

# THE ARCHITECTS' JOURNAL



## standard contents

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

## NEWS and COMMENT

*Astragal's Notes and Topics*

*Letters*

*News*

*Diary*

*Societies and Institutions*

## TECHNICAL SECTION

*Information Sheets*

*Information Centre*

*Current Technique*

*Working Details*

*Questions and Answers*

*Prices*

*The Industry*

## CURRENT BUILDING

*Major Buildings described:*

*Details of Planning, Construction,*

*Finishes and Costs*

*Buildings in the News*

*Building Costs Analysed*

*Architectural Appointments  
Wanted and Vacant*

No. 3227

[Vol. 125]

THE ARCHITECTURAL PRESS

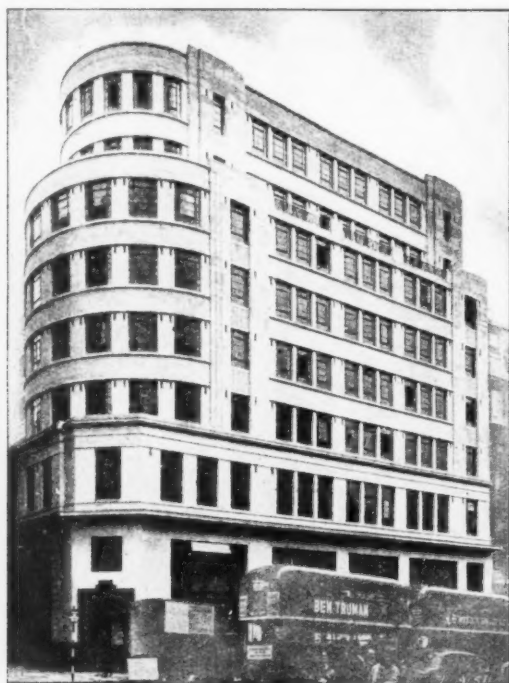
9, 11 and 13, Queen Anne's Gate, Westminster,  
S.W.1. 'Phone: Whitehall 0611

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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 le one week, lh to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

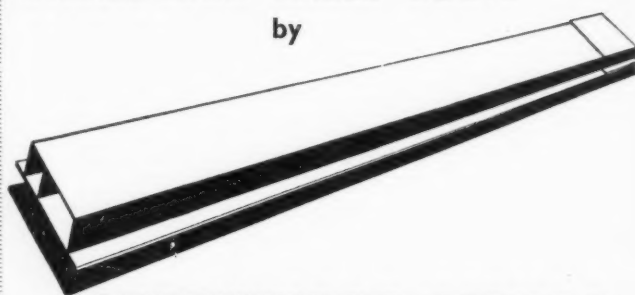
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square. Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street, Grosvenor Square, W.1. Mayfair 7086
ILA	Institute of Landscape Architects, 2, Guilford Place, W.C.1. Holborn 0281
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7179
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1. Abbey 6172
ISE	Institute of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
LDA	Lead Development Association. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. Trafalgar 7711
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary: Trevor Dannatt, A.R.I.B.A., 71, Blandford Street, W.1. Welbeck 4713
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1. Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1. Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James' Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2. Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1. Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1. Welbeck 0619
NCBMP	National Council of Building Material Producers. 10 Storey's Gate, S.W.1. Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1. Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1. Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1. Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2. Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, London, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636



HAYMARKET HOUSE · HAYMARKET · LONDON · S.W.1  
Architects: E. A. Stone, Toms & Partners, London, W.1.  
Contractors: Geo. Wimpey & Co., Ltd., London, W.6.  
Electrical Contractors: Berkeley Electrical Engineering Co., Ltd.,  
London, S.W.1.

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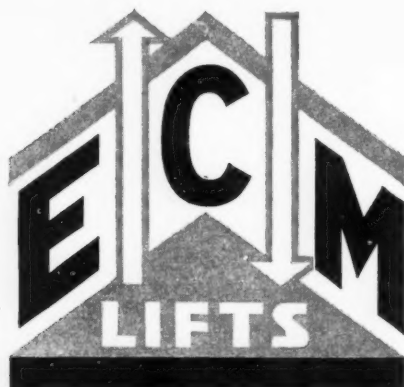
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or Selwyn House, Cleveland Row, St. James's, London, S.W.1. (Tel: WHitehall 5672-6).

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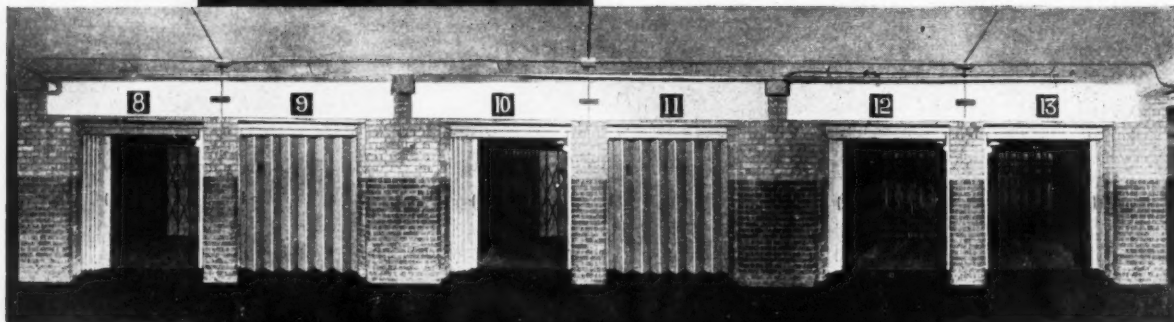
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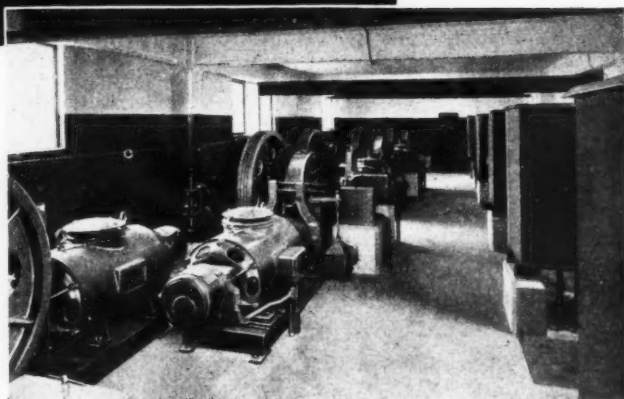


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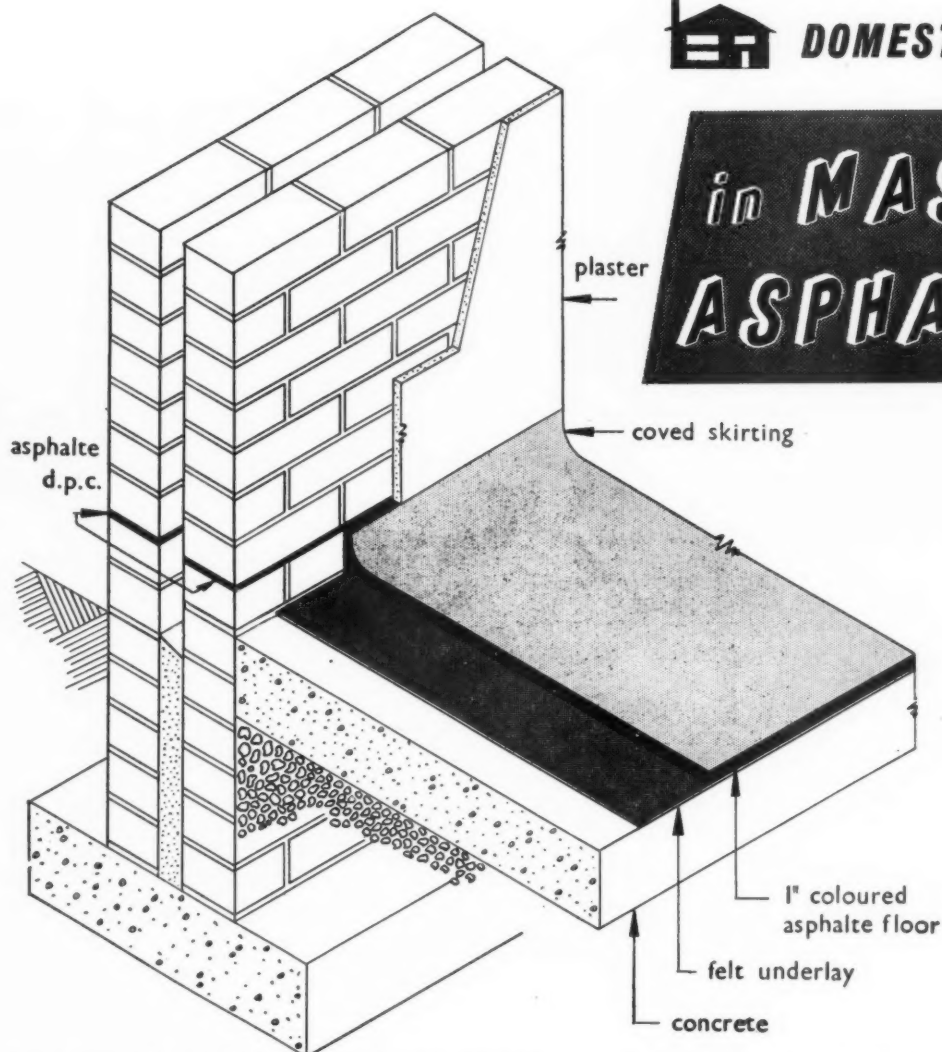
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(3) ordering from member companies of the Asphalte Council.

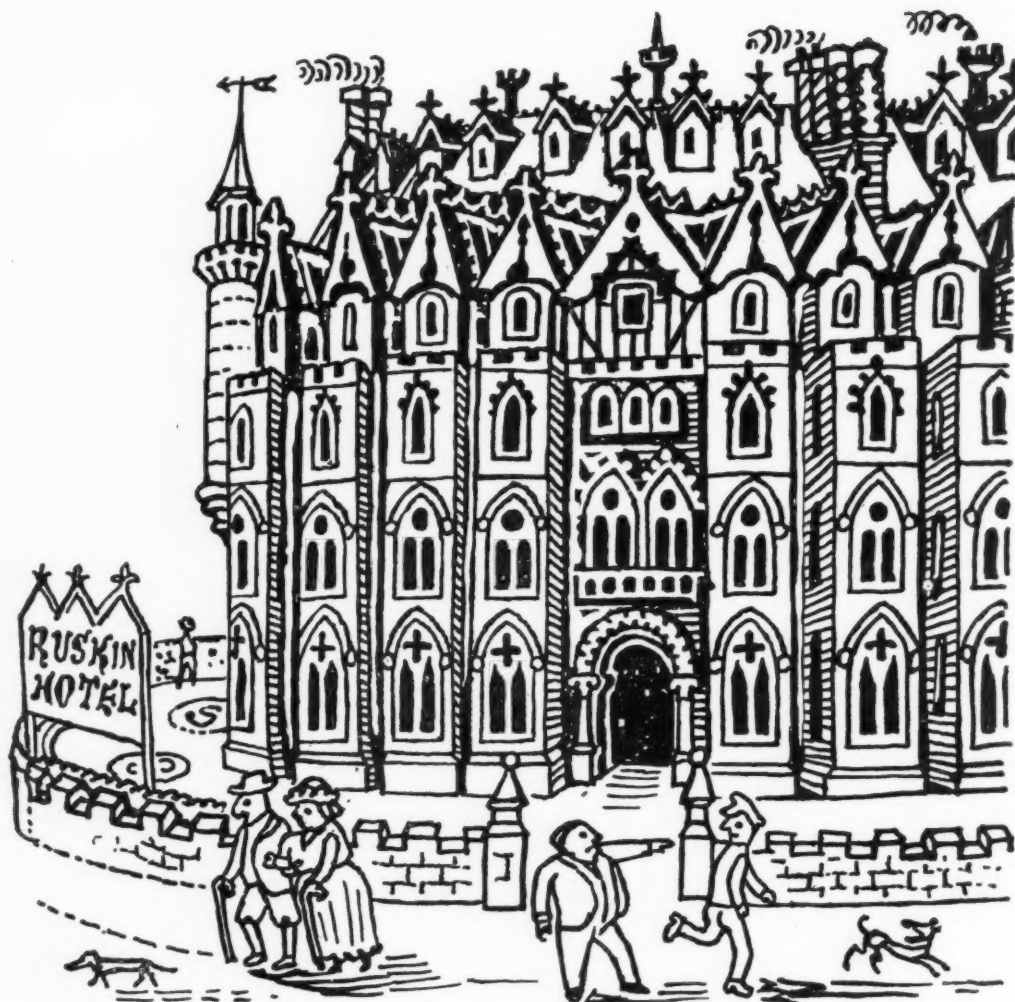
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Unfortunately, this passion for the medieval meant that the principal keys were fully fourteen inches long, and the locks, though doubtless proof against erring monks, were no match for modern picklocks.

After the sudden resignation of the night porter, following the loss of Lady Porterhouse's diamonds, the Manager sent for the Man from Chubb. The locks he proposed were inconspicuous but well-nigh impenetrable, and he arranged a simple system of master keys which will make future scandals, to say the least, unlikely.

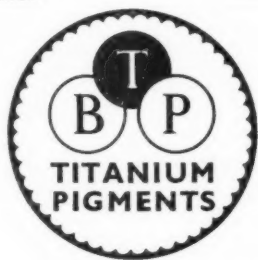
Leaving nothing to chance, the Manager has also acquired, for his own and his guests' valuables, one of those Chubb safes which no bur-

glar has ever succeeded in opening. There is now no safer place for a holiday than the Ruskin Hotel.

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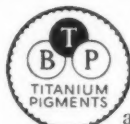




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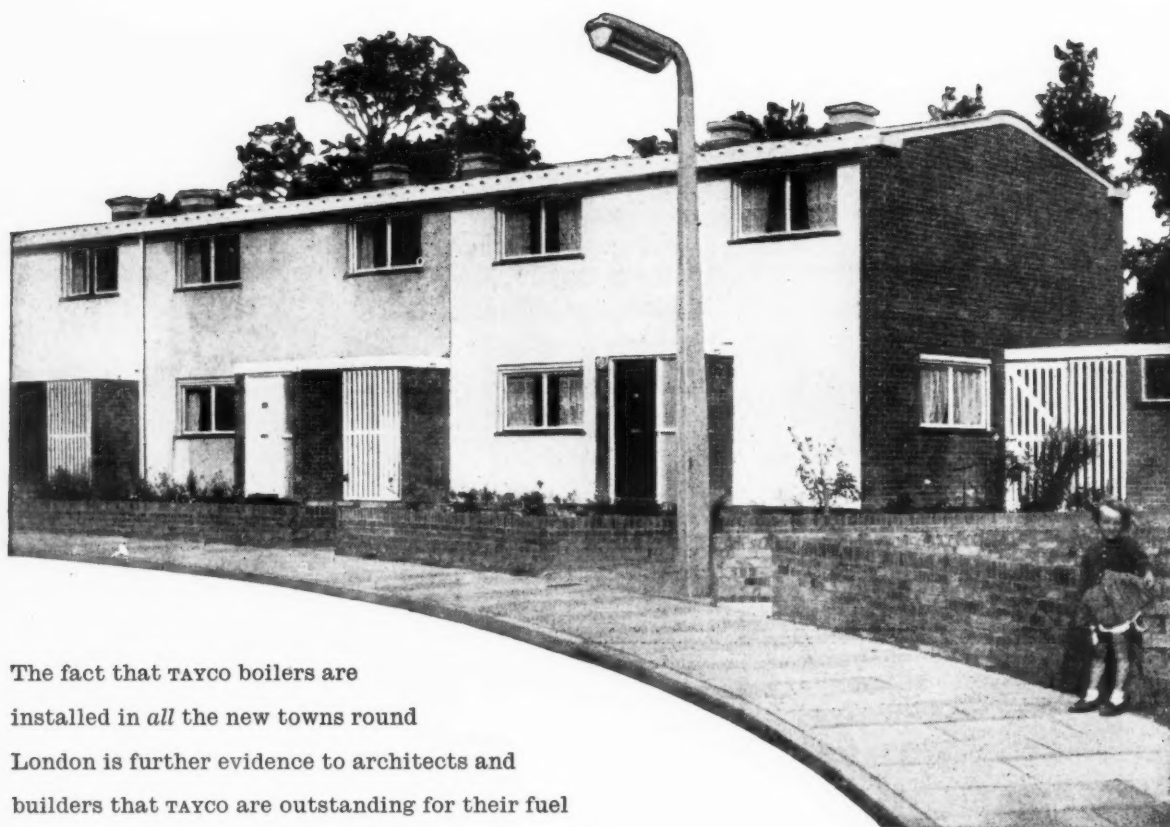
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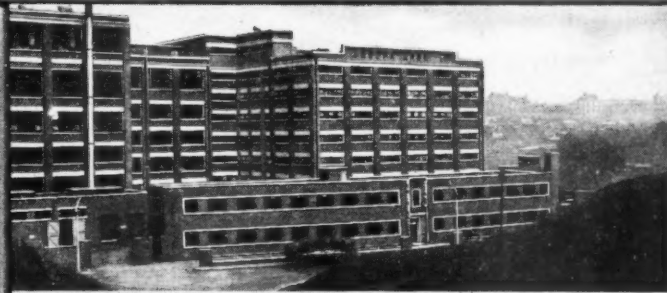


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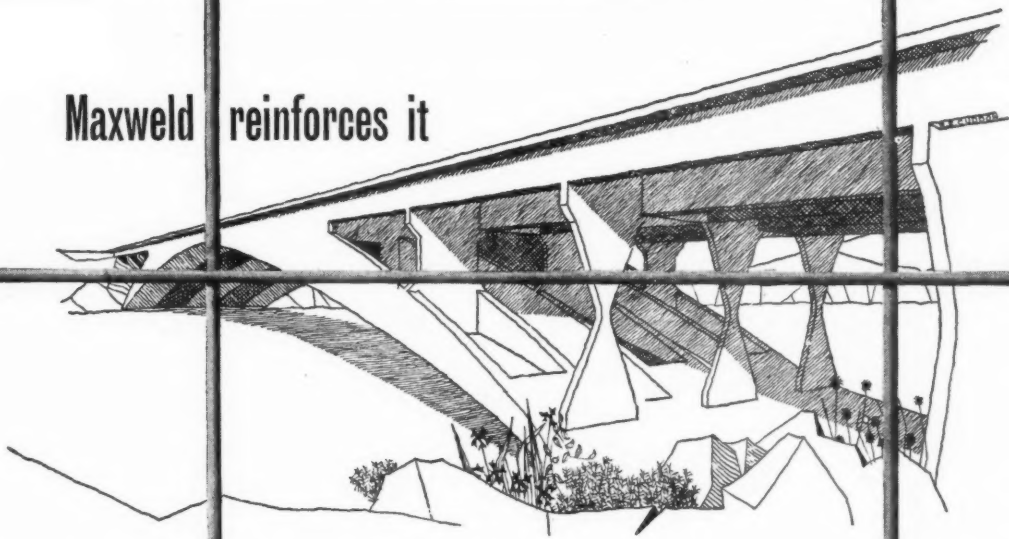
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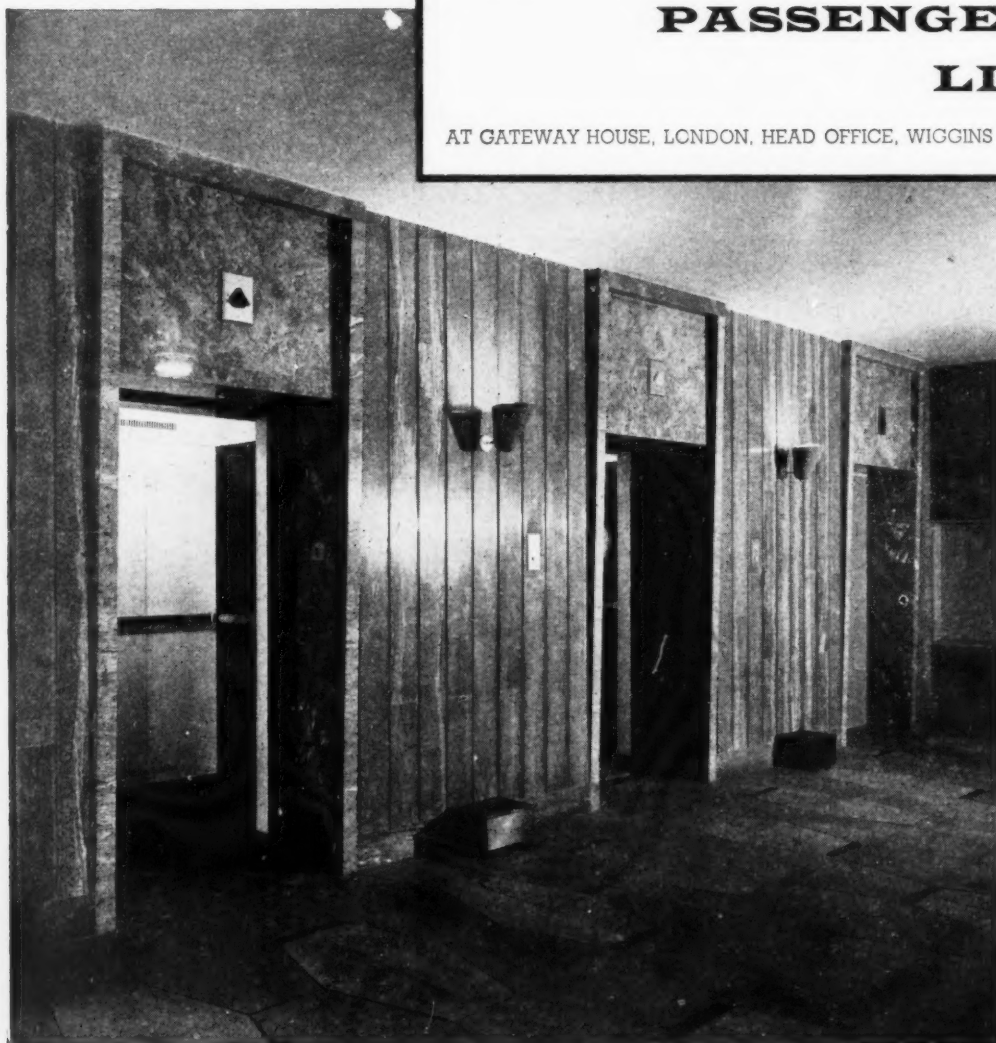
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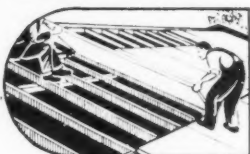


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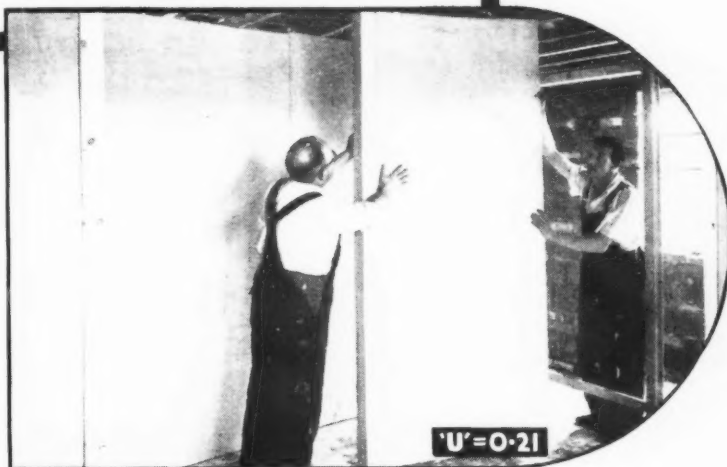
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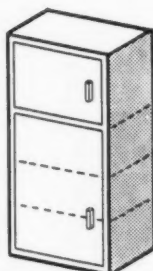
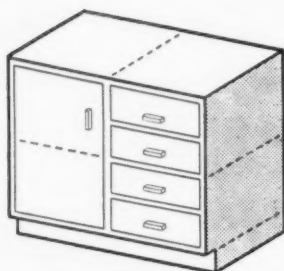
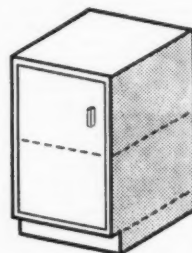
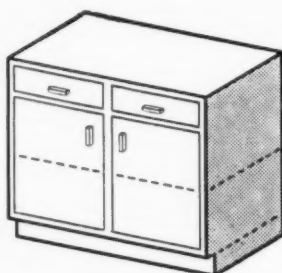
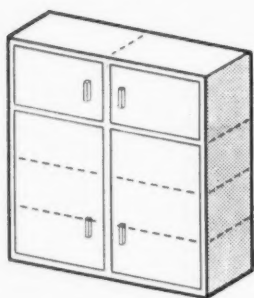
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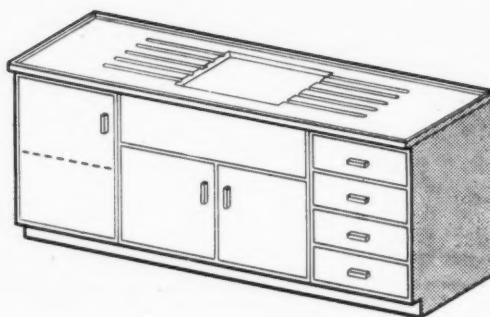
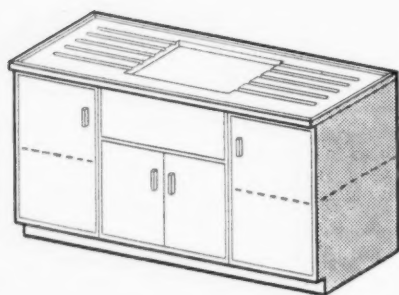
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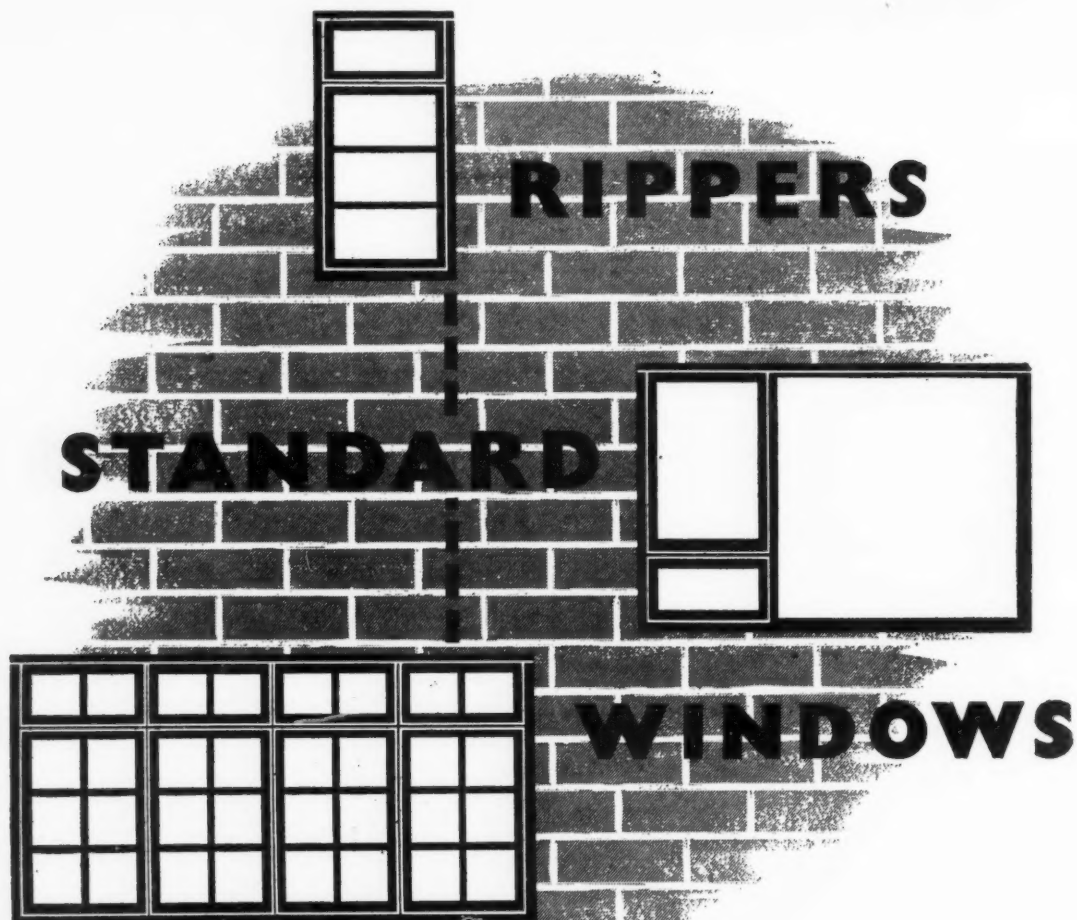
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## **ALL THAT AND COLOURS TOO...**

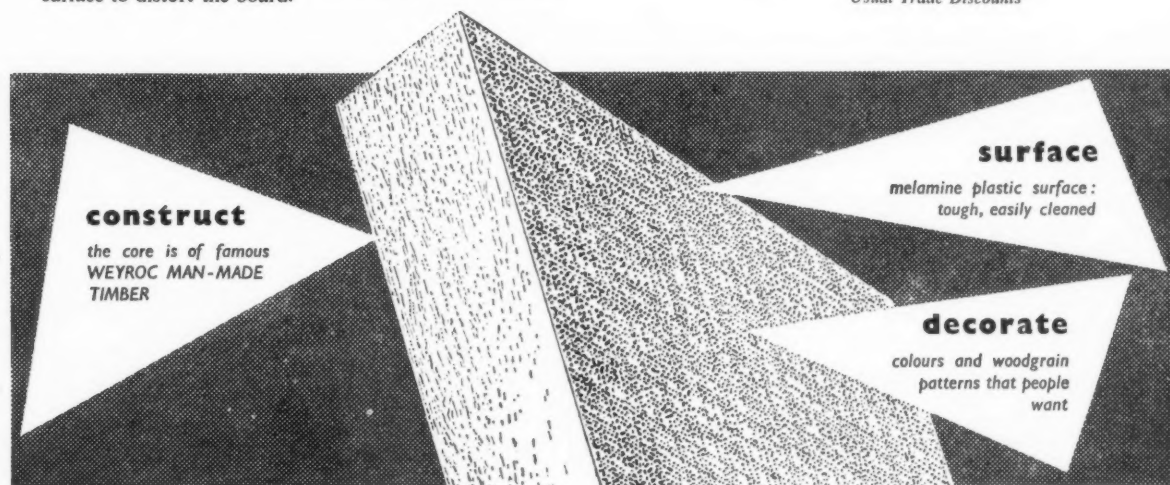
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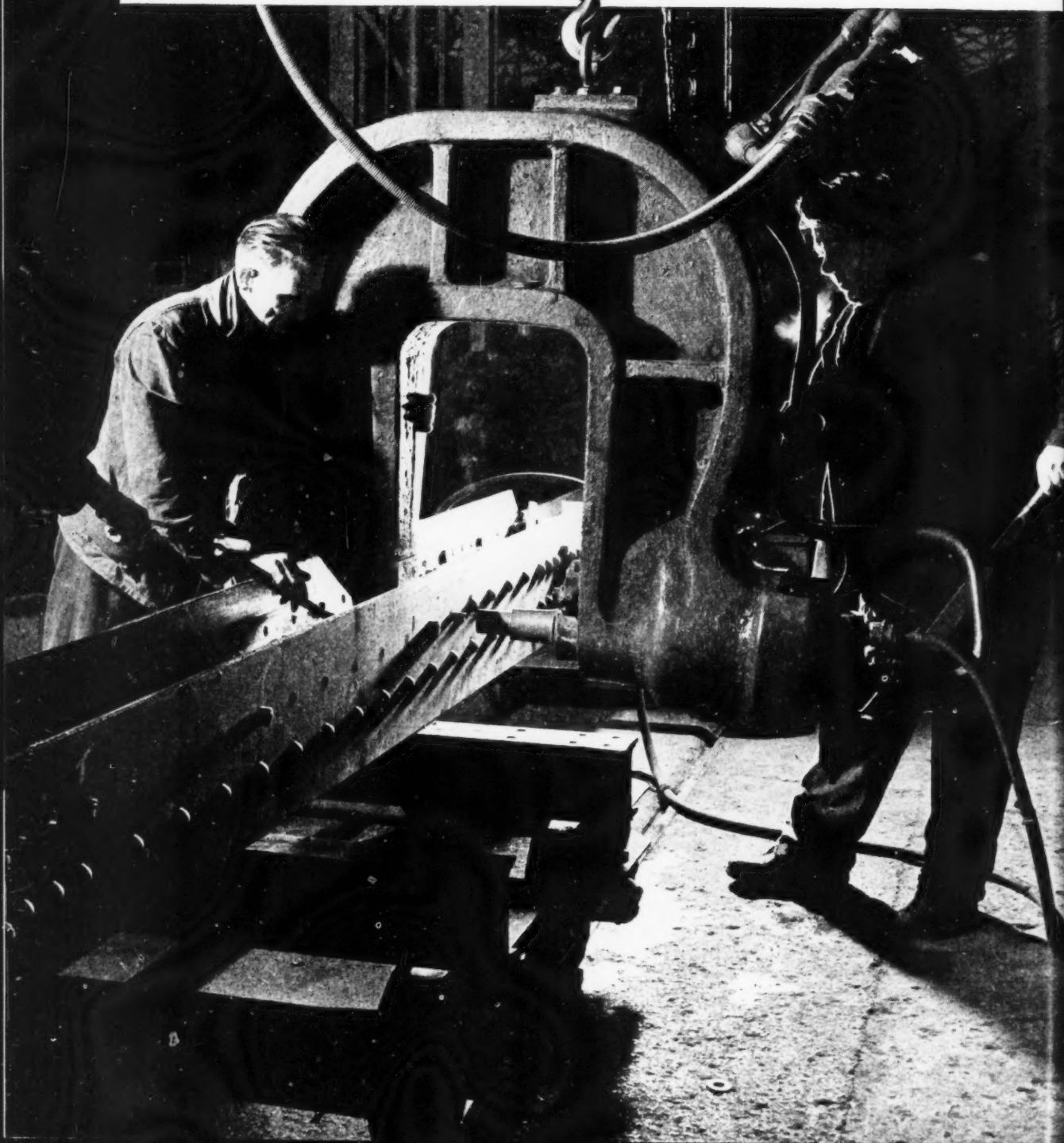
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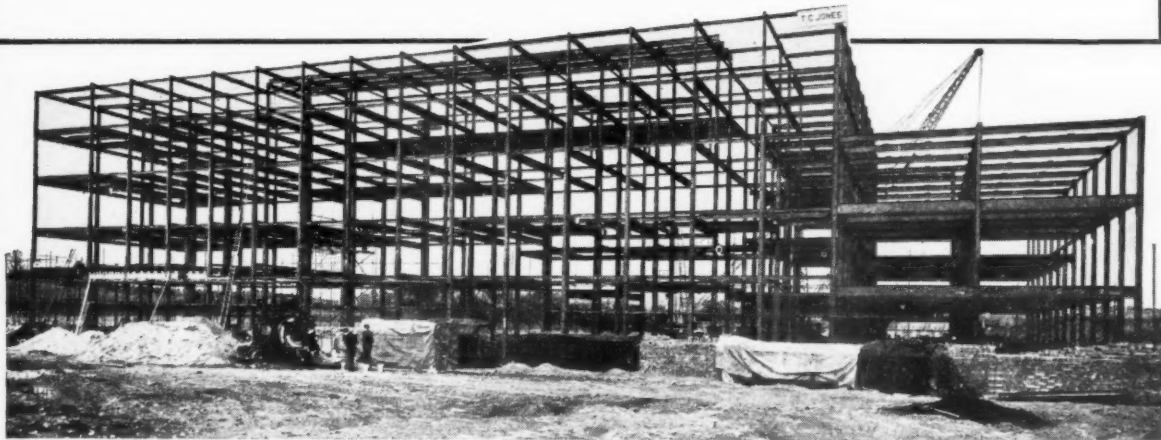




St  
En  
of

# **STORY of STEEL**

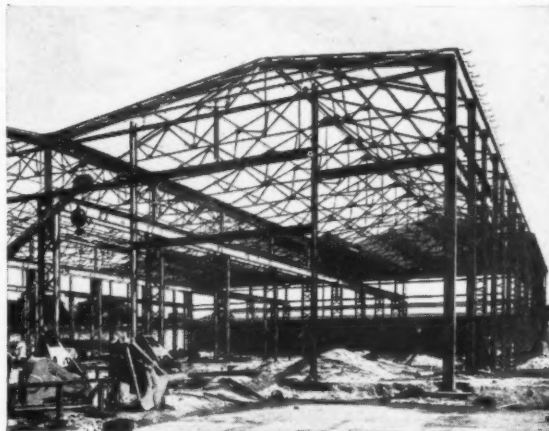
## ***In the Service of Industry***



Steelwork for the first phase of the New Brewery for South Wales & Monmouthshire United Clubs Brewery Ltd., Pontyclun, Monmouthshire. *Consulting Engineer:* Sidney Culverwell Esq. *General Contractors:* John Morgan (Builders) Ltd.



Steelwork for Raw Materials Handling Plant, installed by Mitchell Engineering Ltd., at the gigantic new Works of the Steel Company of Wales at Margam.



Steelwork for Crane Shop for K & L Steelfounders and Engineers Ltd., Letchworth.

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# They never let you down

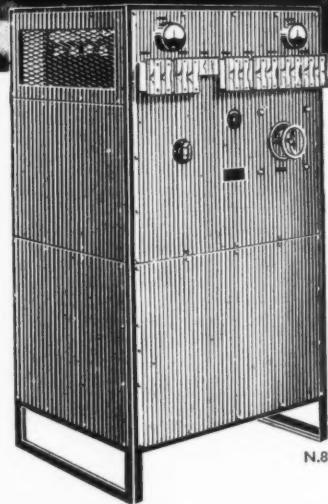


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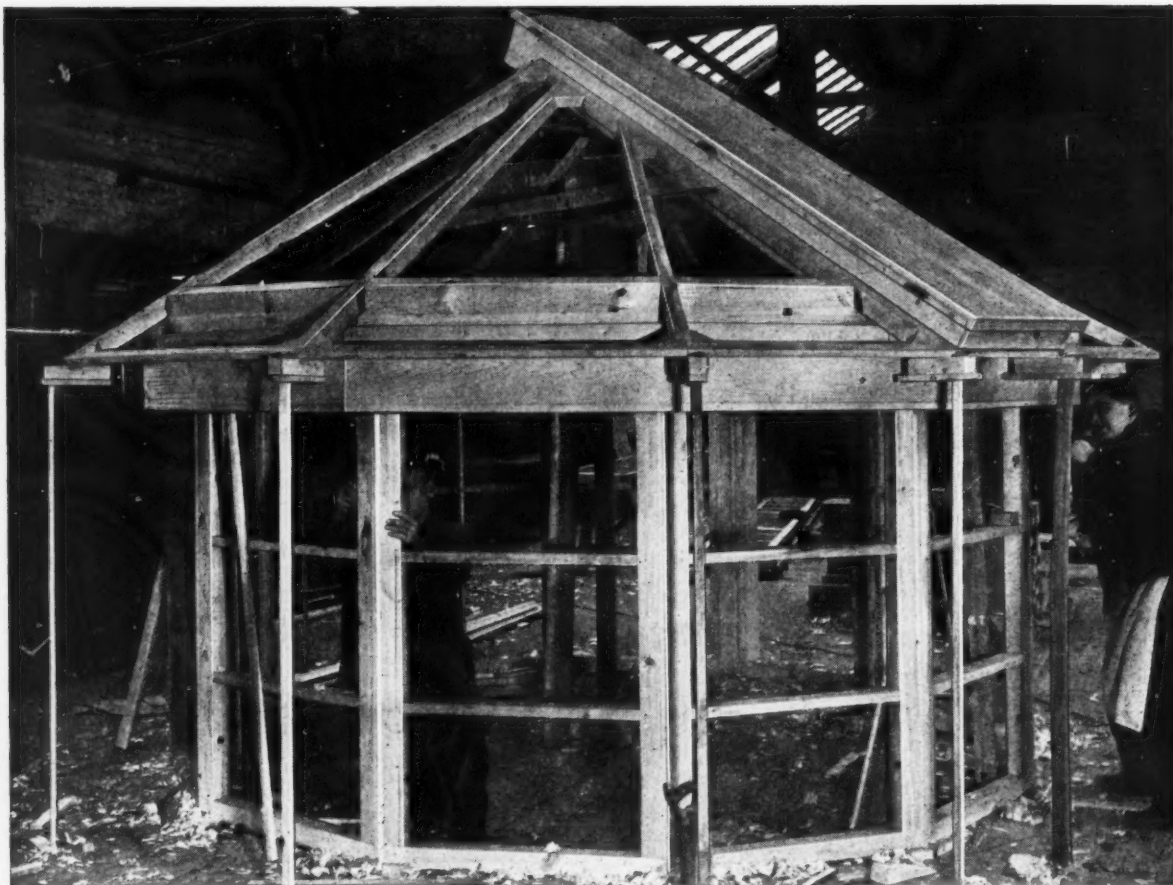
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'Aerolite'  
300

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glues for wood

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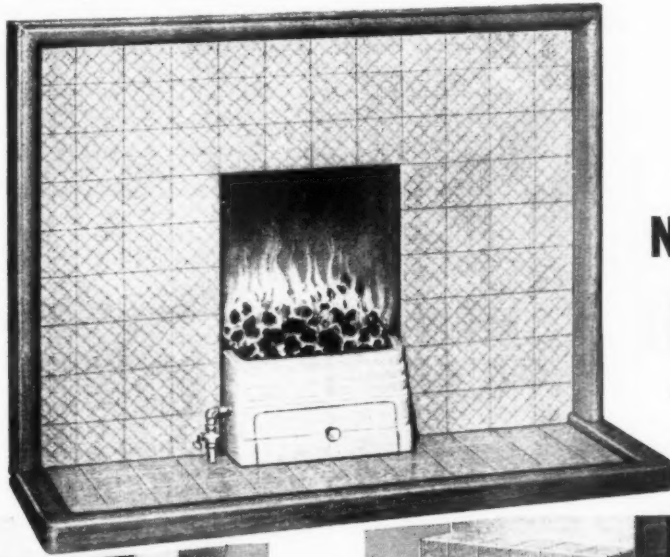
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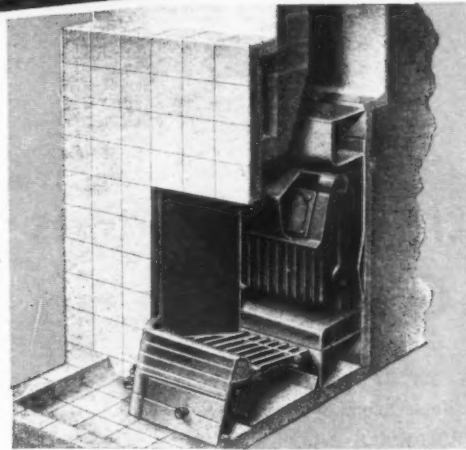
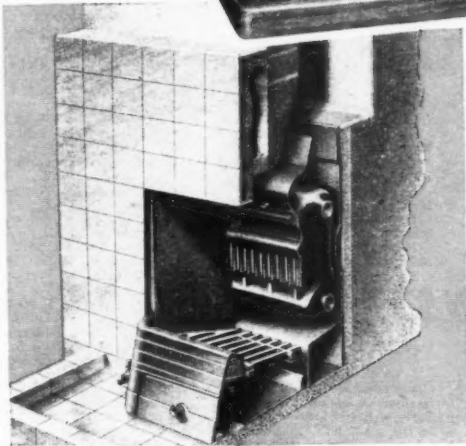
## IDEAL NEOFIRE No. 2C

British Patent No. 591977



## IDEAL NEOFIRE No. 10

British Patent No. 753719



The Ideal No. 2C Neofire is a cheerful open fire, backed by a boiler specially designed to provide the combination of Domestic Hot Water Supply and Background Heating. The boiler will heat up to 3 radiators in other parts of the house, and the domestic supply is obtained by the 'Indirect' method, which entails the installation of an Ideal Indirect Cylinder of appropriate capacity.

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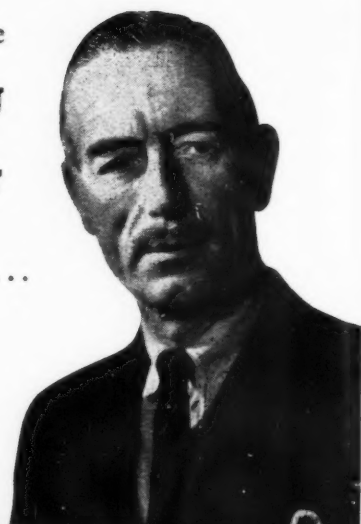
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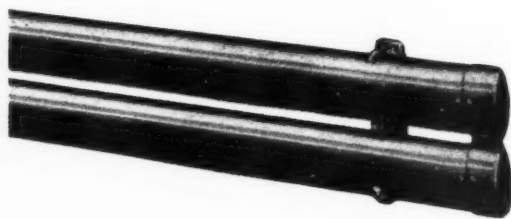
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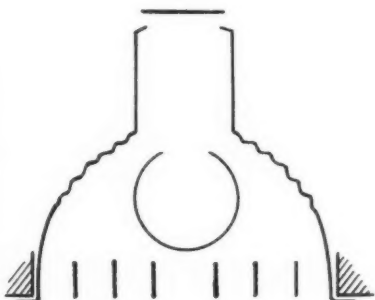
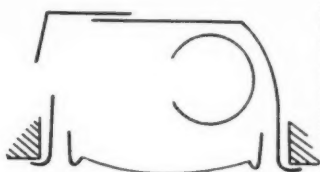
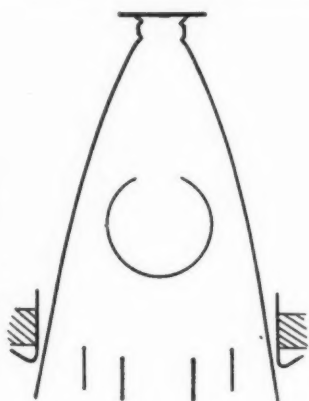
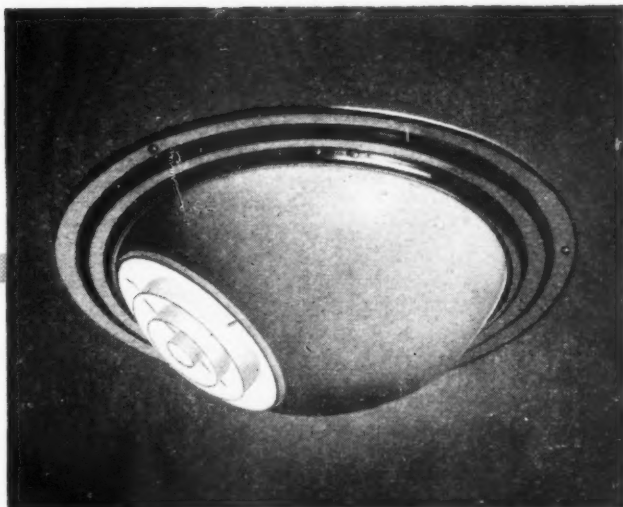
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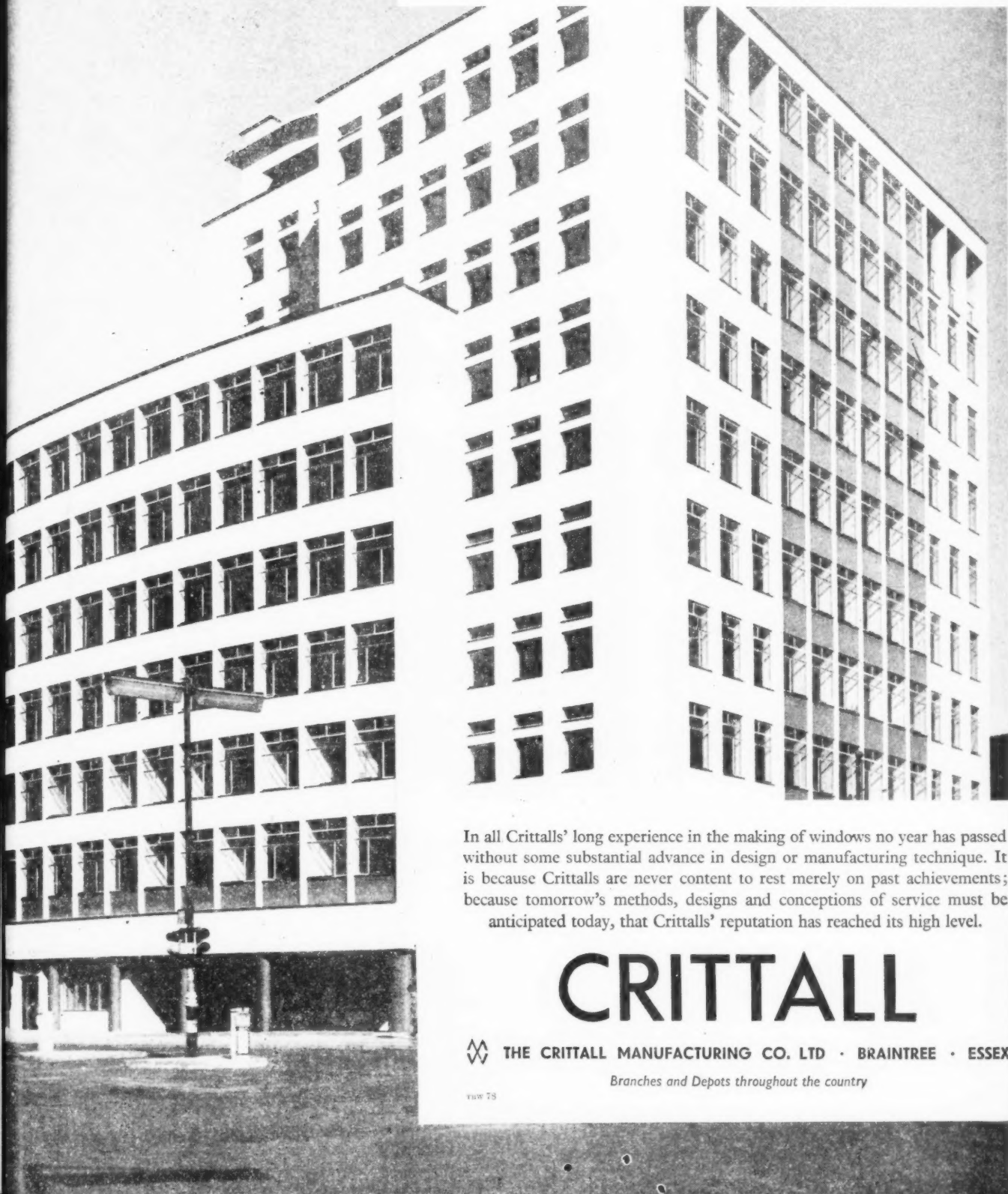






## CRITTALL UNIVERSAL CASEMENTS

This illustration shows Sentinel House, Southampton Row, London, W.C.1  
(*Architect: T. P. Bennett & Son*) which is fitted throughout with  
CRITTALL UNIVERSAL CASEMENTS POSITIVELY RUSTPROOFED by the hot-dip  
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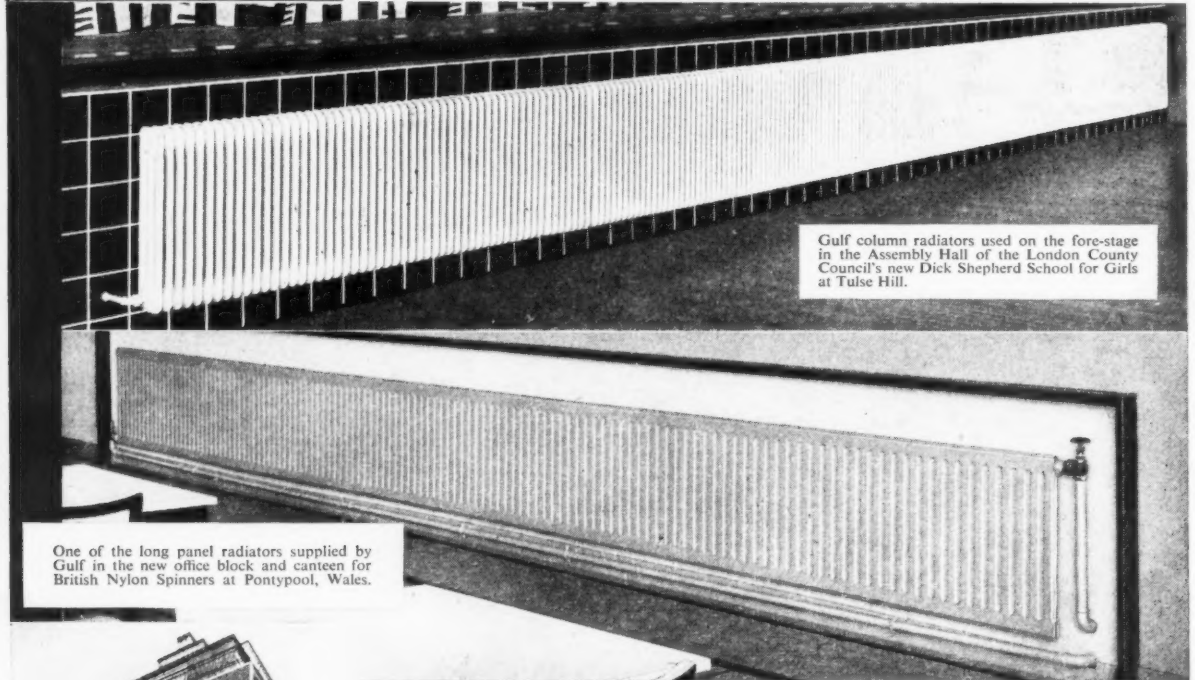
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One of the long panel radiators supplied by Gulf in the new office block and canteen for British Nylon Spinners at Pontypool, Wales.



John Adam House, London, new offices of Industrial Newspapers Ltd., is completely equipped with Gulf.

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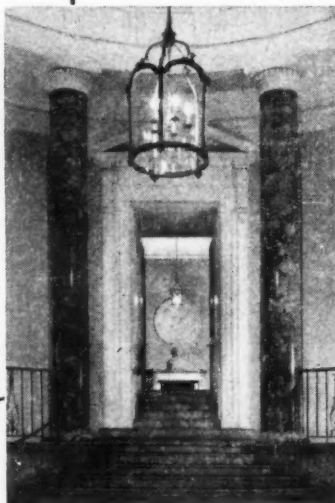


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Dover House, Whitehall, the home of the Scottish Office in London, was built in 1755 by James Paine. The beautiful interior of this building was designed by Henry Holland and is one of his best known works. When this building was taken over by the Ministry it was important to keep the rooms well heated, and yet allow them to retain their natural air of elegance. Crane radiators were chosen because, apart from doing a first-class job, they are in complete harmony with their surroundings. The Crane Pall Mall type radiators which have been installed maintain a comfortable temperature—yet another example of how Crane equipment performs a good service without spoiling the character of a fine old building.

## Once again, radiators by Crane



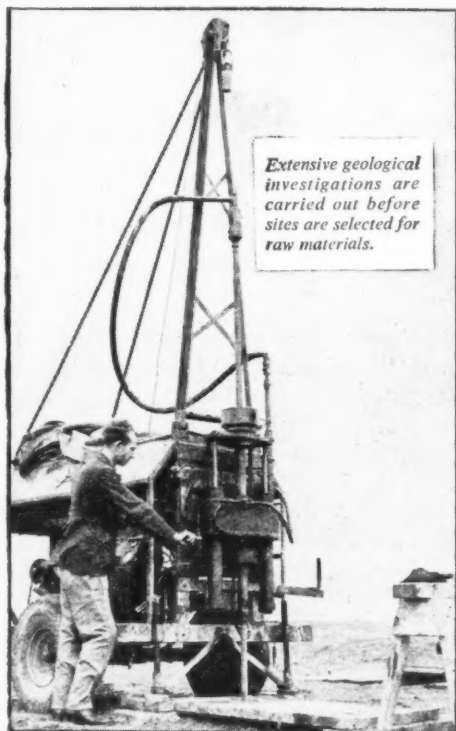
ABOVE: Part of the Secretary of State for Scotland's room featuring Crane Pall Mall radiators.

LEFT: A view of the Entrance Hall which has four Ionic columns rising to an elegant dome, the crown of which is glazed with an extremely delicate grille.

HEATING ENGINEERS:  
H. R. Noble Ltd., Under the  
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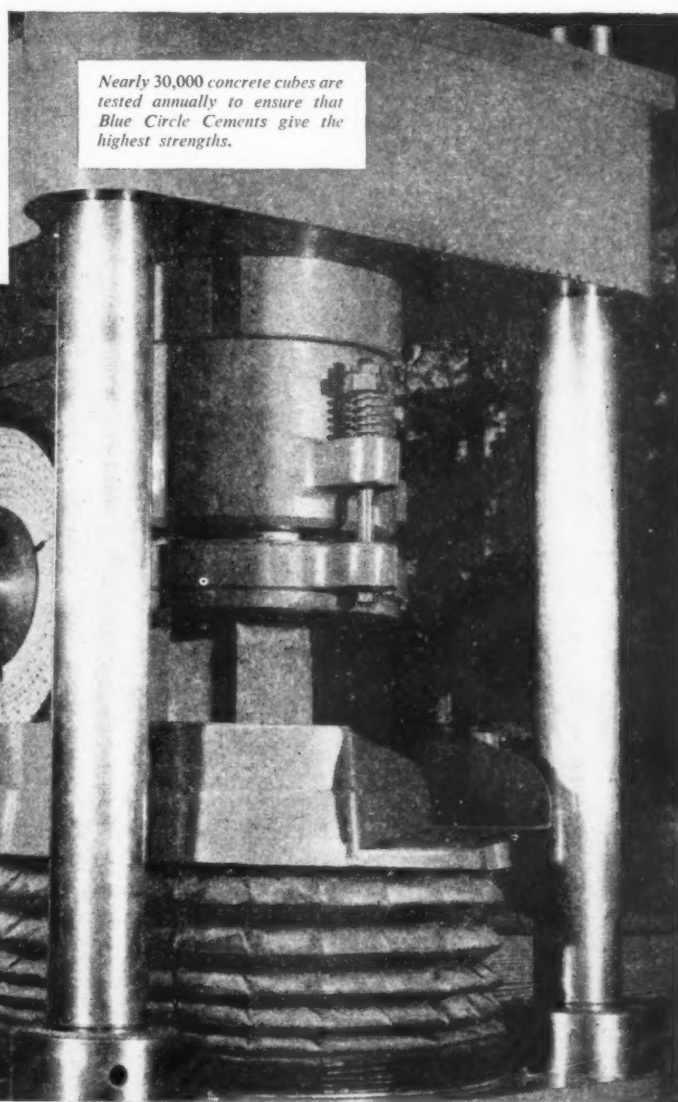
CRANE LTD., 15-16 RED LION CT., FLEET ST., LONDON, E.C.4. Works: IPSWICH Branches: Birmingham, Brentford, Bristol, Glasgow, London, Manchester



*Extensive geological investigations are carried out before sites are selected for raw materials.*

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*Nearly 30,000 concrete cubes are tested annually to ensure that Blue Circle Cements give the highest strengths.*



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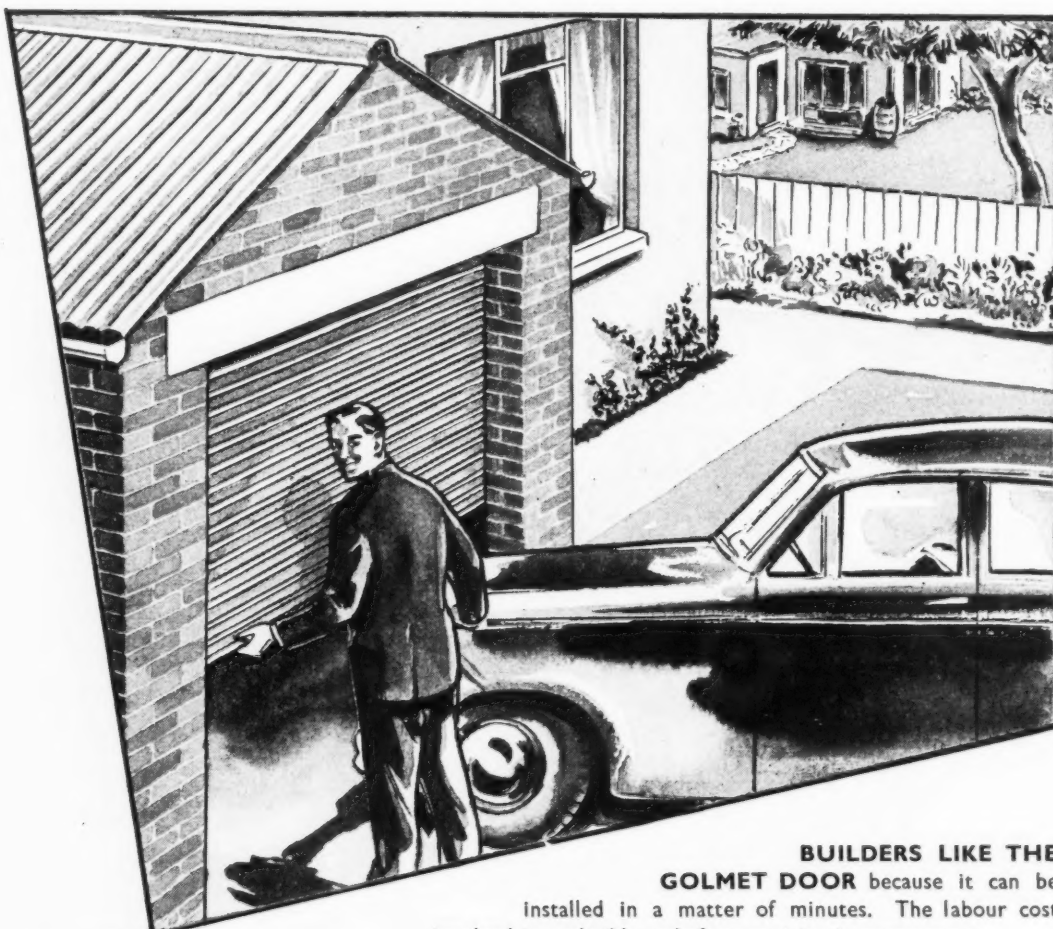
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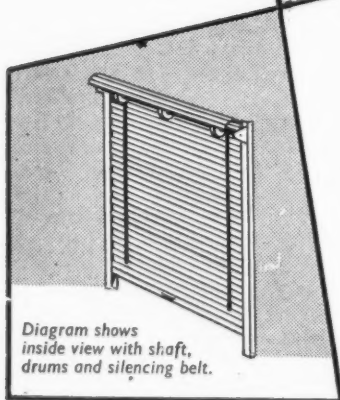


Diagram shows inside view with shaft, drums and silencing belt.

# GOLMET LTD.

CAERPHILLY,  
GLAM.

Telephone : Caerphilly 2381/2/3





Our Sales Director is a glutton for publicity. Hence this picture of him dressed up in armour. And the point? He just wants to attract attention, to make people talk to him. But for Pete's sake don't let him get at you! He goes on for *hours* about Stelcon Floors being literally Steel Clad—in steel plate

form or with a top surface of steel chippings in concrete to make them exceptionally tough and hard-wearing. So the last thing you want to tell him is that you've got a floor full of holes into which you're always pouring money on repairs. Once you admit that, he's got you sold—sorry, cold!

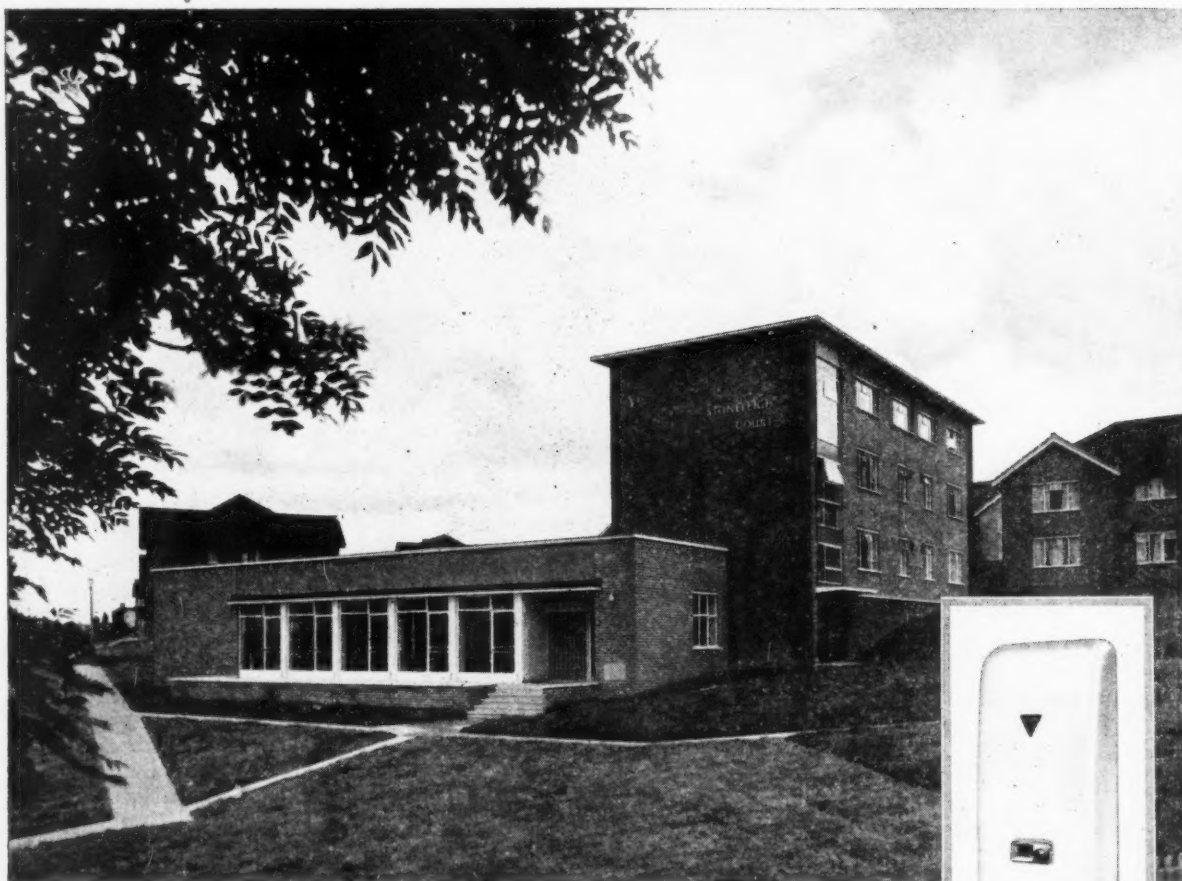


**Stelcon**

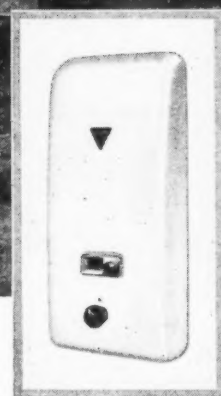
FLOORS GIVE INDUSTRY A FIRM FOUNDATION

ANCHOR STEEL PLATES, STEEL CLAD FLAGS AND RAFTS.

STELCON (INDUSTRIAL FLOORS) LTD. CLIFFORDS INN, LONDON, E.C.4. CHANCERY 9541

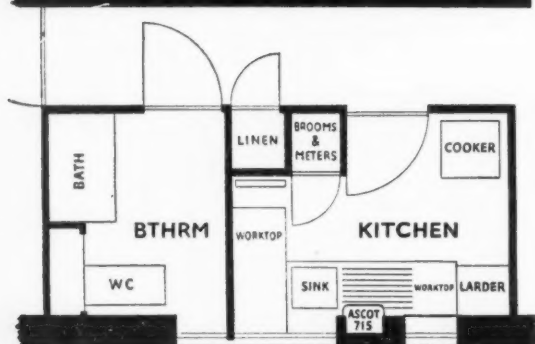


## ASCOT IN NEW HOUSING (I)



84 old people's flats newly built at Stoneleigh Court, Woodford Avenue, Essex for the Ilford Borough Council, are equipped with Ascot 715 Balanced Flue Multipoint instantaneous gas water heaters. Installed in the outer wall of the kitchens, the Ascot 715's supply instant, endless hot water to sink, bath and wash basin in each flat. Stoneleigh Court consists of five 2-storey blocks of flats,

each block containing 10 bed-sitting room types and six one-bedroom with sitting room types, for one and two persons respectively and one 3-storey community block having 4 bed-sitting room flats and a Caretaker's flat. Each flat contains kitchen (see plan, below) fitted with cupboards, and a bathroom containing a special "sitting position" bath and W.C. Weekly inclusive rental of the one-bedroom flats is 26/11d; and that of the bed-sitting room flats is 25/5d.



### RESPONSIBLE AUTHORITIES

H. J. Mulder, A.M.I.C.E., M.I.Mun.E., A.R.I.C.S.,  
Borough Engineer & Surveyor

H. B. N. Nixon, L.R.I.B.A.,  
Chief Assistant Architect

Charles S. Foster & Sons Ltd., Smarts Lane, Loughton, Essex.  
(General Contractor)

ASCOT GAS WATER HEATERS LTD • 255 NORTH CIRCULAR ROAD • LONDON N.W.10  
WHG/A260

# Moulding the future...

*No dog, no vanman, no load—yet.*

When they come, this B.R.S. van, built by Holmes Ltd. of Preston, will have a hard life. And from road to roof it is ready to take it.

The translucent roof especially: it is tough enough to take a poke from a pole or a bang from a box.

It is made of Fibreglass Reinforced Plastic, the material that doesn't drum, dent or corrode, that can be moulded to complex shapes in one piece—without high pressures or costly equipment.

*Fibreglass have an F.R.P. advisory service which is expert, confidential and free.*



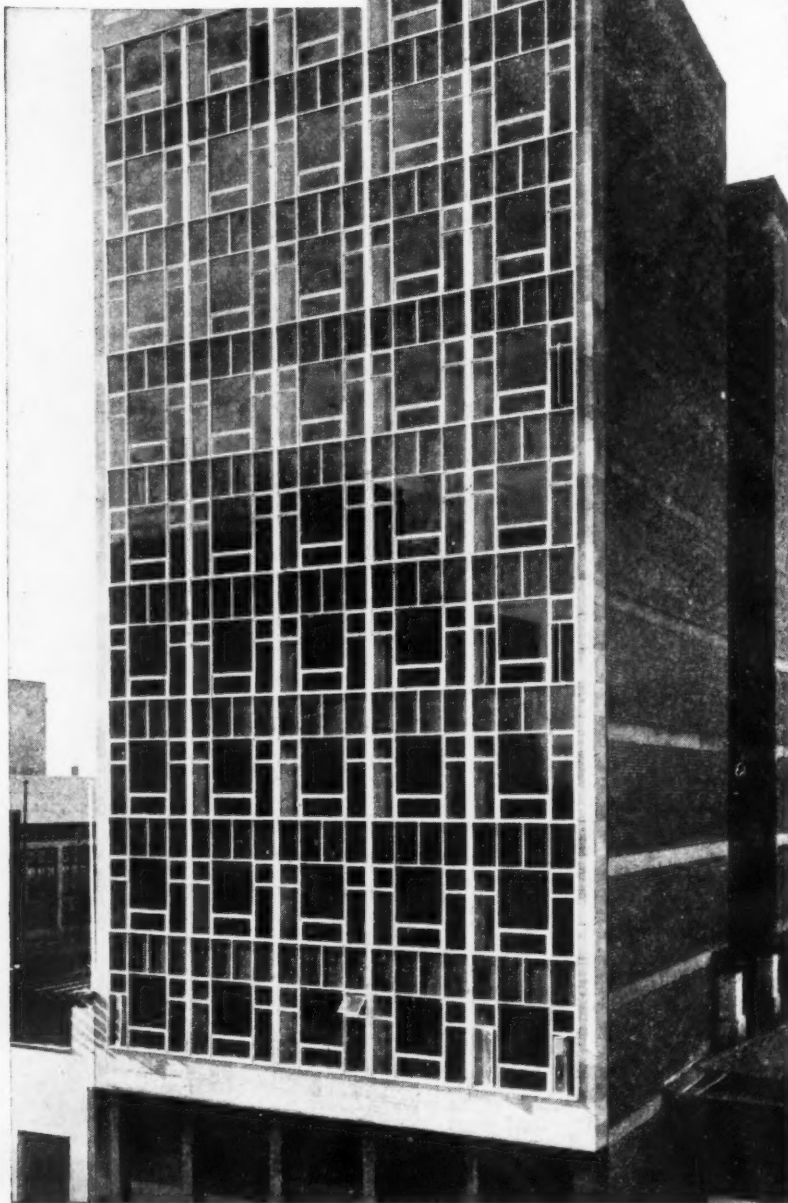
## FIBREGLASS

TRADE MARK

the backbone of Reinforced Plastics

**WILLIAMS & WILLIAMS**

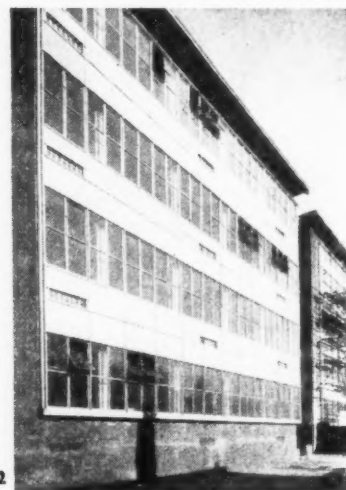
**NEWS SHEET: No. 3**



## THE TURN OF THE YEAR

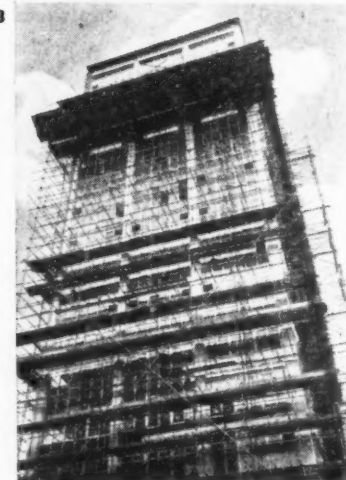
On these pages we show a few of the contracts with which we have been associated during 1956—some completed, some still “work-in-progress”—and others which will come into being during 1957. After all, this is the time of the year when nobody wants to be advertised at (or any other time?) which is a rather obtuse way of wishing you all a very Happy New Year!

- 1** State Government Insurance Offices,  
Perth, West Australia.  
Architects: Hobbs, Winning & Leighton.
- 2** Beecham Factory, St. Helens, Lancs.  
Architects: Quiggin & Gee.
- 3** Fountain House,  
Fenchurch Street, London, E.C.3.  
for the City of London Real Property Ltd.  
Architect: W. H. Rogers A.R.I.B.A.  
Consulting Architect:  
Sir Howard Robertson,  
M.C., A.R.A., P.P.R.I.B.A.
- 4** Head Offices, for the National Dock  
Labour Board, London, S.E.1.  
Architect:  
Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.
- 5** A.I.A. Building, Singapore.  
Architect: John Graham.
- 6** B.C. Electric Headquarters,  
Vancouver, Canada.  
Architects:  
Sharp, Thompson, Berwick & Pratt.
- 7** Tyrrell & Green Store, Southampton.  
Architects:  
Yorke, Rosenberg & Mardall, F.F./A.R.I.B.A.

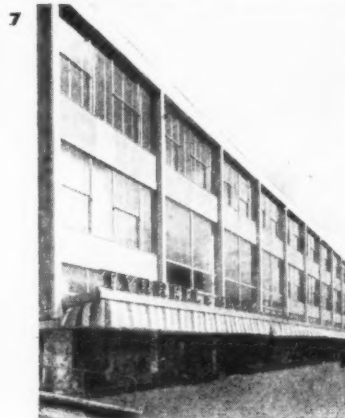
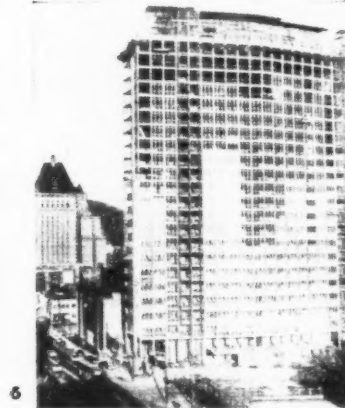
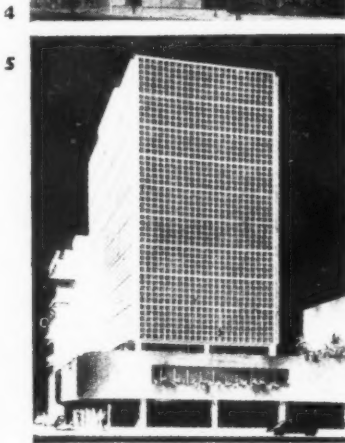


**2**

**3**



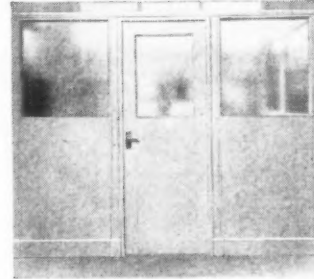




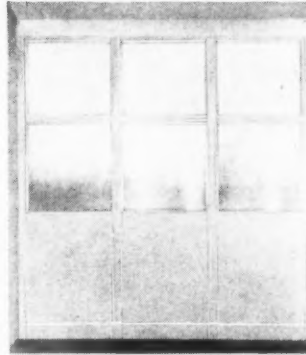
## NEW ROFTEN PARTITIONING

The Pressed Metal Division of Williams & Williams announce the introduction of a completely new system of demountable glass-and-steel, fire-resistant partitioning for offices and showrooms. It can be supplied to suit any ceiling height from 8 ft. 6 in. upwards or alternatively installed as 7 ft. 2 in. screening or 3 ft. 6 in., 4 ft. 10 in. and 5 ft. 10 in. barrier screens.

A leaflet is available—please contact your nearest Williams & Williams Area Office for copies.

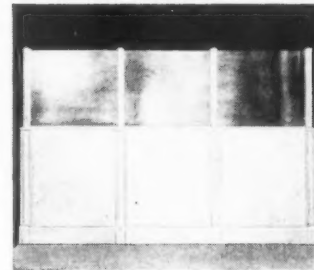


7 ft. 2 in. screening.



Ceiling-height partitioning.

RofTEN Partitioning gives the utmost flexibility for arrangement and re-arrangement, while retaining the advantages—stability, sound insulation and so on—of permanently built-in partitioning.



3 ft. 6 in. barrier screen.

**NOTE:** With reference to the Williams & Williams News Sheet No. 1 in this journal, which featured the new Bata Store in Oxford Street, W.1, we would like to make it clear that Messrs. Cotton, Ballard and Blow were the architects responsible for the general structure for the building owners. Messrs. Bronek Katz and R. Vaughan designed the Oxford Street façade and store for Messrs. Bata Ltd.

**WILLIAMS & WILLIAMS**

RELIANCE WORKS · CHESTER



Member of the Metal Window Association

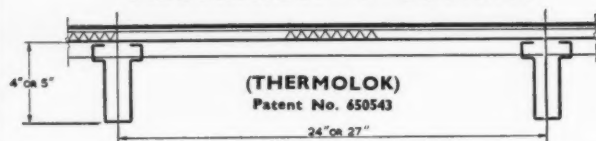


# ANDERSON ROOF DECKINGS

*flat or sloping roofs*



## ALUMINIUM 'B' DECKING



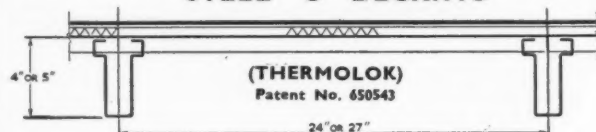
Weight, 4½-lb. per ft.  
super fixed complete.

Thermal  
Transmittance  
'U' = 0.32

Standard Spans: 10ft., 11ft., 12ft.  
and spans up to 15ft. using Multi-Span system. Where required, can span from truss to truss eliminating purlins.

Flexible design permits variation to meet all requirements. Dry construction and top-fixing provides speedy erection. Finish—natural aluminium.

## STEEL 'C' DECKING



Similar in design to 'B' Decking, but units in steel instead of aluminium.

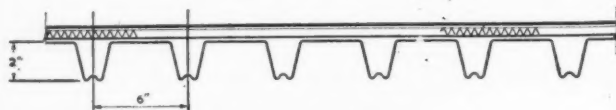
Weight, 6-lb. per ft.  
super fixed complete.

Thermal  
Transmittance  
'U' = 0.32.

Standard Spans: 8ft., 9ft., 10ft., 11ft.,  
12ft. and spans up to 15ft., using  
Multi-Span system.

Finish—Galvanised or Red Oxide.

## STEEL 'D' DECKING



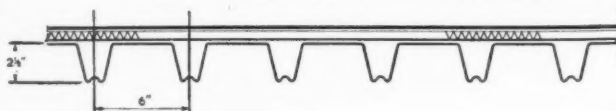
Weight, 5½-lb. per ft.  
super fixed complete.

Thermal  
Transmittance  
'U' = 0.32.

Standard Spans: 6ft., 7ft., 8ft., 9ft.,  
10ft. for 2in. depth.  
3ft. 4in., 4ft.  
4ft. 6in., 5ft. for 1in. depth.

Units 24in. wide by 2in. depth in 22- and 20-gauge. Also available in 1in. depth, mainly for sloping roofs on spans up to 5ft. Positive top fixing by hammer drive screws provides good anchorage, speedy erection and early protection for trades working below. Finish—Galvanised or Phosphated and Red Oxide.

## ALUMINIUM 'E' DECKING



Similar in design to 'D' Decking.

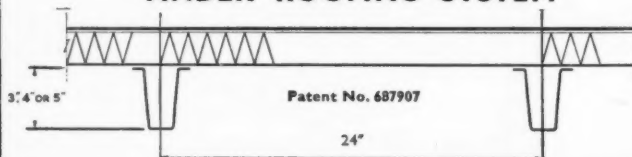
Weight, 4-lb. per ft.  
super fixed complete.

Thermal  
Transmittance  
'U' = 0.32.

Standard Spans: 7ft., 8ft., 9ft., 10ft.  
for 2½in. depth.  
3ft. 4in., 4ft.  
4ft. 6in., 5ft. for 1in. depth.

Units 24in. wide by 2½in. depth in 18-, 19- and 20-gauges. Also available in 1in. depth mainly for sloping roofs on spans up to 5ft.  
Finish—natural or embossed.

## ANDEK ROOFING SYSTEM



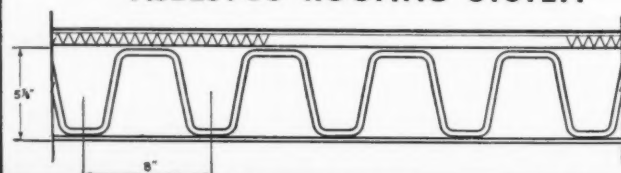
Weight, 14-lb. per ft.  
super using wood  
wool, 6-lb. using straw  
board.

Thermal  
Transmittance  
'U' = 0.21.  
Insulation is  
continuous  
over points of  
support.

Standard Spans: 8ft., 10ft., 12ft.  
and longer spans, using the Multi-Span system. Where required, can span from truss to truss, eliminating purlins.

The standard system incorporates 2in. heavy duty wood wool finished with a ½in. cement sand screed. Other insulating slabs such as straw board may be used as required. Finish of Andek Bars—Galvanised.

## ASBESTOS ROOFING SYSTEM



Weight, 12½-lb. per ft.  
super.

Thermal  
Transmittance  
'U' = 0.2.

Standard Spans: 6ft., 7ft., 8ft., 9ft.,  
10ft.

A roof decking and continuous flat ceiling in one operation. The upper section consists of ½in. fibre insulation board, the underside of which is dressed with hot bitumen and the top surface completed by a built-up roofing system. Dry, high speed construction. Convenient ducting for services. Finish—natural asbestos. (Ceiling can be painted to an appropriate colour if desired.)

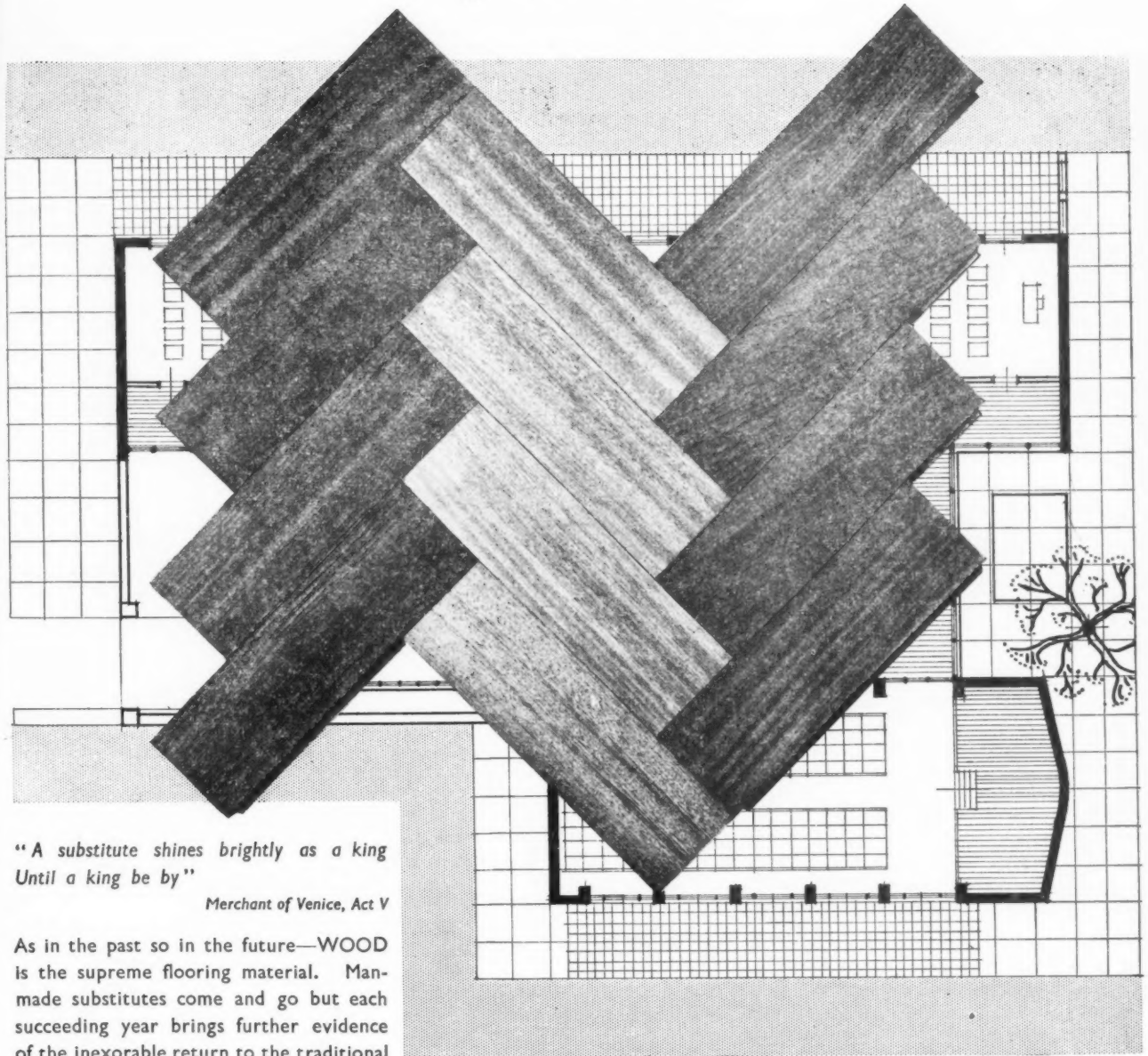
Full details  
on request

# D. ANDERSON & SON LTD.

STRET FORD  
MANCHESTER  
Telephone: LONGford 1113

OLD FORD  
LONDON E.3  
AMHerst 2388

# FLOORS for the future . . . by HOLLIS



*"A substitute shines brightly as a king  
Until a king be by"*

*Merchant of Venice, Act V*

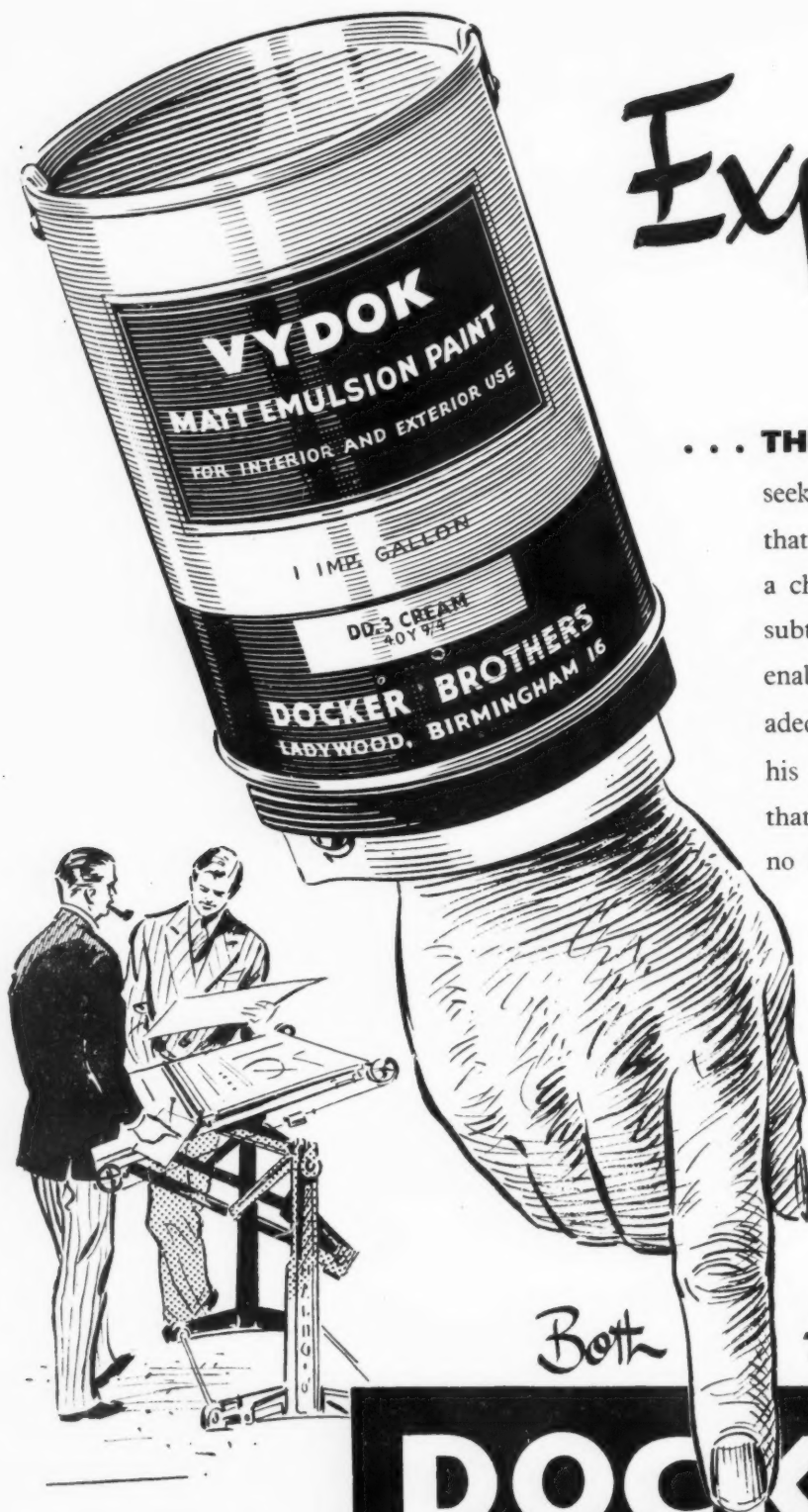
As in the past so in the future—WOOD is the supreme flooring material. Man-made substitutes come and go but each succeeding year brings further evidence of the inexorable return to the traditional HARDWOOD for floors. Many excellent hardwoods are now available at moderate cost which combine BEAUTY, DURABILITY and COMFORT with ECONOMY.

## **SPECIFY—MADE IN ENGLAND**

*to ensure precision in manufacture, controlled moisture content and stability of the floor.*

# **HOLLIS BROS. LTD.**

**LEICESTER • HULL • LONDON • BIRMINGHAM**



# Expert

## ... THE ARCHITECT

seeking perfection, knows that DOCKERS' PAINTS offer a choice of beautiful and subtle colours which will enable him to express adequately the character of his design. He knows, too, that he can specify no better paint.

Both Architects and

# DOCKERS'

*Colour cards and  
details on request.*

DOCKER BROTHERS . Ladywood . Birmingham 16.  
London Showrooms: 17 Berners Street, W.1.



# Opinion

## THE DECORATOR . . .

lives closely to the practicalities.

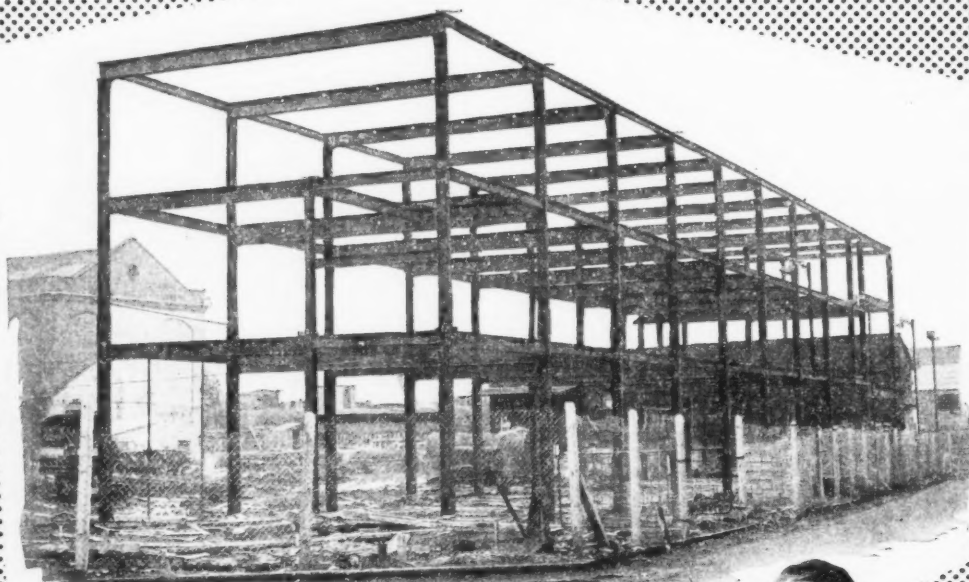
Quality materials are important to him and he knows from experience that he can rely on DOCKERS' PAINTS to maintain his reputation for a first-class job.

*Decorators agree*

# PAINTS

*Every Time*





**This picture tells  
a special story**

Only nine days before this photograph was taken there was not a piece of steelwork in sight.

Urgent priority had to be given to the administration block of the new premises now being built at Wandsworth for Messrs. J. Bibby & Sons Ltd. of Liverpool. Within nine days, delivery, unloading and erection were complete to the stage shown in the photograph. Actual erection took only SIX days.

Consulting Engineers: Sir Bruce White, Wolfe Barry & Partners

*better build it with*

**BOOTH**

*Steelwork*



**JOHN BOOTH & SONS (BOLTON) LTD., HULTON STEELWORKS, BOLTON**

Telephone: BOLTON 1195

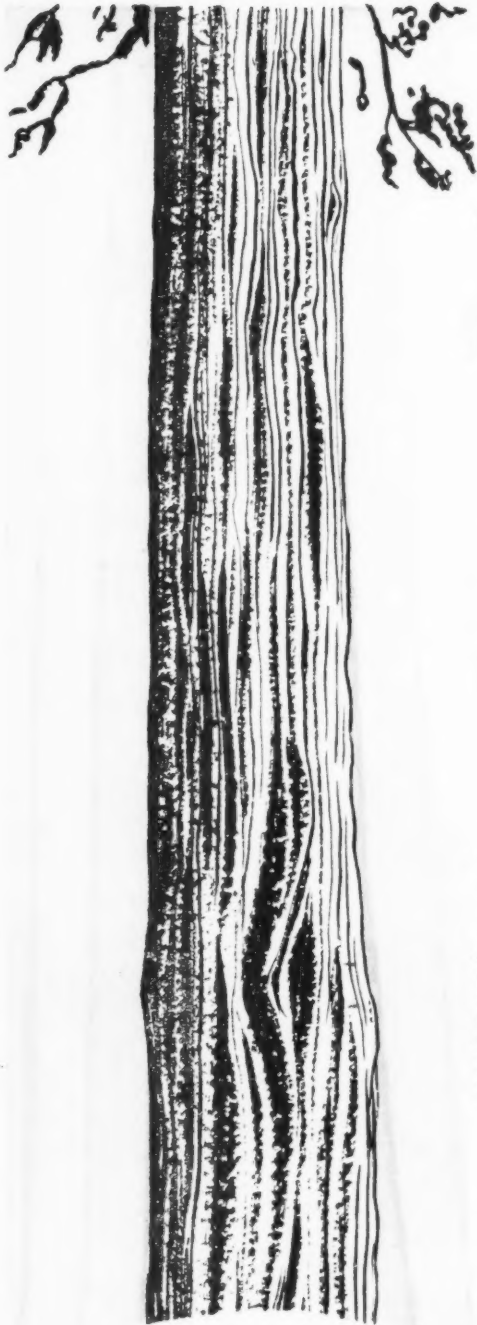
LONDON: 26 VICTORIA STREET, WESTMINSTER, S.W.1

Telephone: ABBey 7162

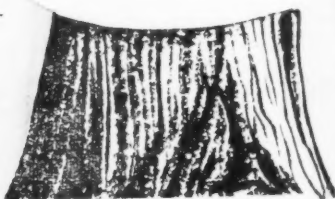








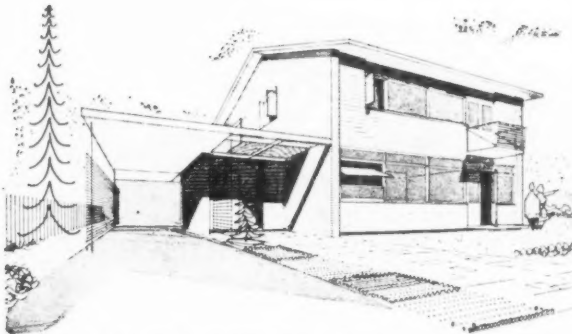
**WOOD**  
nature's best  
building material



CANADIAN

## *Western Red Cedar*

A warm, light wood that  
combines good working  
qualities with excep-  
tionally high resist-  
ance to decay and  
fire. It is  
strong and  
stable.



YOU ARE INVITED TO VISIT THE  
**CANADIAN  
TIMBER FRAME  
HOUSE**

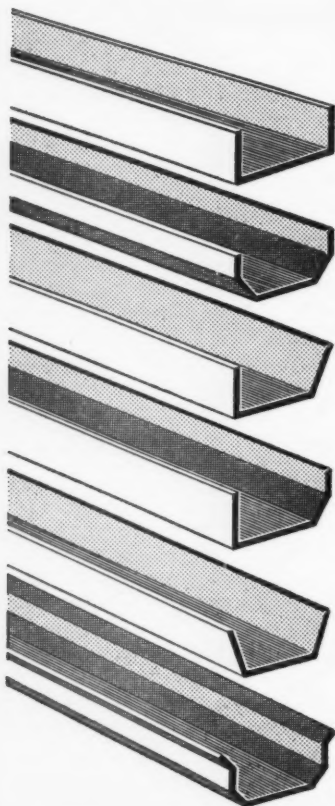
AT THE  
DAILY MAIL

## **IDEAL HOME EXHIBITION**

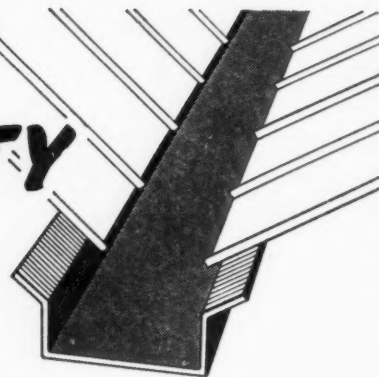
OLYMPIA · LONDON  
MARCH 5th to 30th 1957

Reproduced here is figure of Western Red Cedar.  
This advertisement is one of a series featuring  
Canadian Douglas Fir, Spruce, Red Pine, White  
Pine and Pacific Coast Hemlock.

TIM4



# Where **DURABILITY** is Vital



Out of sight, yet playing an important part in the protection of a building and its contents, roof gutters must be robust and dependable. Produced by specialists in the fabrication of steel, 'Harco' Pressed Steel Gutters conform to B.S. 1091/1946. They are made in standard sizes or to special girths and lengths to meet specific requirements, with pressed socketed joints or butt straps. Supplied self-colour, in painted finish or hot dip galvanized after manufacture by the 'Harco' process.

Send for List No. AJ 793

## 'HARCO' HEAVY GAUGE PRESSED STEEL **GUTTERS**

**Harvey**

G. A. HARVEY & CO. (LONDON) LTD.  
Woolwich Road, London, S.E.7 GREENWICH 3232 (22 lines)



## LATTICE BEAMS

- **ECONOMY**
- **RIGIDITY**
- **PROMPT DELIVERY**

**OF RIVETED AND WELDED CONSTRUCTION**

Enterprising Architects continue to specify our Standard Beam system for modern Schools, Factories Canteens etc. It is most economical and allows freedom of design.

**DESIGN SERVICE AND TRADITIONAL STEELWORK**

Our Design Office are pleased to advise on the use of these Lattice Beams and to design and quote for the complete steelwork of any project.

Write for full details and Data Sheets.

*Sommerfeld's*

LTD.

1

LONDON OFFICE: 167 VICTORIA ST S.W.1  
TEL: VIC. 8843 AND 1000

WELLINGTON · SHROPSHIRE TEL: 1000





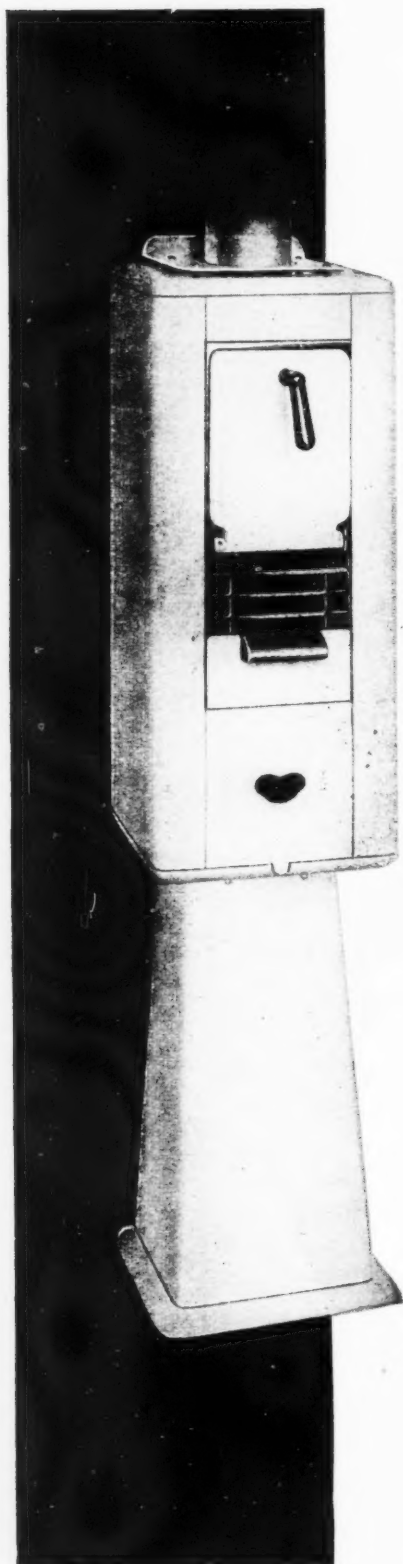


## *Acoustics by* **BURGESS**

Over 14,000 sq. ft. of Burgess Metal Acoustic Ceilings, much of it incorporating radiant panel heating, were installed in the **Sylvania-Thorn Colour Television Laboratories** at Enfield.

Burgess Acoustic Tiles have a high sound absorption co-efficient, and excellent thermal insulation properties resulting in pronounced fuel economy. They are practically indestructible, have a two hour fire resistance rating, and can be easily fixed to, or suspended from, ceilings and walls. Available in 1ft. or 2ft. modules in any British Standard Shade.

**BURGESS PRODUCTS CO. LTD.** ACOUSTICAL DIVISION, HINCKLEY, LEICESTERSHIRE



*Safeguard  
Public Health  
Encourage  
Personal Hygiene*

in FACTORIES • HOSPITALS • CLINICS  
SCHOOLS • HOTELS AND OFFICES

Investment by British industrialists and others in modern equipment to safeguard the health and welfare of the vast and growing numbers of workers, has proved beyond doubt the wisdom of a policy both far seeing and democratic in concept.

The installation of Sugg's incinerators wherever women employees form part of an organisation is plain commonsense.

Our sales and technical staff will be glad to advise and co-operate.

*The Sugg  
Incinerator*

Gas-Fired

WILLIAM SUGG & CO. LIMITED

(Incorporating Cowper Penfold & Co. Ltd.)

VINCENT WORKS, REGENCY ST., LONDON, S.W.1. Tel: VIC 3211



Bracket Clock with striking movement and repeating and alarm mechanism by George Etherington, London, Master of the Clockmakers Company in 1709. The case is of oak, cypress wood veneered.

Reproduced by permission of Camerer Cuss, New Oxford Street, London, W.C.1.



*Products of Integrity*


In this age of synthetics and substitutes  
the authentic production still commands the  
respect and favour of the discriminating.

Specify —

## CLAY ROOFING TILES

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

'The Clay Tile Bulletin,' post free on request



*How's that  
for a warm  
welcome!*

**HARPER**  
No. 3161  
*Gas Radiator*

JOHN HARPER & CO. LTD • ALBION WORKS • WILLENHALL • STAFFS

H605



# "DEXION saved us 30% compared with standard racking"



**SAYS MR. B. W. HICKMAN,  
BEA STATIONERY STORES OFFICER**



## Why **BEA** chose **DEXION** for this big job

**B**RITISH EUROPEAN AIRWAYS chose Dexion Slotted Angle for the big, 25,000 cu. ft. double-tier shelving installation in their new stationery stores at the Viking centre, Feltham. "I reckon it saved us 30% compared with standard racking," says Mr. Hickman.

"Dexion designed the job and built it for us. And it was pretty smart work—the Dexion delivered, the whole thing completed and in use, all in less than six weeks."

Two other points impressed Mr. Hickman: "We weren't restricted to standard racking sizes, so the shelves were tailored to fit our particular stores; and, of course we can always make modifications."

"The other thing is that we may have to move before long. If so, all we need to do is dismantle the Dexion and take it with us. There's absolutely no waste."

### **Dexion for large installations**

This is just one example of many large storage installations where Dexion has been employed to cut costs and make the best use of space. Used everywhere for small jobs of every kind, Dexion is, in fact,

virtually unlimited in the *size* of job it can do: it builds **BIG** and **STRONG**. Builders, architects and factory managers are, more and more, specifying Dexion for the larger structures, where its economies are even more important.

\* \* \*

**FOR ILLUSTRATED BOOKLET** giving full details of the Dexion system and Design and Construction Services, just write B.O.143 on your business letter-head, and post to the address below.

**GET IN TOUCH WITH**

# DEXION



DEXION LTD., MAYGROVE ROAD, LONDON N.W.6 TELEPHONE MAIDA VALE 6031 (21 LINES)



*Photograph by courtesy of  
Messrs. C. D. Productions Ltd.*

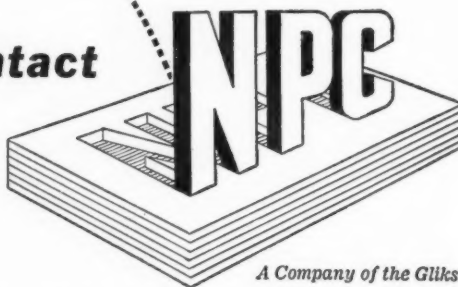
**Planning  
to use**

**PLYWOOD?**

Many and varied are the uses of plywood nowadays. Roofing consisting of plywood beams, framed plywood top and flush ceiling is one of them. If you are planning to use plywood The National Plywood Corporation Ltd., would welcome your enquiries for the supply of plywood for any purpose.



**contact**



*A Company of the Gliksten Group*

**THE OUTSTANDING NAME IN PLYWOOD**

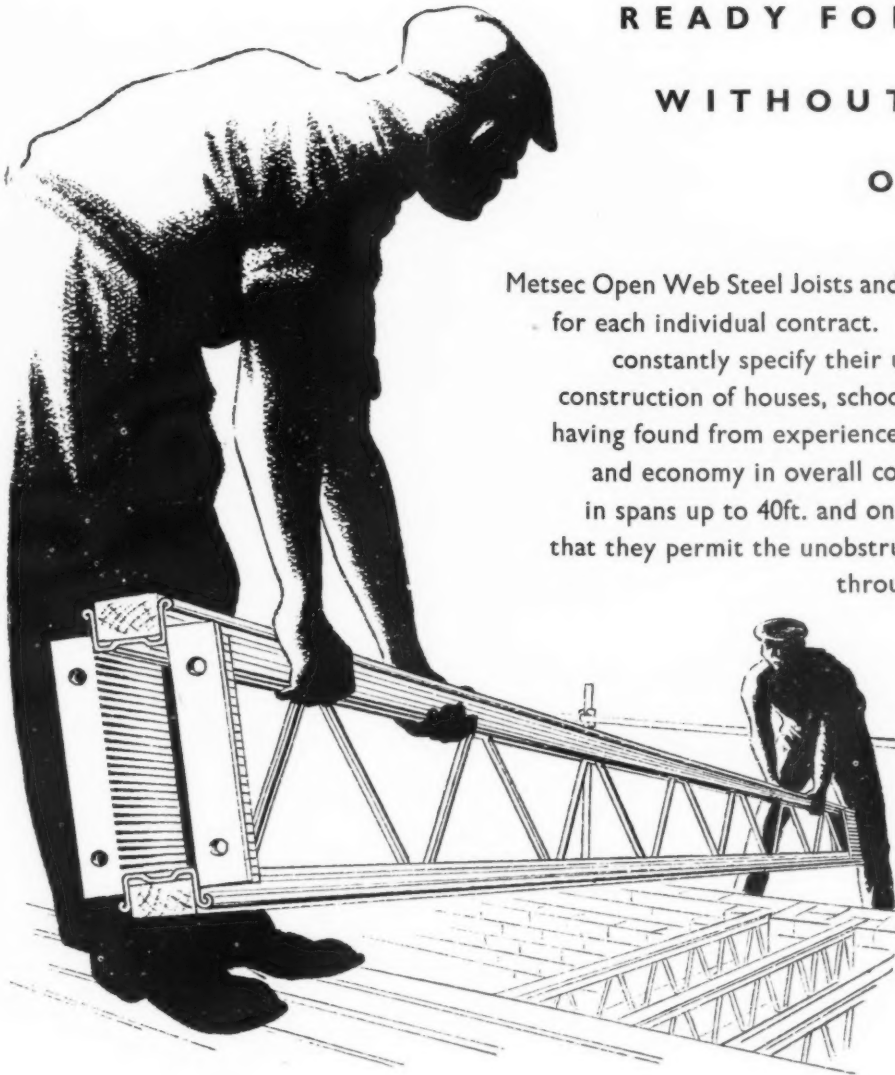
J. GLIKSTEN & SON LIMITED, Carpenters Road, London, E.15. Telephone: AMHerst 3300



# JOISTS

READY FOR PLACING  
WITHOUT CUTTING  
OR FITTING

Metsec Open Web Steel Joists and Trusses are tailor-made for each individual contract. Architects and builders constantly specify their use in the floor and roof construction of houses, schools and other structures, having found from experience their great adaptability and economy in overall costs. Joists are available in spans up to 40ft. and one of the main features is that they permit the unobstructed passage of services through the web of the joist.



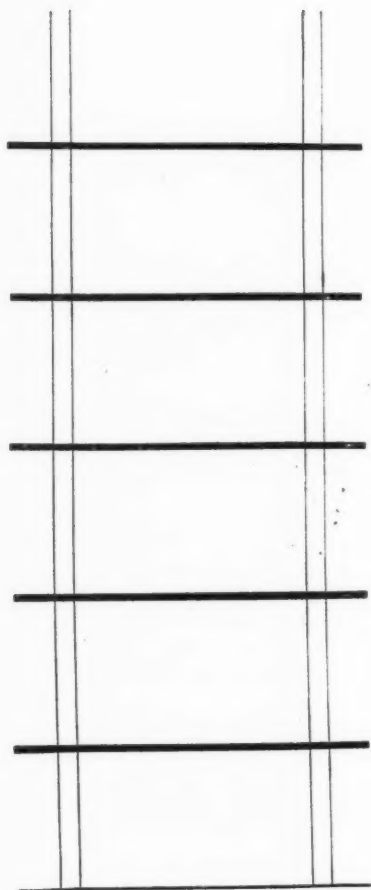
**Metal Sections Ltd**

OLDBURY BIRMINGHAM



SM/MS. 275<sup>o</sup>

# Building r.a.s.



It is the *reductio ad simplissimum*

that we know you will enjoy in the

Plate System by Truscon.

It is a complete framework

without any beams — a framework

of columns and floors for light

industrial purposes, for flats and offices.

The admirably efficient structure

will appeal to you at once.

Please consult us for all details.

Ask for the Plate System by Truscon.

## q.e.d. Truscon





THE ARCHITECTS' JOURNAL

No. 3227 Vol. 125 January 3, 1957

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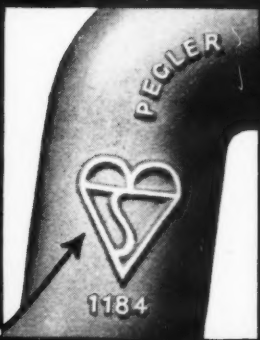
NOT QUITE ARCHITECTURE

## DUBLIN NEWS

"Noël" sang that one-man resistance movement, F. Villon, "morte saison où les loups se vivent de vent." It is the Dublin scene tonight except the gale-nourished wolves are in hiding—from the Gaels. If the ship of state doesn't pull out of the economic power dive, the wolves will be lagging behind the architects in the "Breathing is good for you" campaign. For the solid gold cement-mixers are back in the insurance companies' vaults, and the files are marked P/A. The building workers are coming up into the Final and no opponent has laid a glove on those fesses sans culottes. (You can't trust capitalists!) What the workers ask is logical, reasonable, irresistible, at least in relation to their intellectual development—what they want now—*quick*—is not so much a just wage as a share in the national wealth. In return they promise not to work any more. Well, I mean, doesn't the idea have a certain beauty? (The architects want . . . ? A cup of coffee and a crust of bread to gnaw in the hold of the emigrant ship.)

Last month these architects ate publicly at a Dublin hotel—who knows? maybe for the last time—and persuaded the Prime Minister and the Local Government Minister to join them. The Premier ate the architects—thirty-five years of self-government, the best of brick, stone, marble at their disposal and what had they produced? Not quite architecture, murmured the hosts, wondering, if the guests were toasted would they be edible too: not a few architects present hadn't known marble since schooldays when it was plural and a game. (Thirty-five years of self- . . . and what have the governors produced?) Not speechless, not quite architects, the visiting presidential firemen sat at the top table, united—they

# Up to the mark



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LONDON OFFICE AND WAREHOUSE

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Block by courtesy of the RIBA Journal

## The Final Version

"Let the RIBA building remain exactly as it is, without storeys of offices above it. . . . I believe Mr. Grey Wornum's design is a work of genius" wrote Trystan Edwards in the JOURNAL when 66 Portland Place was opened by King George V on November 8, 1934. Not many others recognized the design in such glowing terms, but T. E. Scott, one of the present vice-presidents, and an indefatigable member of the RIBA Council for many years, wrote in May, 1932, of the original competition design: ". . . it is not too much to hope that it may ultimately be developed into a building worthy of its great purpose." This original design, by G. Grey Wornum, shown by J. D. M. Harvey's perspective, left, was revised considerably before the existing building was put up. The sketch above, by B. R. Williams, shows how Edward Playne, the architect for the extension (which was inevitable, despite Trystan Edwards' plea, because of the rapid growth in membership and activities of the RIBA) has finally—and, we hope, in Mr. Scott's view, worthily—developed the design. In doing so he has managed to reduce the dominance of the upper storeys, and include an extra floor in No. 68, the headquarters of ARCUK. The plans are similar in arrangement to those prepared by Mr. Wornum in 1948. He has since retired, due to ill-health, and his former partner, Edward Playne, is completing the design. The building will not be finished until the spring of 1959.

had nothing to lose but their chains.

All right there's nothing to show (except M. Scott's Bus Station, D. FitzGerald's Plane Station, some schools, churches, factories . . .) but, not quite architecture—one of the great hysterical styles—was not invented by Irish or any other architects. Notquitsm—anywhere—is strictly a Treasury style. Here every penny invested in building has been fully taxable, so now if you tap an industrialist's knee and murmur "Factory!" the reflex salivation is that most hirsute of all false hoods, a wigwam, asbestos cement corrugated and lightly nailed to scantiest, whitest of deal foundation garments. Why build—at retail price—and be taxed when for a song (traditional) you can rent a tenement house, fill it secretly with sewing machines and machineries, flood the market unobserved with most reasonable plastic bras and flourish like celebrated biblical arboretum?\*

So—(so?)—this month Parliament is reading a Government Bill empowering IDA, the Industrial Development Authority, to make grants of up to two-thirds of the cost of factory buildings subject to a maximum grant of £50,000 in any one case. But IDA "should have regard to the extent to which the requirements of the public in respect of the commodities to be manufactured were sufficiently met by established undertakings." Careful Ida, there's a dog in that there manger!

Outside of certain load-bearing walls, however, there is not much activity in the way of laughter. Last summer an American gentleman bought Lord Castlerosse's famous invention, Killarney, and told the press that he planned to build on Ross island "about 20 homes, each architecturally designed to be in keeping with the estate." His statement was unhappily phrased—"home" here is not a polite word; it means a secret castle with several male nurses per patient. "Was it not a fact," a deputy asked in Parliament, "that the present occupier of the Kenmare estate intended to establish a rest camp on Ross Island for a bunch of neurotic Hollywood personalities in between their matrimonial swopping activities?" The deputy was suspended; the American gentleman said that he wanted to share Killarney, not harm it. He envisaged the island as a haven from the hustle and bustle of modern city life. There are worse things than the h. and b. of mod. cit. life however. Visions of American gentleman destination Idlewild humming sadly "Why did I buy Killarney?"

NIAL MONTGOMERY

\* the green bay tree.

## The Editors

### 1957: THE CRITICAL YEAR

THE profession's demand for architectural criticism is bound up in many ways with the modern movement in architecture. Those who saw the hopelessness of continuing to design in the various styles left over from the nineteenth century also realized that frank and regular criticism was an essential aid for the rapid development of sound contemporary architecture, and for creating order out of the abundance of mere technical achievement. By criticism we do not merely mean the finding of faults in a building, and the abuse of the architect's ability to design (though even this has to be done when standards are really low) but the careful evaluation of the qualities inherent in an architect's design. We know of at least one architects' office where it is the custom for each architect to describe to the office the project on which he is engaged and to give the reasons for the design decisions which he has made. Then the other architects freely and frankly give their views on the design. The work of this office is second to none in this country, or even in the world. The result of the criticism is not "design by a committee"—there is little or no compromise—but the architect is virtually compelled to be logical and sincere in his designing, and has his design judgment soundly tested, and the whole office benefits by the exercise of their critical faculties.

It is our endeavour to do, in a small way, for the profession at large what this architects' office do for themselves, and in response to the growing demand for criticism of new buildings in the press, which has been evident in the profession for some while, we have decided to make a start with regular criticism in 1957. The JOURNAL has invited J. M. Richards to contribute a series of articles in each of which a recent building will be discussed, analysed and criticized—within such limits as a short article imposes.

As suggested above, the most useful criticism is a two-way process, and it is important that the architect's own comments on his problems and how he solved them should be given the chance to supplement the outside critic's opinions. The JOURNAL will therefore invite the architect of each building Mr. Richards deals with to reply to his criticisms the following weeks, before Mr. Richards moves on to tackle another building. Readers' own comments on the building or on the opinions expressed on it will also be welcome.

Mr. Richards' first article will appear at the end of this month and we hope that thereafter the heading "Criticism" will have a permanent place in the pages of the JOURNAL.

### HELP FOR THE HELPLESS

Over 11,000 Hungarian refugees have so far arrived in this country. Among them are a number of architect-engineers (the professions are not separate, as they are here), assistants and students. We appeal to architects to help those homeless and probably penniless men now in hostels, transit camps and



temporary homes in various parts of the country. They need jobs.

For nearly a thousand years this country has been free from invasion—free from the horror of homes destroyed and families broken up and separated. In return, as a small thanksgiving, we should do all we can to help the victims of tyranny. The two offers of jobs so far made in response to the RIBA's appeal (see last week's JOURNAL) is quite inadequate. Offers of work should be made either to the RIBA, or to the Technical and Scientific Register of the MOLNS, whom, we understand, have had a fair response to their appeals and have already found work for about a dozen refugee architects and surveyors. But architects must do more than offer jobs. They can help actually to find the Hungarian architects who have arrived in this country. The organizations engaged in helping the refugees have been swamped by the numbers, and the interviewing of each refugee is a slow business. It is believed that there are several small groups of Hungarian architects in this country but their names and addresses are not known. We ask any architects who know of the whereabouts of any of them to ensure that the RIBA are notified, so that as jobs are offered (and we are confident that on being reminded of the need for jobs the profession will respond wholeheartedly) they can be filled. Bearing in mind the suffering now being undergone, this is not, perhaps, too much to ask.



While the ICA are having their annual quiz-cum-jumble-sale (otherwise *Picture Fair*) in the front gallery, their very smart and newly decorated back library in Dover Street is showing a vest-

pocket exhibition of Serigraphs—silk screen prints to you. Most of the exhibits don't do much beyond illustrate the point that Serigraphy, properly handled, can do anything that lithography can do, and sometimes better, but what pinned ASTRAGAL'S ears back was to hear John Coplans, the technical wizard behind this show, say that he and a man at BRS (I can guess who) were working on the idea of weather-proof mural Serigraphy for internal or external walls. If the special varnishes that have to be used to effect the weatherproofing can carry the very bold colours seen in some of these prints, then British exteriors have a brighter future ahead of them than you may have thought.

C, W & L

I have already paid my tribute to the AA Journal's initiative in publishing a full-dress survey of the pioneer work done by Connell, Ward and Lucas in the 1930s. This was followed up by a dinner given in honour of the architects at the AA just before Christmas.

\*

It was a jolly affair with, as was

proper to the occasion, people falling over themselves to pay compliments all round—and one architect, who shall be nameless, just falling over himself. The only thing to be regretted was the absence of Connell (who has been for many years in East Africa) and of Lucas (who has just flown off to the Seychelles—not, we were assured, in connection in any way with *enos*). But Connell was represented by his two sons, one of whom is training to be an architect.

\*

Basil Ward spoke chiefly about Lethaby, Peter Smithson about the pioneers of the 1930s (giving highest marks to Duiker), and Bernard Ashmole delightfully about being C, W and L's first client. The best story of the evening came from him. "High and Over" was attacked on all sides, but liked by one or two eminent people of more discrimination. One of these was Charles Marriott, then art critic of *The Times*, who exclaimed in admiration when he first walked into the house: "I never think much of a house unless you can stand in the middle of it and swill it out with a hose."

#### DIFFERENCE OVER DIFFERENTIAL

This is the month when the National Joint Council meets to decide the industry's sliding scale wage rates, which will go up by about a penny, but there will, no doubt, be a fair amount of argument about the 4d. wage claim and perhaps even more so over the craftsman/labourer differential, which the employers want to increase from 6½d. to 7d., while the operatives seem to want the 5½d. back again. These arguments really apply through most industries, as if you *don't* have a fairly reasonable differential the young don't feel it's worth while serving their time. But in the building trade there are many in-betweeners among the specialist sub-contractors who are rated as semi-skilled, although most of them probably ought to be craftsmen. The whole building industry wage structure is something of a muddle, but fortunately, one of those muddles which work, most probably because the N.J.C. is a fairly sensible body. The real snags are the employers who have a "bonus" linked to nothing at all and used just as an excuse for paying rates high enough to get the number of men needed on the job. Though,



bearing in mind George Schwarz's views, this may be the correct rate for the job to gain the advantages of a semi-free economy.

#### MODEST UN-TANGLING

For the police to remove over-parked cars is a nice logical form of retribution for the French, and parking meters are the American answer, but the possibility of both at once for the British is, of course, a very different pair of shoes, and has produced the squeals one might have expected. Nobody can object to 1s. for two hours, for it's no more than the standard tip to those regular car park attendants who aren't entitled to ask for anything, and again as George Schwarz has noted, it's only what you pay for leaving a coat in a cloak room. On the other hand, 10s. for the odd bit over does seem a bit steep, and works out worst of all for the Westminster and Marylebone types who have houses near the main shopping areas. Garage space being what it is, householders have some faint right to park outside, but anyone who uses a car for business or professional trips in London must admit that the whole thing has got quite out of hand when it takes longer to find parking space than to do the whole journey on foot. The main offender is not the person who *uses* a car during the day, but the man who merely wants all day storage—free. Even the thousands of cars in the Royal Parks all day don't seem to make much difference in the streets round about. The only answer is larger *cheap* all day parks at suburban stations.

#### THE SEASON IN SCIENCE

It has been a flush season for popularized science, with a new magazine in the field and the Reith lectures on the Home Service given over (for the second time) to questions of science.

\*

The magazine, to ASTRAGAL, was something of a disappointment. Its name, *The New Scientist*, is rather too obviously a pup off the *New Statesman*, and its policy seems too much aimed at processing science down to the consistency of what is rudely termed "plastic cheese" so that it shall not upset the queasy digestions of those who don't normally consume anything stronger than the intellectual weeklies. Those, like ASTRAGAL, who prefer red



Recently the British Travel and Holidays Association and the brewers Whitbread & Co. Ltd. combined to show Americans the attractions of "this characteristically British institution," the English pub. With characteristic British carelessness, however, they got it wrong. The result, which was exhibited at the American Society of Travel Agents' convention in Chicago, is shown above. This appalling hotchpotch—faked candelabra and panelling, fitted carpet, sun-burst mirror, modern bar and road-house seats—is just the sort of thing that compelled the editors of the *Architectural Review* to produce a special issue on pubs and run an architectural competition to encourage good pub design—all to no effect, apparently.

meat and pickles, will probably continue to read *Discovery*, *Times Science Review*, *Pelican Science News* (none of which should be beyond the grasp of a reasonably developed intellect), *Galaxy*, and *Astounding Science Fiction* (not beyond the grasp of a reasonably developed imagination).

\*

The Reith Lectures, however, were more like business. Sir Edward Appleton, who delivered them, used the sort of low-pressure tone of voice that only grand old men and very top experts can get away with. To those who did not hear them, let me recommend an early perusal of the reprints in the *Listener*; those who did hear them will not need me to tell them that Sir Edward produced a very lively picture of science at work in, and on, a nation committed to technology for its livelihood, and said some pretty sharp things on the side about the mutual responsibilities of scientist and nation. One of his seemingly-painless barbed thrusts is of more than scientific truth and will be quoted here as ASTRAGAL's thought for the New Year—"A scientist can get done anything he wants to get done, provided he doesn't want the credit for it."

#### ARTFULNESS

Guest night at the Arts Club in Dover Street, just before Christmas, was a remarkably pleasant evening, not least because James Gardner had been given £30 and told to run along and get the place decorated. James Gardner on a fair budget is always accomplished, often brilliant. On a shoe-string he was so ingenious as to make the budget appear lavish. Or perhaps, and more probably, he demonstrated his powers of persuasion. As the blitzed portion of the club is being rebuilt, scaffolding, pots of paint (dribble patterned) and step-ladders, and a mobile of trowels, all brightly coloured (and all said to have been borrowed from the site next door) formed an appropriate theme for the bar. The stair balusters were richly entwined with leaves and at one side of the stairs was a panel of giant Czechoslovakian playing cards—each about three feet high.

\*

At the head of the stairs, seated on a sofa, was a man in armour embracing, and being embraced by, two naked women. In the atmosphere of gin and leather orthodoxy of the Arts Club, this gave a shock to more than one guest. The fact that the suit of armour was empty and the girls were of wax, lightly

garlanded with green leaves called for a closeness of inspection which only the prurient or the short-sighted could give, and one was thankful to learn from Frank Yerbury and Hulme Chadwick (the organizers of the evening's entertainment) that Arts Club behaviour was as correctly traditional as ever—for what that's worth.

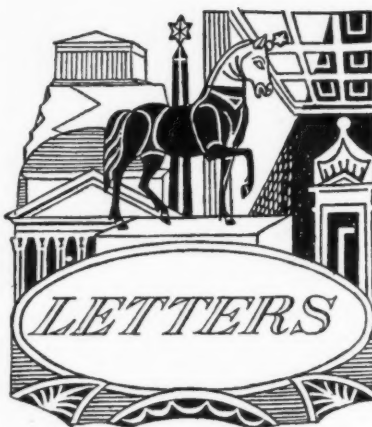
#### CURTAIN CHAMPION

On several occasions when visiting schools ASTRAGAL has been impressed by the carefully designed proscenium curtains. Inevitably they have been the work of Gerald Holtom, who is exhibiting a number of them at the Building Centre. His technique is *appliqué*, the minor art form which filled so many an hour of a Victorian gentlewoman's leisure. Holtom's work, of course, is much more vigorous, colourful stuff. Using a sail-maker's sewing machine, he cobbles up Shakespearian and other characters half as large again as life, and gets considerable pattern and freshness in his forms. The technique is relatively cheap (he uses odd pieces from his curtain-making workshop), but the result doesn't look it, and he has largely mastered the difficult trick of making something which has to be distinguishable at sixty feet, still bearable at only six. The figures are sometimes too stereotyped—possibly because he is consciously designing for school children?—and one would like to see him breaking away more often from the convention of stitching a line round his figures, which gives them a slight resemblance to full-size details for stained glass.

\*

Gerald Holtom, incidentally, claims to have printed and made curtains for over 500 schools in the last ten years—ordinary window curtains, that is, in addition to the stage curtains mentioned above. There are colour transparencies on view showing some of these, and it shows what a radically new world we are living in when architect and curtain-maker get together to design what becomes, in a highly glazed building, a moving, patterned, wall of fabric, as striking in effect to the outsider as it is to the occupant. His white, or lightly patterned sunblinds are also a welcome change to the ubiquitous Venetian blind, and, presumably, cheaper.

ASTRAGAL



J. S. Williams Director of CUC

R. M. J. Harris

Of the Commissioners of Crown Lands

Jack Whittle, A.R.I.B.A.

R. D. Butterell, A.R.I.B.A.

A. E. Ward Secretary IRA

K. Douglas Bundy, A.R.I.B.A.

#### The Case For Gas

SIR.—Both you and the Gas Council are to be congratulated on your joint enterprise in publishing the supplement on "The Case for Gas" (AJ, November 29, 1956). The more information that is available on competitive fuels the better, and, though we do not necessarily accept all that is said in favour of gas, we particularly welcome the publicity given in the supplement to the use of coke.

Your editorial article sets out, however, what you describe as the inescapable facts about gas and coke, one of which is that "the gas/coke method gives approximately twice the heating service for a given ton of coal at the pit than that supplied by the generation of electricity or by burning of bituminous coal."

This seems to be based on experience in one house at Abbots Langley, which is a pretty poor basis for a national generalization. It is not for us to comment on the comparison with electricity generation; but the comparison with the direct burning of coal seems quite unsound.

A ton of coal, of a total calorific value of 300 therms, would give on carbonization 75 therms of gas, which used at 60 per cent. efficiency in a convector fire would produce 45 therms of room heating. At the same time it would give about half a ton of saleable coke, of a total calorific value of 150 therms; this used at 50 per cent. efficiency in a convector fire would produce 75 therms of room heating. The total room heat would then be 120 therms, which is not twice, but just the same as, the amount of heat obtained by burning a ton of coal directly in a convector fire at 40 per cent. efficiency. (All efficiencies quoted are those given in the Ridley Report.)

It is true that not much more than half the heat would be obtained if the coal were burnt in an old stool-bottom grate, but modern gas- and coke-burning appliances must surely be compared with modern coal-burning ones.

By all means let the domestic use of coke

be encouraged, but let justice still be done to coal, which in present supply conditions is likely to be the main domestic fuel for most people for many years to come.

J. S. WILLIAMS.

THE TECHNICAL EDITOR REPLIES: in stating that "the gas/coke method gives approximately twice the heating service for a given ton of coal at the pithead than that supplied by the generation of electricity or by the burning of bituminous coal," we were concerned with *all* heating services in the home: with cooking and water-heating as well as space-heating; for this, after all, is the problem with which the architect has to cope. It is doubtless this triple user which gives the gas/coke combination so great an advantage over bituminous coal in the Abbots Langley experiment. If space heating alone is to be considered, however, then the figures quoted by Mr. Williams are correct and we gladly concede his point that in this context it would only be fair to compare the burning of each fuel in the most up-to-date appliance.



#### New Zealand House

SIR.—May I correct one misconception to which the article on this matter on page 818 of your issue of December 6 may well have given rise? The panel of three—Sir Howard Robertson, Sir Edward Gillett and Mr. Minoprio—consulted by the Commissioners of Crown Lands did not, in fact, see the first design in the form illustrated in your article (*i.e.* of a height of 207—not 237 ft.) but in a form rising to a height of 275 ft. The formula given by the Commissioners to the New Zealand Government before the preparation of the second design—namely, that it might be "in the contemporary idiom, with a tower, but paying due regard to the scale, the main architectural lines and the materials of the adjacent buildings"—was based upon the panel's advice.

R. M. J. HARRIS.

London.

EDITORS' REPLY: We thank Mr. Harris for this information. Readers may remember that ASTRAGAL pointed out that the second design would be improved if the tower was made several storeys higher in order that it would stand well clear of the roof of Carlton House Terrace when seen from St. James's Park, and, we might add, such a course would enable the base block to be reduced by a storey which would bring it in a yet better relationship to the National Gallery.

#### Cost Please!

SIR.—I found the new London County Council 18-storey block which you illustrated (Nov. 15) very interesting and delightfully Corbeseque. It would be most valuable if with these illustrations you could publish the estimated gross cost per foot super, and perhaps the London County Council would be prepared to give you this additional information for the benefit of other Local Authority Architects.

JACK WHITTLE

Essex.

#### Transport Museum

SIR.—ASTRAGAL's suggestion that Brighton Works should become a National Transport Museum is no new suggestion. C. Hamilton Ellis, the well known railway historian, said just the same thing in a letter to *The Times* in July. The Works are due to be closed completely in 1958 and there is every possibility that they will be

designated as a Transport Museum. An added advantage would be the use of the Kemp Town Branch where historic locomotives could perform under their own steam on special occasions.

I was sorry to see no mention of Mr. Scholes' name in connection with the exhibition at Euston. As Curator to the BTC he is responsible for collecting and sorting the vast number of exhibits in the Commissions possession and it is largely due to his initiative and enlightened views that all the BTC Exhibitions have set and maintained such a high standard of exhibition design.

R. D. BUTTERELL.

London.

## Service For Guineas

SIR,—When my Council make their report at the end of the year they will be able to say that the total of disputed fees recovered through the Institute—usually in conjunction with our legal advisers—amounts to over £12,000 since July, 1954. The greater part of this sum was recovered by negotiation in which consultative panels of experienced architects play a significant and entirely honorary part. We have not sought the rôle of "fee-collecting agents": the hard facts of professional life have thrust it upon us.

All professional bodies seek to serve their members in their own particular way. Some are primarily concerned with the maintenance of proper academic standards: some with the more mundane, but not less important, bread-and-butter affairs of the profession. The Institute I have the honour to serve falls in the latter category and you may agree its record of service is impressive.

We are much encouraged, too, by the results of our efforts to defend the private architect's function—left practically unprotected by the Registration Acts. A great deal remains to be done by way of informing the public that "Architectural Consultants," "Consultants in Architectural Design" and the like are not, in fact or in law, architects, but thanks to the widespread co-operation of our members we are making headway.

The Institute of Registered Architects has a policy for the profession as a whole but it also strongly believes in personal service to the individual member on whose problems a great deal of our time and energy are expended. At a time when every guinea counts you may agree it is, perhaps, fitting that professional bodies should justify those they receive in subscriptions—in our case, only three per annum.

A. E. WARD.

London.

## Teaching Not Lucrative

SIR,—I did not, unfortunately, read Paul Ritter's article on Architectural Education, but the letter signed by "A Student" in your issue of December 13 would seem to imply that the practice of architecture has nothing to do with the teaching of it.

Surely your correspondent does not really believe this?

I have for many years taught History as a visiting lecturer, and have done so firstly because I like it, and secondly, because I am foolish enough to believe that students get some benefit from that fact. I can, however, think of many far more profitable ways of augmenting an income.

K. DOUGLAS BUNDY.

Kingston-upon-Thames.



## NEW YEAR HONOURS

### Architects Awarded

The following architects, engineers and others connected with the building industry received awards in the New Year Honours List:

**OBE (Prime Minister's List):** C. T. Bloodworth, principal architect, N.W. Region, MOHLG. B. F. Dark, architect, G. A. Goldstraw, chief architect, Newton Aycliffe Development Corporation. C. O. Tremee, senior architect, War Office. F. X. Velarde, architect, H. J. Adams, chairman of governors, Brixton School of Building. C. Bridgewater, lately chairman National Federation of Housing Societies. S. R. Driver, assistant regional director (Leeds). MOW. B. Elkan, sculptor, P. McKearney, assistant chief mechanical and electrical engineer, MOW. J. S. Williams, director CUC.

**Knights Bachelor:** H. J. G. Griffin, secretary CPRE.

**CB:** J. F. A. Baker, chief engineer, highways engineering staff, MOT.

**CBE:** H. M. Abrahams, secretary National Parks Committee. B. Ashmole, lately keeper, Department of Greek and Roman Antiquities, British Museum. C. W. H. Beaton, photographer and designer. W. J. Eves, Director of Lands and Accommodation, MQW. Capt. W. Gregson, RNR, chairman Fuel Efficiency advisory committee. C. G. Garratt-Holden, secretary, Building Societies' Association. R. McAlpine, director, Sir Robert McAlpine & Sons Ltd. E. J. Powell, county surveyor and planning officer, Glamorgan CC, chairman Road Research Board. P. K. B. Reynolds, chief inspector of Ancient Monuments, MOW. H. W. Wells, chairman, Hemel Hempstead Development Corporation.

## FELLOWSHIPS

### For Landscape Study

Several Research Fellowships, Graduate Scholarships and Assistantships ranging in value from \$1,500 to free tuition plus \$500 are available for graduate study in landscape architecture at the University of Pennsylvania. Applicants must hold either a degree or diploma in architecture or landscape

architecture. Applications should be made to the Dean, The School of Fine Arts, University of Pennsylvania, Philadelphia 4, Pennsylvania.

## OBITUARY

### Henry Thomas Wright

H. T. Wright who was in practice at Newcastle upon Tyne for nearly 50 years died on December 14th, aged 82. He was the most constant and probably the most successful of "single-handed" competitors in open competitions during the period 1905-1938.

H. T. Wright was born in Glasgow and was educated at George Watson's College at Edinburgh. He left school at 17 and was articled to Sir Rowand Anderson, who at that time had a very large and fashionable practice in Scotland. Wright won a travelling scholarship during his apprenticeship, and soon after its completion he spent some years in London with Messrs. Gibson & Russell. His immediate senior there was Cooper, later Sir Edwin Cooper.

In 1898 Wright went to Newcastle upon Tyne as assistant to Messrs. Armstrong & Knowles, and up to the 1914 war, he was first a partner with Armstrong and afterwards with the late Hal Chapman.

But well before 1914 Wright had disclosed his two strongest personal and professional characteristics. The first was an individualism so complete that, even in those days, it more than skirted the eccentric. The second was an absorbing passion for, and considerable skill at, open competitions.

Wright had always preferred to do all his work himself. From the age of 40 on he did so. That by this method he carried out two large jobs and many of moderate size, without contractors complaining of drawings being delayed, is an indication of his industry. He was an indefatigable worker at the drawing board. Other men talk of working 10 or 15 hours a day. Wright did so for most of forty years. At peak periods and competitions he was able to work for 16 hours each day for four or five days, taking short naps between spells at the drawing board. Occasionally a relative, or a very brave fellow architect, used to suggest that it was a waste of his time for him to do all his full-size details himself—and he did many. Wright did not welcome such comments: they were rarely repeated.

Open competitions were the great passion of Wright's life. Between 1905 and 1938 he certainly entered for more than 50. He himself claimed more than 70, and there were several years in each of which he went in for three. Some big firms like Bradshaw Gass & Hope probably ran up a bigger total of entries. But it may safely be claimed that no individual, doing the whole of the work himself, can rival Wright's achievement.

Nor was all this work—added to a single-handed practice—without result. His total score was five wins and five or seven lesser awards.

Wright saw buildings as comprising Plan, Section and Elevation. He saw that the first two were linked, but not the third. In later life he took little interest in the external appearance of buildings, although he could do charming line and wash drawings in the S. D. Adhead manner, and could imitate the style of any assessor both for humorous and for competitive purposes with a good cartoonist's sureness over essentials.

Wright was very unlucky over his competition wins. There can be no doubt at all about that. The first, won when he was 28, was taken away from him and given eventually to a local architect in the promoting town. The second also faded out in the 1914-18 war. The fourth, for a big hospital near London, was won just after



that war, when badly needed. The RIBA had not then attained the strong grip on competitions and all connected with them that they now and rightly hold. But in that case the conduct of the promoters was such that the RIBA offered to sue if Wright could guarantee some portion of the costs—a third or a quarter. But a newly demobbed R.E. officer with four children had no money to spend at law against rich corporations; so that job too went down the wind. Wright never wasted time on complaints but it is probable that the failure of the RIBA to protect its own in those early days was remembered and enhanced his wayward individualism. Certainly, when it was suggested to him in 1945 that he should gracefully take his place among the Retired Fellows he refused stubbornly. He pleaded poverty, and when this was outflanked, his deafness increased noticeably. At last he announced that "those fellows" had never cared anything for the small man in the provinces. It was his only remembered complaint.

From 1923 things improved. He was placed second in a competition for the Newcastle city hall and public baths, in a competition assessed by the present PRIBA and his father. The assessors' very favourable comments led to Wright being given by the city of Newcastle-upon-Tyne a large new secondary school at Heaton, and a few years later he won the competition for one of the first of the Irish Sweepstake hospitals at Ardee in Co. Louth. This was his last win, though he continued to win an occasional premium up to 1937.

By the early 1930's it was clear that his day was passing. Mildly modern designs were beginning to win competitions. Wright's bewilderment as he examined these first examples of free form was both sad and, to the younger generation, just a little comical. It was to him as though people had started to solve crossword puzzles by running the words right out of the printed frames. The world of Cowles-Voysey, Lanchester, Lucas and Lodge and the rest was changing. He continued to compete up to the second war—after all, it was the passion of his life—but one had a feeling that he realized after 1935 that times and views had changed, and he would have to be very lucky to win.

Wright took no part in north-country architectural affairs though he had considerable respect for a number of the local architects. And they in turn seemed to have regard for the most rugged individualist in their midst. They helped him most generously on the few occasions when the results of an excess of individualism inclined or compelled Wright to ask the advice of his fellows.

In 1902 Wright married Gertrude Blair of Newcastle-upon-Tyne. He had three daughters and one son, H. Myles Wright, who is also an architect.

## DIARY

*The Heating of Buildings by Warm Air.* By Dr. W. Davidson. At RICS, 12, Great George Street, S.W.1. 5.45 p.m. JANUARY 7

*Decorative Curtains and Wall-hangings in Appliqué.* Exhibition by Gerald Holtom. At the BC, 26, Store Street, W.1.

UNTIL JANUARY 8

*Lighting as an Effective Aid to Architecture.* By H. R. Buff, H. E. Bellchambers and R. V. Mills. At IES, 2, Savoy Hill.

JANUARY 8

*Futurism and Modern Architecture.* By Reyner Banham. At RIBA, 66, Portland Place, W.1. 6 p.m.

JANUARY 8

*A Visit to Mexico City and Yucatan.* Talk by Eugene Rosenberg. At the AA, 34, Bedford Square, W.C.1. 6.15 p.m.

JANUARY 16



*This entrance gateway designed by Sir Hugh Casson (assisted by T. J. Rendle) forms, with the playing fields into which it leads, a war memorial for Eastbourne College. The ground was found to be made up, presumably in connection with the construction of the road, so the foundations to the entrance and wall were therefore formed by a series of bored piles connected with reinforced concrete beams. The facing materials are: paving, coping and steps, York stone; facing bricks, grey High Brooms; slates, green Westmorland. The memorial tablet is black slate with incised and gilded letters. The contract figure of £1,979 3s. 7d. includes the memorial tablet, gates, screen, steps and sitework.*



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*Whether bombed cities should be rebuilt in the original styles, or in a contemporary manner was an issue which troubled Germany as much as it did Britain. Ian McCallum, the executive editor of the Architectural Review, recently visited West Germany and he described in a Third Programme talk last month his impressions of two of the towns he visited: Münster and East and West Berlin. We reproduce his talk below, together with some of the photographs he took during his tour.*

## WEST GERMANY AND EAST BERLIN

Ian McCallum

The city of Münster in Westphalia suffered a good deal of damage from bombing, and in its subsequent building policy it presents the architectural journalist with a neat contrast in changing attitudes to reconstruction—attitudes not peculiar to Germany.

The market square in the centre of Münster, the Prinzipalmarkt, was largely destroyed. It was an area of tall, steeply-gabled stone houses, arcaded at street level; after the war it was decided to rebuild it in exactly the same style. I cannot enter here into the current attitudes as to the rights and wrongs

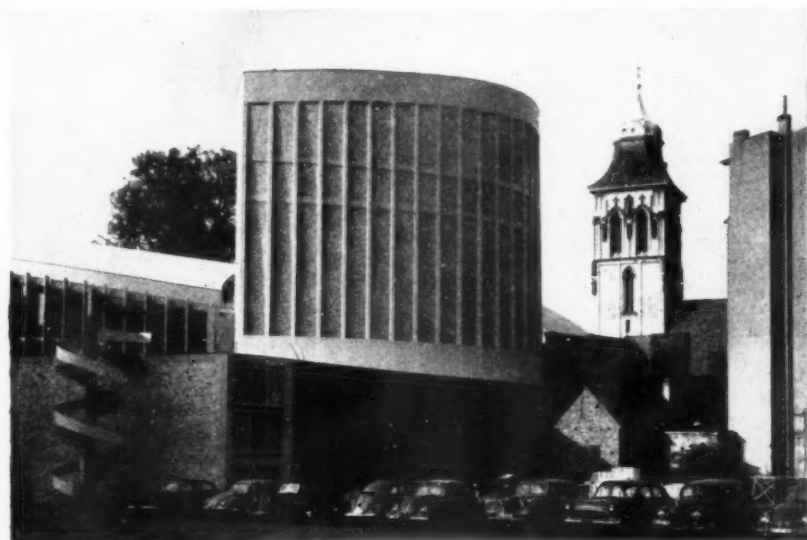
of period reconstruction; other than to say that those in favour say that where towns have had their old quarters entirely destroyed a degree of accurate reconstruction can provide posterity with an aide-memoire it would otherwise lack, and be the poorer for lacking; and those against period reconstruction say that the very desire for it suggests a depressing lack of confidence in our own age and its ability to express itself in architectural terms.

My own feelings about the Münster reconstruction lie somewhere between the two.

Happily, the original buildings were extremely plain and this has dispensed with another powerful argument which says that we no longer have the artists, nor indeed the understanding, to reproduce the sculptural embellishments of a past age.

Skilled masons, however, we still possess and this Münster well demonstrates.

The other reason why I find the Münster reconstruction acceptable is that clearly in West Germany in general, and in Münster in particular, the days of accurate period reconstruction are over. Here is a country which apparently has decided it likes the architecture of its own age and wants to live, if not always in it, at any rate with it. That period reconstruction is not here evidence of a failure of confidence is proved by a building a few streets away from the Prinzipalmarkt. It is a combined opera house, theatre and concert hall and is, I believe, one of the most interesting of the post-war buildings of West Germany. Outside, it is sparkingly clothed in blue and grey glass mosaic. The complex organization of forms, hyperbolic, parabolic, elliptical and saw-toothed are skilfully interrelated and just as skilfully exploited as foils to the adjoining 18th century Town Hall and 16th century church tower. In addition the summer promenade at first floor level incorporates part of the bombed 16th century theatre—another aide-



One of the arguments put forward for the exact period reconstruction of bombed buildings in Münster was that it provided posterity with an aide-memoire it would be the poorer for lacking. Above: the "happily plain" copies of the original buildings in central Münster's Prinzipalmarkt (architects: Diening and Rohling) and, in marked contrast, above left, the nearby theatre, designed by Deilmann, von Hausen, Rave and Ruhnau, showing the stage tower. Left: the emergency exits from the irregularly shaped foyer which wraps around the egg-shaped auditorium and stage. The walls are faced with a blue and grey glass mosaic.



Two views of the colossal Russian war memorial in East Berlin. Top: the view from the foot of the figure of the Mother of the Russians at start of the axis. Above: the reverse view seen from the steps at the base of the statue of a Russian soldier at the climax of the vista.

The bustling scene, with modern office blocks and shops, informally disposed, of West Berlin (below) in contrast to the rigid axial layout of the Stalin Allee (right).



memoire — in the form of an arcaded screen with columns, cornices and all; and very effective it is as you mount the stairs and see it mirrored in walls of glass and later walk through its arches to the restaurant on the opposite side of the terrace to the theatre.

Inside, the technical equipment is magnificent and includes the latest electronic lighting controls; but just as impressive to me is the extraordinary boldness and sophistication of the interior design for what is, after all, a provincial town: from the restaurant with its wire chairs by the sculptor Bertois which set the key for everything else to be open-work, so that the eye slides through chairs, screens and lampshades to take in an unobstructed space, to the auditorium with its wickerwork box and balcony fronts, fluted black walls and ceiling made up of 1,200 lantern-like lights of varied shapes which serve to conceal acoustic devices and spotlights, suspended above them.

There is nothing in West Berlin that quite matches up to the elegance of Münster's theatre. There are a number of buildings under construction which may do so, and

there's no doubt that the Hansaviertel quarter being built for next year's Berlin Building Exhibition will prove of outstanding architectural interest, since most of the world's leading architects have contributed designs. But it is with a brief examination of East rather than West Berlin that I want to conclude.

Apart from the Stalin Allee to which I shall return, the chief tour de force of East Berlin is the Russian War Memorial. It is certainly an impressive affair, and in the grandest possible manner. It suffers, though, from never lowering its voice below a shout. It is axial in plan and you are skilfully brought in along a relatively narrow path through trees, and at right angles to one end of the axis. The first monument that meets your eye and terminates the axis in one direction is a large bowed figure of the Mother of the Russians. When you've reached her feet you turn and before you a long, paved vista stretches, flanked by double avenues of trees and leading to a tremendous flight of steps: these in turn are flanked by marble pylons, which reveal themselves as you approach to be formalized representations of lowered banners.

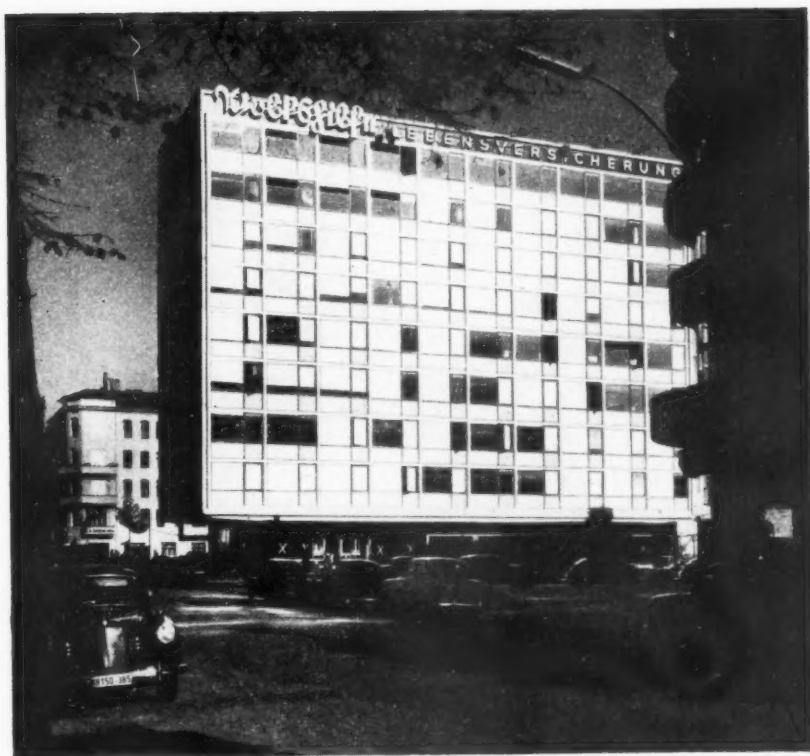


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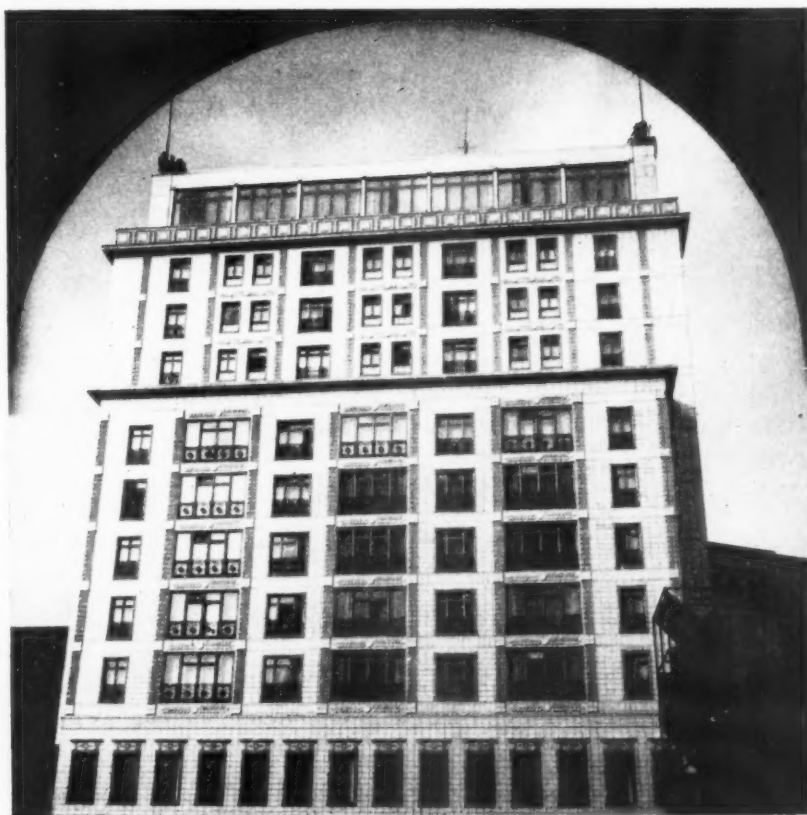
Below them where they frame the sky kneel, in grief, two great bronze soldiers. Beyond the steps and terminating the vista at the far end is just discernible the largest statue of all. When you have reached and mounted the steps this shows up as a massive martial figure on a circular podium, itself raised on a sort of conical earthwork. Between you and it is a formal parterre and at intervals along the side paths at each side and at right angles to them are sarcophagi-like marble slabs with the various stages of the Russo-German war carved on them in bas-relief. Having examined these and finding oneself near the base of the great culminating statue it is something of a surprise to discover it looking singularly un-Russian.

It bears, in fact, a strong likeness to those statues of nude Nordic gods that were scattered with such profusion through the Hitlerian townscape. This one, however, is heavily clothed in a Russian army great-coat and protects in the crook of its arm, a child. At week-ends, it is a touching sight to see Russian soldiers being photographed, in pairs against the background of this figure which represents and yet is so dissimilar to them. The desire for monumental architecture, sculpture and layouts is something with which contemporary artists have so far failed to come to terms, except perhaps in the University of Mexico.

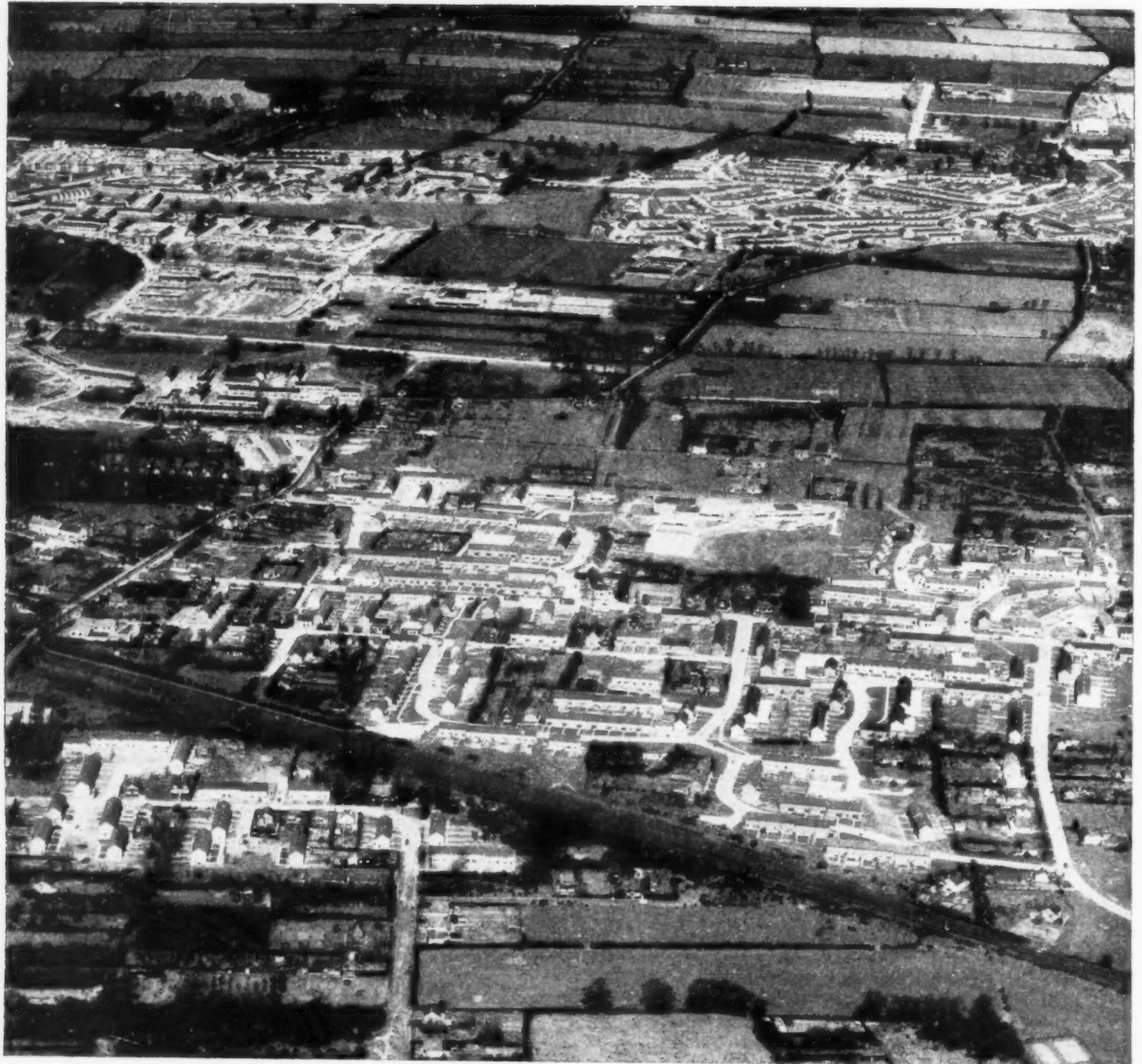
Not that architects east of the Brandenburger Tor want to come to terms with it in our sense of the word, contemporary. The Stalin Allee, the other tour de force of East Berlin, is yet another layout deriving from the Italian Baroque through France. It's a long, very long, straight boulevard lined by high apartment buildings and terminated by towers. If Münster represents the extreme of accurate period reconstruction and bold contemporary experimentation, the Stalin Allee represents another architectural phenomenon of today: a turning away from theories of architecture that have developed in the western world over the last fifty years, without actually depriving oneself of the technical advances that have developed with them. The architectural result is a strange hodge-podge, whether it's in Plymouth, Paris, Moscow or the City of London. The design of the buildings lining the Stalin Allee follows no known rules or theories; I can only hint at it by saying that it lies somewhere between the back elevations of the Dorchester Hotel and the apartment blocks built in the late twenties at the north end of Portland Place. As a piece of town planning the Stalin Allee doesn't succeed very well either; for Berlin can be a very hot and a very cold city, it can also be a very windy one: a street quite as long, wide and straight as this provides a test of endurance to the pedestrian, rather than a pleasant place to shop or stroll. The result is that most people use the old Friederichstrasse, paintless and peeling though it may be, for it is relatively narrow and doesn't take quite so many people to create a sense of bustle and liveliness; and that, our own town planners please note, is what people want in their town centres, whether they live in Berlin or Bracknell.



*Above: an office block in West Berlin which is typical of the very high average standard of design in Western Germany, contrasted, below, with a part of the Stalin Allee, described by Ian McCallum as "somewhere between the back elevations of the Dorchester Hotel and the apartment blocks . . . of Portland Place."*







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OPPOSITE : top left, part of the New Town designated area photographed in 1950, before development had begun. In the foreground is the main London-Upminster-Southend railway line, which divides the New Town area approximately in two, on an east-west axis. Bottom, a view, also looking north, of the same area as shown above, taken in 1955. In the foreground is the Barstable neighbourhood, top right, the Fryerns neighbourhood and part of the industrial estate. Top right, two typical examples of semi-derelict existing property in the Lee Chapel area of Basildon. A considerable amount of this type of development took place soon after the first World War, when a lot of East Londoners moved to the area. At first this type of dwelling was used at weekends only, but when the housing shortage became acute they became permanent abodes. The Development Corporation are gradually acquiring these houses and shacks for demolition.

*In this report of progress at Basildon, which is destined to be the largest New Town in Britain, the unique problems facing the Development Corporation are discussed. Unlike certain other new town sites, where the choice of location has been bitterly fought by local authorities and private individuals, a new town at Basildon was asked*

*for by the local authorities. All the buildings illustrated were designed by the Development Corporation's Architects' Department; (Noel Tweddell, chief architect-planner; A. B. Davies, deputy chief architect-planner) except where private architects' names are mentioned. This report has been prepared by the Development Corporation.*

## BASILDON NEW TOWN

A previous article on Basildon New Town appeared in the JOURNAL for November 16, 1950, but it may be useful to recite the principal facts in connection with the New Town. The Basildon New Town (Designation) Order was issued on January 4, 1949, some 2½ years after that for Stevenage, the first New Town to be designated under the New Towns Act, 1946.

The site established by the Order is the largest of the English New Towns comprising approximately 7,840 acres. The target population, set originally by the Ministry of Town and Country Planning at 50,000, was raised in the Master Plan to 80,000, but it is now planned to reach about 100,000, thus making Basildon the largest New Town in Britain.

In addition to its main purpose of receiving overspill of population and industry from London, an objective common to all London New Towns, Basildon has the additional function of remedying the unsatisfactory existing conditions in its Designated Area. More than half the area is covered by scattered shack developments, inadequately served by roads or main services (opposite page, top). With the object of seeking Government help in the redevelopment of this rural slum, the Essex County Council and the Urban District Council, petitioned the then Minister of Town and Country Planning to designate the area as a New Town, a procedure unique in the history of the New Towns movement.

This shack development had started during the agricultural depression in the late nineteenth century, when farmland was sold cheaply for building plots, but the process was accelerated after the First World War when many Londoners bought land for weekend huts. Much of the land on the unrelated building estates was unsold and remains undeveloped. Roads and services were not put in and the land speculators or landowners did no more than divide each field on paper into a grid-iron estate plan of saleable plots. This was private enterprise at its worst, operating without planning control.

During and after the Second World War, due to the destruction of many houses in the East End of London, a large number of these weekend shacks became permanently occupied by people still working in London and the resident population rose to 25,000 people.

To illustrate the problem: out of 8,716 dwellings which existed in the Designated Area in 1949 only 3,048 complied with the standard of the Housing Act, 1936, so far as being "fit for human habitation." Most of them are without sewers or main water, the only

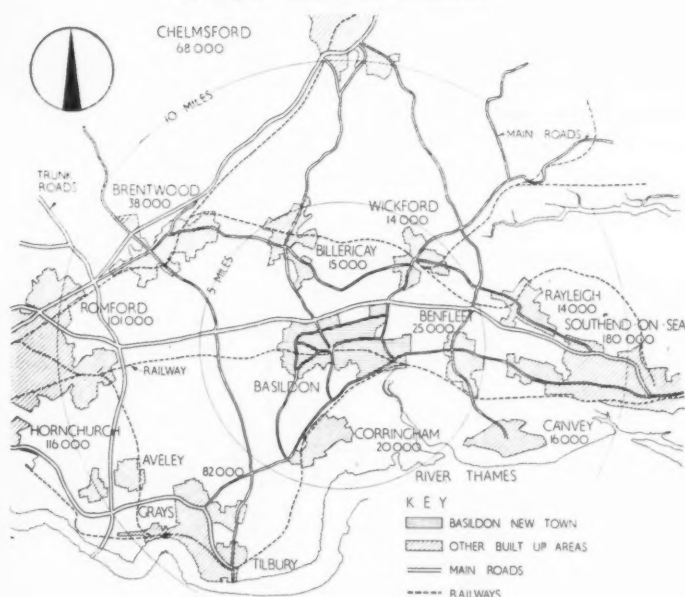


Fig. 1. Site plan showing regional setting.

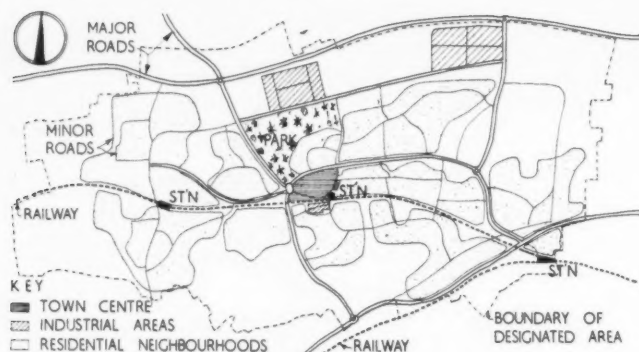


Fig. 2. Master plan of New Town.

services available being gas and/or electricity. Of approximately 100 miles of existing "roads" in the Designated Area, 75 miles consisted of grass tracks impassable in winter months.

In these circumstances, there are few farm units of any size remaining in the Designated Area and the all too frequent complaints that good farmland is being taken for building cannot be levelled in this case. Indeed, the acquisition of land for Corporation development is greatly complicated by the large number of small ownerships into which the land is divided. Many of the owners of these plots cannot be traced. Since there was practically no local employment most of the original inhabitants of the area travelled to work in London. Railway season ticket holders alone from Pitsea and Laindon numbered some 8,000. One of the functions of the New Town is to stop this daily exodus by providing work locally for the whole population.

### The Master Plan

With this background the work of preparing the Master Plan was started in September, 1949, by the Chief Architect and Planner to the Corporation. The plan was submitted to the Minister early in 1951, and approved later in the year with only minor modifications. The plan was revised in 1955 to take account of minor changes of policy which had occurred in the intervening four years (see Fig. 2).

The following main considerations were taken into account in preparing the planning proposals:

(a) *Regional setting*: Basildon lies in the centre of a group of small townships with a planned population of about 158,000 (excluding Basildon itself) within an eight-mile radius, and Basildon will provide facilities for education, shopping and recreation for a major part of that population. The major road network and pattern of land use had, therefore, to provide for this need.

(b) *Topography*: the Designated Area is some six miles long from east to west and three miles deep. It is bounded on the north by the Southend Arterial Road (A.127), and on the south by the Tilbury/Southend Road (A.13). The London-Southend railway divides it longitudinally. Land to the south of the railway is hilly, rising from 10 feet A.O.D. to some 390

feet in Langdon Hills, and is less suitable for building than the area to the north which is undulating. There are, however, certain areas of land in this area which are difficult to drain and these have been undeveloped in the plan.

(c) *Existing development*: At the time of the designation, some 4,300 acres (55 per cent. of the Designated Area) consisted of scattered properties and waste land sold off for building, but never developed. The average density of development was under six persons per acre, the population being centred in two districts: Laindon-Langdon Hills to the west, and Pitsea-Vange to the east. The centres of gravity of these two districts were about  $3\frac{1}{2}$  miles apart and the urban envelope of the Master Plan of necessity became elongated.

The objective in preparing the plan, as with the plans for all New Towns, was to create a self-contained town with medium density, residential areas, industry, shopping, schools, administrative and recreational buildings; and the requisite amount of open space. Garden city development has frequently been attacked for waste of land and lack of urbanity. Equally the high density development of most of our towns is anathema to the average citizen. In face of the demand by prospective tenants and the Local Authorities alike for low density development of the residential areas (houses with gardens and a minimum number of flats, is the Englishman's conception of adequate living conditions in the mid-twentieth century) a net density of 14 to 15 dwellings per acre has been adopted as normal, falling to about 10 dwellings per acre in the older parts of the town where road alignments are already fixed, and rising to 25 dwellings per acre near the Town Centre where it is hoped a more urban environment will be acceptable. This conception has resulted in a gross density inside the urban fence of 22 persons per acre, a high figure compared with the usual New Town standards, but one requiring that the area enclosed by the urban fence is only 60 per cent. of the designated area. The town plan for 100,000 people is then split into ten residential neighbourhoods, varying considerably in size, and each containing buildings, as is customary, to meet the common needs of the residents: houses, primary schools, shops, churches, playing fields, etc.

The secondary schools serving large catchment areas have been sited between neighbourhoods. A County College and a College of Further Education have been sited near the Town Centre.

Manufacturing industry has been sited in two areas totalling 320 acres along the main road, A.127, and will provide work for about 20,000 people. Sites are provided for service industry in Laindon, Pitsea, and near the Town Centre.

The Town Centre itself, of 63 acres, has been sited on low ground in the physical centre of the area with a large town park on the flat land to the north. Although architecturally the Town Centre site is not dramatic, being sited in the basin of low ground surrounded on three sides by low hills, the approaches from these directions are interesting. And the situation of the centre in relation to the main road network connecting with the rest of the town and the surrounding townships, is excellent.

While the new Town Centre will contain some 300 shops, the existing major shopping centres in Laindon, Langdon Hills and at the Vange-Pitsea extremities of the plan will be retained. They will, however, be reduced from a straggle of miscellaneous buildings along a mile of classified road to compact shopping areas of about 100 shops each. Minor groups of seven to 14 shops are provided in each of the other neighbourhoods to cater for daily needs of the population, the overall shopping density being one shop per 140 persons.

Provision has been made in the plan for open space on a scale of eight acres per thousand population. This consists of playing fields (four acres per thousand), parkland, allotments (one acre per thousand) and woodlands. They are sited as far as possible to preserve the best landscape features of the area, and to link into continuous strips of green to break up residential development. Unfortunately, little money is available at present for this development.

Outside the urban fence, but within the Designated Area, areas of sparse shack development west of Laindon are planned to revert to agriculture, but areas north of Laindon and Pitsea, where existing scattered development is more substantial are planned as smallholding areas and retained in their existing form.

A table of principal land uses is given below:

#### Inside Urban Fence

	Acres
Residential .. .. .	2,500
Manufacturing industry .. .. .	320
Service industry .. .. .	40
Education .. .. .	400
Neighbourhood Centres .. .. .	70

Town Centre .. .. .	65
Open Space .. .. .	790
Roads and Railways .. .. .	325
Allotments .. .. .	120
<b>TOTAL ..</b>	<b>4,630</b>

#### Outside Urban Fence

	Acres
Smallholdings .. .. .	500
Agricultural .. .. .	2,560
Miscellaneous .. .. .	150
<b>TOTAL ..</b>	<b>3,210</b>

<b>Total Designated Area .. .. .</b>	<b>7,840</b>
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#### Housing

Housing by its very extent, covering 80 per cent. of the built-up area of a town, and by its social implications, is the most important building type in establishing the character of a New Town. Unfortunately, as has already been hinted, there is no agreement on how it should be provided. The public and their elected representatives, the Local Authorities, demand a low density with its particular economics and architectural disadvantages. The profession would like to see the urbanity of our older towns reproduced, with high buildings, high density, and lack of space, repeating living conditions, which have passed as surely as the horse has disappeared as a daily means of transport. High building, where land, as in Basildon,

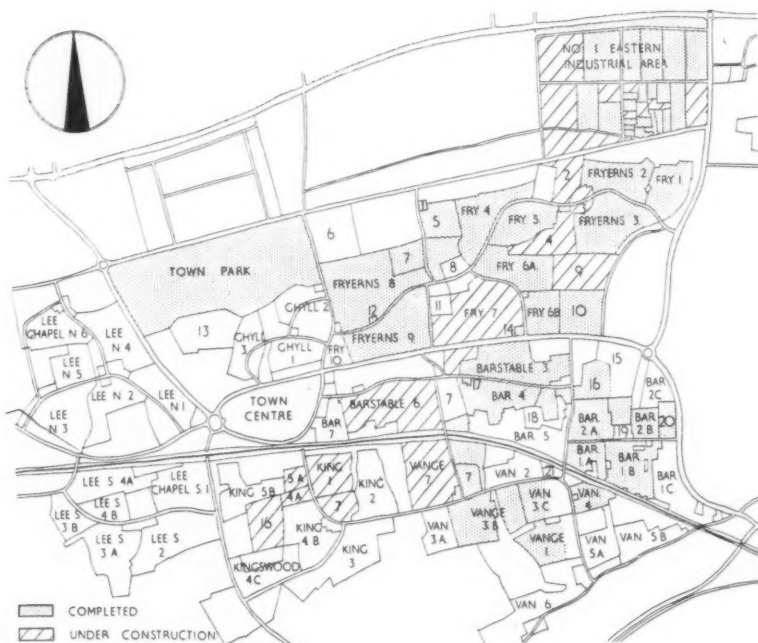


Fig. 3. Neighbourhood plan.

#### KEY: to isolated figures

1. Existing church
2. Public park
3. Proposed public gardens
4. Proposed playing fields
5. Sports ground
6. Proposed county college
7. Primary school
8. Neighbourhood centre
9. Existing sec. modern school
10. Sec. technical college
11. Proposed special school
12. 2 shops
13. Proposed college of further education
14. Church of England church
15. Proposed sec. grammar school
16. Sec. modern school
17. Shops and public house
18. Proposed community centre
19. Tennis courts
20. Roman Catholic church

is available, is also expensive. How many people would wish to pay more rent for a flat than for a house of larger floor area and with a garden. A compromise must be found.

Other problems face the architect of a new town. The size of the housing programme (between 1,500 and 2,000 dwellings a year, may have to be built); the lack of variety of reasonably priced materials in adequate supply; the variety of design needed to avoid monotony, particularly where the predominant height can only be two storeys; planning for the motor vehicle, in road width, parking space and garage provision; byelaws, building costs, and loans at high interest rates.

At Basildon, the solution falls into three phases of development. The early "garden city byelaw street" of 1951/52 (bottom, page 18) gave way to cul-de-sac and square, some with closed corners, in 1953/54, giving a feeling of enclosure and community (centre, page 18). Experimental three-storey developments in squares and crescents was also undertaken at this time. More recently, the ever-increasing number of motor vehicles has driven the Corporation to adopt a modified form of Radburn layout. The majority of current housing layouts are developed on this principle; an example is shown in the plan below. A garage is provided for every two houses, sited at the bottom of the garden for easy access and the garage roads also provide for heavy deliveries, e.g., coal and refuse collection. The placing of these dirty services at the rear simplifies the planning of the house, since only one door is needed on the front elevation. A narrower frontage can be adopted and economy in engineering site costs is achieved. Greater privacy is achieved in the rear garden and urbanity creeps back into the front due to the closer spacing of the houses

(bottom right, opposite). With rear access roads the gap between each five garages gives access to the houses behind.

Interest in the street picture is created by the use of more expensive materials at strategic points in the layouts and colour is used on woodwork and brickwork as extensively as consideration of maintenance costs will allow. The photographs show alternative facing materials of flints, horizontal and vertical weather boarding, and coloured renderings. The majority of houses are, however, built in local brick. Only small and unsuccessful experiments in prefabrication have been attempted.

The marked antipathy of present New Towns residents to flats coupled with the fact that up to this year New Towns did not receive the flat subsidy allowed to local authorities has meant only a small proportion of flats have been built, the majority being in two-storey corner units. The lack of blocks of flats has, therefore, further increased the need for higher house densities and enclosure. Sites have been left for high blocks of flats where emphasis is desirable in the modelling of the town. It is hoped that the blocks will be built later when the possible demand and economic conditions permit.

A prime element assisting variety is the three-storey terrace house. The "Long Riding" street of 250 such dwellings is probably unique in post-war building. This street with its terraces and crescents and increased scale is designed to have Regency discipline and grace. It will form an imposing route from the Barstable Neighbourhood Centre westwards to the Town Centre. These three-storey terrace houses are of narrow frontage with cross wall construction. They consist of three-bedroom types (without garages) and four-bedroom types with a built-in garage on the ground

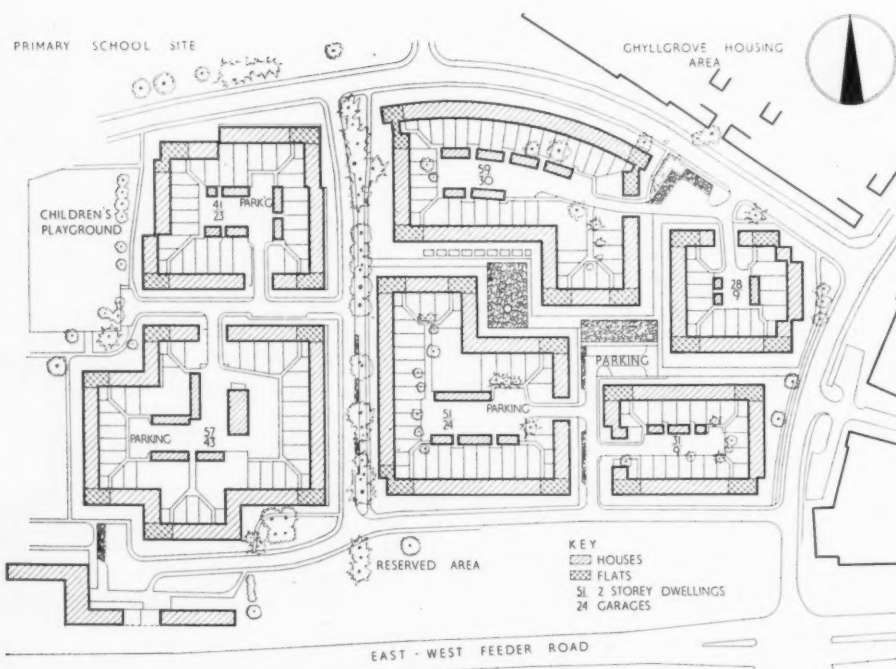
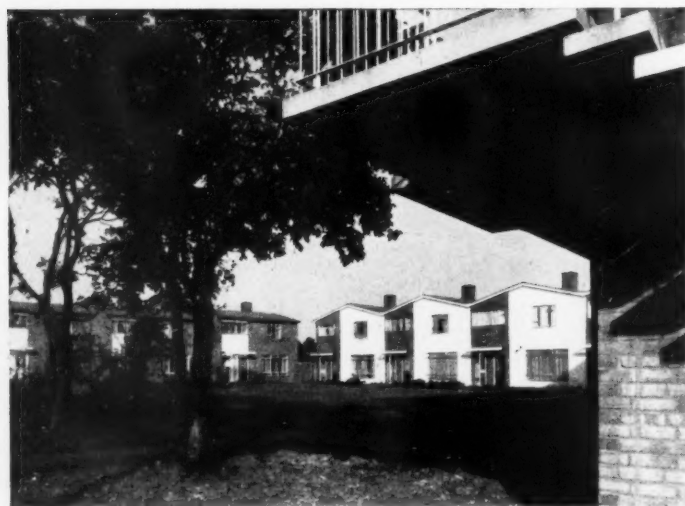


Fig. 3 (left). Ghyllgrove neighbourhood, housing area 1; road access from the rear and pedestrian access to fronts of houses.

OPPOSITE: Top, one of the first of the residential neighbourhoods to be developed was the Fryerns neighbourhood. In this view of areas 2 and 3, the first stage of the shopping centre and a public house can be seen centre, right. Centre left, three-storey houses in Long Riding, in the Barstable neighbourhood. These houses have a narrow frontage, cross-wall construction and some have garages on the ground floor. Corner sites are occupied by flats, either bed-sitting room or with one-bedroom. The other three pictures show examples of terraces and semi-detached houses all in area 8 of the Fryerns neighbourhood. The wide variety of design and materials can be seen.







*Top, another example of semi-detached housing in area 8 of the Fryerns neighbourhood. Centre, terrace housing in area 6b, Fryerns neighbourhood, designed by David du R. Aberdeen. Above, houses in area 3b of the Vange neighbourhood. The forest of TV aerials on these houses, which are part of the early development at Basildon, are no longer required. Internal aerials, each serving a group of houses, are now installed as a result of research by the Corporation, in conjunction with E. K. Cole Ltd. of Southend.*

floor. The ends of the terraces are stopped with flat blocks and the density of the scheme is about 70 persons per acre. The overall cost of this scheme has not been much greater than two-storey development of the same accommodation, and the houses are popular and easy to let.

In addition to the Corporation's own staff, 11 firms of private architects have been engaged in housing work.

There are about 150 different dwelling types built or building, and further types are being designed for future schemes. Their sizes vary from bed-sitting room to four-bedroom and a wide range of room sizes, arrangement and finish is provided for tenants of the various income groups.

Four classes of houses are recognized by the Corporation:

- Class 1. Manual workers
- „ 2. Skilled workers and foremen.
- „ 3. Clerical and professional.
- „ 4. Managerial.

It is the Corporation's general policy to build to a higher standard of design, construction, finish and equipment, than is normal for Local Authority housing estates.

Owing to the shrinkable clay subsoil at Basildon and presence of sulphates in the ground, 4-ft. deep strip foundations and sulphate resisting cement were employed for all houses up to 1953. Even with these precautions some trouble was experienced in cracking of foundations, and since 1954 all houses have been built on the "short bored pile and ground beam" foundation developed by the Building Research Station. This method has proved to be completely successful and has so far shown a saving in cost.

During the early years of the Corporation's life, limitation of sewerage capacity restricted the output of houses to 500 houses a year. On completion of a new sewerage works this programme was initially stepped up to 1,500 and 2,000 houses respectively, for the years 1955 and 1956. But this has now been reduced owing to the credit squeeze to 1,250/1,500 houses per annum for the time being.

In areas of scattered shack development further building difficulties are encountered by the problem of extensive property and land acquisition. While vacant land is acquired in advance of the building contract, some standing properties have to remain temporarily and are excluded from the first phase of the building. The layouts, however, are designed to allow for the ultimate demolition of these properties and small contracts have to be let later to fill these gaps in the initial development. These infilling contracts by their nature increase the cost of building and slow down progress of final development.

#### **Town centre**

The site of the Town Centre has already been described. It is 63 acres in extent and nominally flat. Like housing, the design is dominated by the two factors, the motor car, and economics. The latter has the effect of limiting the height of buildings to two or three floors, four storeys is possible in special cases. Few shops require more than the ground floor for sales and a first floor for stock and staff rooms. Since living accommodation over shops has lost much of its popularity for the tenant, is hardly profitable and is certainly difficult to manage for the landlord and complicates the design in terms of access, service deliveries and clothes drying, from the point of view of the architect, it is not surprising that its provision is the exception rather than the rule. Some office and ancillary accommodation is required but probably only

enough to provide upper floors over a quarter of the shops. Hence, the majority of the development will be on two or three floors with, perhaps, some tank rooms above to give the semblance of a fourth floor in special cases. Similar problems of low height have been experienced in the rebuilding of many of our blitzed cities. Nash's Regent Street was built to half the height of the street we know today and it will be interesting to speculate whether this Town Centre will be redeveloped in 100 years' time to greater height, or whether the present pattern of low American regional shopping centres has come to stay.

The conflict between the motorcar and the shopper has been solved by segregation, the shopping area of 35 acres being the preserve of the pedestrian apart from four car parks. Even so, the greatest distance of any shop from a peripheral road is 200 yards, less than half the distance between bus stops in a busy London street, or rather more than the length of Selfridge's in Oxford Street.

For the motorist and the delivery van large car parks surrounded by service roads with unloading bays occur behind every shop, making vehicular access into the centre of the shopping area easy without conflicting with the pedestrian. This is, in fact, the same principle of dual access as is used in housing layouts; a peripheral road round a super block of, say, 20 to 30 acres, with pedestrian access to the fronts of the houses or shops, and vehicular access and parking in the rear culs-de-sac.

The alternative approach of conventional street shopping was of course explored. Streets wide enough to carry the estimated future traffic and permit kerb-

parking would have necessitated carriageways about 50 ft. wide. This in turn would have required central islands to permit easy crossing of the road, or preferably dual carriageways of an overall width of 60 to 70 ft. plus two 15 ft. footpaths. Such roads criss-crossing the plan would have dismembered the shopping area and complicated rather than eased the process of shopping. Segregation of the motor car was preferable and this solution has allowed an urban character to be developed together with a feeling of density in the comparatively narrow pedestrian ways that would never have been possible with low buildings facing wide streets.

Apart from the shopping area which will contain some 300 shops the town centre will contain the following principal buildings as shown in Fig. 4.

Cinemas (2).

Hotel.

Public Houses (3).

Church.

Town Hall.

Public Library.

Police and Court House.

College of Further Education.

Fire Station.

Ambulance and Civil Defence.

Health Centre.

Garage & Service Station (3).

Bus & Railway Stations.

Post Office.

Telephone Exchange.

Service Industry.

Market.

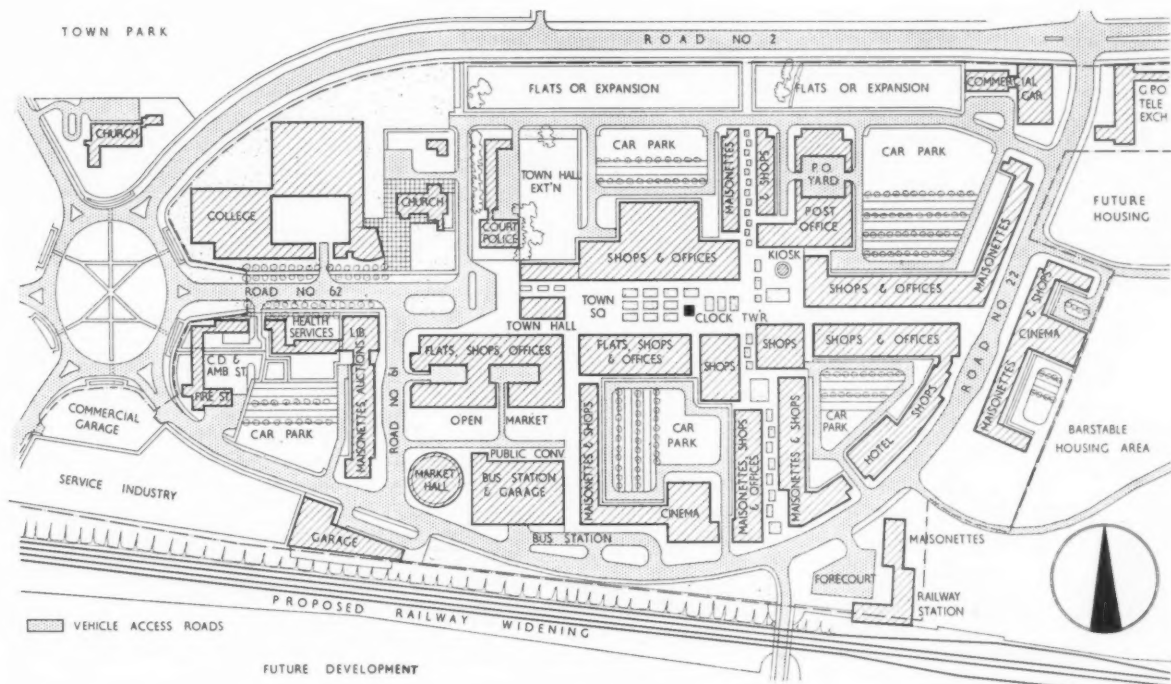
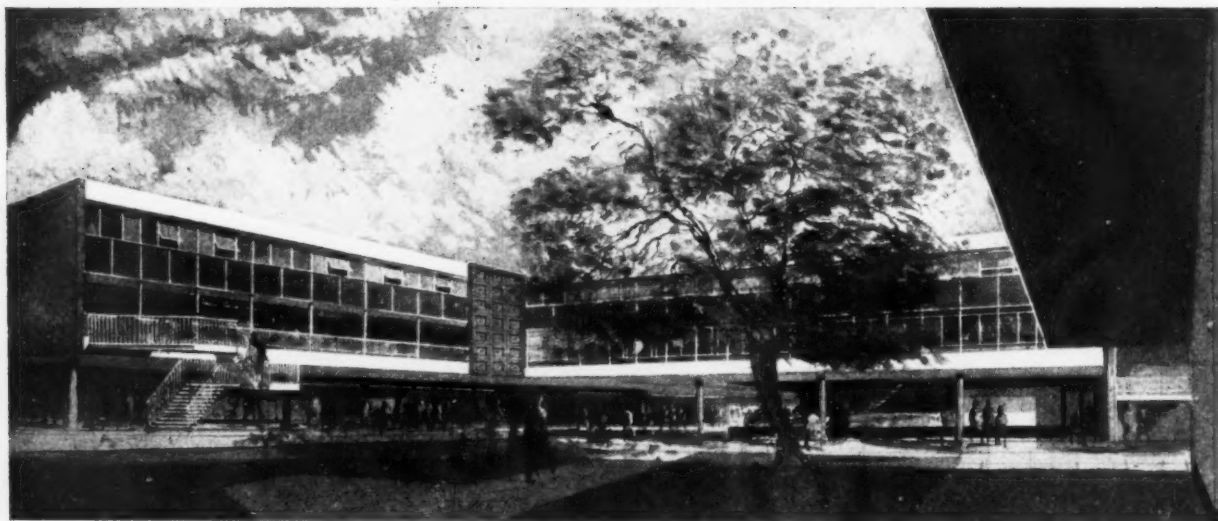
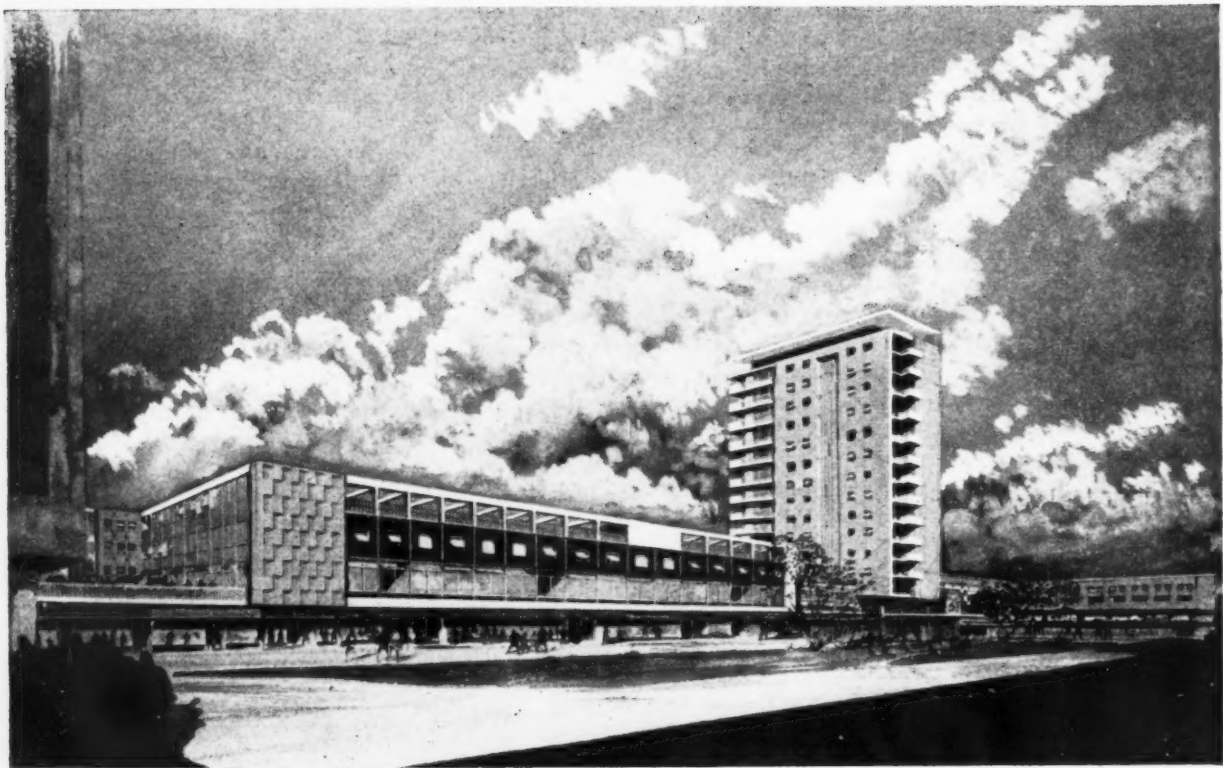


Fig. 4. Layout of proposed Town Centre.





*Top: the proposed Town Centre at Basildon will occupy 63½ acres on a site bounded to the south by the railway line. In this sketch of the Town Square, the 3-4 storey block seen*

*on the left will contain shops and offices, and the tall block will contain flats. Above: part of the Town Centre, with shops on the ground floor and maisonettes above.*

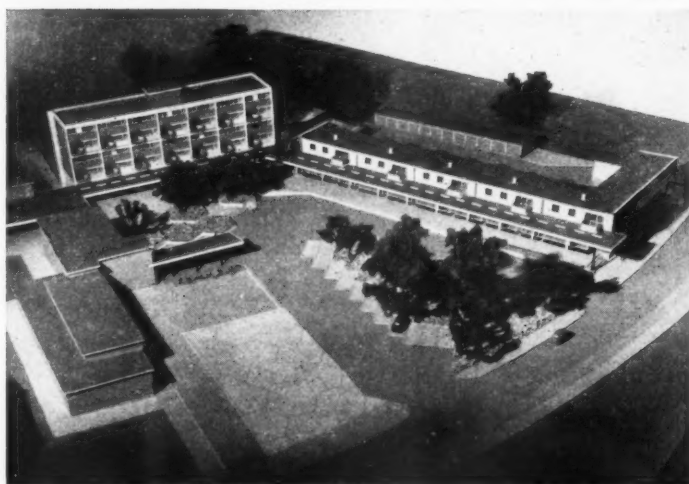
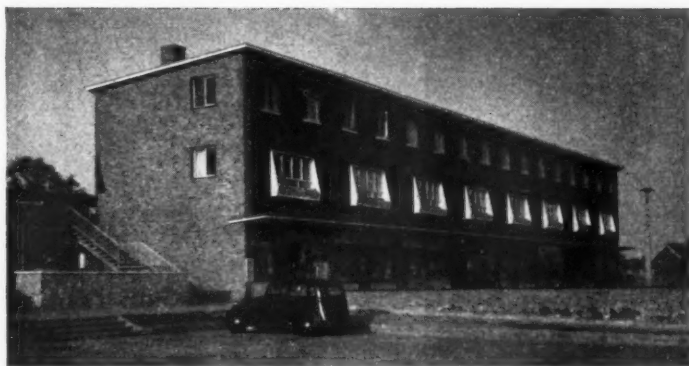
In addition a tower block of flats is proposed in the main square to provide convenient living accommodation for those who must, or prefer to, live in the Town Centre and at the same time provide a focal point in the design.

It will be noticed that the Town Hall is placed on the east-west axis of the plan at the junction of the commercial area to the east and the administrative area to the west, symbolizing the fulcrum of the plan.

Construction of the Town Centre has already begun

and it is hoped to complete the building of the shops in the east-west pedestrian way and main square in the first phase, developing the north-south links later. The Post Office buildings and Church of England Church are also likely to be developed early, otherwise most of the public buildings are expected to lag behind the shopping. The present intention is that about one-third of the commercial building will be financed by the Corporation and two-thirds by private investment.



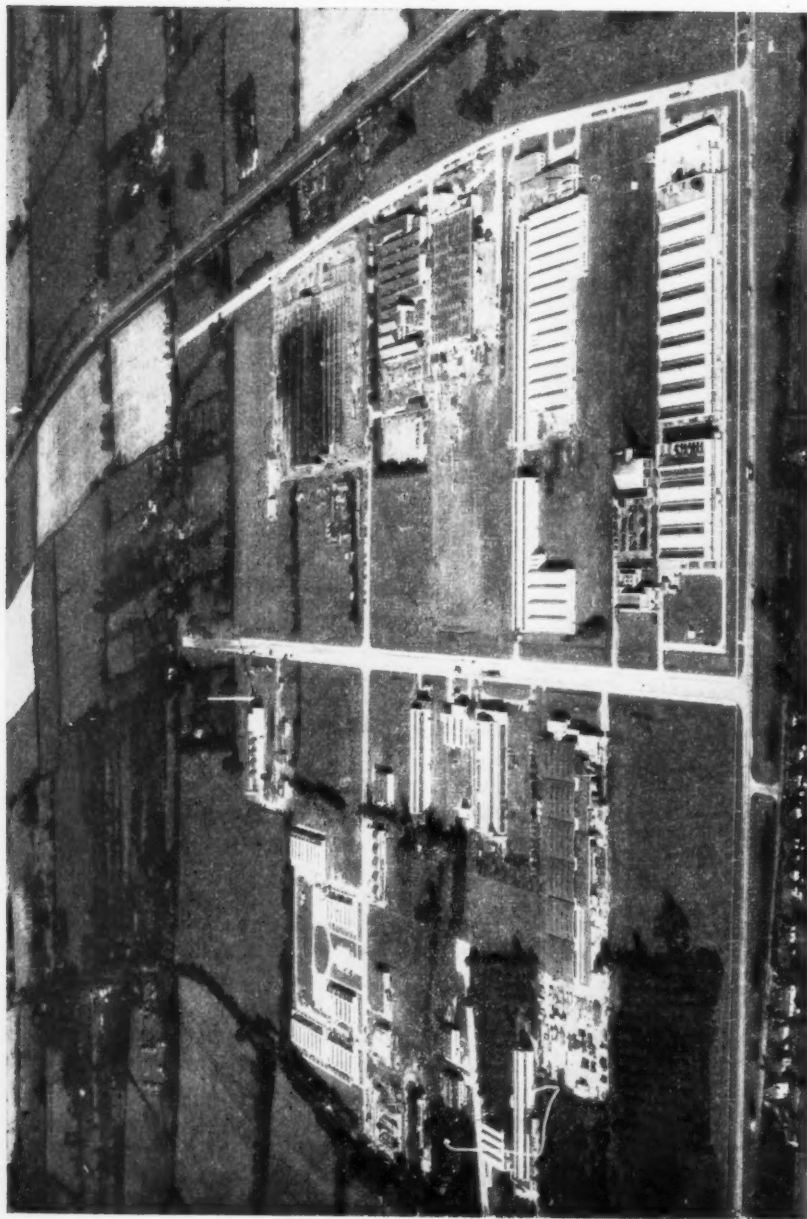


*Above: these shops, with living accommodation above, are in the first block to be built in the Barstable neighbourhood centre. This building was analysed in the JOURNAL for November 8, 1956. Centre left: the first stage of the Fryerns neighbourhood shopping sub-centre. Eventually a wing will be built at right-angles and at the far end of the block illustrated here. These shops are for everyday shopping needs. Below left: The Fryerns neighbourhood centre seen in this photograph of a model, will include shops for an ultimate population of about 10,000. The five-storey block on the left will contain shops, with flats and maisonettes above, the L-shaped block on the right will be shops, with flats on the first floor. Work began on these shops in the autumn of last year. To the left of the shops are future community buildings.*

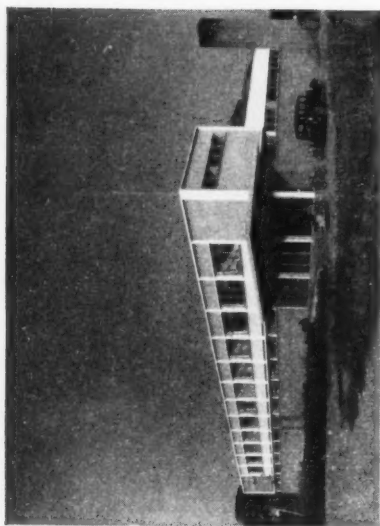
#### **Neighbourhood shops**

The Barstable neighbourhood shopping centre was illustrated in the JOURNAL of November 8, 1956, and may be regarded as typical of this type of development.

Units of two or three shops have also been built as pantry shops half-way between neighbourhood centres to reduce the distance walked for day-to-day goods. They have not proved so successful and it is thought that six shops is the minimum that should be built on one site to ensure a useful shopping centre to shopper and shopkeeper alike.



Above: the eastern industrial area from the east. The main London-Southend road is on the right and in the foreground is the road which leads into the New Town residential area. In the top left corner is the group of nursery factories, some of which are seen in the next photograph (top right). These factories, each of 2,000 sq. ft., are for industrialists with limited resources, who can later move to larger premises if they wish. Above right: factory and offices for



Nuffoor Ltd., designed by Clifford Strange. Below: a photograph of a model of the proposed factory for the Ford Motor Co., at Basildon, designed by E. R. Collister and Associates. It can be seen under construction top right in the aerial view.



## Industry

To provide good communication with the rest of the country and improve accessibility to all parts of the Town, two Industrial Areas have been placed along the Arterial Road, A.127. The Eastern area is some 200 acres in extent and the Western 120 acres. Most of the land in the Eastern Industrial Area is already developed or allocated and work on the Western Industrial Area will start shortly.

Thirty-three factories have been completed so far with a total floor area of 695,000 sq. ft. There are a further 12 factories under construction at the moment with a floor area of 350,000 sq. ft. The total number of persons employed is 8,000.

The Master Plan allowed for an industrial density of 50 persons per acre. Experience has shown this estimate to be low, the present density of development, built and building (but not allowing for later development), is approximately 120 persons per acre calculated on the developed parts of sites. Ultimately, however, when final development has taken place, the density of the industrial areas is likely to resolve at about 75 persons per acre.

Most factories are designed to the individual requirements of industrialists. For production areas the construction ranges from the north light and monitor light steel frame construction (though equal pitch roofs are also used particularly with factories using travelling cranes) to the use of r.c. frame or shell vaults in the smaller factories. Newer methods of construction using tubular steel space frame are under consideration for some future development.

A number of units of 2,000 sq. ft. each have been built as so-called nursery factories for industrialists with limited resources, who wish to start business on a smaller scale and later, if successful, move to a larger factory.

Factories can be designed and built through several agencies. The majority have been built by the Corporation either to the designs of the Chief Architect or an architect appointed by the Corporation at the request of the industrialist, and are leased to the indus-

trialists. In other cases the site can be taken on a ground lease and the building be financed and built by the industrialist. A further alternative which has been adopted in a few cases is that the industrialist buys the site freehold and builds his own factory. The factories under private development have been designed by architects appointed by the industrialist. Corporation developed factories are designed in conjunction with, and to the basic requirement of, the future tenant. If the tenant, however, requires any special features or equipment particular to his trade, and which would not necessarily be an advantage or acceptable to an alternative tenant, these items are scheduled as special requirements and the cost of them is recovered by the Corporation over a shorter period than the period of the lease.

## Education buildings

Apart from industry and commerce, another large land user is the education authority. Once sites have been agreed between the Corporation and the Essex County Council, the County Architect, H. Conolly, C.B.E., is responsible for development. A tribute might well be paid here to the co-operation the Corporation have received from him. Unfortunately, school architecture, particularly primary schools, is often too small in scale in relation to its setting to contribute much to the architectural build-up of the town.

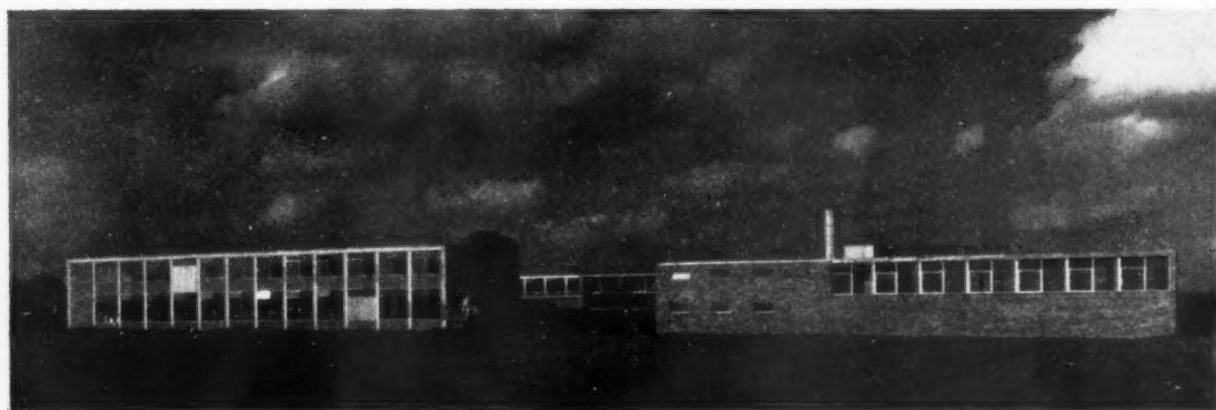
Twelve new secondary schools will serve the town. One of these, designed by Denis Clarke Hall and illustrated below, is already complete. Two more are under construction.

Fourteen primary schools are proposed. Four are complete and one is under construction. The Roman Catholics will, in addition, build two secondary and three primary schools. One of the latter is under construction.

A College of Further Education has been placed in the Town Centre with its playing fields in the town park and a County College has been placed between the two industrial areas.

*This is the first completed secondary school of the twelve that will serve the town. This school in the Fryerns*

*neighbourhood was designed by Denis Clarke Hall. Two other secondary schools are now under construction.*





### Ancillary building

Many other buildings go to make a town and it is impossible to list them all. Some, the less profitable ones, are not yet built and residents may have to wait some time before luxury or even amenity buildings are provided. Rome was not built in a day. Government policy and the credit squeeze can delay much non-essential development both in the building field and with the laying out of open spaces.

Three churches have been built by the Roman Catholics, the Church of England and Baptists. A photograph of an R.C. church is seen below.

Post offices (until the Town Centre is reached) are placed in shops in the neighbourhood centres. A number of police houses have been built by the County Council but no other buildings for police, fire brigade or ambulance service. Similarly, the one Health Centre sited in the main area of residential development has, in spite of many approaches to the appropriate Ministry, never been sanctioned and the doctors have had to provide themselves with surgeries.

Public houses are not subject to such direct Government control. Two have been built and two more are on the drawing board.

### Architects

In addition to the Corporation's own staff, architects in private practice are taking a full part in the development of the New Town, both when the Corporation are the building owners and where private development is taking place.

The architects concerned with Corporation development are :

Noel Tweddell (Chief Architect); A. B. Davies (Deputy Chief Architect); J. N. Graham (Senior Architect, Town Centre); J. Farber (Senior Architect, housing); R. W. Johnston (Senior Architect, industry); P. Crowe and K. M. Munnich (Senior Planners).

The landscape consultant is Sylvia Crowe, and the quantity surveyors are E. C. Harris & Partners.

Private architects working on housing in the New Town are: Norman and Dawbarn (Fryerns 1 and 2); Clifford Culpin & Partner (Fryerns 5, 10, Ghyllgrove 2); Richard Sheppard & Partners (Fryerns 6A); David du R. Aberdeen & Partners (Fryerns 6B); Stanley Bragg (Barstable 4c; and Fryerns 2 flats); Atkinson, Smith & Haywood (Kingswood 1, 4A and 5A, and Lee Chapel South 4); Basil Spence and Partners (Vange 7); William Crabtree (Kingswood 4B, Vange 5A, 5B); Ralph Tubbs (Kingswood 5B); Lionel Brett & Kenneth Boyd (Ghyllgrove 3); Burles & Newton (Barstable infilling); G. A. Jellicoe & Partners (Lee Chapel North 1).

Private architects working on shops are: Burles & Newton (Fryerns and Barstable "pantry" shops); William Crabtree (Kingswood neighbourhood centre); H. T. Cadbury-Brown (Kingswood sub-centre).

Private architects working on factories are: E. R. Collister & Associates (Marconi); Branson & Beauchamp (Ben Williams); Stewart & Hendry (Bonallack); Stanley Bragg (Aaronberg, Christopher Roberts); Kenneth Wray (Thompson & Foster); J. Seymour Harris & Partners (Freedman Upholstering Co.); Wilson, Mason & Partners (Transformer & Electrical Co.); Sanders & Montague (Jenolite); Clifford Strange (Nufloors); Wallis Gilbert & Partners (Darham Industries).



*Above left: this Roman Catholic church in the Barstable neighbourhood was designed by John Newton, of Burles and Newton. Above right: on a site adjoining the shops at the*



*Fryerns neighbourhood centre is this public house, designed by Stewart and Hendry as a private development for the clients, Mann, Crossman & Paulin Ltd.*



## THE INDUSTRY

*This week Brian Grant reviews a double-hung sash window, an overhead electric radiant heater, a guaranteed roofing and flashing material, silicone water-repellent paint, a new oil-fired boiler and plastic stair nosing.*

## NEW DOUBLE-HUNG SASH

Crittalls are now producing a new Mark I double-hung sash window which is intended to supplement the existing Mark II sash, which has spring balances and is restricted to rather small sizes. The Mark I has weight counterbalances and can be made in heights up to 8 ft. and widths up to 5 ft., either in one large pane or divided into small panes with glazing bars. The upper leaf is operated by a handle in a slide.

The window is made of extruded aluminium sections and is lacquered where the edges of the frames abut against masonry. (*The Crittall Manufacturing Co. Ltd., Braintree, Essex.*)

## ELECTRICAL HEATING

The G.E.C. have produced a new overhead electric radiant heater for use in large machine shops or aircraft hangars, or in buildings where continuous heating is uneconomic. Since the heat source is radiant, air temperatures need not be high, and comfortable conditions are produced fairly quickly. The heater consists of an anodised aluminium reflector and a sheathed heating element rated at  $1\frac{1}{2}$  kW, the design of the trough allowing a second element to be used, giving a total rating of 3 kW without further alteration. Dimensions are 40 in. by  $10\frac{1}{2}$  in. by  $3\frac{1}{8}$  in. and prices are £8 and £11. The heaters, being designed for industrial and commercial applications, are not subject to purchase tax.

All future G.E.C. fluorescent fittings will have an independent fuse mounted in the terminal block, so that faults can be quickly

traced when a number of fittings are on a single circuit. The fuse is a cartridge type, carried in a polythene moulding and is suitable for any fitting containing one or more tubes up to a total rating of 240 watts. The fuse is in the input side of the fitting and protects the chokes and other equipment, so that when it is removed it is safe to carry out any necessary repairs while other fittings in the circuit are still alight. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2.*)

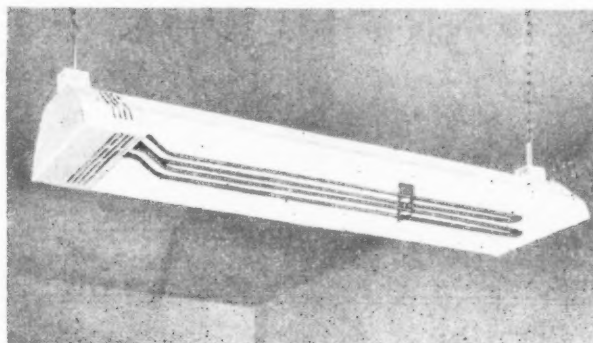
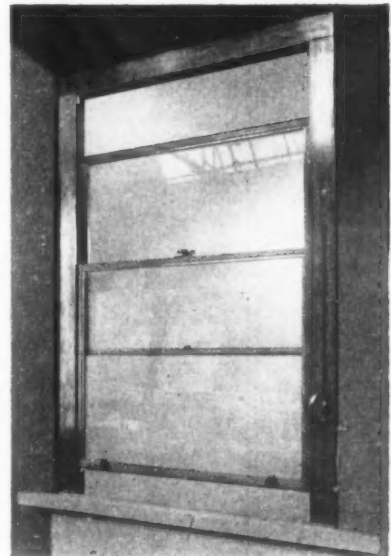
## GUARANTEES FOR ROOFING

When the asphalt and roofing manufacturers announced that they would no longer give long term guarantees for their products, most architects were considerably dismayed, and no doubt a number of clients were too. In contrast, it is interesting to be told that Nuralite, which has now been on the market for several years as an easy to fix roofing and flashing material, is now to be guaranteed for a minimum of 25 years. Since the material is remarkably cheap, it is extremely valuable to have reassurances of this kind. (*The Nuralite Co. Ltd., Whitehall Place, Gravesend, Kent.*)

## WATER-REPELLENT PAINT

A new silicone water-repellent paint has been announced by Hangers Paints Ltd. For average work only one coat is necessary, but two coats may be desirable if the surface is very porous. The extra coat, however, must

be applied immediately, as the first coat develops its water repellency quite rapidly, when the second coat will not take to the surface. For the same reasons, neither emulsion paints nor distempers can be applied without a previous coat of varnish or oil-based sealer, as the silicone repels water-based paints in the same way that it repels rainwater. Oil-based paints can be applied over the usual primers, and wallpapers can be used provided that the adhesive is suitable. (*Hangers Paints Ltd., Stanferry Works, Hull.*)



*Above: the Crittall Mark I double-hung sash window, made of extruded aluminium sections. Left: the G.E.C. overhead electric radiant heater.*



"PUZZLECORNER", SOUTHAMPTON

*Architects: Messrs Gutteridge and Gutteridge*

# HOPE'S

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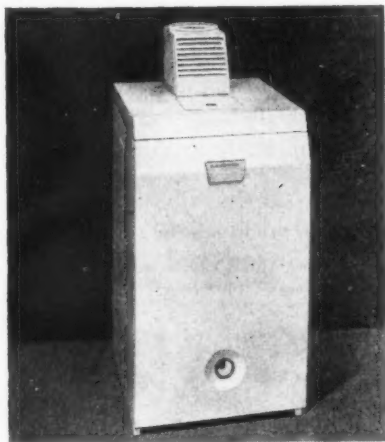
*Local Office: 2-3 Brunswick Place, Southampton*

MEMBER OF THE METAL  WINDOW ASSOCIATION

## technical section

## NEW OIL-FIRED BOILER

Allied Ironfounders have just announced a new Rayburn oil-fired boiler which costs £75 and which will be available in the New Year. The boiler has an output of 25,000 B.Th.U. and will heat a 30-gallon hot water cylinder and also provide heat for up to 100 sq. ft. of radiating surface. The recommended fuel is Domesticol, a kerosene-based oil which sells in the London area at 1s. 4d. a gallon, though no doubt the price will soon go up. The new boiler has a gravity-fed vaporising burner with no fans, pumps or other moving parts, and the manufacturers claim an efficiency of 80 per cent. There is the usual adjustable thermostat, and a flame failure device which cuts off the oil supply if the burner should be extinguished. A particular feature of the burner is the small consumption when the boiler is idling, which is as low as  $\frac{1}{4}$  pint per hour: total fuel con-



The new Rayburn oil-fired boiler, by Allied Ironfounders, Ltd.

sumption naturally varies considerably and can be anything from 5 to 30 gallons a week, corresponding to the heat output of  $\frac{1}{4}$  to 4 cwt. of solid fuel. The oil storage tank is not, of course, included in the boiler price, but external tanks with capacities from 100 to 500 gallons or more are readily available. (Allied Ironfounders Ltd., 28 Brook Street, London, W.1.)

## PLASTIC STAIR NOSING

Marleys, who recently introduced a plastic handrail cover, are now making a rigid Vinyl stair nosing which is highly resistant to wear and is at the same time non-slip. The nosing is made in one section only, but can be supplied in four colours and in lengths of 3 ft. and 6 ft., the minimum quantity being 72 ft. of the former and 144 ft. of the latter. The cost of the nosing to approved flooring contractors is 8½d. per ft., including purchase tax, and at this price it is claimed to be the cheapest stair nosing on the market. Fixing is by means of Marley's M.8 adhesive. (The Marley Tile Co. Ltd., Riverhead, Sevenoaks, Kent.)

## INFORMATION CENTRE

*A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.*

8.53 surveying and specification  
BUILDING COMPENDIUM

*The Architects' and Builders' Compendium.* The Compendium Publishing Co. Ltd., 23, Tavistock Street, Aldwych, W.C.2. Price £2 2. 0.

This is the sixty-ninth year of issue of this work of reference. Part I "General Information" gives notes on Building and Town Planning Acts, Industrial Agreements, Government Departments, British Standards, Mathematical data, conversion tables, etc. Part II "Technical Information"—the bulk of the volume—is divided into 26 sections (A to Z). Some deal with trades (brickwork, steelwork) some with materials (glass) some with elements (floor finishes, roof construction) some with technical aspects (fire grading, thermal insulation). There is a register of architects and of builders, and the book appears to be copiously cross-indexed.

The main purpose of the compendium is of course as a vehicle for advertising. Indeed not all of the A to Z sections give independent technical information, and of those that do most are too meagre. For example "Roofing." (Section I) tables weights, pitches and covering capacities; shows drawings of one type of TDA truss followed by an inexplicably long account of aluminium (used like zinc or copper), with three pages of amateurish drawings. There appears to be no mention of any kind of roof decking. Other sections suffer a similar, puzzling disparity of treatment. Why for example does the section on heating and hot water (K) not mention forced warm air, or embedded floor heating systems? One has the feeling that the publishers scraped together some technical notes where they could, to give the uninformative advertising a veil of respectability.

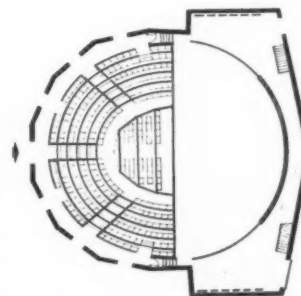
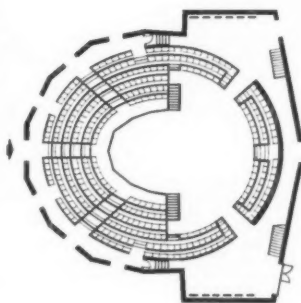
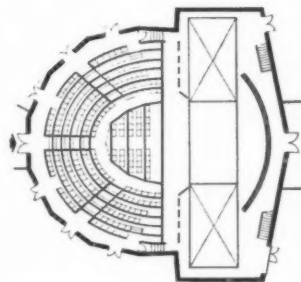
10.154 design: building types  
EXPERIMENTAL THEATRE

*A New Concept in Theatre Design.* Norman R. Branson. (RSA Journal 17.8.56)

Text of a lecture given by the architect of the projected Questors Theatre. Making the point that the object of making an adaptable theatre is not to facilitate the production of old plays on the kind of stage for which they were written, but to provide

for the present uncertainty about what kind of stage is really wanted for modern productions, Norman Branson demonstrates that the Questors Theatre will provide four recognised forms of stage—the picture frame, the proscenium, the Elizabethan-type open stage and the arena stage—together with a fifth which he described as the "space stage" where all impediments are removed between auditorium and cyclorama. The Questors is small, with seating which varies (i.e., according to type of stage) between 315 and 461 and commands considerable unpaid labour for these plan changes. In the subsequent printed discussion he reports the terms on which the Middlesex County Council would permit waivers from their customary requirements and gives it his opinion that the planning principle could be extended to commercial theatres of 1,000 and more seats.

Three illustrations from 'A New Concept in Theatre Design' reviewed above. Top: proscenium stage with forestage; centre: arena stage; bottom: space stage.



# Modern cold water, Matthew! . . .



Water services as efficient and logical as the buildings themselves! Flexible piping, in fact, in De La Rue Polythene . . . that's the modern way of conducting cold water, as architects will tell you. Builders and engineers, too. Farmers likewise.

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- Cheaper in labour, no dearer in first cost.
- Doesn't collect scale.
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- DOESN'T BURST, not in the coldest weather.

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## technical section

23.224 heating and ventilation  
DOMESTIC HEATING

*A Comparison of Capital Costs of Heating Systems in Houses.* (BRS Digest No. 93. HMSO. 3d.)

*Domestic Heating. Estimation of Seasonal Heat Requirements and Fuel Consumption in Houses.* (BRS Digest No. 94. HMSO. 3d.) These are summaries of two useful papers given at the Institute of Fuel's Domestic Heating Conference last May and which were substantially reprinted in the special issue of the JOURNAL of June 28, 1956, pp. 738-744. The first assumes a two-storey, semi-detached house in a contract for 50 similar houses. The cost of "conventional installations" varies between £167 and £268, of "specialist installations" between £300 and £630. The second summary gives a table which enables you to estimate the heat input required for four different house types using three ventilation rates and three standards of insulation.

26.125 services and equipment: miscellaneous  
GAS CATERING APPLIANCES

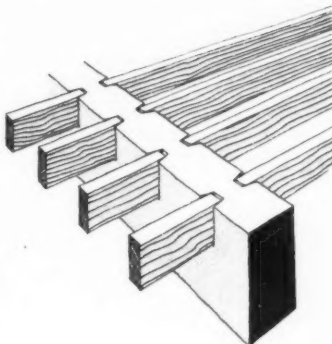
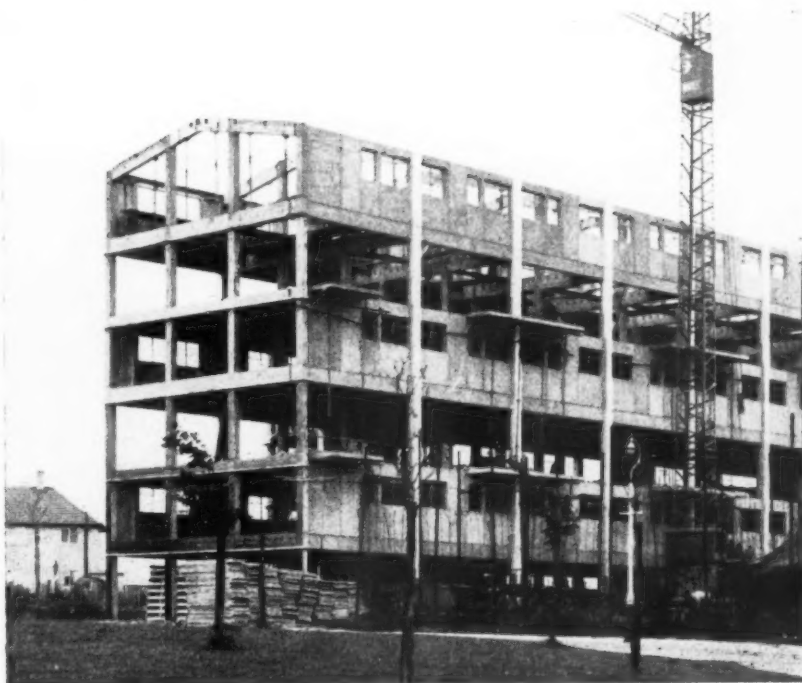
*List of Tested and Approved Gas Catering Appliances.* No. 1, Oct. 1956. (Gas Council. Free.)

This list, issued free by the publishers, is intended as a companion to their list of Domestic Appliances, and is consequently a worthwhile venture. It should prove of value to architects and others concerned with the purchase of catering equipment because it has collected together between two covers a great deal of classified information that usually has to be sought piecemeal. One page of general information is followed by fifteen pages that include an index of appliances, an index of manufacturers, and lists of the manufacturers that make each form of appliance, with manufacturers' catalogue name and number for each appliance. The material is very well presented, cross referenced, and set out.

The question, of course, arises as to the basis upon which the appliances have been approved and tested. The first page states "the . . . appliances . . . have been tested in accordance with BS 2512 (1954) . . . and have been found in *general* (our italics) to meet the requirements." The BS 2512 deals with performance, safety, materials, and to a small extent design criteria; the insertion of the word "general" without a note of the manner in which any appliance does not conform, defeats the object of the list.

In some general advice dealing with layout of appliances it is said "due regard should be paid to servicing facility and ease of cleaning." This is certainly good advice but it puts solely on the kitchen planner a responsibility that should be taken care of in large measure by the designer of the equipment. This matter of ease of cleaning, installation and servicing should surely be one of the grounds for the Gas Council's approval.

## KITWELL FARM ESTATE, BIRMINGHAM

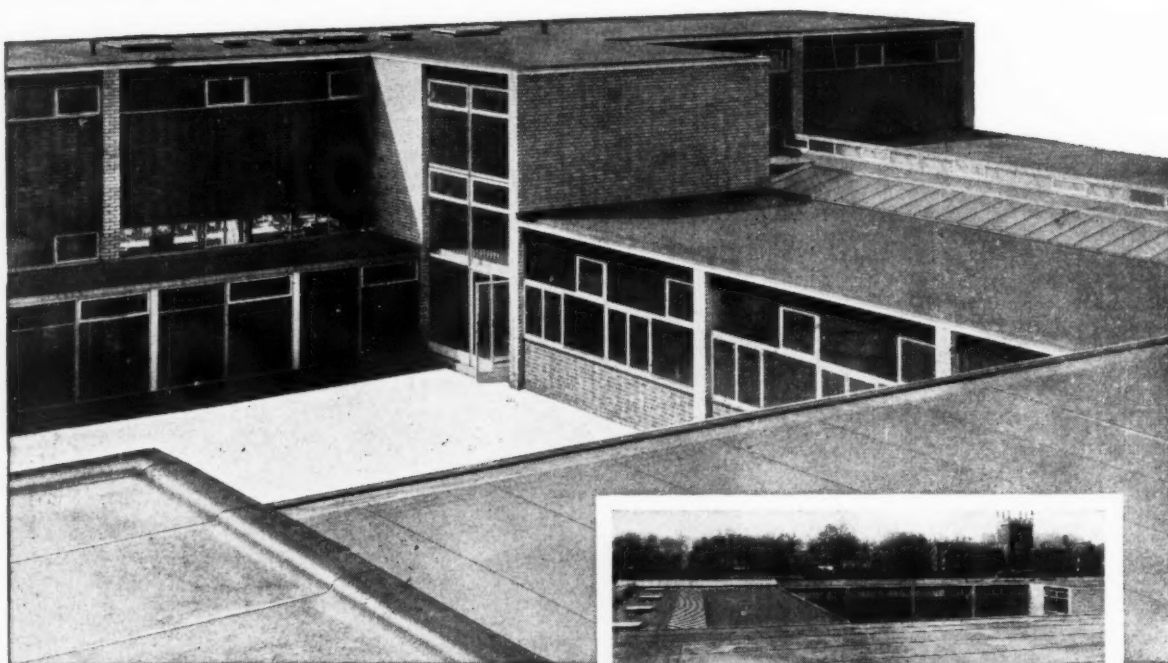


These six-storey maisonettes were designed by the City Architect (A. G. Shepperd Fidler) in collaboration with Wates Ltd. and W. V. Zinn, structural engineer. The first block (above), nine dwellings long, was completed (framework and external cladding) in 26 working days. The frame is of 10-in. in-situ columns, on a 16-ft. by 10-ft. 6-in. grid. Party floors are in-situ reinforced concrete, intermediate floors are of timber joists resting on notched pre-cast beams (left) spanning between party floors. At first, third and fifth floors: concrete external cladding panels are factory made with metal windows already fixed in (left); at other floors: 4½-in. facing brickwork, the inner skin being 3-in. clinker block in both cases. Significant factors in the design were: the 16-ft. module of the building represents the size of a telescopic centre for the floor shuttering. The access tower is kept clear of the block—allowing repetitive construction throughout the whole length. The only concrete units to be factory made were those requiring special finish: thus reducing transport. There were two basic types of wall panel, one of external beams two of roof beams and one of party wall beams. Only four of the sixteen man erection gang were tradesmen.

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## technical section

**9 DESIGN: GENERAL****the use of industrial components for house building in America**

It is generally agreed that we can only get the kind of buildings we need at a price we can pay by making a fuller use of industrial methods; also that the architectural forms which we desire are best produced by the imaginative use of factory-made components. It is very noticeable, however, that, apart from the pre-fab programmes of immediately after the war, there has been comparatively little use of these components in the field of house-building. This week Michael Brawne, who has recently returned from America, reports on the mounting success of factory production in American housing and on a number of experiments by individual architects to adapt factory-made components evolved for industrial type buildings for use in houses.

The great technological resources of the United States have only recently made a serious and visible impression on its domestic architecture. Two clear trends are discernible and must be distinguished. The first concerns the mass-production of standard houses by the great timber prefabricators of the Middle West. The second, the employment by a few architects on what are still largely experimental structures of totally factory-produced parts. The merging of these two trends has barely started.

**Whole house prefabrication**

Quantitatively the impact of the timber prefabricators like National Homes or Harnischfeger is of course enormous; whether their architectural importance will eventually equal that of the still rare prototypes seems, however, debatable. National Homes, like their competitors, are producing standard wooden houses which, if generally better designed and more rationally planned than the builder's house fabricated on the site, are in no way distinguishable from their traditionally produced neighbours. Prefabricated houses have become respectable at the price of conformity. As the *House & Home* headline puts it: "The new look in prefabs: you can't tell them from the other houses."

Their success can perhaps be measured by the fact that National Homes, the largest of the prefabricators with a production capacity of 290 houses a day, is already responsible for something like 2 per cent. of the total annual house construction. This means something like 25,000 houses which in terms of this country would represent about 9 per cent. of the annual construction of dwelling units. National Homes is, of course, only one of about 88 prefabricators who, after a few false starts in the immediate post-war period, are now firmly established and who through their builder-dealer organizations are capturing an ever larger share of the total housing market. So much so, that in 1955 one house in every 12 was prefabricated. These firms normally supply from their assembly lines room-size panels complete with their structure, insulation, interior and exterior faces and windows; ceiling panels, roof panels and trusses; floor panels; and sometimes plumbing assemblies, heating and air-conditioning plant, kitchen cabinets, chimneys, electric wiring and so on. These are delivered to the site by truck and erected there by a local builder who is the manufacturer's dealer for the area and who may also have had mortgage help as well as advice on site layout, colour, landscaping and the interior furnishings of the model house from his manufacturer. It is partly through the provision of such service that the makers of prefabricated houses have been able to make such exceptional inroads on the traditional market.

The timber prefabricators do not, of course, manufacture the entire house. Like their counterparts in the automobile industry, they have their suppliers and sub-contractors. These become responsible for such items as metal windows, sanitary fittings or ironmongery. The fabricators as a group are now, however, producing in sufficient volume to be able to influence the design within these secondary industries. The horizontal sliding window, packaged, glazed and complete with its surround, ready to be nailed to the studs, is being mass-produced in aluminium largely due to the demand of the prefabricators and large-scale builders. Similarly plumbing, walls and utility cores, long on the drawing board as rational projects, are now being actually manufactured for use in prefabricated houses.

Although the assembly lines of the house fabricators are on the whole merely the mechanization of the handicraft process (and are thus rather more analogous to the textile than the automobile industry) several new processes have been evolved. The most interesting perhaps is that in which the floor of Carl Koch's "Techbuilt" house—one of the most adventurous of the prefabricated houses—is composed of a sandwich of paper honeycomb resin bonded under heat and pressure to two layers of plywood which then form the finished floor and ceiling.

**Architects' use of "industrial" components**

Based upon quite different assumptions and produced by rather different techniques is a series of houses



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# technical section

which largely owes its inception to Charles Eames's experiment at Santa Monica. The influence Eames has exerted as a result of his own house and the furniture he has designed for the Herman Miller Collection cannot be over-emphasized.

Eames's house, built in 1949, as well as those succeeding it, may be described as experimental in the sense that a large number of components employed were not specifically designed for use in house construction. The Eames house, for example, used standard industrial windows as well as web joists and steel decking which, up to that time, at any rate, were more usual in the construction of workshops and light industrial buildings. Since that time much the same system has been used on a number of houses but rarely have these elements been combined with the same wit and distinction.

## "Unistrut" framing

A radically different method is responsible for a house at Ann Arbor by Prof. Walter Sanders of the University of Michigan. It is part of a group of buildings erected to study and develop the use of "Unistrut" cold-rolled steel sections in building. "Unistrut" was

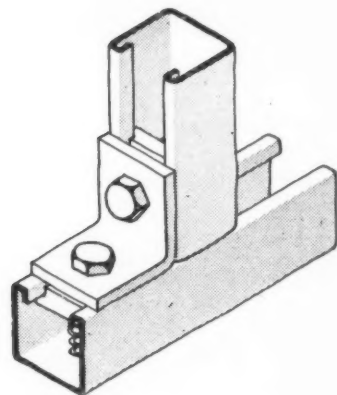
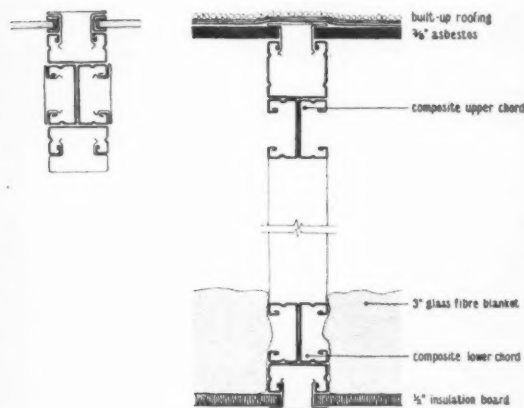


Fig. 1 (left): a view of part of the structure and glazed wall of the Sanders House. The vertical member is the mullion shown in section in fig. 3; the members supporting the brise soleil are the single channels shown in fig. 2. Fig. 2 (above): the basic "Unistrut" connection, showing the standard channel section, angle bracket, and hex-headed bolts. The bolts screw into special nuts which are grooved to fit the channel section and which are held in position before fixing by a coil spring. The channel is rolled cold, in five sizes and a range of three gauges. The illustration shows the heaviest section, 1 1/8 in. x 1 3/8 in. x 12 gauge. Fig. 3 (below left): a typical mullion of the Sanders House. Four 16 gauge channels are spot welded to each other. Spring-action cover fillets close the openings of the channels and form clips for holding the plate glass, which is edged with rubber gaskets. Fig. 4 (below right): cross section through the 1 ft. 8 in. deep roof truss of the Sanders House. The truss spans 24 ft. 6 in. It has composite top and bottom chords formed by spot welding three channels together. The web members, which are single channels, are welded to the chords. The ceiling is formed by 1/2-in. insulation board fixed with spring-action cover fillets; the roof is of 3/8-in. asbestos and built-up bituminous roofing. A 3-in. glass fibre blanket provides insulation in the severe climate.



## **HIGHBURY QUADRANT PRIMARY SCHOOL**

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EX2

### technical section

originally designed for industrial shelving and storage units and is available in this country for those purposes.\* It consists of a steel channel section to which other similar sections may be fitted at any point by a small casting and bolt held in place by the thrust of a coil spring. Prof. Sanders has combined four of these channels to form structural mullions at 4 ft. 1 in. centres to carry both a floor and roof and filled the space between them with fixed glass, standard project-out windows or asbestos panels. Three "Unistrut" sections are joined to form the upper and lower chords of welded web joists. In the case of the roof joists, insulation board is snapped into place between the bottom chords to form a ceiling and asbestos sheets are similarly put between the upper chords to carry built-up roofing.

The system is obviously extremely flexible and has so far lent itself to the construction of a single-storey house, a two-storey house, a school and a research laboratory at the University of Michigan's College of Architecture and Design. The last has a space frame roof composed of pyramids whose struts are "Unistrut" sections. It seems questionable whether the concentration of steel created by a mullion and its cover fillets is really needed at such close centres and whether the relatively complicated section which forms the mullion and which requires the spot welding of four rolled channels can produce an economic structure. One therefore looks forward to further experiments in this series started by Charles Attwood, the head of the "Unistrut" Corporation, who was himself an architect before he became a manufacturer, which may overcome some of these objections. In the meantime it is important to recognize the great potentials of the method and the extreme liveliness of the results. The research laboratory, particularly, has an almost Steinbergian wiriness which is more often found in architectural conceptions than fully realized buildings.

### Rolled steel sections

Walter Sanders has taken a series of small units originally destined for loads less severe than those encountered in a building and has through their multiplicity created a workable structure. Rafael Soriano's house for Joseph Eichler has, on the other hand, scaled down the steel skeleton normally used on much larger buildings and has created a domestic structure by using only a very small number of these elements. Soriano's house at Palo Alto, near San Francisco (Figs. 5, 6 and 7), was designed for Joseph Eichler, a well-known and enlightened speculative builder, as a possible prototype and was on view after being completed under the somewhat misleading and unfortunate title of "The House of 1970." The structure of the house, which includes 1,000 sq. ft. of living space and a two-car garage, consists of seven rigid steel frames formed by welding r.s.j. columns to an r.s.j. beam. The roof is formed by corrugated steel decking spot welded to the beams and exposed as a ceiling.

This is covered on its upper side with rigid insulation and built-up roofing. The wall cladding consists of only three infillings: glass going from floor to the underside of the beam as a sliding steel door with one moving and one fixed leaf; plywood in a steel frame and corrugated polyester fibreglass sheeting. Interior partitions were also factory produced and consist of wooden storage walls. Skeleton, roof, cladding and storage are colour coded to emphasize their separation and independence: the r.s.j.s are matt black, the underside of the steel decking white, the frames and surrounds of the sliding doors and the frames of the remaining panels a brilliant gloss yellow, the storage walls mahogany. Externally the garden is divided into a number of areas with polyester fibreglass screens which are coloured and translucent and have something of the quality of Japanese shoji. In a house at Belvedere, which is of very similar construction, Soriano has used perforated corrugated steel sheets normally used on sound absorbent ceilings as garden dividers, and with the sun behind them each perforation becomes a dazzling pinpoint. This is the sort of imaginative use of industrial products which we have not yet seen in this country. The total result in each of these houses is that of a precise building, in every way a designed structure rather than a haphazard agglomeration of building material.

This house at Palo Alto has, of course, an importance which goes beyond the precision of its detailing, for it is the first time that a speculative builder has seriously considered a house which is to be made from the mass-produced components of an industrial technology.

Fig. 5: view inside the kitchen of the Soriano house.



\*As well as for in-situ ducting in reinforced concrete structures.

**I knew it when it was a tree . . .**

**Deciduous or coniferous, Mister?**

Long words, son! I chopped that cupboard down  
before you could even say 'tree'.

**It doesn't look like wood**

It doesn't behave like it either, son. Doesn't split  
or splinter. It's wood without the knots and trouble—  
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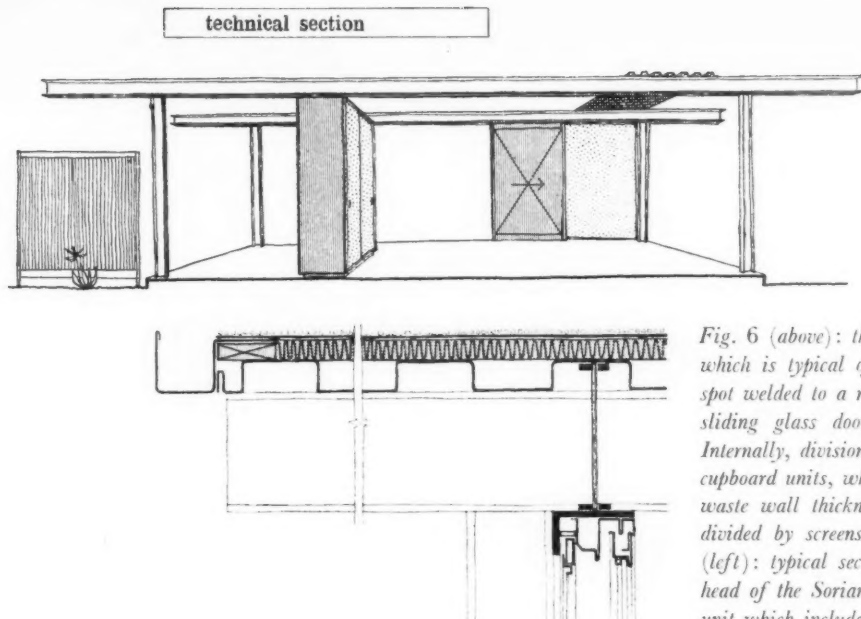


Fig. 6 (above): the basic structure of the Soriano House, which is typical of all his recent work. Steel decking is spot welded to a rigid steel frame and aluminium or steel sliding glass doors provide the bulk of the enclosure. Internally, divisions are wherever possible made of wooden cupboard units, which provide sound insulation and do not waste wall thickness. Externally, garden areas are subdivided by screens related to the interior spaces. Fig. 7 (left): typical section through the eaves and sliding door head of the Soriano House. The door is a standard steel unit which includes an external sliding mesh screen.

These may not, moreover, have always been the most suitable for the purpose. Soriano has, for example, had to use steel which was oversize for his house, not only because outmoded local codes insisted, but also because lighter steel with a more efficient section for

domestic construction is not yet being rolled. Nevertheless, a beginning has been made and the possibility of mass-producing highly finished components for mass consumption in domestic construction taken one step further. Steel components for both structural and non-structural uses will undoubtedly become more common in the future in prefabricated houses. To further this trend the Columbia-Geneva Division of the United States Steel Corporation is currently conducting a research programme in the use of steel in housing. Such a grammar of construction will owe a great deal to a group of Los Angeles architects of

Fig. 8: the structure of the Corns House consists of standard steel three-hinged frame members placed back to back. The only foundations required on a 45-deg. sloping site were a row of five pads. The external walls are a sandwich of aluminium sheet, glass fibre and plywood, 1½ in. thick.



# Seven typical **BISON** jobs in Northern England

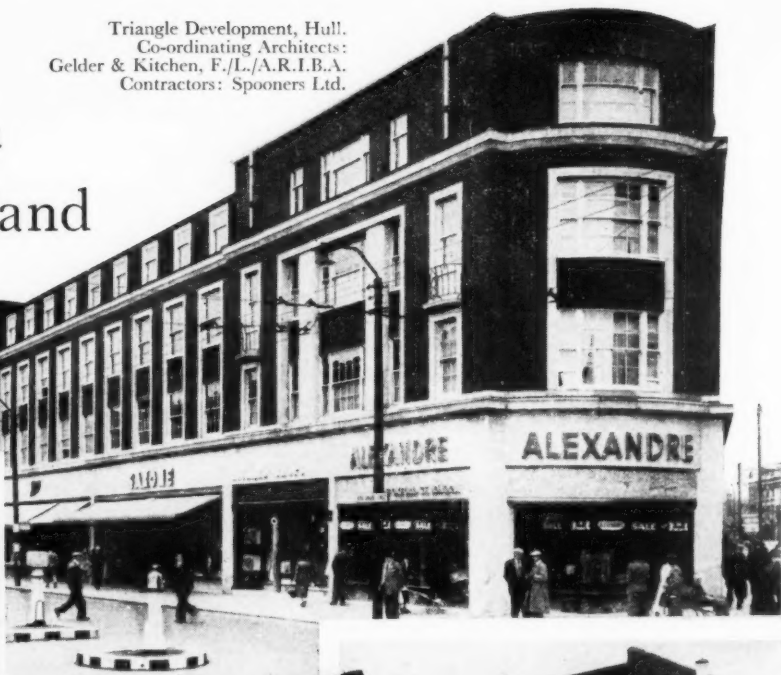
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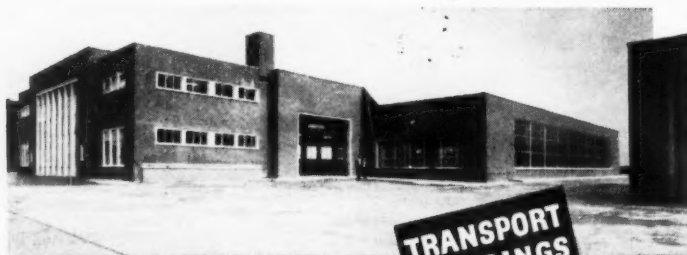
C & A Modes, Sheffield.  
Architects: North & Partners.  
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Architect: R. A. H. Livett, O.B.E., A.R.I.B.A.,  
City Architect, Leeds.  
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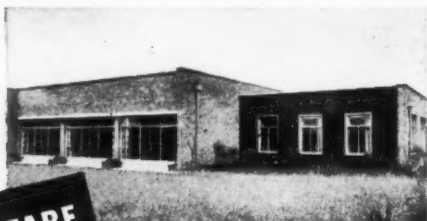
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**CINEMAS**

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CON 79

### technical section

which Richard Neutra is the distinguished pioneer and of which Soriano was until recently a member. Craig Ellwood may perhaps fairly be described as its presently most successful popularizer.

#### Adaptation of industrial truss

Industrially produced building parts have, of course, for some time been used both in the structure and cladding of buildings such as factories and offices. William Corns, building a house on a steep slope at Ross, in California (Fig. 8), has taken the two halves of a standard industrial three-hinged frame and put them back to back to form the skeleton of his house. He has then sheathed it using the standard aluminium extrusions of a curtain wall system as panel frames and filled in with glass or an anodized aluminium sheet. The roof construction consists of high-tensile steel Z-shaped purlins with corrugated aluminium roofing sheets above them. The ceiling, which is attached to the underside of the purlins is made from rigid fibreglass insulation board to which is glued a rubber sheet containing embedded within it electric wires for radiant heating. The floor joists are formed by the same Z-shaped members as the purlins except that they have been pretensioned. The balcony rail is a standard industrial window with the transom bars omitted. Internally most partitions are storage walls made of plywood held in aluminium window extrusions. Corns has taken the perfectly standard materials of a building technology now common in the United States on commercial structures and applied them to a house. The result is probably a prototype of domestic construction five years hence.

As Michael Ventris pointed out in his Report (AJ November 15, 1956), the American architect's task in selecting his manufactured building components is made much easier by having a comprehensive and intelligible source of information at hand. Sweet's Architectural File classifies most manufacturers' catalogues (which are all of identical size) and binds them into 10 indexed volumes. These are then distributed free to all practising architects who apply for them. In addition, there are Sweet's Files on the related fields of engineering, process engineering, mechanical industries, power plant and product design which often contain products somewhat ahead of current architectural use. The choice is wide and intelligent comparison possible. Moreover, products listed as standard are normally available from stock, unlike this country where "standard" so often merely means that the design happens to be in existence and that if it is asked for, it can be made to order.

#### Co-ordinated equipment

American industry is increasingly becoming aware that housing is in many cases a market which it has not yet fully explored. It is almost redundant to add that few American homes compare in quality and performance with the automobile under the car port and that such an exploration of the house building market may indeed be fruitful. In terms of equipment, of course, the assault has been going on for some time,

though it is only comparatively recently that really rational and co-ordinated equipment has been put on the market. Probably the most distinguished and important of these units is the series made by General Electric and designed by George Nelson. These consist of two separate kitchen fitments which can be had in five different colours. One is the so-called "Kitchen Center" which is 9 ft. long and is covered with a single sheet of stainless steel. It includes a sink with a garbage grinder, an automatic dishwasher, an electric range with four burners and a combined washer-drier appliance. The stove is normally a separate fitment to be mounted at shoulder height. The other unit is a refrigerator-freezer combination with a total capacity of 10.7 cu. ft. It has two compartments for fresh and one for frozen food. The unit is 5 ft. 4 in. long, 3 ft. 3½ in. high and 1 ft. 5½ in. deep and can, as the advertisements put it, "be hung on the wall like a picture" so as to be at eye level. It can also be made to stand independently as a room divider. Both these fitments cost less than the individual pieces of equipment bought separately and the connections to services are greatly simplified. These colourful and precisely designed units are part of the perhaps unspectacular revolution which is going on in American house planning which, recognizing that the housewife spends a good deal of her time in the kitchen, is making it the most colourful and pleasurable space in the house.

Other appliances have made equal progress even if the results are visually less stimulating. The effect on planning is, however, often quite important. Laundry units, for example, which, unlike those available in this country, combine washing and complete drying in one machine and one continuous automatic operation are now on the market. There being no spilling of water or sloshing of wet clothes it becomes possible to put the laundry unit at the point closest to where most of the dirty linen is thrown off and clean clothes are needed. The position preferred by most housewives is somewhere outside the bathroom and near the children's bedrooms. It is interesting to note in passing that in the survey of washing machines published in the *Architectural Review* for November, 1956, it is taken for granted in the first sentence that the machine will be in the kitchen or bathroom.

A rational disposition of these appliances is, of course, to some extent made possible by the fact that even in speculative housing these are installed by the builder and bought with the house under a system known as the package mortgage. This system has the approval of both the Federal Housing Administration and the Veterans' Administration, which together underwrite the vast majority of house loans, and is, perhaps, just one more instance of the great power which the lending institutions exert on design. In this exceptional case, a beneficial power.

#### New whole house structures

Manufacturers of building materials have not yet reached the level of sophistication shown by the G.E. kitchen. Vigorous research is, however, going on.

# technical section

Apart from the studies in the use of steel by the United States Steel Corporation a number of other highly important projects are under way. The use of aluminium for warped shells is being studied by Eduardo Catalano in conjunction with an aluminium company; U.S. Gypsum has built a group of experimental houses which included two very interesting designs, one had steel columns and open web joists, the other used the Youtz-Slick lift slab technique for its concrete structure; Reynolds Metals Company, a large fabricator as well as extruder and roller of aluminium, is experimenting with that metal for house construction. The most spectacular and widely publicized of these research projects is just being concluded at the Massachusetts Institute of Technology under a grant from the Plastics Division of the Monsanto Chemical Company. It concerned the use of plastics in housing and has produced as its visible

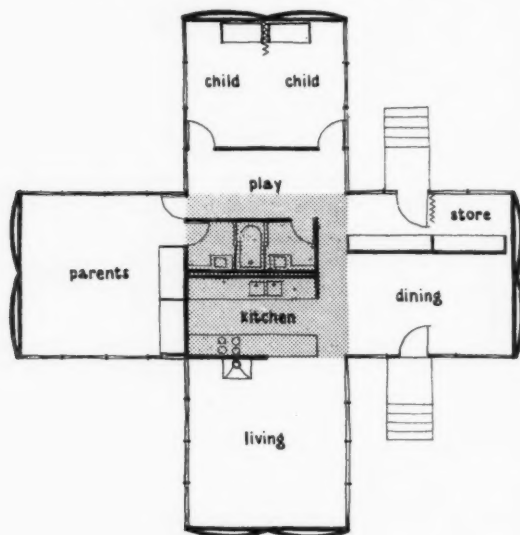
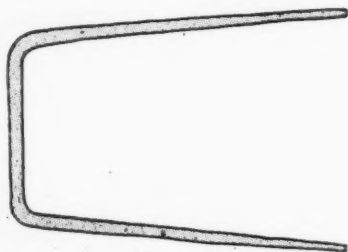


Fig. 9 (above): plan of the Monsanto House. The central core is 16 ft. square, and each wing is formed of two cantilevered shells each 8 ft. wide and 16 ft. long.

Fig. 10 (below): section of the curved shell forming the structure of the cantilevered wings of the Monsanto House. Two layers of polyester-glass-fibre provide the outer skins, with foamed urethane or styrene insulation between them. The main structural problem in a curved shape of this kind is that strength is achieved before rigidity. To eliminate deflection the plastic shell is therefore somewhat stronger than it would otherwise be.



result a so-called "House of Tomorrow" which is soon to be built and exhibited in Disneyland at Anaheim outside Los Angeles. The house was designed by Marvin Goody and Richard Hamilton (Figs. 9, 10). The structure of the Monsanto House consists of U-shaped shells formed by two skins of polyester fibre-glass with a layer of foamed insulation between them. These cantilever from a central core and become the ceiling, end wall and floor of a projecting wing. They can be grouped around the core in a number of ways, the most simple being the star-shaped arrangement shown on plan. Each shell is 8 ft. wide and 16 ft. deep so that each cantilevered wing becomes 16 ft. sq., the shells being tapered stack within each other for transport. The taper in the floor is then filled by a wedge which contains ducts and pipes. Polyester fibreglass will be used for the columns of the central utility core and polyester may also be used as a facing to phenolic paper honeycomb in the wall panels. Windows will be acrylic and ducts vinyl or urethane. The project is still at a relatively early stage in some respects and many questions such as that of jointing are still not finalized. It does, however, represent a serious attempt to tackle the problem of mass-producing a house and does so with great freshness and imagination. Like so many previous attempts at prefabrication it does, however, suffer from being associated with the producer of one particular material. What is still needed is a research project which has as its chief aim the production of a house and tackles the problem from the point of view of the consumer rather than the producer. It seems doubtful, for example, whether the use of the cantilevering U-shaped frame, however well it may demonstrate the strength of a bent sheet of plastic, provides the answer in terms of orientation or overlooking.

## Conclusions

The houses described are, of course, only a beginning: a step towards the production of a house which will qualitatively be of our time. Most of them are still the relatively rigid enclosures which have so long meant shelter in our civilization and which have surely been made obsolete by our technology. The family which in theory owns the home can in no way control the spaces it occupies, yet ownership and control are almost proverbially synonymous. It is neither able to choose a space specifically fitted to its current needs nor subsequently able to amend that space to its evolving demands—a discrepancy between need and performance which we would consider intolerable in a typewriter or a cooker. One can, therefore, only hope that out of this series of experiments there will soon appear a house which will indeed be adjustable to the variables of mid-20th century living; a structure which will provide the space control now made possible by the clear differentiation between load-bearing structure, waterproof umbrella, space enclosure and service equipment. If one looks at American housing today, the expectation is strong. It seems all the more a pity, therefore, that no comparable experiments are being undertaken in this country.







working detail

STAIRCASES: 28

STAIRCASE: FLATS IN PARIS

Lionel Mirabaud, architect

(material supplied by R. K. Dewhirst)



*The outer edge of each tread is supported on a system of  $\frac{3}{4}$ -in. dia. collared m.s. sleeves riding on  $\frac{1}{2}$ -in. dia. m.s. rods. Each rod is secured top and bottom in a m.s. channel at floor slab level. The handrail is supported on brackets welded to every fifth sleeve and is stiffened by raking  $\frac{3}{8}$ -in. dia. rods which engage in each tread.*

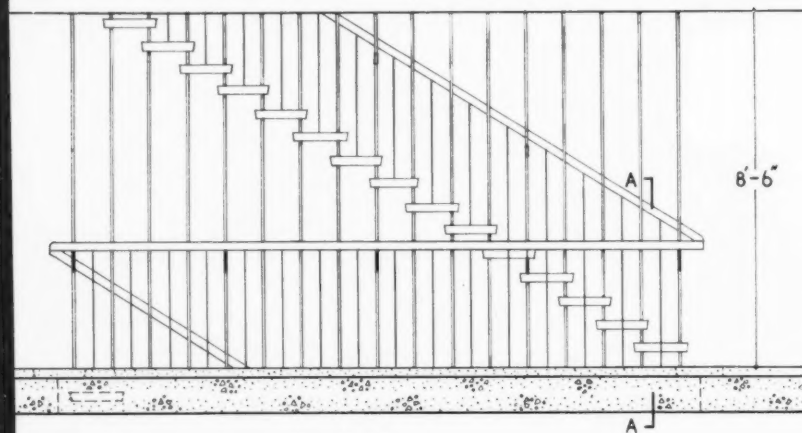
working detail

STAIRCASES: 28

STAIRCASE: FLATS IN PARIS

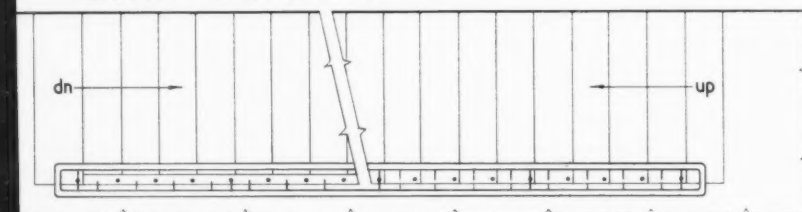
Lionel Mirabaud, architect

(material supplied by R. K. Dewhirst)



8'-6"

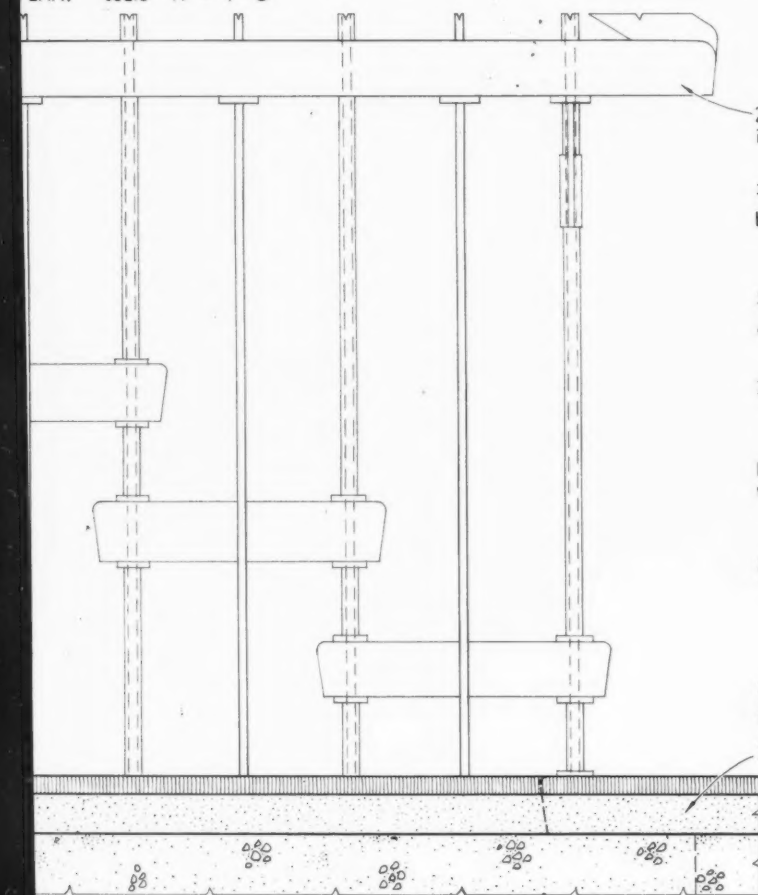
ELEVATION. scale  $\frac{1}{4}" = 1'-0"$



dn

up

PLAN. scale  $\frac{1}{4}" = 1'-0"$



2" x 2 1/2" polished iroko handrail

3/16" m.s. handrail brackets

3/4" dia. m.s. tube encasing 1/2" dia. rod

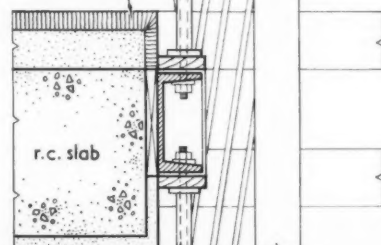
2 3/4" iroko treads

1 1/2" dia. m.s. collars welded to 3/4" dia. tube

3/8" dia. m.s. rod

3/4" plastic floor finish on foamed rubber base

2" screed



r.c. slab

SECTION A-A. scale  $\frac{1}{2}" = 1'-0"$

Note: figured dimensions in feet and inches are approximate



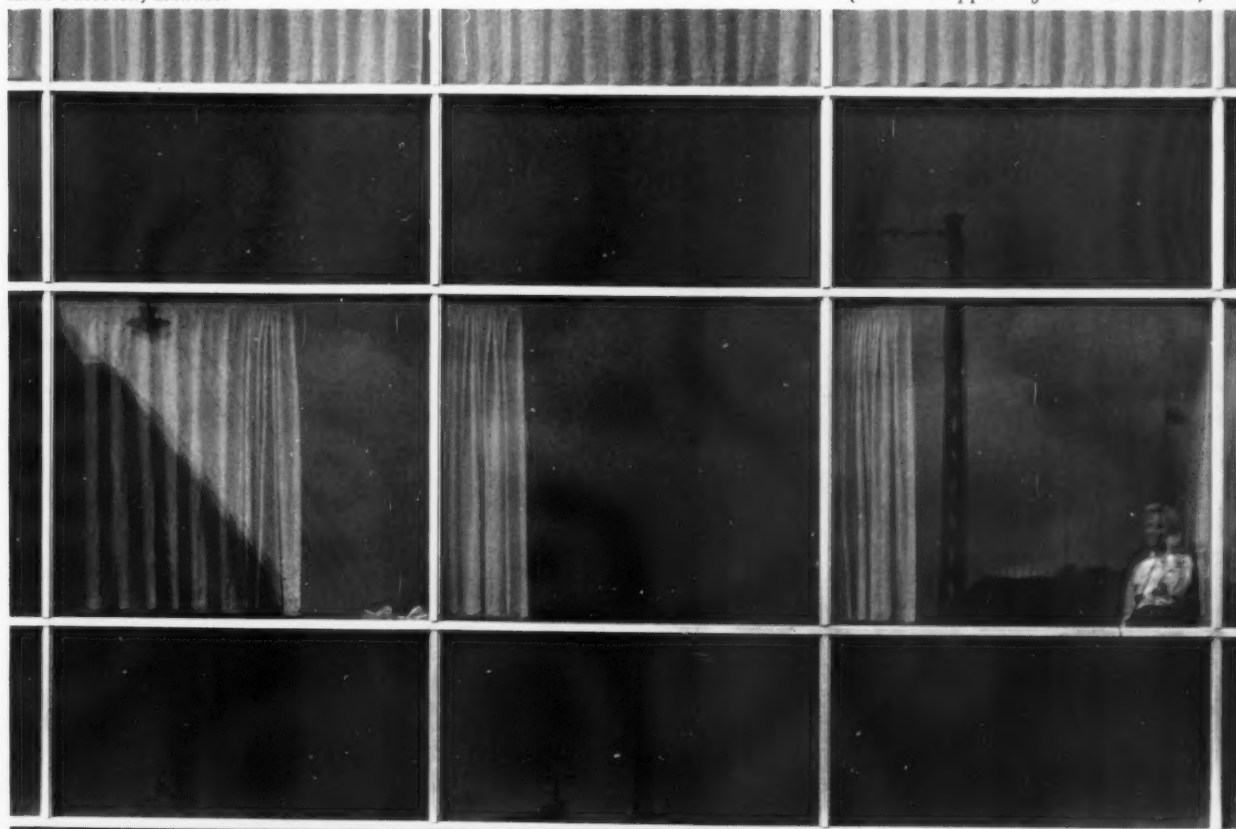
working detail

WALLS AND PARTITIONS: 42

CURTAIN WALL: OFFICE BUILDING IN COPENHAGEN

Arne Jacobsen, architect

(material supplied by D. J. Leadbetter)



*The curtain walling to this eight-storey building is supported by steel channels lugged to the edges of the cantilevered floors. After fixing of the channel, the plates which support the mullions were welded on in situ. The laminated timber mullions, each consisting of four laminations bolted together in the joiners' shop, were then bolted into place. The transoms are housed into them with a simple carpenter's joint. The aluminium glazing beads clip over patent screw heads. The green coloured glazing of the solid panels is a German product and consists of two layers of thin glass with an adhesive paint medium in between. Permanent ventilation is provided by slots in the transom.*

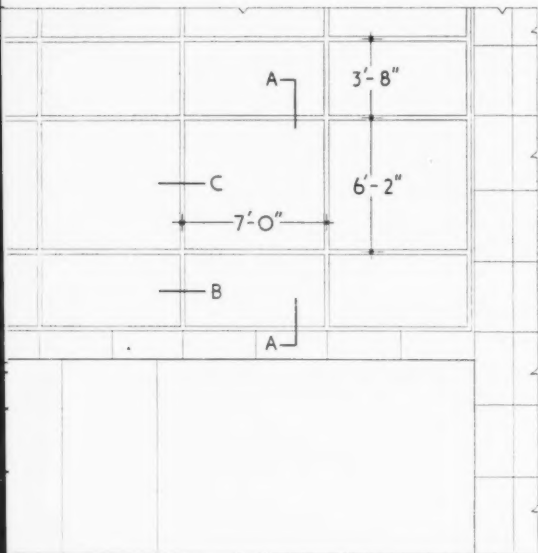
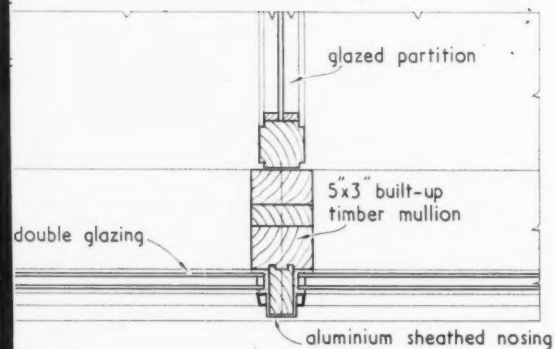
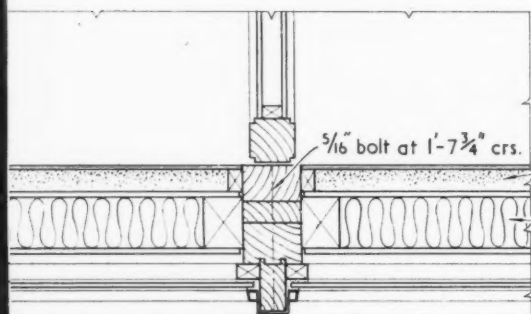
## working detail

## WALLS AND PARTITIONS: 42

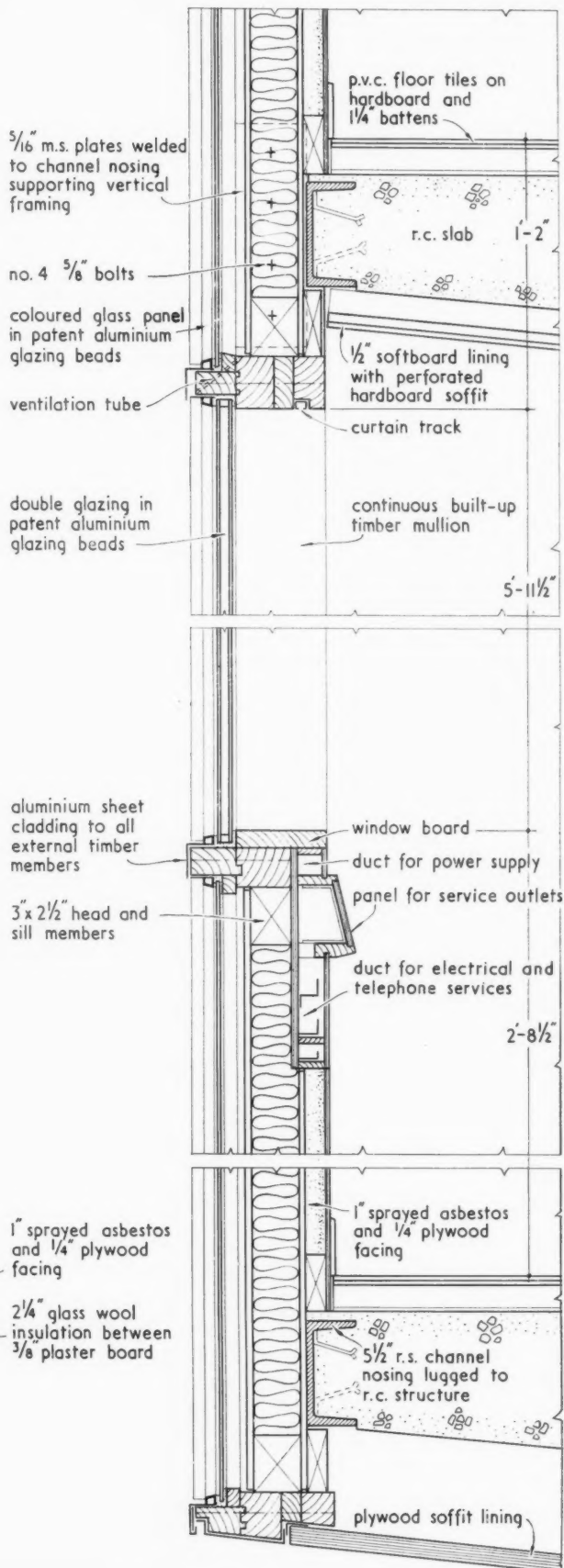
CURTAIN WALL: OFFICE BUILDING IN COPENHAGEN

Arne Jacobsen, architect

(material supplied by D. J. Leadbetter)

ELEVATION scale  $\frac{1}{8}'' = 1'-0''$ PLAN AT C. scale  $\frac{1}{2}'' = 1'-0''$ PLAN AT B. scale  $\frac{1}{2}'' = 1'-0''$ 

Note: figured dimensions in feet and inches are approximate

SECTION A-A. scale  $\frac{1}{2}'' = 1'-0''$

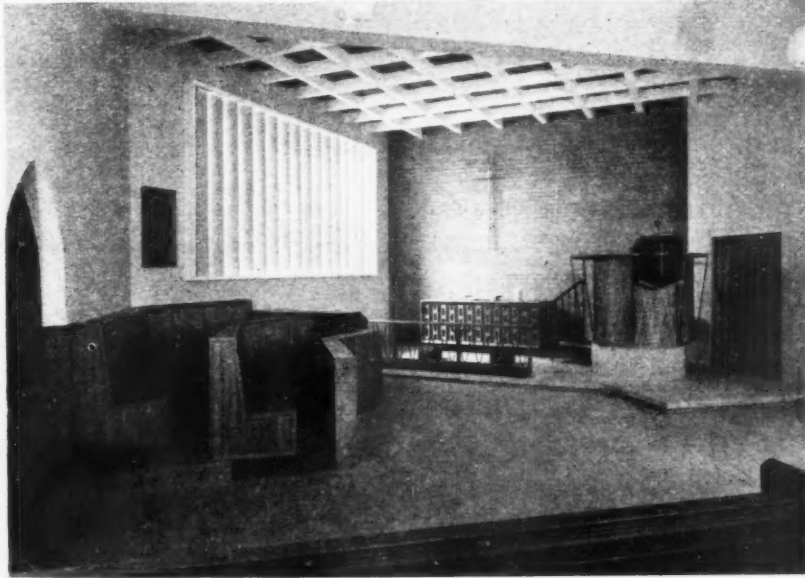






## CHURCH EXTENSION IN E. YORKSHIRE

## Contractors



The trustees of the Methodist church at Willerby, E. Yorkshire, required an extension to the existing building, to include a new sanctuary, above, a vestry, boiler house and lavatory accommodation. The architects, Fisher, Hollingsworth and Partners, have avoided the orthodox symmetrically planned sanctuary; the altar is at an angle of 40 deg. to the east-west axis of the church and is naturally lit from the north through sheet steel louvres.

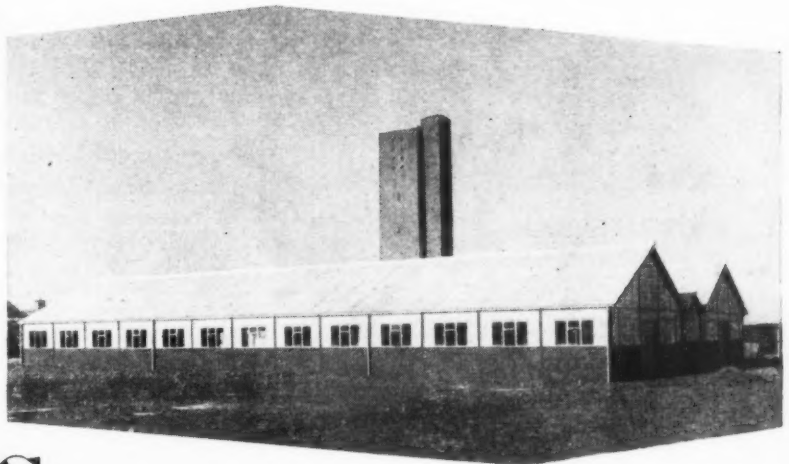
Housing etc., Basildon New Town, Essex for Basildon Development Corporation. Chief architect/planner: Noel Tweddell, A.R.I.B.A. Deputy chief architect/planner: A. B. Davies, A.R.I.B.A. Senior architects: J. N. Graham, S.P. DIP., A.R.I.B.A., A.M.T.P.I., J. Farber; R. W. Johnston. Senior planners: Phillip Deane, M.A., A.R.I.B.A.; K. N. Munnich, D.A., S.P. DIP., A.R.I.B.A., A.M.T.P.I. Fryerns, 6B housing area architect: David du R. Aberdeen, D.A., F.R.I.B.A., A.M.T.P.I. (main contractor: W. & C. French Ltd.) Fryerns 8 housing area (main contractor: W. & C. French Ltd.). Vange 3B (main contractor: W. & C. French Ltd.). Barstable 3/4 (main contractor: W. & C. French Ltd.). Roman Catholic Church, Barstable (architect: John Newton; main contractor: J. Leary & Son Ltd.). Fryerns Technical Modern School (architect: Dennis Clarke Hall, F.R.I.B.A. main contractor: Leightons [Contractors] Ltd.). Barstable Neighbourhood Centre (main contractor: J. & J. Dean Ltd.). Fryerns 2/3 (main contractor: J. B. Rose & Co. Ltd.). Fryerns 2/3 (main contractor: W. & C. French Ltd.). Nufloors factory (architect: Clifford Strange, L.R.I.B.A.; main contractor: Charles S. Foster & Sons Ltd.). Nursery factories, blocks A.C.E. & F (main contractor: A. E. Symes). Nursery factories, block B (main contractor: W. & C. French.). Sub contractors—Roofing felt: D. Anderson Ltd. Ironmongery: Clark



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*Plumbing*: Eastern Plumbing & Heating Co., Henry Tattersall Ltd. *Glazed walls*: John Ellis & Son, Robbs Cement Enamel Finishes Ltd. *Roller shutters*: Shutter Contractors Ltd. *Painting*: Jenner Bros. (Ilford) Ltd., and Field Ltd. *Plastering*: A. Charldwood & Sons Ltd., Co-Plastering Ltd. *Lantern lights*: Henry Hope & Sons Ltd. *Tiling*: Carter & Co. Ltd.

## Announcements

### PROFESSIONAL

R. Towning Hill & Partners, A/A.R.I.B.A., A.M.T.P.I., have changed their Bristol address to 18, Orchard Street, Bristol, 1.

Imrie, Porter & Wakefield, chartered architects, announce that Peter Wakefield, A.R.I.B.A., and T. McEwan Porter, A.R.I.B.A., are both now practising from 35, Market Place, Warminster (telephone: Warminster 2123 and 2051).

### TRADE

The Plasterboard Industry announces that the Gypsum Building Products Association has been dissolved and that a new association to be known as the Gypsum Plasterboard Development Association has been formed with the object of promoting, encouraging and developing the use of plasterboard in Great Britain. The Gypsum Plasterboard Development Association will take over such activities as the publication of "The Gypsum Journal" and the discussion of technical matters with Government Departments and other organizations.

Percy Bilton Ltd., building and civil engineering contractors, announce that C. G. Linford-Relf, A.I.A.S., has been appointed a Director.

British Plimber Ltd., manufacturers of Plimberite wood chipboard, have appointed A. T. V. Collinge as their Technical Representative for North-West England and North Wales.

McKechie Brothers Ltd. of Birmingham have appointed John Hood & Co. 55, Cheap-side Street, Glasgow, C.3., sole selling agents in Scotland for extruded rods and sections in brass, bronze, aluminium bronze, nickel silver, copper, brass and bronze stampings, chill cast bars, anti-friction metals, non-ferrous ingots, solder.

With the appointment of J. A. E. Reiss as Chairman of The Associated Portland Cement Manufacturers Ltd. and The British Portland Cement Manufacturers Ltd., he relinquishes the Chairmanship of The Cement Marketing Company Ltd. as from December 31. His successor is V. C. Ellison who is also Managing Director of the two producing companies.

Air Control Installations Ltd., of Ruislip, Middlesex, have moved their Birmingham Office to Wolverley House, Digbeth, Birmingham, 5 (telephone Midland 5148).

## Correction

In the contractors list for the terminal building at London Airport, in the AJ for December 13, Horsley Smith & Co. (Hayes) Ltd. were omitted. They wish it to be known that they "were responsible for the supply and installation of a small area of patent sprung dance floor in the grill room."



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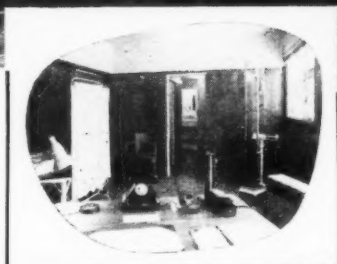
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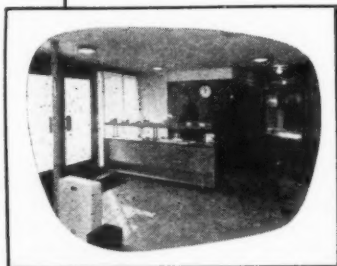
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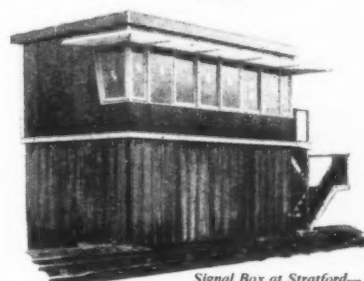
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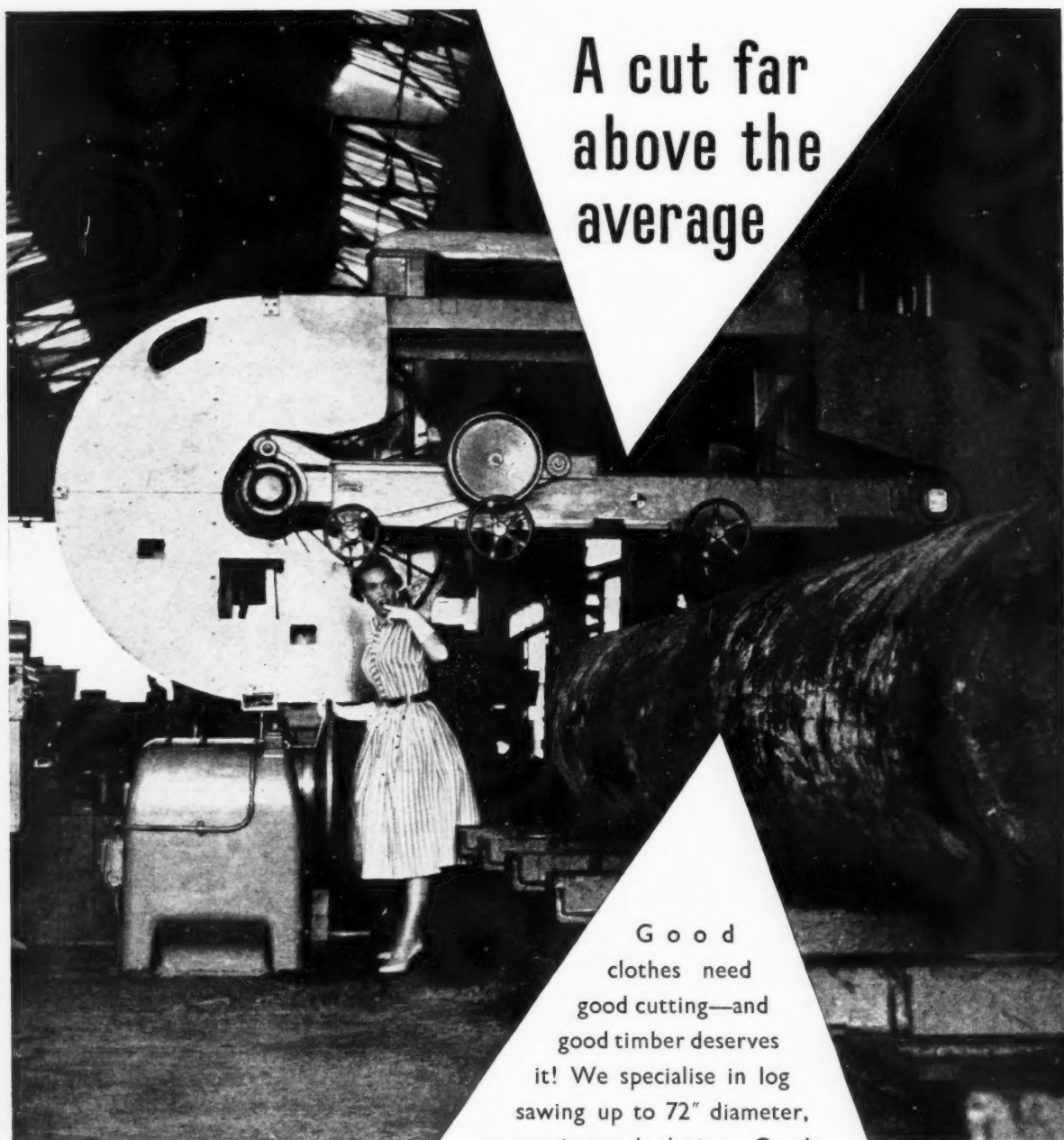


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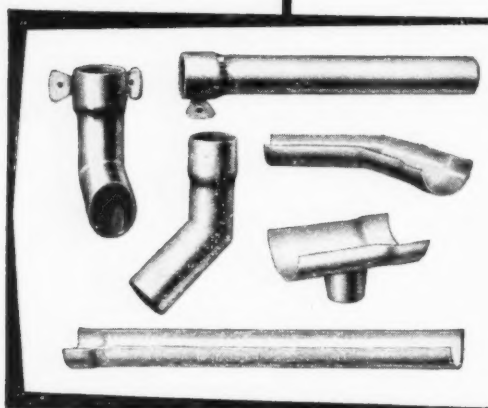
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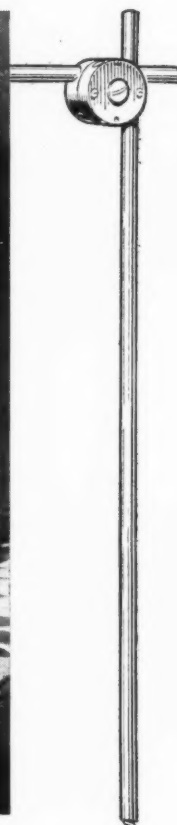
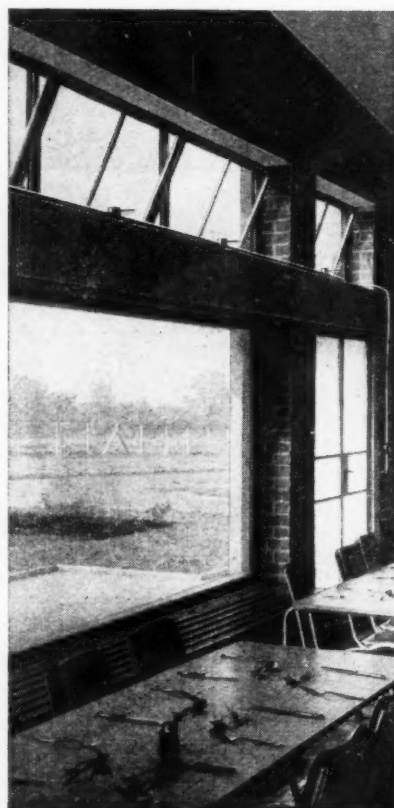


Illustration shows part of the canteen at the Administration and Design Office of W. J. Fraser & Co. Ltd., at Harold Hill, where Teleflex Remote Controls were used for window operation.

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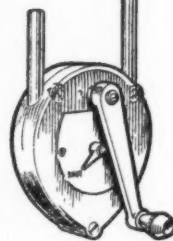
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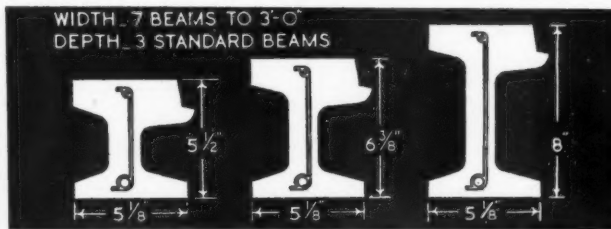
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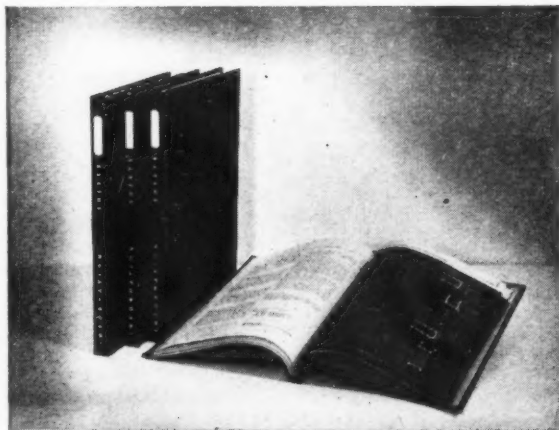
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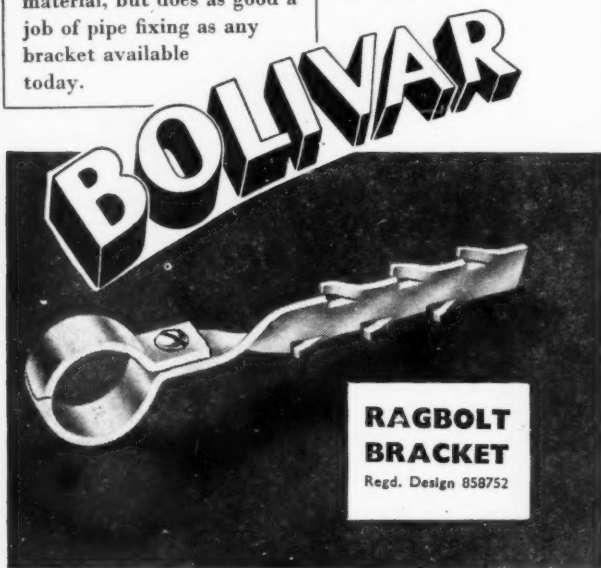
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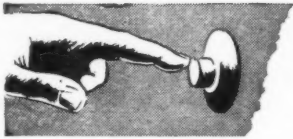
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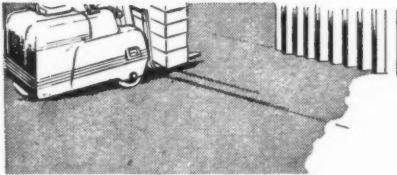




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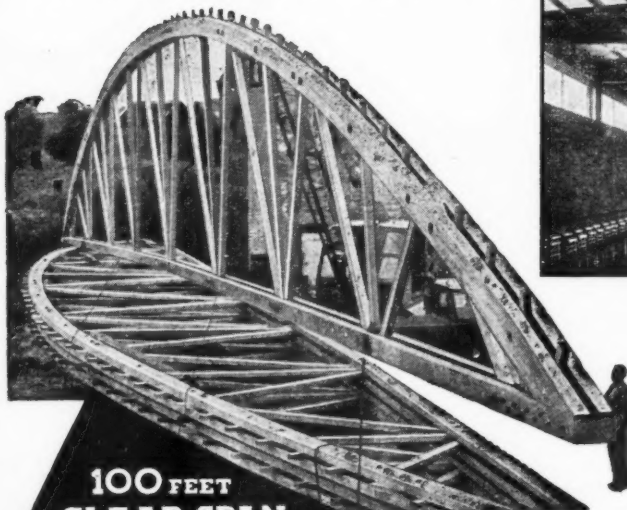
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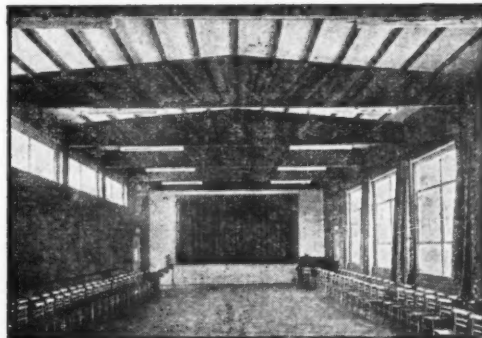
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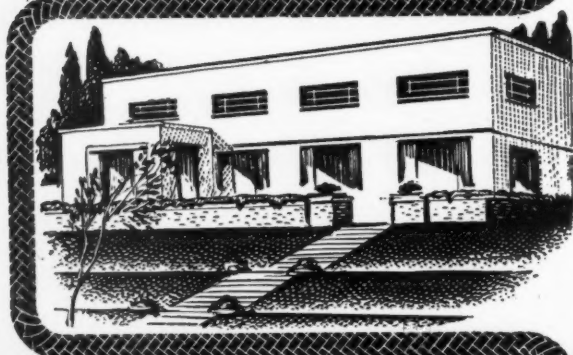
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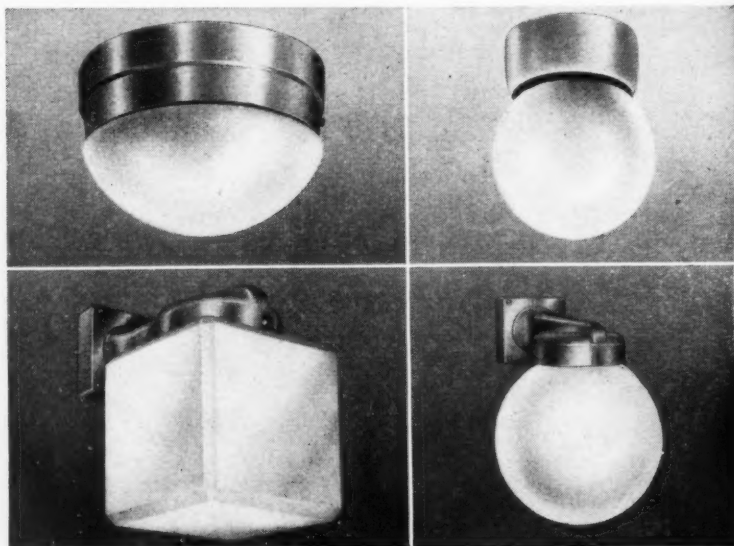
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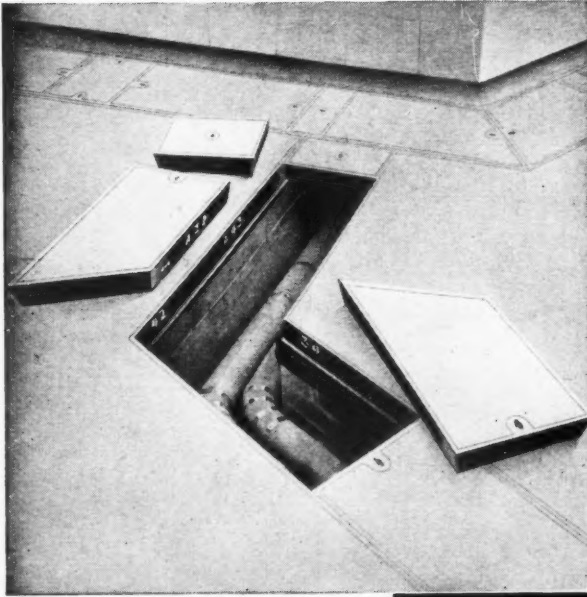
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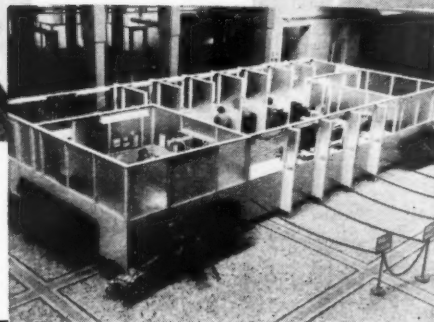
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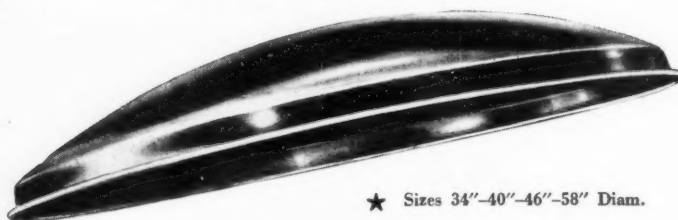
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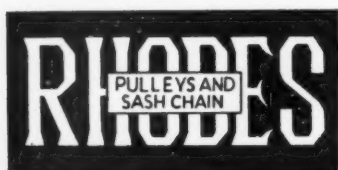
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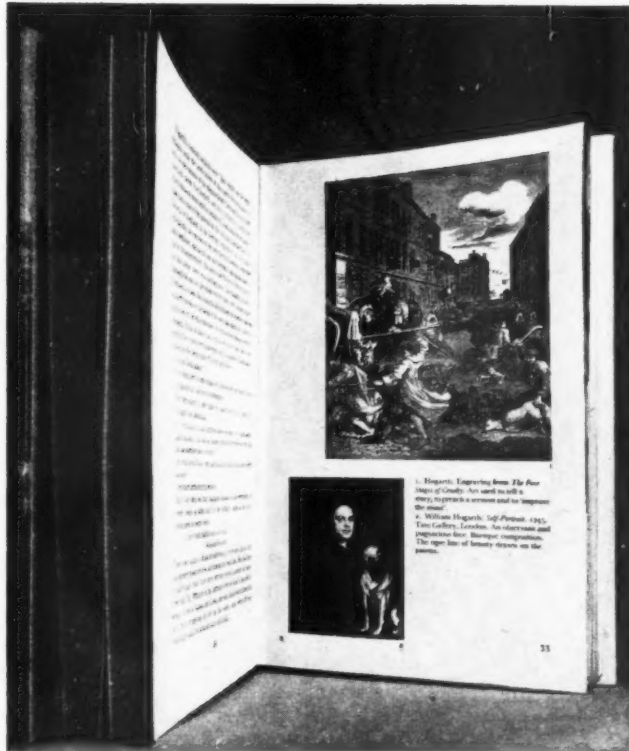
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THE CORPORATION OF GLASGOW  
ARCHITECTURAL AND PLANNING  
DEPARTMENT

## ASSISTANT ARCHITECTS

## ASSISTANT PLANNERS

## ASSISTANT QUANTITY SURVEYORS

Vacancies exist for a number of Assistants as above and for Architectural Assistants. Minimum qualification, Intermediate Examination of the appropriate professional body. Salary scale £580-£1,100 per annum with placing according to age, experience and qualifications.

Form of application may be obtained from the Principal Administrative Officer, 20, Tronquair, Glasgow, C.I. 4745

## LONDON COUNTY COUNCIL

## ARCHITECTS' DEPARTMENT

Vacancies exist for ARCHITECT/PLANNERS (salaries up to £817). Tasks include 3-dimensional planning within London's eight major Comprehensive Development Areas (including Stepney/Poplar, the South Bank, and Elephant and Castle) and other Redevelopment Areas.

The work includes the preparation of comprehensive layouts covering the important areas of new public and private development throughout the County, and covers the whole field of planning technique.

Particulars and application form from Architect (AR/EK/ATP/1), County Hall, S.E.1. (907) 4543

COUNTY BOROUGH OF SUNDERLAND  
PUBLIC WORKS MANAGER

Applications are invited for the above post. The salary scale will be £1,790 rising by £55 to £2,065, the starting point in the scale to be fixed by the Council according to experience and qualifications. There will be a car allowance.

The duties of the Public Works Manager (a new appointment) will include responsibility for the repair and maintenance of Corporation buildings and civil engineering works and the carrying out of new building and civil engineering work for the Corporation, subject in each case to competitive tendering for larger works.

Applicants must have had control of large building or civil engineering establishments of local or public authorities doing work by direct labour, or of private contractors.

The appointment is subject to the Superannuation Acts and medical examination.

Forms of application and particulars of duties and conditions of appointment are obtainable from the undersigned at the Town Hall, Sunderland, to whom applications must be sent so as to arrive not later than 19th January, 1957.

G. S. MCINTIRE,

Town Clerk.

4819

## HARLOW DEVELOPMENT CORPORATION

Vacancies exist in the office of the Architect-Planner, Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I., and the Executive Architect, V. Hammett, B.Sc., A.R.I.B.A., A.R.I.C.S., A.M.T.P.I.

JUNIOR ASSISTANT ARCHITECTS required under Quantity Surveyor Building Contractor. Industrial Development at Harlow New Town.

Appointments offer excellent opportunities for work full of interest on development of contemporary factory buildings, offices and laboratories.

Applicants, who should be Intermediate R.I.B.A., must possess sound knowledge of building construction, together with experience in the quick and accurate preparation of working drawings and details. Knowledge of framed structures an advantage.

Posts will be in the Salary Scale A.P.T. III, £640-£765. Housing available for successful candidates.

Applications within 10 days to General Manager, "Terlings," Harlow, Essex. 4802

QUANTITY SURVEYING ASSISTANTS required by Air Ministry Works Directorate in London and Provinces. Grade and commencing salary based on not less than 3 or 5 years' previous experience under Quantity Surveyor Building Contractor.

Approved full time study will count towards 5 years period. Normally technical qualifications in Builder's quantities or building, e.g. C. & G. final or O.N.C. or proof to equivalent standard. Duties include abstracting and billing, site measurement and preparation of estimates. Salary range £515 to £790 London rate starting pay dependent on age, qualifications and experience. Salaries somewhat lower in Provinces. Pensionable and promotion prospects. 5-day week, 3 weeks leave a year. Applicants normally should be natural-born British subjects. Write stating age, qualifications and previous appointments including type of work done to AA.879/80. London Appointments Office, Ministry of Labour and National Service, 1-6, Tavistock Square, W.C.1. No original testimonials should be sent. Only candidates selected for interview will be advised.

4833

## COVENTRY CORPORATION

Architectural and Planning Department require:-

(a) PLANNING ASSISTANT (Development Control), A.P.T. III, £656-£784.

(b) TRAINEE PLANNER (Central Area Reconstruction), Higher General Division, £205-£512 (male) or £184-£446 (female), according to age, etc.

Additional local award £26 in approved circumstances. Housing accommodation may be available post (a). Application forms, etc., from A. G. Ling, Bull Yard, Coventry, returnable within 14 days publication. 4836

ARCHITECTURAL ASSISTANTS required by Government of Uganda on contract for one tour of 30 to 36 months in first instance. Salary scale (including Inducement Pay) £915, rising to £1,341 a year. Commencing salary according to age, qualifications and experience. Gratuity at rate of 13½ per cent. of total salary drawn. Outfit allowance £30. Free passages. Liberal leave on full salary. Candidates, 21-35 years of age, must either be Inter. R.I.B.A. or have had considerable experience in the preparation of working drawings of buildings generally, and in the use of levelling instruments, and have a sound knowledge of building construction. Experience in tropical building problems an advantage. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote MCB/40421/AG. 4830

## CITY COUNCIL OF SINGAPORE

Applications are invited for appointment of TWO ASSISTANT ARCHITECT AND BUILDING SURVEYORS, in the City Architect and Building Surveyor's Department, on agreement for two periods each of 3 years residential service.

Applicants must be A.R.I.B.A., with a minimum of 6 years professional experience for post (A), and of 2 years for post (B).

Basic salary scale, \$785 to £1,420 (\$1 Malayan = 2s. 4d.). With Current Variable and Ex gratia allowances the initial total emoluments offered for the two posts are equivalent to:-

	Post A.	Post B.
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Initial basic	1,055	875
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Total for single man	1,918	1,638
Total for married man	2,044	1,764
Total for married man with one or more children	2,235	1,879

Partly furnished quarters provided if available at 12½% of basic salary. Free air passages for officer and family subject to certain limits. Home and Local leave. Officers must join Provident Fund, and if not offered permanent appointment will be given on satisfactory completion of Agreement benefits equivalent to 20% of basic salary drawn for residential service during Agreement.

Further details from the Council's London Agents: Messrs. Allen & Williams, 1, Victoria Street, Westminster, London, S.W.1. Closing date for full applications in DUPLICATE, Tuesday, 15th January, 1957. 4832

## URBAN DISTRICT OF FELTHAM

## ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of an Architectural Assistant (male or female) on the Council's unestablished staff, at a salary according to qualifications and experience up to Grade A.P.T. II (£609 17s. 6d. x £20 10s. = £691 17s. 6d. per annum), plus London "weighting."

Forms of application, obtainable from the undersigned, must be returned accompanied by copies of two testimonials, not later than 25th January, 1957. Canvassing directly or indirectly will disqualify, and applicants must disclose, in writing, whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

M. W. COUPE,

Clerk of the Council.

Council Offices, Feltham, Middlesex. 4836

## PADDINGTON BOROUGH COUNCIL

ARCHITECTURAL ASSISTANT A.P.T. III—£686 to £814 2s. 6d. p.a. (£10 p.a. less if under age 26). Starting salary according to experience. Candidates should be Inter-R.I.B.A., with some practical experience of the design of contemporary multi-storey housing work. Work will also include interesting schemes for other Council departments. Write age, qualifications, and details of past experience and training, to the undersigned, together with the names and addresses of three referees, by 14th January, 1957 (quoting A.315).

W. H. BENTLEY,

Town Clerk.

Town Hall, Paddington Green, W.2. 4859

## ESHER URBAN DISTRICT COUNCIL

## APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE A.P.T. II

Applications are invited for the above-mentioned appointment, at a salary in accordance with Grade A.P.T. II (£609 17s. 6d. = £691 17s. 6d.), plus London weighting. The Council is prepared to assist with the provision of housing accommodation if required.

Forms of application and further particulars obtainable from the Engineer and Surveyor, Council Offices, Esher, to whom applications must be returned by 12th January, 1957.

FREDERICK EDWARDS,

Clerk of the Council.

Council Offices, Esher. 4861

CITY OF LIVERPOOL  
ARCHITECTURAL AND HOUSING  
DEPARTMENT

## PRINCIPAL HOUSING ARCHITECT

Applications are invited for the above appointment. Salary £1,515-£55 to £1,735 per annum (Scale E), subject to review. Commencing salary according to qualifications and experience. Applicants must be Fellows or Associates of the Royal Institute of British Architects; and possession of a planning qualification is desirable.

The person appointed will be responsible for the section of the Department undertaking the design and supervision of all housing and ancillary projects.

Application forms from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, should be returned, accompanied by copies of not more than three recent testimonials, by 28th February, 1957.

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

THOMAS ALKER,

Town Clerk.

GOVERNMENT OF QATAR-PERSIAN GULF  
ASSISTANT ARCHITECT

Applications are invited for the following post under the direction of the State Engineer, Government of Qatar, Doha, Persian Gulf:- ASSISTANT ARCHITECT. Applicants for this post should be qualified Architects (Associates of Royal Institute of British Architects or other internationally recognised body), having good general experience of the design of private and public buildings. Applicants should be rapid and competent draughtsmen.

The successful applicant will assist the Government Architect in the design of the many architectural projects associated with a rapidly expanding town.

Salary: Will be according to Scale E2, starting at Rs.1,775/- an Arabic month, with annual increments of Rs.75/- a month up to Rs.2,000/- and then by annual increments of Rs.100/- per month to a maximum of Rs.2,300/- per month (Rs.1,775/- an Arabic month is equivalent to £1,590 a Gregorian year).

Gratuity: Payable on the basis of one month's pay for each completed year of service, on completion of contract only.

Probation: Probationary period of six months during which contract may be terminated at three months' notice by the Government, without stating its reason.

Contract: A five-year contract, subject to successful completion of probationary period. The employee may terminate the contract at three months' notice only after completing one year's service.

Accommodation: Free furnished accommodation, fuel, light and water. Married accommodation will be provided in accordance with the rules, but in no case before successful completion of probationary period.

Leave: Will be earned at the rate of six days for each completed month of duty.

Free Travel: On first journey to Qatar, leave (not exceeding one return 1st class air passage in each year), and termination, for applicant, wife and children up to 18 years of age.

General: The climate is hot for about five months of the year, but this is offset by air-conditioning in staff houses and offices. Good climate for the rest of the year. No income tax. Duty car allowance. Free medical and dental treatment.

Applications: Endorsed "Assistant Architect" giving full personal particulars, including age, nationality, religion, education, marital status, qualifications, training, past experience and employment, names and addresses of three referees, and recent photograph, should be sent to: The Adviser to the Government of Qatar, P.O. Box 36, Doha, Qatar, Persian Gulf. A further two copies simply endorsed should be sent to: C. Tennant Sons & Co., Ltd., 4, Copthall Avenue, London, E.C.2. 4848

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## ARTHUR LOUIS AARON V.C. SCHOLARSHIP

The Management Committee invite applications for this scholarship of £250, open to past or present students of the Leeds School of Architecture and Town Planning who, at the time of taking up the award, hold the Diploma in Architecture of the School. The scholarship is awarded for travel and study in Architecture.

Applications should reach the Clerk to the Leeds School of Architecture and Town Planning, 43A, Woodhouse Lane, Leeds, 2, from whom further details may be obtained, by the 18th February, 1957.

GEORGE TAYLOR,

Chief Education Officer.

Education Department, Leeds, 1. 4863

LONDON COUNTY COUNCIL  
ARCHITECTS' DEPARTMENT

ARCHITECTURAL AND SURVEYING ASSISTANTS required for BUILDING ACT and BY-LAW WORK in connection with the Council's constructional and fire-precautionary standards. Starting salaries up to £818 according to qualifications and experience.

Particulars and application form from The Architect (AR/EK/BW/3), County Hall, S.E.1. (2223). 4869



Architects, as under, wanted by Lanark County Council for County Architect's Department, Motherwell:—

(a) SENIOR ASSISTANT ARCHITECTS. Salary £1,100—£1,150. Must be A.R.I.B.A. In addition to all-round knowledge of architectural practice, should have knowledge of modern School building, and be capable of assuming position of responsibility.

(b) ARCHITECTURAL ASSISTANTS. A. & P. VIII (£930—£1,005). Must be A.R.I.B.A., with not less than 7 years' practical experience.

(c) ARCHITECTURAL ASSISTANTS. A. & P. VI and VII (£825—£950). Must be A.R.I.B.A. with not less than 5 years' practical experience.

(d) ARCHITECTURAL ASSISTANTS. A. & P. V and VI (£730—£825).

(1) A.R.I.B.A., plus satisfactory architectural training, or

(2) Passed Parts I and II Final R.I.B.A., plus 3 years' practical experience, or

(3) Intermediate R.I.B.A., plus 5 years' practical experience, or

(4) Satisfactory architectural training, plus 9 years' practical experience.

(e) ARCHITECTURAL ASSISTANTS. A. & P. IV (£670—£715).

(1) Passed Parts I and II Final R.I.B.A., plus satisfactory architectural training, or

(2) Intermediate R.I.B.A., plus 2 years' practical experience, or

(3) Satisfactory architectural training, plus 6 years' practical experience.

(f) ARCHITECTURAL ASSISTANTS. A. & P. III (£635—£680).

(1) Intermediate R.I.B.A., or

(2) Satisfactory architectural training, plus 4 years' practical experience.

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

Medical examination. Superannuation. No canvassing.

Applications, stating age, qualifications and experience, together with names of three referees, should be lodged with County Clerk, P.O. Box No. 1, Glasgow, within two weeks of date of advertisement. 4793

**COUNTY BOROUGH OF SUNDERLAND**  
Applications are invited for:—

CHIEF QUANTITY SURVEYOR. J.N.C. Special Rate "B" (£1,295—£1,405).

CHIEF ASSISTANT ARCHITECT. A.P.T., Grade VI (£902—£1,107).

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

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

Commencing salaries according to qualifications and experience. Particulars of these appointments obtainable from the Borough Architect, Grange House, Seabrook Road, Sunderland.

Applications to be received by me at the Town Hall by 28th January, 1957.

Canvassing will disqualify.

G. S. MCINTIRE.  
Town Clerk. 4872

**DURHAM COUNTY COUNCIL**  
PLANNING DEPARTMENT

SENIOR PLANNING ASSISTANT. Salary £814 17s. 6d.—£994 5s. (A.P.T. V). Applicants must be Associates of the Royal Institute of British Architects, and preference will be given to those holding a Town Planning qualification.

The successful applicant will work as a member of a small team dealing with the preparation of housing and redevelopment layouts, central area layouts, village layouts, etc. Housing available at Peterlee or Newton Aycliffe, about 12 miles from Durham. Forms and particulars from County Planning Officer, 10, Church Street, Durham.

Closing date: 12th January, 1957. Canvassing members of the Council is prohibited.

J. K. HOPE.  
Clerk of the County Council. 4869

**LANCASHIRE COUNTY COUNCIL**  
PLANNING ASSISTANT (ARCHITECTURAL)

required at Liverpool. Salary within the scale £707 5s. to £907 2s. 6d.

The work would primarily be in connection with the control of development, and applicants should be qualified Architects, having a high standard of design ability and appreciation. Previous planning experience, although an advantage, is not essential. Commencing salary according to qualifications and experience.

Applications, giving age, qualifications, present appointment, experience, etc., and two referees, to the County Planning Officer, East Cliff County Offices, Preston, by the 14th January, 1957. 4868

**ARGYLE COUNTY COUNCIL** invite applications for the appointment of a QUANTITY SURVEYING ASSISTANT in the County Architect's Department. Salary scale A.P.T. IV-VI (£655—£870), with placing according to qualifications and experience. The post is superannuable. The successful applicant will be given the tenancy of a 4-apartment Council house if required.

Apply, stating age, experience, and qualifications, along with copies of two recent testimonials, to County Architect, County Offices, Dunoon, by 8th January.

A. D. JACKSON.  
County Clerk. 4867

## HOLLAND COUNTY COUNCIL

Applications are invited for the appointment of a DRAUGHTSMAN in the Boston office of the County Planning Department, at a salary in accordance with Grade A.P.T. 1 (£543 5s.—£525 5s.).

Candidates should be competent draughtsmen, and previous experience in the office of a local authority would be an advantage.

The appointment is subject to the National Scheme of Conditions of Service and to the Local Government Superannuation Acts, and will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, and the names of two referees, should reach the County Planning Officer, 21, Haven Bank, Boston, Lincs., by the 19th January, 1957. Canvassing will disqualify.

H. A. H. WALTER.  
Clerk of the County Council. 4865

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

Applications are invited from Architects and Planners for the following permanent appointments at salaries shown (including maximum London allowance):

DEPUTY GROUP ARCHITECT (3 posts), Grade V (£844 17s. 6d.—£1,024 5s. p.a.).

ASSISTANT ARCHITECT (2 posts), Grade IV (£757 15s.—£937 2s. 6d. p.a.).

ASSISTANT PLANNING OFFICER, Grade V (£844 17s. 6d.—£1,024 5s. p.a.).

The County Borough has an extensive reconstruction and slum clearance programme, and offers varied and interesting work.

Application forms and details from the Borough Architect and Planning Officer, Thomas E. North, O.B.E., F.R.I.B.A., Dist.P., M.T.P.L., 70, West Ham Lane, Stratford, E.15, to be returned by 22nd January, 1957. 4849

**BOROUGH OF PRESTWICH**  
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited from suitably qualified persons for the appointment of ARCHITECTURAL ASSISTANT in the Department of the Borough Engineer.

Salary A.P.T. IV (£727 15s. per annum, by annual increments to a maximum of £907 2s. 6d. per annum). The appointment is permanent and superannuable. HOUSING ACCOMMODATION AVAILABLE.

Further details and application forms to be obtained from the undersigned. Forms to be returned not later than the 19th January, 1957.

C. A. CROSS.  
Town Clerk. 4843

**BOROUGH OF NEWCASTLE-UNDER-LYME** requires a SENIOR ASSISTANT QUANTITY SURVEYOR in the Borough Engineer and Surveyor's Department. Salary in A.P.T. IV, according to qualifications and experience (£727—£907).

Applicants will be required in connection with taking off for new Schools and Housing contracts. Favourable consideration will be given to the provision of housing accommodation in suitable cases.

Application forms and conditions of appointment may be obtained from the Borough Surveyor, Lancaster Building, High Street, Newcastle, Staffs., and must be returned to him not later than Tuesday, 15th January, 1957.

C. J. MORTON.  
Town Clerk. 4845

**BANFF COUNTY COUNCIL** requires Planning Assistant for County Planning Department.

Buckle: Salary scale £675—£1,005 according to experience. Applicants must be A.M.T.P. with experience in dealing with particulars for planning permission, and in the preparation of, and legislation relating to, Development Plans.

Appointment superannuable, subject to medical examination. Consideration given to housing of successful applicant. Apply within 14 days to County Clerk, Banff, stating age, whether married, with full particulars, together with copies of 3 recent testimonials. 4789

**LONDON COUNTY COUNCIL**  
ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECTS Grade III (up to £987), and ARCHITECTURAL ASSISTANTS (up to £238), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings. Application forms and particulars from Architect (AR/EK/A/2), The County Hall, S.E.1. (1189) 4544

**CAERNARVONSHIRE COUNTY COUNCIL**  
Applications invited for posts of ASSISTANT ARCHITECTS in the County Architect's Department at a commencing salary of £922 per annum, in A.P.T. V (£814—£994).

Further particulars and application forms from Clerk of County Council, Caernarvon. Closing date: 16th January, 1957. 4837

**HAMMERSMITH**  
ARCHITECTURAL ASSISTANT (Unestablished). A.P.T. III (£656—£25 12s. 6d.—£784 2s. 6d. p.a., plus London weighting). Applicants should have passed Intermediate Examination of R.I.B.A.; municipal experience desirable, but not essential. Application forms, returnable by 18th January, 1957, from Town Clerk, Town Hall, Hammersmith, W.6. 4853

## Tenders Invited

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

## BOROUGH OF EALING

## INSTALLATION OF HOT WATER AND BATHROOMS

## NORTH AND SOUTH ROADS, EALING

Tenders are invited for the installation of Hot Water and Bathrooms to houses and flats in North and South Roads.

Conditions of Contract, etc., may be obtained from the Borough Engineer and Surveyor, Town Hall, Ealing, W.5, on deposit of £2, to be refunded upon receipt of a bona fide tender.

Tenders (in plain sealed envelopes, endorsed "Tender for Bathrooms—North and South Roads," but bearing no name or mark indicating the sender), must be delivered to my office not later than 10.00 a.m. on Friday, 1st February, 1957.

The Council do not bind themselves to accept the lowest or any tender.

E. J. COPE-BROWN,  
Town Clerk. 4842

## Architectural Appointments Vacant

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

## KNIGHTSBRIDGE. — ARCHITECTURAL ASSISTANT required. Salary range £500—£800.—Telephone BEL. 3565, or Box 4777.

ARCHITECTURAL ASSISTANT required, with about four to five years' office experience. Write or telephone giving full particulars, including age and salary, to Hasker & Hall, Architects, 13 Welbeck Street, W.1. (WELBECK 0061). 4861

POST-INTERMEDIATE ASSISTANT required, in large London Office with widely varied practice. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1. Telephone HOB 7082. 3152

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Applications giving age, details of previous experience and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester 4. 3056

ADAMS, HOLDEN & PEARSON require ARCHITECTURAL ASSISTANTS.—Write, giving particulars of experience and salary required, to 38, Gordon Square, W.C.1. 4791

ARCHITECTURAL ASSISTANT required immediately for busy Birmingham practice. A.R.I.B.A. and Intermediate qualifications. Salary scale £500—£750, according to experience, etc. Write, giving full particulars and when available, to Wood & Kendrick & Williams, 57, Colmore Row, Birmingham, 3. 4812

APPLICATIONS are invited for the following appointments:—

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LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON have vacancies in their Welwyn Garden City Office for Senior and Junior Architectural staff. A large amount of varied interesting work on hand.—Write, stating age, salary, experience, to Louis de Soissons, Peacock, Hodges & Robertson, Midland Bank Chambers, Howardsgate, Welwyn Garden City. 4829

THERE are vacancies in the Divisional Architect's office for an ASSISTANT ARCHITECT at R.I.B.A. Intermediate Stage and for a STUDENT ARCHITECT who is studying or is prepared to study for the R.I.B.A. examination, at commencing salaries between £247 and £750 per annum.

Applications giving date of birth and full details of education, experience, etc., to Staff Department, National Coal Board, Northern (N.C.B.) Division, Whitley Road, Longbenton, Newcastle-upon-Tyne 12. 4838

ARCHITECTURAL ASSISTANTS required for small expanding practice. State experience and salary required. Box 4844.

SENIOR ASSISTANT required in City Architect's office. Must be experienced in preparing working drawings and design. Five-day week. Salary £1,150 per annum. Write Box 4852.



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AN unusual opportunity is offered to ARCHITECT-PLANNERS interested in progressive design, good housing layout and research in the rapidly expanding housing and planning fields in Canada.

Central Mortgage and Housing Corporation (the Crown Corporation which administers the National Housing Act of Canada) requires experienced architect-planners in its reorganised Architectural and Planning Department at Head Office in Ottawa to meet the requirements of the recently created Development Division and its new programme for improving the quality of planning and housing in Canada.

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Travel assistance grants to help defray the cost of moving to Canada will be given on the following scale: Married \$500. Single \$200.

Applications, stating age, marital status, qualifications and details of experience, together with the names and addresses of three referees, are to be addressed to Supervisor, Personnel Department, Central Mortgage and Housing Corporation, Head Office, Ottawa. 4850

**NEW ZEALAND** Architectural Practice mainly engaged commercial, bank and industrial work requires: (a) ASSISTANT ARCHITECT with A.R.I.B.A. salary range £825 to £900; or (b) ARCHITECTURAL ASSISTANT with at least seven years sound office experience, salary range £700 to £800. Prefer single man but would consider married. Salary rate applicable influenced by ability and qualifications, being commencing salary subject to good increases according to progress. Splendid opportunity for enterprising capable men, minimum 2 years assured engagement, applicants' passage provided, subject some minor conditions. Apply airmail with snapshot, and personal and experience details, plus small recent working drawing, to Mitchell & Mitchell and Partners, P.O. Box 187, Wellington, N.Z. 4847

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**A MANCHESTER** Brewery Company require ASSISTANT Architect's Department. Must be able to produce plans and details, have good building experience, knowledge of quantities and specifications. Age limit 50. Salary by arrangement. Box 4875.

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**ARCHITECTURAL ASSISTANTS** required for general works, in St. Albans Office. Write stating age, experience and salary required to: Keith Roberts, L.R.I.B.A., 17, Verulam Road, St. Albans, Herts. 4791

**MULTIPLE** Company in Midlands require in their Architect's Department a competent ASSISTANT. Good opportunity for capable man, 5 day week, and Superannuation Scheme in operation. Applications giving details of age, qualifications, experience, and salary required. Box 4794.

Henrique E. Mindlin

## Modern Architecture in Brazil

Preface by Professor  
Sigfried Giedion

THIS BOOK is the first full-scale attempt to show modern Brazilian architecture in all its aspects. Since the Museum of Modern Art in New York published its well-known work *Brazil Builds* (now out of print) which gained for Brazil's young architects immediate recognition in other countries, these brilliant designers have further developed their daring innovations and projects, thus making an invaluable contribution to modern architecture. Inspired largely by the ideas of le Corbusier, Gropius, and Mies van der Rohe, they have thoroughly studied the phenomenon of sunlight and have created many kinds of protective devices in the form of *brise-soleil*: and they have enthusiastically explored the plastic possibilities of reinforced concrete construction. The results they have already achieved in both these developments are now being applied the world over.

The author, Henrique E. Mindlin, one of the foremost living Brazilian architects, speaks with authority derived from direct personal experience of the problems discussed. Professor Giedion says, in his Foreword: 'He has handled his subject in a very straightforward way, both in his introduction and, especially, in his brief, objective explanations of the many illustrations.'

After a short but interesting historical survey and explanation of the main factors in modern Brazilian architecture, Mr. Mindlin discusses and illustrates the work of over 60 of his fellow-architects, giving a selection from their most important jobs, many of which have been completed very recently: much of this latest development has hitherto



remained unknown outside Brazil. The survey comprises well over 100 examples, drawn from all types of building, including houses, blocks of flats, hotels, schools, churches, hospitals, public buildings and recreation centres; and in addition there are examples of city planning and of landscape architecture.

The book contains over 430 photographs and 300 drawings (all drawn for this book); and includes a selective bibliography of all the important projects and jobs of each architect, thus extending its scope far beyond the work illustrated.

Size 12 by 8½ in., 264 pages with over 700 illustrations. Price 84s. net. Postage 1s. 9d.

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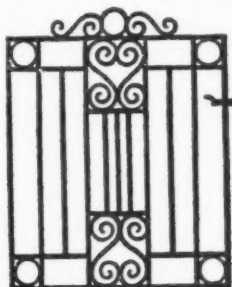
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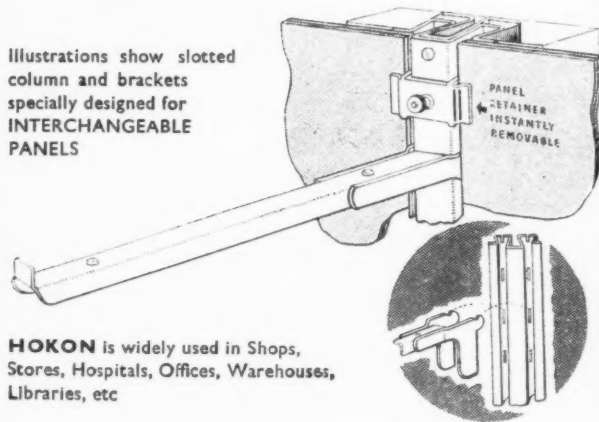
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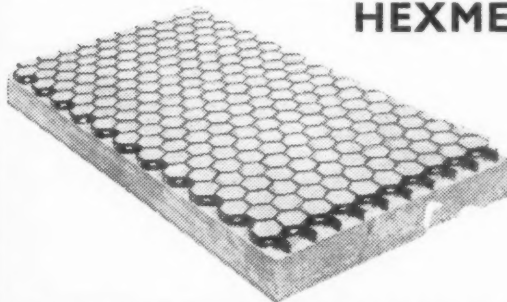
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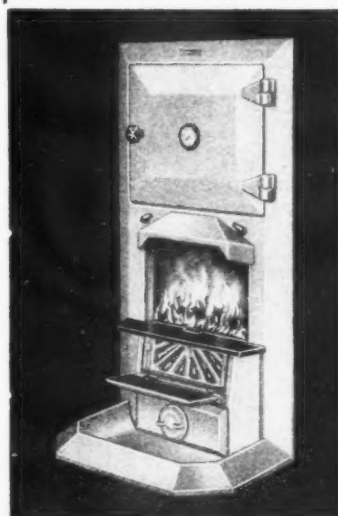
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