
NEW RESEARCH LABORATORY AT WYTHENSHAWE

BRISTOL AERO ENGINES LTD.,
NEW HIGH ALTITUDE TEST PLANT,
FILTON

ROYAL AIRCRAFT ESTABLISHMENT,
FARNBOROUGH
(TRIDAC COMPUTER BUILDING AND EQUIPMENT)

LINSEED FIBRES LTD., LIPHOOK, HANTS

TEBBUTT & HALL BROS. LTD.,
RAUNDS, WELLINGBOROUGH

These are just a few of the modern buildings protected by Minerva

No building protected by Minerva has ever been destroyed by fire

TE CUSTOS URBIS
MINERVA

Write for full details of the Minerva System of Fire Prevention by Nuclear Detection to:

THE MINERVA DETECTOR CO. LTD., RICHMOND, SURREY · TELEPHONE: (RICHMOND 6431)

modern building requirements call for

VERMICULITE

The most efficient cost/ratio insulation material for lightweight concrete, plaster and loosefill.

Each year millions more cubic feet continue to be used of this permanent, fireproof, lightweight insulation aggregate.

By constant research into the development of Vermiculite and its application to modern building methods, the A.V.E. is making an important contribution to the advancement of general building design and construction.

The latest A.V.E. publication—'Do's and Don'ts' on laying Vermiculite concrete—is now freely available from members and is included with each site delivery of A.V.E. Vermiculite.

Specify one of these branded A.V.E. *Vermiculites.*

ASSOCIATION OF AVE VERMICULITE EXFOLIATORS

Full technical information from

BRISTOL
The Iron & Marble Company Ltd
33-35 Victoria Street
Bristol 1

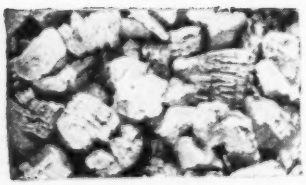
DUKINFIELD & GLASGOW
William Kenyon & Sons (MetaMica) Ltd
Dukinfield Cheshire *and*
140 West George Street Glasgow C2

SOUTH WALES
L. Slack & Son Ltd
Courthouse Street Pontypridd
South Wales

NEWCASTLE
J. M. & J. Bartlett Ltd
Lombard House Warwick Street
Newcastle upon Tyne 2

NORTHAMPTON
A. R. & W. Cleaver Ltd
Advance Works Wood Street
Northampton

LONDON & WELWYN GARDEN CITY
Dupre Vermiculite (Exfoliators) Ltd
39-41 New Broad Street London EC2



Issued in the interest of better insulation by the Association of Vermiculite Exfoliators
51-55 Strand London WC2

Will not normally crack or shrink

SYNTHANITE is the registered name of the sensational new quick-drying binder of great strength that enables screed to be laid up to 600 sq. yds. with no joints and little fear of cracking, and gives an ideal surface for all floor finishes.

Rapid hardening and phenomenal 'drying-out' times (6 to 10 days instead of the usual 4 to 6 weeks) are features of SYNTHANITE that make possible earlier occupation of the building with obvious economies.

The virtual absence of shrinkage and cracking in a SYNTHANITE screed eliminates the risk of having to carry out repairs at a later date.

Laid over an acoustic mattress, SYNTHANITE uses its high flexual strength and negligible shrinkage to form the ideal floating screed and sound insulator. It need never be more than 1¼in. thick and no reinforcement is necessary.

SYNTHANITE screed is laid only by the specialist firms listed here, whose workmen are skilled in the operation. Contracts can be accepted for screeding anywhere in the U.K. and Eire.

For full information write to any of the above firms or to:

Haskel Robertson Ltd.
19 Queen Street, London, W.1 Tel: GROsvenor 8764

W. Miller (Plasterers) Ltd.
15 Stainforth Road, London, E.17 Tel: LARkswood 3496

P. B. Industrial Floorings Ltd.
(Associate Co. of Pollock Bros.) Ltd.
473 New Cross Road, London, S.E.14. Tel: TIDeway 4438

Jonathan James Ltd.
55 Lacy Road, London, S.W.15 Tel: PUTney 9343

The British Doloment Co. Ltd.
18 Howick Place, London, S.W.1 Tel: VICtoria 6176

William Kenyon & Sons Thermal Insulation (Scotland) Ltd.
140 West George Street, Glasgow, C.2 Tel: Douglas 7233

John Hadfield & Sons Ltd.
Effingham Street, Sheffield 4 Tel: Sheffield 24082

Synthanite (North Western), Ltd.
Quarryfields, Ruthin, Denbighshire Tel: Ruthin 493

Decorative Plaster Co. (Newcastle upon Tyne) Ltd.
1a Leazes Park Road, Newcastle upon Tyne Tel: Newcastle 23014

Artistic & Industrial Flooring Ltd.
Specialist House, St. Philips, Bristol Tel: Bristol 77671

Morris de Leval Limited.
15 Princes Gate, London SW7 Telephone: Kensington 6000

MORE THAN 63,000,000 SQUARE FEET OF SYNTHANITE SCREEDING HAVE ALREADY BEEN LAID.

Recent contracts include:—

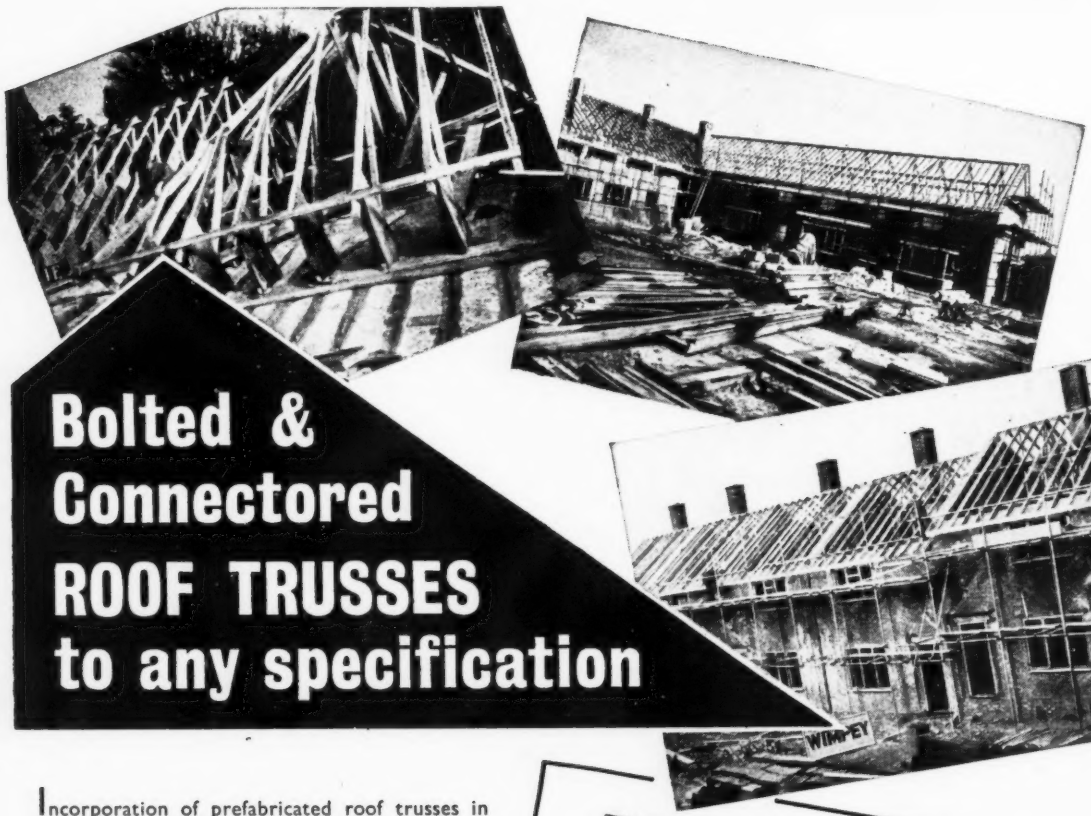
Leven High School, Fife. Kirkcaldy School, Fife. Buckhaven School, Fife. Hutcheson's Grammar School, Glasgow. Stewarts and Lloyds' Ltd. Mossend. Tate & Lyle Building, Silvertown. Bowaters Building, Northfleet. Telephone Exchange, Liverpool. Sun Assurance Office, Edinburgh. Marconi Building, Great Baddow, near Chelmsford.

and private offices

"ARMOURPLATE" and "ARMOURCAST" are registered trade marks of Pilkington Brothers Limited. Supplies are available through the usual trade channels.

PILKINGTON'S

"ARMOURCAST" Interior Glass Doors



Bolted & Connectored ROOF TRUSSES to any specification

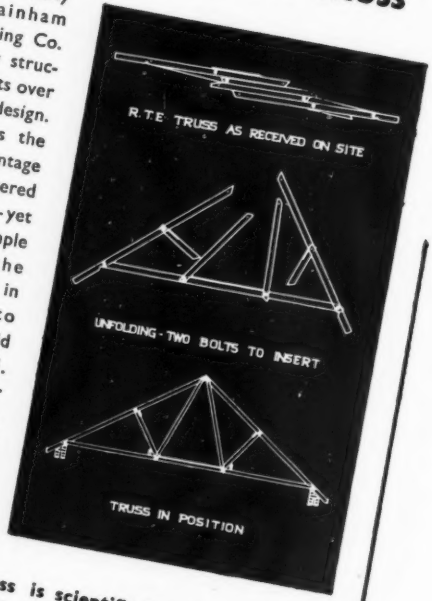
Incorporation of prefabricated roof trusses in house construction saves labour and materials and gives the Architect freedom to plan the first floor independently of the ground floor. It gives the Builder the possibility of laying the floors and erecting the ceilings on the first floor in the ample uninterrupted area under the cover of a roof, before the partition walls are erected.

Roof trusses manufactured by Rainham Timber Engineering Co. Ltd. carry the guarantee of a precision built job, under strict factory supervision: connectors and splitrings are wholly and squarely embedded in the timber in the exact position specified; end distances are meticulously observed; quality is watched. The RTE built truss is competitive and good.

Rainham Timber Engineering Co. Ltd. manufacture any type of truss to specification and supply a sound engineering job for the purpose required. Ask them to estimate for your next contract.

THE R.T.E. FOLDING ROOF TRUSS

This truss scientifically designed by Rainham Timber Engineering Co. Ltd. shows many structural improvements over conventional truss design. In addition, it has the considerable advantage that it can be delivered to the site folded — yet requires only four simple movements and the insertion of two bolts in pre-drilled holes to transfer it into a rigid structure. The R.T.E. folding truss is suitable for all types of roof covering, for any pitch, for hipped and gabled roofs and for spans up to approximately 30 ft.



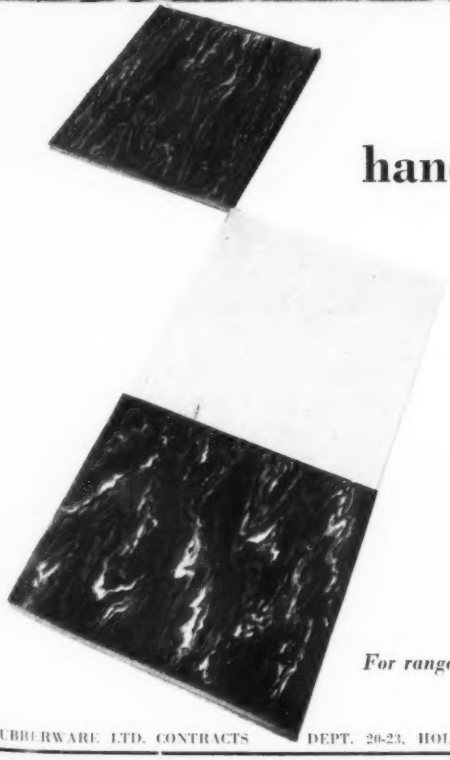
- The R.T.E. Truss is scientifically designed — is stronger — simpler — cheaper.
- The R.T.E. Truss looks right — and is right.

R T E

RAINHAM TIMBER ENGINEERING COMPANY LIMITED
FERRY LANE, RAINHAM, ESSEX. *Telephone:* Rainham 3311
Construction in Glued Laminated and Bolted and Connectored Timber

TIB.5

"Harefield" Rubber Flooring laid in the First Aid Room, McIntie & Price Ltd., Waxlow Road, London, N.W.10.



handsome is as handsome does!

There's nothing like rubber flooring — "Harefield" rubber flooring — for hard wear and good looks. It can make your Offices and Entrance Halls, Corridors and Canteens, Board Rooms and Waiting Rooms, all so much quieter and more inviting. Harefield Rubber Flooring looks attractive, lasts a lifetime and — most important these days — is easy to maintain.

"Harefield"

RUBBER FLOORING

For range of patterns, colour suggestions or estimates for laying, please write or telephone

RUBBERWARE LTD. CONTRACTS DEPT. 20-23, HOLBORN, LONDON, E.C.1. Tel: CHAncery 7711. HEAD OFFICE & WORKS, HAREFIELD, MIDDX.

"What a day! I'll be glad of a Bath!"

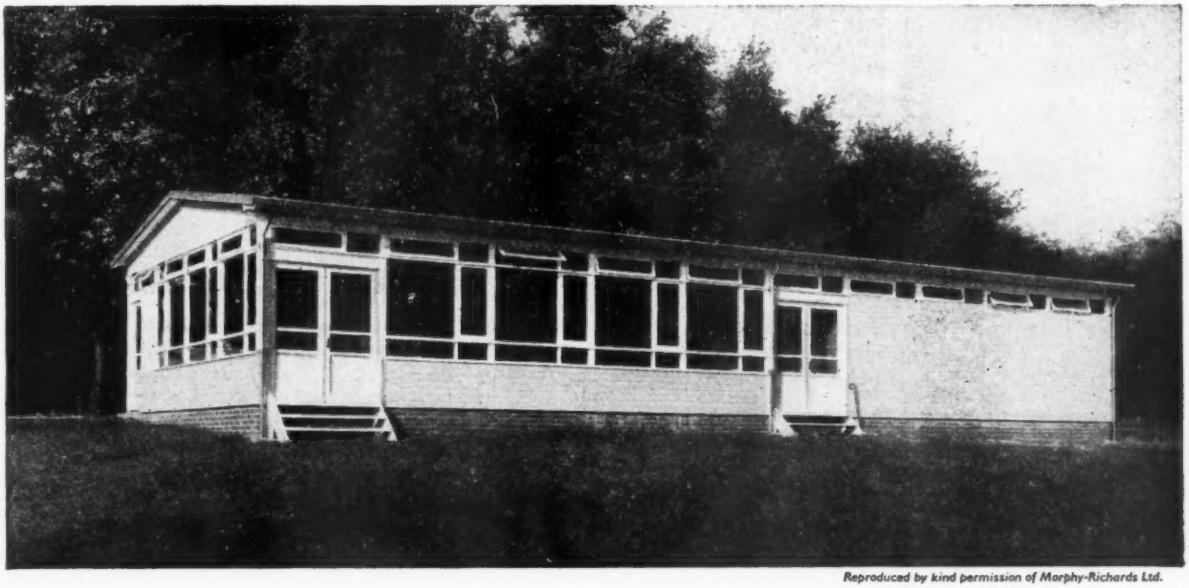
He knows there's nothing like a good hot bath to freshen him up after a tiring day at the office. Especially if it's a Bilston.

For the modern Bilston is a real luxury bath—a joy just to lie back and relax in, it's so roomy and comfortable. Smart and colourful too, with its fine enamel glaze finish which is hard-wearing and easy to clean. There's a whole host of designs and sizes to suit every bathroom and to please every taste. And, best of all, there's a Bilston to match every colour scheme.

To help you advise on baths, we've produced a full-colour catalogue—complete with colour chart, suggested layouts for modern bathrooms, and full specifications of all Bilston Baths. If you would like a copy for your files, please send a postcard to Department AJ57/4.

Make sure it's a Bilston Bath

BILSTON FOUNDRIES LTD., BILSTON, STAFFORDSHIRE



Reproduced by kind permission of Morphy-Richards Ltd.

ROOM FOR DEVELOPMENT

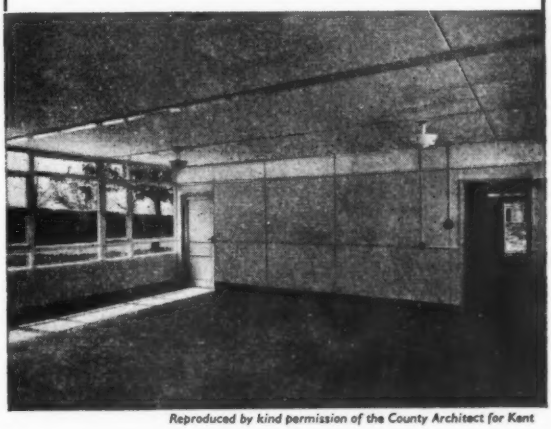
HERE is the answer to all those in authority whose urgent needs for extra room are frustrated by delay and high cost. HALL'S wide span timber buildings are designed with a greater degree of prefabrication to save expensive site hours. These structures are so skilfully designed and well constructed that they will grace any site.

Architects, surveyors and public authorities in many parts of the country have specified these buildings as a supremely practical and aesthetic answer to a variety of accommodation needs.

HALL'S wide span buildings are available in standard single spans of 10, 12, 18, 24 and 30 ft. and in any lengths in units of 6 feet. Interior details are "made to measure" for individual needs. Constructed by craftsmen from selected timber, kiln dried and processed, they will last indefinitely.

Write for full details to:

OFFICES, CLASSROOMS,
CHURCH HALLS,
RECREATION HALLS,
SPORTS PAVILIONS,
HOSPITALS, CANTEENS



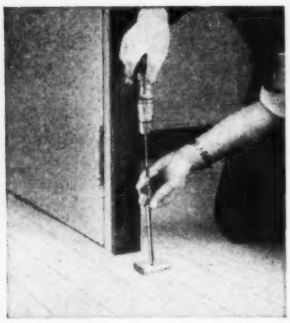
Reproduced by kind permission of the County Architect for Kent

HALL'S

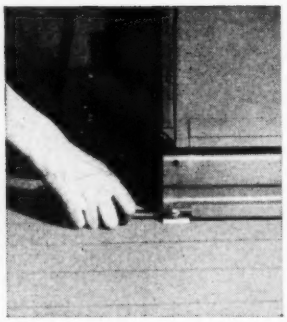
R. HALL & CO (KENT) LTD
33, PADDOCK WOOD, Nr. TONBRIDGE, KENT
Telephone: Paddock Wood 508

THE TIMBER BUILDING MANUFACTURERS ASSOC OF GT BRITAIN

Roften Modular Partitioning is as easy as this to put up — or rearrange

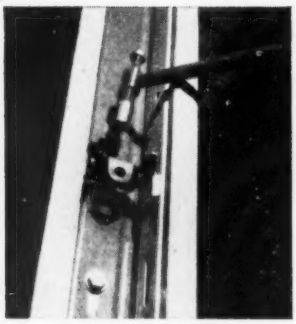


1 Two steel sole plates for each unit of partitioning are screwed to the floor with wood screws.



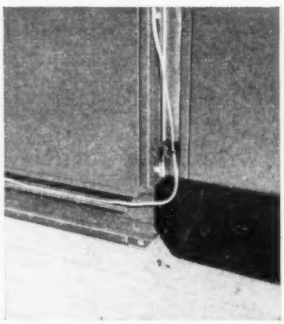
2 The 40" wide, modular units are bolted to the sole plates. All units are interchangeable.

3 Five link plates, at 15" centres, drop into ready pressed out pockets and fix each unit to the next.

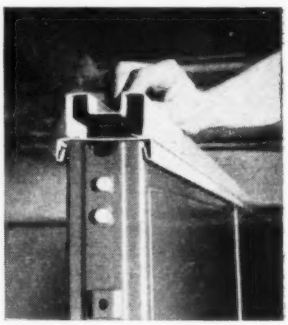


4 Link plates are also used for 3-way fixing — but in this case they are finally bolted in for extra strength.

5 The 40" wide modular door frame, linked in with the rest of the system, is firmly anchored at the foot by a cleat.



6 Electric wiring runs down between partitioning units and along specially provided channels at the bottom.



7 A head channel, cold rolled like all Roften Modular Partitioning sections, finishes off the top of the free-standing screening.

8 Pilasters are clipped on to the notches of the link plates to finish off the joins between units.

9 Skirting is clipped on to the bottom of each unit. Plinths cover the joins in between.

10 Four rubber-buffered glazing beads clip in. Special beads are available for double glazing.

11 Any type of 32 oz. glass slips into the opening, followed by the second set of four glazing beads.

The partitioning installation is now finished. Although it is easy to rearrange, Roften Modular Partitioning is permanent in appearance, all joins are flush, there are no uncovered bolts or screw heads. 13 standard colours are available, and contrasting schemes can be easily arranged at no extra cost. Roften Modular Partitioning will give your client quiet, warm, well laid out *offices — of sumptuous appearance.*

CAVITY CONSTRUCTION

The panelling of Roften Modular Partitioning units consists of a double skin of 20 B.G. pressed steel. Each skin is backed by ½" insulating board and there is a 1" dead air space in between.

And it is remarkably inexpensive — 'phone up and see or write for our leaflet for further details.

ROFTEN MODULAR PARTITIONING

PRESSED METAL DIVISION WILLIAMS & WILLIAMS

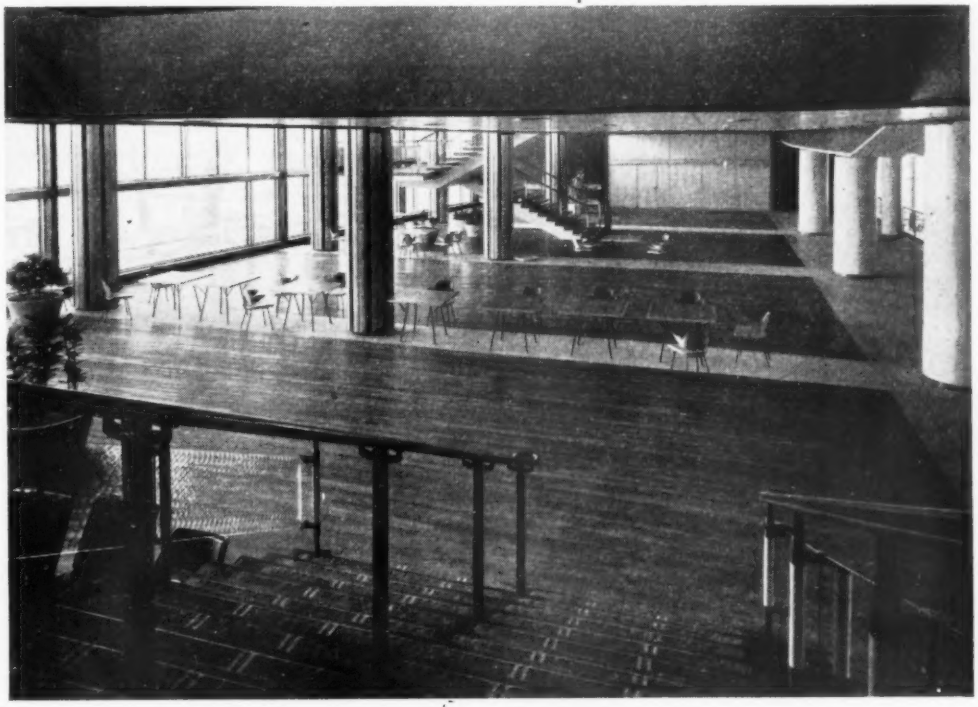
Dept. AJ1, ROFTEN WORKS, HOOTON, WIRRAL, CHESHIRE. Willaston 2171
WILLIAMS HOUSE, 37/39 HIGH HOLBORN, LONDON, W.C.1. Holborn 9361.

FLOOR AS THE ARCHITECT SAW IT

Floor Treatments Limited specialise in keeping floors *in the condition that the architect originally specified.* They maintain a service of advice and assistance in the initial stages to provide the architect with the result he seeks and follow it by shouldering the onus of ensuring that it remains so. They are impartial, informed, work in conjunction with flooring contractors, and are responsible in an advisory capacity for some 35,000 schools, public buildings and hospitals.

This is the floor of the FESTIVAL HALL first treated in 1951 with a Floor Treatments product.

The work was initially carried out by *Messrs. Vigers Brothers Limited.*

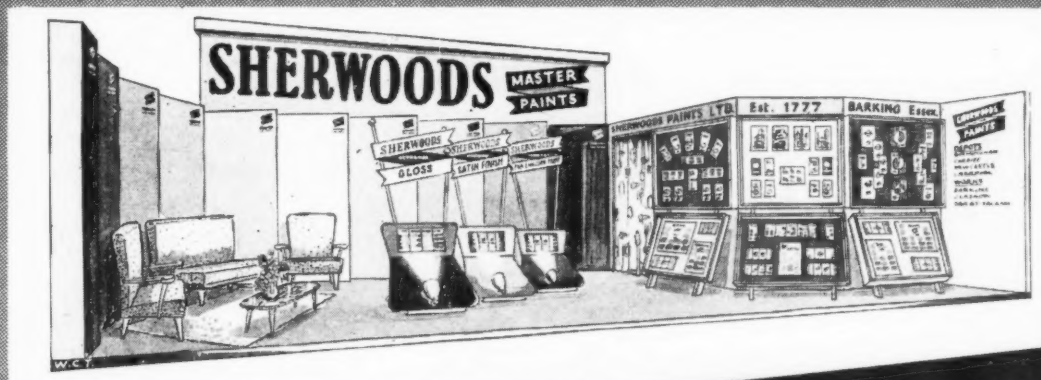


Send for this outline of the service offered by Floor Treatments Limited, – THE CARE OF FLOORS to:

FLOOR TREATMENTS LTD

HIGH WYCOMBE, BUCKS
Tel: High Wycombe 1617 (4 lines)

CONTRACTORS TO THE MINISTRY OF WORKS, ADMIRALTY and EDUCATION AUTHORITIES throughout the country.



We Cordially Invite You

to the National Federation of Master Painters' and Decorators' Exhibition, Princes Hall, Broad St. Birmingham. Nov 2nd–9th

Directors and Executives of Sherwoods Paints Ltd. will be on their stand at this interesting and important exhibition.

Sherwoods have ambitious plans for even greater efficiency in their Service to their many friends both old and new among Master Painters, Architects, Decorators and Contractors.

A little notice of your visit would be appreciated and would ensure your ready welcome and our undivided attention.

SHERWOODS
EST. 1777
PAINTS

SHERWOODS

BARKING ESSEX

Telephone: Rippleway 5500

impervious to atmosphere —

Atmospheric grime will never destroy the underlying beauty of Leeds Fireclay Faience. Here is a material the manufacture of which is based on ancient techniques which have stood the test of time over the centuries. A wash, and its original brilliance is restored. For permanent beauty specify Leeds Fireclay.

Stand No. 136/7, Row G, at the Building Exhibition, Olympia.

Regd. Trade Mark

LEEDS FIRECLAY

FAIENCE & TERRA COTTA

THE LEEDS FIRECLAY CO. LTD.

WORTLEY, LEEDS 12. TEL : LEEDS 638021

LONDON OFFICE : LEEDS HOUSE, CAVENDISH PLACE, LONDON W1. Tel. LANgham 3511. 'Grams. FIRECLAY, WESDO, LONDON

NO MORE ROOM INSIDE . . .

If like the Conductors, you are faced with the same problem then you are at a definite advantage if you invested in a Coseley Building in the first place, it is so easily extended.

Designed in clear spans from 30′ 0″ to 75′ 0″. Eaves heights from 8′ 0″ to 20′ 0″.

Lengths in multiples of 12′ 6″. Width in multiples of Standard spans

Send now for illustrated Brochure and full details, or better still ask our Technical Representative to call.

COSELEY ENGINEERING CO., LTD.
LANESFIELD, WOLVERHAMPTON. TELEPHONE BILSTON 41927 (10 lines)

London Office: 41/46 Piccadilly, W.1. Tel: REG 4924/5/6

PATTERNS

THE mosaicist was no doubt amused at his own creation as he put together a picture of a fat and bibulous Silenus over-burdening his beast. Yet the years have given proof of the long-lasting endurance of this miniature form of "tiling" and the lively opportunity it gave for the use of colour in decorating floors. Semtex, the modern flooring tile, affords a more general opportunity for design. *Whole* areas can follow an integrated pattern in either traditional or contemporary style, which can be picked out in contrasting colours.

There is also no doubt of the endurance and economy of the Decorative Semastic and the Vinylex ranges, which are inexpensive to lay, easy to clean and keep clean, comfortable to walk upon and at once the most practical and the most attractive form of covering for sub-floors in any housing or building concept. They are increasingly specified, not only for their obvious suitability but also because there are expert Semtex tile-laying facilities conveniently available in all principal towns throughout the United Kingdom.

SEMASTIC AND VINYLEX DECORATIVE TILES

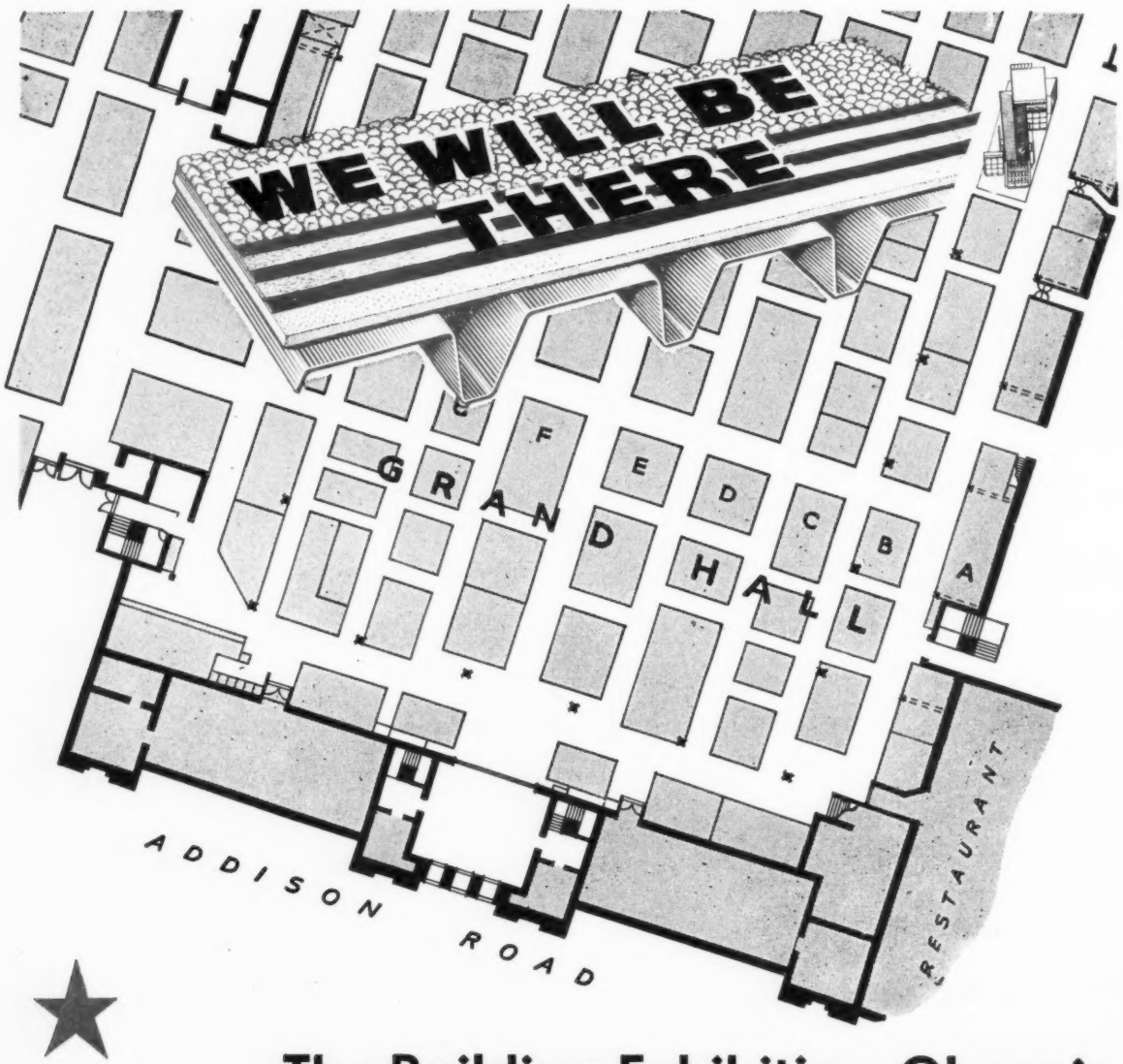
***made by* SEMTEX LTD A DUNLOP COMPANY**

For further information and illustrated brochures write or telephone:
SEMTEX LIMITED, SEMTEX HOUSE, WELSH HARP, LONDON, N.W.9. Tel: HENDON 6543

NS OF PROGRESS

This mosaic, now in the Museo Nazionale, Naples, originally formed part of the floor in the house of Paquius Proculus, a citizen of ancient Pompeii. It depicts Silenus, son of Pan, nurse, preceptor and attendant of Bacchus, proving too great a burden for his ass.

7/58/516



The Building Exhibition, Olympia

NOVEMBER 13-27

If you want to know about the latest developments in Roof Construction, you will easily find your way to

Stand No. 30/31 Row B.

where "BITUMETAL", Briggs Modern Development in Aluminium Roofing and "CHALLENGE" Multi-Layer Roofing are displayed in an interesting and informative manner. Behind every Briggs Roof is the Briggs Organization with its scientific resources and highly specialised knowledge to advise and co-operate on every detail of modern roofing development.

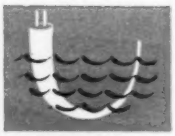
BRIGGS

WILLIAM BRIGGS & SONS LIMITED

Vauxhall Grove, London, S.W.8 — *Regd. Office:* Dundee

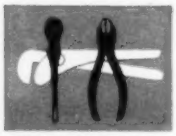
Offices at: ABERDEEN · BELFAST · BRADFORD · BRISTOL · CARDIFF · DUBLIN
EDINBURGH · GLASGOW · LEICESTER · LIVERPOOL · NORWICH

FIREPROOF



WATERPROOF

MECHANICALLY TOUGH



EASILY INSTALLED

Oil-proof, vermin-proof, fatigue and corrosion resistant . . . . virtually indestructible.

NEW FEATURES! SIMPLIFIED SEALING AND TERMINATING! WIDE RANGE OF SIZES!

New manufacturing techniques developed by the Company ensure accurate control of cable size, result in fully annealed copper conductors and enable a consistently high manufacturing standard to be maintained.

* *Mineral Insulated Cables with copper sheaths*

Constructed from inorganic materials BICC M.I. Cables are fatigue and corrosion resistant and will not deteriorate through time. They are oil and vermin proof, and immune from most destructive elements. Specify BICC M.I. Cables for permanent installations in factories, garages, power stations, ships, etc.

BICC M.I. Cables are available for immediate delivery in 440V and 660V grades with one, two, three, four or seven conductors. Full details, specifications and jointing instructions are available on request.

BICC M.I.* CABLES

FOR LIGHTING AND POWER APPLICATIONS WHERE A HIGH SAFETY FACTOR IS ESSENTIAL

BRITISH INSULATED CALLENDER'S CABLES LIMITED · 21 BLOOMSBURY STREET, LONDON, W.C.1

Alicanopies & FACIA-SOFFITT

by BAINBRIDGE Bros. (ENGINEERS) Ltd.

Alicanopies made of aluminium are specially designed to give the architect a greater variety of shapes at a more economical cost. No maintenance other than the periodic painting given to the exterior of the house is necessary.

Facia Soffitt : takes two men only one hour to fit an average pair of houses—no special skill required—hammer is the only tool necessary—no scaffold required.

Alicanopies, Aluminium Facia Soffitt and Barge Boards, are fitted to the Houses illustrated.

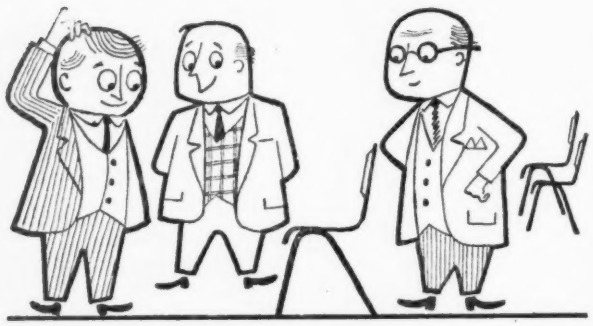
CITY OF SHEFFIELD CORPORATION HOUSES,
BY PERMISSION OF J. L. WOMERSLEY, F.R.I.B.A., M.T.P.I.
CITY ARCHITECT

BAINBRIDGE Bros. (ENGINEERS) Ltd.

FACIA WORKS

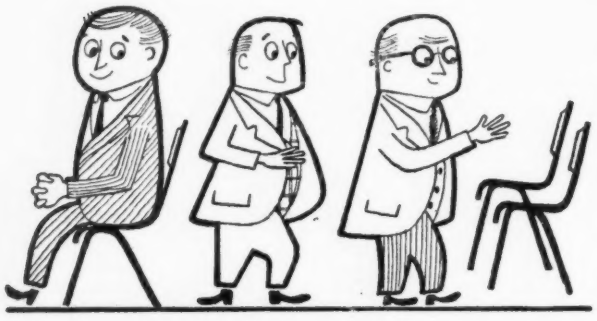
WOODHILL RD. BURY, LANCS.

TELEPHONE BURY 1599 AND 3071



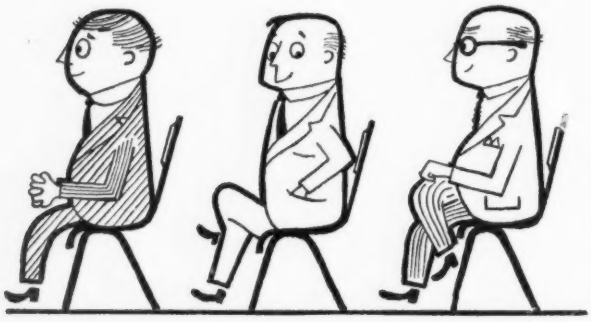
Wonderfully simple...

The clean modern lines of E.S.A. Lamstak chairs make them both attractive and superbly comfortable. Neat seating at its best.



Simply wonderful...

Light, strong and easy to handle, Lamstak chairs build into firm compact stacks. Chairs for a whole hall "vanish" into a corner.



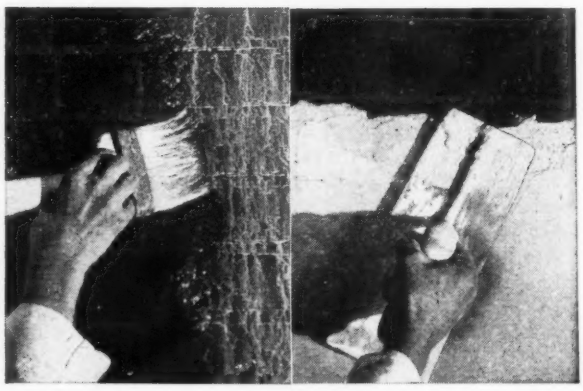
LAMSTAK! *Regd. Trade Mark*

Chairs and armchairs in moulded laminated beech, with or without furnishing fabric upholstery. Matching stackable tables come in two sizes: 48″ × 27″ and 30″ × 30″.

Write today for brochure detailing all E.S.A. furniture to:—E.S.A. Ltd., Esavian Works, Stevenage, Herts. Tel: Stevenage 500, or 101, Wellington St., Glasgow, C.2. Tel: Central 2369. Do it now.

SPECIALISTS IN STACKABLE FURNITURE E S A LIMITED

The 'key' that goes on with a brush!



plastaweld

PERMANENT BONDING FLUID

Plastaweld is a fluid used straight from the can which does NOT require stippling or blinding with sand. It permanently bonds gypsum plasters to any sound clean surface, however smooth. Not solely for use with skimming coats, it can also be used with browning backing coats.

Costing 46/9d per gallon for 70 or 100 sq. yards coverage, it provides a permanent bond at something like 6d a sq. yard!

NO HACKING — NO NOISE, DUST OR DIRT —HOURS OF EXPENSIVE LABOUR SAVED—

Just brush or spray on

plastaweld

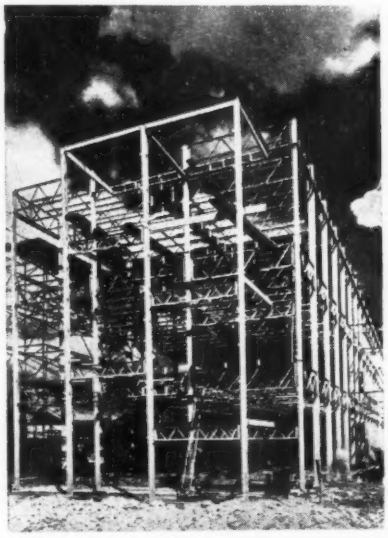
IT'S ANOTHER MANGER PRODUCT

OUR TECHNICAL DEPARTMENT is at your service to assist you in your particular problems. Telephone or write to J. MANGER & SON LTD., (Dept. P2) 57d Kingsland High Street, London, E.8. (CLIssold 5307).

structural steelwork

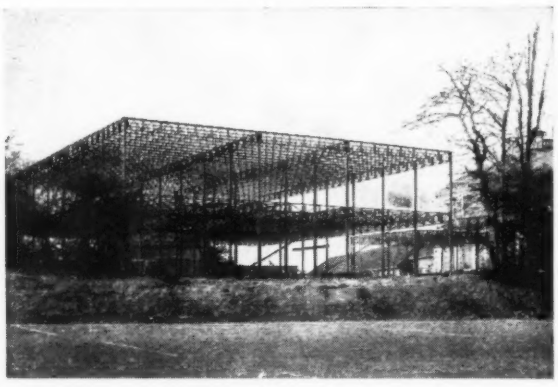
THE BOWATER PAPER CORPORATION LIMITED. The Architects for the new Office Blocks at both Mersey and Northfleet designed for Lattice Steelwork on a modular grid which allowed service lines to be run between floor and ceiling and gave complete flexibility for internal arrangements.

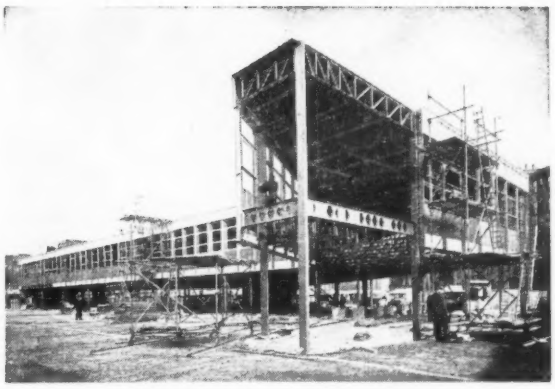
Architects: Messrs. Farmer & Dark.



YORK. For the City of York a Grammar School. Sommerfelds designed the Steelwork on a 3ft. 4in. modular grid allowing complete freedom for the Architect to use curtain walling and internal arrangements.

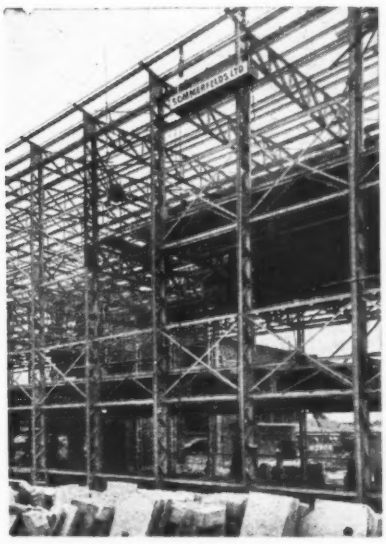
Architect: E. Firth, F.R.I.B.A., A.M.T.P.I., City Architect.





B.E.A. For this B.E.A. Building, speed was the essence of the Contract. Sommerfelds designed the Steelwork and from unloading the first lorry on site to the completion of a 250 ton steelwork erection took three weeks.

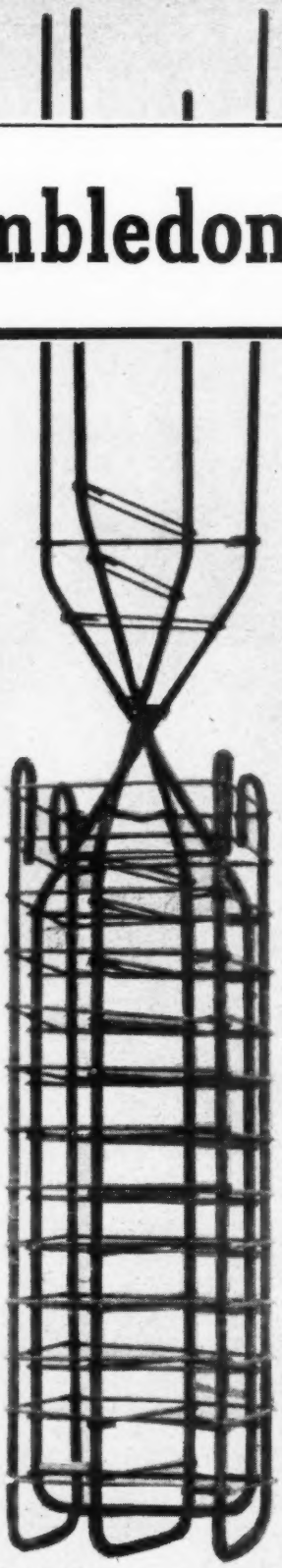
General Contractors: Messrs. Richard Costain Limited.



I.C.I. For I.C.I. a Laboratory Block. A multi-storey building with a height to eaves of 44ft. and uninterrupted spans of 50ft. on each floor. Deep Lattice Beams and light stanchions were used with considerable saving in steel requirements.

Architects: Messrs. J. Douglass Matthews & Partners.

GAZES at Wimbledon



A UNIQUE CONSTRUCTIONAL PROJECT NOW BEING UNDERTAKEN BY W. H. GAZE & SONS LIMITED IN CONJUNCTION WITH THEIR REINFORCED CONCRETE SPECIALIST SUBSIDIARY COMPANY FORMCRETE LIMITED.

One of the problems in construction of the Concrete "Dome" at the All-England Lawn Tennis & Croquet Club, Wimbledon, was to eliminate as far as practicable the effects of Plastic yield, shrinkage and differential settlement. These are impossible to predict exactly but may seriously affect the stress distribution in a structure of this magnitude, which, being supported on four columns only, is believed to be the largest of its kind in Europe.

The practical way of overcoming these difficulties is to render the boundary members Statically Determinate during prestressing, which in this case corresponds with the transfer of dead weight from the shuttering to the four corner columns.

This condition has been achieved by using three "roller" type bearings, consisting of a compression member hinged at the top and bottom by two similar throats, and one fixed bearing with one throat only. Since the throats are circular in plan, the hinges are similar to spherical metallic bearings.

The initial condition of the "Dome" can therefore be roughly compared to a table with three legs resting on three spheres, free to move in every direction, and the fourth leg fixed to a spherical bearing.

The photograph shows Reinforcement to the spherical bearing without the steel "mats" designed to take bursting forces due to concentrated load on the hinge.

After prestressing, all Columns will be position fixed by sealing the bottom throats.

THE CONSULTING ENGINEERS FOR THIS WORK ARE C. J. PELL & PARTNERS

W. H. GAZE & SONS LTD

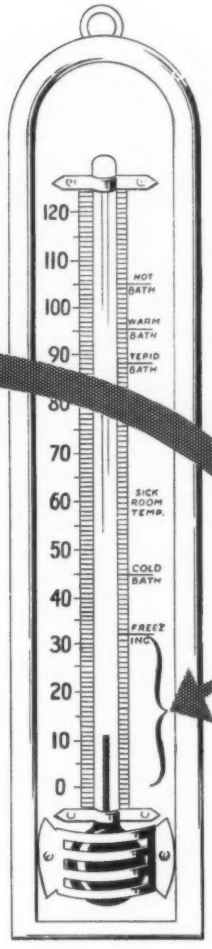
HIGH ST. KINGSTON-ON-THAMES SURREY
Tel: KIN 1144

TENNIS COURT DIVISION
THE GAZEWAY, 139, ROEHAMPTON VALE, LONDON S.W.15. Tel: PUTney 4554

LONDON · KINGSTON · SOUTH AFRICA

21 Degrees Under

Private house at Grove Estate, Harpenden. Rendered in Sand and Cement. Contractors: Stevenson & Spence Ltd., Harpenden, Herts.



YOU CAN SAFELY CARRY OUT PLASTERING WORK DURING PROLONGED FREEZING CONDITIONS — WITH FEBSPEED PLUS ! — Here is the proof :—

The external rendering to the house illustrated here was applied in February 1956 when the temperature stood at 23° F. BY DAY and 11° F. BY NIGHT!

Contractors' reports show that despite the fact that the rendering was applied in 9° of frost it is today sound, solid crack free and firmly adhering.

Febspeed made it possible for the work to go on at such low temperatures.

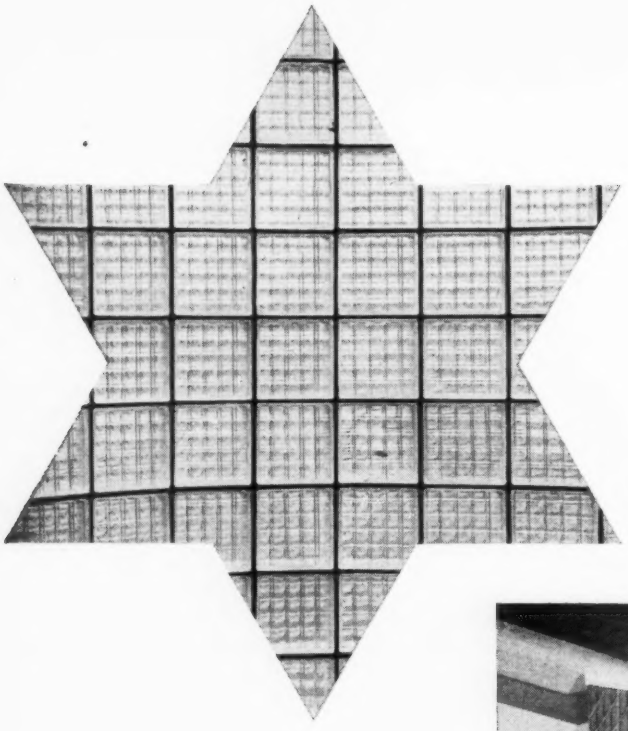
FEBSPEED PLUS

THE CEMENT ANTI-FREEZE COMPOUND THAT ALSO PLASTICISES WATERPROOFS AND RAPID HARDENS

FEB (GREAT BRITAIN) LTD.

102 KENSINGTON HIGH STREET, LONDON, W.8. Phone : WES 0444

ALBANY ROAD, CHORLTON-cum-HARDY, MANCHESTER 21. Phone : CHO 1063



GLASS

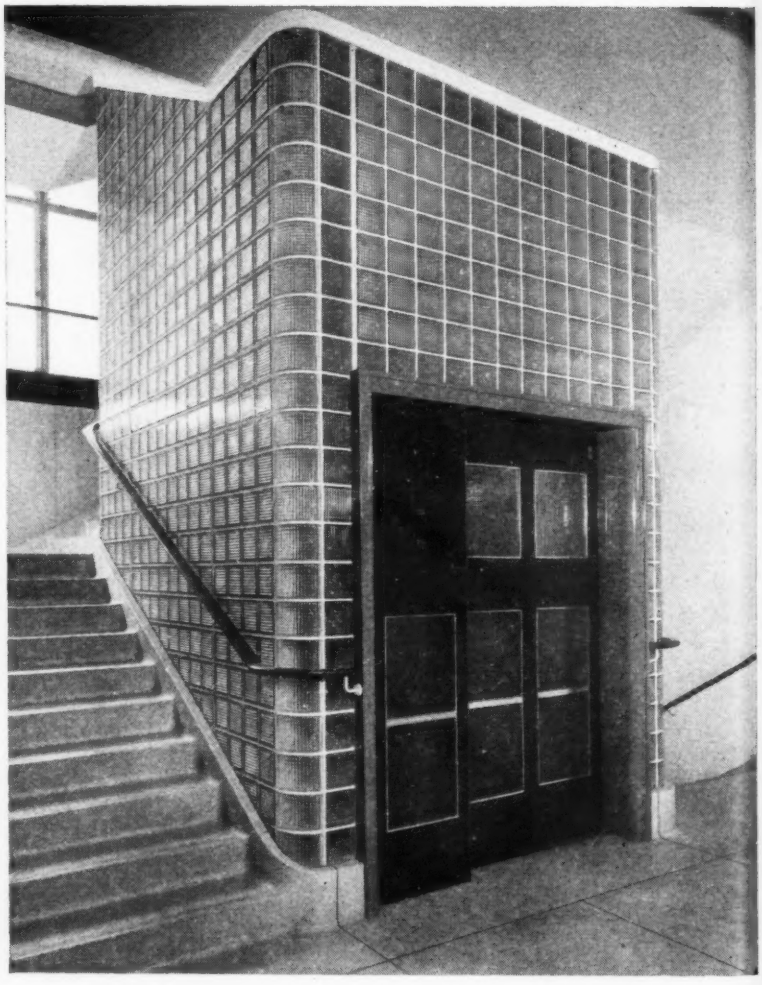
gives a

STAR PERFORMANCE

for

THE B.B.C.

Lift Enclosure, B.B.C. Television Centre, Canteen Building, Wood Lane. Contractors: Higgs & Hill Ltd. Architects: Graham Dawbarn, C.B.E. (Norman & Dawbarn) in association with M. T. Tudsbery, C.B.E. Consulting Civil Engineer, B.B.C.



Of the many effective applications of 'Insulight' Hollow Glass Blocks, this photograph of a lift enclosure provides an outstanding example.

Consider the advantages:

Attractive appearance; good light transmission and diffusion, with obscuration; efficient thermal and sound insulation; an hygienic, dustproof, all-glass installation requiring no maintenance.

As Specialist Fixers with many years of experience, Clark-Eaton are well qualified to advise on the characteristics and requirements to be taken into account when designing in 'Insulight' Hollow Glass Blocks. Please ask for Booklet.

CLARK FOR GLASS

JAMES CLARK & EATON LTD.

SCORESBY HOUSE, GLASSHILL STREET, BLACKFRIARS, LONDON, S.E.1

Telephone: WATerloo 8010 (20 lines)

SEE OUR EXHIBIT AT THE BUILDING CENTRE

Branches at

CANTERBURY, BOURNEMOUTH, EASTBOURNE, READING, OXFORD (H. Hunter & Co.)

Universities
Staircase
Arcadia

October Architectural Review

Vexed by conflicting interests and lack of comprehension of the issues at stake, the design of *Universities* has become a problem that excites passion and prejudice, rather than constructive thinking. In the October number of the Review, Professor Pevsner and the Hon. Lionel Brett will attempt to put the problem back on a realistic basis in a special feature covering both the historical growth of *universities* and their present needs, emphasising the diversity of concepts, both in organization and architecture that the term embraces. Two articles in the same issue will deal with problems of architectural lettering; Nicolete Gray contributing a study of *Lettering in Three Dimensions* and *Skill*, surveying the design of *Fascia Boards*. Also in *Skill* will be an illustrated description of Arne Rudberger's stunning staircase for the MEA department store in Stockholm, and other recent structures to be illustrated will include a small house by Sir Hugh Casson on the South Coast, and another well-designed adjunct to a department store—G. A. Jellicoe's roof garden on top of Harvey's at Guildford. Two historical features will deal with developments in the first quarter of the present century: Ian Nairn's delayed study of Hampstead Garden Suburb is now expanded into a larger study of *Arcadia* as a place to dwell in, and Reyner Banham will investigate the implications of recent publications on the position of *Mondriaan* both as a pioneer of modern design, and as a model to be set up for emulation by architects in the future

3 D shop lettering in Dublin.

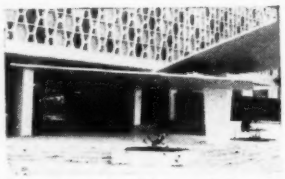
Staircase at the MEA Store, Stockholm.

Smithsons
Building Exhibition
ONNO

November Architectural Review

The controversial Smithsons will make their first appearance as contributors to the Review in November, with an illustrated study of the Shape of the Community, in which they set against the exhausted diagrams of CIAM planning their vision of a more humane type of city. For non-visionaries—and for visionaries too—*Skill* will provide a full cove age or the Building Exhibition from the technical point of view, as well as an *Interiors* treatment of G. A. Jellicoe's restaurant and shopping floors at Harvey's of Guildford.

Visionary qualities, spurred by hard practical necessities, illuminate Kenneth Browne's proposals for applying the ONNO traffic-directing technique to Park Lane and west Mayfair. The study of the functional tradition is advanced by Brian Spiller's article on Georgian Breweries. Buildings described in this issue will include the new Bowater Factories by Farmer and Dark, whose cladding provides a practical follow-up demonstration of patent-glazing techniques, and Rangoon University and Technical Institute, by Raglan Squire and Partners, extensively illustrated in colour. Professor



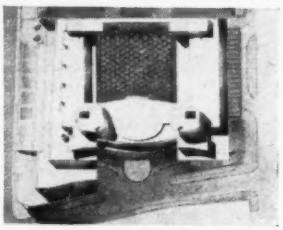
Entrance to the Library of the new Rangoon University. Architects, Raglan Squire and Partners.

Pevsner reviews Tschudi Madsen's important book on the Origins of Art Nouveau, whose character is summed up in the title *Beautiful and, if need be, useful*, and Dr. S. Lang will provide a note on Architectural Visitors to Padua, based upon a register kept by the university there, in which practically every English architect and amateur of note signed his name when passing through.

TUC
Brasilia
Street Lighting

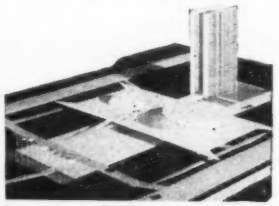
December Architectural Review

Design for public and administrative functions will form the subject of the two most important features in the Review for December. The *TUC Memorial Building*, designed by David Aberdeen, which is only the second public building of consequence to go up in London since the War, will be described and illustrated for the first time in completed form, and a supporting article in *Skill* will examine in detail the finishes



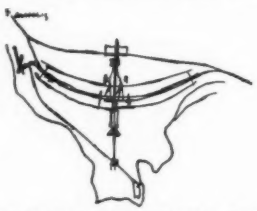
Airview drawing of David Aberdeen's TUC Memorial Building.

and mechanical equipment that make this one of the most lavish buildings—outside the commercial field—of recent years. The other major feature is concerned with *Brasilia*, the projected new capital city for Brazil, typically grandiose and Latin-American in conception, but more likely than most such schemes to achieve completion. Sir William Holford,



Oscar Niemeyer's design for the Congress Building at Brasilia.

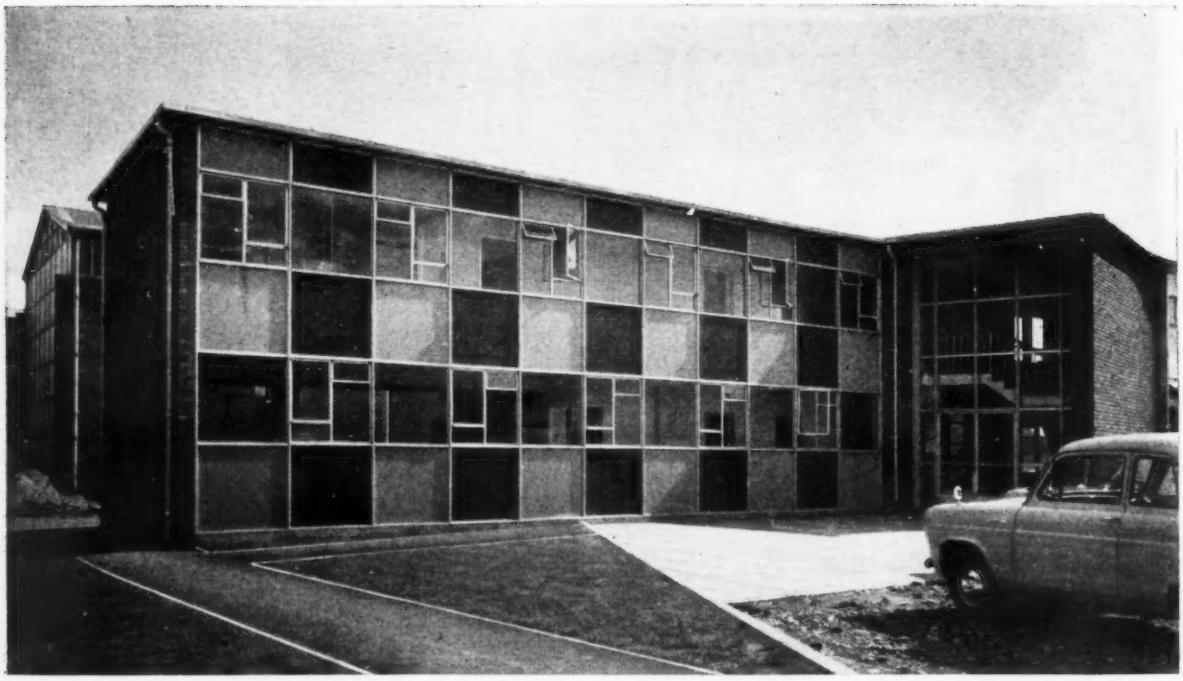
who was one of the jury who assessed the competition for the new capital's plan, introduces the project and its site, discusses the competition, and adds a few words by way of introduction to the brilliant and unconventional winning scheme, by Lucio Costa, father of Brazil's modern movement, whose report is published in English for the first time.



One of Lucio Costa's sketches for Brasilia.

Another father of his art, *John Britton*, founder of English topographical studies, will be the subject of an historical article by Peter Ferriday, and the bicentenary of the birth of the great neo-Classical sculptor *Antonio Canova* is celebrated by one of England's leading neo-Classical scholars, F. J. B. Watson, with a chronicle of English visitors and admirers at the sculptor's studio in Rome. Gordon Cullen will tackle one of the most vexed and debated problems of outdoor detailing, *Street Lighting*, in terms of distribution and siting, as well as the design of equipment, and interiors to be described include the IBM offices and the Garden Centre, both in new office blocks in Wigmore Street. Foreign reports will cover the *Triennale di Milano*, and the *Berlin Interbau* exhibition, and regular features like the *Counter Attack* Bureau and Robert Melville's provocative art-criticism will continue.

WILLIAMS & WILLIAMS NEWS SHEET



New Works, Wales Gas Board, Aberavon.
W. F. Edwards, F.C.I.S., A.I.G.E., General Manager & Secretary.
Architects: T. Alwyn Lloyd and Gordon, F/A.A.R.I.B.A.
Engineers: S. L. Wright, B.Sc., M.Inst.G.E. and W. D. Rees, M.Inst.G.E.

The office has 'Wallspan' along each face in conjunction with 'Z' Range windows and purpose-made doors in aluminium. The infilling panels are yellow and dark blue 'Muroglass'. To the left of the photograph may be seen the gable of the compressor house (and beyond, the emergency generating plant).

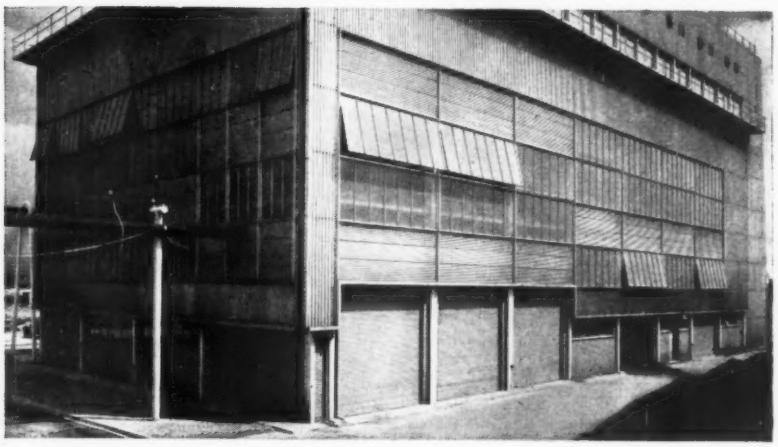
Industrial Symmetry at Aberavon

The new works of the Wales Gas Board at Aberavon are nearing completion and the industrial symmetry which was one of the ambitions underlying the plans for the development of the works has been fully realized.

The gas received at the new works from the Steel Company of Wales is sent out through the grid system of the Board eastward to Bridgend and Porthcawl, westward to Neath, Swansea and Llanelly and onward to Milford Haven and Pembroke.

The new works is notable for having been designed by a team of architects and engineers. Their co-operation is producing an architecture which makes no attempt to disguise its technical function. In the architect's own words, the objective is that "a gas works should look like a gas works and be proud of it".

Extensive and varied use of aluminium has been made in all three main blocks—'Wallspan' Curtain Walling with aluminium faced infillings; 'Aluminex' Patent Glazing; standard 'Z' Range and purpose-made aluminium windows. Aluminium was specified for these purposes because of its known resistance to corrosion, which is especially valuable in a situation such as this where there is a sulphur laden atmosphere both inside and outside the building—in the latter case complicated by proximity to the sea.



The interior of the compressor house showing the runs of 'Aluminex' sidewall glazing under the eaves and the gear-operated vertically pivoted aluminium windows. The gable end is clad with 'Wallspan'. A feature of this building is the way in which possible gas traps in the roof have been avoided by omitting a central ridge. The highest point in each bay is occupied by opening windows designed to give maximum ventilation.

The emergency generating plant includes 'Aluminex' sidewall glazing with continuous gear-operated ventilators. The purpose-made aluminium windows and pressed aluminium mullions are also by Williams & Williams.

VARIED USES FOR STANDARD WINDOWS

ABOVE: 'Z' Range windows in the 'Blue Door' at Maidstone designed by Fremlins Ltd., Surveyors' Department, Maidstone. Contractors: Mills & Sharp Ltd.

BELOW: Two examples of private house building. House at Crawley, Sussex. Architects: Lomas & Pooley, A/A.R.I.B.A. Bungalow at Ifield, Sussex. Designed by E. M. Monk.

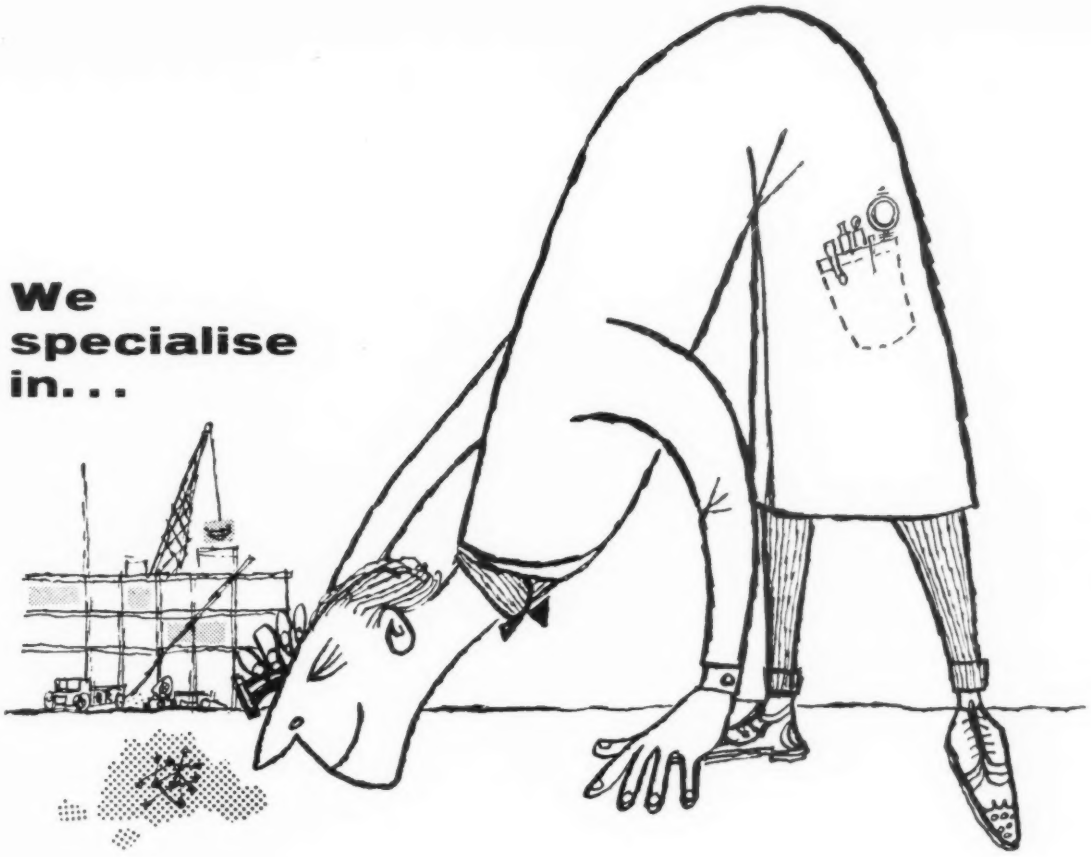
NEW LONDON SHOWROOM

Williams & Williams new London Showroom at 36 High Holborn, W.C.1 will be opening shortly and will include a permanent comprehensive exhibition of Williams & Williams products.

WILLIAMS & WILLIAMS

RELIANCE WORKS, CHESTER

Member of the Metal Window Association.



down-to-earth problems!

When choosing a building site, one vital aspect must always be investigated—the characteristics and strength of the subsoil. The Douglas Organization, with its wide experience in all fields of civil engineering construction and building, has laboratory and field equipment to test for and design any type of foundation, check earth movements and the stability of slopes and cuttings, and overcome ground water and soft clay, to mention only a few typical problems. We are also pleased to interpret results provided from other sources—so whatever your building or foundation problems, dial for Douglas!

DOUGLAS

SOIL MECHANICS & FOUNDATION ENGINEERING DEPARTMENT

ROBERT M. DOUGLAS (CONTRACTORS) LTD., 395 GEORGE ROAD, ERDINGTON, BIRMINGHAM 23.
Tel.: BIRCHFIELD 5261 (15 *lines*) *Telegrams: Aremdee, Birmingham*
ALSO AT LONDON . SWANSEA . LIVERPOOL.

Aveley 'Dacre' County Primary School for Essex County Council. H. Conolly, C.B.E., F.R.I.B.A., *County Architect*.

The Bowater-Eburite Canteen adjacent to the Mersey Mills of the Bowater Organisation at Ellesmere Port. *Architects:* Farmer and Dark, F.F.R.I.B.A.

A. H. ANDERSON LIMITED

Building Systems

66, Victoria Street, London S.W.1. ***Telephone: Tate Gallery 2192.***

TIMBER A75 CONSTRUCTION

A75 is a method of constructing complete permanent single and two-storey buildings of the highest quality of design and finish in the shortest possible time. It is extremely flexible in application and can, when required, be employed in conjunction with other methods of construction.

A. H. Anderson Ltd. is organised to provide Architects with a comprehensive building service from the design stage to the completion of the building. Speed at all stages of the building process is achieved through close Architect/Builder co-operation.

AVELEY, "DACRE" PRIMARY SCHOOL

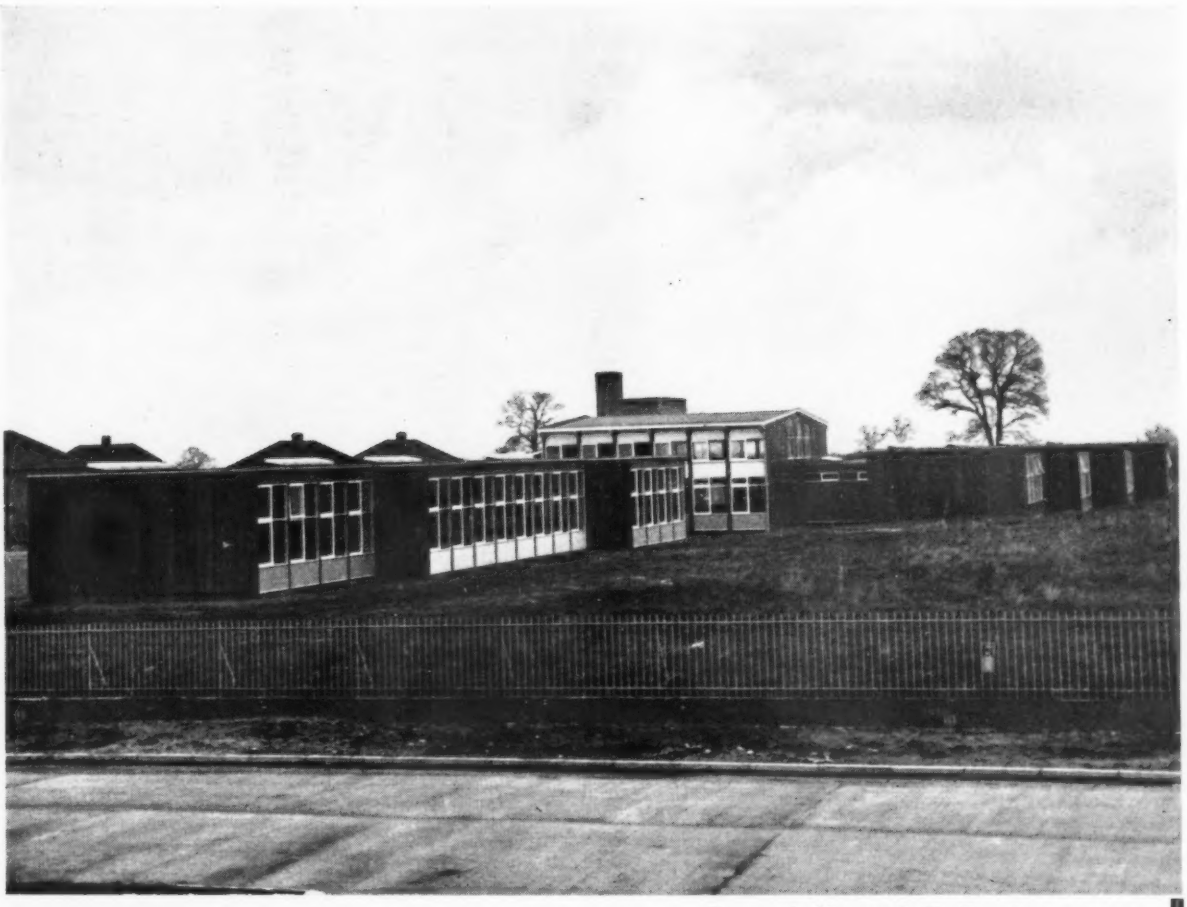
for Essex C.C.: County Architect,
H. CONOLLY, C.B.E., F.R.I.B.A.

"RAGUSITE" BUILT-UP ROOFING

is specified exclusively on "A.75" structures.

RAGUSA

HEAD OFFICE:
3 BUCKINGHAM PLACE,
LONDON,
S.W.1



County Architect : G. R. Bamsley, F.R.I.B.A.

TIMBER A 75 CONSTRUCTION

SYSTEM OF CONSTRUCTION

employed at

TELFORD AVENUE JUNIOR SCHOOL
LEAMINGTON FOR THE WARWICKSHIRE
COUNTY COUNCIL

Site works and erection by

FOSTER & DICKSEE LTD *Builders*
JAMES STREET, RUGBY
RUGBY 2095

County Architect : H. Conolly, C.B.E., F.R.I.B.A.

TIMBER A 75 CONSTRUCTION

SYSTEM OF CONSTRUCTION

employed at

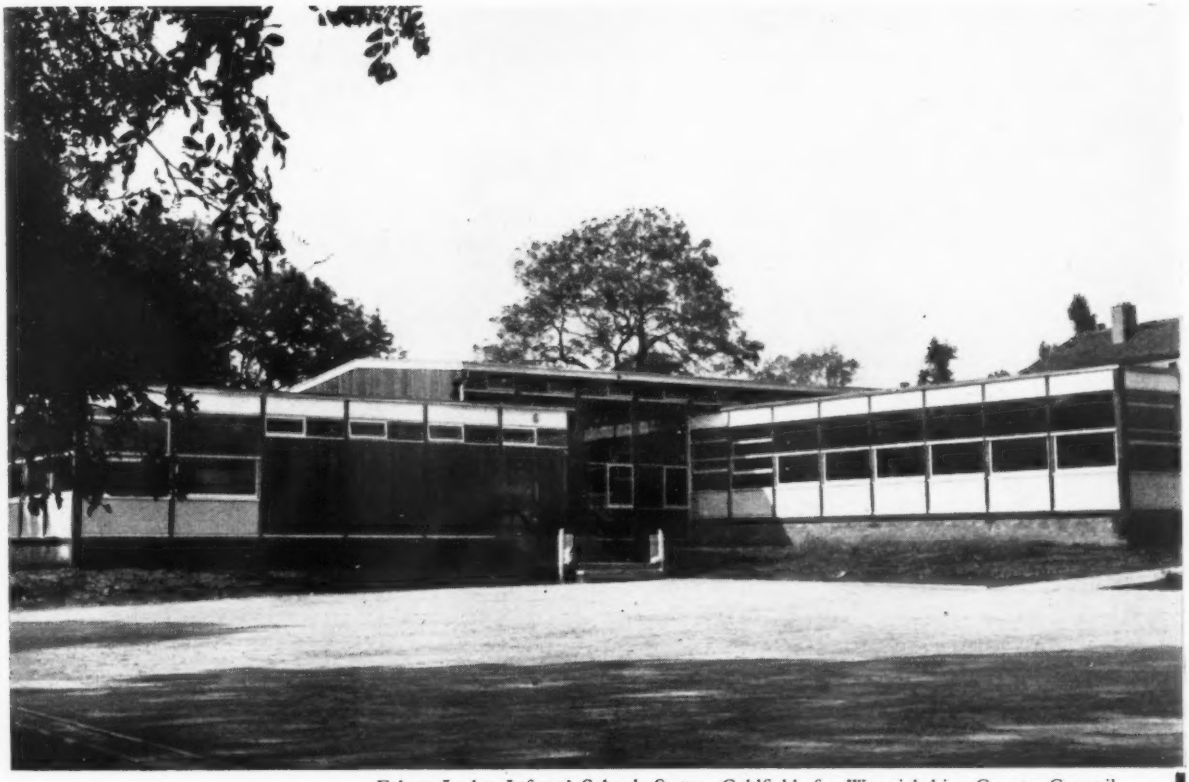
RAYLEIGH 'THE GLEBE' PRIMARY SCHOOL
FOR ESSEX COUNTY COUNCIL

Site works and erection by

HENRY POTTER (WM. SHARP) LIMITED

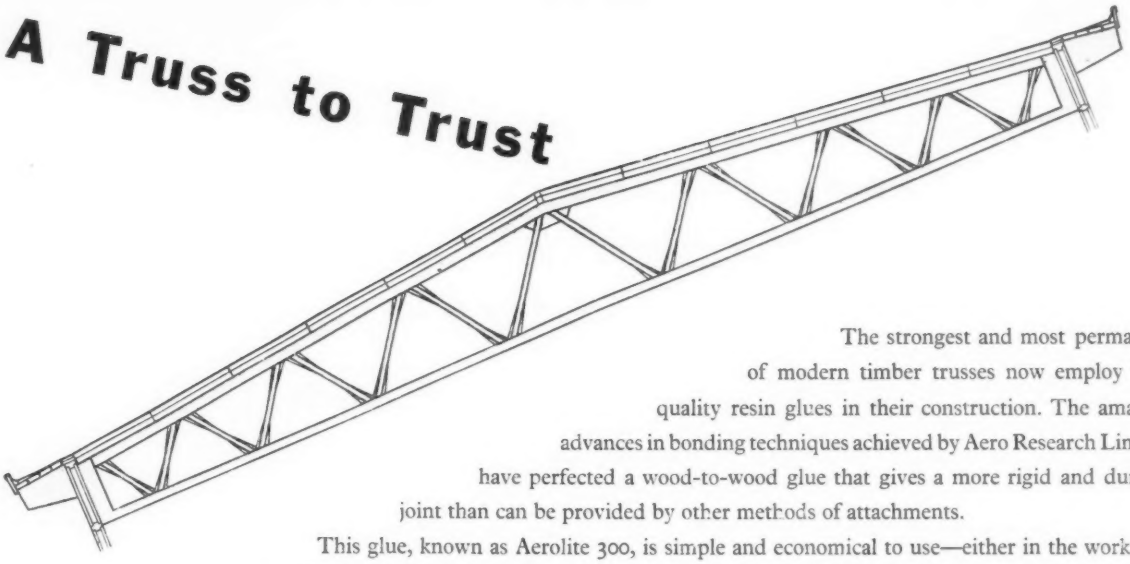
Builders and Contractors

FAIRFIELD WORKS · CHELMSFORD · ESSEX



Falcon Lodge Infants' School, Sutton Coldfield, for Warwickshire County Council
Architects: Farmer & Dark F F.R.I.B.A. in collaboration with G. R. Barnsley F.R.I.B.A., County Architect

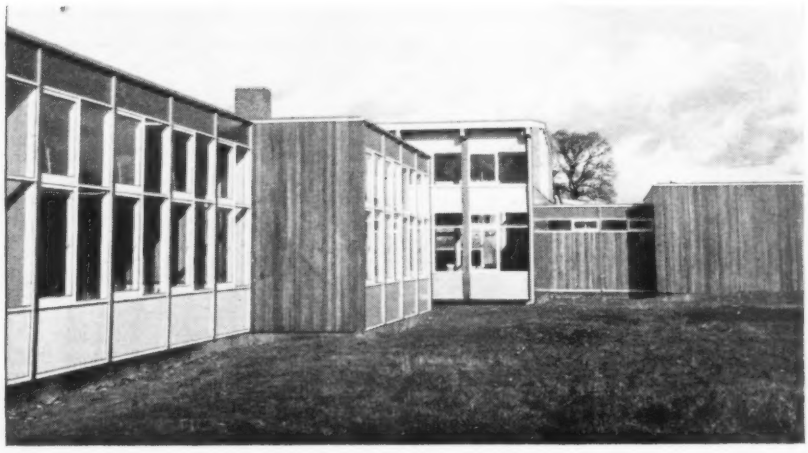
A Truss to Trust



The strongest and most permanent of modern timber trusses now employ high quality resin glues in their construction. The amazing advances in bonding techniques achieved by Aero Research Limited have perfected a wood-to-wood glue that gives a more rigid and durable joint than can be provided by other methods of attachments.

This glue, known as Aerolite 300, is simple and economical to use—either in the workshop or on the building site. It is unaffected by cold or dampness, is not attacked by fungi or moulds, has remarkable gap-filling properties and produces a joint of tremendous strength, resistant to sagging or distortion.

May we send you full information on Aerolite and copies of our monthly publication, Aero Research Technical Notes, describing the use of Aerolite in glued timber structures?



Leamington Telford Avenue Junior School for Warwickshire County Council: County Architect, G. R. Barnsley, F.R.I.B.A.

The timber truss shown above was used throughout the roof structure of this Junior School at Telford Avenue, Leamington. *To provide joints of the utmost strength Aerolite 300 was employed in the construction of these trusses.*

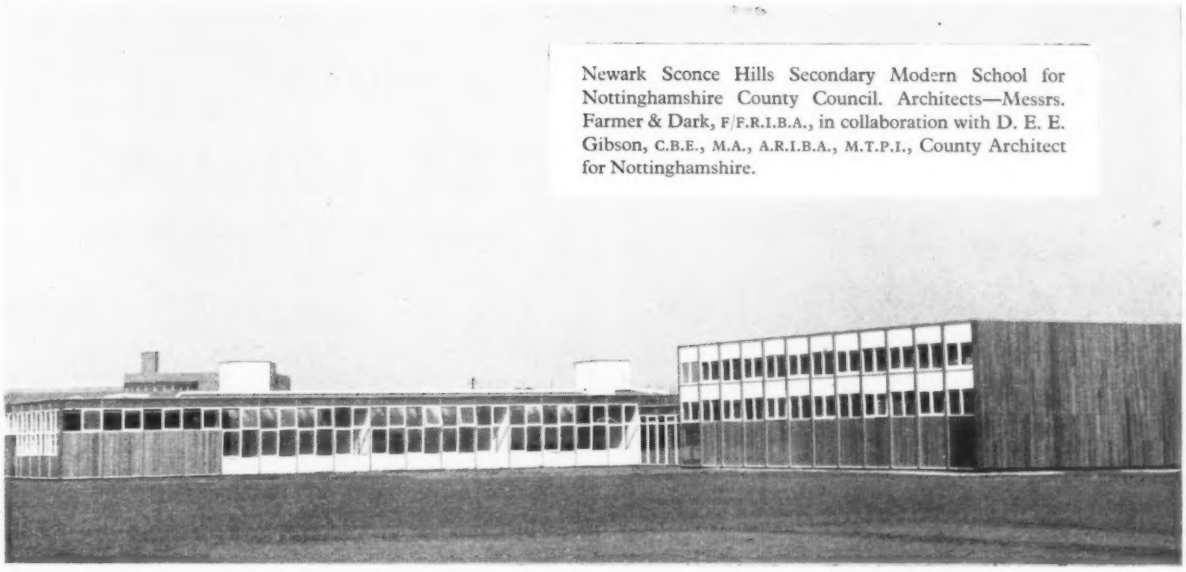
This school was built by the A75 system—a complete, flexible and permanent method of timber construction for single or two storey buildings of high quality design and finish devised by A. H. Anderson Limited, 66 Victoria Street, S.W.1. (Tel.: Tate Gallery 2192.)

Aerolite *glues for wood*

Aerolite is a registered trade name

Aero Research Limited *Duxford, Cambridge. Tel.: Sawston 2121*

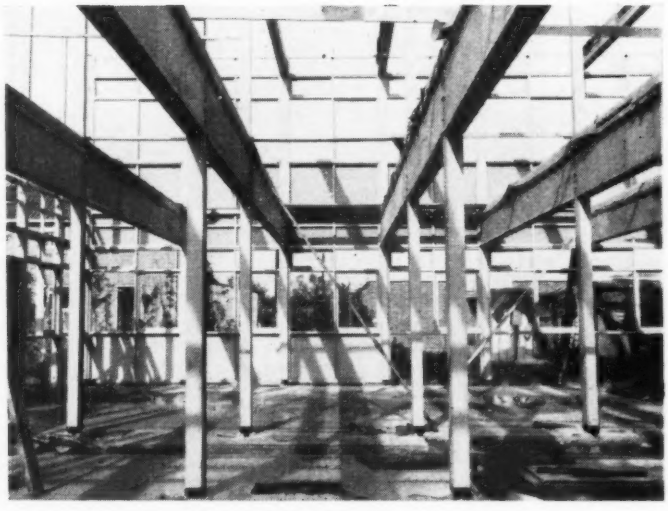
AP394



Newark Sconce Hills Secondary Modern School for Nottinghamshire County Council. Architects—Messrs. Farmer & Dark, F/F.R.I.B.A., in collaboration with D. E. E. Gibson, C.B.E., M.A., A.R.I.B.A., M.T.P.I., County Architect for Nottinghamshire.

CANADIAN TIMBER

for flexibility and efficiency



Park Hall Secondary Modern School for Warwickshire County Council. Architects—Messrs. Farmer & Dark, F/F.R.I.B.A., in collaboration with C. R. Barnsley, F.R.I.B.A., County Architect for Warwickshire.

The wider use of timber, combined with new building techniques, has evolved architectural designs eminently suited to the economic construction of public buildings. These new designs and structural methods provide for more useful interior space, greater flexibility of planning, more freedom in the design of walls, windows and overhangs for sunlight control and covered walkways. Buildings go up faster, too. Framing members are often standardised and delivered pre-cut. Floor and wall sections, prefabricated off-site, fix into position quickly. Labour is used more efficiently and the cost of materials can be kept to the minimum.

SEND FOR 'TRENDS IN TIMBER CONSTRUCTION'
—an 18-page pictorial study of timber's wide range of uses in present day structures of all types. Write for your free copy to:

COMMERCIAL COUNSELLOR (Timber)
DEPT. J.4, CANADA HOUSE,
TRAFALGAR SQUARE, LONDON SW1

CANADIAN TIMBER

FROM BRITISH COLUMBIA

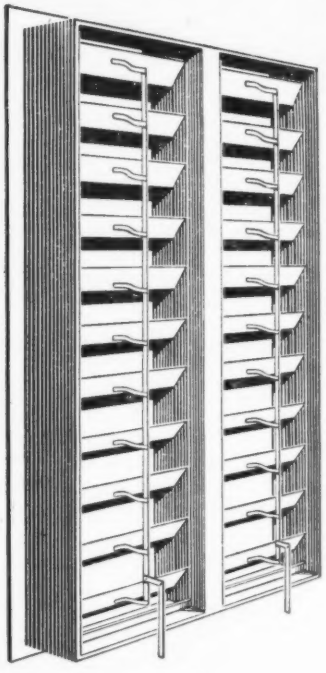
Pacific Coast Hemlock. Douglas Fir. Western Red Cedar. Sitka Spruce.

High quality timber produced by members BRITISH COLUMBIA LUMBER MANUFACTURERS ASSOCIATION

4A

Contract: London Airport Control Building

Arch: Fredk. Gibberd Esq., F.R.I.B.A., M.T.P.I. Cont: Taylor Woodrow Construction Co. Ltd.



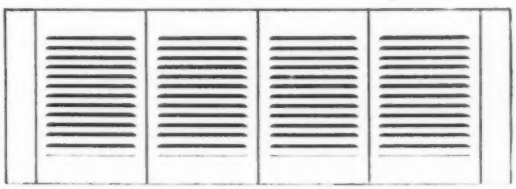
VENTILATION FOR INDUSTRY

Louvres of all sizes

Greenwood's extensive range, which includes heavy and light duty ventilators, fixed or movable, in all sizes in steel or aluminium, are designed for all industrial or domestic requirements. With mullions to form multi-bank panels the heavy duty ventilators can be specified for the largest contemporary industrial premises.

(Left) *A typical double banked Greenwood's Heavy Duty Movable Louvre.*

(Right) *Type LH 'Maxaire' Multi-louvred Panel with ¼" flange.*



Visit Stands G122 3 Building Exhibition Olympia Nov. 13—27

Greenwood-Airvac *ventilation*

GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

Patentees, Designers and Manufacturers of Ventilating Equipment and Electrical Conduit Systems

BEACON HOUSE, KINGSWAY, LONDON, W.C.2. CHAncery 8135/6/7., 'Airvac', London

AJ

THE ARCHITECTS' JOURNAL

No. 3270 Vol. 126 October 31, 1957

9-13 Queen Anne's Gate, London, S.W.1. Tel. WHI 0611.

Subscription rates: by post in the U.K. or abroad, £2 10s. 0d. per annum. Single copies, 1s.; post free 1s. 3d. Special numbers are included in Subscriptions; single copies, 2s.; post free, 2s. 3d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for 30s.; carriage 1s. extra.

NOT QUITE ARCHITECTURE

UP THE WHO?

A Plea From The Beet-belt

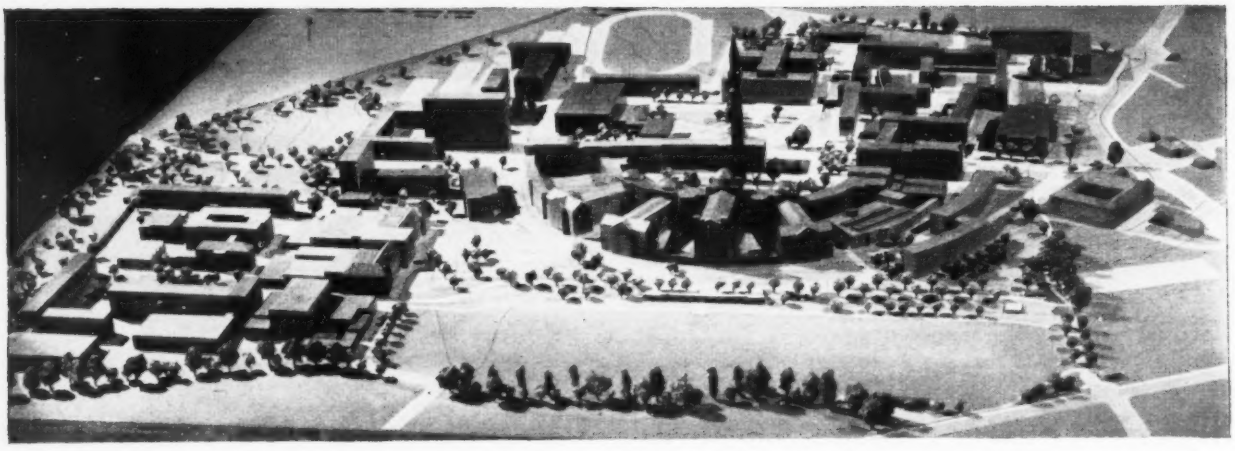
All through the instructive and frequently literate correspondence that has been exchanged in the JOURNAL about Rushbrooke village housing, one vital question has been consistently by-passed: not—one suspects—because the architects can't answer it, but because no architect could possibly ask it. Quite simply: why are the houses that shape?

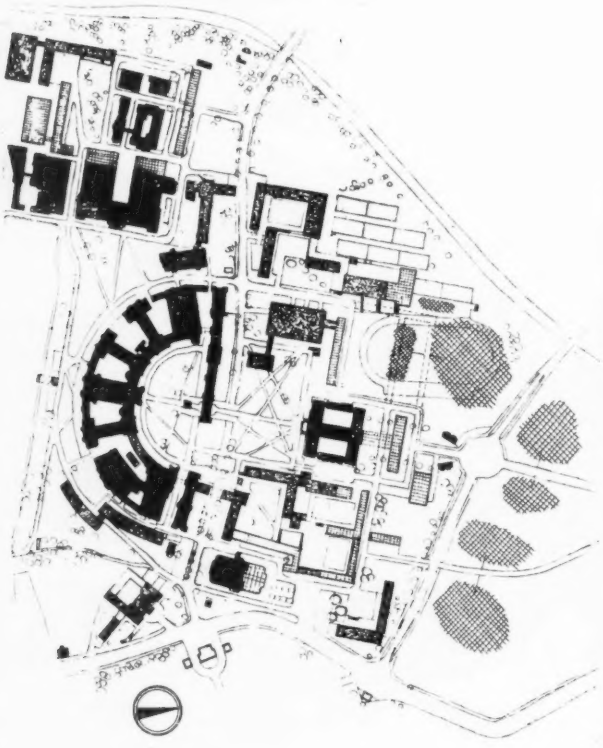
*

Only a skunk could ask such a thing: it's like enquiring why the Bauhaus had a bridge over a road that wasn't there. Any architect knows there were "perfectly good functional reasons" for that bridge, and for those house-forms, and any architect worth his salt knows that "perfectly good functional reasons" are a smoke screen (first laid by Vitruvius, thickened by Palladio) for concealing one's real intentions from clients.

*

Anyhow, we have Bill Howell's assurance that they are not that shape because they were cribbed from the CIAM village housing projects (and I wonder what skunk suggested they were) but this only extends our problem beyond the confines of the beet-belt of East Anglia. Perhaps it was the dreaded *Zeitgeist*, that well-known art-historical miasma that inches forward at the speed of time, overwhelming original geniuses in its path, and turning them into indistinguishable contemporaries. Mr. Davies and Mr. Weeks, Mr. Howell and Mr. Partridge, Mr. Voelcker and Mr. Stirling, Mr. and Mrs. Smithson, were sitting at their drawing boards in cellar, attic or bathroom when the spirit of the times seeped up insidiously between the floor-boards and made them mindless slaves of the collective sub-conscious.





Living and Learning

Closely following the *Architectural Review's* study, by Professor Nikolaus Pevsner and Lionel Brett, of the historical growth and the present needs of universities comes an exhibition of some of the better examples of contemporary university buildings. It is called " Living and Learning," and it will be on view at London University from November 1. It is essentially, like the *Review's* articles, something to start people thinking about the nature and purpose of university life and the contribution which the structures and their disposition can add to, or detract from, university living and learning. The latest contribution in this field is for Birmingham University and has been designed by Sir Hugh Casson and Neville Conder, whose proposals for the Sidgwick Avenue scheme at Cambridge are the most efficient and entrancing to have been prepared in this country since Wilkins laid out Downing College in 1807. The problems at Birmingham University are even more difficult than those they had to solve at Cambridge. The existing buildings, designed by Aston Webb, form an incomplete " D " on plan, and present an array of radiating blocks on the summit of a hill overlooking Edgbaston, a suburb of Birmingham. As the plan indicates, Casson and Conder envisage an extension of the curve of the " D " to break the rigid axiality, and, by inter-connecting courtyards, to exploit the opening in the upright of the " D " to provide glimpses from the new buildings of the Siena-like Campanile. Webb's concept of a hill-top citadel is, however, being retained, and the architects are endeavouring to develop the idea of a walled university city by making the centre largely pedestrian, and blocking to motor traffic the east-west road which would otherwise bisect the campus. In their report the architects emphasize the dangers of providing axial plans or focal points with types of buildings which are perpetually in a state of growth and decay as university aims and needs change. A number of alternative layouts have been suggested to indicate the flexibility of the planning. Space for over one thousand cars in small dispersed parks has been provided. A novel detail of the plan is the recommendation that on several of the sites reserved for future building trees shall be planted. Thus, if the sites are never used, the trees will, on maturity, serve as " graceful substitutes "—in the words of the architects' report—and complete the composition. Casson and Conder have also prepared proposals for the development of halls of residence on a site to the north of the university buildings. See page 649

(Thinks: Eh?). Of course the situation isn't as spook-struck as that. The mechanics of what happened are fairly easy to elucidate. All were rightly appalled at the recent state of rural housing, and all, having been subjected to substantially the same educations, influences, architectural journalists, grand old men, etc., came up with substantially the same solutions. But why that particular solution: why are beet-belt voters to be decked out in the architectural apparel of Mediterranean peasants? Woz-type architecture, as one of them calls it.

*

My guess is Corb as much as anything. The Jaoul houses, the *Murondins* emergency slums (spine walls and fancy-pitched roofs), contributed the shapes, Marseilles, by dragging people down to the coast, gave the visual images. Add one actual village actually rebuilt for Mediterranean peasants, Quaroni's work at La Martella in South Italy (which you can compare with Rushbrooke in the August *Architectural Review* . . . . Advt.) and all that's missing is the motive.

*

And that's not too difficult to find, even if no one dare admit it. Old-style modern architects used to keep in touch with the lower orders by doing architectural charity on them from a great height, and designing bleak and efficient accommodation where the working-classes could be filed away when not in use. But new-style modern architects are supposed to get down on all fours with the plebs and help them cultivate a vigorous popular culture. This is all very well, but in utter honesty it would involve the beet-belt architect in helping them cultivate half-timbering and Swedish detailing—and there are some things that even a Brutalist can't stomach. So, without noticing that you've changed gear, you start cultivating instead the popular culture of an entirely different set of land-workers, who apparently *like* living in the kind of white-walled, pure-form architecture we have been brought up to admire. Up the Mediterranean peasants!

*

But heaven help the architectural profession when the beet-belt voters discover that they, with their long traditions of progressive methods, mechanisation, education-mania, and trade unionism, have been dressed up in UNRRA charity-architecture designed for the most depressed agricultural community in Europe. Speaking on behalf of the beet-belt, which is my native clay, whose inhabitants I know from many angles, I call upon the bright boys of the profession to dream up, and quick, an architecture that shall be appropriate to a tractor-driving, tie-owning, telly-watching, WEA-attending, pool-investing, fungicide-spraying, *Mirror*-reading community.

*

We don't have *peasants* in East Anglia. Up the Rural Operatives!

REYNER BANHAM

The Editors

THE BOOM IN BOXES

DO we want the boom in spec. builders' boxes to continue, and the volume of local authority housing to decline still further? The only possible answer to this question is "no," yet this seems to be a highly probable result of the present financial restrictions. While the building societies have decided, for the time being at any rate, not to increase their mortgage rates, the public authorities are finding it increasingly difficult to maintain the rate of their housing programmes. The falling rate of house building by public authorities is partly due to the concentration on slum clearance, the difficulties of finding sites in urban areas, and the failure of the Town Development Act to lead to the expansion of country towns for the reception of overspill. But it is also due to financial difficulties, which current policies must inevitably intensify. Not even a substantially higher level of rents will convince a local authority treasurer that it is sound finance to tie a 7 per cent. millstone round his council's neck for 60 years, and even the LCC has announced that it finds it increasingly difficult to borrow money at any price.

Nobody wishes to return to the immediate post-war era when private houses were almost unobtainable, but equally we can only view with concern any further reduction in the housing programmes of local authorities which, for all their faults, provide almost the only well-designed and planned large-scale housing groups, and which alone are wholly designed and produced by architects. The need for a sustained housing programme is, in fact, fully confirmed by the proceedings of the National Housing and Town Planning Council, which met in Harrogate last week.

One of the architects who addressed the conference, Lt.-Col. A. E. Henson, drew attention to the fact that in rural areas, where there is now a vast preponderance of private enterprise housing, developers ignore the knowledge available for them on housing design and layout, but continue to build houses with low standards of design, planning and materials. Clifford Culpin insisted on the fact that the road layouts on housing estates must be part of a comprehensive design which can only be undertaken by the architect-planner, and not by the road engineer. But such comprehensive design is, with a few enlightened exceptions such as the Eric Lyons housing at Ham and Blackheath, only provided by local authorities.

All too few of them have yet seen the light (Loddon RDC, who employ Tayler and Green, are an outstanding exception), but their work is improving, and it is easier to persuade them to do better than to persuade the speculative builder.
We must not overlook, moreover, the need for a steady housing programme that will ensure continuous employment and enlarged experience for the architectural and planning staffs that have been built up in recent years.

WHY CONDONE VANDALISM?

It would be a deplorable and disastrous piece of vandalism if the Nash terraces at Regent's Park were to be demolished. Maxwell Fry, in a letter to *The Times*, has supported the destruction of the terraces on the ground that the Regent's Park estate should be redeveloped to fit the changed conditions of the contemporary scene. Unfortunately, the evidence available before our eyes does not support his optimistic belief that we can safely "take our courage in both hands and face the consequences." But, in any event, why destroy one of England's architectural masterpieces in order to give modern architecture a chance to show what it can do, when there are (or should be) unlimited opportunities for modern architecture elsewhere?

GIVE A DOG A BAD NAME

Mr. Tyrrell, a Gosport architect, suggests, in this week's correspondence columns, that the RIBA should give a lead to salaried members of the profession and ask them to join the ABT as one solution to the problems which have concerned Richard Sheppard's *ad hoc* committee on the status and salary of architects.

*

The answer, unfortunately, is not so simple. If *everyone* was a devout Christian, or Hindu, or sincere communist, the world's troubles would be over. The snag is that, beat the drum, tabor or backside how one may, not everyone can be persuaded or compelled to join a cause. And there is a very good reason why people won't join the ABT: it has gained a reputation of being as much interested in politics as in purely professional matters, and too much concerned with technicians who are not architects. This reputation may be justly or unjustly earned, correct or incorrect, the latest news or terribly out of date. It makes no difference, the accusation sticks and the poor old ABT isn't getting anywhere with architects. This does not mean it can't do much good work on behalf of draughtsmen, clerks of works and so forth.

TUC

The latest in the series of discussion meetings on new buildings organized by the ICA had as its subject David Aberdeen's TUC headquarters in Great Russell Street, and started with the great advantage of being held inside the building discussed—as the chairman remarked, it was like holding a post-mortem in the stomach of the patient.

*

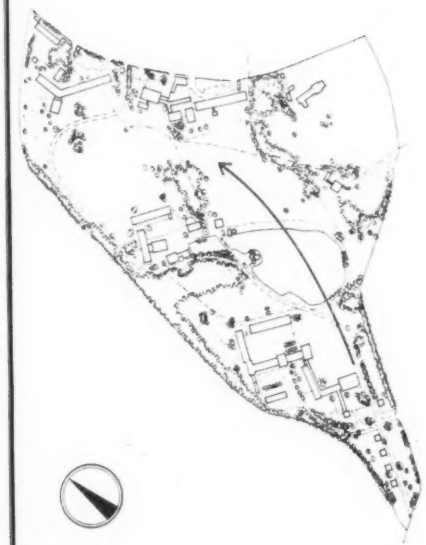
The timber-lined, glass-roofed conference hall in the basement made a most agreeable setting for a brisk session of question-and-answer, which followed a tour of the building—it was, in fact, the first time the hall had been used. I will wait to comment on the building until readers have seen pictures of it—it is being fully illustrated in the JOURNAL, I believe, next month—and will only say now that everyone was impressed with the high standard of craftsmanship and finish inside (the sort of standard we are accustomed to in a Danish town-hall, but in too few modern English buildings) and that it is remarkable and unusual how closely the finished building follows the design that won the competition ten years ago.

*

One thing the ICA party didn't see was the Epstein carving, executed as a memorial to trade-unionist war casualties, which will dominate the internal courtyard and be seen from nearly all the important rooms in the building. It is still shrouded in a tarpaulin and is to remain so until the official building opening ceremony takes place in February. By that time it is hoped that the large bronze group over the main entrance, by Bernard Meadows, will be ready too.

THE OTHER TRUST

It is a sign of the success of a manufacturer when his product becomes a household word: and no matter how much the makers of Thermos flasks may object, the public at large will go on describing other makes of vacuum flasks as thermos flasks, without the capital T. The *Architectural Review* can congratulate itself on the fact that a similar fame has come its way, for the annual report of the National Trust devotes a large section headlined "Counter Attack" to the desecration of the countryside. The Trust considers that in the preservation of country houses the line is now being held, and their future is for the moment less desperate than it was. But it adds that the "destruction and vulgarization" of the countryside itself, and of the country towns and villages, is gathering increasing momentum. For this reason



In this week's frontispiece we show something of the proposals by Sir Hugh Casson and Neville Conder for Birmingham University extensions. Here are a plan and a perspective of the residential building side of the site. The plan indicates the sites of six halls, each housing about 150 students. To economize on kitchen facilities, four of the halls are paired so that the refectories share kitchens. The arrow indicates the line along which the visitor's eye will be directed by the new landscaping. The architects propose creating a lake as a focal-centre to the site, and by carefully cutting and extending the tree planting to lead the eye up to a 12-storey tower of students' rooms at the summit of the site. On the far shore will be a "village," consisting of a shop, canteen, estate office, staff flats, games rooms and library, thus forming a social centre where students of different halls will be able to meet. This development of a site by the careful use of water, finely curving roads, and the careful placing of buildings within a setting of trees is a most welcome return to the English picturesque landscape tradition of the eighteenth century.

the Trust took the unusual step in the spring of circulating particulars of "Counter Attack" in its spring bulletin. And now, in its report, it asks members of the Trust to give their active support to the principles for which "Counter Attack" stands. Very good: but may ASTRAGAL remind members of the Trust that it was published by the *Architectural Review*, and is still on sale at the price of 12s. 6d.?

*

On one point, however, ASTRAGAL cannot refrain from a mild disagreement with the Trust. To say that the adaptation of large houses with remote kitchens and antiquated heating to the exigencies of the 20th century "has entailed sacrifices and discomforts which the urban householder would not for a moment contemplate" strains credulity. Urban householders, of whom ASTRAGAL is one, also suffer a good many discomforts, and would be very ready to swop places with the owners of many stately homes, who have contrived to do pretty well out of their arrangements to hand them over to the National Trust, or to open them to the public, or both. By all means let us rejoice that these houses are being saved: but there is no point in pretending that it has been all sacrifice and no gain.

DATA FROM THE MAKERS

The RIBA and Building Centre competition for manufacturers' "literature" produced 200-odd entries, a comparatively modest figure when most architects probably get catalogues and leaflets at the rate of 150 or 200 every month. Perhaps manufacturers were too diffident or their publications were not to BS sizes, but the winning and the commended designs, and for that matter most of the others, seemed reasonably factual and very largely devoid of excessive salesmanship, which is presumably what architects want. I know there is a considerable body of opinion which says that the BS size is wrong: maybe this is so, but until the standard is changed manufacturers cannot be blamed for keeping to it.

*

The other vexed question, of course, is price. It is unfortunate to have no indication of costs, but as many manufacturers have had unhappy experiences with architects who have

taken published figures as representing accurate costs, they now prefer individual estimates, expensive and time-wasting though these may be. There is to be another competition next year in which it will be reasonable to hope for a good many more entries, though it would be sensible to exclude any that were submitted this year.

VAN DE VELDE

Although he was ninety-four, and therefore had to depart sooner rather than later, Henry van de Velde had become so permanent an institution in the European architectural scene that it is difficult to believe that he is dead. Like Frank Lloyd Wright he proved, by his very existence, that the architecture of our own century is the direct descendant of that of the nineteenth century, however much it may have protested its new-ness and distaste for the past when it was young.

*

Van de Velde's career started before Art Nouveau, and although he would not have it said of himself, he became one of Art Nouveau's great international stars. Yet he was right in a way, for unlike most of the Art Nouveau designers, he was less a stylist than a radical innovator, and he contributed to the old arts and crafts school at Weimar, which he headed from 1906 until the war, a tough-minded tradition that Gropius was able to exploit when he transfigured the school into the first Bauhaus. Of his generation only Wright survives . . . it makes you realise how middle-aged the century is getting.

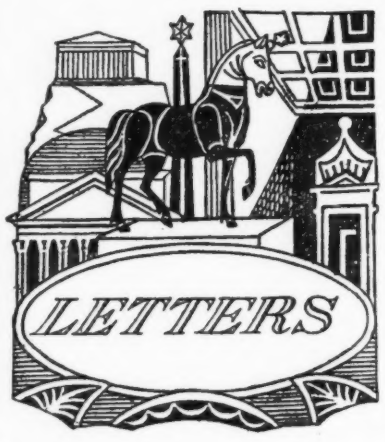
COO!

In spite of the honesty and humour of Roy Brooks, it seems that estate-agent's English will remain the tissue of half-truths and pious hopes that it always has been. However, those who regard the house-ad as a legitimate mid-century art-form, and savour its subleties of oblique misrepresentation and its masterly way with abbreviations, may like to extract the full implications from the following set of initials: W.O.O.O. This newcomer followed *Usl. offs.*, etc., in a stock-broker-area ad. on the Kent-Surrey-Sussex borders.

*

It had me foxed, too—the answer is "Wealth Of Old Oak."

ASTRAGAL



10 *Local Authority Architects*

J. Edward Tyrrell

39 Members of Birmingham City Architects Department (Signed)

John Voelcker, A.R.I.B.A.

Walter Segal, Reg. Arch.

Representation

SIR,—As some of the local authority architects to whom the open letter published by the RIBA was addressed, we welcome the opportunity of making the following observations in reply.

In our particular case membership of a recognized "organization" is a condition of employment and in our view the most appropriate organization open to us at present covers far too wide a range of employees to serve the specific needs of a minority of professional members. We would, therefore, welcome the formation of an association catering either for the interests of architects alone or for professional local government officers as a whole.

Before deciding on which would be the better proposition, information on the following points appears essential:

1. What would be the estimated potential membership of an association of salaried architects and assistants?
2. Have any other comparable bodies been formed consisting of only one profession (excluding medical)? What size membership have they and what benefits have they obtained?
3. Have other comparable bodies been formed consisting of more than one profession in the same organization and how successful have they been?
4. What is the professional membership of NALGO?
5. What contribution, if any, is envisaged?
6. Was any information relevant to the above questions obtained from the recent RIBA questionnaire?

Referring to the text of the "open letter," we find ourselves seriously at variance with the *ad hoc* committee's opinion that "the lack of an effective pressure group is not at the root of the problems they have been asked to examine." The formation of a pressure group, such as enjoyed by the medical profession, is precisely what the Committee should have been asked to consider; it should not, as you so rightly infer, be envisaged as one which should adopt the big stick methods of certain powerful unions. Nevertheless it should be able to wield its influence at least as effectively.

Two further points arise from your letter. First, that we have no reason to believe that the local government negotiating machinery is undergoing reformation. Second, that whilst it may be true that county, city and borough architects' association incidentally looks after the interests of deputies, deputy architects are not in fact included in its membership. It would be interesting to know the reasons why this association cannot be extended and developed.

If the suggested formation of the professional body such as envisaged by the committee is accepted, and we think that it ought to be, there seems to us to be two possible approaches, both based on the assumption that local government architects alone would be numerically insufficient to obtain effective recognition as a negotiating body. These two approaches are:

(*a*) That the association incorporates architects in both local government service and in private practice.

(*b*) An amalgamation of all professions employed by local government into one representative association, constituted so as to preserve the identity of each profession. This, to us, would seem the more likely to achieve the desired results.

In conclusion we hope that the consultation with the RIBA members concerned initiated by the open letter will be continued throughout the formative stages of the desired organization.

VICTOR G. BARTHOLOMEW (A), B. R. S. DALTON (A), ALAN DICKENS (A), BRIAN J. HADLAND (A), NOEL J. HALL (A), J. D. HUME (A), C. A. HUNT (L), KENNETH G. JONES (A), G. F. STANLEY (A), JACK WHITTLE (A).

Why Not The ABT?

SIR,—Why do Architects, who are so anxious to plan for other people, create so many difficulties in efforts to plan their own. The existence of the Ad Hoc Committee arises from the concern of salaried architects as to their status, remuneration and future. There has been for many years an association, *e.g.*:—The Association of Building Technicians, pursuing on behalf of its members, with no little success, a policy of improvement on these three vital issues, the full attainment of its policy only being hampered by lack of membership.

This association has, over a period of years; built up recognition in various forms; the machinery is there needing only a membership more representative of salaried architects to set in motion the means of attaining its objects.

The Ad Hoc Committee now investigates the setting up from scratch of another association

Surely, the solution lies in the R.I.B.A. giving a lead to the salaried members to join A.B.T., and helping to direct its activities into the channels it requires.

It is on these lines that I have replied to Mr. Sheppard's open letter. In my suggestion is not the answer, perhaps the Ad Hoc Committee or any individual will give reasons why membership of A.B.T. will *not* be the means of solving our problem.

J. EDWARD TYRRELL

Hants.

ASTRAGAL replies to Mr. Tyrrell on page 648.—ED.

Support For Mr. Sheppard

SIR,—We wish to endorse the letter of Richard Patterson (October 17), regarding the work being conducted by the RIBA Ad Hoc Committee and the resolutions passed by the Nottingham architects.

We, as members of the city architect's department, Birmingham, have also met to discuss the contents of the open letter to RIBA members in local authority offices, and have forwarded our observations to the Secretary for Professional Relations, as requested.

We consider that the formation of the proposed society of salaried architects in local government will in no way be detrimental to our membership of the RIBA, since the society would be affiliated to the Institute purely as a negotiating body.

It is felt that the work being conducted by the Ad Hoc Committee is of great importance and we sincerely hope that other groups of architects throughout the country will express their views on the letter from Mr. Sheppard.

39 MEMBERS OF CITY ARCHITECT'S DEPARTMENT. (Signed)

Birmingham.

An Apology

SIR,—When you did me the honour of elevating me, a humble letter-writer on the subject of Messrs. Banham & Stirling, to the rank of Secretary of the Coal Utilisation Council I was wondering how to escape the Council's wrath and decided to go into hiding.

The attentions, however, of a number of people engaged in the production of Gas, an allied industry, to which I have since been subjected, compel me to ask for your protection: would you please relieve me of an honour which you conferred upon a most undeserving subject.

WALTER SEGAL.

London.

We apologize both to Mr. Segal and to E. W. Wignall, secretary of the Coal Utilisation Council.—ED.

DIARY

Managing Building Projects. Course of weekly discussions organized by the LCC Brixton School of Building in collaboration with the BC. 3. *Architect and specialist consultant.* Speakers: R. W. Paine and Ove N. Arup; November 6. *Architect and contractor.* Speakers: Philip Bennett and A. J. Hill; November 13. At the BC, 26, Store Street, W.1. 5 p.m.

Design and Detailing of Screen Walls. Course of six weekly lectures. *Introduction* by Edward D. Mills; October 31. *General principles governing the design of screen wall syetsms* by John D. Kay; November 7. *Glass in screen wall systems* by T. A. Markus; November 14. *Concrete cladding systems* by J. G. Wilson; November 21. *Timber cladding systems* by E. Levin; November 28. *Joint sealing* by John Bowler-Reed; December 5. *Closing session and general discussion*; December 12. At the LCC Brixton School of Building, Ferndale Road, S.W.4. 6.30 p.m. Fee for course £1. Applications to the secretary.

President's Inaugural Address and Presentation of London Architecture Bronze Medal. At the RIBA, 66, Portland Place, W.1. 6 p.m. NOVEMBER 5

A review of present architectural thought and trends by H. T. Cadbury-Brown. Sponsors, IES and RIBA Science Committee. At the RIBA, 66, Portland Place, W.1. 6 p.m. NOVEMBER 7

OBITUARY

H. Van de Velde

Professor Henry Van de Velde has died, at the age of 94, in Zurich. ASTRAGAL writes a short appreciation on page 649, and a more detailed appraisal will appear in next week's JOURNAL.

ISE

Should Architects be Replaced?

"Should Architects be replaced by engineers in the design of industrial structures?" This question was discussed at the Institution of Structural Engineers on Wednesday, October 23, at one of a series of combined meetings held by the Graduate and Students Section of the Institution of Structural Engineers and the Architectural Association. The discussion was led by F. J. Samuely and A. W. Cox. A. Beeson was in the chair.

Mr. Samuely suggested that there was, perhaps, a lack of understanding among engineers as to the true function of an architect: apart from having to consider the appearance and utility of the building the architect was trained in planning and also in the overall administration and co-ordination of many different trades and professions. He had to know a little about each one of these and still keep an overall eye on the whole project. Mr. Samuely felt that the architect was in a better position to do this than members of a more specialized profession. Statistics showed that even in the case of structures like garages, where the structural frame was the major part of the building, only some 50 per cent. of the total cost was structural. For most other buildings this figure was considerably less.

Mr. Cox said that he fully agreed with all that Mr. Samuely had said. He added that the architect's training taught him to treat the building as part of its environment. The economic aspects of the whole building, as well as those of its component parts had to be considered. This required training.

The discussion was then thrown open to the floor. Mr. Pye made the plea for the contractor, suggesting that all too often it was this latter who had to sort out the problems in detail. Mr. Samuely agreed that this might occasionally be true, but he thought that many new ideas would only be developed if somebody refused to believe the contractor's plea that it could not be done. Mr. Myers, who suggested that too frequently the architect only put a facade on a building, thought that in the ultimate perfection an architect should be the distillate of the pure artist and the pure engineer. Mr. Tietz suggested that in the case of highly functional structures, such as colliery buildings, power stations and waterworks, where the specialist's part of the project was of such overwhelming importance to the subordination of all else, though the architect should be called in he might better be employed as one of subsidiary consultants rather than as the co-ordinator. He agreed that the engineer responsible would require administrative training to co-ordinate all the other contracts. Mr. Dutt felt that though a structural engineer ought to know more about architecture, the extra years of study would be too high a price to pay and would still not make engineers into architects. Mr. Samuely thought the engineer could gain greater knowledge of architecture at the expense of some other subjects, such as electricity and machines.

MANAGEMENT

Course for Executives

Urwick, Orr and Partners Ltd., the management consultants who have worked extensively with the building industry, will shortly be repeating their one-week course on "Management and Productivity in the Building Industry" at their training centre at Slough, Bucks.

The course is designed for senior and intermediate-level managers only. It will be held from November 25 to 29.

The aim of the course it to help those in responsible positions to acquire an overall grasp of the management techniques which have been successfully applied to building operation. The fee, including residence, is 50 guineas. Applications should be made to Urwick, Orr and Partners Ltd., 29, Hertford Street, W.1.

ABT

Discussion on Higher Technology

The report of the London Regional Advisory Council for Higher Technological Education (see JOURNAL for August 1) will be discussed at an open meeting to be held at the Building Centre, Store Street, London, W.C.1, on Friday, November 22, commencing at 6.30 p.m. The main speakers at this ABT-sponsored meeting will be D. E. Woodbine Parish, chairman of the regional advisory committee for building, and Percy Johnson-Marshall, whose ideas on this subject were published in the JOURNAL on June 6. The chairman will be E. E. Holiamby, president of the ABT.

TCPA

Caravan Laws

The Town and Country Planning Association is recommending to the Minister of Housing and Local Government the following changes in the laws governing the use of land by caravans.

(a) Changes in Public Health Act Control.

1. At present land can be used by caravans 42 days without a licence. *This should be reduced to 28 days.*

2. At present it is doubtful if the law allows local councils to impose a time limit when issuing licences. *They should be able to limit the period of the licence to 12 months.*

3. *Penalties for offences under the Public*

Health Act, fixed in 1926, should be increased substantially if they are to act as a deterrent.

4. *The expression "movable dwellings" should be confined to tents and bona fide caravans.* (At present it also covers sheds, vans, etc.).

(*b*) *Changes in Town and Country Planning Act Control.* 1. At present *any number* of caravans may be placed on land for up to 28 days in a year without planning permission. *The number should be limited to five.*

2. If permission for the use of land for caravans has not been obtained, the local authority may serve an enforcement notice requiring their removal. *It should be an offence for a site operator to put further caravans on the land after such a notice has been served.*

3. At present certain organizations (*e.g.*, the Caravan Club) holding a certificate from the Minister may use land for caravans without having to apply for planning permission. *This right should not be withdrawn in respect of a site without these organizations being given the opportunity to state their views.*

4. At present seasonal caravan camps can be operated summer after summer without planning permission because of delays inherent in the procedure, and despite refusal of permission by the Minister in each preceding year. The enforcement notice requiring removal of the caravans only comes into effect when the holiday season is ending anyway. The site operator removes the caravans for the winter and can claim that he has complied with the notice. *It should be made illegal for land to be used for substantially the same purpose within three years of the enforcement notice coming into effect.*

TCPA

Is Planning Successful?

For ten years Britain has had complete planning control. What has it achieved? That question will be discussed at the TCPA's national conference at County Hall on November 28 and 29.

The first talk on "Trend and Prospects," will be given by Peter Self, lecturer in public administration, London School of Economics, under the chairmanship of B. J. Collins. Discussion will be opened by Arthur Ling, city architect and planning officer, Coventry.

Sir Sydney Littlewood, R. J. Roddis (town clerk at Eastleigh), and Colonel G. P. Shakerley (chairman, Gloucestershire County Council) will speak on "Planning and Local Government: Delegation." The chairman will be Sir Frederic J. Osborn.

"Planning and Productivity," will be the subject of A. G. B. Owen, chairman of the Owen Organisation. The discussion will be opened by E. G. A. Bartlett, head of a company which has moved its factory from an overcrowded area to a new town. The chairman will be Sir Thomas Williamson, chairman of the General Council of the TUC.

The subject of the last session will be "Planning and Agriculture." The speaker will be Dr. G. P. Wibberley, head of Department of Agricultural Economics, Wye College, University of London. C. N. Thornton-Kemsley will be in the chair and discussion will be opened by G. R. Allen, lecturer at University of Oxford Agricultural Research Institute.

The fee for the conference will be £1 10s. for members and £2 2s. for non-members. A dinner will be held at the House of Lords on November 29. Tickets will cost £2 2s. The conference will be opened by Henry Brooke, Minister of Housing and Local Government.

RICS

Fixed Price Tendering

A correspondent writes:

"Pre-planning" and the need for quicker approval procedures were the two main themes of a discussion of the return to fixed price tendering held at the RICS on October 16. Most speakers—from the floor as well as from the platform—supported the need to drop the fluctuations clauses and to have contracts better prepared before work begins on the site—but few gave any practical suggestions as to how this latter proviso could be effected.

J. T. A. Brooks (chief quantity surveyor, MOW) suggested that the bill of quantities could be improved, the number of p.c. sums should be reduced, tenders should be accepted within one month at least, and builders should be allowed up to four weeks after acceptance before starting on the site. Mr. Brooks asked why variations could not be settled *during* the contract and told his audience, without revealing how he knew, that builders had not added for the risk of a fixed price contract as much as had been expected.

Harold Conolly (Essex County architect) discussed the slowness of official approvals, and mentioned three police houses, the consent for which took five months. As a member of both the RIBA Council and the Joint Consultative Committee he revealed ("unofficially") that they would both approve the return to fixed price tendering.

L. A. Walden (NFBTE president) reiterated that "pre-planning" was the main problem and suggested that national propaganda was less effective in persuading professional men to "pre-plan" and sub-contractors and suppliers to give firm quotations, than discussions between individuals.

George Whitby (architect) asserted that any architect who, in eighteen months' time was not operating fixed price contracts, would be "inefficient."

Rex Proctor (quantity surveyor) referred to the Ministry's two year limit to fixed price contracts and asked what happened if delays in approval and delays during the contract caused the two year limit to be exceeded.

W. H. Beesley (architect and q.s.) mentioned the effect of district surveyors on fixed price contracts and suggested a form of contract where the builder might tender for fluctuations on labour only or on materials only.

Points made by other speakers were these: Why could not Ministry approval be obtained on a quantity surveyor's estimate instead of a builder's tender?

For some commercial clients the wasting asset of a site might represent greater financial loss than extra building costs—and therefore building speed was more important.

The NFBTE should advise their members to refuse to tender for jobs that were not fully prepared—this would provide architects with a means to lever decisions out of their clients.

Why could we not advance five per cent. of the contract sum to builders at commencement of the contract?

In introducing the fixed price contract, the government should have given some assurance that fuel prices would be controlled.

Some local authorities had adopted the compromise of suspending clause 25 A for the first 12 months of the contract.

The meeting afforded a useful exchange of views, but like so many meetings of its kind, it was too narrow in scope and too short of the facts of experience for conclusions to point to a step forward. If "pre-planning" is the major necessity of the fixed price contract, we need some detailed descriptions of actual cases where the builder has been adequately served by the architect and q.s. and where he has conducted operations with a corresponding efficiency.

HARROGATE

Housing and Planning Conference

The National Housing and Town Planning Council's national conference took place at Harrogate on October 23, 24, and 25. The following are summaries of the papers given to it.

1. Housing Finance

It was appropriate, at a conference that was dominated by the 7 per cent. Bank Rate and by the financial difficulties of local authorities, that the first paper should have been on "housing finance," by Frank Holland, the comptroller of the LCC. Like Alderman Bradbeer, of Birmingham, who spoke later on overspill, he considered that the high rate of interest was blocking the building of expanded towns under the Town Development Act. To secure the correlated movement of industry and population from the cities to the "receiving areas" the paramount need was, he said, cheaper money.

In an interesting survey of the housing subsidies, now abolished for general needs, he corrected several misconceptions: the total cost of exchequer and rate subsidies in the United Kingdom was £100 millions a year, or little more than one-half of one per cent. of the national income, and it could not be maintained that this was a crushing burden. Of more direct interest to architects was his strong argument against financing housing by 60-year loans. These introduced the possibility that far too much debt would be outstanding when, in years to come, the amenities of the houses lagged so far behind standards then current that the rents could not be maintained. Other factors which, in his view, made it desirable to write-off houses over 40 years were the rapid advances in techniques for lighting, heating and maintenance.

Mr. Holland also criticized the currently popular view that the stock of houses in the country, apart from a few special areas, is now sufficient. The fact that there was an approximate balance between the number of private households and the dwellings available for housing them did not, he thought, support this view. The estimated number of households was based on the assumption that only 80 per cent. of married men under 40 had a separate household. Most of the remaining 20 would prefer to have their own homes but were prevented by lack of accommodation. Each family needed the right kind of dwelling in the right place and at the right price. Quite apart from slum clearance he estimated the need for dwellings at perhaps 100,000 a year for 10 years.

The high cost of flats in congested areas (now averaging £3,000 each, inclusive, in London) was examined by Mr. Holland from the financial viewpoint. He attributed the high costs partly to the high cost of acquiring land which was already developed or occupied (up to £60,000 an acre), to the expense of filling in basements, etc., and to the need to comply with the zoned density in the Development Plan. As a finance officer he regretted that planning considerations so often prevailed over financial ones, and felt that sometimes density should be increased to secure less expensive development.

High flats also involved increased capital costs in construction—high-speed lifts and heating, playing areas, drying areas, car parks—and in maintenance. "Generally it may be said with confidence" he said, "that any housing authorities who follow the Minister's lead and embark on tall blocks

(*Continued on page* 654)

IRISH ARCHITECT DE-MODERNIZES PUBLIC HOUSE

This building is situated on the corner of one of Dublin's most fashionable streets and has been a public house for centuries. The ground and first floors were "modernized" in 1944 *but Sam Stephenson, a Dublin architect, has rescued it. The existing counter has been covered with Parana Pine boarding and white plastic. A specially designed brass foot rail was substituted instead of the existing step, a low canopy was installed to give a sense of enclosure and two bar screens of polished brass with lettered glass panels were installed. The floor was covered with* 18*-in. square black and white rubber tiles. The existing ceiling was papered with a paper in black, grey and white. The tables of* ¾*-in. square black steel frames with white plastic tops and brass edging are screwed to the floor. These and the stools and chairs were specially designed. The walls at the entrance were painted a dark olive green. The remaining walls were painted in terra-cotta. The mouldings and flats of beams were picked out in white. The doors were painted charcoal grey with the mouldings in gold leaf. The exterior of red brick was completely repainted in charcoal grey; the mouldings, quoins, balustrade, etc., were picked out in white, black and light grey. The window spandrels on the ground floor were picked out in a large "pub wall" pattern. On the blank side wall the initials of the owner, E N, were painted in large "three-dimensional" letters with the face in red and the sides in white and light grey. The fascia letters are out of two-inch hardwood faced with gold leaf. The job cost £*2,500*. Above right, the saloon bar. Below, the public bar.*

(*continued from page* 652)

of flats are likely to have some rather painful financial experiences, and in spite of the special flat subsidies must expect to encounter rents and rate contributions of an order well above those they are used to for their existing houses."

2. *The Caravan Problem*

Hector Mackenzie-Wintle, the deputy MOH to South Oxfordshire Combined Districts set out to debunk the glamour that, for some people, surrounds caravans, and did so successfully. His conclusions, based on a survey of caravans in his district, were that: (1) Caravans are unsuitable for children; (2) they are always substandard housing accommodation; (3) for young couples, both of whom are working, they are probably better than living with in-laws or in digs; (4) caravan life probably causes more young couples to postpone having families, or to limit them to one child; (5) that caravans are often suitable accommodation for old people; (6) that he gets twice as many complaints about sickness being caused from living conditions as he does from houses; (7) that the law with regard to residential caravanning is inadequate, and (8) that housing authorities should on no account slacken their efforts to provide houses because most caravanners are in caravans because they have to be, not because they want to be.

He had two positive proposals for the protection of caravanners and local authorities. The first was a set of model bye-laws for caravans, that should relate to such things as overcrowding, size of caravans, security of tenure, revoking of site licences where conditions were not complied with, and various requirements for stricter control. The second was that local authorities should run caravan sites as they run housing estates, thus entering into competition with and driving out the bad site operator who charges premiums, turns his tenants out, and exploits him in other ways.

3. *Housing Layout*

Clifford Culpin's paper on the impact of the motor vehicle on residential layout laid its emphasis on the segregation of the motor vehicle from the pedestrian within the housing estate. To ensure success in rear-access layouts he postulated three conditions: The area to be developed must be big enough to accommodate a "superblock," as tiny areas would not provide the opportunities for separating vehicles and foot-passengers for any worthwhile distance. The group of houses served by each service road should be fairly clearly defined, or an almost insoluble problem arose with postal numbering. Each group of houses should be clearly defined, given a name, and the houses numbered in rotation. Finally the architect must take the lead in determining the lines and shapes of roads to suit the grouping of the houses, the engineer determining the construction. No preconceived conventional engineering ideas could be allowed to clash with planning design. The road layout, parking arrangements, garages, house design and landscape could only be adequately integrated by the architect-planner.

4. *Rural Housing*

Lt.-Col. A. E. Henson criticized severely the lack of planning in rural housing. The indispensable preliminary for a plan was either a physical housing survey, or the preparation of a "town map" for every town and village. But the sad fact was that very few such maps had been completed, with the result that development was taking place on an improvised basis.

The absence of well-conceived "town maps" often resulted in the addition of a small estate of some 12 to 24 council-owned houses in a cul-de-sac, with a road constructed to a specification and width equal to some trunk roads, an alien intruder in the village. Yet in dozens of villages where this had happened there were infilling sites where the same number of houses could have been erected with no road costs and with much improvement to the village. If planning authorities had put first things first and spent time on preparing these maps, they would have had to spend less time on town planning appeals against proposals to build in the green belts, and nothing like the number of infringements of the green belts would have occurred.

Lt.-Col. Henson also criticized the excessive switch-over in rural housing from local authority to private development. The policy of not allowing any private housing had been followed by an equally bad one of having 90 per cent. private enterprise. It was wrong because the average rural family could not undertake the obligations of house purchase. In view of the overwhelming preponderance of private development it was also extremely disturbing to observe that the promoters paid no attention to the research work in the Ministries. There was no excuse for low standards of planning design or materials, yet these developers were building houses almost identical with those that were being erected in the 1930's. In his view developers should be encouraged to meet and discuss schemes with the council's technical advisers before their plans were completed.

5. *Planning Realization*

James Kegie, County Planning Officer for Monmouth, also considered that planning authorities were misdirecting their efforts. There could be little doubt, he said, that a great proportion of the effort of many local planning authorities was spent on the control, and not on the encouragement, promotion and practical realization of development proposals. It was far too easy to get involved in long discussions on whether Mr. A's garage should have a flat roof and be constructed in brickwork rather than asbestos, or whether his house should have bow or splayed bay-windows, or whether the roofing material should be red or brown, and to take one's eye off the vital objectives of the Town and Country Planning Act, which was to facilitate and promote development of appropriate types in the proper places.

As examples of what he had in mind Mr. Kegie instanced the promotion, by publicity of every kind, of industrial development required to balance a community. Local authorities should go further; a small Monmouthshire town of 5,000 population had recently invested £50,000 in building a modern factory to improve the district's industrial structure. Local authorities should also assist private developers by ensuring that land was available. An overriding benevolent and voluntary direction of building into the right channels could do much to minimize the negative outlook in planning. Similarly there should be the closest co-operation with transport, public utility and other undertakings.

6. *Overspill*

Alderman Albert F. Bradbeer, Birmingham, ventured the opinion that the discouragement, of industry, and the attempts to limit its opportunities for progressive expansion, which seemed to govern decisions in Whitehall, would prove to be highly dangerous. He discussed the problem of Birmingham's overspill on the assumption that it could be tackled in six ways.

The first, increase of densities, was being applied: 75 per cent. of dwellings were now being provided in flats of four or more storeys. The second was to extend the city boundaries, which was only a partial contribution if other methods failed. The third was to acquire dormitory estates outside the city, on which he had nothing to say. The fourth was to co-operate with small towns for their development under the Town Development Act. This Act seemed at first like a gift from the Gods, but unfortunately it had not proved to be of much help. The local authorities of the large cities and the LCC had urgently asked the Government, if it wished to secure the effective operation of the Act, to create a workable financial basis for it. This included overcoming the difficulty of the high interest rate. The fifth was to build a new town under the New Towns Act, and the sixth to export population, but on neither of these points had Mr. Bradbeer anything to say—surprisingly in view of Birmingham's known differences with the MOHLG over a new town.

ILA

Presidential Address

The following is part of an address given by the ILA President, Sylvia Crowe, at the Housing Centre, on October 17.

Since June there have been three events, each exercising a particular influence on landscape architecture in this country, and curiously enough, each representing one of the main lines along which I had been thinking the ILA should press its policy. The first disturbance of the summer peace was when the IFLA travelling exhibition was brought to England by the Civic Trust and shown first in Birmingham and then in London.

The second event was the Newcastle Conference. It showed landscape architecture in its true position as the profession whose function it is to translate all the diverse and sectional interests of different land-users, into one complete and healthy landscape. It showed it as the profession which must know enough of each land-user's problem, to see how one relates to another, to hold a balanced view, and to add to the technical requirements of each, that particular contribution of landscape architecture the aesthetic expression of practical land-use.

The third event was the ILA Schools Exhibition, a most creditable exhibition of the work of students from landscape courses at Reading, London, Durham and Leeds. Creditable in quality, but as Sir Hugh Casson said in his article in the *Observer*, revealing the fantastic situation that only four small courses, two of them evening courses, and one post graduate, are attempting to supply the trained practitioners to carry out work whose scope, so well illustrated in the other exhibition, is frightening in its immensity. These two exhibitions illustrate the horns of the dilemma on which the profession finds itself.

On one hand, more and better equipped practitioners are needed if we are to be entrusted with all the work which should be carried out by landscape architects, which no other profession is equipped to undertake.

On the other hand, it is difficult to attract either sufficient numbers of the right type of entrant, or the educational grants necessary to support adequate courses, until we can show concrete evidence that landscape architecture is both a skill necessary for the community, and a profession offering a reasonable future for the individual.

But I believe that the moment has come when we can break this vicious circle, and I suggest that we should devote all our energies, as an institute and as individuals, to achieving this end as quickly as possible. The three lines of attack which I have in mind are, first to explain landscape architecture to the public, secondly to define its position in the part which it should play in relation to other professions and to land uses, and thirdly to persuade educational authorities that landscape architecture is a

profession to be taken seriously.

The landscape, not only in this country, but in many parts of the world, is in a state of disintegration. The old landscape of organic nature has been split open by the activities of too many men with too many new ideas. Almost all the new techniques are sectional, each concerned with its own particular function, each attempting to seal off a part of the surface of the land to be used wholly for its own purpose, without relationship to its surroundings. Consequently the landscape has lost its continuous web of pattern and disintegrated like an exploding atom. The task of landscape architecture is to weave it together again, sometimes into a variation of the old pattern, sometimes into a completely new one.

Does the profession which can fill this role rank as an art or a science? You can call it either, but I would say that it represents the bridge between the two. For landscape architecture cannot succeed in its visual objectives, unless the breach between science and humanism, and between aesthetics and technology can be healed.

Hope for the second industrial revolution, which is now upon us, lay in the very real interest and concern shown by many industrialists for the appearance and well-being of their work's surroundings; by the efforts being made by local authorities to repair the ravages of the past, and by the interested co-operation of those concerned with forestry and agriculture. But this hope was qualified by the realisation of the minute impact which landscape had so far made, by the piecemeal and localised method of approach as opposed to a wide view of the landscape as a whole, and by the immense schemes which are going forward without there having been any true assessment of their effect on the landscape or any comprehensive plan to absorb the inevitable changes.

It is not a question of drawing a line on a map, and saying because the buildings shall not overstep this line, therefore everything outside it remains as it is. Nor is it a question of putting everything right with a tree-screen. All industrial concerns throw a complex zone of influence about themselves, and only a manipulated landscape can reduce the effect of this zone on the surrounding countryside and make the industry itself into a landscape in its own right. My third point, education, has exercised the ILA for the last twelve years. The opportunities awaiting us, the slowly awakening realisation by the public that our work is needed, will be wasted unless we can produce first class practitioners able to hold their own in ability and technical knowledge with any other profession. To ensure this supply, we need two things. First, to establish full university courses on a sound and permanent basis, then to encourage the right type of young man and woman to come into the profession.

More and more county planning authorities are employing landscape architects on their staff, and also in some cases making use of consultants. We may hope that this may be one of the most fruitful fields in the future. For it is these larger planning authorities who have the wider view of the landscape within their province. It is they who can replace on an even bigger scale that care for the well-being and appearance of the landscape which was shown by the eighteenth-century landowners. Other great public concerns, such as the various electricity undertakings with their thousands of miles of overhead wires and attendant transformers; the Coal Board; British Railways, who are about to embark on wholesale overhead electrification and the raising of old railway bridges; the service departments, with their grim compounds; all are influencing the landscape, and not for the better, over the whole country, and we can only hope that they too may realise that the advice of landscape architects can help them both to carry out their obligations to the countryside as good landlords, and to ease their problem of public relations.

OIL-FIRED HEATING

Review of a touring exhibition

An exhibition of oil-fired domestic heating is now touring the country. It is reviewed here by Duncan Stewart, who saw it when it was in Liverpool. As Mr. Stewart points out, the exhibition is of considerable importance to the architect.

Shell Mex and B.P. Ltd. recently organized an exhibition of oil-fired domestic heating equipment at the premises of Rowe Bros. & Co. Ltd., Pall Mall, Liverpool. This was important to the architect, for it is the small or domestic job which he has so often to handle on his own without much expert advice, and the equipment shown caters for the smallest to the largest house. With the ever-increasing cost of solid fuels oil seems likely to play a larger part in heating in the near future even in the domestic field; the echoes of Suez seem to be fading fast away.

The oil companies are quick to point out the advantages—no carrying of coal or ash, no dirt, steady and reliable delivery, easy control by automatic devices, reasonable cost, all advantages likely to appeal to the householder. Manufacturers of boilers on the other hand have been very slow to produce boilers suitable for domestic users, boilers efficiently designed both in terms of operation and appearance. There were still boilers in this 1957 exhibition which were only too obviously adaptations of solid fuel boilers with the oil-firing unit not very neatly grafted on. On the other hand, some have produced models obviously designed specially for the fuel and tucked the apparatus neatly inside an attractive case. This is particularly important in the smallest of the units, which are almost certain to sit in the kitchen rather than in a special chamber set aside for them.

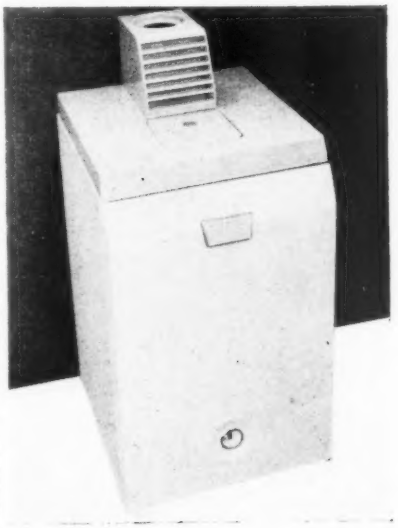
Allied Ironfounders, with their new "Rayburn" oil-fired boiler, seem likely to appeal to the man with the smaller house and not too much to spend. The cost of the boiler only is £75, dimensions 18 in. × 20 in. × 32 in. high, with an attractive stove enamel finish and a very clean design. Since it is gravity fed with a natural draught vaporising burner there are no moving parts to go wrong or pressure jets to make an unpleasant noise, and the thermostat control ensures efficient operation. The control knob might have been better placed outside the cabinet, however, as the front must be lifted off to give access. An alternative would be a hinged door. Ignition is not automatic. The manufacturers suggest that the whole installation, including a tank (presumably small 160 gallon size) need not cost more than about £120, but this seems rather optimistic.

The rating is 25,000 BTU/hr., and the consumption of oil, BP Domesticol recommended, will of course vary with the heating load. An example quoted gave summer time hot water for 9 gallons of oil a week, and winter hot water plus 96 sq. ft. of radiator surface for 22 gallons a week in the coldest weather. Cost of oil varies with the district and the quantity, but for a 100-gallon load in outlying districts it is about 1s. 8d. a gallon max. Consumption lies in the control of the householder, who can set his thermostat accordingly.

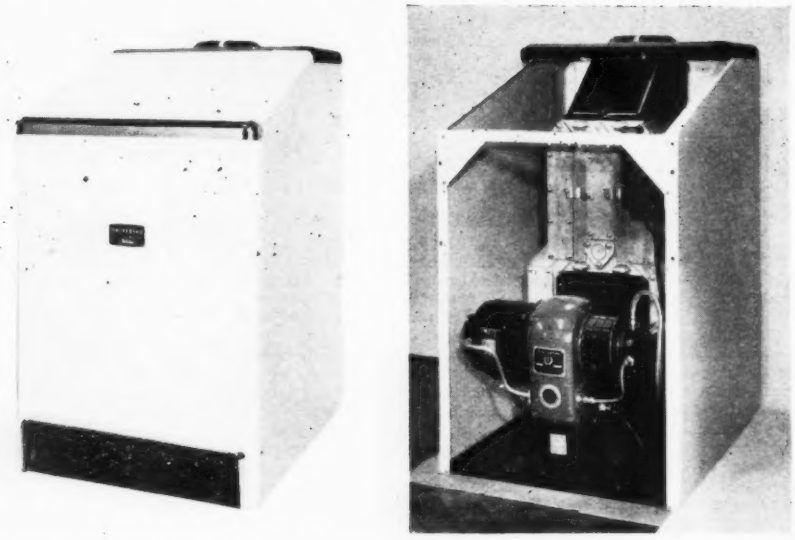
A similar boiler of neat appearance is the "Wilson Oilheat," made in two sizes, 25,000 BTU/hr. and 35,000 BTU/hr., costing £74 and £81 respectively; also with a vaporising natural draught burner with thermostatic control. The heating unit is fibreglass-insulated, but what proportion of the heat comes into the room where the boiler is placed is not stated. The efficiency is quoted as 80 per cent., which is a very good figure, and the operation of the boiler is simplicity itself. The smaller model will give 30 gallons of hot water plus 100 sq. ft. of radiator surface (say 4 or 5 radiators), while the larger gives 30 gallons of hot water plus 160 sq. ft. of radiator surface (6-8 radiators). Figures quoted for a 4-bedroom house gave consumption as about 6 gallons a week in summer and twice this in winter. There is little virtue in comparisons of this nature however since individual requirements and insulation values of dwellings vary so greatly, while individual ideas of comfort conditions may be widely different.

So much for the smallest boilers. The larger houses and buildings of smaller size require boilers of greater rating, and they operate mostly on the pressure jet system where the oil is forced through a fine jet under pressure and mixed with air also

The Rayburn boiler.



The Wilson Oil-heat



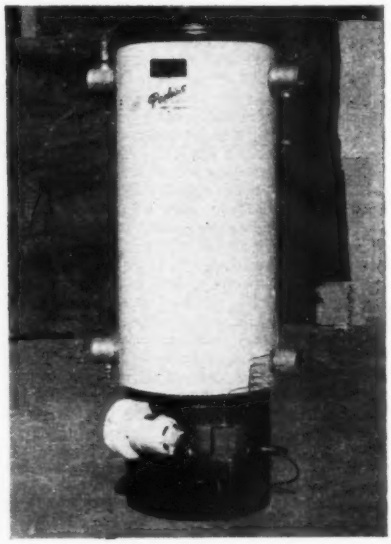
Above: left and right, the COA 70 Potterton.

forced in by fan. These types have the advantage of being able to use the cheaper oils and are very amenable to automatic control, electric spark ignition usually being provided. Naturally the burner produces some noise not too pleasant in a kitchen or near a living part of the house, and they are usually placed in boiler rooms or special chambers. Many excellent examples were on show. An attractive boiler is the "COA 70 Potterton" (Thomas De La Rue & Co. Ltd.), of 70,000 BTU/hr. rating, costing £222, or £242 specially lined for soft water areas. The fuel is domestic fuel oil 35 sec. and the burner is pressure jet, fully automatic. Oil consumption is ½ gallon per hour. The burner has refinements, such as a photo-electric flame-failure safety device, boiler thermostat and oil filter. All the machinery is completely enclosed in a pleasantly-designed and finished cabinet, and efficiency is 80 per cent.

Where floor space is limited the "Perkins Domestic Vertical" model could prove useful. The smallest is 35,000 BTU up to 150,000 in this range, and the example exhibited is a vaporizing burner model with forced draught, 60,000 BTU rating costing £105, using 3·75 points/hour at max. The firing unit is mounted on a hinge so that it can swing outwards from the boiler for easy cleaning—a very ingenious arrangement.

"Watts" demonstrated a slim, pleasant unit of 70,000 BTU rating costing £230. This is the same design as their well-known Watts Automatic gravity feed solid fuel boiler, but with a pressure-jet oil-firing unit attached. The efficiency claimed is 60 per cent.

Fewer examples were shown of warm-air oil-fired units, but "Radiation" exhibited their beautifully sleek warm-air unit, suitable for new houses designed to suit their installation problems—a special recess for the heating unit and a system of ducts for the warm air to the various rooms and back again to the heat exchanger. This is a well-designed unit and the performance figures are very clearly given. Rated output—40 to 50,000 BTU/hr. for space heating plus 50 gallons per 24 hour period of hot water at 140 deg. F. In a 1,500 sq. ft. house insulated to the Egerton Standard (most new housing still falls short of this standard), an annual consumption of 850 gallons of oil will maintain the whole house at 55 deg. F. at all times, the living room at 67 deg. F. for 8 hours day, and



The Perkins Domestic Vertical.

the bedrooms at 65 deg. F. for 4 hours/day, plus 50 gallons/day of water at 140 deg. F. In summer an additional 2,000 units of electricity for water heating will be needed. If we assume Domestic Fuel oil at 1s. 6d. a gallon (an average price) and electricity at 1d. a unit, this gives a total annual cost of about £72 for a good standard of comfort.

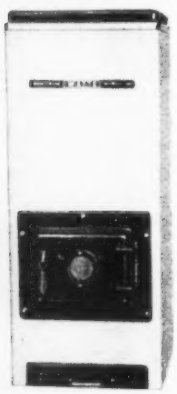
Another example demonstrated is by Airheating Ltd. with their "Midget" Air Heater of 40,000 to 100,000 BTU output (up to 1,000 cub. ft./min.).

No examples of rotary burner units were shown—one wonders if they are out of favour.

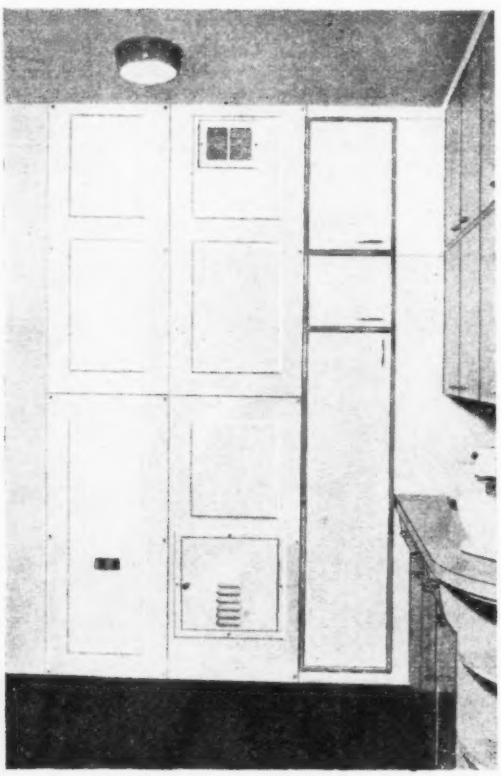
Finally a word on oil-firing costs. Shell Mex and B.P. Ltd. suggest that for the smaller house, say £1,500+, with boiler size of 20,000 BTU/hr. upwards, the capital cost of an oil-firing installation, complete, will be in the region of £65 per radiator, while for the house of £3,000+, with a boiler of 50,000 BTU/hr. upwards, one should allow about 10 per cent. of the capital cost of the house.

As for running costs, with oil, as with other things, the larger the quantity bought at a time the cheaper it is, so that even in a small installation, if a 600-gallon tank (cost about £40) is installed then a 500-gallon delivery of oil will cost only about 1s. 4½d. a gallon for B.P. Domesticol in the inner zone, whereas a delivery of under 100 gallons may well cost 1s. 8d. a gallon. On the other hand, not every small householder will want to pay out about £35 for a load in one fell swoop. Again, the heavier oils are cheaper but not suitable for small size vaporizing burners. Even at that, oil is still a proposition for the small house, particularly if it can remain steady in price while other fuels rise, as they surely will.

The exhibition is now on tour. It is well worth a visit.



The Watts Automatic Gravity Feed.



The Radiation exhibit.

THE INDUSTRY

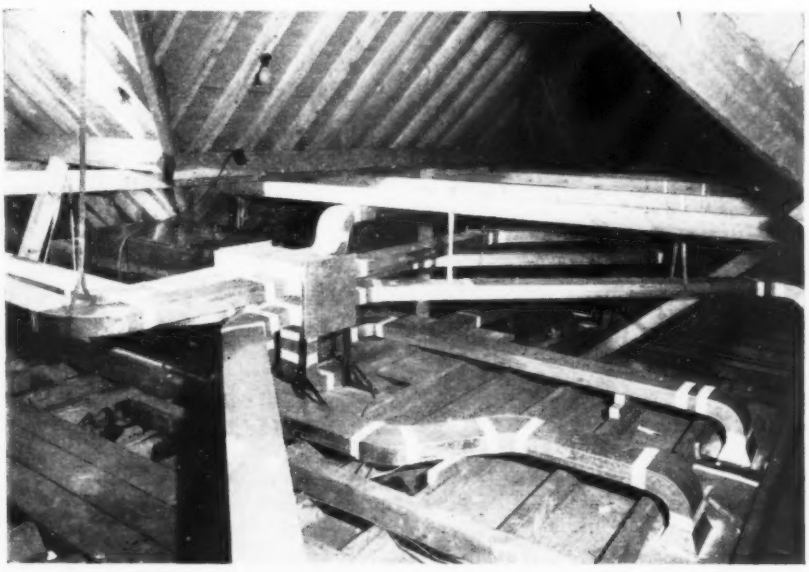
Brian Grant describes two warm-air heating systems, standardized glasshouses, synthetic rubber sealers for curtain walls and a new range of light fittings.

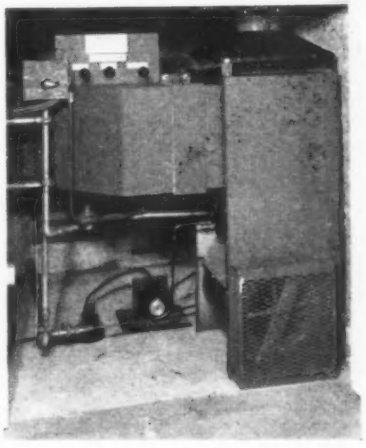
Heating with warm air

Shown to the Press a fortnight ago, Sugg's Halcyon system of warm air heating is already being installed in a number of Wates houses, and is also being used by the South Eastern Gas Board. The heat source is a gas burner which requires only a small asbestos cement flue, and a corrosion resistant tubular heat exchanger. For choice, the heater unit should be placed in the centre of a relatively open plan, and short ducts are then run to outlet grilles in one or more rooms, or upstairs to bedrooms if the heat rising from the hall is not enough. Air is circulated by a low-speed electrically driven fan, and the heater compartment is only 3 ft. square, usually being combined with an airing cupboard which takes its heat from the flue. Cool air is drawn from the living room, and each duct has a damper, so that all the heat can, if necessary, be directed into one room for quick warming up, the damper controls all being attached to the heater unit. The total heat output is 17,000 B.T.Us per hour, and this can be regulated by an ordinary gas tap or by thermostat. The main gas supply is automatically cut off if the current should fail, or if the pilot light should be extinguished. When required, a clock control can also be fitted to start and stop the heater for two separate periods per day, a particularly useful fitting when a household is at work during the day. The cost of the system, with fully automatic controls, is about £100, and to this would have to be added the cost of installation. In new work, however, the cost of chimney stacks, fuel stores and fireplaces would be saved, and the makers claim that this is almost always more than the cost of the heater installation. Gas consumption figures are bound to vary widely, but the makers give a figure of 180 to 400 therms per heating season, and point out that many gas boards have cheap rates for domestic consumers using as much gas as this.

A modified form of heater with a balanced flue is shortly to be produced for use in multi-storey flat blocks where normal flues would take up too much space. (*William Sugg & Co. Ltd.*, 67-73, *Regency Street, Westminster, London, S.W.*1.)

Pak-a-Way heat exchanger unit and duct installed in a roof.





The Sugg Halcyon selective heater.

A heat exchanger and a system of air ducts is also used in the Pak-a-Way unit, which was used in the Canadian Trend house at this year's Ideal Home. In this system the essential heat is supplied from a normal boiler, which has a flow and return pipe to the heat exchanger. The latter contains an integrally mounted pump to assist water circulation, as well as a centrifugal fan for the air. Ducts are in metal with standard dimensions of 7 by 3 in. plus the necessary angles and bends, but other materials can be used, and the Pak-a-Way design department has also worked out a method of forming ducts with Nautilus flue blocks, a method which should considerably simplify installation in new work. There are four standard sizes of heat exchanger, with warm air outputs varying from 300 to 800 cu. ft. min. and with B.T.U. ratings from 23,000 to 62,000 per hour.

In addition to providing hot water, the boiler must also be capable of providing the heat for the Pak-a-Way, but otherwise control of the heating system is entirely automatic, with a thermostat in the main room to give overall control, and dampers in the diffuser outlets in each room. The return air from the warmed spaces is

You'll enjoy planning round the PARKRAY 2

(Chosen for New Town development at Basildon, Bracknell, Corby, Crawley, Harlow, Hatfield and Hemel Hempstead)

Furnishings by Times Furnishing Co. Ltd.

The illustration shows how effectively the Parkray 2 smoke-consuming convector fire can be used to divide living and dining areas in a modern, open-plan room.
The design makes the most of the free flow of convected warm air which supplements radiant heat from the open fire and also flows through a vent at the back of the fireplace to warm the dining area.
Like all Parkray fires, the Parkray 2 burns either coal or smokeless fuels—but not much of either. And it supplies more than enough hot water to meet the needs of an average family, and heat a radiator or towel rail.

At the Building Exhibition
NEW—Ductair heating for the smaller house, Yorkmaster *automatic* solid fuel cooker and other new developments at the Building Exhibition, Olympia. Stand 202/3 M.

This Parkray 2 is one of several hundred being installed at Basildon Essex. Architects: BASIL SPENCE, O.B.E., A.R.A., F.R.I.B.A. AND PARTNERS *in association with* NOEL TWEDDELL, A.R.I.B.A., *Chief Architect, Basildon Development Corporation.*

Radiation
PARKRAY 2
SMOKE-CONSUMING CONVECTOR FIRE
PIONEERS OF SMOKE REDUCTION

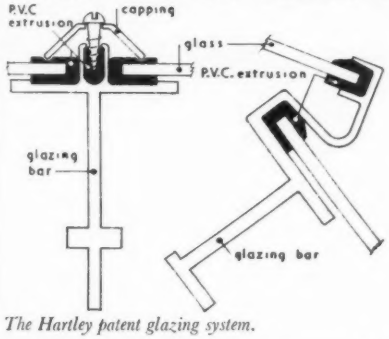
Technical Information Sheet available from: RADIATION GROUP SALES LTD., PARK FOUNDRY, BELPER, NR. DERBY.

technical section

allowed to pass back to the heat exchanger through an opening at high level on the upper floor, and this is mixed with about 20 per cent. fresh air before being heated and re-circulated. In summer months when heat is not needed the system can be used to provide fresh air ventilation. In the ordinary way the opening and closing of doors is enough to give adequate air circulation, but with tight-fitting doors a grille may be necessary to allow the air to return to the heater. An open fireplace should be fitted with a damper to prevent the loss of warm air when the fire is not in use. (*The Package Heater Co. Ltd.*, 268, *High Road, Harrow Weald, Middlesex.*)

Standardized glasshouses

Hartley glasshouses are produced in a range with spans varying from 13 to 28 feet, and in lengths of 14 ft., so that they may be built to any required length overall. The structure consists of an aluminium alloy framework which, after fabrication, is



The Hartley patent glazing system.

chemically treated and then stove enamelled, after which the manufacturers claim that no painting or other maintenance will be necessary. Ventilation is provided by side pivoted opening lights, ranges of which are controlled by lever and stainless steel wires, and each pane of glass is set in an extruded p.v.c. channel to avoid breakages by expansion. The sections used in the structure and elsewhere are specially designed extrusions, and the whole job seems to have been very carefully thought out. (*V. & N. Hartley Ltd., Greenfield, nr. Oldham, Lancs.*)

Sealers for curtain walls

In spite of the claims of manufacturers, quite a number of architects are somewhat sceptical of mastics which "never set hard." If mastics have liquid plasticizers, this is probably not far from the truth, but a new series of synthetic rubber sealers known as Weatherban has recently been announced by the International Division of the Minnesota Mining & Manufacturing Co. These are two-part sealers, a curing agent or accelerator paste being used to cure the liquid after it has been applied, and producing a solid rubber seal which adheres firmly to metal, masonry, glass and other building materials. The makers claim that these sealers will stretch to more than double their length without failure, and will return to their original length when the load is removed. (*The 3M Company, 3M House, Wigmore Street, London, W.*1.)

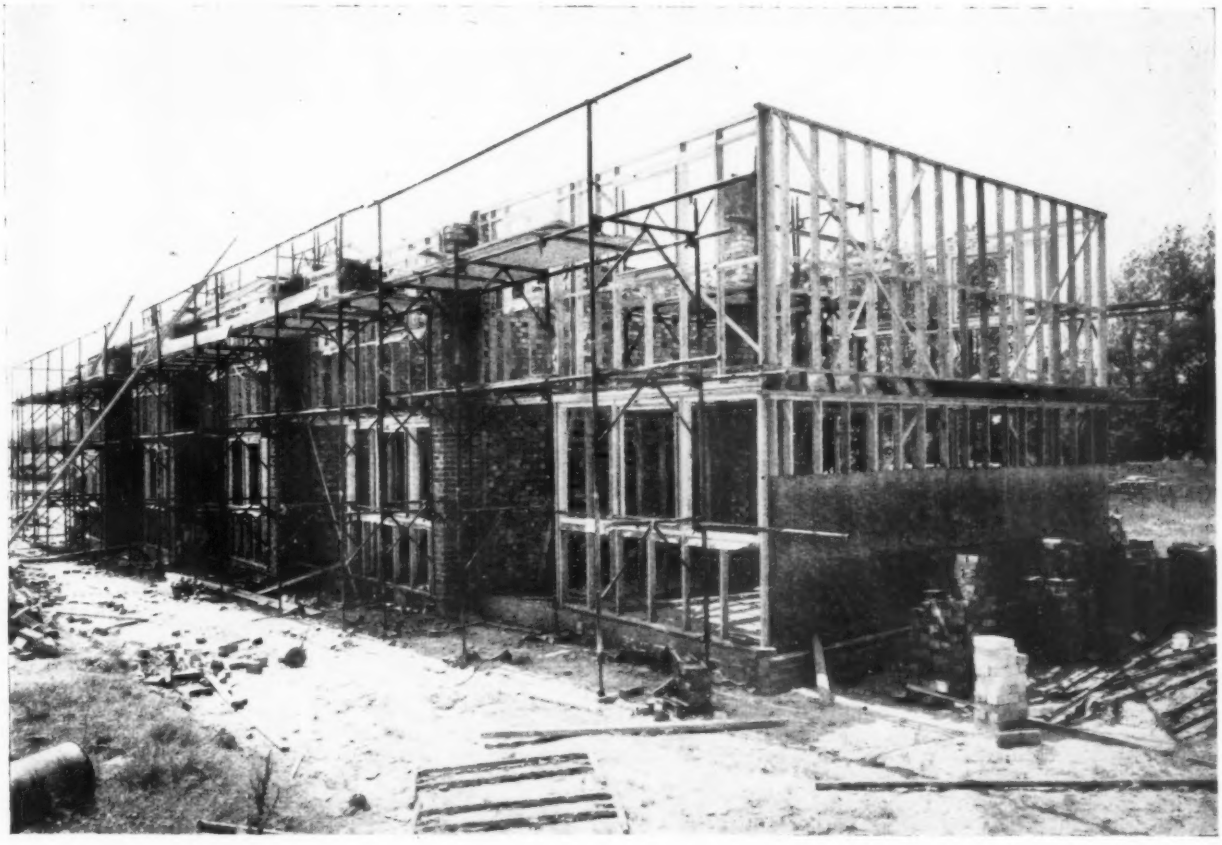
Two shades from the new Troughton & Young range.

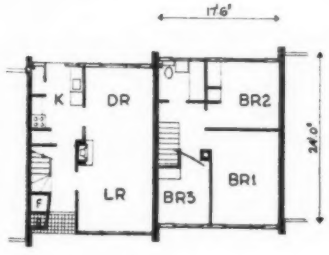
Lighting fittings

Troughton & Young Ltd. have designed a new range of glasses as an extension to their existing Mondolite series. The new fittings are made in four basic shapes, and in a variety of colours and materials. All the fittings are designed to take a 200 W. E.S. lamp and have an open base for ease of re-lamping and also avoid accumulations of dust and insects; while a special method of retaining the glass on the suspension tube allows it to be removed without any tools. Prices vary from £3 to £6 or more, plus purchase tax. (*Troughton & Young (Lighting) Ltd.*, 143, *Knightsbridge, London, S.W.*1.)

technical section

TIMBER-FRAME HOUSING EXPERIMENT AT SLOUGH, MIDDLESEX

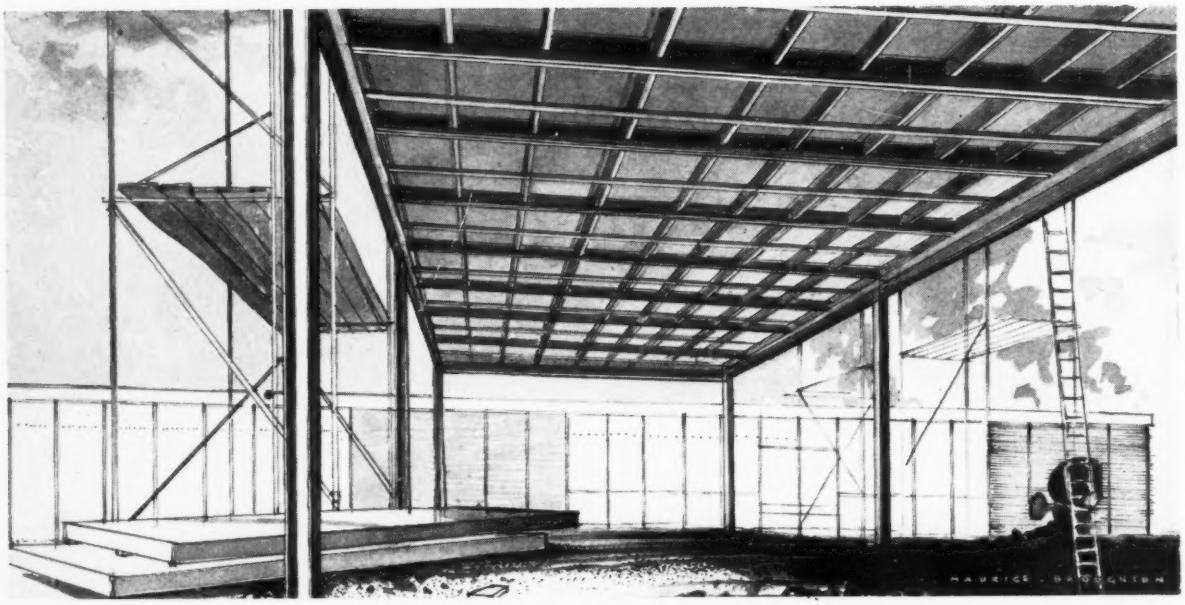




Ground floor plan

On October 10, representatives of more than 50 local authorities—architects, engineers, surveyors and housing committee officers—visited the Britwell Estate at Farnham Royal, near Slough, to inspect an experimental terrace of five timber-frame houses erected there for the LCC by Holland & Hannen and Cubitts Ltd. This terrace was erected to assess the economy of timber-framed construction of low-cost housing, combined with a practical application of Canadian surfaced timber. CONSTRUCTION: *In order to comply with the model byelaws, the party walls between dwellings are of 9-in. brickwork projecting 9 in. beyond the face, and the timber-framed gable end walls are faced with 4½-in. brickwork. The byelaws also require the party walls to project above the roof, but a waiver is normally obtainable if, as here, an incombustible roof finish is used. The load-bearing external walls are constructed of 4-in. by 2-in. nominal studding (1⅝-in. by 3⅝-in. Canadian Lumber Standard) with insulating plasterboard internally and Western Red Cedar boarding externally. The internal partitions, which are also load-bearing, are faced with plasterboard, as also are the ceilings. There is, of course, nothing new or original in the use of timber for cladding or structural members in English housing. It is an indigenous material with a rich heritage. What is new*

It's a question of STRENGTH for WEIGHT . . .



and the answer is DIAFRAME

the new roofing system

CHEAPER • STRONGER • LIGHTER

Diaframe, a new lightweight structural panel, has been specially designed by Newsums—Britain's foremost timber engineers—for spans of up to 18 feet. Ideal for roofing and flooring, it is prefabricated and provides a structure which, weight for weight, is stronger than reinforced concrete or structural steel! Diaframe undoubtedly alters the whole concept of building construction, and gives the architect the material to match his ambitions.

SPAN	LBS. PER SQ. FT.	PRICE
11 ft.	2.2 lbs. per sq. ft.	3s. 3d. sq. ft.
12 ft.	2.4 lbs. per sq. ft.	3s. 5d. sq. ft.
15 ft.	2.6 lbs. per sq. ft.	3s. 8d. sq. ft.
16 ft.	2.8 lbs. per sq. ft.	3s. 11d. sq. ft.
18 ft.	3.0 lbs. per sq. ft.	4s. 1d. sq. ft.

Delivered free anywhere in the United Kingdom for minimum quantities of 3,000 sq. ft.

THE BUILDING EXHIBITION 1957 Olympia, London November 13-27 See Our Exhibit

Engineered by NEWSUMS

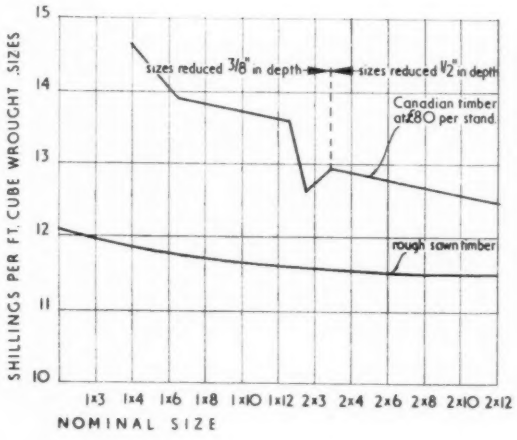
For full details and specification, please apply to the manufacturers:

H. NEWSUM SONS & CO. LTD., 238 High Street, Lincoln. Telephone: Lincoln 812

also at : 28 St. George Street, Hanover Square, London, W.1. Telephone: MAYfair 3453

technical section

TIMBER-FRAME HOUSING EXPERIMENT AT SLOUGH: continued



in these terrace houses is the use of wrought timber for carcassing. The timber is Canadian Pacific Coast Hemlock surfaced to Canadian Lumber Standards. This means that all faces are planed and the arrises rounded after conversion. Apart from the attraction of its appearance, which might well be utilized but in these houses is hidden, timber has a number of advantages. Site carpentry immediately loses its rough and ready quality and members can be accurately aligned to permit dry surfacing techniques to be successfully employed. Numerous attempts have been made to achieve a satisfactory plasterboard joint, all of which have failed due to the size variations of rough sawn timber studding members. In these houses it is difficult to believe that the plasterboarded stud walls and ceilings have not been skim coated with plaster. The avoidance of "wet trades" not only speeds erection (these houses were erected in 11 weeks) but also means that tenants do not suffer a "drying-out" period during which the dwelling is difficult to heat and condensation problems may occur. The following cost comparisons suggest that it is probable that timber construction saves money only if allied to dry construction.

Cost comparison of partition walls (non-loadbearing)

	per sq. yd. s	d
Cost of 2-in. clinker block wall with ½-in. render and set plaster both sides	21	1
Cost of timber stud partition with dry-jointed plasterboard (1⅜-in. by 2⅜-in. C.L.S. studs at 18-in. centres)	18	10
Saving in cost per sq. yd.	3s. 0d.	
Saving in cost per dwelling (average 130 sq. yd per dwelling)	£19 10s. 0d.	

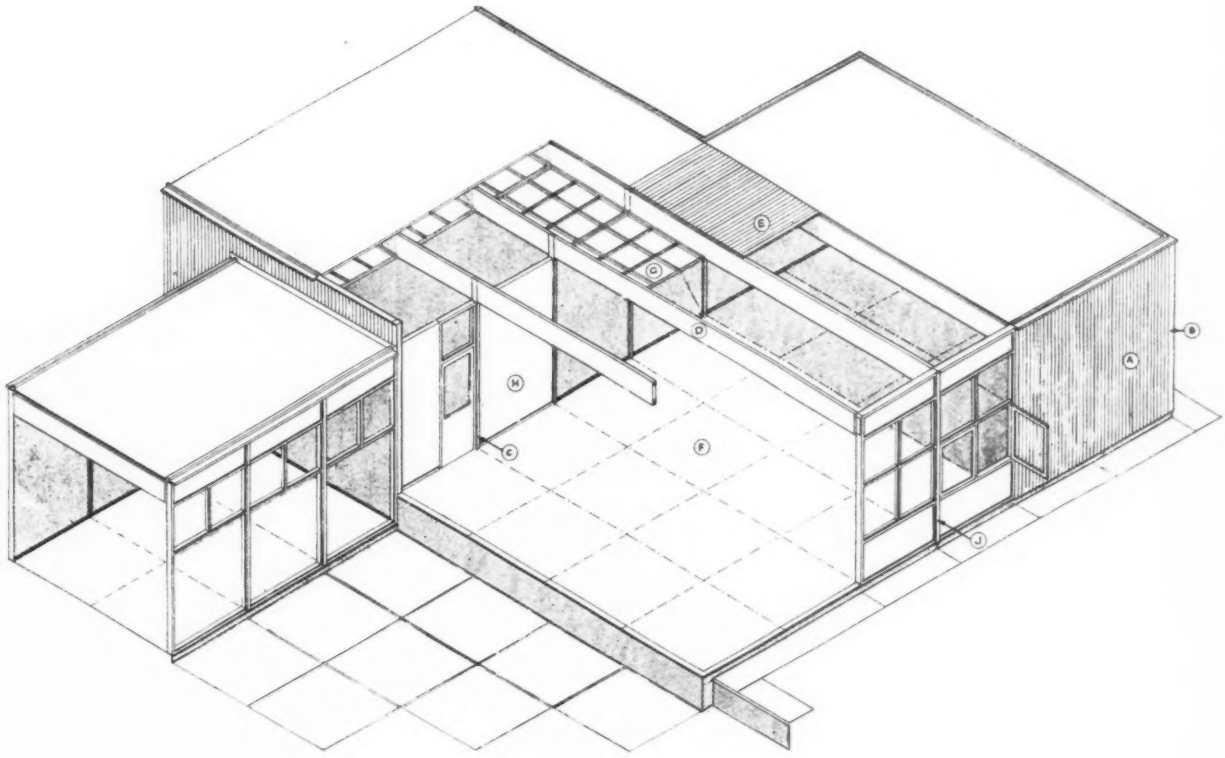
Cost comparison of partition walls (loadbearing)

	per sq. yd. s	d
Cost of 4½-in. fletton brickwork with ½-in. render and set plaster each face	29	5
Cost of stud partition with dry-jointed plasterboard (1⅜-in. by 3⅜-in. C.L.S. studs at 18-in. centres)	18	9
Saving in cost per sq. yd.	7s. 0d.	

No allowance has been made for the saving in costs of chasing, for services or the saving from the use of TRS electric cables instead of conduit. If in the timber partitions plasterboard is skim coated with plaster, 6s. per sq. yd. must be added to the prices quoted. It is difficult to make a direct comparison between Canadian planed timber and rough sawn since it is of reduced sectional area, ⅜ in. less than nominal in thickness and ½ in. less in widths. This sometimes makes it necessary to use a larger size than would be necessary with rough sawn. Furthermore, above 4-in. depths the Canadian timber sizes increase in multiples of 2 in., giving a less flexible choice, requiring perhaps a "step-up" in size, or alternatively a reduction in spacing between members. With regard to strength, no reliable figures are available for the Pacific Coast Hemlock timbers used on the houses at Farnham Royal, because the Canadian stress grading standards are different from the English ones, but it would seem that they would be classified as class B timbers under the London Building Byelaws. The graph shows a cost comparison between Canadian planed and rough-sawn timber related to actual cubic content. Canadian timber is sold at approximately £80 per standard, the standard being measured unwrought. The final overall cost figures for these houses is not yet available but it is estimated that a saving of £60 per dwelling will be made compared with a traditionally constructed equivalent. This could well be more if the number of units erected were sufficient to justify prefabrication. In view of this it is surprising that although many thousands of timber houses have been erected in England by local authorities (the LCC in the 1920's erected some three to four hundred), brickwork remains the predominating form of construction for two-storey housing. There would seem to be little justification for this. The fire hazard is small, fire insurance premiums are very little higher, and the risk of rot or insect attack is negligible if adequate damp-proof coursing and ventilation are provided. Complete protection by pressure impregnation would cost no more than £20 per dwelling.

technical section

A TIMBER PREFABRICATION SYSTEM



KEY:

A. External walls
B. Columns
C. Internal column
D. Roof beam
E. Roof panel
F. Floor panel
G. Ceiling panel
H. Internal partition
J. Cover strips

A system of constructing permanent single- or two-storey buildings with a main structure of timber and a wide range of internal and external finishes has been developed by A. H. Anderson Ltd. and their consulting architects, Farmer and Dark. The system is called A.75: the name refers to the 75-in. module which has been adopted. With single-storey buildings, the external panels are loadbearing. Two beam depths give economical spans up to four modules for average planning requirements and seven modules for halls, canteens, etc. Two-storey buildings have a frame structure, with panels set between columns. The maximum span is four modules. Foundations consist of a concrete site slab with edge beams, and pads under columns. External walls are seated on a 1-in. thick slate sill template, which acts as a damp-proof course. External wall panels have a basic frame which may be filled with various sub-assemblies: fixed glazing, opening lights, doors, solid panels, etc. Where the whole panel is solid, a cladding of vertical hardwood boarding is used, but fascias and under-sill panels may be of any suitable material. Columns are of solid timber, and beams of box-section with plywood webs. Roof panels, spanning one module between beams, are 2-in. thick and made of solid timber boarding. The roof finish is three layers of bituminous felt with white spar chippings; there is an upstand and aluminium flashing around the perimeter. Drainage is by aluminium sumps and down-pipes. Rooflights may be introduced at any point, and are 2 ft. by 2 ft., 6 ft. by 2 ft., or 6 ft. by 4 ft. Ceiling panels are normally fitted to the underside of the beams, and consist of insulation board on timber framing. Internal partitions are of 2½-in. thick plasterboard hollow panels, joined with timber connecting pieces either to each other or to the columns where necessary. They may be arranged on the main module lines or on the half-module. The space left between roof panels and the ceiling is used for service runs, holes being provided in the beams to allow this. A range of half-modular built-in fittings, including shelving, cupboards, drawers and sink units, has been designed for use with the

B·B·E

specialist building materials

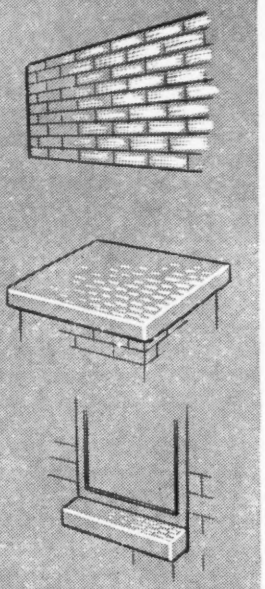
KYLJACK

ANTI-FROST SOLUTION

FOR CONCRETE & MORTAR MIXES

KYLJACK makes concrete and mortar mixes safe to use under severe frost conditions. The work can proceed, and this means—no hold-up—no time lag—no profits lost. KYLJACK is a concentrated anti-freeze liquid, mixing readily with gauging water. It remains constant—no settlement and no deterioration of the product in storage. Mixes "on site" with minimum labour costs. Obtainable from Builders' Merchants.

KYLJACK, a dual purpose product, is also invaluable as an additive to the gauging water of concrete mixes, having the properties of considerably increasing the rate of set, improving workability and advancing the curing. Forms in precast work and moulds are released quicker, providing faster turn-round. Information regarding compression strength and dosage together with full specification, is available.



PLYCOMOR

IMPROVED MORTAR PLASTICISER

PLYCOMOR is a liquid with carefully controlled characteristics. It induces into the mortar-mix microscopic air bubbles which distribute, on mixing, throughout the mortar and remain entrained to give the effect of increasing the bulk. The entraining of the air gives a mix of a 'buttery' consistency, with a marked improvement in the workability. The latter lends itself to cleaner and quicker working, besides reducing the waste caused through droppings.

After the mortar has set, the air cells act as cushions against the stresses and strains caused by thermal expansion and contraction due to varying weather conditions, thereby reducing any tendency to craze or crack. The set mortar is more resilient, has increased resistance to frost, increased adhesive properties and reduced water absorption.

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

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

FULL TECHNICAL ADVISORY PANEL The services of our Technical Staff and the I.B.E. Laboratories are available to you.

This panel not only acts as a proving ground for the products, but also investigates customers' problems and advises on the best method to adopt for any particular requirement. You are invited to make full use of this service, entirely without obligation.

Most of the products manufactured by the I.B.E. Group of Companies are obtainable from Builders' Merchants. In case of difficulty write to us direct.

I·B·E

GROUP OF COMPANIES

Descriptive booklets, folders, leaflets, together with information and specification sheets are available from any one of our offices, dealing with individual products or those grouped under the heading of Roofing, Flooring, and Special Building Materials, including Mortar and Concrete Additives, and will be sent to you immediately on request.

MEMBERS OF THE I.B.E GROUP

BRITISH BITUMEN EMULSIONS LTD

Dundee Road, Trading Estate, Slough, Bucks
Telephone: Slough 21261

Deeside, Saltney, Nr. Chester
Telephone: Chester 23128

20 Mauldslie Road, Glasgow, E.2
Telephone: Bridgeton 2791

55a Eastgate, Inverness
Telephone: Inverness 533

91a Lower Ashley Road, Bristol, 2
Telephone: Bristol 51436

ASSOCIATE COMPANIES

IRISH COLD BITUMEN LIMITED

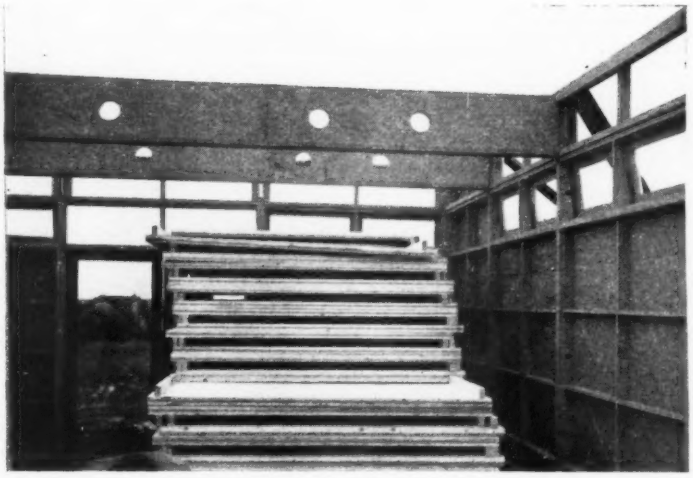
136 154 Stranmillis Road, Belfast
Telephone: Belfast 68261 2

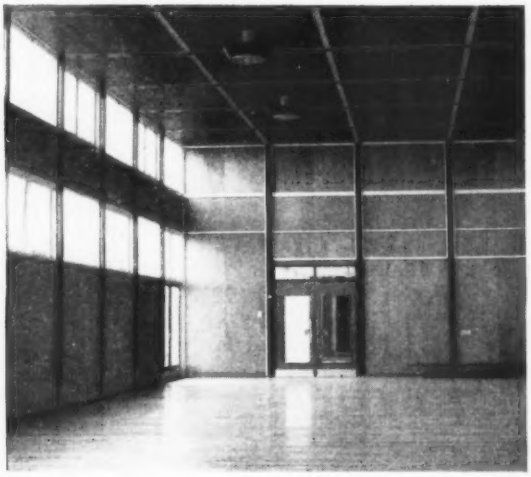
COLFIX (DUBLIN) LIMITED

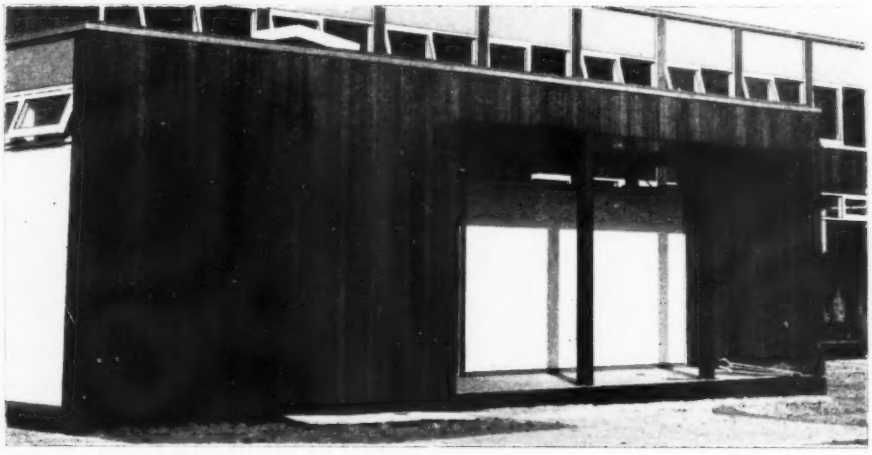
East Wall Road, Dublin, C.10
Telephone: Dublin 41271

technical section

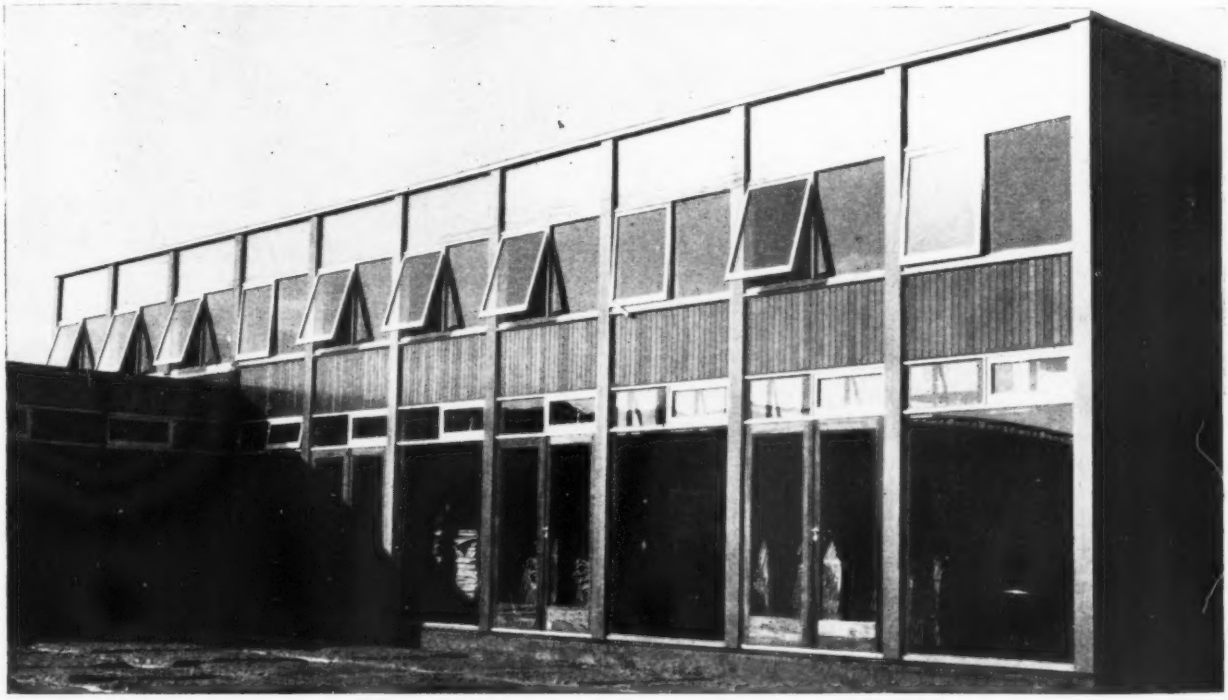
A TIMBER PREFABRICATION SYSTEM: continued







system. The photographs above show the system under erection and as it appears in the completed gymnasium of a school at Sconce Hills, Newark (architects Farmer and Dark, with Donald Gibson, Notts County Architect). Left and below, two views of a canteen building at Mersey, Ellesmere Port, showing the appearance of both one-storey and two-storey versions of the system (architects Farmer and Dark).



technical section

11 MATERIALS: GENERAL
cost history of new techniques

Architects often ask, ruefully or indignantly, why it is that new techniques always cost more than their traditional counterparts. It also puzzles economists, who say that this happens in building, but not in other industries. This week we present a study of four such techniques, carried out by Brunton, Baden Hellard and Boobyer, architects; and R. J. Playle, quantity surveyor. They show, in the form of graphs, the cost changes for the last seven years, of polythene water pipe, pitch fibre drains, chipboard flooring and plasterboard partition units. For the same period they show, for comparison, the costs of materials with which these new techniques have to compete. The results do not, in fact, confirm the accepted picture of inevitable higher costs but two points must be made. First, that in most cases each technique was more expensive when it first came on the market than it is now. Second, that much of the work formerly done on the site is either eliminated or takes place in the factory.

Work study may be described as a means to improvement in the operation of plant and workers in the manufacturing process. It has only recently been taken up by the larger and more progressive building contractors, where it has brought a marked increase in efficiency.

But there is a need for the processes themselves to be questioned, relative to the end they achieve, a need for method study to show whether or not the same purpose can be met by simpler and quicker means. This more comprehensive view of a problem implies that fundamental improvements in efficiency will not come from the separate sectional interests in building; it also implies that the architect must take an interest. The architect is the leader of the team by definition, but he is also the only one whose prime interest is the proper balance of all aspects in the completed building, rather than the adequacy or efficiency of any one part, phase, or construction technique. He is not directly concerned with the operating efficiency of any particular construction or the production costs of any individual component and so is in the best position to choose materials with the right balance of initial cost and site assembly costs; or for that matter, to advise the manufacturer on the critical balance between works-output efficiency and site-construction facility. Many manufacturers seem more concerned with quantity output per unit cost (say 4d. each) than assembly or construction facility (site labour 2s., total 2s. 4d.), though in many cases a slight increase in production complexity or cost (say 5d.) might result in a cheaper overall installed cost in the building (site labour 1s. 7d., total 2s.).

A large number of new products possessing a greater factory-manufactured content have come on to the market since 1949, and many are now firmly established in the building vocabulary. But these, and certainly those that failed to make the grade, have been criticized for high initial costs. Every manufacturer putting a new product on the market has been faced with the problem of starting it at an uneconomic price that will create the demand, and enable mass production to reduce the price and make it more competitive than its traditional predecessors. Yet at first with only a small demand, production costs will be higher, and expensive plant must be provided. In some cases the demand does not come quickly enough and the product fails, with consequent loss—whether it is realized or not—to the whole industry in its fight to maintain and improve standards, and at the same time hold steady or reduce building costs in a society where the standards of living and wages are rising.

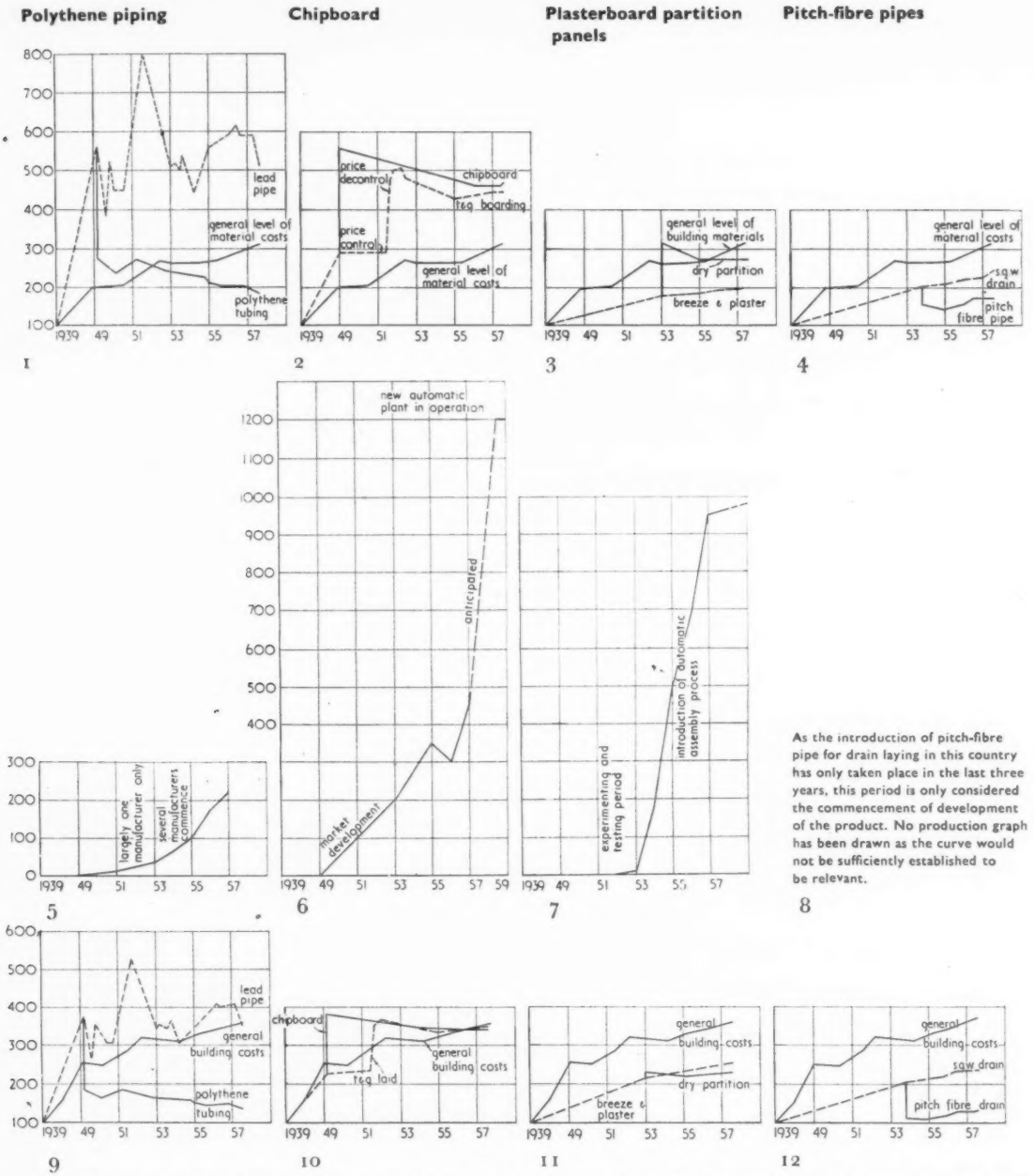
Study of four materials

For this study of the costs of new building products in relation to the general cost pattern, four materials were chosen, and these have been compared with their more conventional predecessors. In each case the functional requirement has been considered and the standard of performance of the new material has been considered equal to, or better than, the element or material it replaces. These four materials are:

1. Polythene tubing in place of lead pipe—as a cold water service.
2. Wood chipboard in place of t. & g. boarding—for flooring.
3. Plasterboard partition units in place of breeze and Plaster—in partitions.
4. Pitch fibre pipes in place of salt glazed ware—in drainage.

In each of these cases the manufacturer has been able to hold his price steady, and in all but one case, to effect a considerable continuing price reduction in the face of rising manufacturing costs—this during a period when the general level of building costs have risen steeply. These costs of the material delivered, are shown in the graphs (Figs. 1 to 4) in relation to (1) prime cost of the traditional predecessor at the same period, and (2) the general curve of all building materials over the same period. Cost in both instances are represented by prices " delivered to site."

technical section



As the introduction of pitch-fibre pipe for drain laying in this country has only taken place in the last three years, this period is only considered the commencement of development of the product. No production graph has been drawn as the curve would not be sufficiently established to be relevant.

Figs. 1 to 4 show the cost history of eight different materials, (1) polythene and lead piping; (2) chipboard and t. and g. boarding; (3) plasterboard partition units and plastered breeze blocks; (4) pitch-fibre and earthenware drain pipes. Each graph shows the general level of building materials prices (compiled by Davis, Belfield and Everest). Figs. 5 to 8 show volumes of production corresponding to the new materials above. Figs. 9 to 12 show the cost of the eight materials installed in a typical housing scheme—thus including site labour costs and overheads.

The manufacturers' view

In preparing the details of this paper, it was thought valuable to relate these figures to the volume of production over the same period, and graphs 5 to 8 show the general trend of output of these materials over that period. In each case, the manufacturers were asked what were the factors that contributed to their assessment of the selling price of his product when it was placed on the market. Their answers are shown on the opposite page.

Consolidated effect of new technique

It can be seen that once a new product has been put on the market at a fixed price there is still the assessment of its total cost, delivered and fixed, to be made, in relation to the material or technique it replaces. In some cases the manufacturer will already have made this assessment and may be prepared to give it; indeed, he may use the information as a selling point for the material. This may mean costing the work of several trades; for example, plasterboard partition units replace breeze and plaster—the work of two trades—and replaces them with only one, the carpenter. One of the reasons why elemental costing has come into being is to enable comparisons of

technical section

Manufacturers' views

Polythene piping

" When marketing a product as revolutionary as polythene tube, a manufacturer must be prepared to make a loss for the first two or three years. We estimated the likely sales of the product for over three years after its first marketing, and costed the process rate of manufacture. This sets a maximum to the initial price. If, however, we find that the price so calculated is only just above that of a traditional material which a product might replace, we may well decide to face a loss for an even longer period and set the initial price to be completely competitive with the traditional material. Naturally, as production expands and is made more efficient over the years, costs fall and this enables a further reduction in price. Where other manufacturers enter the market with a similar product already established, the price level has been set and, with few exceptions, they sell initially at the established price."

Chipboard

" In assessing the market price, the principal considerations were of raw materials, wages, commercial discounts and all overheads, including, in this case, the important one of transport to store yards. Clearly the prices of competing materials, which are many and varied, had also to be watched, but the prices that have obtained since production began just after the war were primarily dictated by the costs of mass-production, publicity, and delivery of the various grades in which this sheet building material is manufactured."

Plasterboard partition panels

" It was appreciated that the change over by architects and builders to the use of dry partition in place of the conventional brick and breeze plastered wall, though on paper a simple one, would be far reaching in its effect on the building programme. Thus the development period for the material was thought to be a very long one and would require sustained technical assistance from us as the manufacturer, to the user. Indeed, a development group was set up with this in mind. One of the earliest tasks of this group was to assess a rational costing basis for the technique to enable the cost of the product to be related to the conventional technique. This confirmed that the unit selling price of the product had been correctly made, being the balance of production costs and low profit margin (nil if development costs are included) and the cost of conventional competitive methods. This long development period has enabled progress to be made on automated assembly plant so that as demand increases, production has been able to cope with it, avoiding the usual delays resulting in frustrated orders."

Pitch-fibre pipes

" The experience in the United States (where the material has been used for more than 40 years and production now is of the order of 200 million feet per year) has acted as a guide to the development of this product in Great Britain, but even so the acceptance of the product has exceeded expectations, and the pilot plants have been hard put to it to keep pace with sales. New plant is only now coming into production which will enable greatly increased demand to be met, and as the material is one where semi-automated manufacturing process can be used, the price levels should be much more easily maintained in the face of rising labour costs in engineering."

different techniques to be made at the design stage. Sufficient has been written in other places upon the collaboration of the quantity surveyor with the architect over this assessment that we will not dwell upon it now, except to say that here is the root reason for this collaboration, and in this field such things as the standard method of measurement, and trade billing are not the established methods.

Graphs 9 to 12 show, for each of the four materials and their traditional counterparts, the cost delivered and fixed in a housing contract of fifty houses at a total value of £80,000. These graphs indicate the relative costs of the materials based upon measured units which take into consideration all items affecting direct comparison. They also take into account economical use of large panel units, e.g. flooring and partition panels, where cutting and wastage is reduced.

To return to the points made in the opening paragraphs —these graphs suggest that large savings can be made by the complete reconsideration of technique for any particular function. The saving on this contract by use of these techniques would be of the order of £900 on £9,000, or 10 per cent., based upon the following:

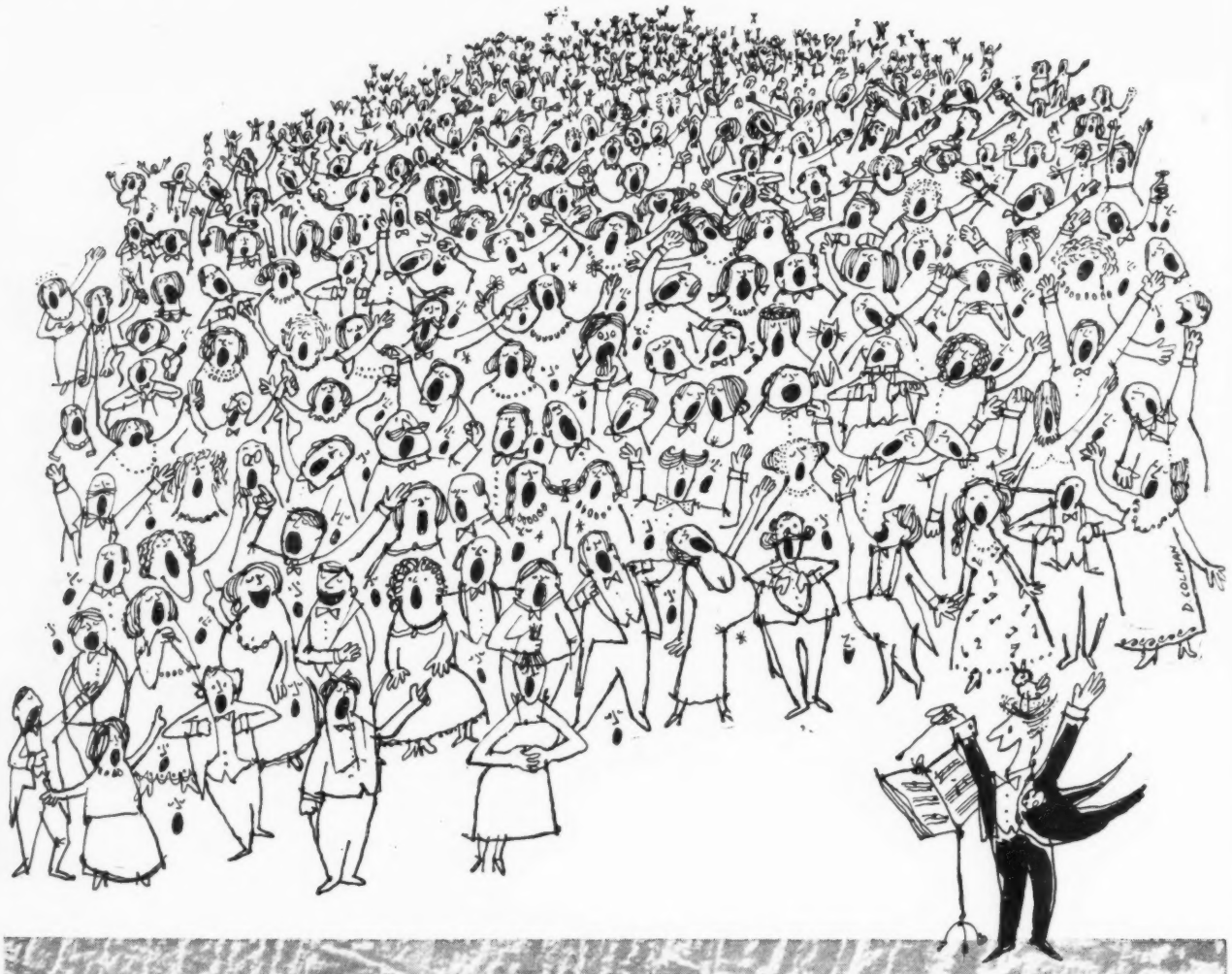
1. Heavy duty Polythene cold water tube laid in trenches or ducts from water companies' mains to internal stop cock.
2. Wood chipboard used for all first floors.
3. Plasterboard partition units used internally throughout for non load bearing partitions.
4. Pitch fibre drains used for soil and rainwater disposal to all main runs and long branch lengths.

It must be remembered that only part of the construction was considered and the saving on the total contract sum would be just over 1 per cent. It does give an indication of the effects that would be produced by development of new techniques rather than by the improvement of existing ones throughout construction. There is great potential for improved productivity in the industry by a full application of comprehensive " Process study " to the whole design process.

Detailed application of work study by any one faction of the building industry, in isolation, is not likely to produce the final answer. Individual studies at site level can produce remarkable economies. Yet one can imagine the frustrating effect on a contractor whose motion and job studies have resulted in the proper balance of a team of men and machines for drain laying work (say a concrete mixer, digger and dumper, with four operatives), and consequent increased output, only to find that in future, with pitch fibre drains, no concrete would be required, the depth of trench would be decreased, and site labour content was reduced. He would have to start all over again!

The inference from the curves remains so clear that no one can fail to appreciate the benefit of these new techniques, the greater part of which takes place in a factory. One thing seems certain; unless the architect can get the " building team " together (*including* the manufacturer), the increase in productivity in the industry is going to continue to fall behind other British industries to the detriment of all.

E2



Let us sing the praises . . .

of CARLITE pre-mixed plaster

A song of plaster progress, of a plastering revolution! Gypsum and Perlite, factory-mixed, saving weight and saving lathing, giving better insulation, greater fire and crack resistance, easier estimates and planning, tidy sites and far less storage. Five thousand years of sanded plasters—now Carlite strikes a clear new note! Write for technical details.

The Gotham Company Limited, Gotham, Nottingham.
The Carlisle Plaster & Cement Co., Cocklakes, Nr. Carlisle.
Thomas McGhie & Sons Ltd., Kirkby Thore, Westmorland.

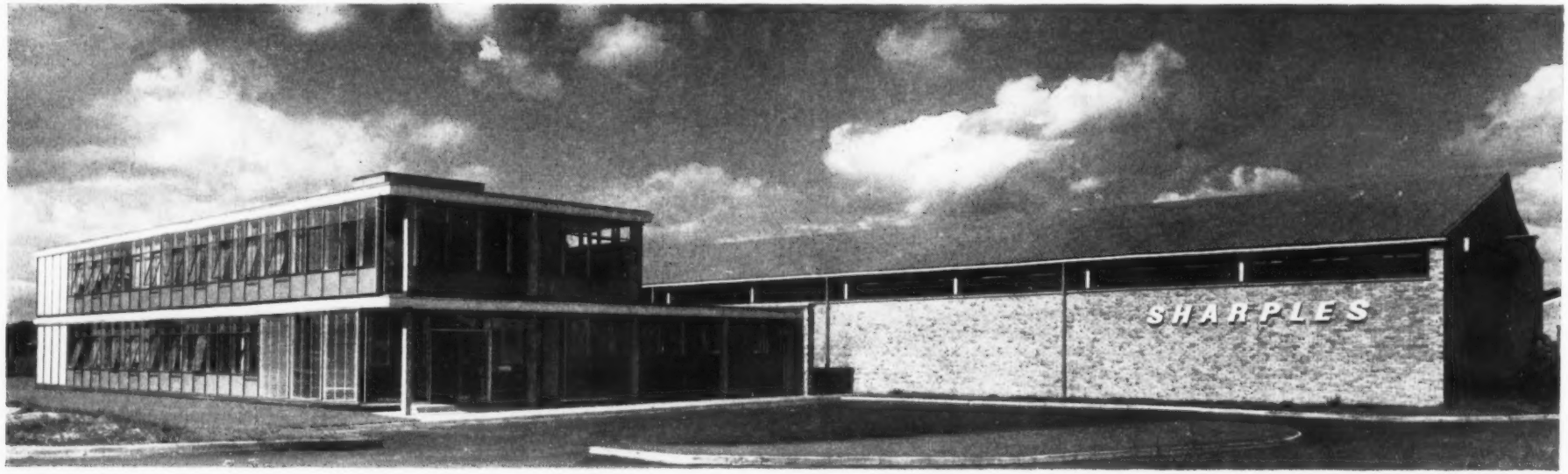
building illustrated

FACTORY AND OFFICES

in DOMAN ROAD, CAMBERLEY, SURREY; designed by JOHN BICKERDIKE; assistant architect, PETER GOWER; structural consultant, F. G. COFFIN; quantity surveyors, LEITCH and SAMUEL

This office block and factory were built as separate structures because of planning restrictions. The factory is a direct and economic answer to the clients' requirements, and careful planning has achieved a high percentage of usable space in the office block, where separation of the various structural elements has led both to simpler detailing and to greater internal flexibility. This is the first factory to be illustrated in the JOURNAL with a separate analysis of the production area and the office block.

Viewpoint 1: the offices and factory from the south-east.



analysis

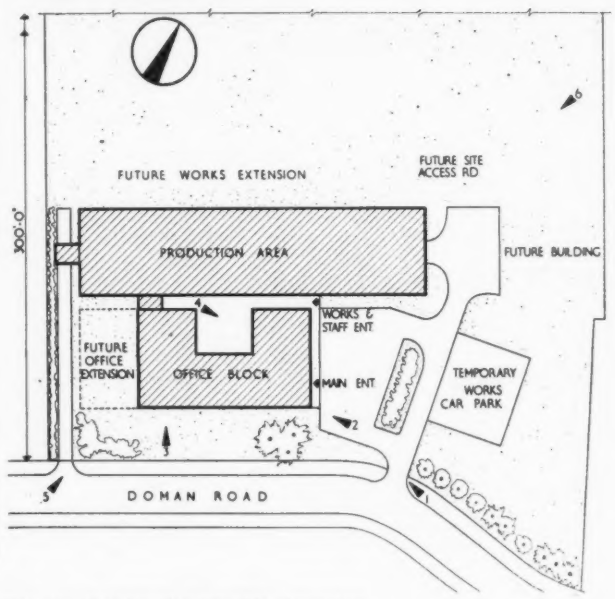
CLIENT'S BRIEF: his stated requirements

Administrative and design offices, production area, small pilot plant and laboratory for Sharples Centrifuges Ltd., designers and manufacturers of high-speed centrifuges. Both offices and production area to be planned to be readily capable of future extension, and office partitioning to be independent of the structure for easy demounting. During the working drawing stage the client's needs changed; the production area was required to house much larger machines, and a tank tower and steam-raising plant were needed for experimental purposes. Board of Trade and planning restrictions necessitated the building of the offices and the factory as two completely separate structures, and limited the size of both at the present stage.

SITE: area of site, surroundings, access and planting

A virtually flat site without trees of about 2¼ acres in a small industrial area consisting mostly of small speculatively built unit factories. Access is from Doman Road on the south side of the site. A scheme for future planting has been prepared.

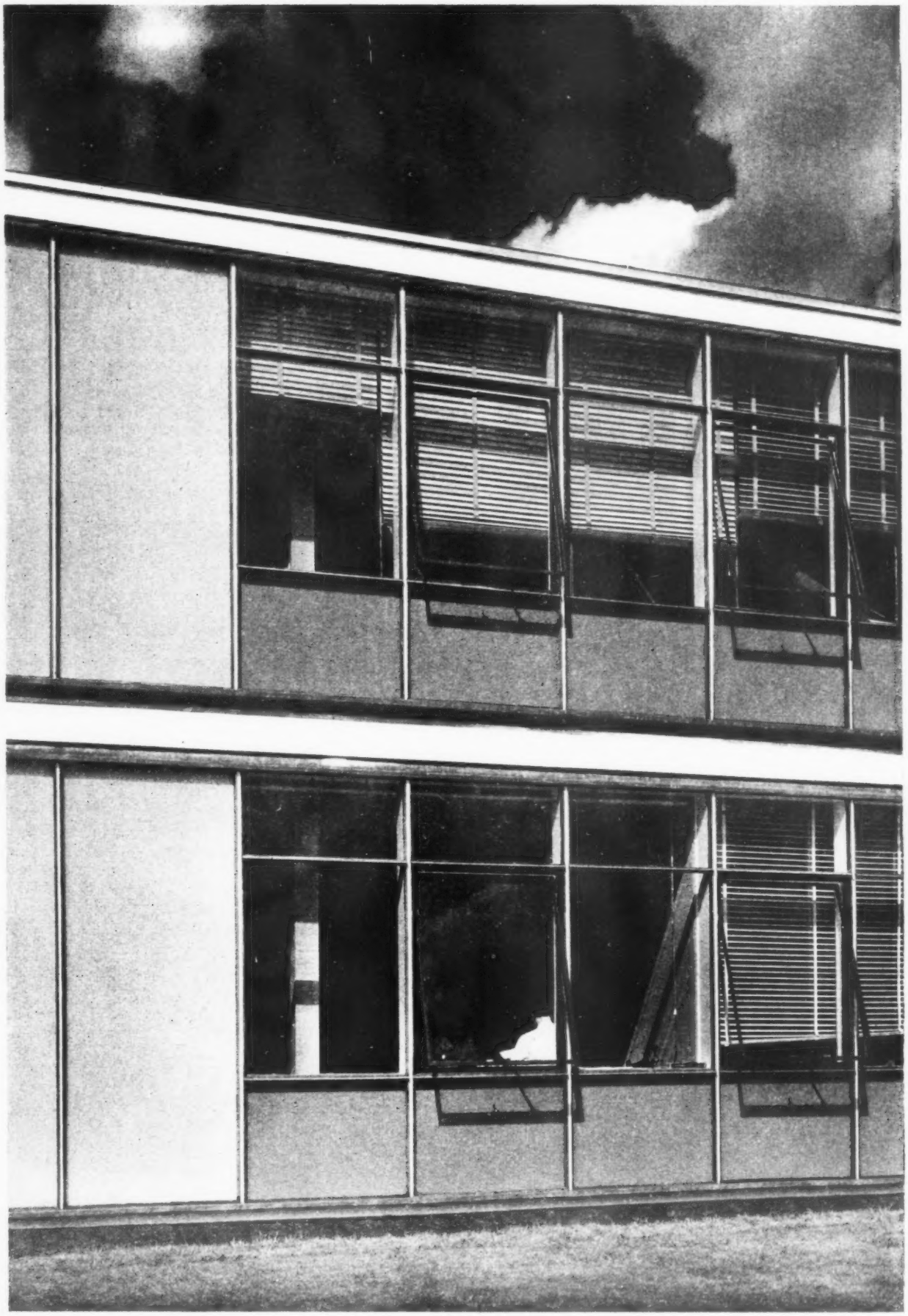
building illustrated



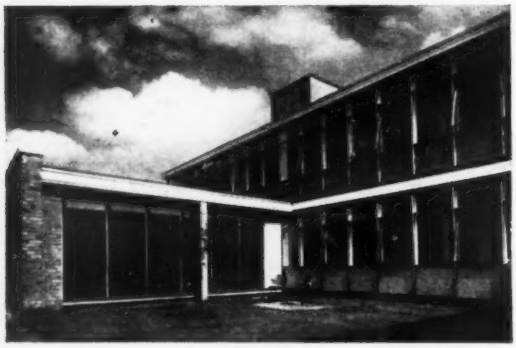
Site plan showing photographic viewpoints

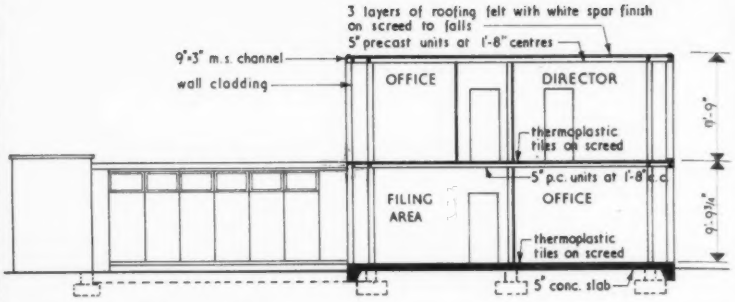
Viewpoint 2 (below): the office block is placed on the building line facing Doman Road, on the south side of the site. At the east end of the block, approached from the visitors' car park, is a recessed porch opening on to the entrance hall. The rest of the ground floor accommodates general offices, lavatories and a small canteen. Quieter interiors, including directors' offices, the drawing office and conference room, are grouped together on the first floor for greater isolation from noisy areas within the block. Viewpoint 3 (opposite): the steel frame structure is clad externally by timber curtain walling designed by the architect on a 3-ft. 4-in. planning module. Units of the framing, four to six modules wide, were fabricated in the joinery shop, and jointed together in position mid-way between mullions with galvanised steel tongues. Purpose-made metal windows were set in the framing to form opening lights, the remainder being directly glazed with hardwood beads. The roughcast glass used for the spandrels and other solid areas is colour-backed, mostly light blue, but medium grey under clerestory windows and white for the full height panels on the front elevation. Softwood sills, dressed over with 4-lb. lead sheeting, are used instead of hardwood, and the projecting window heads are similarly treated. The cladding will be illustrated later as a Working Detail.

ery
ons
ere
ing
sed
tly
ite
lls,
od,
ed.



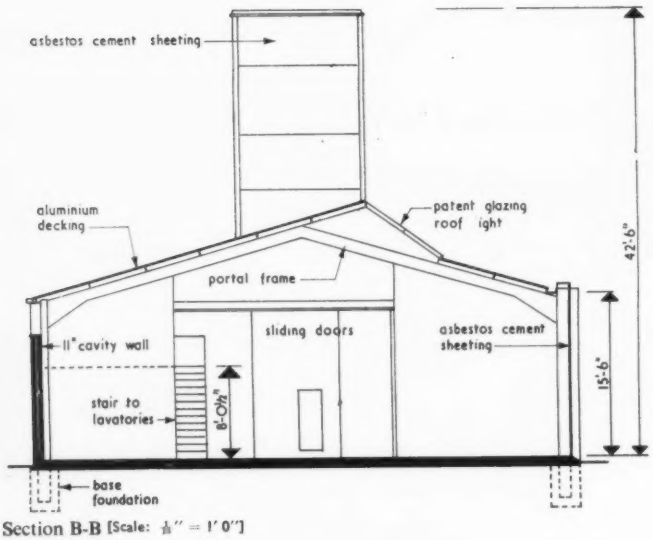
building illustrated





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

Viewpoint 4 *(above): the general planning of the offices is arranged so that the block can be extended at both ends if additional space is required. Two single-storey wings project northwards at either end of the block, towards the factory, to form a small internal courtyard between the two buildings. This separation was considered desirable by the architects to improve the natural lighting of the offices on the north side of the block and to reduce as far as possible the transmission of noise from the factory. At the same time the two blocks are physically separated, so that for purposes of planning control they could be considered as independent buildings. Viewpoint* 5 *(below): the factory at present consists of a single bay sited behind the offices parallel to the building line. An experimental tank tower, a laboratory and a small pilot plant are grouped together at the west end of the bay, the remainder forming the production area. Portal steel frames carry insulated aluminium decking on purlins to form the roof, which is finished with mineralized felt. External walls are generally* 11*-in. cavity brickwork and* 13½*-in. at the gable ends.*



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

Viewpoint 6 *(below): the north wall is clad with asbestos cement sheeting to facilitate the addition of one or more further bays when required. For the same purpose the stanchion heads along the north side project beyond the roof level to be picked up by subsequent framing, and the drainage has been suitably sized. The main entrance to the factory is through a large sliding door at the east end of the bay. The roof is in principle symmetrically pitched, but from this is projected a large north light at a steeper slope, which is the main fenestration for the interior, supplemented by a continuous clerestory on the south side.*

analysis

Factory

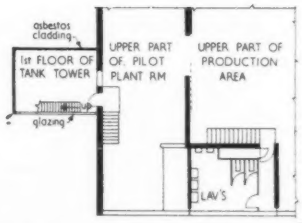
	s	d
cost per sq. ft.		
preliminaries and insurances	3	7
contingencies	1	4

PLAN: general appreciation

A simple light engineering bay, with provision for further bays to be added on the north side. Laboratory, small pilot plant and experimental tank tower have been placed at the west end of the bay. The steam boiler is placed in the production area, and in addition to providing steam for experimental purposes, also heats the factory and offices.

MAIN CONSTRUCTION

Steel portal frames, with cavity brickwork walls and aluminium decking roof.



First floor plan, factory

Offices

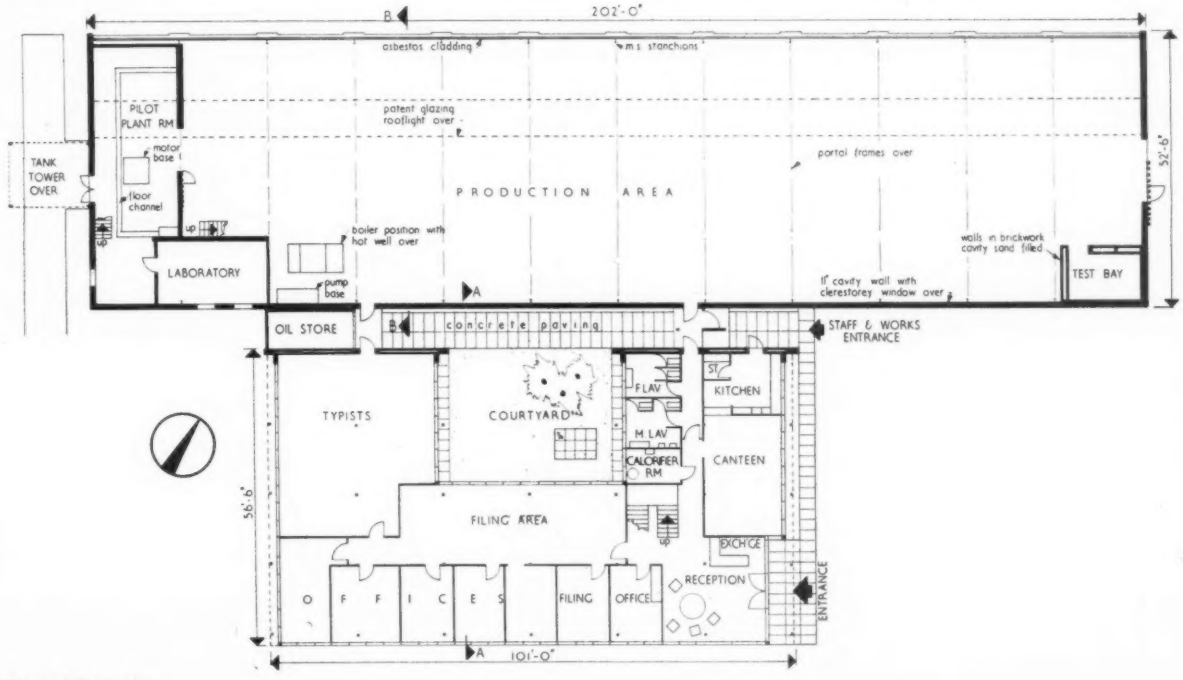
	s	d
cost per sq. ft.		
preliminaries and insurances	5	6
contingencies	2	1

PLAN: general appreciation

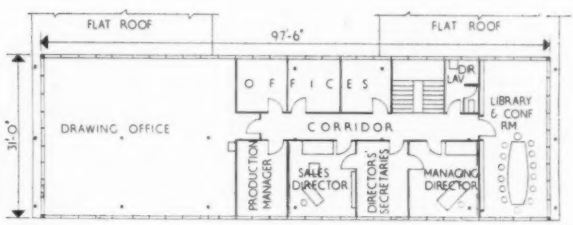
Arranged to provide maximum useful area, for a staff at present about 60 in number. Corridors and stairs are only 4½ per cent. of total floor area. Courtyard provides good light and pleasant outlook to rooms on north side, with reasonable isolation from factory noise. For ease of communication the filing area is centrally placed, and closely related departments are together on the ground floor. Directors and secretaries rooms, conference room, library and drawing office are on the first floor for quietness and seclusion. The planning and construction allow for future extension at each end of the block.

MAIN CONSTRUCTION

Steel frame, with walls off-set from columns with cantilevered double cross channels carrying precast concrete floor and roof beams. The cantilevering has saved an additional row of stanchions, and allows them to be placed a half module off the grid to avoid interference with cladding or partitioning. Concrete floor beams and the steelwork were carefully related to avoid downstand beams. Edge steel channels carry a timber and glass external wall system devised by the architects.



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

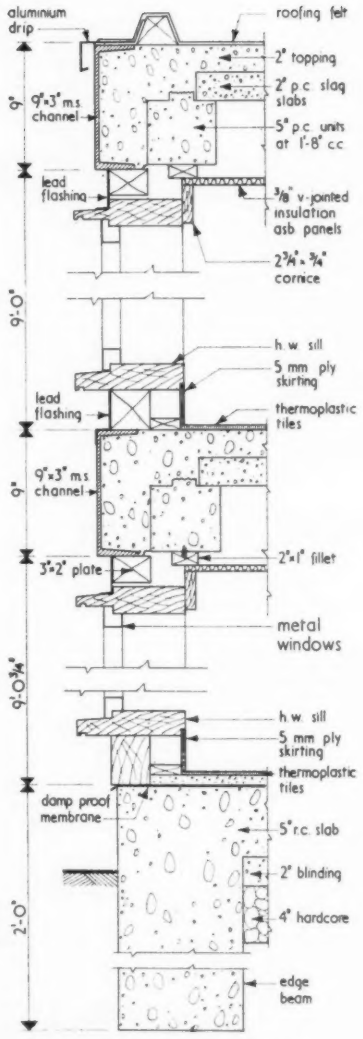


First floor plan, office block

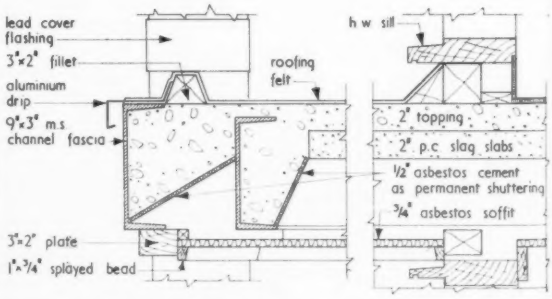
building illustrated

In the entrance area at the east end of the office block (above) there is an enquiry desk designed to incorporate the private telephone exchange so that both can be operated by one girl. There is also sufficient space for waiting and interviews (below). The floors generally in the block are light grey and buff thermoplastic tiles and the ceilings throughout are lined with 3-ft. 4-in. by 1-ft. 8-in. panels of smooth-faced asbestos silica-bonded sheeting, screwed directly to timber battens cast in the concrete floor and roof beams. These give fire protection to the structure and are at the same time readily removable for access to the services.

analysis



Section, cladding of south facade, office block [Scale: 1" = 1' 0"]



Section, first floor, east facade, office block [Scale: 1" = 1' 0"]

analysis

Factory

STRUCTURAL ELEMENTS

	s	d
Work below ground floor level		
foundations	3	3
ground floor slab	3	11

3 ft. × 3 ft. × 4 ft. 6 in. deep mass concrete bases for stanchions; pockets in bases for stanchions give partial end fixity and eliminate holding-down bolts. 2-ft. deep edge beams between bases to carry external side walls, for economy and to simplify drainage. Strip concrete foundations for gable end walls and internal partitions. Reinforced-concrete ground floor slab, 9 in. thick including damp-proof membrane and granolithic finish, laid on 12-in. layer of hardcore. The risk of site flooding made it desirable to slightly raise the floor level. In the machine shop area the reinforced slab has been thickened to 3 ft. to carry very heavy high precision machine tools.

External walls and facings — 2 10

Cavity brickwork, increased to 13½ in. for gable ends, with mild stocks externally, a 9-in. blue brick plinth, and sand-limes internally left fair-faced to reduce decoration costs. Temporary cladding of asbestos-cement sheeting on north side to facilitate future extension.

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{0.675}{1}$$

Frame or load bearing element — 6 6

Rigid steel frame, designed on the plastic theory, spanning the 50-ft. width of the bay at 16 ft. 8 in. centres. Steel was chosen for easy fixing of services and equipment, and each frame is designed to take a 2-ton point load. Portal frames arose from client's need for a clear 50-ft. span and 20-ft. height in the centre of the bay. The shape used gives this required clearance, but at the same time reduces the external wall area, and the volume of air to be heated. Column studs project beyond the roof on the north side, ready for extension by addition of a second bay.

Staircases — 4

(*a*) pilot plant to tower formed of precast r.c. treads cantilevered from walls;
(*b*) factory floor to lavatories, hardwood with open risers, height, floor to floor: (*a*) 12 ft. 0 in.;
(*b*) 9 ft. 0 in.
Number of staircases: 2.
Widths: 3 ft. 0 in.
Total rise: 21 ft.

Offices

STRUCTURAL ELEMENTS

	s	d
Work below ground floor level	3	10

Mass concrete pads to stanchions, strip foundations to brick walls, edge beam integral with ground floor slab elsewhere.

External walls and facings — 4 7

Timber framed wall system with 7 in. × 2 in. softwood mullions at 3 ft. 4 in. centres, 8 in. × 2 in. softwood heads and lead-clad sills, and timber and special extruded aluminium transoms. Set in this frame are metal opening lights with hardwood beads. Below transom sill level, external infilling is roughcast glass with coloured back face, with glass-wool quilt and aluminium-faced plasterboard internally. Finned heating pipes are contained within thickness of walling to avoid cutting of partitions, and are protected by smooth finished asbestos cement sheeting. The module gives flexible room layouts; and column grid is offset a ½ module in each direction to maintain simplicity of external cladding and partitioning. Timber frames were shop made in sections of 4, 5 or 6 modules, and joined with steel tongues at head and sill midway between mullions.

$$\text{ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{0{\cdot}338}{1}$$

Frame or loadbearing element — 6 8

R.s.j. internal and external columns through both floors on 16 ft. 8 in. by 13 ft. 4 in. grid. Beams spanning 13 ft. 4 in. formed of two continuous steel channels each side of the stanchions, and cantilevered 1 ft. 8 in. to edge channels.

Upper floor construction — 3 6

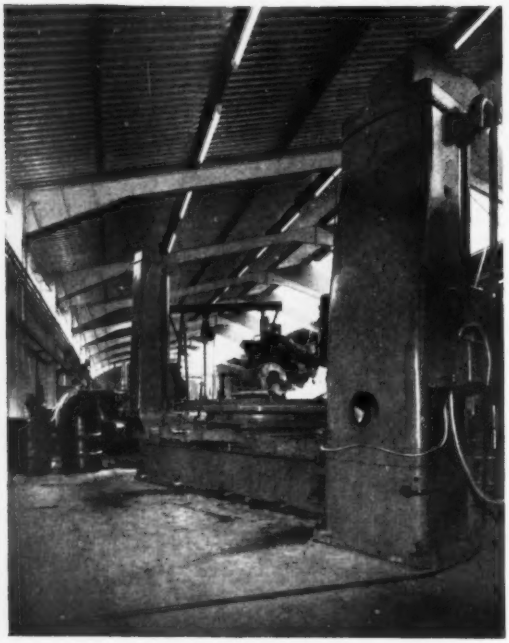
Precast concrete beams spanning 16 ft. 8 in. between channels, with infilling of foamed slag blocks, the whole being screeded over. This method provides a clear ceiling without exposed beams to facilitate partitioning, and at the same time space for most service runs. Ceiling fixing battens are cast integrally with the concrete beams.

Staircase

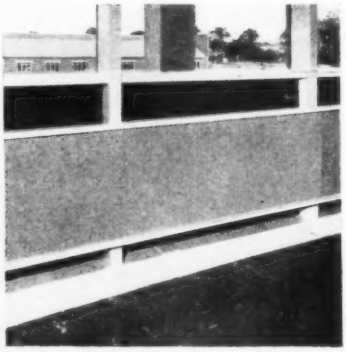
In situ r.c., with hardwood nosing and cork lino tread inserts, and steel balustrade and hardwood handrail. Exposed concrete is plastered and painted.

No. of staircases	1
Width	4 ft.
Total rise	9 ft. 10 in.

building illustrated



Left: the filing area is centrally placed on the ground floor to be close to all departments and acts as circulation to the offices on this floor. The steel columns are displaced off the planning grid half a module in both directions to simplify the detailing of the external timber walling and the internal partitioning. In addition, the construction of the upper floor and roof has been carefully designed so that there is a clean soffit without projecting beams, to further this clear separation of structure from cladding. The partitioning used is precast gypsum plaster panels with scrimmed and plastered joints, chosen for economy and for reasonably good sound insulation, thought by the architects to be desirable on a comparatively quiet site. At the same time it is considered that any necessary alterations can be carried out without undue difficulty. Artificial lighting generally in the offices is by louvred plastic tungsten fittings, which have a 45° cut-off and give a good spread of light on to the ceiling. Centre left: the conference room on the first floor has furniture selected by the architects and tungsten fittings, both diffusing and directional, which have added sparkle to give a different character to this interior. Below, right: in this room and throughout the office block, except in the entrance hall and lavatories, there is a standard detail internally below sill level for the timber walling. Panels of smooth finished asbestos cement sheeting carried on light timber bearers protect finned heating pipes behind, which circle the block on both floors. The mullions are notched to carry the pipes, which are kept clear of the internal partitioning. Behind the pipes the spandrels are lined inside with aluminium-faced plasterboard with a backing of glass wool. 13-amp. power and telephone sockets are fixed directly to the top face of the timber walling sill, with the wiring underneath, behind the softwood skirting, which is removable for access. With this system extra outlets and points can be readily installed as required.



For the factory, the clients requested a clear 50-ft. span with 20-ft. clearance in the centre. The form chosen for the portal frames meets these needs and at the same time the symmetrical pitch reduces both the external wall area and the total volume of the building. The infilling panels which carry the north light have a partial screening effect (left) and are picked out in a strong colour, BS8-091 (red-purple). Finishes generally in the factory have been chosen to minimize maintenance costs in repainting, with the walls of sand-lime bricks left fairface and the aluminium roof decking left exposed internally. The floor in the bay is finished with a 1-in. granolithic screed and in the machine shop area the structural floor beneath has been increased in thickness to 3 ft. to carry exceptionally heavy high precision machine tools. Artificial lighting is by batten fluorescent fittings clipped directly to the roof purlins. The roof light in the factory area will be illustrated as a Working Detail in a later issue of the JOURNAL. *Centre, above: on the north side of the bay at the eaves a steel box gutter, which is exposed internally, runs just inside the line of stanchions, so that it can continue to function in its present position when a second bay is added.*

analysis

Factory

	s	d
Roof construction Aluminium insulated roof decking on steel I-section purlins, finished with three layer three ply felt, top layer green mineralized. Decking provides good insulation, and needs no painting or other maintenance internally. Tank tower has asbestos-cement trough units, felted. Area of roof: 8,844 sq. ft.	5	4
Roof lights Patent aluminium glazing, left unpainted, in north slope of roof. Main source of natural lighting, partly louvred by supporting filler pieces on portal frames, with secondary light from clerestory in south wall. Area of roof lights: 1,810 sq. ft.	1	9
Windows Galvanized and oil painted steel purpose-made frames and horizontally-pivoted opening lights, forming clerestory. Vertical aluminium patent glazing, left unpainted, in tank tower. Ratio: window area / floor area = 0.110 / 1		8
External doors (*a*) main east entrance sliding doors, softwood, painted; (*b*) side doors, flush plywood faced, oil painted. Ratio: external door area / floor area = 0.0265 / 1		2
Glazing ¼-in. wired roughcast glass in patent glazing, clear 32 oz. elsewhere.		1
Total structural elements	24	10

PARTITIONING

Internal partitions 13½-in. and 9-in. sand-lime bricks between pilot plant and production area. Glazed timber-framed between pilot plant and laboratory.		10
W.c. doors and partitions 3-in. gypsum plaster partitions, with flush plywood faced doors, oil painted.		2
Internal doors and ironmongery (*a*) hardwood sliding door, fire check between pilot plant and production area, oiled; (*b*) flush plywood faced, oil painted, with satin aluminium lever handles, etc. Number of single doors: 3		1
Total of partitioning	1	1

Offices

	s	d
Roof construction Similar to upper floor construction, but screeded to falls, and finished with 3 layer 3 ply bituminous felt and spar chippings. Thermal insulation provided by foamed slag blocks. Area of roof: 4,890 sq. ft.	4	5
Rooflights None		
Windows Timber walling directly glazed to form fixed lights, with screwed hardwood beads finished with clear synthetic varnish. Purpose-made horizontally pivoted and top hung metal windows, galvanized and painted, and fixed in timber framing to form opening lights. ratio: window area / floor area = 0·415 / 1	1	0
External doors (*a*) main entrance double leaf glazed doors, softwood and painted, (*b*) rear entrance doors, flush plywood faced, painted. ratio: external door area / floor area = 0·0106 / 1		1
Glazing Generally 32 oz., with ¼-in. roughcast coloured glass below cill in timber walling, and ¼-in. polished plate in entrance area.	2	1
Total of structural elements	26	9

PARTITIONING

Internal partitions 3-in. precast gypsum plaster panels with scrimmed and plastered joints. Fairly heavy and airtight partitions, which are at the same time low cost and readily demountable, were chosen to give good sound insulation between rooms essential on a quiet site. Area of partitioning: 450 sq. yd.	1	11
W.c. doors and partitions Partitions similar to those used generally, with flush plywood faced doors, painted.		3
Internal doors and ironmongery Generally flush doors, plywood faced and button-polished. Georgian wired plate glazed doors in corridors, drawing office and filing area. Satin aluminium lever handles, locks and latches. No. of single doors: 27	doors ironmongery	5 4
Total of partitions	2	11

analysis

Factory

FINISHINGS

	s	d
Floor finishes	1	3
1-in. granolithic paving in production area, and 9-in. square p.v.c. tiles in laboratory and lavatories.		
Type of finish — granolithic — p.v.c. tiles		
Area in sq. yd. — 1,125 — 50		
Price per sq. yd. — 9s. 6d. — 29s. 6d.		
Wall finishes	2	
In factory, sand-lime brick, fair-faced, self colour, requiring no decoration or maintenance. In lab. and pilot plant, 4-coat chlorinated rubber paint, alkali faced resistant, can be hosed down. Steel work and windows, oil paint.		
Ceiling finishes		
Self-finished aluminium decking in works, requiring no decoration or maintenance. In lab. asbestos board, finished emulsion paint. B.S. " 101 "		
Decorations	10	
Steelwork, windows, internally, gutters gloss oil white		
Windows externally, r.w.p.s., doors gloss oil B.S. 9-093 (grey)		
Filler pieces on portal frames gloss oil B.S. 8-091 (red)		
Walls in pilot plant and laboratory 4 coats chlorinated rubber paint, white.		
Total of finishes	2	3

FITTINGS

Cloakrooms	1	
Hooks etc. in lavatories		
Other fittings	11	
Hardwood and teak benching, fume cupboard and racks in laboratoty, oiled or varnished.		
Total of fittings	1	0

Offices

FINISHINGS

	s	d
Floor finishes	2	3
9-in. square waxed thermoplastic tiles generally, with 9-in. square p.v.c. tiles in canteen and kitchen.		
Type of finish — *Thermoplastic tiles* — *P.v.c. tiles*		
Area in sq. yd. — 750 — 58		
Price per sq. yd. — 19s. 7d. — 29s. 6d.		
Wall finishes	5	
Plaster generally, emulsion painted, with oil painted softwood skirtings and trim.		
Ceiling finishes	1	9
Throughout, 1 ft. 8 in. by 3 ft. 4 in. by ½ in. thick panels of smooth sanded asbestos cement board, with mitred edges, screwed direct to battens in concrete beams. Provides fire protection to steel beams; at the same time all panels removable for access to services.		
Decorations	2	3
Small offices, walls — Emulsion — B.S. 9-093 (grey)		
„ — „ — B.S. 5-060 (grey-green)		
Filing area, walls — „ — B.S. 1-022 (red) and 5-058 (grey-green)		
Typing area, walls — „ — B.S. 5-064 (green) and white		
Entrance hall, walls — „ — B.S. 0-009 (strong green-yellow) and white		
Canteen, walls — „ — B.S. 4-057 (yellow), 0-095 (grey) and white		
Ceilings generally — „ — white		
Woodwork generally internally, gloss oil white Externally, natural finish iroko hardwood beads, white gloss oil on mullions and exposed edge of channels at 1st floor and roof level. Opening lights B.S. 9-098 (grey), and coloured glass panels mainly light blue, but medium grey under canteen windows, white for full-height panels on front elevation, and some yellow and grey in courtyard.		
Total of finishes	6	8

FITTINGS

Cloakrooms	3	
Electric incinerator in women's lavatory. Mirrors, hooks, etc., in all lavatories.		
Other fittings	2	
Reception desk and telephone exchange in entrance area, built in timber and glass, purpose-designed to be operated by one girl, and at the same time to hide unsightly 5 line 20 extension switchboard supplied by G.P.O.		
Kitchen equipment	1	5
Compact kitchen designed to serve 50 hot meals at lunchtime with single oven cooker, 5-ft. hot cupboard, 6-gal. urn, built-in cupboard, plateracks, worktops and service counter.		
Total of fittings	1	10

analysis

Factories

SERVICES	s	d
External plumbing Bituminous felt on aluminium to form eaves trim; felted gutter in valley on north side, painted and galvanized steel box gutter on south side. 6-in. and 4-in. heavy extruded aluminium r.w.p.s., both internal and external		3
Waste disposal Two pipe system, c.i. with copper traps.		2
Cold water installation Copper pipework, served from main storage tank in offices.		1
Sanitary fittings 2 w.c.'s, 3 basins, 2 urinals, 2 large sinks, 2 laboratory sinks, and 1 drinking fountain, all in heavy white vitreous china.		4
Heating installation Fan blown floor and wall-mounted units, with pump assisted circulation from steam calorifier. Horizontal oil-fired fully automatic packaged boiler unit, placed in production area, burning 900 seconds oil from 2,000 gal. storage tank, and supplying 1,250 lb. steam per hour at a working pressure of 100 p.s.i. Boiler primarily required by client for experimental purposes, and therefore cost not included in analysis. New type of burner is quiet enough to use in production area.	2	4
Hot water installation Copper supply pipes from 50 p.s.i. steam calorifier, with reducer valve and electric immersion heater for summer use.		1
Drainage Separate soil and surface water systems, salt-glazed pipes cased throughout in concrete.	1	10
Gas installation Bench points in laboratory and pilot plant.		1
Electrical installation 5-ft. 80-watt fluorescent batten fittings, clipped directly to purlins, giving 25 to 30 lumens/sq. ft. No. of fittings: 100 approx. 300, 100, 60, 30 and 15 amp. switch fuses in factory and pilot plant to meet heavy present and future machine loads, and for distribution to offices. 415 volt 3 phase/250 k.V.A. main in production area, distributed in heavy screwed conduit or trunking, with sub-main in pilot plant and m.i.m.c. cable to offices.	4	0
Total of services	9	2
Paved areas Macadamised access roads and concrete paving.	1	11
Total cost per sq. ft. £24,898 / 11,025 sq. ft. =	45	2

Offices

SERVICES	s	d
External plumbing Aluminium trim at eaves, 4 in. aluminium r.w.p.s., centrally placed and left exposed internally for main roof, external for lower roof. 4 lb. lead cloak on softwood heads and cills of timber walling, instead of hardwood; very successful and neat.		3
Waste disposal Two pipe system, c.i. with copper traps.		4
Cold water installation Copper pipework, supplied from 300-gal. galvanized tank in housing on roof, fitted with electric immersion heater as a precaution against frost.		5
Sanitary fittings 5 w.c.s, 6 basins, 4 urinals, 1 sink and 1 drinking fountain all in white vitreous china; 2 stainless steel sinks in kitchen.		9
Heating installation Pumped flow and return from boiler in production area feeding finned pipes in timber external walling behind panels under sills in most interiors. Radiators in lavatories, and recessed fan blown heat exchanger for entrance hall.	6	11
Hot water installation Copper supply pipes from calorifier, serving lavatories and kitchen, with electric immersion heater for summer use.		3
Drainage Separate soil and surface water systems, salt-glazed pipes cased throughout in concrete.	1	10
Gas installation Supply to kitchen.		3
Electrical installation Tungsten louvred plastic fittings throughout, giving 30 to 35 lumens per sq. ft. in drawing office and 15 to 20 lumens per sq. ft. elsewhere. Number of fittings: 125 approximately. P.v.c. covered wiring generally. No. 44 13-amp. flush outlets, nearly all of which are located on the bottom sill of the timber walling system. Supply is run under the sill behind removable skirting on both floors, and thus the position and number of outlets can be readily changed. Twenty-seven line private automatic exchange with two master loudspeaking telephones with key calling facilities, in addition to 19 internal G.P.O. extensions.	5	8
Total of services	16	8
Paved areas Entrance drive and visitors' car park, hardcore macadamized. Paths and entrance porch, precast concrete paving slabs.	1	11
Total cost per sq. ft. £23,482 / 7,300 sq. ft. =	64	2

analysis

FIRE: structural precautions

Factory: Hardwood sliding door between production area and pilot plant.
Offices: ⅝-in. plaster on expanded metal covering stanchions, and asbestos cement ceiling board giving minimum of ½ hour fire resistance to structure internally. 1-in. concrete on expanded metal covering external columns giving 1 hour. In addition, local authority requirements demanded steel stiffening to timber walling system where not counted as completely window, i.e. where solid or with clerestory only, to form nominally non-combustible structure.

TIME SCHEDULE

Drawings	Design, July, 1955 Working, September, 1955.
Tender date	February 14, 1956.
Contract signed	February 24, 1956.
Work commenced	March 1, 1956.
Work completed	Factory, December, 1956. Office, February, 1957.
Type of contract	RIBA lump sum with quantities.
Comments	Eight months contract, delays due to steel deliveries and bad weather.

COST SUMMARY

	Factory	*Offices*
Total ground floor area	10,133 sq. ft.	4,400 sq. ft.
Total floor area	11,025 sq. ft.	7,300 sq. ft.
Price of work above ground floor level	£19,891	£21,383
Price of foundations	£3,951	£1,399
Price of external works	£1,056	£700
Gross total price	£24,898	£23,482
Price per sq. ft.	45s. 2d.	64s. 2d.

Based on estimated final account.

Contract figure for both buildings	£48,895
Contract cost per sq. ft. for both buildings	53s. 4d.
Final cost per sq. ft. for both buildings	52s. 9d.

Note on costs supplied by architects
Cost of timber walling system considered as complete element, including steel opening lights, all glazing and coloured infill panels, insulation, flashings, heating pipe panel covers and removable skirtings:
11s. 5d. per sq. ft. of walling.
7s. 8d. per sq. ft. of office floor area.
Total area of external timber walling system 4,890 sq. ft.

SITE ORGANIZATION

Site labour and equipment: one of the regular general foremen and a number of regular trades foremen were sent to the site. The contract manager responsible for the site visited the job not less than twice a week. Equipment for excavations included D.4 scraper and 10 R.B. excavator. Foundation trenches and stanchion bases were hand dug. Otherwise normal general contractors' equipment such as concrete mixers, etc., were used.
Sub-contractors: sub-contractors were brought in to do granolithic flooring in the factory; plastering (the general contractors have a plastering firm which works almost entirely for them); steel staircase to tank tower and balustrading to staircase in factory; handrail to office staircase; tarmacadam work; turfing and garden cultivation.
Job management: site visited twice a week by contracts manager, who provides liaison between site office and head office and with architect, attends site meetings, etc. Progress chart was prepared and reviewed from time to time. Incentives were provided to the operatives by the use of prefixed targets on a measured basis and the bonus adjustment resulting was made each month and amount due to the men converted to a weekly payment. Site meetings were held frequently to suit the progress of the work.

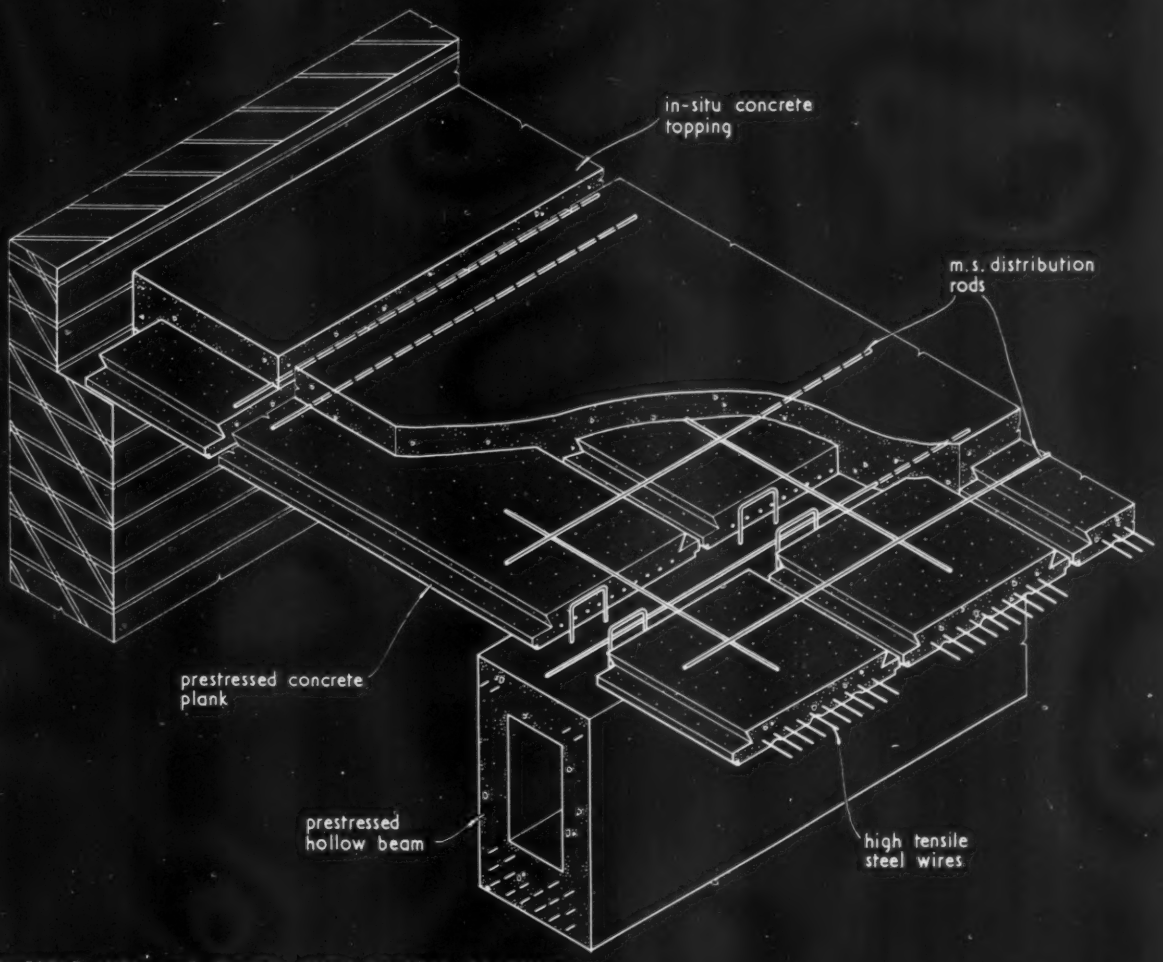
CONTRACTORS

General contractors: J. M. Jones & Sons (Builders) Ltd. *Sub-contractors—Reinforced concrete (precast steps):* Conallcrete Ltd. (*precast coping*): Qualcret Ltd. (*floors and roof*): Geo. Greenwood & Sons. *Bricks (mild stocks):* Eastwoods Sales Ltd. (*sand lime*): Igtham Brick & Tile Co. (*fletton*): London Brick Co. Ltd. *Special roofings and felt:* Wm. Briggs & Sons Ltd. *Partitions:* Bellrock Gypsum Industries Ltd. and W. & C. French Ltd. *Patent glazing:* Senlac Metal Casements Ltd. *Structural steel:* Conder Engineering Co. Ltd. *Tarmacadam:* General Asphalte Co. Ltd. *Patent flooring:* Marley Tile Co. Ltd. *Granolithic paving:* F. Bradford & Co. Ltd. *Central heating:* Weatherfoil Heating Systems Ltd. *Electric wiring and fixtures:* Edmundsons Construction Co. Ltd. *Boilers:* Spanner Boilers Ltd. *Stairtreads:* Korkoid Decorative Floors. *Metal staircases:* R. Smith (Horley) Ltd. *Door furniture:* A. G. Roberts Ltd. and W. N. Froy & Sons Ltd. *Casements:* Senlac Metal Casements Ltd. *Sanitary fittings:* Adamsez Ltd. *Plaster:* A. C. Comley Bros. *Joinery (standard flush doors):* Gliksten Doors Ltd. (*handrails*): F. J. Lewis Ltd. *Shrubs and trees:* John Waterer Sons & Crisp Ltd. *Signs:* The Lettering Centre. *Paint:* The Walpamur Ltd. *Chlorinated rubber paint:* Tretol Ltd.

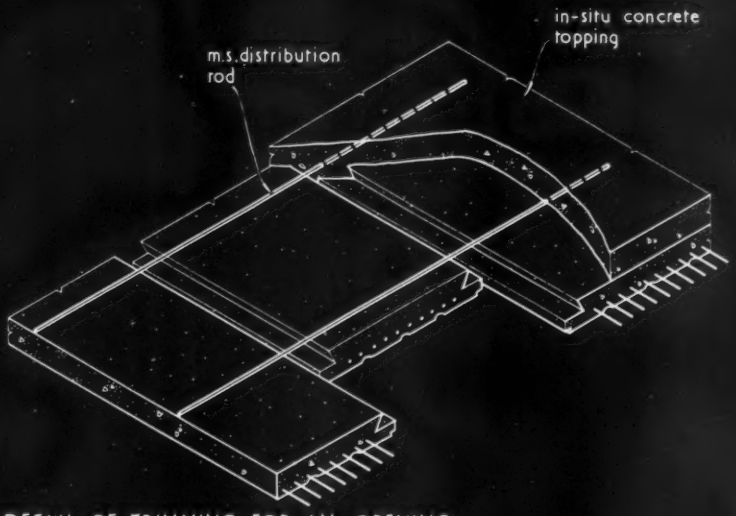
Architects' Journal 31.10.57

FLOOR STRUCTURAL ELEMENTS CONCRETE

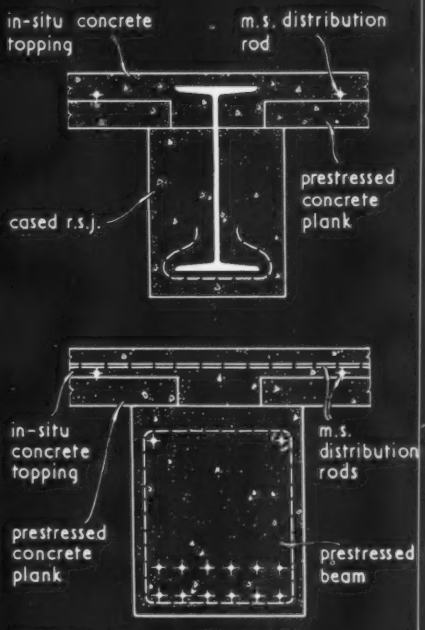
The Architects' Journal Library of Information Sheets 643. Editor: Cotterell Butler, A.R.I.B.A.



ISOMETRIC VIEW OF FLOOR WITH TYPICAL BEARINGS.



DETAIL OF TRIMMING FOR AN OPENING.



TYPICAL BEARING DETAILS.

·BISON· PLANK FLOOR. Manufacturer : Concrete Limited.

20.D2 ·BISON· PLANK FLOOR

This Sheet describes the Bison plank floor. The drawings on the face show a general view of the flooring, a method of trimming at openings and sections through typical bearings. The floor is designed according to the method approved by the Ministry of Works and the London County Council.

General

The flooring system can be used in any situation where an in-situ concrete floor would normally be used. It consists of precast prestressed concrete planks with in-situ topping. No shuttering is required, and a minimum of support is needed for the planks during the pouring of the in-situ concrete. Construction is extremely rapid and, as the main reinforcement is in the factory-made plank, it is already accurately placed. It is particularly suitable for T-beam construction and is easily adaptable for openings and balconies. Services can be accommodated in the floor thickness.

Components

The planks are of prestressed concrete, shaped as shown in the drawing on the face of the Sheet. They are normally 14 in. wide by 2 or 2½ in. deep and are obtainable in lengfhs up to 20 ft. 0 in. Special widths can be made for use where holes for service pipes, etc.. are required.

Fixing

Bearing can be taken on loadbearing walls, plain or cased r.s.j.'s or reinforced concrete beams. Contiguous bays may bear on a 4½-in. wall. It is usual to have a 2-in. bearing on end supports. Spans up to 8 ft. 0 in. require no temporary support before the in-situ concrete is laid, and spans up to 15 ft. 0 in. require a single prop only. The planks are normally propped to a small camber to allow for deflection on striking. To obtain a minimum thickness the in-situ topping should generally be of 1 : 1½ : 3 concrete, the stresses adopted being in accordance with British Standard Code of Practice 114:1957. In the case of medium and short spans a slight increase in the topping thickness permits the use of 1 : 2 : 4 site concrete. For floors the topping is normally from 2 to 2½ in. in depth with distribution rods at suitable centres; additional reinforcement can be incorporated to ensure greater transverse rigidity under heavy partitions or concentrated loads. For roofs, the minimum thickness which can be used is a 2-in. plank with 1-in. topping. Service pipes, etc., up to 1 in. in diameter can be included in the floor thickness. The underside of the planks may be keyed for plaster or, where this finish is not required, the joints may be pointed.

Openings: Trimming for openings is quite simply carried out, as shown in the drawing on the lower face of the Sheet. The curb for a roof-light can be cast in-situ on top of the prestressed plank to form a composite L-shaped beam.

Loading

The 4-in. composite prestressed floor has the same performance as a 6-in. solid or hollow tile floor with regard to deflections and load-carrying capacity. The following table gives safe distributed loads for various thicknesses of slab.

Total thickness of slab (in.)	Dead weight of slab (lb./sq. ft.)	Safe distributed super load (lb./sq. ft.) for spans (ft. and in.)				
		30	60	100	150	200
3	36	13 0*	—	—	—	—
4	48	16 0	14 0	12 0	10 6	9 6
5	60	19 0	17 0	15 0	13 0	12 0
6	72	—	19 0	17 0	15 0	13 6

* Roof construction only

Further Information

The manufacturer maintains an advisory department which is available to answer questions and advise on problems dealing with this subject generally. Full design data are available on request.

Compiled from information supplied by:

Concrete Limited.

Address: 16, Northumberland Avenue, London, W.C.2.

Telephone: Whitehall 5504.

ARTIFICIAL LIGHTING CALCULATIONS : THE LUMEN METHOD : 3

This Sheet is a continuation of Sheets 34.B1 and 34.B2 and *must* be read in conjunction with them. It gives Tables 3 and 4 (referred to on the previous Sheets), the latter being extracted from the Code of the Illuminating Engineering Society.

TABLE 3. NOMINAL AVERAGE LIGHT OUTPUT OF LAMPS IN LUMENS

(a) Tungsten Filament Lamps, at 240 volts

Watts	25	40	60	75	100	150	200	300	500	750	1,000	1,500
Single coil	200	325	575	780	1,160	1,960	2,720	4,300	7,700	12,400	17,300	27,500
Coiled coil	—	390	665	880	1,260	—	—	—	—	—	—	—

(b) Fluorescent Lamps (Tubular), for a life of 5,000 hours

Note: These figures are suitable for preliminary calculations, but are only approximate. Changes are made from time to time by manufacturers, who should be consulted if precise data are required.

Watts		Lamp colour				
Lamps	Lamps and gear	Colour Matching (Northlight)	Daylight	Natural	White	Warm white
20	26*	500	670	630	730	670
30	40	890	1,200	1,030	1,320	1,200
40 (4 ft.)	50	1,280	1,660	1,440	1,850	1,660
40 (2 ft.)	47*	830	1,120	960	1,280	1,120
80	95	2,360	3,200	2,720	3,500	3,200

* With two lamps in series

(c) Other Lamps, 200-250 volts

Type	Watts		Nominal lumens
	Lamps	Lamps and gear	
Sodium	45	65	2,250
	60	80	3,420
	85	105	5,525
	140	165	9,100
Mercury	80	90	2,320
	125	137	3,875
	250	265	7,750
	400	420	13,600
Mercury Fluorescent	80	90	2,320
	125	137	3,875
	400	420	12,800
Mercury/Tungsten	160	No gear required	2,080
	200		2,800
	250		3,500
	300		5,400
	500		10,500

TABLE 4. RECOMMENDED LEVELS OF ILLUMINATION

General

	lumens per square foot
Domestic	
Bathroom	5
Bedroom	3
Kitchen	10
Living room	7
Mirrors (light on person)	10
Sewing	20
Sustained reading and homework, workbench	15
Hotels	
Bedrooms	5
Dining rooms and lounges	7
Writing room desks	15
Medical buildings	
Dentists' surgeries	15
,, surgery chairs	70
Hospital beds	15
Laboratories	20
Operating theatres	30
,, tables	300
Wards and private rooms	3
Waiting rooms	7
Office buildings	
Book-keeping, typing, filing, cashiers' counters	20
Drawing offices	15
,, boards	30
Enquiries, reception, waiting rooms	7
Private offices, telephone exchanges	15
Public buildings	
Churches: body	5
altar, chancel, choir	7
Church halls	7 + special lighting
Libraries: backs of books	3
reading room	7
,, ,, tables	15
stack room	10
Museums	10 + showcase lighting
Public halls	7 + special lighting

34.B3 ARTIFICIAL LIGHTING CALCULATIONS: THE LUMEN METHOD: 3

General (*continued*)

	lumens per square foot
Schools	
Art rooms, sewing	20
Classrooms, laboratories, staff rooms	15
Changing rooms, lavatories	7
Lecture theatres, assembly halls, gymnasiums	10 + special lighting
Practical rooms, workshops	*see Industrial Lighting*
Shops, etc.	
Departmental stores, shop interiors, showrooms	15
Foodshops	20
Refreshment rooms	20
Restaurants	10
Sports (Indoor)	
Badminton, cricket, racquets, squash, tennis	20
Billiards saloons	3
„ tables	20
Gymnasiums	10
Skating rinks	7
Swimming baths	5

Industrial

Assembly	
Very small	100
Small	50
Medium	30
Ordinary	15
Large	7
Boiler and engine rooms	
Fuel and ash handling, boilers, compressors	7
Cotton Industry	
Weaving: dark colours, fine count	30
light colours, fine count	20
grey cloth	10
Warping, slashing and dressing, packing, doubling (fancy) vertical spindle or pirn	10
Healding (drawing in) and cloth examination	special lighting
Food Manufacture and Preserving	
Inspecting and grading	50
Refining, mixing, blending, cleaning, sweetmaking, confectionery, bottling, packing and cutting benches	15
Jewellery and Watchmaking	100
Laboratories and Testing rooms	
Extra fine instruments and scales	50
General	20
Machine and Fitting Shops	
Very small bench and machine work, tool making, gauge inspection, precision grinding	100
Small bench and machine work, medium grinding, setting automatic machines	50
Fairly small bench and machine work, rough grinding	20
Ordinary bench and machine work	15
Printing Works	
Assembly, cutting, embossing, typesetting by hand (up to 6 pt.), setting tabular matter	30
Art room, monotype, linotype, intertype, typesetting from good copy, colour printing, block making, lithography, proof reading	20
Casting and matrixing, folding, pasting, punching and stitching	10
Sheet Metal Works	
Benchwork, pressing, punching, shearing, stamping, spinning and folding	15
Welding, Soldering and Contact Welding	
Fairly small soldering and contact welding	20
Ordinary soldering and contact welding	15
Woodworking	
Fairly small bench and machine work, fine sanding, finishing	20
Cooperage, gluing, medium machine and bench work, planing, rough sanding, sizing, veneering and pattern making	15
Sawmills	7

working detail

BALCONIES: FLATS IN BERLIN

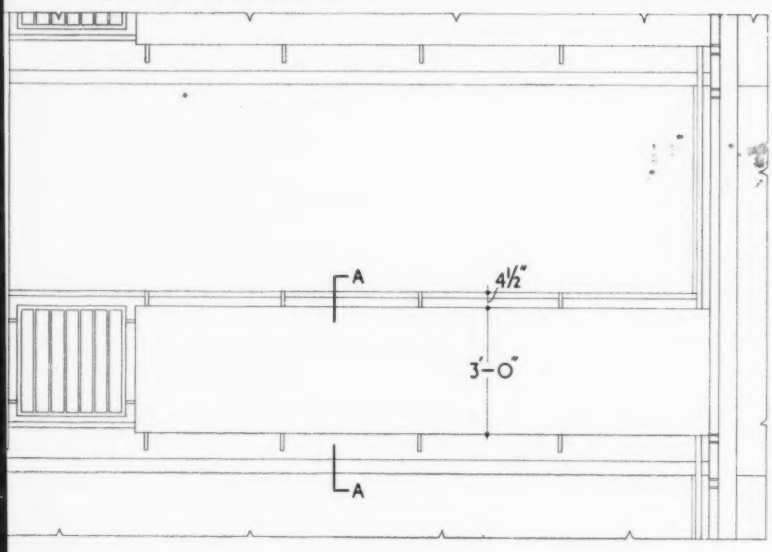
Walter Gropius and W. Ebert, architects

The balconies are only partly projected in front of the face of the building to give users privacy and protection from the weather.

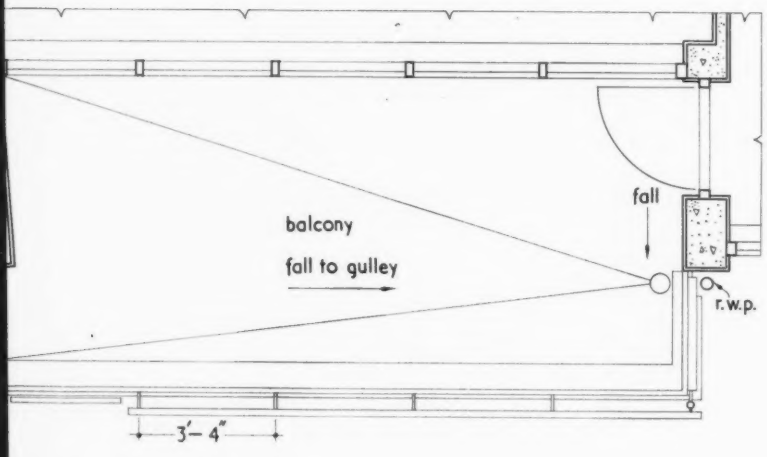
working detail

BALCONIES: FLATS IN BERLIN

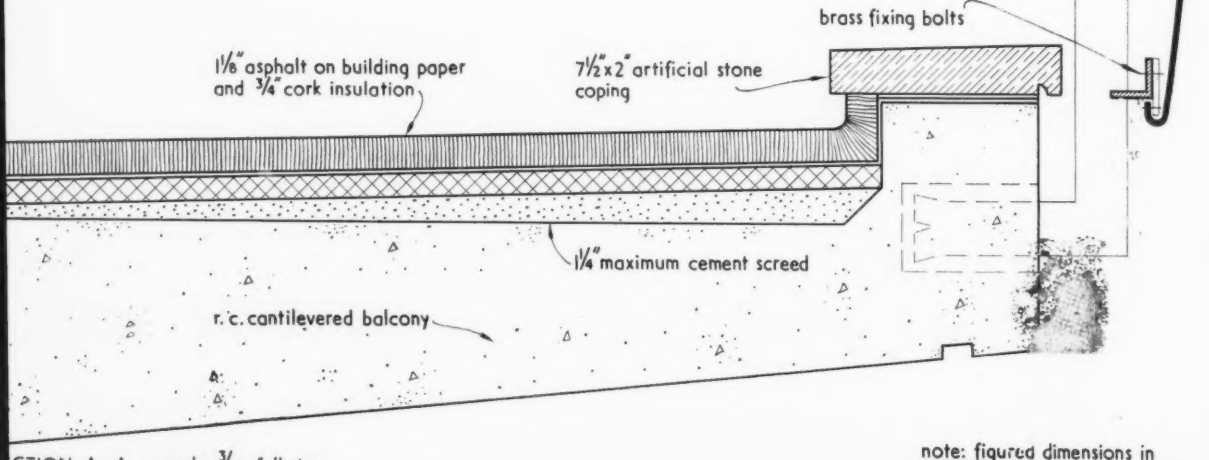
Walter Gropius and W. Ebert, architects



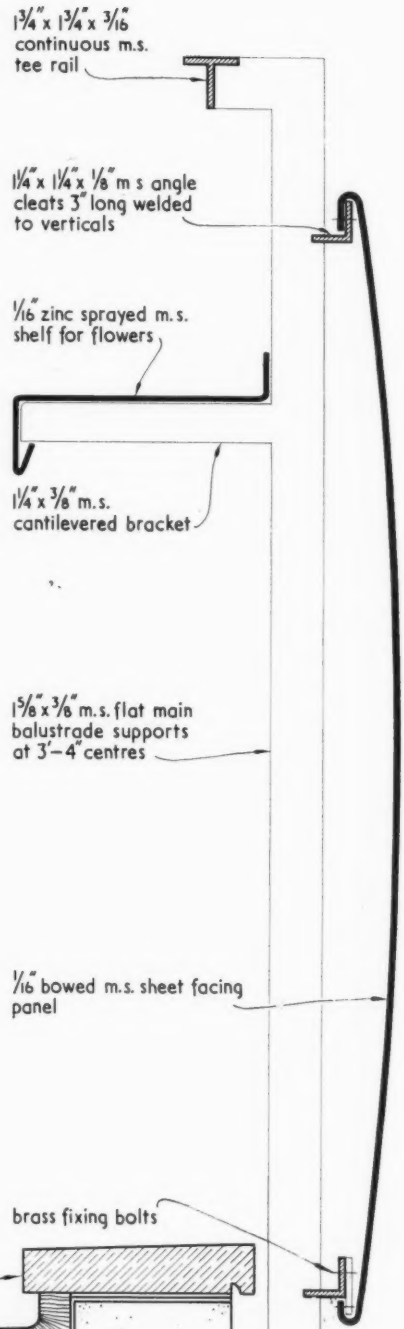
ELEVATION. scale ¼" = 1'–0"



PLAN. scale ¼" = 1'–0"

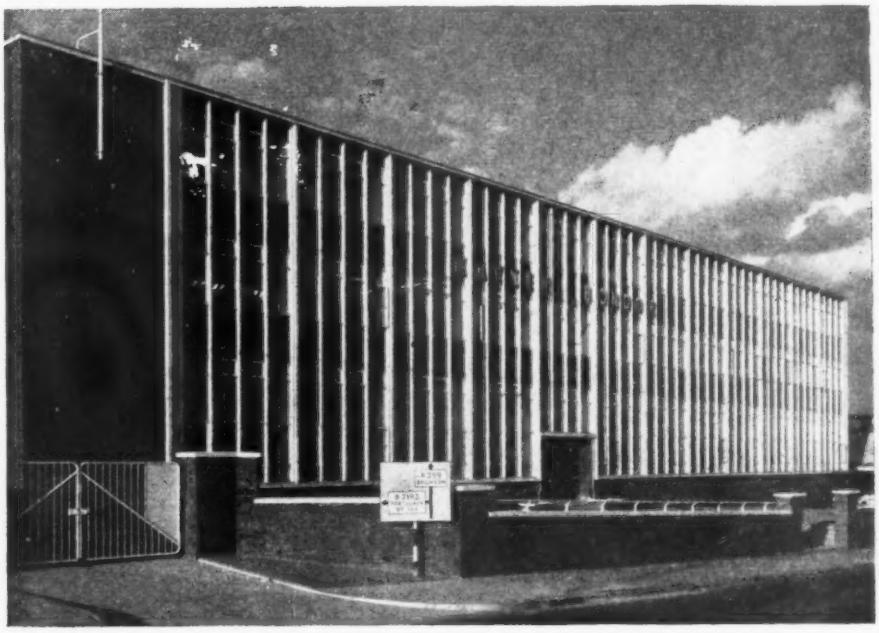


SECTION A–A. scale 3/16 full size



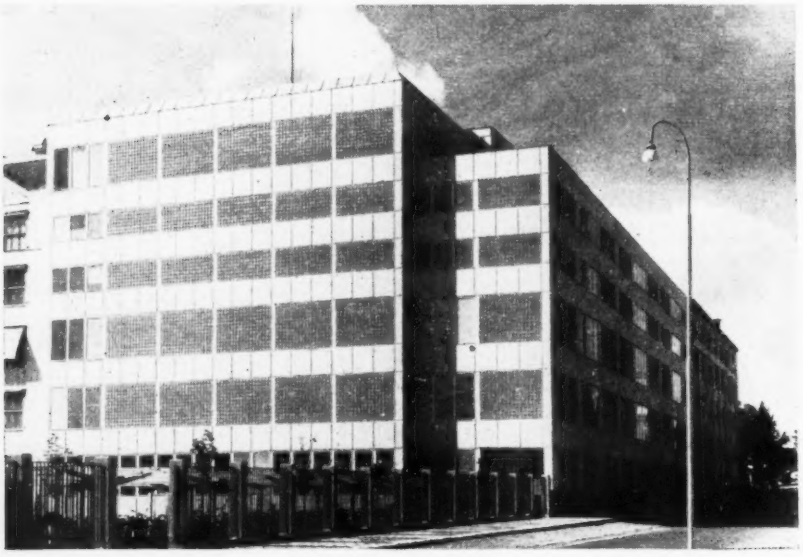
note: figured dimensions in feet and inches are approximate

UNDERWEAR FACTORY AT PORTSLADE



The new underwear factory for Kayser Bondor Ltd. at Portslade, near Brighton, was designed by Wallis, Gilbert and Partners and the quantity surveyors were Stanley Griffiths and Partners. The premises, which provide 38,000 sq. ft. of floor space on three storeys, are steel framed with reinforced concrete floors and roof. The curtain walling to the main facade consists of standard metal windows and extruded aluminium sections. The ground floor is occupied by offices, a training school, a cutting room and a despatch area; the first floor by production areas and the second floor by the staff dining room, the kitchen and the main canteen. From the canteen there is a view southwards over Shoreham Creek to the sea. On the 80-ft. north wall of the canteen there is a large mural by Basil Armstrong. The general contractors were Higgs and Hill Ltd.

FACTORY EXTENSION IN STOCKHOLM



This factory extension on six floors for A.B. Marabou, the largest chocolate manufacturers in Scandinavia, was designed by Artur von Schmalensee and the consulting engineers were Jacobsson and Widmark. The new wing provides an additional 100,000 sq. ft. of floor space, at a cost of approximately £570,000. Ceilings are finished with acoustic tiles made of aluminium, which give an improved fire security compared with other sound absorbent materials and air from the air-conditioning system is forced out through the perforations in the tiles.

Announcements

PROFESSIONAL

G. A. Jellicoe and Partners have opened an office at 5, Princess Square, Plymouth (telephone 66388).

Banks, Wood and Partners, quantity surveyors, announce that E. Dudley Smith, F.R.I.C.S., has acquired their Chelmsford practice and will practice from 139, London Road, Chelmsford, and 45, North Hill, Colchester, under the name of E. Dudley Smith and Partners. R. H. Shepherd, A.R.I.C.S., will be the resident partner at Colchester.

Cheale and Jenkins, architects and surveyors, of 55, High Street, Maidstone, Kent, announce that they have closed their practice. C. J. Cheale, L.R.I.B.A., F.I.A.A. & S., will now practice at 182, Maidstone Road, Chatham, Kent (telephone 3112).

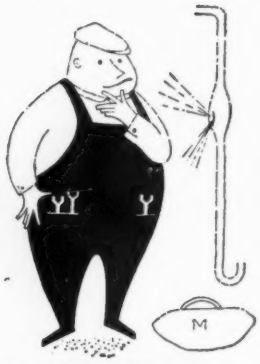
Edward S. Wright, A.R.I.B.A., announces that his address is now: City Architect, City of Townsville, Town Hall, Townsville, Queensland, Australia.

V. B. Johnson and Partners, A/A.R.I.C.S., of Leet Court, King Street, Watford, have opened a branch office at 38-40, High Street, Bedford (telephone Bedford 2933). P. G. Stanley, A.R.I.C.S., is in charge of this office.

TRADE

The British Plastics Exhibition and Convention is to be renamed the International Plastics Exhibition and Convention and will next be held at Olympia from June 17 to 27, 1959.

the building exhibition



november 13-27 1957

Olympia London

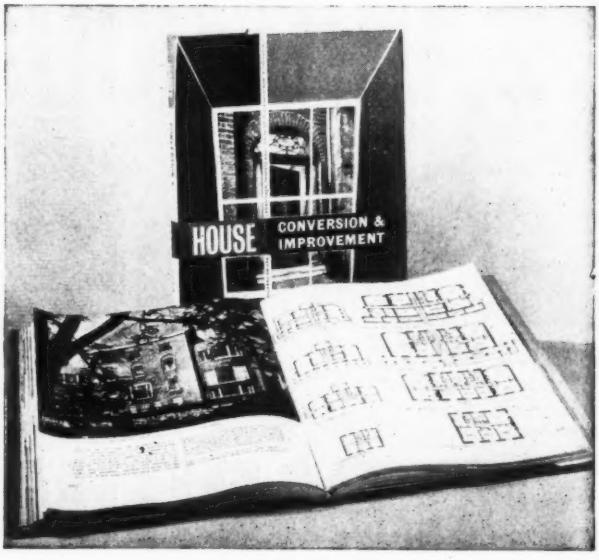
Many of the latest materials for cladding office blocks will be shown. Architects can discuss in detail the wide variety of surfaces obtainable and their methods of fixing.

Architectural students are especially welcome at the Exhibition which is open each evening until 7 p.m.

The Building Exhibition, Room G.23, 32 Millbank, London, S.W.1

FELIX WALTER, F.R.I.B.A.

House conversion and improvement



THIS IS THE FIRST comprehensive illustrated book to be published on the subject of the conversion or improvement of properties of all kinds. It is based on the series of articles printed from time to time in the *Architect's Journal*, with the addition of a certain amount of fresh material. This book is designed to be of value to those architects concerned with the conversion of old or out-worn houses into groups of smaller units suited to present-day needs; to local housing authorities engaged in the rehabilitation of derelict urban and rural areas; and to those private owners who, for the purpose of investment or for their own occupation, are planning to turn old houses into new flats, or maisonettes, and seek the latest ideas on layout, materials and equipment.

A great many successful conversions, ranging from luxury Belgravia terrace houses to remote rural cottages, are thoroughly illustrated and described; in the majority of cases full details of building costs, rents, rates, &c., are given. Chapters written by acknowledged experts in their own fields deal in simple language with the legal aspects of conversion, mortgages, loans and grants, management, and town planning.

Size 9½*in. by* 7½*in.* 258 *pages including over* 420 *halftone and line illustrations.* 42*s. net, postage* 1*s.* 9*d.*

THE ARCHITECTURAL PRESS

9-13 Queen Anne's Gate Westminster S.W.1

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

GOVERNMENT OF NORTHERN IRELAND

Applications invited from ARCHITECTURAL ASSISTANTS with recognised training and fair experience for unestablished posts in the Chief Architect's Branch, Ministry of Finance. Salary scale (under review) £485—£766; starting pay for candidates who have passed RIBA Intermediate examination will be not less than £605. Preference will be given to ex-Servicemen. Application forms obtainable from the Director of Establishments, Ministry of Finance, Stormont, Belfast. 7820

GOVERNMENT OF NORTHERN IRELAND
ASSISTANT ARCHITECT CLASS II

Applications are invited for pensionable posts in the Chief Architect's Branch, Ministry of Finance. Candidates must be Registered Architects by examination, with at least two years' experience in an Architect's Office in the preparation of working drawings. Salary scale £780 (at age 25)—£1,055 (age 34 and over)—£1,215. Transfer of existing Pension rights may, in certain circumstances, be approved. Preference will be given to ex-Servicemen. Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast. 7806

ARCHITECTURAL ASSISTANTS
Required by
MINISTRY OF WORKS

For employment in London and Provinces on design and detailing work on construction and maintenance of all types of public buildings.

Salary range £550 (age 21) to £870 p.a., London (slightly less elsewhere).

5-day week. 3½ weeks' annual leave initially. Starting pay according to age, qualifications and experience. Good prospects of promotion, with salaries of £1,030 p.a. and above.

Opportunities for permanent posts leading to pensions (non-contributory).

Interviews at Regional Offices, where possible. Applicants should be of Inter. R.I.B.A. standard. State age, training and experience to Chief Architect, Ministry of Works (A), Abell House, John Islip Street, S.W.1. 7484

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECTS and SURVEYING ASSISTANTS in the Building Regulations Division as follows:—

(a) For surveys of existing premises and consideration of proposals for alterations and new construction in the Theatres Section; and

(b) For building control work in connection with applications under the London Building Acts and Bye-laws as regards compliance with the Council's construction and means of escape standards.

Salaries up to £860, with starting rates according to qualifications and experience.

Application form and particulars from the Architect (Ref. AR/EK/47/57), The County Hall, S.E.1. (1610) 7707

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT GRADE IV, £727 15s.—£907 2s 6d. p.a. plus £30 London allowance. Must be A.R.I.B.A.

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

3. ASSISTANT BUILDING SURVEYOR, GRADE III, £656—£784 2s. 6d. p.a. plus L.A. £30 p.a. Preference given those who have passed Intermediate R.I.C.S. (Bldg. Sub. Div.). Capable drafting specifications in all trades, prep. schedules of dilaps., detailed estimates for gen. maint. works and surveys of properties.

Full details, present salary and three copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 7749

DERBYSHIRE COUNTY COUNCIL

Applications are invited for the undermentioned appointments in the County Planning Department:—

(a) SENIOR PLANNING ASSISTANT (Special Grade) (£750—£1,030).

(b) PLANNING ASSISTANT (A.P.T. II, £725—£845).

(c) PLANNING ASSISTANT (A.P.T. I, £575—£725).

Applicants should have had experience in the Planning Department of a Local Authority and for post (a) be corporate members of the Town Planning Institute (an additional qualification, preferably architectural, will be an advantage) and for post (b) have passed the Intermediate Examination of the Town Planning Institute or its equivalent.

Applications with full particulars, one testimonial and the names of two referees should reach the County Planning Officer, 8a, Bold Lane, Derby, by November 9th. 7934

LINDSEY COUNTY COUNCIL

(a) ONE ASSISTANT ARCHITECT, Special Grade (£750—£1,030). Applicants should be A.R.I.B.A.

(b) ASSISTANT ARCHITECTS, Grade A.P.T. II (£725—£845). Applicants should have passed Intermediate Examination R.I.B.A.

In special circumstances consideration will be given to starting salary not more than two steps up the grade.

N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any member or senior officer of the Council.

Applications, giving age, qualifications, experience, present salary, and the names of at least two persons to whom reference can be made, to be sent not later than 5th November to the County Architect, County Offices, Lincoln. 7877

CITY OF HEREFORD
APPOINTMENT OF ARCHITECT (HOUSING)

Applications are invited for the appointment of Architect (Housing) at a salary within Grade "C" of the lettered grades commencing at £1,295 per annum and rising by annual increments of £55 to a maximum of £1,515 per annum. The recommendations of the Joint Negotiating Committee for Chief Officers of Local Authorities will apply to the appointment. A motor car allowance will be paid in accordance with the recognised Scale and housing accommodation will be made available, if required. The appointment is determinable by either party on giving three months' notice in writing.

Candidates must be members of the Royal Institute of British Architects. Particulars of the appointment and forms of application may be obtained from the undersigned to whom applications must be delivered not later than 30th November, 1957.

T. B. FELTHAM,
Town Clerk.

Town Hall,
Hereford. 7903

OLDHAM EDUCATION COMMITTEE

Applications are invited for the following posts in the Schools Architect's Department:—

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

ARCHITECTURAL ASSISTANT, A.P.T. I (£575—£725).

ARCHITECTURAL DRAUGHTSMAN, Misc. IV—VI (£540—£725).

The appointment will be made within the grades indicated according to qualifications and experience.

Consideration will be given to the provision of housing accommodation to suitable applicants if required.

These posts, which offer excellent opportunities for responsible and interesting work, will be primarily concerned with the design and erection of the second phase of a new College of Further Education.

Applications should be addressed to the Director of Education, Education Offices, Union Street West, Oldham, by the 9th November, 1957, giving full details of age, qualifications and experience, together with the names of two referees. 7890

HER MAJESTY'S OVERSEAS CIVIL SERVICE
TOWN PLANNING OFFICER, SURVEY DEPARTMENT
GOVERNMENT OF NORTHERN NIGERIA

To produce development plans for Government Stations, African towns and villages.

Appointment is either permanent and pensionable in the salary range £1,086 to £1,680 p.a. or on contract in the range £1,170 to £1,824 p.a. Officers on contract receive a gratuity of £37 10s. in respect of each completed period of three months' resident service on satisfactory completion of contract.

Free passages for officer and wife and up to cost of one adult passage for children. Children's allowances from £120—£288 p.a. also payable. Quarters, if available, at rental of 8⅓% of basic salary. Generous home leave on full salary.

Candidates must be A.M.T.P.I. or have passed the Intermediate examination of the T.P.I. and in addition have regular engineering, architectural or surveying qualification. Experience in research for planning an advantage.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving briefly age, qualifications and experience, quoting BCD.103/408/04. 7906

EAST KILBRIDE DEVELOPMENT CORPORATION

The Corporation invite applications for the following posts:—

(1) ARCHITECT/PLANNER, salary scale £815—£1,107 by annual increments. Applicants must be A.R.I.B.A. and A.M.T.P.I., with at least two years' qualified experience.

(2) ASSISTANT ARCHITECT/PLANNER, salary scale £656—£784 by annual increments. Applicants should at least have passed the Intermediate examination of the R.I.B.A.

The commencing salary in each case will be in accordance with qualifications, experience, etc. The appointments are subject to the Corporation's Conditions of Service and Superannuation Agreement. Selected candidates will require to pass a medical examination.

A house or flat will be made available, if required. Application forms may be obtained from the General Manager, Torrance House, East Kilbride, to whom completed forms should be returned not later than 6th November, 1957. Canvassing directly or indirectly of the members of the Corporation will constitute an absolute disqualification. 7917

FEDERAL GOVERNMENT OF NIGERIA
ARCHITECTS, PUBLIC WORKS DEPARTMENT

To prepare sketch plans, working drawings and detailed specifications for various types of buildings and carry out general work of an architectural office.

Contract appointments. Salary range £1,290 to £1,962 p.a. Gratuity of £37 10s. for each three months' service payable on satisfactory completion of contract.

Free passages for officer and wife and refund of up to cost of two adult passages for children. Allowance of £75 each for two children maintained outside the territory. Quarters, if available, at low rent. Generous home leave on full salary.

Candidates must be A.R.I.B.A. with wide general experience.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving briefly age, qualifications and experience quoting BCD.112/14/05. 7905

CITY OF SHEFFIELD
CITY ARCHITECT'S DEPARTMENT
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT (HOUSING)
Grade A.P.T. IV—Salary £1,025—£1,175

Applications are invited from appropriately qualified persons for this appointment on the staff of the City Architect, Mr. J. L. Womersley, F.R.I.B.A., M.T.P.I.

The person appointed will be required to prepare initial designs for housing layouts and to work them up in detail. Preference will be given to those having a planning qualification or with a particular interest in town planning, the grouping of buildings and landscaping.

The City's Housing Programme consists of (i) estates in outer areas comprising mixed development of houses and flats, (ii) estates in inner areas containing a substantial proportion of high flats, and (iii) the redevelopment of outworn central areas. The appointment offers considerable scope to progressive architects possessing the requisite qualifications, design ability, and experience.

Applications stating age, education and training, qualifications, present and past appointments (with dates and salaries), experience, and the names of two referees, should reach me by the 11th November, 1957.

JOHN HEYS,
Town Clerk.

Town Hall,
Sheffield, 1. 7939

JOINT COUNTY COUNCIL OF MORAY AND NAIRN
APPOINTMENT OF COUNTY ARCHITECT

Applications are invited for the appointment of County Architect with the Joint County Council of Moray and Nairn at a salary of £1,371 × £54 to £1,588 per annum with placing according to qualifications and experience.

Applicants must be members of the Royal Institute of British Architects and should preferably have had experience with a local authority in the construction of houses, school buildings, etc.

A car allowance, in accordance with the Council's approved scale, will be paid for the use of a car to be provided by the candidate.

The post is covered by the County Council's Superannuation Scheme and the successful candidate will require to pass the usual medical examination.

Applications giving particulars of age, qualifications, technical training, and experience, together with copies of not more than three recent testimonials should be lodged with the County Clerk, County Buildings, Elgin, on or before 18th November, 1957. 7940

LINDSEY COUNTY COUNCIL
PLANNING DEPARTMENT

Applications are invited for the appointment of two ASSISTANTS A.P.T. Grade I, £575—£725 per annum. Applicants must have completed a three-year period of training in a planning, architect's or surveyor's office comparable with the recognised scheme for the training of Municipal Engineers or have passed the Intermediate examination of T.P.I. or R.I.C.S. Commencing salary according to qualifications and experience.

Superannuation and N.J.C. conditions of service as approved by the County Council. Canvassing will disqualify. Relationship to any member or senior officer of the Council to be disclosed in writing by applicants.

Applications with particulars of training, experience and names of two referees to County Planning Officer, The Castle, Lincoln, not later than 15th November, 1957. 7924

SOUTH AUSTRALIA
SCHOOL OF MINES & INDUSTRIES, ADELAIDE

LECTURER in the DEPARTMENT OF ARCHITECTURE. Salary £A1,500 to £1,750 according to qualifications. Applicants should hold a degree or diploma in Architecture, and be a corporate member of an appropriate professional body. Previous experience as an architect is essential. The successful applicant may be required to lecture and conduct classes in subjects of the Architectural, Town Planning, Building or Quantity Surveying Courses for which he is qualified, and to devote the whole of his time to the duties of his office. The position carries liberal sick leave, long service leave and superannuation benefits. Family fares paid to Australia and housing guaranteed. Applications close 14th December, 1957.

Agent General & Trade Commissioner.

South Australia House,
Marble Arch,
London, W.1. 7948

DOWN COUNTY COUNCIL
ASSISTANT ARCHITECT

Applications are invited for the position of ASSISTANT ARCHITECT in the Planning Department. Applicants must hold a Degree or Diploma from a recognised school of Architecture or be Associates of the Royal Institute of British Architects. It is desirable that candidates should have completed a recognised course in Town Planning or be Associate Members of the Town Planning Institute. Preference will be given to ex-service candidates possessing the necessary qualifications. The salary will be fixed in A.P.T. Grades IV, V or VI (£735—£1,107) according to the qualifications and experience of the successful candidate. Travelling expenses while travelling on duty will be paid at the current County Council scale. The appointment is subject to the provisions of the Local Government Officers' Superannuation Act, 1950 (contribution rate 6%) and to the Council's conditions of service.

Applications giving full details of training and experience with the names of two persons to whom reference may be made, should be lodged with the undersigned not later than Tuesday, the 12th November, 1957.

J. H. HARVEY,
Secretary.

Courthouse, Downpatrick.
22nd October, 1957. 7914

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

ASSISTANT ARCHITECT required—good experience of design and construction necessary, preferably in hospital work. Applicants must be Associate Members of the R.I.B.A.

Salary scale £700 × £25 (3) × £30 (1) × £35 (6) —£1,015 plus £20—£50 London weighting. Commencing salary above minimum may be paid according to relevant practical experience appropriate to the post. Whitley Council conditions, superannuable.

Apply, stating age, qualification (with date) and experience, with names of two referees, to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 11th November. 7929

OXFORD REGIONAL HOSPITAL BOARD

Applications are invited from qualified Architects for the appointment of ASSISTANT ARCHITECT (£700 × £25 (3) × £30 (1) × £35 (6)—£1,015 p.a.), in the Regional Architect's Department. Previous hospital experience is not essential.

Candidates may obtain further particulars from the Regional Architect.

Applications stating age, training, qualifications and details of experience, with the names of two referees from whom testimonials may be obtained, should be submitted to the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford, by not later than 22nd November, 1957. 7935

CORPORATION OF LONDON
REQUIRE FOR
CIVIC DESIGN SECTION
CITY PLANNING OFFICE

TWO PLANNING ASSISTANTS. Point of entry on scale dependent on age and experience. £620 to £985 in eight increments.

Primarily for assistance in design, detailing and modelling of redevelopment proposals for Barbican and other areas of the City of London. Candidates should have a good architectural background and education and a sensitive and contemporary approach to design. Ability to prepare perspectives in colour required, for one post. Superannuation, medical examination. Local Authority experience not essential.

Applications with details of training, age, experience, present salary, and two recent testimonials, to City Planning Officer, 55/61, Moorgate, London, E.C.2, within 14 days. 7921

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Selections for appointment are now being made from ARCHITECTS who have passed their Final Examinations this summer. Starting salaries up to £712 10s. a year, in scale £637 10s. to £860.

Vacancies also for ARCHITECTS of experience at starting salaries up to £1,090.

Full programme of Houses, Flats, Schools, and many other interesting buildings.

Application forms and full particulars from the Architect (Ref. AR/EK/46/57), The County Hall, S.E.1. (1609) 7708

DUNDEE COLLEGE OF ART
SCHOOL OF ARCHITECTURE

Principal: H. Adam Crawford, R.S.A., D.A.

The Governors of the Dundee Institute of Art and Technology invite applications for the position of SENIOR LECTURER AND STUDIO INSTRUCTOR.

Applicants should be members of the R.I.B.A. and preferably be holders of a Degree or Diploma of a recognised School of Architecture. A Degree in Town Planning would also be an advantage.

Salary Scales—
Men—£1,300 × £50 — £1,550.
Women—£1,219 (under "Equal Pay" Scheme to reach £1,550 by April, 1961).

Applications should be lodged by Saturday, 9th November, or as soon as possible thereafter, and should be on the prescribed form which, with full particulars, may be obtained from the undersigned.

F. RAYMOND WILKINSON,
Clerk and Treasurer.

Bell Street,
Dundee.
24th October, 1957. 7943

BOROUGH OF CHESTERFIELD
ARCHITECTURAL ASSISTANT

Applications invited for above appointment at a salary in accordance with the Special Classes Grade, *i.e.* £750 × £40 (7) to £1,030. Commencing salary in accordance with qualifications and experience.

Applicants must be Associates of the R.I.B.A. or hold equivalent qualifications and must have had a good general practical office experience.

Housing accommodation available if required. Car allowance is payable.

Applications, stating age, qualifications, full details of experience and positions held, together with the names of two referees, to be received by the Borough Engineer, Town Hall, Chesterfield, not later than Monday, 18th November, 1957.

Canvassing will disqualify.

RICHARD CLEGG,
Town Clerk.
7923

CITY OF WAKEFIELD
CITY ENGINEER'S DEPARTMENT

Applications are invited for the following superannuable appointments:—

(*a*) TWO ARCHITECTURAL ASSISTANTS, Special Grade (£750—£1,030)

Applicants should be A.R.I.B.A. and preference will be given to those having municipal experience.

(*b*) ASSISTANT CLERK OF WORKS (Property Maintenance), Miscellaneous Grade V (£610—£670).

Applicants must have a thorough knowledge of the building trades, should be conversant with plans, quantities, etc., and have had experience in the supervising of works and the preparation of estimates.

Applications stating age, training, qualifications and experience together with the names of two referees should be sent to J. N. Sedgwick, City Engineer, Town Hall, Wakefield, by 11th November, 1957. 7951

CARMARTHENSHIRE COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(*a*) ASSISTANT ARCHITECT. Salary Grade Special Scale £750—£1,030 per annum.

(*b*) ARCHITECTURAL ASSISTANT. Salary Grade A.P.T. II £725—£845 per annum.

(*c*) ARCHITECTURAL ASSISTANTS. Salary Grade A.P.T. I £575—£725 per annum.

Candidates for posts (*a*) must be A.R.I.B.A., and those for posts (*b*) and (*c*) must have passed the Intermediate Examination of the R.I.B.A.

Details of qualifications, experience and present salary, with copies of three recent testimonials to County Architect, County Hall, Carmarthen, not later than Saturday, 16th November, 1957.

W. S. THOMAS,
Clerk of the County Council.
7950

CANNOCK RURAL DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited from suitably qualified persons for the above permanent post on the staff of the Engineer and Surveyor. Salary—Grade A.P.T. III (£845—£1,025).

The starting salary will be fixed at a point within the Grade depending on the qualifications and experience of the successful candidate.

Housing accommodation in the form of a self-contained maisonette will be available, if required, at a reasonable rent. Travelling allowance will be paid on essential-user scale. It is the Council's usual practice to operate the assisted car-purchase scheme, when necessary, and to assist with removal expenses.

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

Applications, giving full details of age, qualifications and experience together with the names and addresses of two referees, to reach the undersigned by Tuesday, 12th November, 1957.

JOHN P. ROBERTS,
Clerk of the Council.

Council Offices,
Penkridge,
Stafford. 7946

COUNTY BOROUGH OF SOUTHPORT

Applications are invited for the appointment of an ASSISTANT QUANTITY SURVEYOR (Special Scale £750—£1,030) in the Borough Architect and Town Planning Officer's Department.

Candidates must have passed the Final Examination of the R.I.C.S. (Quantities Division).

Consideration will be given to the provision of housing accommodation if required.

Application forms obtainable from the Borough Architect and Town Planning Officer, 99/105, Lord Street, to be returned by 16th November, 1957.

R. EDGAR PERRINS
Town Clerk.
7888

PADDINGTON BOROUGH COUNCIL
ASSISTANT QUANTITY SURVEYOR
(£875—£1,055)

Candidates should be Intermediate A.R.I.C.S with experience up to final accounts stage. Commencing salary according to qualifications and experience.

Applications stating age, qualifications, experience, present and past appointments, and the names and addresses of two referees should be sent to me by 11th November, 1957 (quoting A.355).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 7930

CITY OF MANCHESTER
HOUSING DEPARTMENT

Applications are invited from suitably qualified persons for the appointment of:

ASSISTANT ARCHITECT, "SPECIAL" Grade £750—£1,030 p.a.

(Applicants must have passed the Final examination of the R.I.B.A. or equivalent and point of entry to grade will be according to qualifications and experience.)

Applications, giving full details of age, qualifications and experience to the Director of Housing, Town Hall, Manchester, 2, to be received not later than Friday, 22nd November, 1957. 7913

CORPORATION OF LONDON
CITY PLANNING OFFICE

Require PLANNING ASSISTANT (£950—£1,175 in five increments). Point of entry on salary scale dependent on age and experience. Applicants should be A.M.T.P.I. and A.R.I.B.A., and have contemporary approach to large scale design, and experience of planning surveys and Development Plan work. Superannuation. Medical examination.

Applications, with details of training, age, experience and present salary and copies of two recent references, to City Planning Officer, 55-61, Moorgate, London, E.C.2, within 14 days. 7920

HERTFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

ASSISTANT ARCHITECTS (Special Class—£750—£1,030) required. Previous Local Government experience not essential.

Applications, with names of two referees, to County Architect, County Hall, Hertford, Herts., not later than 8th November, 1957. 7911

VACANCIES (AT LEAST ELEVEN) FOR ARCHITECTURAL ASSISTANTS IN THE IRISH CIVIL SERVICE

Rates of pay: Man: under 25 years, £8 1s. 5d.; 25 years or over £3 13s. 8d. to £11 14s. 11d.; Woman: under 25 years, £6 7s. 2d.; 25 years or over, £6 16s. 11d. to £9 10s. 9d. **Maximum age** limit: 35 years. Essential: adequate **training** in Architectural work. Application forms and further particulars from Secretary, Civil **Service** Commission, 45, Upper O'Connell **Street**, Dublin. Latest date for receiving completed **application** forms: 14th November, 1957. 7916

INVERNESS COUNTY COUNCIL invite applications for the following appointments: (*a*) CHIEF ARCHITECTURAL ASSISTANT. Applicants must be not less than 40 years of age and Associate Members of the Royal Institute of British Architects: Salary £1,200 per annum; (*b*) DRAUGHTSMAN. Salary according to age, £355 per annum at age 21 rising to a maximum of £535 per annum. Applications stating age, training, qualifications and experience with copies of recent testimonials to the County Clerk, County Buildings, Inverness, by 15th November. 7945

Architectural Appointments Vacant

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

LONDON office with widely varied practice urgently requires all grades of ASSISTANTS, preferably with London experience. Five-day week. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1 Holborn 5108. 6631

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

ASSISTANT of Intermediate standard, with office experience, good draughtsman, required for work on Flats and Houses. Please state experience, age and salary required to: R. Jelinek-Karl, F.R.I.B.A., 22, Chancery Lane, W.C.2. Hol. 5696. 7866

WELL-KNOWN London Architects require ASSISTANTS between Intermediate and Final standard. Interesting projects. Five-day week.—Write, Box 861, c/o 7, Coptic Street, W.C.1. 7589

W. J. SIMMS SONS & COOKE, LTD., manufacturers of Timber Buildings for home and overseas markets, have a vacancy in their Architect's Department for a SENIOR ASSISTANT. Applicants should have considerable general experience and be in the age group 30-45. Salary will be commensurate with age and ability. Housing accommodation available.—Apply to the Staff Architect, W. J. Simms Sons & Cooke, Ltd., Haydn Road, Sherwood, Nottingham. 7912

ARCHITECTURAL DRAUGHTSMAN required, with experience of Civil Engineering and Allied Trades, and fully capable of working on own initiative. Age not exceeding 30 years. Excellent salary conditions and pension fund.—Applications in writing to Staff Supervisor, Shell-Mex and B.P., Ltd., Shell-BP House, 7, Oxford Road, Manchester, 1. 7889

ARCHITECTURAL ASSISTANT, Intermediate to Final standard, not over 30 years of age, required immediately for Bank's Architect's Department in Manchester. Permanent position. Contributory pension scheme. Salary range: £690 at age 27, rising by annual increments to £825 at age 31 and thereafter upon merit.—Box 7910.

BUCKINGHAMSHIRE firm of Architects, within 30 miles of London, with a varied practice, require TWO ARCHITECTURAL ASSISTANTS, approaching Final R.I.B.A. standard. 5-day week. Salary according to age and experience.—Please write, giving full particulars, to Box 7768.

PATRICK GWYNNE is seeking an ASSISTANT (approximately £600/£700) with suitable experience for work on houses and interiors. Office at house near Esher, therefore desirable that applicants should (already) live within easy travelling distance. Please send particulars to The Homewood, Esher, Surrey. 7869

MANCHESTER: ASSISTANT required, Intermediate standard; small, progressive, congenial office, varied contemporary work. Please write Box 7867, giving full particulars and salary required.

EDINBURGH: ASSISTANT, Intermediate standard or qualified, wanted for recently established practice. Please write, giving full details and salary required to Law and Dunbar-Nasmith, 54, Frederick Street, Edinburgh, 2. 7870

INTER. ASSISTANT required by Harrow office. Practical exp. wkg. drgs.; specification; surveys, etc. Good draughtsman.—Please write, with full part., includ. sal. reqd., to Field & Shaw, 40, Station Road, N. Harrow, Middx. 7788

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. Five-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 862, c/o 7, Coptic Street, W.C.1. 7593

ARCHITECTURAL ASSISTANTS required, Intermediate and Final standards, for Industrial and other varied work. Salary between £500 and £900 per annum, according to experience.—Eric G. V. Hives, L.R.I.B.A., 46, Queen's Road, Reading. Telephone 55484. 7796

ARCHITECTURAL ASSISTANT required, to be employed on industrial work. Salary £500 to £600 per annum, according to experience.—W. Leslie Jones, 59, High Street, Great Missenden, Bucks. 7830

WANTED in London office of A.R.I.B.A. engaged on work for Housing Company, ARCHITECTURAL ASSISTANT, Inter R.I.B.A. standard. Experience in preparation of Sketch Designs, Working Drawings and Specifications essential. Salary according to experience and capabilities. Box 7942.

COUNTRY Practice requires JUNIOR ASSISTANT of about Intermediate Standard. Reply with details and salary required to Box 7880.

JUNIOR ASSISTANT required for busy Drawing office. R.I.C.S. trainee (Building section) preferred.—Write, stating age, training and experience, A. C. Draycott, South Street, Lancing. 7936

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

APPLICATIONS are invited for the following appointment in the above Branch Office undertaking interesting and varied commercial and industrial projects:—

ASSISTANT ARCHITECT, capable of preparing working drawings from preliminary details (salary range £550 to £820 per annum). There is a 5-day week in operation, and the appointment will offer prospects of upgrading.

Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester. 7941

SENIOR ARCHITECTURAL ASSISTANT required in Blackpool office, with varied practice.——Write, giving full particulars of age, qualifications, experience, etc., to MacKeith, Dickinson & Partners, 4, South King Street, Blackpool. 7938

ARCHITECTURAL ASSISTANT required in City office of Architects and Chartered Surveyors. Final R.I.B.A. standard, salary according to experience.—Parfitt & Craig Hall, 39, Lombard Street, London, E.C.3. 7937

ARCHITECTURAL ASSISTANTS wanted for busy West End office engaged on industrial and commercial work. Applicants should be of Inter. or Final standard, with about 3 years' office experience.—Eric Firmin & Partners, 10, Manchester Square, W.1. Welbeck 2849. 7928

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required. Commencing salary £500—£800 per annum, with bonus, according to ability and experience. Varied work, small and large projects, mainly industrial. Own transport desirable but not essential.—Applications for interview, stating age, experience, qualifications and salary required, to D. R. Harper, A.R.I.B.A., Francis W. B. Yorke, Harper & Harvey, 191, Corporation Street, Birmingham, 4. 7927

ASSISTANT required, Intermediate standard or higher, with some years' office experience, for small practice.—F. Greenwood, A.R.I.B.A., 18, The Green, Richmond, Surrey. RIC. 6316. 7925

ARCHITECTURAL ASSISTANTS, Inter. or Final standard, required in Manchester office for Industrial and Commercial work of an interesting nature. Salary at range £750—£900 p.a., according to qualifications. These interesting posts are offered in Design-Contractor's office. —Apply Box 7918.

REEMA CONSTRUCTION, LTD., Milford Manor, Salisbury, have vacancies for recently qualified ARCHITECTS and for experienced BUILDING CONSTRUCTION DRAUGHTSMEN for work on the design and production of new traditional buildings, including multi-storey flats. 7954

FINAL Standard ARCHITECTURAL ASSISTANT required for variety of work in connection with exhibition buildings and their ancillaries (not with exhibition design). Good salary and working conditions.—Write in first instance, giving details of age, training and experience, if any, to Staff Architect, Olympia Limited, Kensington, W.14. 7944

GOOD DRAUGHTSMEN, with experience of constructional details, required in Essex office of Architect, engaged on development of houses and flats of traditional and new concrete technique.—Write, giving details of age, experience, and salary required, to Box 7947.

BUSY office in Kensington requires ARCHITECTURAL ASSISTANT, with 3/4 years' office experience, good draughtsman and sound knowledge of construction essential, for work on Licensed premises.—Apply Mayell, Webb & Hart. Telephone: FRE. 8596. 7949

TWO JUNIOR ARCHITECTURAL ASSISTANTS required immediately for working up tracing and colouring in busy West End office. Excellent prospects for right men.—Applications, stating age, experience, training and salary required, to Kenneth Wakeford, Jerram & Harris, 7, Connaught Place, London, W.2. 7953

ARCHITECTURAL ASSISTANT or DRAUGHTSMAN required, with at least 3 years' previous experience in private office.—H. S. W. Stone & Partners, Chartered Architects, 20, The Crescent, Taunton, Somerset. 7952

DRAUGHTSMAN'S TECHNICAL ASSISTANT required in a department concerned with the use of prefabricated building systems of wide application. Excellent opportunity for initiative. Apply Box 7933.

ASSISTANT ARCHITECTS (Final R.I.B.A. Standard) are required in a Department concerned with the use of prefabricated building systems of wide application. Contemporary outlook appreciated. Apply Box 7932.

IMPERIAL CHEMICAL INDUSTRIES, LTD., has a vacancy for an ARCHITECTURAL ASSISTANT in its London office. Candidates should be Associate Members of the R.I.B.A. between the ages of 25 and 35, and should have a thorough knowledge of architectural works, particularly in regard to the design and construction of offices, canteens, laboratories, housing and warehouses.—Applications, stating age, qualifications and experience, should be forwarded to Head Office and Regions Staff Department (GDC), Imperial Chemical House, Millbank, S.W.1. 7897

SENIOR and JUNIOR ASSISTANTS required by a busy Manchester office; varied practice, including school projects. Salaries in the region of £750 per annum for juniors and £1,000 per annum for seniors.—Box 7895.

INTERMEDIATE standard ARCHITECTURAL ASSISTANT required for busy and varied Private Practice—previous office experience essential.—Apply, stating experience, age, and salary required, to George E. Clay & Partners, AA.R.I.B.A., 198, Parrock Street, Gravesend, Kent. 7896

ARCHITECTURAL ASSISTANT, Final R.I.B.A. standard, age 23-30, with practical experience and initiative, required to take responsible position in Lake District practice.—Full particulars to Hargreaves & Mawson, 25, Finkle Street, Kendal, Westmorland. 7894

J. M. AUSTIN-SMITH & PARTNERS require an ASSISTANT, qualified or unqualified, for interesting and varied work, with opportunities for taking responsibility and supervising work in progress. Salary will be according to age, and length and type of experience.—Apply by telephone, Regent 6183, or by letter to 29, Sackville Street, London, W.1. 7893

ARCHITECTURAL ASSISTANT required. Good draughtsman, with office experience and knowledge of building construction.—Apply, stating salary required, to Caroe & Partners, 16, Great College Street, Westminster. 7892

LESLIE & PETER BAREFOOT, Chartered Architects, require ASSISTANT, Inter. to Final standard. Interesting contemporary work.—Apply in writing to 22, Thorofare, Ipswich. 7907

ASSISTANT ARCHITECT required in small modern office, with plenty of scope. Salary £13 to £15.—Watson & Coates, 6, Gray's Inn Square, W.C.1. 7909

Architectural Appointments Wanted

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

ARCHITECT'S ASSISTANT, school trained, seeks job London area with some responsibility. Box 7821.

A.R.I.B.A. (29), 4 years' experience on Industrial and Domestic work in London offices, seeks responsible position in Norwich or district.—Box 7902.

PART-TIME work sought by Student R.I.B.A., with 11 years' varied experience. 15 to 20 hours per week. Flexible arrangement preferred. —Box 7904.

ARCHITECT (32), single, 9 years' post-graduate experience, available November, seeks appointment with prospects, home or abroad.—Box 7901.

CHIEF ARCH. ASST. (29), not impressed at the future of his prospects limiting him to just over the £1,000 p.a. mark in an architectural office, seeks to consolidate career in progressive permanent position where wide knowledge of all aspects of building design, detail, administration and contract supervision would be useful. Will consider anything—administrative, technical, commercial or professional but *not* sales. All enquiries welcomed and answered.—Box 7922.

ASSOCIATE (37), with a good general experience in private practice, seeks senior position, with prospects. Birmingham area.—Box 7899.

Other Appointments Vacant

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

SHOP FITTINGS. Applications requested for position of SHOP FITTINGS SUPERVISOR, conversant all aspects of Shop Fitting Work including Details, Costing, and with outstanding ability in Contemporary Design, Lay-out and Presentation. Box 7692.

BUCKINGHAMSHIRE firm of Architects, with Quantity Surveying branch, require JUNIOR ASSISTANT, for taking off and working up. Salary according to age and experience.—Write Box 7769.

CLERK OF WORKS

APPLICATIONS are invited from qualified Clerks of Works (M.I.C.W. by exam. preferred), holding either H.N.C. in building or membership R.I.C.S. (Building Sub-division), and in the age group 35 to 45, to supervise building work at an expanding factory in Stoke-on-Trent. Experience of industrial building—steel framed structures and R.C. machine foundations essential. This position is permanent and pensionable.—Please write, stating age, qualifications and salary required, Box 7926.

BUILDING SURVEYOR required by major oil company in its Newcastle branch office. The work is in connection with the development and re-modelling of petrol filling stations, garages, workshops, etc. Applicants should have a sound knowledge of building construction and by-law requirements, and be capable of carrying out site surveys and site inspections. Must be a car driver. Pension and Life Assurance Scheme, generous sickness benefits, luncheon vouchers.—Write, giving full details, stating age, experience and salary required, to Box 7919, quoting ref. BSN/242.

ARCHITECTURAL ASSISTANT, Intermediate standard, required. Must have office experience. Busy office, with wide variety of work. Good prospects.—'Phone Secretary, London Victoria 2051, for appointment. 7793

Services Offered

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

"DON" ARCHITECTURAL MODEL MAKERS. We offer the highest grade work with speed and reliability.—Please 'phone Erith 3843 or Hastings 1366. 1673

SITE Surveys and Surveys of Buildings prepared at short notice anywhere in Britain. MUSeum 8753. 3103

ARCHITECTURAL, Reinforced Concrete and Steel design and detailing work required. Over 30 Assistants available. MUS. 8753. 5145

SMALL London Architectural Practice can undertake further work and help out others more fortunate.—Reply to Box 7908.

BILLS OF QUANTITIES, Specifications, Schedules, etc., typed and duplicated. Quality and accuracy guaranteed. Speedy and economical service. Prompt despatch by registered post.—Josephine Sammons, 52, Brunswick Road, Hove. Tel.: Hove 70051. 7791

GOOD LETTERING is essential for Commemorative Wall Tablets, Foundation Stones, etc. Designs prepared and estimates given for the finished work in any suitable material. Renowned as a Centre for Lettering since 1934.—Sculptured Memorials, 67, Ebury Street, S.W.1. 9170

THE SITE SURVEY COMPANY, Blackheath, S.E.3. Tel.: LEE Green 7444-5. Fully equipped to undertake urgent Engineering and Architectural surveys in any part of the country and abroad. Specialists in 1 in. scale detailed surveys for extensive city development areas. 1890

F. R.I.B.A. (40), well qualified, with London practice temporarily slack due to present financial restrictions, offers services to other Architects in their offices or in own. 15s. per hour.—Box 7898.

SURVEYS, Working Drawings, Details, etc., etc. Competent assistance given by fully qualified staff at reasonable rates.—Box 7891.

SITE Surveys, Levels, etc., undertaken 50 miles radius Stratford-on-Avon.—H. G. Bengough, Brailes, near Banbury, Oxon. Tel. Brailes 60. 7915

ENGINEER, 20 years' experience, offers services to the profession: Structural and Civil Designs and Details, Surveys, etc.—39, Park Lane, Pontefract, Yorkshire. 7931

Partnership and Financial

6 lines or under, 15s.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra.

ASSOCIATE, Dip. Arch. (37), requires Partnership or position leading thereto. Broad experience in private practice. Midlands preferred, but not essential. Some capital available.—Box 7900.

Miscellaneous

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

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

ARCHITECTURAL METALWORK of all types supplied and fitted. Gates, doors, balustrades, staircases, steel structures. Design staff available.—Clayton & Bamber, Ltd., Cartersfield Road, Waltham Abbey, Essex. 5823

PALL MALL, S.W.1. Approximately 1,200 square feet excellent office accommodation on two floors available either for four years or nineteen years at 25s. per square foot. Particularly suitable professional use. Phone Hyde Park 8771 or write H. 10, Hay Hill, W.1. 7863

Educational Announcements

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

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

R.I.B.A. Inter. and Final EXAMS. TUITION, BY POST.—C. W. BOX, F.R.I.B.A., 115, Gower Street, W.C.1. Tel.: EUS. 3906. 1942

FIRST FOLD HERE

AJ enquiry service

If you require catalogues and further information on building products and services referred to in the advertisements appearing in this issue of the Architects' Journal please mark with a tick the relevant names given in the index to advertisers overleaf. Then detach this page, write in block letters, or type, your name, profession or trade and address in the space overleaf, fold the page so that the post-paid address is on the outside and despatch. We will ensure that your request reaches the advertisers concerned.

FOLD HERE

Postage will be paid by Licensee

No Postage Stamp necessary if posted in Great Britain or Northern Ireland

BUSINESS REPLY FOLDER
Licence No. S.W. 1761

THE ARCHITECTS' JOURNAL

9-13 Queen Anne's Gate

London, S.W.1.

FOLD HERE

TUCK IN THIS END

Alphabetical index to advertisers

For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Education, Legal Notices, Miscellaneous Property and Land Sales, see 98, 99, 100, 101, 102

Write in block letters, or type, your name, profession and address below, and fold so that the post-paid address is on the outside.

NAME_____

PROFESSION_____

ADDRESS_____

_____

31.10.57

CODE
0421

0430
0433
0818
0869
0446

0828
0829
0870

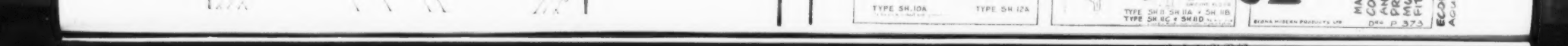
0455
0457
0466
0468
0473
0478
0479
0480
0481

0492
0754
0671
0501
0502
0786
0509
0523
0650
0535
0742

0544
0545
0547
0548
0756
0550
0552
0873
0871

0873

0587
0657
0601
0813
0810
0606


TYPE SH.10A
TYPE SH.12A
TYPE SH.11 SH.11A + SH.11B
TYPE SH.11C + SH.11D
MA
CO
AN
PR
MU
FI
EC
AC
DRG. P 373

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