

THE ARCHITECTS' JOURNAL



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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
IWA	Inland Waterways Association. 14, Great James' Street, W.C.2.	Chancery 7718
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
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary: Trevor Dannatt, 6, Fitzroy Square, W.1.	Euston 7171
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. 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, Victoria Embankment, W.C.	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 Asphalt 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
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association. 14, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	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 St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 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 5051
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

standard contents

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

NEWS and COMMENT

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SUPPLEMENT

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HOUSING STATISTICS

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[Vol. 121

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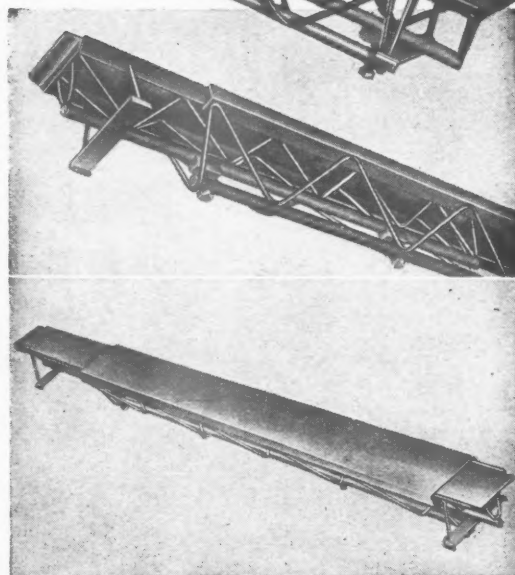
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D	10 ft.	15 ft.	131

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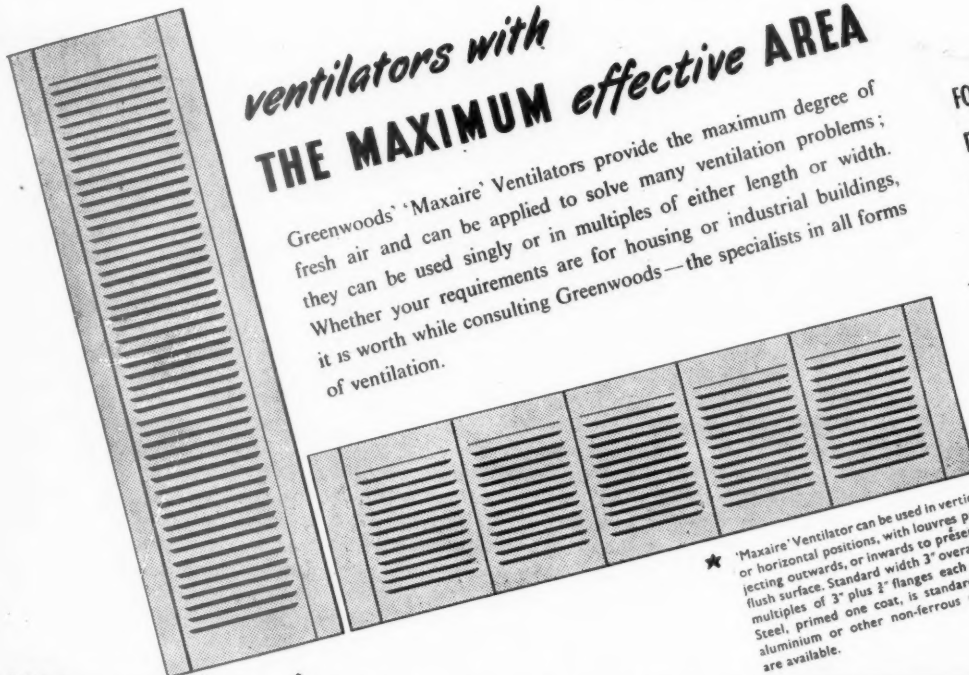
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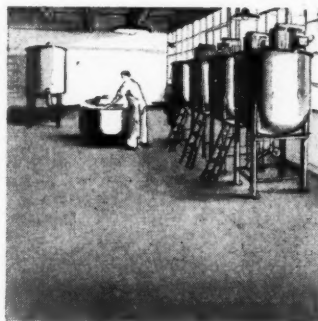
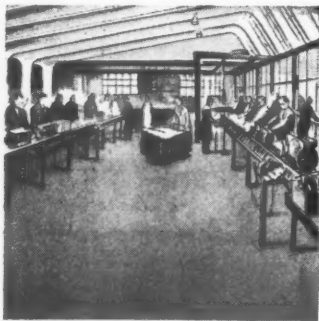
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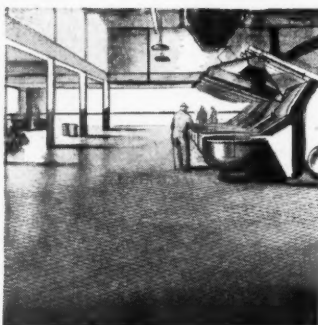
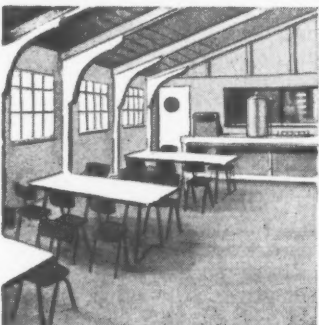
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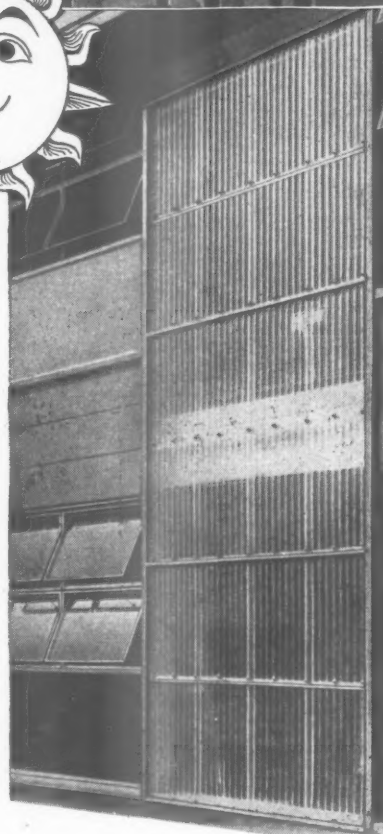
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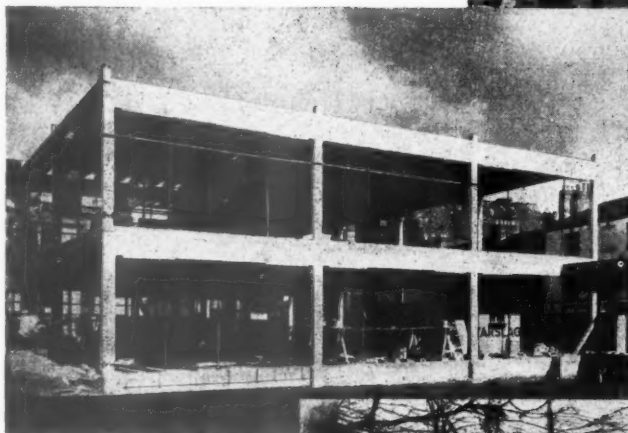
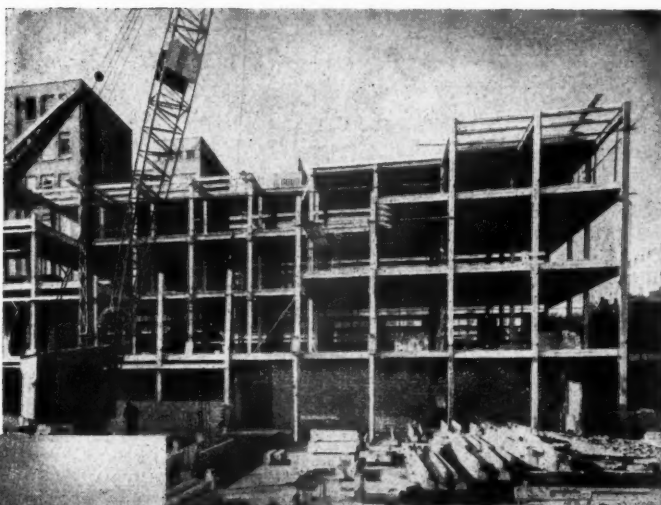


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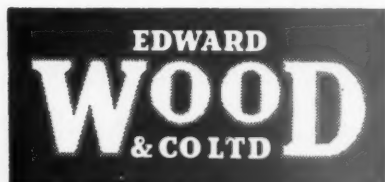


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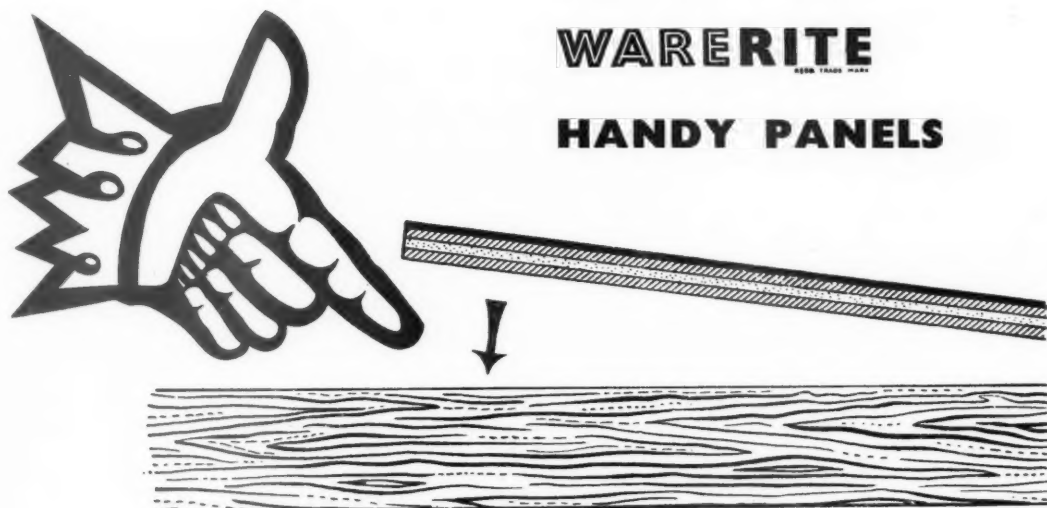


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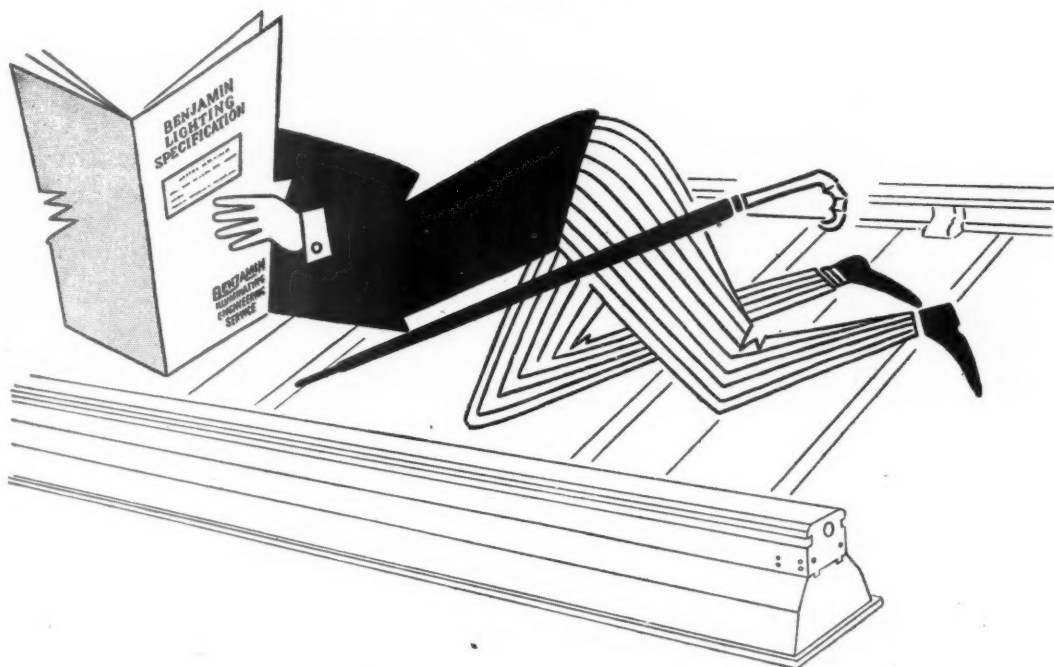
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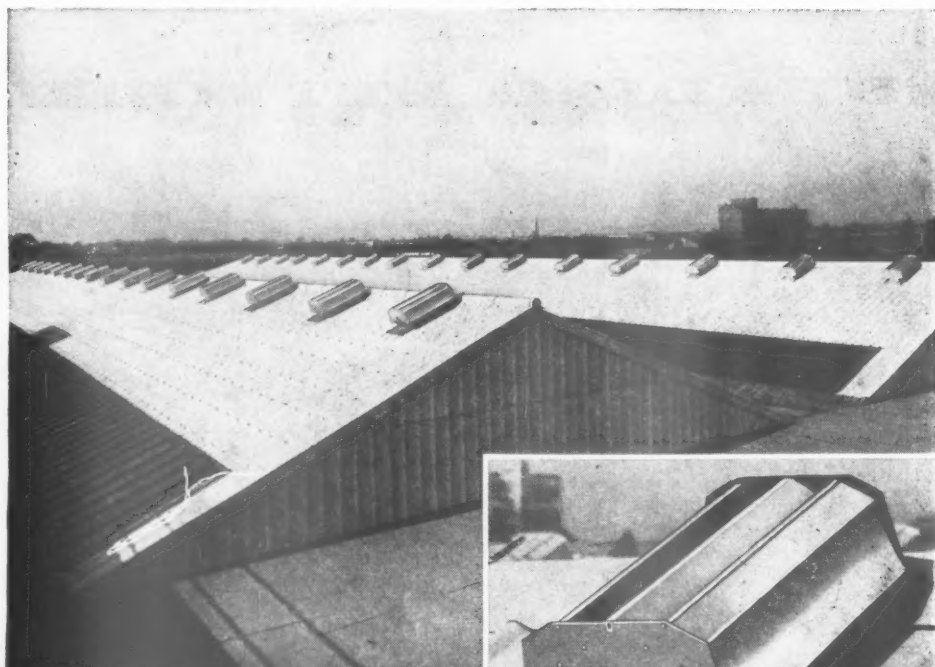
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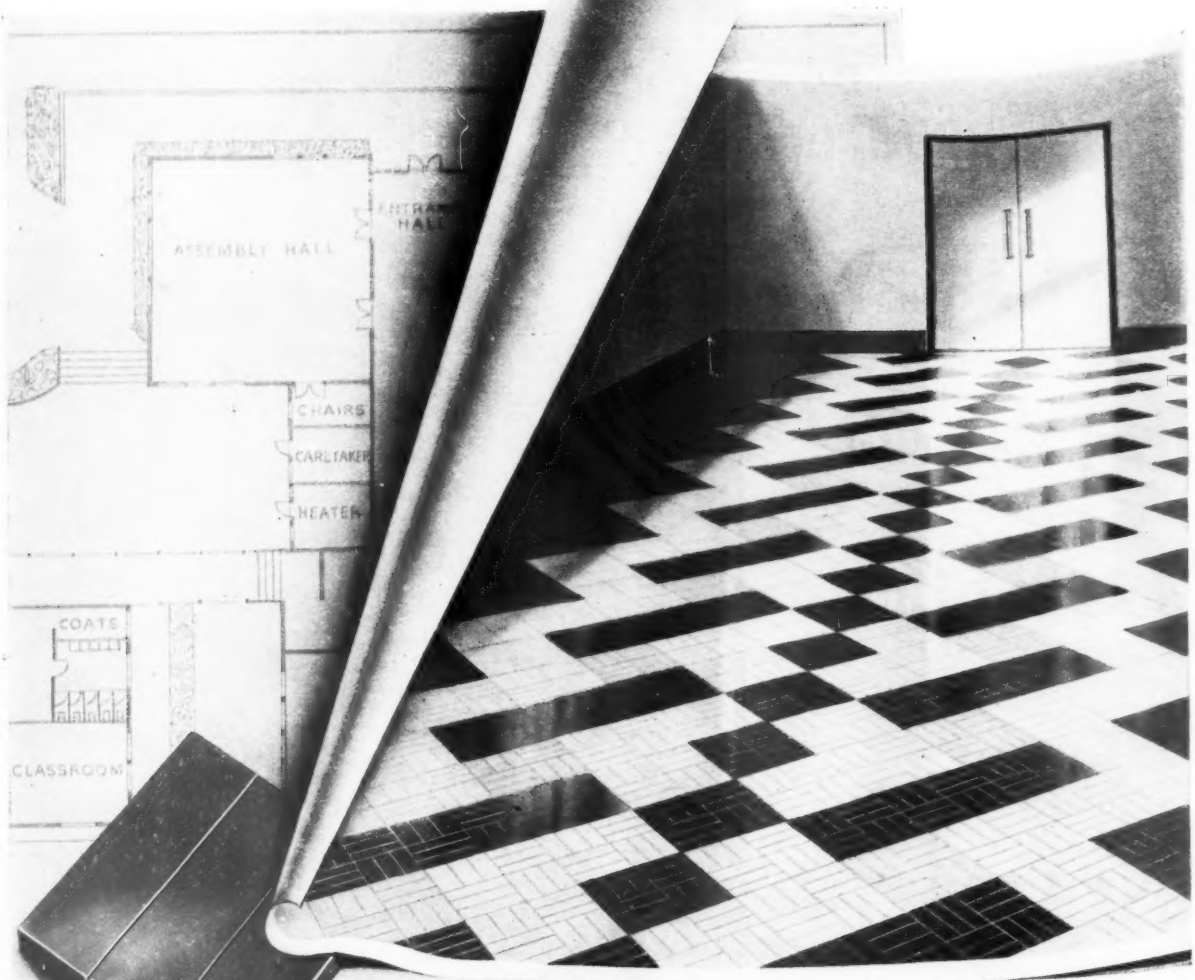


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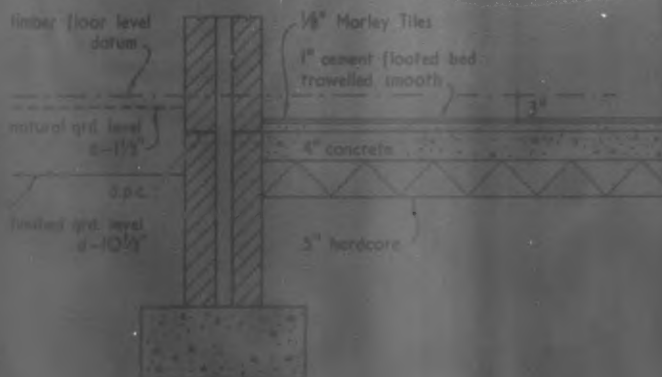
COST LESS



The illustrations on the right summarise the detailed information on two of the fourteen examples of flooring costs given in the Marley publication FF.2. The costs throughout the booklet have been compiled by a reputable independent firm of chartered quantity surveyors, and are based upon current competitive prices for houses.

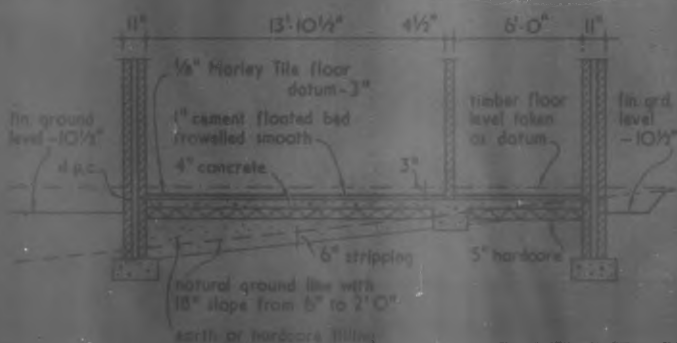
EXAMPLE A For Normal Type of Site

38 yds. sup. Excavate, remove and deposit @ 1/rd.	2 1 2	5 ft. run Form pipe chase @ 1/rd.	5 0
4 yds. cube Excavate to reduce to levels @ 4/rd.	19 0	31 yds. sup. 1" screed @ 4/rd.	7 9 10
4 yds. cube Remove and spread surplus @ 5/rd.	1 0 0	31 yds. sup. 1" Marley Floor Tiles @ 11/3rd.	17 10 1
51 yds. sup. Hardcore and blinding @ 3/10rd.	5 18 10	6 ft. run Galvanised steel bar as step @ 3/10rd.	11 3
31 yds. sup. Concrete bed 4" thick @ 5/10rd.	9 0 10		
		Total for Example A	£44 16 0



EXAMPLE C2 For Sloping Site (18" crossfall from front to rear)

38 yds. sup. Excavate, remove and deposit @ 1/rd.	2 1 2	31 yds. sup. 1" screed @ 4/rd.	7 9 10
91 yds. cube Filling to make up level @ 4 yd.	2 3 11	31 yds. sup. 1" Marley Floor Tiles @ 11/3rd.	17 10 1
31 yds. sup. Hardcore and blinding @ 3/10rd.	5 18 10	6 ft. run Galvanised steel bar as step @ 3/10rd.	11 3
31 yds. sup. Concrete bed 4" thick @ 5/10rd.	9 0 10	DEDUCT	45 0 11
5 ft. run Form pipe chase @ 1/rd.	5 0	91 yds. cube Remove surplus @ 5/rd.	2 6 3
		Total for Example C2	£42 14 8



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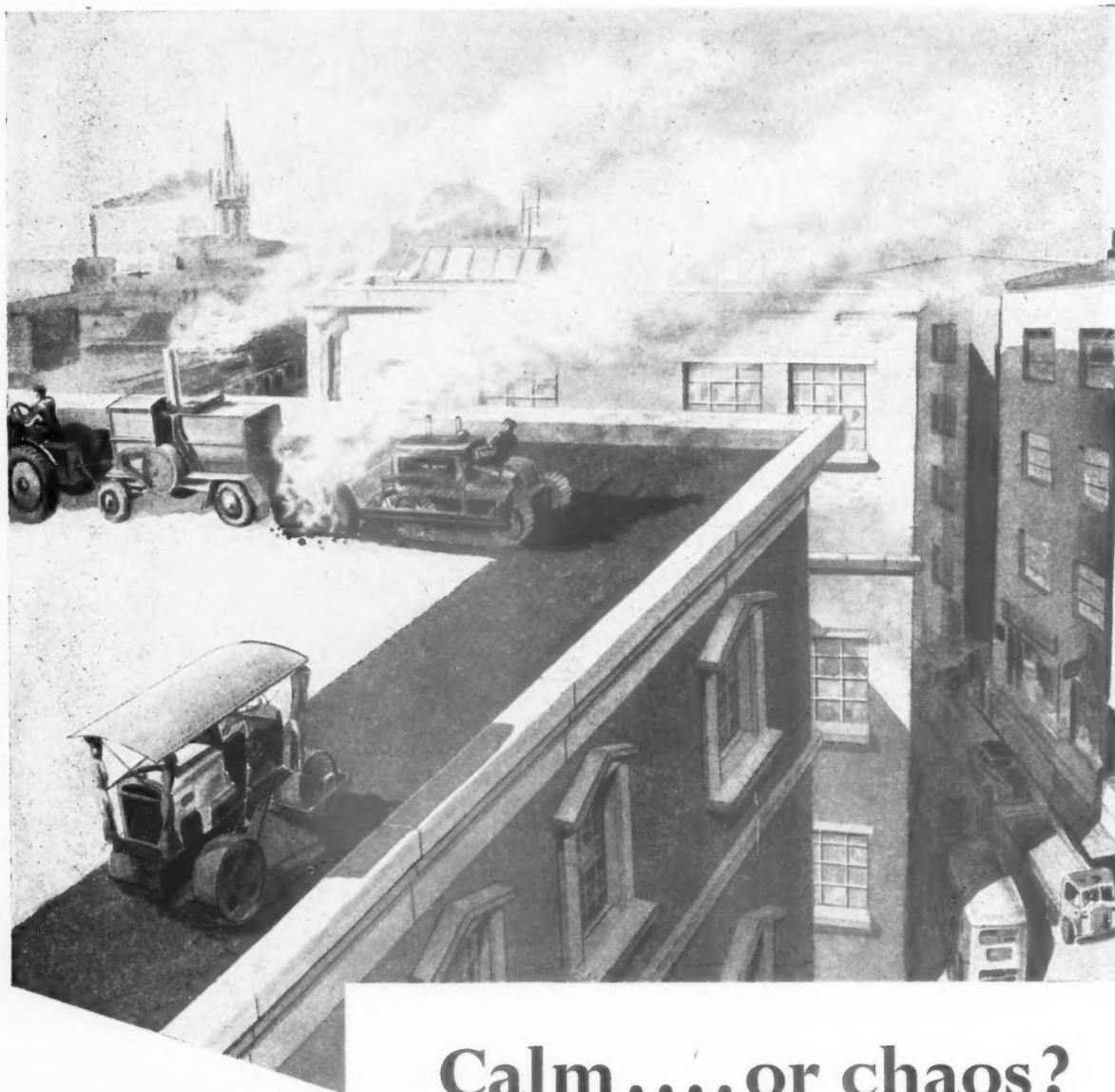


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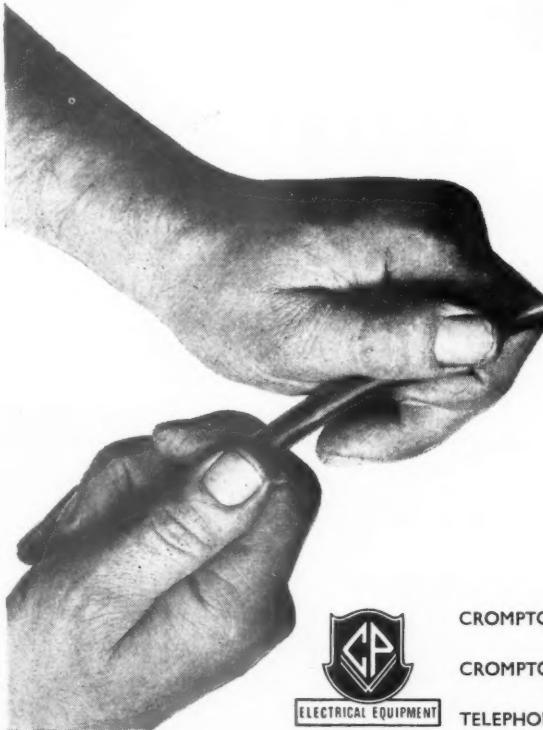




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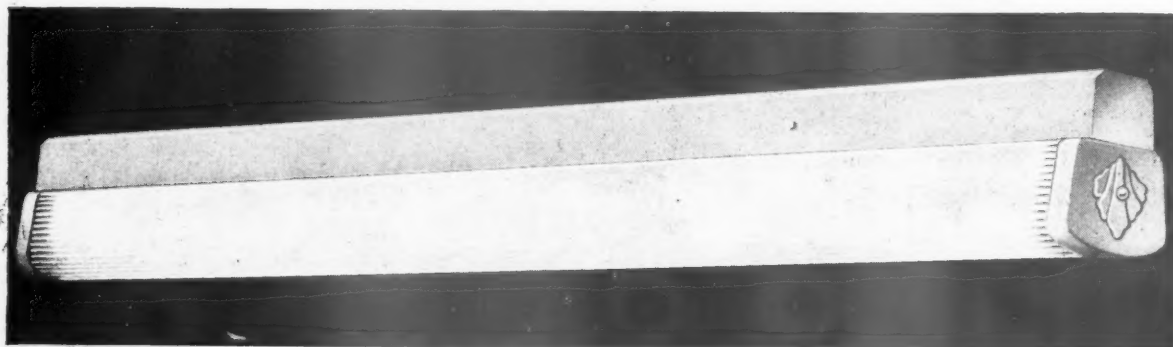
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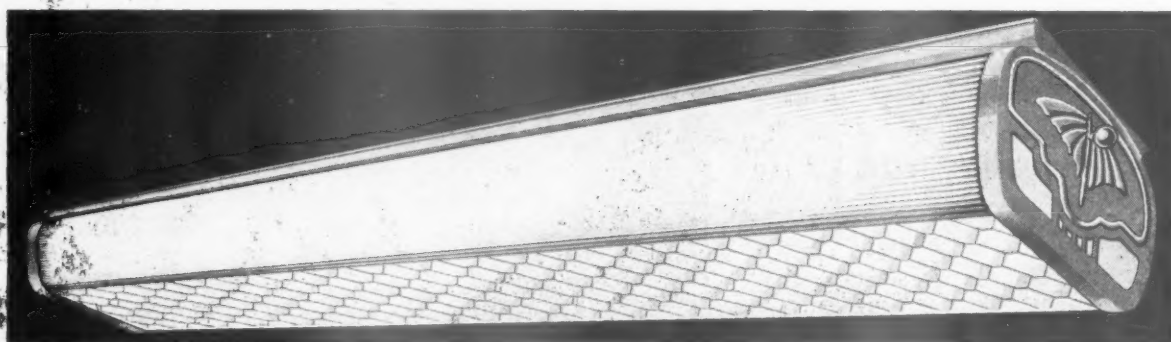
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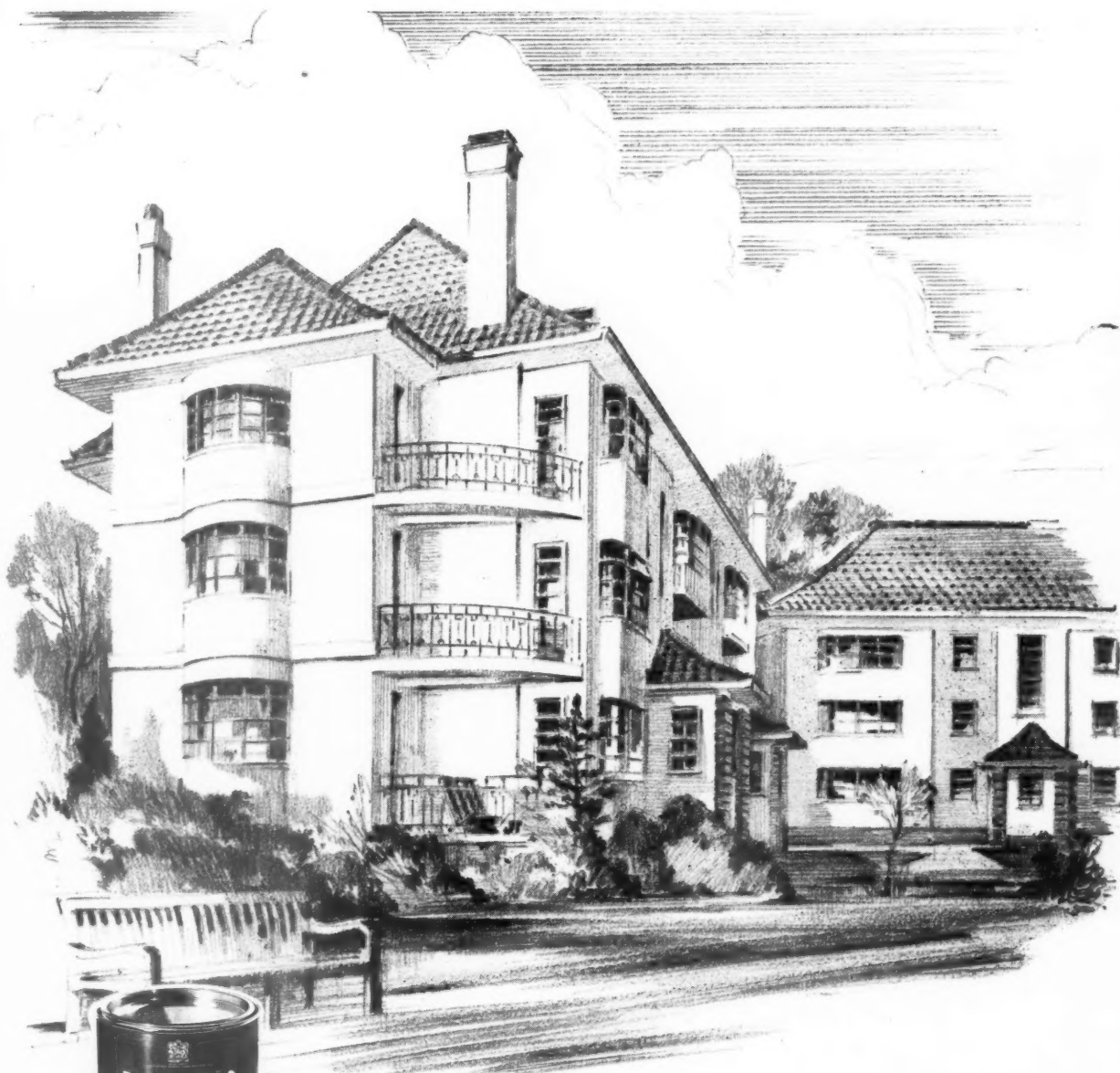
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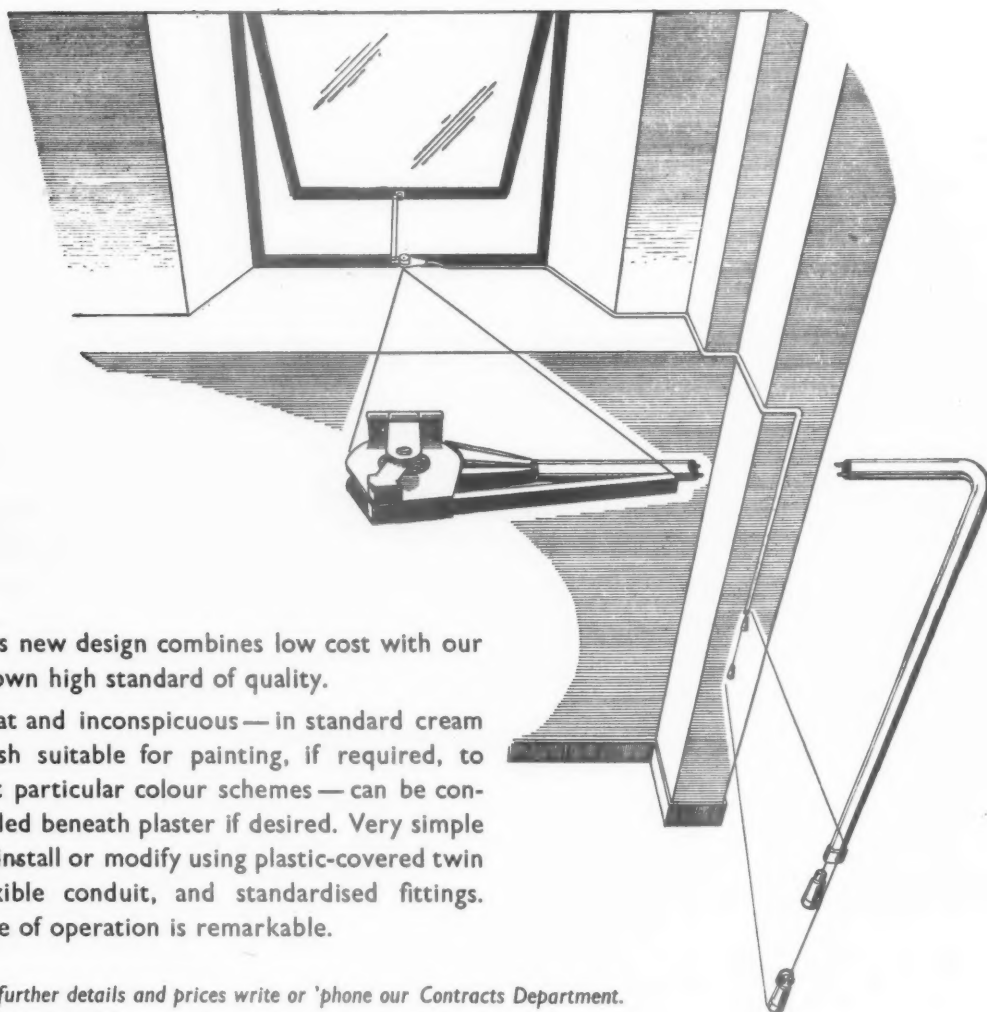
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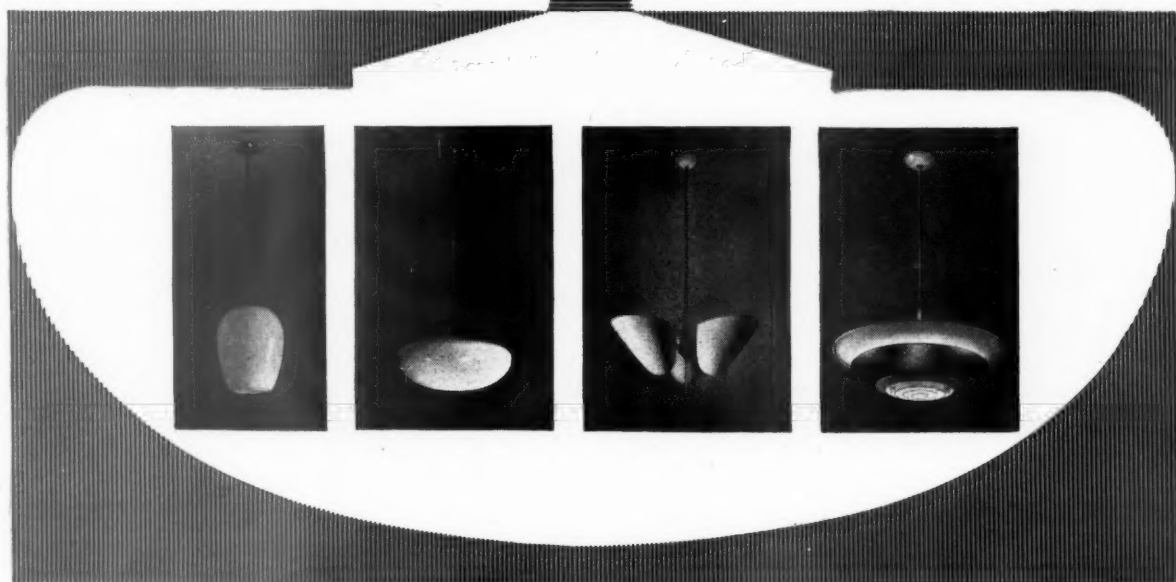
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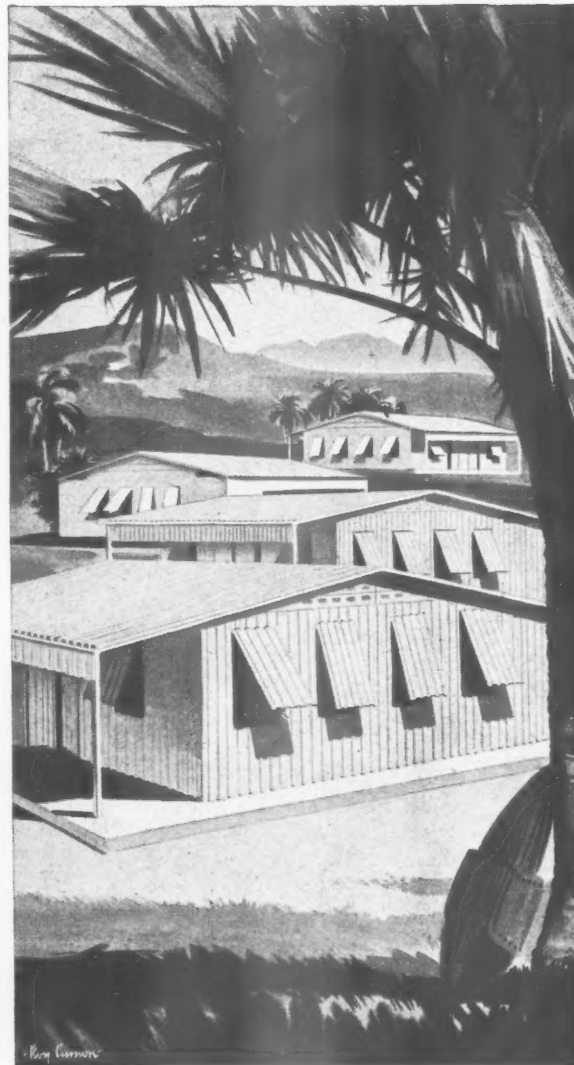
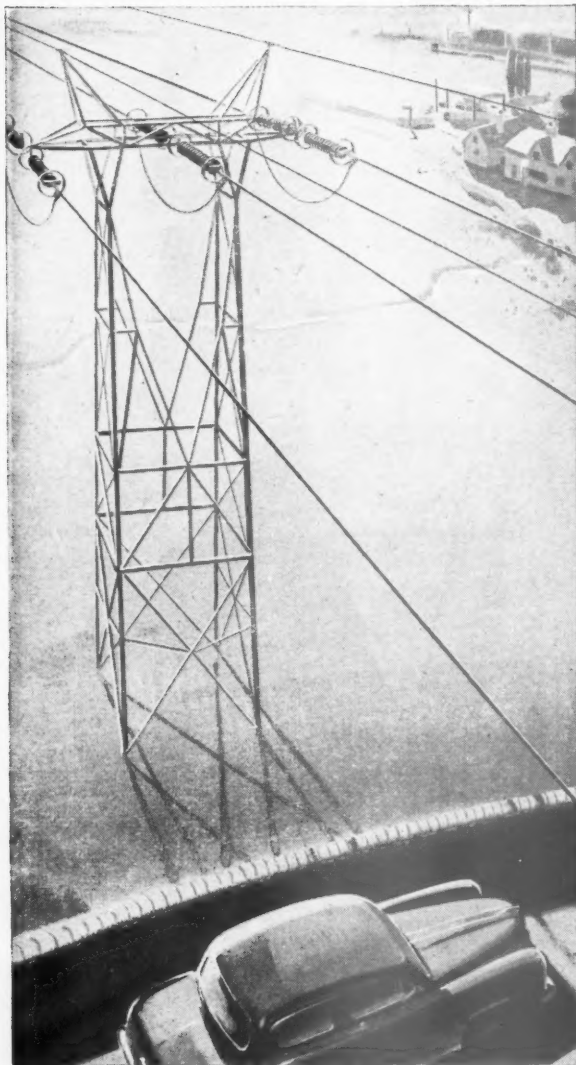
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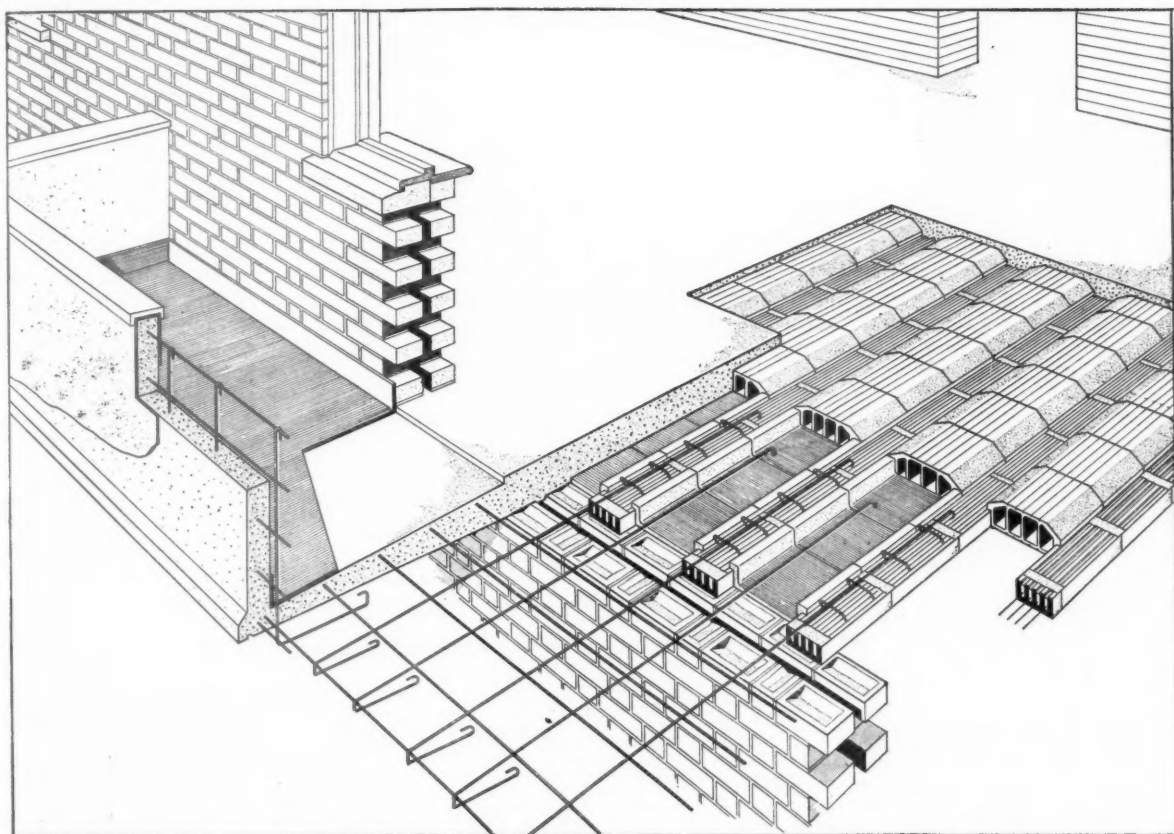
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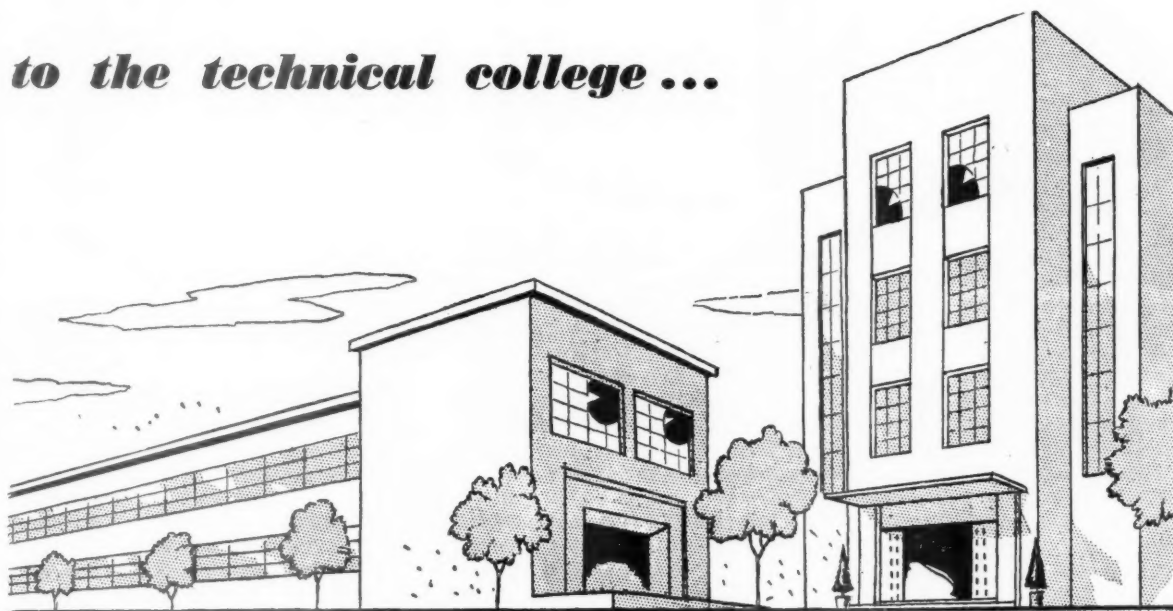
The lintol has a removable front portion to enable the Unit to be built in immediately above the appliance, thus enabling a fireplace surround of more pleasing proportions to be used. The front attachment is removed when the appliance is fitted and bedded back in position when any necessary infilling around the back and sides has been carried out. The type of front attachment will vary according to the design of the heating appliance and fireplace surround.

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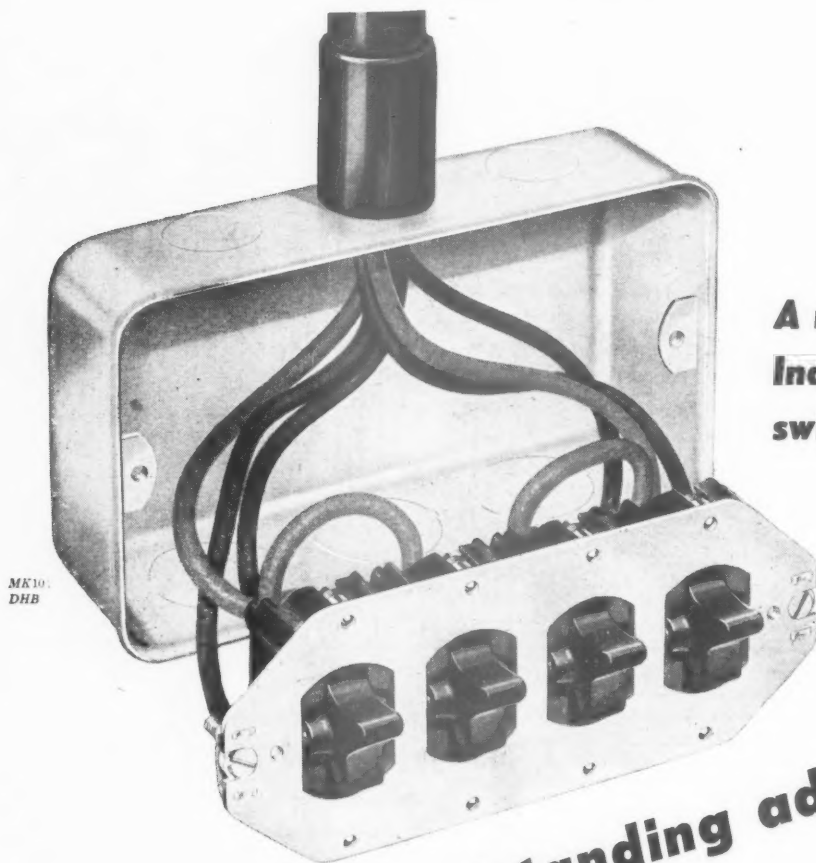
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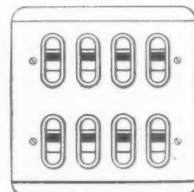
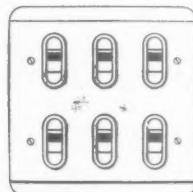
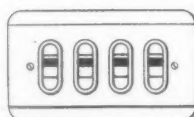
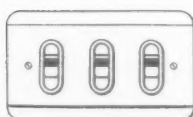
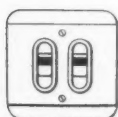
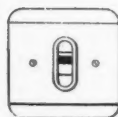
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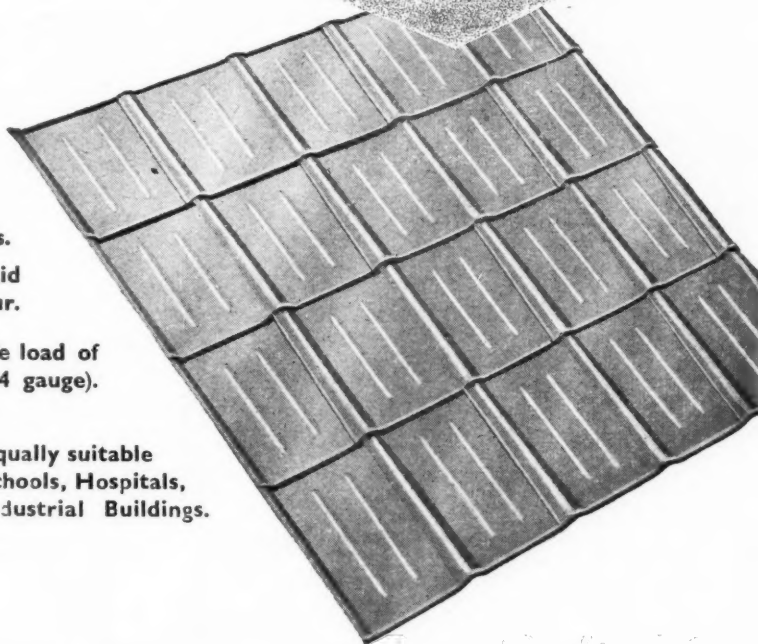


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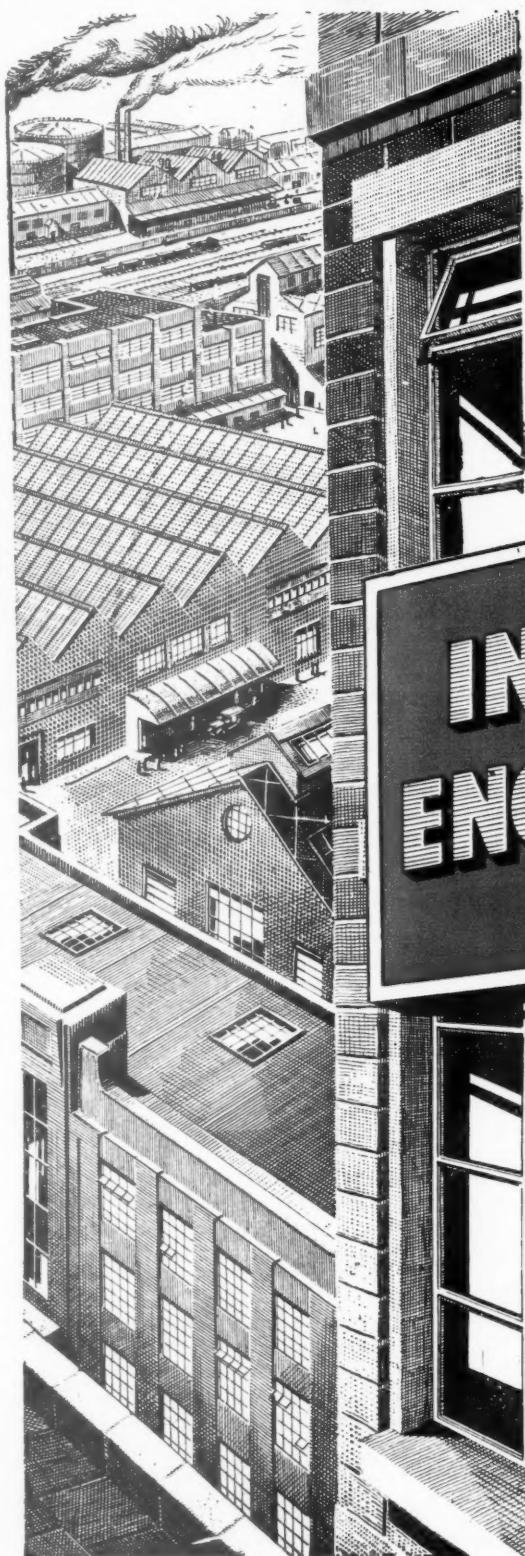


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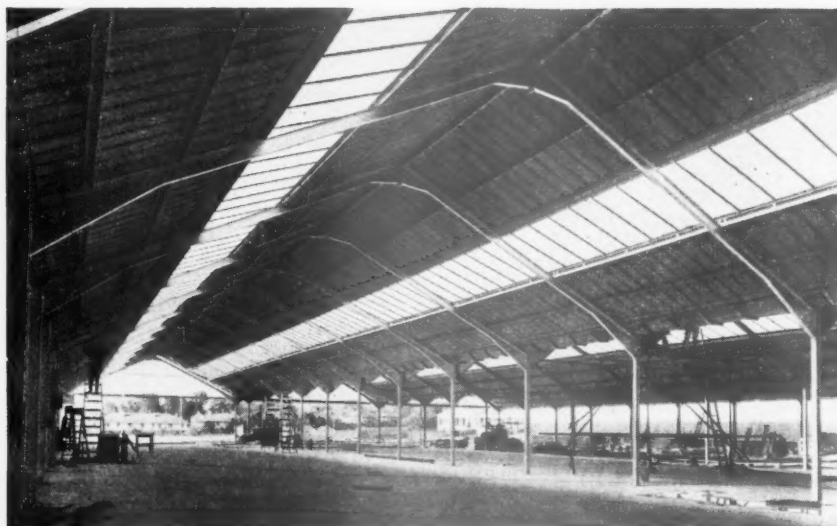
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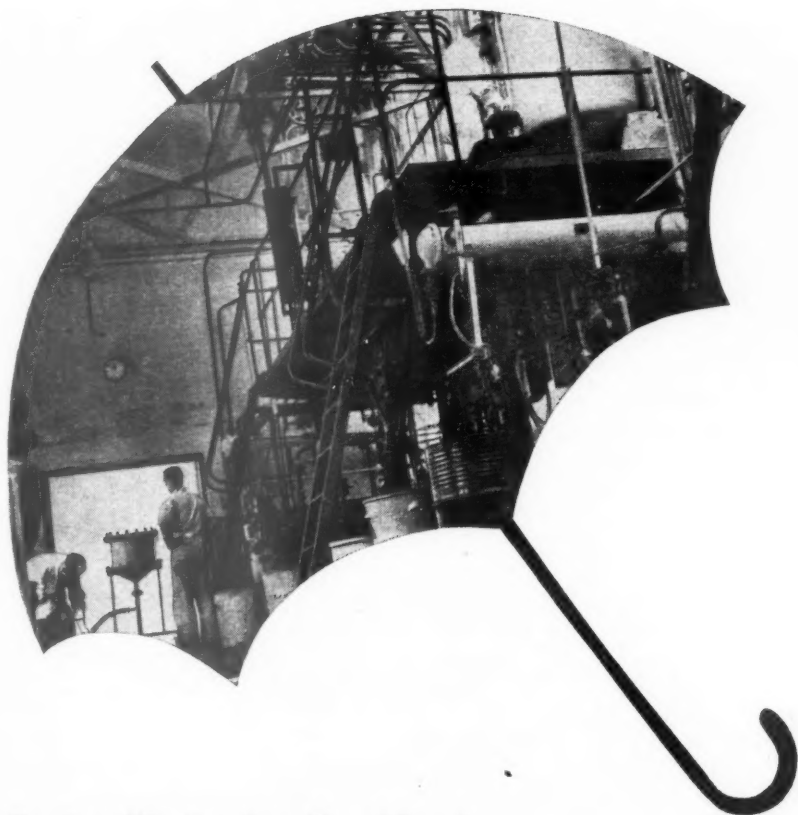
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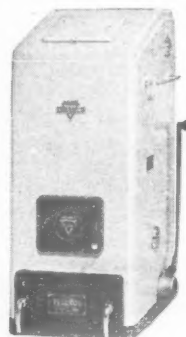


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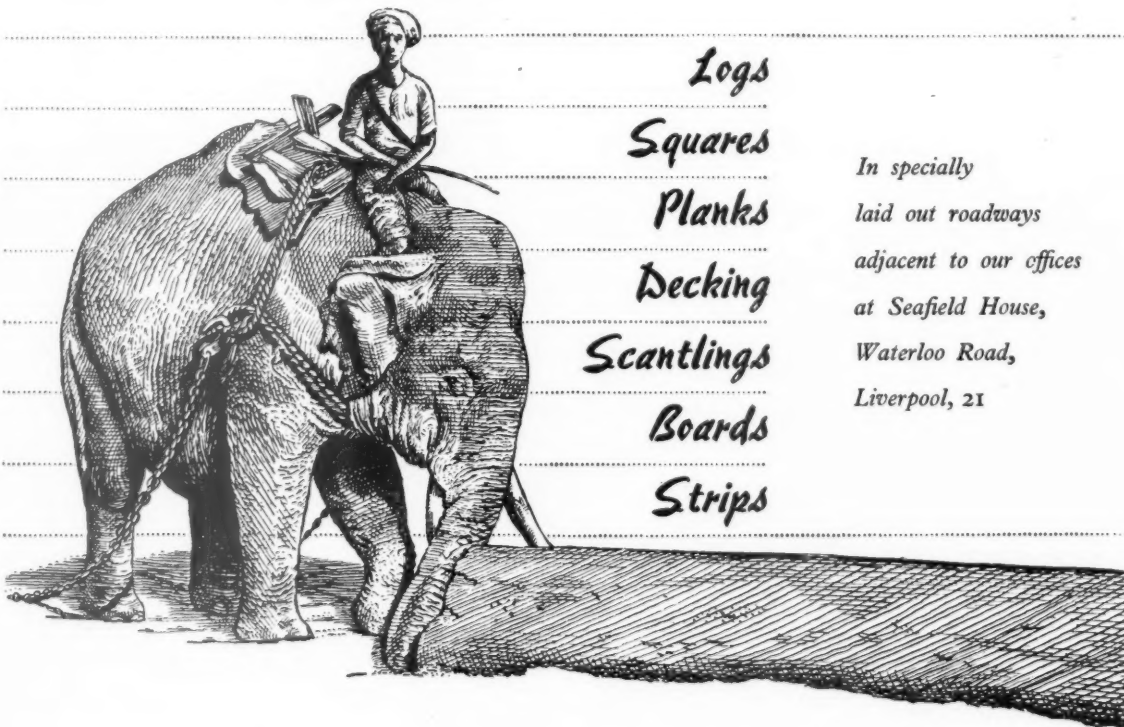


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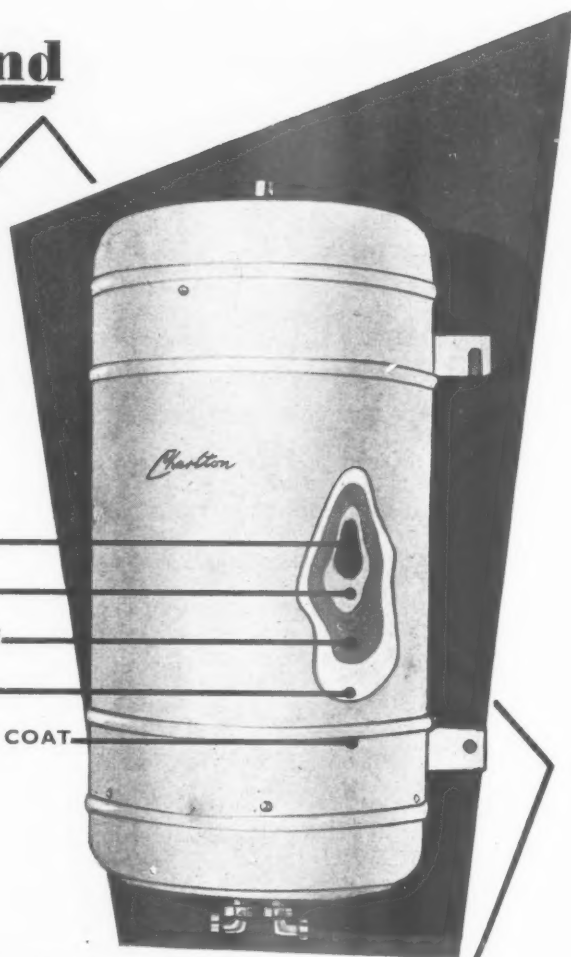
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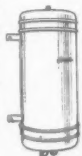
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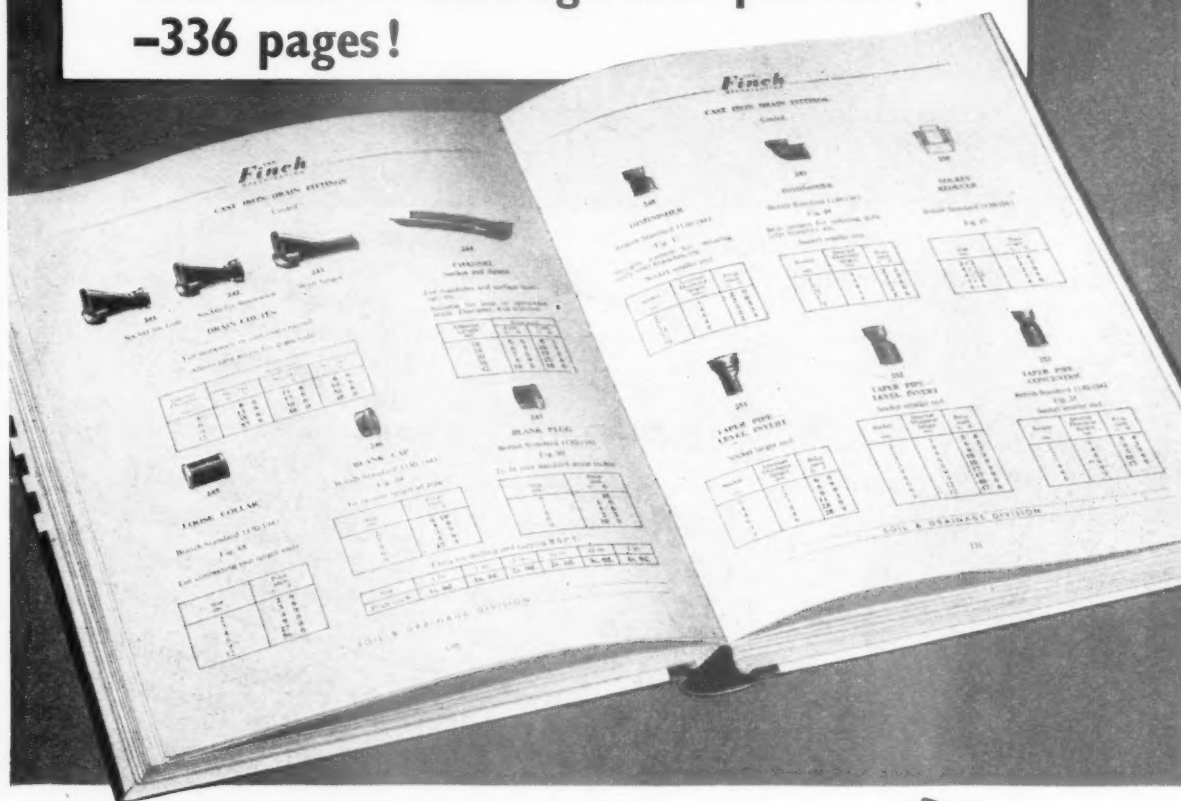
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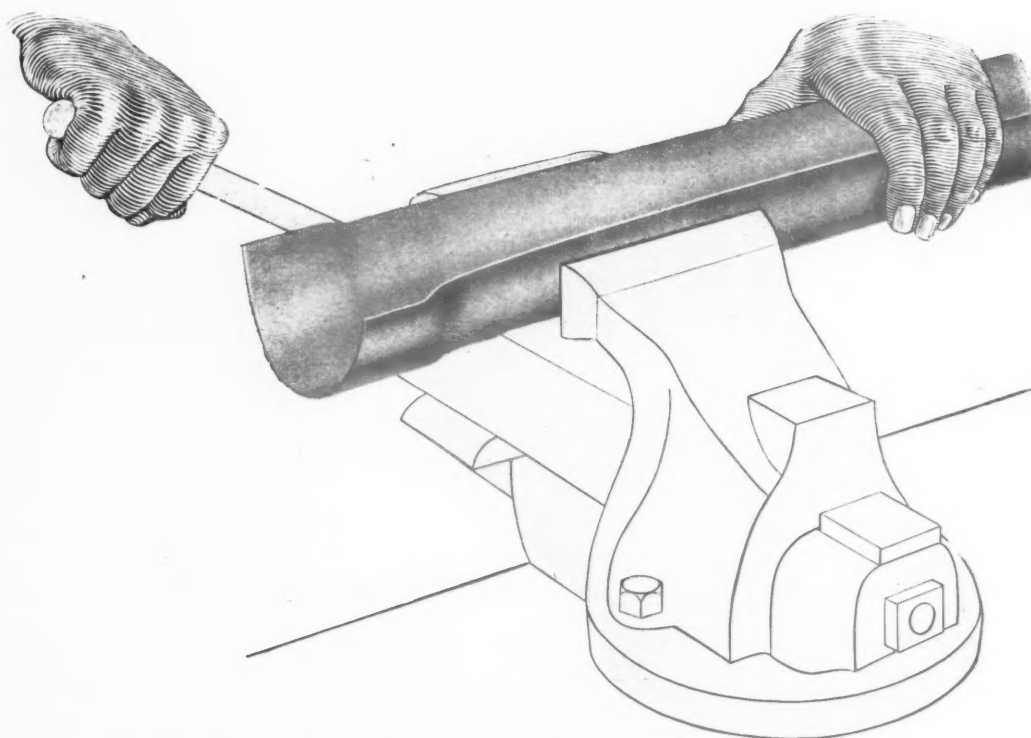
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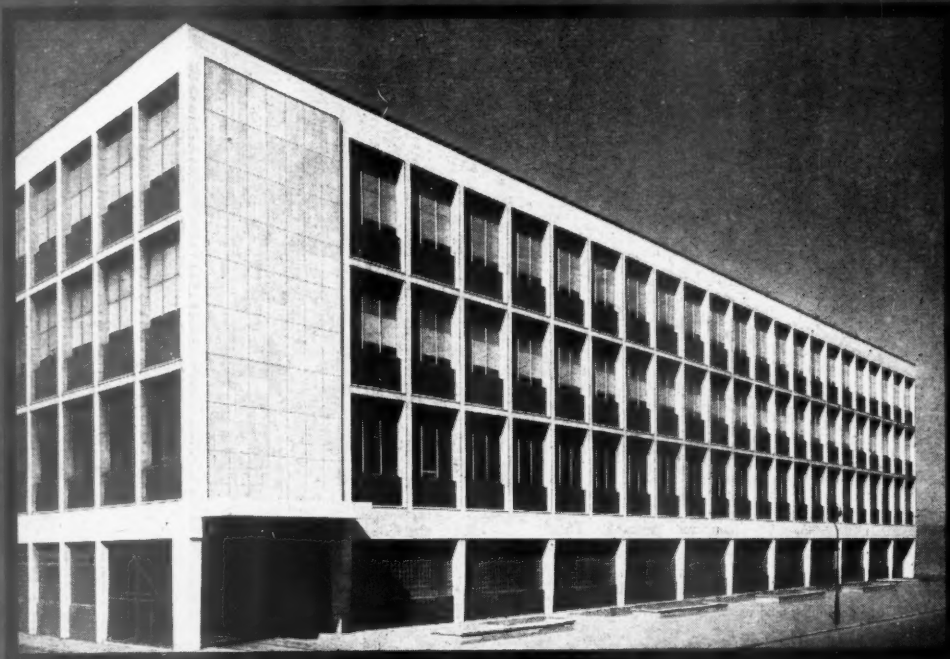
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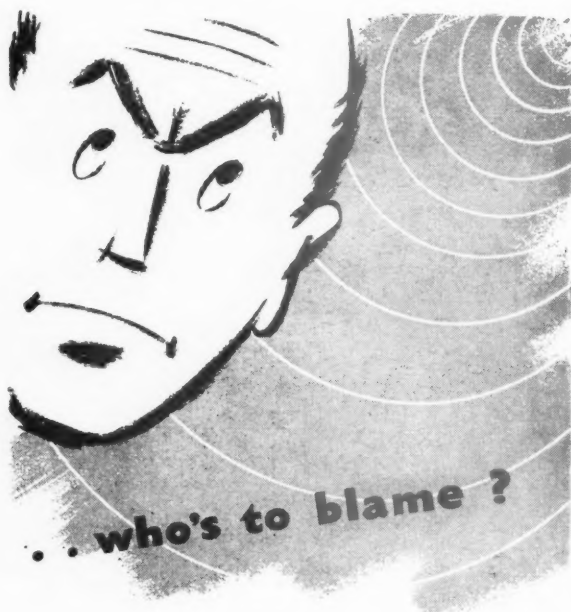
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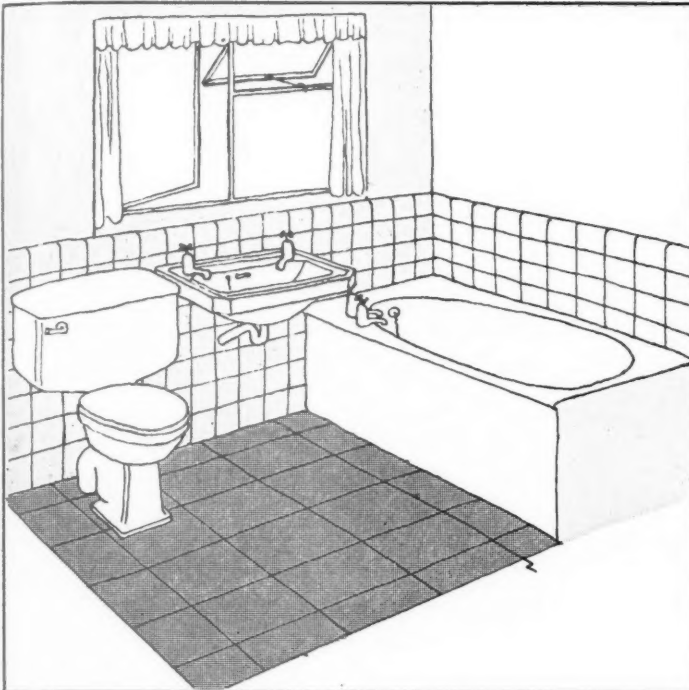
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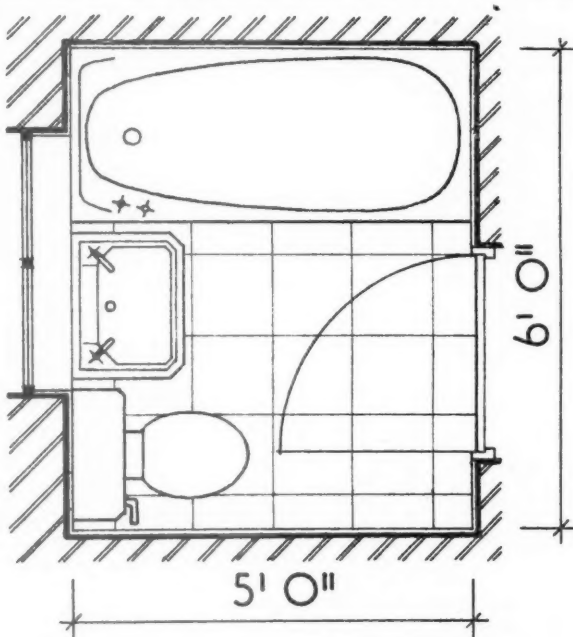
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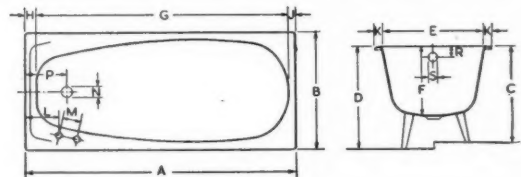
The lavatory basin and low-level w.c. suite are of standard sizes, and nothing is chased or recessed into the wall; the door is hinged.

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SPECIFICATION :

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A	B	C*	D	E	F
5' 0"	2' 2"	1' 9 $\frac{1}{2}$ "	1' 11"	1' 10 $\frac{1}{2}$ "	1' 3 $\frac{1}{2}$ "
1524 m.m.	660 m.m.	546 m.m.	584 m.m.	572 m.m.	394 m.m.
G	H	J	K	L	M
4' 8"	2 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	7 $\frac{1}{2}$ "	4"
1422 m.m.	64 m.m.	38 m.m.	45 m.m.	184 m.m.	102 m.m.
N	P	R	S	* Standard Height unless No. 3A Foot is specified	
2 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "		
57 m.m.	235 m.m.	60 m.m.	48 m.m.		

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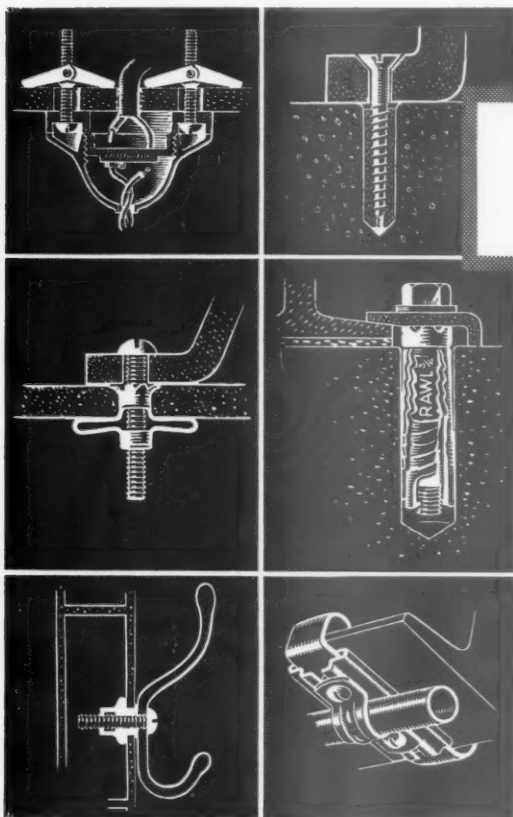
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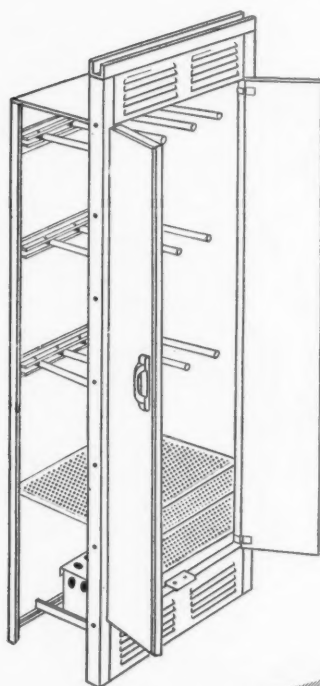
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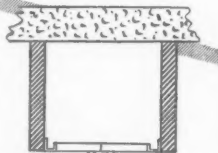
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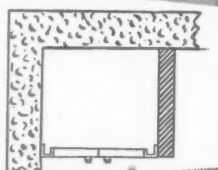
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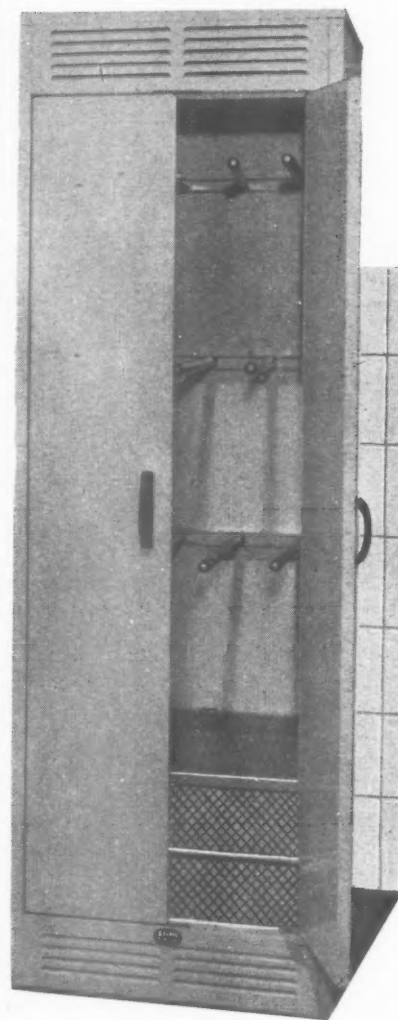
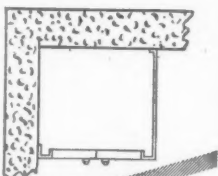
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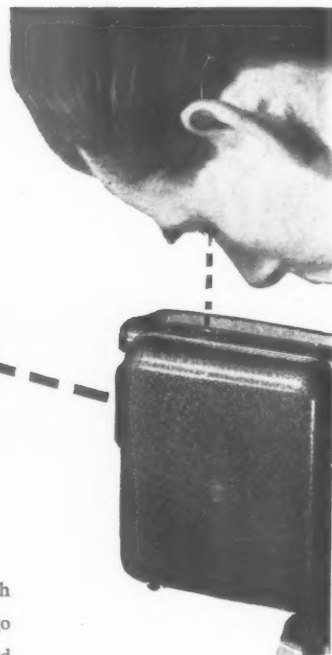
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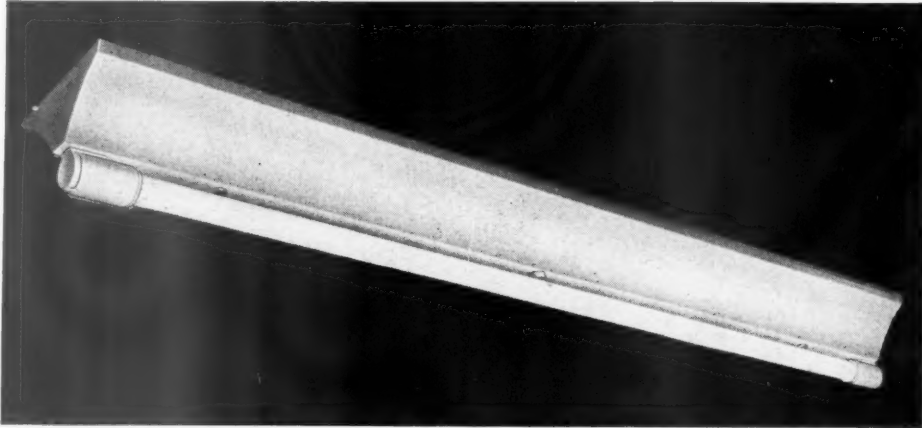
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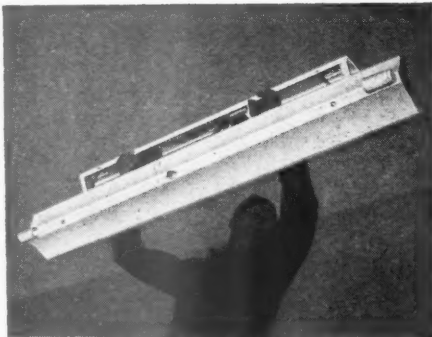
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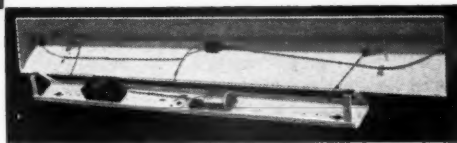
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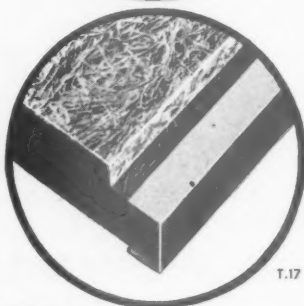


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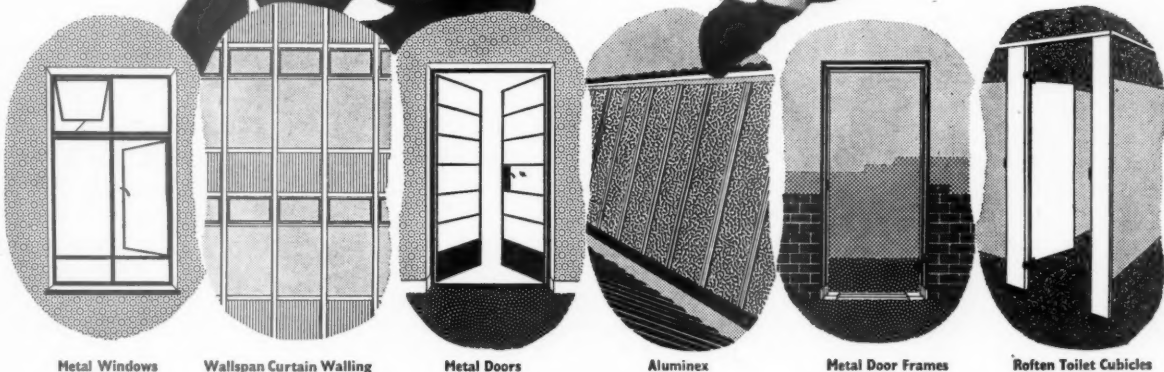
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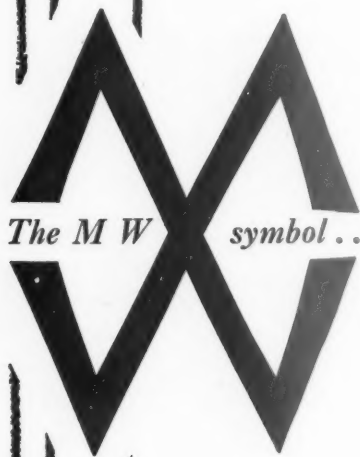
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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

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NEW BARBICAN LATEST

The New Barbican committee are not, I am glad to see, taking their rebuff from the City Corporation lying down. They have decided to appeal to the Minister—which appeal may perhaps serve the useful purpose of causing the Minister to consider whether he should not intervene and insist on the City adopting a comprehensive planning policy for the area north of St. Paul's.

The danger at the moment is that in their anxiety to push forward with rebuilding the City will sanction isolated schemes covering parts of the same area, and we shall have got back to piecemeal development—which everyone

agrees is wrong but which no one seems to be able to escape from.

The Minister will have a knotty point of procedure to settle. The City Corporation said that the New Barbican application was invalid, because it had no industrial development certificate from the Board of Trade. BOT say that it didn't need to have one. New Barbican say: (a) if they don't need to have one their application is valid after all; (b) if they do, the City Corporation has no right to condemn a scheme that hasn't been properly submitted to them.

In such ways architects and planners are continually involved in bureaucratic manœuvres for position; and meanwhile cities get rebuilt as though planning hadn't been thought of—or at least hadn't been understood.

FAILED COVENTRY

Now that a section of the professional Press has followed hard upon the heels of the Coventry papers in giving the "short list" of applicants for Donald Gibson's job, they may as well be given here too. They are: V. Hamnett, executive architect to Harlow New Town Development Corporation; D. R. Harper, chief architect to Crawley New Town Development Corporation; A. G. Ling, senior planning officer to the LCC; D. E. Percival, deputy city architect of Coventry, and L. H. Wilson, city architect at Canterbury.

At the same time ASTRAGAL does protest against the practice of publishing such "short lists." The oriental student may treasure his "B.A. Fail, Oxon."

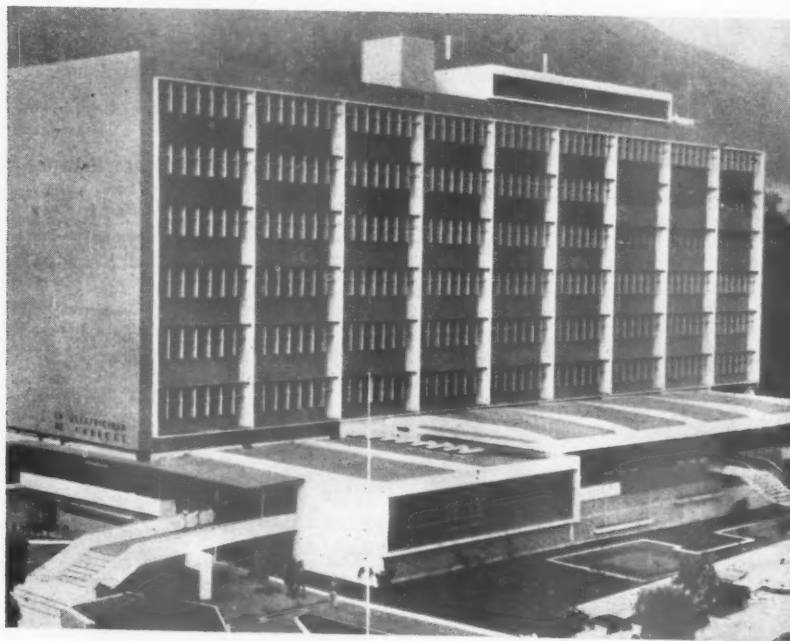
but an appointment such as that of chief architect to a blitzed city is rather different. The list also raises questions that might have been better unraised... as to whether Arthur Ling is stepping up or down, and what—if anything—is wrong in at least two of the New Towns. Coventry, in issuing this list to the Press, blundered, but is at least running true to recent form.

ANOTHER POLICY

Mr. Kenneth Albert's new Fabian research pamphlet* contains nothing very new. Much of what the author says is based on the reports of the Working Party and the Anglo-American productivity team: he also wants MOW to be responsible for all building works, with a central purchasing division for materials; and jobs over £5,000 to be carried out by construction units (presumably the equivalent of the present contracting firms) all of which shall be limbs of a public construction corporation. Nationalizing the contractors is of course, an idea which pops up very regularly, but ASTRAGAL is still not at all sure that it would work, though that doesn't mean he thinks contractors are perfect as they are. The trouble with nationalizing an industry like ours is that new materials and methods are cropping up all the time, and the industry must be allowed to experiment and make mistakes if it wants to.

Once we reach a state where questions can be asked in Parliament about losses on a particular job, then the construction corporation will inevitably play for safety and the acceptance of new materials will be even slower than it is now.

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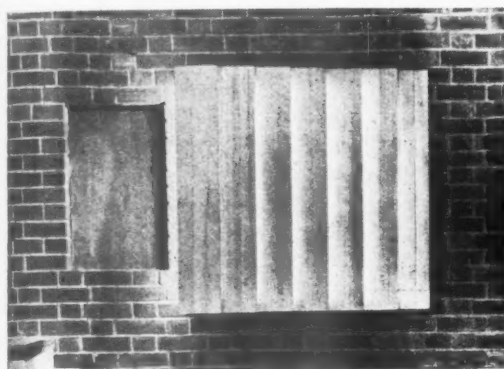
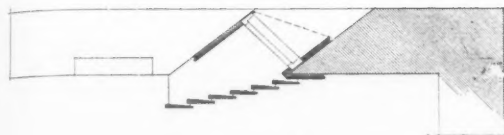
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AGENTS THROUGHOUT THE WORLD

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Top, plan of a concealed window designed to throw light on the speaker's platform in Alvar Aalto's Town Hall at Saynatsalo. Above, the baffled window. Right, part of one of the two unusual timber trusses spanning the town hall. These illustrations are from a book on Alvar Aalto reviewed by ASTRAGAL this week.



WIZARD TYPE

It might sound a bit corny to call Alvar Aalto the Wizard of the North, but for the fact that Eduard Neuenschwander, in his new book on Aalto,* says that in Finland the educated man is still regarded as something of a magician, a creator, and enjoys popular interest and support in his activities. Certainly there must be something peculiar about the Finnish situation, because Aalto has contrived, in a most successful way, to become more and more Finnish, without ever going provincial or ceasing to be an architect of international standing.

■

The point is brought out by a picture in Neuenschwander's book which shows what appears, at first blush, to be an abstract construction after the Victor Pasmore manner, but proves in the end to be a rather crafty sort of squint which directs necessary light across the speakers' table in a lecture hall, without glaring in the eyes of the audience, and is, when you come to look at it (as you can, above) almost a piece of routine Finnish vertical boarding. The whole of the work shown in this admirable publication has the same sort of quality—he takes the inevitable and immediately available wood and brick, and uses them with the radical originality which we only expect in pre-stressed concrete or space-frames. Any-

* *Alvar Aalto*, by Eduard and Claudia Neuenschwander. Architectural Press, 50s.

body who is worried about regionalism versus internationalism should go away and thoroughly digest this book—those who are merely interested in architecture may even have read it already.

TRUE REMEMBRANCES

Sir Edwin Lutyens, without quite so much of his genius, would have been on a par with Philip Tilden. The same world of rich Edwardians as haunts a Jekyll garden also haunts the pages of Mr. Tilden's autobiography.* It is not only a dead world; it was never anyway a very real one. Wernhers, Liptons,

* *True Remembrance*, by Philip Tilden. Country Life, 25s.



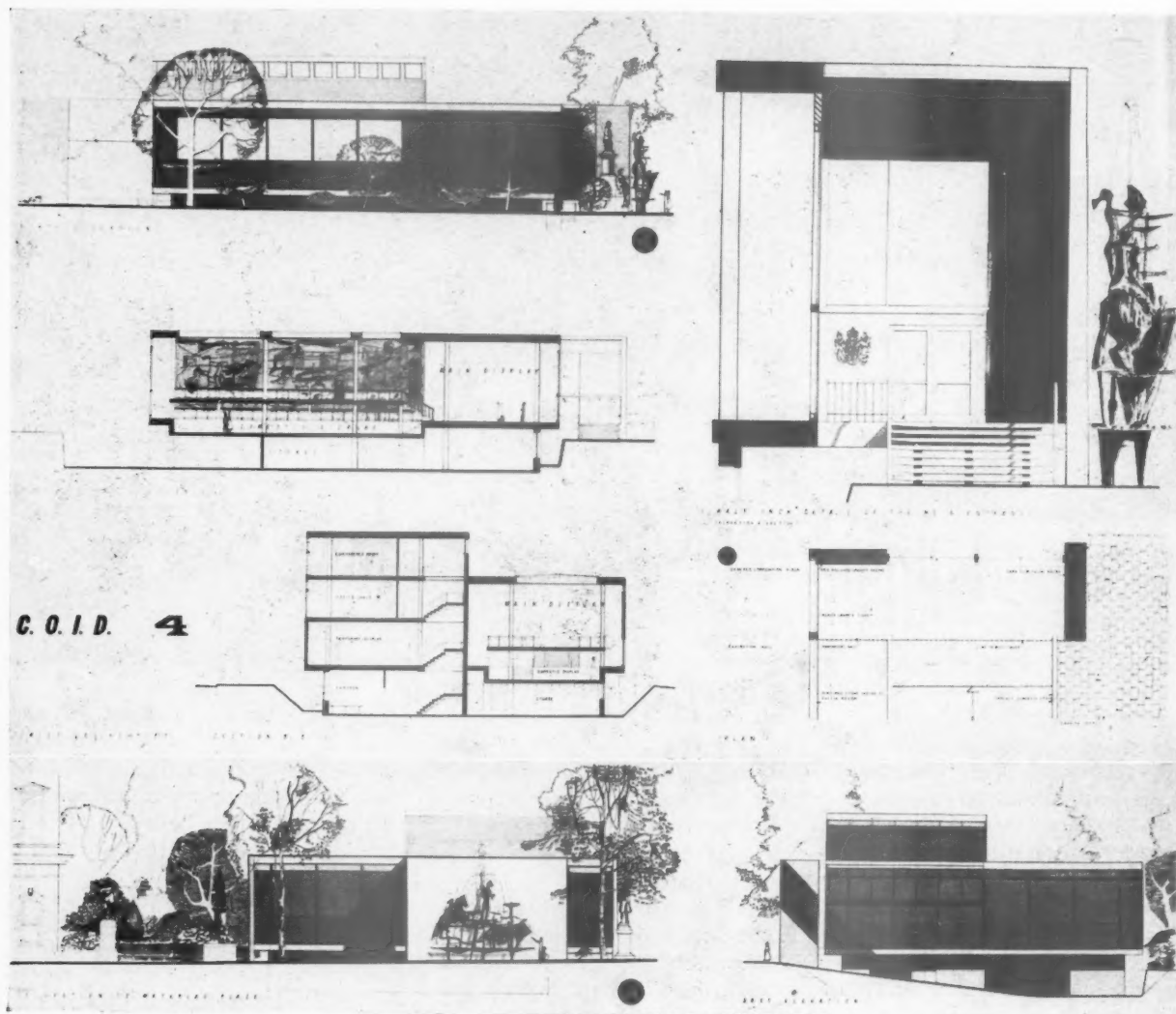
Two designs by Philip Tilden, whose autobiography ASTRAGAL reviews this week. Above, part of the walls of Selfridge's proposed castle on Hengistbury Head; right, a proposed tower for Selfridge's store.

Sassoons, Conways, Rocksavages and Frances, Countess of Warwick, flit through these pages as friends who were also clients. It is kind to regard their tastes as Mr. Tilden's alibi.

■

For Philip Tilden did apparently start off with a genuine love of what, one fears, he might call "all that is English and gracious and old," only to pass on to the marble pools and patios of the Sassoon house at Lympne or the black glass of the same man's house in Park Lane . . . and so to the fabulous Selfridge castle that was to have covered most of Hengistbury Head. This mag-





Hollow Victory

There were 679 competitors last year for the RIBA's prizes and scholarships which total in value over £3,000. The results of seventeen competitions for architects and students were announced at last week's general meeting at Portland Place and part of the winning entry for a major prize, the Victory Scholarship, is shown above. The author of this design, J. V. Gibberd, Student, RIBA, together with the other prizewinners, whose names were published last week, deserve to be congratulated on their success. The prominence we give to this design, however, is not due to its qualities as such—considerable though they are—but because these design drawings illustrate the inadequacy of the competition programmes set. The jury who compiled the programme and judged the entries consisted of some of the most distinguished and prominent members of the profession, and in most instances, leading protagonists of the modern movement. They were: The Chairman of the Board of Architectural Education, P. G. Freeman; Professor Sir William Holford, Michael Pattrick, Principal of the AA, Professor Gardner-Medwin, Peter Shephard, R. H. Uren, F. R. S. Yorke and Raymond Erith. The subject set for competition was for a small exhibition building and offices for the COID. The drawings requested were $\frac{1}{8}$ in. scale drawings showing plans of all floors and all elevations

of the building. Not less than two sections, $\frac{1}{2}$ in. scale drawings of any part of the building which will show the competitor's ability in detailed design." The small size of the project, in contrast to the mammoth buildings so often proposed for these competitions, shows a welcome understanding of the limitations of the student designer. On the other hand, the failure to ask for any drawings showing the construction and detailing would appear to be a shocking weakness which vitiates the meaning of modern architecture. The pleasant lines and shapes shown above may be structurally sound or they may be but pretty patterns on paper—the *beaux arts* approach to design carried out in contemporary *clichés*. The blacked-in sections give little indication as to whether design and construction are closely integrated or two separate processes. Nevertheless, in fairness to this design, we should point out that it is outstanding amongst the other entries. We suggest that it is time the RIBA took one more small step forward, set the lead which the schools will inevitably follow and ensure that when students are asked to design a building, they are asked to design the whole—services, structure and finishes. $\frac{1}{8}$ in. scale design drawings may be only aesthetic exercises in two dimensions, and should be made only to impress the client—not the teacher or the jury.

num opus was unique in that it incorporated within itself nearly all the styles in Bannister Fletcher.

*

The Oxford Street tower (see page 33) was a serious project and it would be interesting to know—but Mr. Tilden doesn't tell us—how much shopping space would be left in the famous store when the supports for this surprising structure had been inserted. Mr. Tilden's book is nostalgic . . . one can hardly blame him.

MUNSELL RANGE

It is encouraging to learn that there is shortly to be an announcement concerning a new standard range of paint colours agreed, apparently, by nearly everyone who matters. Prime movers in this are the paint industry and—believe it or not—the RIBA. This will, of course, be a nasty smack in the eye for people like ASTRAGAL who are always saying that the RIBA does not take her duties seriously enough.

NUMBER PATTERNS

Bruce Martin, once of Herts and now at BSI studying modular co-ordination, is one of those cool, clear-minded fellows who prefer to state their opinions and conclusions simply, however much more awe-inspiring it might be to wrap things up in esoteric technical jargon—witness the admirably simple paper he gave to the Modular Society last week and which is reproduced in part on pages 40-41. The most delightful moment of the evening, in ASTRAGAL's cynical view, however, was when a manufacturer, calling for boldness and practicality, pointed out that the Modular Society had advised him to lay down plant to manufacture goods on a 4 in. module, so what was BSI still hawking about? It will be just too bad if this is the wrong dimension, but he can't say that he hasn't been warned.

NEW HOMES FOR OLD

A new MOHLG handbook with the above title was published last week and will be reviewed by Guest Editor Felix Walter in our next issue. A rather lightweight affair, it could, in my opinion, have given much more emphasis to the need for planting and painting—for townscape, in fact—if the effort put into simple conversion and repairs is to have a lasting effect.

ASTRAGAL

POINTS FROM THIS ISSUE

New Barbican appeal to MOHLG	page 31
Review of BSI work on Modular Co-ordination	page 40
The Design and Practice of Joinery : Part III An Analysis of Construction	page 51

The Editors

ROUND ONE TO THE TRADE UNION MOVEMENT

A GOOD many salaried architects will have greeted with mixed feelings the advice they received last week from the RIBA Council that "their interests will be best served by joining an existing organization appropriate to their particular field of employment." That is to say, presumably, the IPCS (who have achieved most) for those in central government; NALGO (who throw in architects with all white-collared workers and have achieved passable salaries only for the semi or non-qualified) for those in local authorities; the ABT—who are unlikely to achieve "any more substantial recognition in the established negotiating machinery than it had been able to obtain in the past 25 years," and, of course, BAG, whom nobody recognizes, but which no doubt assistants in private offices could join as soon as they had achieved the unlikely act of persuading their bosses to form a body with whom they could negotiate.

What else did the council recommend? "That the Royal Institute shall not sponsor a new organization of a trade union nature; that no one existing organization shall be singled out for professional support; (and) that the Royal Institute will proceed actively to explore alternative means of attaining the agreed objections of improving and strengthening the conditions of employment of salaried architects in all classes of employment." And the Council have asked the Salaried and Official Architects Committee to ascertain: "in what direction further effort might be practicable and of benefit to salaried members generally; (and) how co-operation and liaison with the various negotiating bodies may be strengthened and improved."

In effect, we are almost back where we started from. One thing, at least, however, has been learnt. The salaried members look to the RIBA for help over negotiating salaries rather than anyone else. Indeed, the Secretary's letter once again reminds members—as if in protest at this touching faith—that, under the terms of the Royal Charters, the RIBA could not "assume the role of a negotiating body on full trade union lines." Although he also admits that the RIBA "is already consulted from time to time in connection with the periodic review of grading and remuneration of architects in central and local government service and some statutory undertakings." So presumably the RIBA is recognized as an advisor but not as a negotiator. The decisiveness of

the present situation adds support to the suggestion outlined in our leading article last week, that is, that the RIBA should appoint a team—a short-term commission—to investigate in detail the state of the profession in terms of prosperity and productive capacity. At the moment it is extremely hard to plan any policy of consolidation and financial improvement for a profession which is so largely an unknown quantity.

As some readers will remember, our Guest Editor of 1953, Professor Ian Bowen, assisted by Martyn Webb, conducted a fairly detailed survey of certain aspects of the profession and had several constructive suggestions to offer on its future. Recently, as a result of the interest aroused in the question of a negotiating body for salaries for the profession, we asked Martyn Webb to make a few suggestions. Now, following the publication of the RIBA's views, would seem an opportune moment to give the ideas of someone outside the profession who has given some thought to the problem. He offers no simple clear-cut policy, but merely a fruitful line of thought to pursue. This article will appear shortly.

In the meantime, readers can ponder on the surmise that it is surely comparatively rare for the leaders of a *professional* body of such high standing to tell a section of its own members to go and pay someone else to look after them—to go, in fact, into a *trade* union. Not through disloyalty, of course, but because of the profession's own lack of influence and power, of solidarity, and guts.



R. P. Harris

The Caravan Problem

SIR—As an Engineer-Planner and a regular reader of your JOURNAL, it is not without some trepidation that I address a letter to your correspondence column, but I consider that I should correct some of the misconceptions contained in your Caravan Issue (November 4).

Concerning "talking-point 10," your readers should be informed that legislation is already available under the Town and Country Planning General Development Order 1950, whereby caravans may be parked on any land for not more than 28 days in any calendar year without permission, and members of certain recreational organizations holding a certificate of exemp-

tion granted by the Minister of Health under Section 269 of the Public Health Act, 1936, may park on any land without time limit.

Your basic assumption that residential caravan sites may be expected to vanish as permanent housing catches up with population increase is sheer wishful thinking—in the London area at any rate—since the total number of caravans and the number of caravan sites are steadily increasing, despite all efforts by local authorities to check such increase. The magnet of London is as strong as ever and immigration into the London area appears to be returning to its pre-war level. I would even go so far as to suggest that it is quite likely that the demand for residential caravans, in the London area in particular, will increase as housing subsidies and housing allocations to local authorities are reduced and the prospects of obtaining houses diminish for families with a limited amount of capital. Furthermore, I suggest that almost 50 per cent of persons at present living on caravan sites do so from choice and not because they are unable to obtain a more traditional form of dwelling, many of them having vacated houses in order to move into caravans.

The demand for caravans by people who cannot afford a house will not diminish until such time as speculative builders can provide houses for a small deposit of £100 or thereabouts.

Your contributor stated that local authorities may gain control of sites which have never received permission under the 1932 or 1943 Planning Acts as if they were new sites, but this is quite incorrect, since all such sites have been exempt from enforcement proceedings under the Town and Country Planning Act 1947, since July 1, 1951. Local authorities could, of course, extinguish a caravan use under Section 26 of the 1947 Act, but in doing so, they would

have to face up to payment of heavy compensation for the loss of use and in addition, would have to re-accommodate all the families dispossessed. Few authorities would be prepared to take such action.

Your contributors, like so many local authorities, do not differentiate sufficiently between residential and recreational caravan sites, and there is a vast difference, for instance, in the sanitary requirements, as the former are, in effect, housing estates and should be treated as such.

I consider that I should also point out that collective storage facilities for cycles, perambulators, etc., do not, for very obvious reasons, find favour on caravan sites; individual sheds of an approved design are far more practical even if they are not as satisfactory aesthetically.

On residential sites families with children should be segregated for the benefit of such families and of elderly persons, and vans should never be grouped around a central children's play space, as the noise of children playing is more often than not too much for old folk.

I also suggest that the only satisfactory method of control of residential caravan sites is by the joint use of powers available under Town Planning and Public Health legislation. Conditions to be imposed in Permissions should be worked out jointly by the local planning authority and the public health authority (in those cases where Section 269 of the Public Health Act, 1936 has been adopted) and these should be incorporated in the town planning permission or public health licence, as may be appropriate. Care should be exercised to ensure that public health conditions are not imposed in a town planning permission, and vice versa, since this will never be acceptable to the MOHLG and the Courts, respectively.

Finally, as a planner with some small experience of residential caravans, I suggest that caravan sites are not so easily dealt with as the authors of your articles suggest, more particularly in those cases where sites have become established. Caravanners are all too often pawns in the game played between site operators—often allied with caravan manufacturers—and the local authorities, with the MOHLG and the Courts acting in the capacity of referees.

R. P. HARRIS

Cheam, Surrey.



ISE, CCA and RCA

Lecture by P. L. Nervi

The news that Professor Pier Luigi Nervi is to give a lecture next month under the joint auspices of the three bodies listed at the head

of this note will be very welcome to our readers. The subject he has chosen is "Some Reinforced Concrete Structures in Italy" and we can only hope that modesty will not deter him from devoting the lion's share to buildings like the Turin Exhibition Hall and the Florence Stadium which he has designed himself, and that he will take the opportunity to give his views on the architect/engineer relationship—a subject on which, as he himself is both, he should have much to say.

As Professor Nervi does not himself speak English, translations of his paper will be circulated in advance to all who apply for tickets. The paper will then be taken as "read" and the meeting itself will be devoted to questions arising from it. Needless to say, facilities for translation will be laid on, so that this should prove an exceedingly worthwhile occasion.

The date is February 24, the place the Central Hall, Westminster.

BC

Vacuum Concrete Films

The film show given at the BC on January 5, one of a series of lunch-time shows, consisted of two films on the vacuum concrete process, sponsored by Millar's Machinery Co. Ltd.

Vacuum processing is a technique for removing the excess water (needed to render the concrete sufficiently plastic for pouring) in order to reduce the water/cement ratio after pouring, resulting in concrete of high strength. Other advantages are the more efficient compaction achieved by atmospheric pressure during processing and the possibility of striking shuttering immediately the process has been completed.

The equipment is fairly simple, and most of the normal forms of shuttering can be adapted for use with the process, so that it can be applied to both *in situ* and pre-cast work.

The technique was developed in America in 1935 and has been extensively used on the Continent in recent years. The films at the BC showed examples carried out during the past year in this country and two examples from France and Italy.

AA

£750 Travelling Scholarship

The Marley Tile Co. Ltd. offer a travelling scholarship of £750 to enable a Fellow or Associate of the RIBA to undertake a tour of three months' duration to Mexico, Venezuela and Brazil. The winner will be re-

quired to study the architecture and the building activities of Mexico, Venezuela and Brazil, and (1) to take photographs for the production of coloured slides to illustrate his reports (if necessary a camera will be lent for this purpose by the Marley Tile Co. Ltd.); and (2) to prepare a report upon each of the three countries, the use and copyright of which will remain at the disposal of the promoters and the AA. Applicants must be under 40 years of age, and must provide evidence of their office experience and of their special interest in the architecture and building activities of Mexico and South America referred to above.

Typewritten applications (four copies) must be submitted by February 17, 1955, to the Secretary, The AA, 36, Bedford Square, London, W.C.1, and must contain the following particulars:—Age; architectural education; academic qualifications; present occupation or employment; evidence of the candidate's suitability for appointment to the Scholarship (a knowledge of one or more European languages would be of value); the names of two persons to whom reference may be made regarding the candidate's fitness for appointment to the Scholarship.

The applications will be considered by a Selection Committee consisting of the two following representatives appointed by the

GUEST EDITORS, 1955

THE COST OF BUILDING

The cost problem is essentially a problem of knowing where the money goes, of understanding how it is distributed in buildings. If the expenditure of money is to be planned at the design stage and to be controlled during building operations, knowledge of this kind is vitally necessary.

This view of the problem is the basis from which the Guest Editors will conduct their examination of its principal aspects. Chief among these are:

Methods of analysis to give cost distribution in building work.

The planning of cost distribution at the design stage.

The purpose and use of bills of quantities.

Builder's costing systems and cost control.

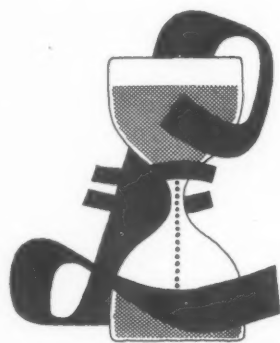
The programming and progress control of building operations.

The management of building contracts.

Contractual procedure and collaboration between the architect, the quantity surveyor, consultants, the contractor and sub-contractor.

Education and training of the architect, the quantity surveyor and the builder.

During the year, examples of cost analysis will be given and their results critically examined. Apart from their main programme of study the Guest Editors will act as expert advisors to the JOURNAL on all matters relating to cost and building efficiency.



The Guest Editors are:

Norman Stanley Farrow, M.B.E.

Gleeve Barr, A.R.I.B.A.

James Nisbet, A.R.I.C.S.

Ivan Tomlin, A.I.B.E.

E. F. L. Brech, B.A., B.Sc., M.I.I.A.

Council of the Architectural Association:—
Howard V. Lobb, C.B.E., F.R.I.B.A., H. T.
Cadbury-Brown, F.R.I.B.A., A.A. DIPL. (HONS.),
and one representative of the Marley Tile
Co. Ltd.

ANNUAL APPEAL

Provident Institution of Builders' Foremen and Clerks of Works

D. E. Woodbine Parish has launched this year's appeal for funds for the Provident Institution of Builders' Foremen and Clerks of Works. Permanent pensions to the aged and infirm, temporary assistance in times of special need, aid to widows and the maintenance of orphaned children are the responsibilities of the Institution. Donations will be received by D. E. Woodbine Parish at 11, Buckingham Palace Gardens. Cheques should be made payable to the Institution.

DIARY

Upwards or Outwards? Discussion on skyscrapers and suburbs between Colin Clark, Director of the Institute of Agricultural Economics at Oxford University, Sir William Holford, Professor of Town Planning in London University, and Hugh Weeks. In the BBC Home Service. 9.15 p.m. JANUARY 13

Work and Teamwork. Symposium on "Walter Gropius" by Professor Giedon. Speakers: E. Maxwell Fry, Professor N. Pevsner, John McHall, Reyner Banham. Chairman: Dr. J. L. Martin. At the ICA, 17-18, Dover Street, W.1. 8.15 p.m. Members only 2s. JANUARY 13

Planning Position in India. Talk by Professor W. A. Robson. At the Planning Centre, 28, King Street, W.C.2. 6.30 p.m. JANUARY 17

Contract Organisation in Relation to the Use of Mechanical Plant. Talk by N. S. Pippard, of the BRS Department of Scientific and Industrial Research. At the Brixton School of Building, Ferndale Road, S.W.4. JANUARY 18

Development Plans: Objects and Objections. Talk by Michael Rowe, Q.C. At RICS, 12, Great George Street, S.W.1. 5.30 p.m. JANUARY 18

The House and Housework. Talk by R. G. Bateson, Building Operations Research Unit. Chairman, E. J. Edwards, Director of Housing, City of Westminster. At the HC, 13, Suffolk Street, S.W.1. 1.15 p.m. JANUARY 18

Keeping Out Water. Film by the NAMMC. At the BC, 26, Store Street, W.C.1. 12.45 p.m. JANUARY 19

English Mediæval Stained Glass. Illustrated lecture by Alec Clifton-Taylor. At the V and A Museum Lecture Theatre, Exhibition Road, S.W.7. 6.15 p.m. JANUARY 19

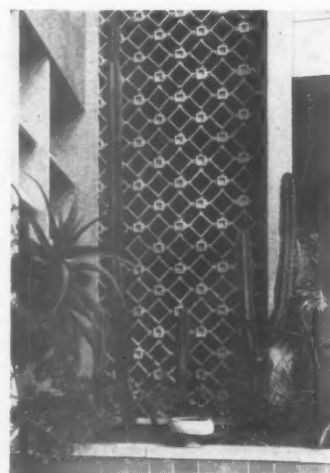
Integration of Members and Students. Informal meeting to discuss closer collaboration and contact between members and students. At the AA, 34, Bedford Square, W.C.1. 6.15 p.m. JANUARY 19

Car-parking in Central London. Conference held under auspices of the London Society. Chairman: Sir Alfred Bossom. At the RICS, Great George Street, Westminster. 5.30. JANUARY 20.

PARLIAMENT BUILDINGS FOR THE



The Kenya Legislative Council Building at Nairobi was designed by H. Thornley Dyer in association with A. B. Connell, and cost £165,000 for the superstructure and £9,000 for foundations. Besides providing permanent accommodation for the legislative council the building contains a library, writing and interview rooms, committee rooms, offices for ministers and social facilities for members, who comprise four races, Europeans, Asians, Arabs and Africans. The photograph above is of the west wing from the sunken garden. Below left, one of the concrete grilles, which are 8 ft. wide by 30 ft. high. Below right, the north facade of the council chamber. The chamber is designed, as the House of Commons, for a two-party system and with galleries for public and distinguished strangers. The tower, seen in the photograph opposite, was designed in relation to the scale of the future civic group and as an asymmetrical visual "stop." The site is in a re-entrant of parkland into the civic centre, which is Crown land and permits a free layout for the groups of buildings. The building was planned to be deliberately reminiscent in form to the Palace of Westminster and the extended plan on two floors is intended to create an illusion of a larger building group and to permit free circulation of air. The construction is entirely of reinforced concrete with panel walls faced



A black and white photograph of the University of the Philippines Diliman. The image shows a large, modern building complex. On the right side, there is a tall, slender clock tower with a clock face and a small structure on top. To the left of the tower is a long, multi-story building with a series of windows. The building is set against a backdrop of a cloudy sky. In the foreground, there are some trees and a paved area.

This floor plan shows the upper part of the Council Chamber and its associated facilities. The main room is the 'UPPER PART OF COUNCIL CHAMBER', which includes a 'press' area and a 'PUBLIC GALLERY'. To the left is the 'DISTINGUISHED VISITORS GALLERY'. A 'COMMITTEE ROOM-1' is located below the main chamber. A 'seats corridor' runs along the left side, with rooms numbered 2, 3, and 4. A 'landing' area is at the bottom left, with 'MEN'S LAVS' and 'WOMEN'S LAVS'. To the right, there is a 'RECEPTION' area and a 'PUBLIC GALLERY'. The plan also shows a 'STAFF R.M.' and a 'BOYS R.M.'.

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

We print here the text of a lecture given by Bruce Martin to the Modular Society at a meeting held at the RSA on January 5. Bruce Martin, who is head of Modular Co-ordination Studies at BSI, recalled that teams had been set up last year by BRS and BSI to examine Modular Co-ordination. He pointed out that his lecture was, in effect, a report on the first stage of the BSI programme and was to be followed in March by a complementary lecture by William Allen on the work done by BRS.

MODULAR SOCIETY

Products, Dimensions and Modules

There are now 380 building standards which include 60 dealing with builders' plant and equipment, 70 with glossaries, drawing office equipment and technical considerations and the remaining 250 with building material. An early examination of the building material standards showed that they cover not less than 18,000 products and that the relations between these products could not be studied methodically unless some simple pattern was devised which would show their position in the general process of building. This pattern is what we now call the Table for the Co-ordination of Building Material. (See opposite.)

Table for the Co-ordination of Building Material

The materials used in the construction of a building undergo a series of processes which may be considered as a sequence of separate stages; in the first instance raw materials are obtained, selected and refined, and the refined materials are taken to the building site or to a large number of different factories.

In the primary group of factories the refined materials are processed to produce simple cross-sectional forms. The processing is usually a continuous operation and it is in these factories that the rolled sections, bars, tubes, cables and sheets are made. These sections are then available to the Builder on the site or may be sent to a secondary group of factories. Sections are not used solely in building and it should be noted that they have general application in many other industries.

In the secondary group of factories materials and sections are used to produce simple building products which are characterized by small dimensions, simple forms and limited use. They are called *units* and include bricks, blocks, tiles, slates, fastenings, pipes and their fittings.

In the remaining group of factories, materials, sections and units are used to produce a wide variety of complex products

with definite functional characteristics: these are called *assemblies* and include the heating, sanitary, electrical and gas equipment, the furniture, doors, windows, panels and stairs.

Thus the refined material is converted into three groups of building products: sections, having small cross-sectional dimensions and long lengths, simple forms and a wide variety of use; units having small dimensions in three directions, simple forms and specific use in building, and assemblies having overall dimensions in the order of human scale, complexity of forms and specific use in building.

In combination, building products group themselves into a number of separate *functional components*: the foundations, structural frames, walls, roofs, services and finishes. These are independent functional systems of assembly and when a number of these are inter-related, they make a complete organism or system of building.

The *systems of building* are the many different possible arrangements of the functional components or elements.

Thus the complete building process is covered in a table of six vertical columns. On the left are the materials and on the right the completed systems of building: the building process moves from left to right. Column 1 includes materials, refined materials and their associated production processes: column 2 sections from the large factories: columns 3 and 4 units and assemblies from subsequent factory processes:

column 5 work carried out on the site and column 6 the building during its useful life until its eventual decay and downfall. The table constitutes the complete cycle in which every building is made, built, utilized and maintained. The cycle is continuous and the division into a number of stages is for the purpose of analysis and to provide a common basis for agreement and subsequent study.

The Tabulation of Dimensions

With the completion of the table, it was then possible to begin with a methodical analysis of the dimensions of the products described in the existing building material standards and of those outside the standards. At this stage we had to give a meaning to the dimensions of a product and to distinguish between the actual or overall dimension, the nominal dimension, and the maximum and minimum dimensions. The *actual* dimensions of all products have been listed and it is found that each group of products in the table has definite dimensional characteristics. In sections, the length is not usually defined and only the cross-section has determined dimensions. In the case of bars, tubes, sections and cables, the cross-sectional dimensions usually lie between 0 in. and 10 in., in sheets the thicknesses lie between 0 in. and 3 in. and widths between 20 in. and 80 in. Units are characterized by fixed dimensions in three directions which in the case of bricks, blocks, tiles and slates seldom exceed 18 in. Pipes seldom exceed 10 in. diameter with lengths lying between 0 in. and 250 in.

TABLE FOR THE CO-ORDINATION OF BUILDING MATERIAL

(1) Materials	(2) Sections	(3) Units	(4) Assemblies	(5) Functional components	(6) Systems of building
METALS	BARs e.g. rod	BRICKS e.g. air wall	STRUCTURAL ASSEMBLIES e.g. frame door window stair panel	GROUNDWORKS e.g. fencing paving	
STONES	TUBES e.g. conduit	BLOCKS e.g. floor wall		FOUNDATIONS e.g. pile raft	
AGGREGATES	SECTIONS e.g. channel trim lath lumber	TILES e.g. roof floor	HEATING EQUIPMENT e.g. boiler cooker	STRUCTURAL FRAMES e.g. shell skeleton	
LIMES PLASTERS CEMENTS		SLATES e.g. roof	SANITARY EQUIPMENT e.g. tank bath	WALLS e.g. screen partition	
WOODS	SHEETS e.g. slab board quilt panel sheet	PIPES and PIPE FITTINGS e.g. drain rain water flue	ELECTRICAL EQUIPMENT e.g. lamp switch	ROOFS e.g. pitch flat	
PIGMENTS OILS PAINTS	WIRES and WIRE CABLES e.g. cord conductor	FASTENINGS e.g. nail screw hinge lock	GAS EQUIPMENT e.g. mantle meter	SERVICES e.g. heating sanitary electrical gas	
ADHESIVES			FURNITURE and FIRE EQUIP- MENT e.g. kitchen office hydrant	FINISHES e.g. floor ceiling wall	
BITUMENS TARS ASPHALT					

Fastenings are generally small and have few dimensions exceeding 10 in.

The structural assemblies include frames, doors, windows and panels and these rarely exceed 6 in. in thickness and 100 in. square. Service equipment and furniture dimensions are of the order of 20 in. to 80 in.

While tabulating dimensions of products, we came to realize that our studies would have to take into account shape as well as size. In fact, the science of modular co-ordination concerns the effective joining of building products and will include the whole range of products, their form and shape, the way they fit one to another and the selected dimensional pattern that will make joining methods effective. Modular co-ordination depends ultimately not only on the size of the product and its dimensions but also on whether it fits and does its job. This does not mean that dimensions are insignificant; rather that the shape of the object and its relation to its neighbours are of first importance. The effective joining of traditional building units is their most notable characteristic, whilst newer products are equally distinguished by the complexity of their arrangement in any general system of assembly. Today building products can seldom be simply joined or fitted into a wider pattern of building and consequently are to a disturbing degree ineffectual. For example, although large numbers of corrugated sheets exist having the same overall dimensions, their profiles are unrelated. Without effective building products there can be no efficient building, for organized and sequential building operations depend on the division of the building into articulate parts capable of being fully related to each other.

The tabulations of dimensions of existing rectilinear products showed that in the range 0 in. to 100 in. about 200 separate dimensions exist and several of these occur many hundreds of times. We were led therefore to study how these dimensions came to be attached to their respective products. This study is still under way and at this stage I will only mention the people to be consulted. The dimensions of building products would appear to be determined by anyone engaged in the building industry. Each member of the building team may influence the dimensions in the light of his own requirements.

The *manufacturer* is primarily concerned with the factory processes, the machinery involved and the nature of the material to be processed. The *builder* is mainly concerned with ease of transport, stacking, handling and assembly. The *user's* prime concern is the relationship of the product to his own size: the door handle and bath tap to fit his hand, the door and window to suit his overall dimensions, and the furniture and equipment closely related to his body. The *architect* is concerned with the relation of the parts to the whole: the dimensions of the products in relation to the dimensions of the design.

Simplification

The simplification of building products is a selective process aimed at simplicity of design, reduction of unpopular types, elimination of unnecessary ones and creation of

necessary variety. It is now generally agreed that simplification is a necessity for an efficient industry. If we apply this process to the dimensions of building products in industrial production, then we have to select dimensions by reducing the unpopular and little used, by eliminating the unnecessary and unused, and by creating a necessary and varied range for general use.

These selected dimensions become modules. They are the basis for *any* form of modular co-ordination and not only help the effective joining of the parts, but also facilitate the planning of the building.

Selection of Modules by the Architect

When considering the design of a building and the parts to be used for its construction, the architect has, broadly speaking, three courses open to him.

Firstly, he can design the parts specially for the job in hand, settle their dimensions and make arrangements for their subsequent manufacture. This generally involves lengthy correspondence and discussion between designers and manufacturers resulting in a long and expensive design period, which is repeated for each job.

Secondly, he can design the parts for a particular system of construction and relate them to certain selected dimensions used throughout the design. This is the method adopted in the case of many of the school programmes. It leads to standard parts, and standard details which are common to a particular architect and the associated manufacturers. Within such a group simplification is achieved, but it takes a long time and considerable effort to reach a fully satisfactory set of parts. For the architect, change is difficult to make and for the manufacturer the market is limited to those using the system. But the parts are common to many buildings; and, compared with the first method, there is a saving in time at every stage of the building process.

Thirdly, he can utilize parts that have already been designed and related to modular dimensions. To do this he must adopt pre-determined modules for his design. He must be ready to choose dimensions from a limited range of numbers instead of from all possible numbers. By doing so he will eliminate the need to design and dimension the parts, reduce the details of jointing to a few simple cases, be able to obtain the parts from a number of manufacturers, and speed up manufacturing, ordering, delivering and assembling. Furthermore when other architects are prepared to choose their modules from the common range of numbers, the market for the products will increase, leading to more efficient production and increasing variety of modular parts. As with language the use of a common vocabulary will bring about its own fruitful development.

If the largest variety of products is to be used in different constructions and for different programmes then the various modules must be related to one another.

Relation of Modules

In the American A 62 proposal for modular co-ordination there is a basic module and all dimensions are multiples of this

module. All existing product dimensions are re-located to the nearest mark on the 4-inch scale, but there is no basis for selection of particular dimensions and only limited simplification is thereby achieved. Too many dimensional variations are possible and there is no assurance either that the selected sizes are properly related to particular products or that they are harmonically inter-related.

In the German standard building numbers, the dimension one metre is chosen and all building numbers are factors of the metre. In both the German and American methods, a number or dimension has been selected and all dimensions based upon it: thus the dimensions are evenly spaced upon the range 0 in. to 100 in. and form an arithmetic series.

By contrast the dimensional pattern of building products indicates a relatively large number of dimensions in the lower and progressively fewer in the upper range. This suggests a geometric series as a basis for relating the modular numbers. Le Corbusier's "Modulor" is, of course, a particular kind of geometric progression with a common ratio of 1.618; the engineering series, known as "Preferred Numbers" or Renard series are also ranges of numbers having a common ratio. Since it may be desirable for the numbers to have a common factor as well as to be related by a common ratio, numbers that exist simultaneously in arithmetic and geometric progressions will require study.

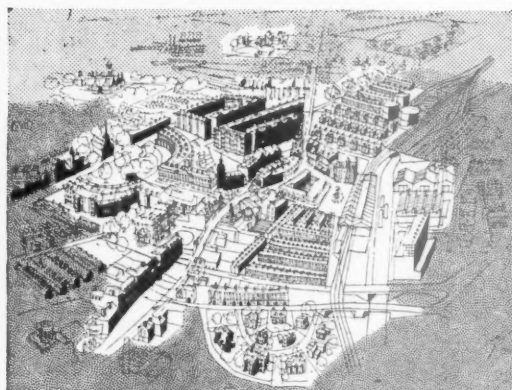
At the same time, we must bear in mind the fundamental numerical relationships between the numbers, since the building products related to these numbers will greatly affect the appearance of our buildings. These building parts will form the subject of our revised modular standards.

Within a modular number pattern there should be a full range of standards devoted exclusively to the complete description of particular building products. These products need to be designed to fulfil a clearly defined need, suitable for full production and stocked to be available on demand. There must be a clear division between a standard that determines the performance of an electric light and that which lays down a worthwhile design; whilst it is essential to have a "performance" standard there must also be a "product" standard. Such standard building products will be based on related modules to allow of optimum standardization combined with the greatest variety of assembly methods. They will constitute a basic vocabulary of dependable products for building.

At the moment there are two main tasks in hand.

Phase I of the European Productivity Agency Project, No. 174: Modular Co-ordination, is under way and the reports being prepared in twelve countries are to be submitted in May, 1955, and will cover building products, theoretical data, research programmes and practical applications.

Parallel with this project, the work of our research teams continues and is directed towards the immediate objective: the determination of a number pattern for building modules.



This week Ernest Watkins and D. T. H. Nicholson, at the invitation of Guest Editor Felix Walter, write on valuating property for rating and taxation. They touch on liability for rates and taxes, the landlord's property tax, excess rents, maintenance claims and the effect of creating a separate "hereditament" or maintenance claim. With this article Felix Walter concludes his year as Guest Editor and his series of articles on conversion. One associated article, however, will follow at a later date on townscape and planting in relation to conversion work by H. F. Clark.

CONVERSIONS: VALUATIONS FOR

RATING AND TAXATION

The valuation of property, both for local rates and for income tax purposes, is now the responsibility of the Valuation Officers of the Commissioners of Inland Revenue. The vast majority of existing valuations were made before the war and the process of revaluation of all the properties in the country is far from complete. Originally valuations for rating purposes and for income tax were made separately, the first by the local rating authority, the second by the Inland Revenue, but we are here only concerned with private dwellinghouses and broadly speaking there has never been a very great difference between the two valuations for this class of property, whichever the valuing agency.

A major point which arises on conversion is this: does the conversion create a new, separate "hereditament" (as the unit of assessment is called) or is it no more than the improvement and modernization of an existing hereditament? If it is the latter, the old valuation will stand. If it creates a new hereditament, a new valuation will be made. The difference that makes to questions of taxation will be dealt with later. The difference over rating—for the rateable values of two or more separate hereditaments is likely, in total, to exceed that of the former single value—will not directly affect the owner, save insofar as the future tenants will take into account the rates they will have to pay when negotiating over the rent asked on the fresh letting. Whether a new "hereditament," separately rateable, is created is always a question of fact.

Valuation

The method of valuing private dwellinghouses (which includes private garages and storage premises) is laid down in Section 3 of the Valuation for Rating Act, 1953. It is as follows:

The gross valuation shall be the rent at which the premises "might reasonably have been expected" to command if let on or about June 30, 1939, on a year-to-year basis, if the tenant had agreed to pay all the usual tenant's rates and taxes and if the landlord had undertaken to bear the cost of repair and of insurance and other expenses, if any, necessary to maintain the place in a state to command that rent. The valuation, then, is an artificial one, in the sense that the valuer must value what exists now on the basis of what it would have been worth in

terms of rent at some earlier time, that is, on June, 30, 1939. Nor is that all. The Act also directs that in making such a valuation certain other assumptions shall be made by the valuer. First, an obvious one, he must assume that the house he is valuing existed on June 30, 1939, and was then in the state in which he finds it when he values it. Secondly, he must also assume that the locality, the whole of the physical and social surroundings of the house, existed in June, 1939, exactly as he finds them at the time of valuation. Finally, he must disregard certain exceptional circumstances that, as a matter of historic fact, may have been present in that particular locality in June, 1939. These are the effect of (a) the Rent Restriction Acts on neighbouring property and (b) the existence in that locality of a "marked scarcity or abundance of dwelling accommodation" insofar as these circumstances may have influenced the rents then commanded by property in that particular neighbourhood. The intention of this provision is clearly to eliminate the effect of purely local conditions on rents at that particular point in time, June, 1939, and to try to lay down a general standard of valuation based on June, 1939 rent levels all over the country.

The following definitions are given in the Act:

1. A "dwellinghouse" is a hereditament used wholly for the purposes of a private dwelling or private dwellings. A building in which the rooms are let off singly for residential purposes is not a private dwellinghouse, but the letting off of rooms within a private dwellinghouse does not destroy its character, as such. In other words, a boarding house remains a private dwellinghouse; a set of one-roomed flatlets is not.
2. A "private garage" is a garage not exceeding 240 sq. ft. and which is not a part of a business garage, or of a hotel, or used for the garaging of goods or hackney vehicles.
3. A "private storage premises" is a hereditament used solely in connection with a private dwellinghouse for the storage of domestic articles of its occupants.

Any profit on services provided by a landlord (in addition to his payments for repairs and insurance) under his tenancy agreement is to be excluded when calculations are made as to how much of the rent payable is to be treated as a payment for these services. (Section 6 of the 1953 Act).

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Procedure

Once an assessment has been made it cannot be increased until the next general revaluation unless a property has been entirely omitted from the valuation list or if the full facts were not disclosed at the time of the last valuation. New assessments can be made if there has been any real change in the character of the property itself (as may well happen if there is a conversion). This is a point on which it will be advisable to obtain professional advice. On the other hand, landlord or occupier may claim a downward revision of the assessment at any time if he can prove that there had been a drop in the rent or a deterioration in the value of the property.

Where a new hereditament does come into existence and falls to be valued for rating (and income tax) the Valuation Officer must prepare a proposal for its valuation and send copies to the occupier and to the rating authority within seven days. The individual affected (and the rating authority) have the right to object, either on the ground that the property should not be included or revalued at all, or on the ground that the value put upon it is unjustified. An objector must give written notice to the Valuation Officer within 21 days of receiving the proposal and must state the ground of the objections. The Valuation Officer then considers

To deal with repairs deductions for rating purposes first, the allowances, for properties outside the Metropolis, are as follows: Gross Annual Value not exceeding £15: $\frac{3}{4}$ ths.

Gross Annual Value between £15 and £20: £6 or 30 per cent. of the amount by which the gross value exceeds £15.

Gross Annual Value between £20 and £40: £7 or 25 per cent. of the gross value whichever is the greater.

Gross Annual Value between £40 and £100: £10 or 20 per cent. of the gross value, whichever is the greater.

Gross Annual Value exceeding £100: £20 together with $\frac{16}{100}$ ths. of the amount by which the gross value exceeds £100.

Inside the Metropolis, the allowance for rating purposes are:

Gross Annual Value not exceeding £15: $\frac{3}{4}$ ths.

Gross Annual Value between £15 and £20: £6 plus $\frac{1}{10}$ ths of the excess over £15.

Gross Annual Value between £20 and £40: £7 plus $\frac{1}{4}$ th of the excess over £20.

Gross Annual Value between £40 and £100: £12 plus $\frac{1}{4}$ th of the excess over £40.

Gross Annual Value exceeding £100: £24 or £20 plus $\frac{1}{4}$ th of the excess over £100, whichever is the greater.

For income tax purposes, the repairs allowances are as follows:



Great Totease Farm, Sussex, whose conversion by Sir Hugh Casson is described on pages 49 and 50

the objections. He may accept them; if he does not, he must serve notice that he does not on all parties interested. Thereafter the person to be assessed has 21 days in which to appeal to the local Valuation Court.

On receiving notice of appeal to that court, the Valuation Officer notifies the clerk to the local valuation panel and he arranges for a court to be convened. The persons entitled to give evidence are the appellant, the Valuation Officer, the rating authority and the owner and occupier (if not the appellant). The case is heard in public and evidence is given on oath. There is an appeal from the local valuation court to the Lands Tribunal. An alternative to an appeal to the local valuation court is arbitration, but only provided all parties agree.

The annual value and deductions from it

The figure resulting from the valuation is the Gross Annual Value. The Net Annual Value, which is the figure on which assessments are based in the case of both rates and Schedule A income tax, is the Gross Annual Value, reduced by a repairs allowance, but the repairs allowances are not the same for both rating and taxation purposes.

Gross Annual Value not exceeding £40: $\frac{1}{4}$ th.

Gross Annual Value between £40 and £50: £10.

Gross Annual Value between £50 and £100: $\frac{1}{4}$ th.

Gross Annual Value over £100: £20 plus $\frac{1}{4}$ th of the excess over £100.

It should be remembered that the statutory repairs allowance provided by the Housing Repair & Rents Act, 1954, for the purposes of this Act is as set out in the Act and does not correspond exactly with the figures as set out above.

Liability for rates and taxes

The liability for rates falls on the occupier of the premises and, as mentioned, is not the direct concern of the landlord, save in so far as the liability for rates may influence the mind of a prospective tenant and the rent he will agree to pay. But the liability for Schedule A income tax based on the net annual value, and for any tax on excess rents, is the direct concern of the landlord and must be considered in greater detail. Like most of the present day legislation, the Income Tax Act, and the Finance Acts which vary it, are extremely complicated and anyone thinking of investing in property would be well advised to consult his accountant before

putting his plans into final shape.

Income derived from the ownership of property or rents therefrom, is assessed under two different schedules of the Income Tax Act, 1952. The basic assessment is made under Schedule A and any "Excess Rents" under Schedule D.

Landlords property tax

Schedule A tax, commonly known as the landlords property tax, is levied on the Net Annual Value of lands, including buildings, in the United Kingdom. It is a notional income which is assessable to Income Tax and, if the landlord receives an income in excess of £2,000 in any fiscal year, it is also chargeable to Surtax. With very few exceptions, the assessment made on property is deemed to be unearned income and no earned income allowance is granted. Any allowances due to the landlord, which have not been set off against other income, will be granted against the assessment.

Excess rent

Since no general revaluations had been made and put into operation since 1935/36, whereas some rents had been free to rise it was thought necessary during the war to pass additional legislation in order that tax could be charged on any rents in excess of the Net Annual Value. In the case of short leases, that is to say, leases which are for a period not exceeding fifty years, the following provisions apply.

Where the rent actually receivable exceeds the net annual value of a property, tax is payable on the excess rent and is calculated as follows: first, a notional net annual value is calculated from the actual rent received, treating that actual rent as the gross annual value and deducting from it the allowance for repairs appropriate to that figure. Then the actual assessed net annual value is then deducted from that figure, and the difference, the excess, is treated as taxable income in the hands of the landlord and assessed for tax under Schedule D.

The following is a simple example:

Actual rent received: £100. Less appropriate Repairs Allowance for a gross annual value for that figure (*i.e.*, 1/5th), £20 = £80. Deduct existing Net Annual Value, £60. Excess Rent Assessment = £20.

Income Tax will be charged on the Net Annual Value under Schedule A on £60, and in addition, Income Tax will be charged on the Excess Rent of £20 under Schedule D. If the lessor occupies part of the premises the rent is increased by a proportion of the Net Annual Value, appropriate to the amount of space he occupies.

Where the property is let on a weekly tenancy, 1/26th or two weeks' rent can be deducted from the rent, so that in effect, in the case of weekly tenancies, two weeks' rent become free of tax provided that the fifty weeks' rent less the repairs thereon is in excess of the Net Annual Value.

Maintenance claims

Where the owner of any property proves that the actual cost to him of maintenance, repairs, insurance and management on the average of five years preceding the claim exceeds the statutory repairs allowance for that year, repayment of Income Tax may be claimed on the excess, up to a total of the Net Annual Value. In the case of a property assessed under Schedule A only, the repairs allowance will be that reflected in the Net Annual Value. In the case of properties which are let at a rent higher than the Net Annual Value, the revised repairs allowance must be com-

pared with the average of the repairs. Expenditure on additions and improvements is not allowable, but by concession the Inland Revenue sometimes do accept the estimated cost of any repairs in fact necessary but which have been avoided by the making of the alterations, provided the alterations are not so extensive as to alter the character and identity of the individual hereditament. Generally therefore, the following types of expenditure can be included in a maintenance claim:

(a) Current repairs and redecorations—inside and out. (b) Repair and maintenance of central heating, water and lighting installations, drains, sewers and upkeep of paths. (c) The cost of lopping trees overhanging public highways. (d) Insurance premiums against damage to the property by Fire, Flood, and Tempest, but not insurance premiums on contents. (e) Valuation fees for the purpose of fire insurance, but not for the valuation of the property for the purposes of sale. (f) The cost of rent collection and periodical inspection by agents, etc. (g) Legal cost for debt collecting, preparation of tenancy agreements and disputes as to tenants' rights, etc. (h) Advertising necessary for the letting of vacant property. (i) Accountancy fees in connection with the preparation of a maintenance claim. (j) Structural alterations necessary to comply with, or to anticipate the serving of, a dangerous structure or insanitary notice of the local council.

Where property is in a dilapidated condition when it is purchased, the Inland Revenue might claim that much of the purchasers' expenditure on repairs in the years immediately following is not a true repair but capital expenditure and so argue that their cost is not allowable as maintenance expenditure. The contention is that a lower purchase price was paid for the property because of the poor state of repair. This contention of the Revenue is based on a case which applied to business profits, and, as the case did not deal with repairs to properties assessed under Schedule A, any such contention should be resisted.

Claims are usually submitted on the basis of payments made in the year to March 31, but by agreement with the Inland Revenue it is possible to make a claim on the basis of expenditure incurred in any period of twelve months provided whichever basis is adopted is adhered to in the future. Where repairs, for example, have been carried out in March and the bill is not received until April, and the account paid in April (that is, in the following financial year) it is worthwhile, in the case of a new property, considering on which basis the claim shall be made. If expenditure incurred in March can be included in a claim for that fiscal year, relief would be obtained one year earlier than would be the case if the claim were made according to the date of payment of the account.

Where property has been newly purchased, it is worthwhile bearing in mind that it is the property on which the claim is made, irrespective of who owns it at the time when the repairs are carried out. It is always advisable to ask the vendor of the property if any claims have been made by him for maintenance relief in past years, and if so, asking him or his accountant to supply the necessary agreed figures. Even if no claim has been made by him the figures and receipts for what he has paid on repairs may be of value in establishing a claim based on the average spent over the last few years.

An important concession is granted by the Inland Revenue where property has been newly acquired in that for the first full five years of the new ownership they are prepared to accept a claim based on the actual expenditure carried out in each of the five years. Thereafter the claim will continue on the basis of the average of expenditure in the five preceding years.

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The following is a brief example of the two methods of claim:

Year ended March 31	1949	1950	1951	1952	1953	Total
Repairs	5	50	4	41	65	165
Insurance	10	10	10	10	10	50
	15	60	14	51	75	215

If one assumes that the Gross Annual Value of the property in question is £60, with a repairs allowance of £12, and Net Annual Value of £48, the maintenance claim for the year 1953/54 based on the average of the expenditure in the five years to March 31, 1953 will be computed as follows:

1/5th of £215 = £43. Less Statutory Repairs Allowance = £12. Maintenance Claim on £31.

If in the year to March 31, 1954, a total of £210 was spent on maintenance and insurance, the claim for 1954/55 would be computed by taking out of the average the £15 for 1949 and adding the £210. The average of the five years to March 31, 1954, is £82, from which the repairs allowance of £12 should be deducted, giving excess repairs of £70. However, the relief would be restricted to a figure of £48 as maintenance relief in any one year cannot exceed the Net Annual Value of the property.

If we assumed in the above example that the property was purchased in 1948, it would be possible to claim the concession whereby the actual expenditure in the first five years is utilized instead of the average basis. Claims should then be made as follows:

1949 £15 - £12 = £3

1950 £60 - £12 = £48

1951 £14 - £12 = £2

1952 £51 - £12 = £39

1953 £75 - £12 = £63 (but the claim would be limited to the N.A.V. of £48).

When a new property is purchased and it is intended to claim the concession, it is probably advisable for the landlord to arrange the repairs of the first five years that he does not expend more than the Gross Annual Value in each year. If he does this then he will obtain maximum relief, each year. In addition he will have the advantage that relief will be granted soon after the repairs have been carried out.

In the case of all maintenance claims submitted to the Inland Revenue, detailed supporting invoices and receipts must be supplied and where work has been carried out on the basis of an estimate, the Inland Revenue usually require the production of the estimate itself.

Normally any maintenance relief is granted to a landlord by repayment of Income Tax paid, but if the figures are agreed any time before the Schedule A tax is payable in January of each year, then usually the maintenance relief is offset against the Schedule A assessments.

Voids

If a property is vacant, tax under Schedule A will be relieved for the appropriate period when the house was empty provided no rent was being paid for that period. The Inland Revenue do not regard a house as unoccupied unless all the furniture has been removed.

The effect of taxation on increases of rent under the Act, 1954

It is important to bear in mind that the Schedule A valuations differ from those for rating purposes and the repairs allowance for the latter is usually larger. It is therefore of importance, in considering what increases can be allowed under the Act, to

appreciate that the repairs allowances granted for Income Tax purposes and for rating purposes differ. You may have a property which is assessed as follows for Income Tax purposes:

Gross Annual Value, £60, less Repairs Allowance, £12 = Net Annual Value: £48 (controlled rent).

with a rating assessment in the following figures:

Gross Annual Value, £60, less Repairs Allowance, £16 = Net Annual Value: £44.

In order to qualify for the increased rent under the Act, the landlord must have spent on repairs six times the statutory repairs allowance as set out in the Act in the past three years, or three times the repairs allowed in the last year. The statutory repairs allowance as set out in the Act are very similar to those granted for rating purposes. If one refers to the example set out above concerning maintenance relief, it will be noticed that the landlord has spent £110 in the past three years, and six times the statutory repairs allowance is £96.

In the year 1953 he spent £65 which is more than three times the allowance of £16. He therefore qualifies under both of the provisions.

The landlord, on these figures, would be entitled to increase the rent by twice the repairs allowance, that is by £32, which when he added to the present controlled rent would give a revised rent of £80. The restriction as to the total rent payable of twice the Gross Annual Value, in this example £120, would not apply.

An excess rent assessment would be made each year on the revised figures as follows:

Rent: £80, less Repairs Allowance for Taxation purposes, say, £16 = £64, less Net Annual Value assessed under Schedule A: £48 = Excess Rent Assessment: £16.

It would then be left to the landlord to make a maintenance claim in respect of the repairs which in the spirit of the Act should be carried out.

The rent has been increased by £32, and this is the figure which notionally he should spend in each year although there is no statutory obligation to do so, but if we assume that in the case of a newly acquired property in the first five years he does in effect spend £32 per annum and the repairs allowance of £16 is deducted in each year, then a maintenance claim could be made on £16 in each year, and it will be noticed that this claim is exactly equal to the excess rent assessment as set out above.

It is quite clear that if landlords take advantage of the provisions in the Act, a large number of excess rent assessments will become necessary, with a corresponding number of maintenance claims being made. It may be that in future Finance Acts some provisions may be incorporated which will avoid the considerable number of further excess rent assessments which will arise. However, at present the landlord will appreciate that an excess rent assessment will be made automatically, leaving it to him to claim for any maintenance relief.

Effect of creating a separate "hereditament" or maintenance claim

One possible pitfall should be mentioned at this stage. Where property is altered and converted, for example into two or more flats, the question is almost certain to arise of whether the owner can claim maintenance relief in respect of monies spent on what, in the strictest sense, could not be regarded as anything but repairs which in any event would have been necessary whether or not the conversion took place. Whether or not this relief can be claimed depends on the question of whether in making the conversion the property has lost its original identity.

On converting a property the Revenue might contend that there has been a change of identity; it is to their advantage to do so. If the tax-payer maintains that the building, notwithstanding the conversion, has not changed its identity, then the previous Schedule A assessment cannot be altered. If the Revenue maintain their contention that the identity of the building as a whole has been altered, and that new hereditaments have been created they will say that new units of assessments have come into existence and they will seek to make new Schedule A assessments accordingly on each. In view of the excess rent provisions (explained above), this will not affect the total tax payable directly, because whether the total rents receivable are assessed under Schedule A or Schedule D or under two or more Schedule A assessments is of no consequence but where the landlord stands to lose is in connection with his maintenance relief.

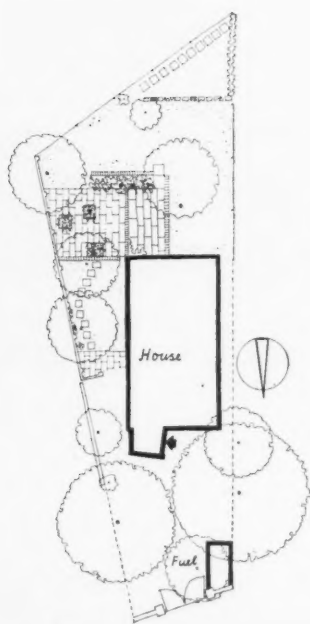
At the time of carrying out conversions, it would almost certainly be necessary to carry out some repair work caused by damage during the conversion of the existing structure, but the Revenue would probably argue that the whole cost of conversion including any repairs, represented the cost of creating the new unit of assessment and therefore was capital expenditure.

Furthermore, the benefit of earlier expenditure on repairs to the old hereditament, for maintenance claim purposes, will be lost. If there is any danger that a new unit of assessment will be created, it is advisable, if it is possible to do so, to delay any actual repair work which is independent of the conversion operation until after the conversion has taken place. If it is intended to repaint the outside of the property for example, this might well be left until a later year and not carried out at the time of the conversion.

25 Tanfield Road Croydon

Architect : Peter Gibbs

THE SCHEME: *The first essential in this conversion was that the interest on the loan for alterations plus the rates did not exceed £2 per week. To this end, much of the work was carried out by the owner-architect although it was necessary to employ some skilled labour and to sub-contract several items. Before alteration, the building was a typical coach house with loose boxes, coach space*



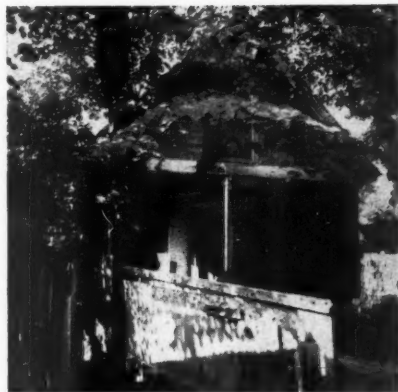
Site plan



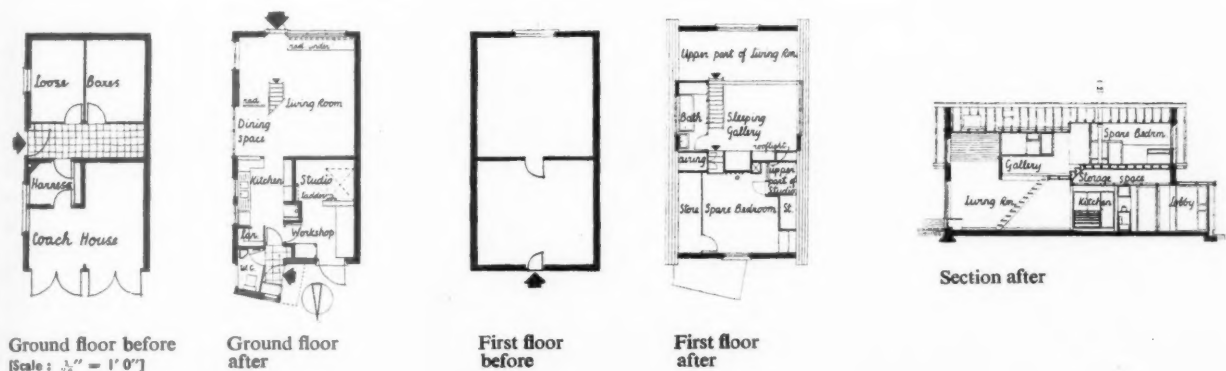
The living room seen from the garden at the south

and harness room on the ground floor (about 530 sq. ft.) with a hay loft above covering less than half of this area. The site itself was small; the frontage was 20 ft. widening to nearly 40 ft. at the rear and the depth was about 90 ft. Originally forming part of a larger property, the plot contained a number of mature trees and was surrounded by gardens of adjoining owners.

PLANNING DETAIL : To overcome the limitations of the existing building and to achieve the maximum sense of space, physical barriers were eliminated as far as possible. Thus the living room, dining space and kitchen, stairs and



The front entrance before and after conversion



Looking from the kitchen through to the living room



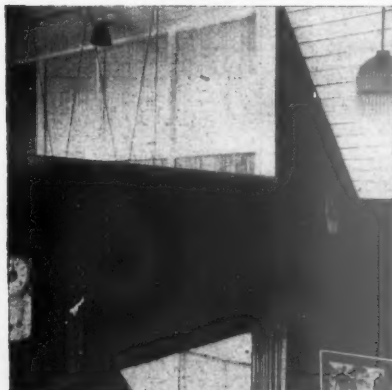


The living room before, during and after conversion

sleeping gallery over part of the living room were treated as one. That the ceiling of the living room extends to two storeys in height over part of its area accentuates this open planning and

increases the apparent size within. Wasteful circulation space, such as lobbies and corridors, has been omitted altogether and to reach the living room from the front door it is necessary

Left, front of the gallery and bathroom. Right, looking into the garden from the living room



to pass through the kitchen. In an unconventional layout such as this, one can dispense with the traditional entrance hall, although there must be a few occasions when the kitchen becomes too much of a corridor for the comfort of the housewife. Nevertheless, many families would prefer less conventional arrangements and the omission of wasted space to some official interpretations of contemporary planning which at times offer the reverse.

SERVICES AND INSULATION: A thermostatically controlled solid fuel boiler in the kitchen provides domestic hot water and heats the living room radiators; the calorifier is unlagged to give heat to the kitchen and bedroom above. All hot water pipes are insulated to reduce heat losses. Existing 9 in. brick walls are painted internally with bituminous paint and lined with 1 in. glass fibre quilt, battens and plasterboard. Except between ceiling joists where loose fill exfoliated vermiculite insulation has been used, the roof has been insulated with 1 in. glass fibre quilt between the rafters.

COSTS: Because of the skilled labour employed as well as the owner's own time the total cost of the work, £1,108, does not reflect the true capital outlay under normal conditions, but it is interesting to note that, including the purchase price of the property, the total cost was no more than £1,548.

RATEABLE VALUES:

		Gross value	Rateable value
Before	£26	£19
After	£38	£28

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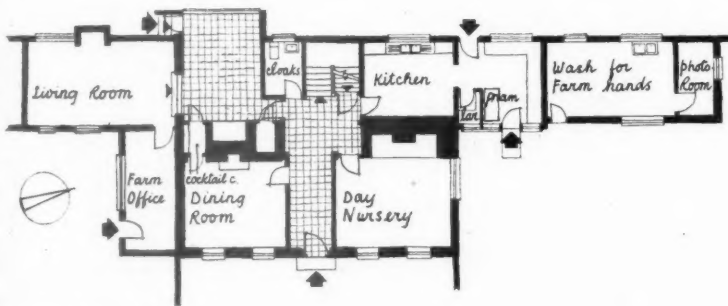
The farm from the west after conversion

Great Totease Farm Sussex

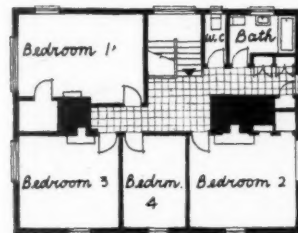
Architect : Sir Hugh Casson

THE SCHEME: Timber framed buildings are capable of concealing their ailments until their repair is scarcely economic and unless owners are particularly vigilant the Death Watch and furniture beetles can eat their way into the structural frame without detection. This applies more especially to the timber frames of old houses which over the years have been enclosed internally and externally with a cladding of

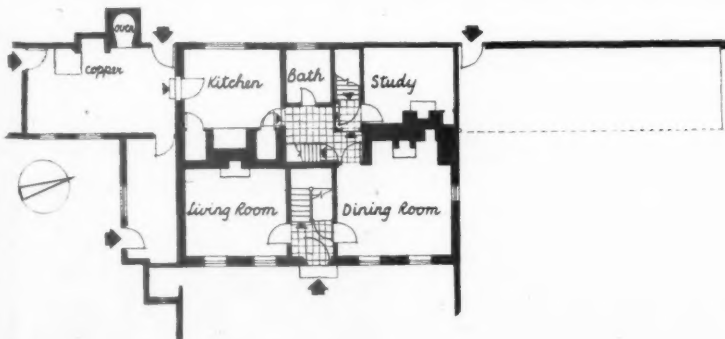
plaster or some other finish. At Great Totease Farm conditions were extremely bad when the property was acquired. All internal timbers, including main structural roof members, wall studs, floor beams and joints were infested with Death Watch beetle. As a conversion, the work entailed the gutting and replanning of an existing house to meet changed conditions rather than an alteration in the family unit capacity.



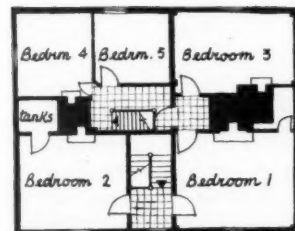
Ground floor after



First floor after



Ground floor before [Scale: 1/4" = 1' 0"]



First floor before



Above, the living room after conversion. Below, looking into the cocktail cupboard from the hall

PLANNING DETAIL: In some cases structural timbers were so weakened by beetle infestation that complete removal of the internals was considered more economic than the replacement of weakened members and the treatment of the rest. Thus after the clearance of floors, roof and stud partitions there remained, apart from the external structural walls, two massive brick fireplace and flue structures. Because of this, it was possible for the entire house to be replanned to suit the new

owner's requirements. The external appearance of the original building was carefully preserved, apart from the introduction into the rear elevation of a large picture window in the upper living room and new windows in the bedrooms, bathroom, kitchen and laundry.

COST: Licences issued for the work, which was carried out during 1952, amounted to £3,200.

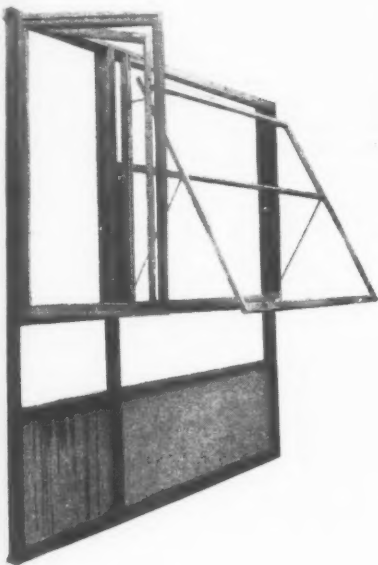


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TECHNICAL SECTION

In this, the third article on the design and practice of joinery, the authors, John Eastwick-Field and John Stillman, leave the consideration of the marketing and properties of the raw material dealt with in their first two articles and begin to examine the construction of joinery components. They here set out to analyse the principles which must govern the use of timber in joinery, preparatory to discussing in subsequent articles the detailed design of sections and joints. The authors hope that the articles will arouse comment which will be useful for the MS of the book which they are preparing. The illustrations are by Robert Maguire. For purposes of classification the series is numbered 13. Materials: Timber.

THE DESIGN AND PRACTICE OF JOINERY

By John Eastwick-Field and John Stillman

3. AN ANALYSIS OF CONSTRUCTION

Nothing has been said as yet about the way in which wood, in the form of seasoned sawn planks, is made up into articles of joinery. Before anything can be made, there must be a design which will determine both what the article is to look like and exactly how it is to be put together from separate pieces of wood.

The design of some of the common articles of joinery, such as sash and casement windows and panelled and battened doors, has become so much a tradition that the details of their construction will not necessarily have to be described to the joiner or manufacturer, unless some departure is required from the usual pattern. These articles are often produced with no more than a note from the architect of the sizes of the members; and in the ordering of mass-produced standard articles all that is required is a catalogue number. On the other hand, if the

architect wishes to maintain a closer control or to depart from the accepted practice in construction, or to modify the appearance of such articles, he then must have enough knowledge of the methods at the disposal of the joiner or manufacturer to be able to give him proper instructions.

Equally, if he wants to have joinery made which is exceptional in size or for which there is no precedent, or whose particular character depends upon the way in which it is made, then again he must be able not only to give appropriate instructions, but he must also understand the technical means and visual consequences of the method of construction which he chooses.

The illustrations overleaf exemplify these particular departures from standard construction, for which detailed instructions and drawings would be necessary:

(a) shows a dowelled joint for the junction

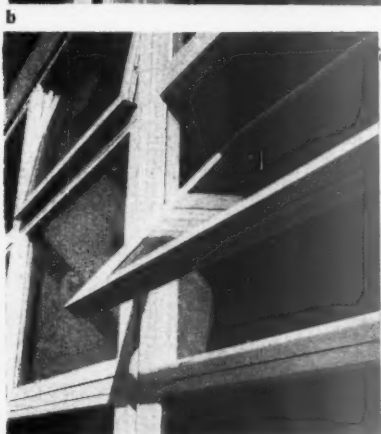
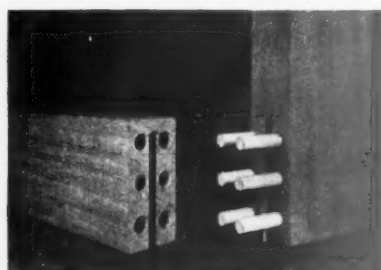
between the stile and rail of a framed door, where the normal joint would be a mortice and tenon—a change in construction.

(b) shows a door in which the width of the battens, the square rebates between them, and the curved light are all variations from the standard framed and battened door—a change in detailed design.

(c) illustrates a part of a large continuous area of glazing in wooden frames, and is indicative of the problems involved when extra large sizes are needed.

(d) an acoustic reflector, is typical of the kind of work for which there is unlikely to be any precedent, and about which there will not be any guidance in standard trade textbooks.

(e) shows continuous benching designed both for economy and also to obtain a particular character not associated with traditional methods of making such fitments.



These examples serve to show that it is not enough merely to learn to know parrotwise the details of what has come to be thought of as traditional practice. Instead one must understand the principles exemplified by such joinery and to have a vocabulary from which to draw, not of complete components, such as windows and doors and so on, but of basic elements.

If one examines any article of joinery one may first be surprised by the subtlety with which the actual joints are made, and indeed since the function of the many joints used must be understood in order to design satisfactorily, the subject will be discussed later in full. It may also be apparent that all joinery is a process of putting together in some way or another a number of relatively small pieces of wood. These pieces, whose dimensions are governed by the size of the logs and the method of their conversion, are never large enough to comprise the whole article—unless one were to count a shelf as such—and some means has to be found of making them, as it were, larger, whether it be to form an open framework or a flat area of solid material.

An analysis of joinery suggests, in fact, that there are these two basic requirements:

1. To make *skeleton frames*, as, for instance, in door frames, casement windows, and the supporting framework to a counter.
2. To make *flat areas of wood*, as in doors, counter tops, linings and wall panelling.

Almost all joinery consists of these two elements, either separately or in combination and it is therefore important to know how they are constructed and how they behave. Figs. 2 and 3 show two typical ways of forming frames, in which one important consideration is that the cross-section of the individual pieces shall be large enough and of the right shape to permit an adequate joint to be made at the corners. The choice of the appropriate joints for frames for different purposes will be discussed separately, and for the moment one need be concerned only with the simple fact that frames of one sort or another are a common part of joinery, and that no better way of making them has been found than by joining four separate lengths of wood at their ends. It is obviously not practicable, for instance, to make such a shape by cutting out the centre portion of a large plank of wood, since two sides would have the direction of grain across the section and would have no strength. It would, of course, be possible to overcome this by using very thick plywood, but this would be uneconomical, apart from other objections, such as the difficulty of screwing or nailing into, or even painting, the top edge.

A frame made up in the traditional way is very stable, since the shrinkage along the length of the grain of each member is negligible, and the width of the members, where shrinkage would be likely to occur, is usually relatively small. For this reason, the frame is often used in conjunction with panels filling the centre, as one method of making the large flat areas of wood which we are considering.

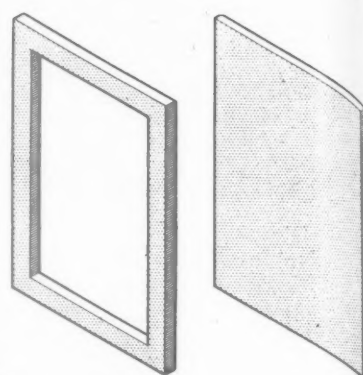


Fig. 1

The two basic elements of joinery: skeleton frames and flat areas of wood.

With the exception of shelves, or such components as consist solely of frames, there are indeed very few instances in joinery where it is not necessary to make sides or tops or bases which are bigger than the individual

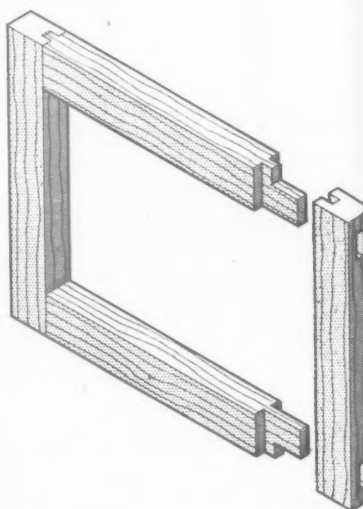


Fig. 2

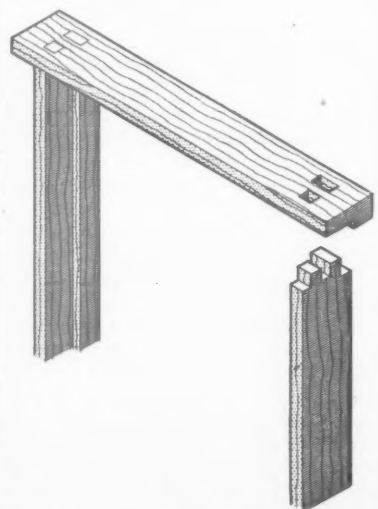


Fig. 3

pieces of wood available. It is true that the top of a counter could be simply one very large plank and again, in modern construction, a panelled wall may consist of relatively few large sheets of ply. In the first instance, the appearance of the single plank may be particularly valued, though it is likely to be expensive, and in such a position allowance can fortunately be made for the movement which will inevitably occur; in the second instance, advantage is taken of the special characteristics of plywood, one of which is that it has very little movement. More usually any area larger than the individual plank has to be made up in one of the following ways:

(a) A number of boards with their edges accurately finished and glued together (Fig. 4). When the surfaces are sanded the joints can hardly be seen—and the separate boards can be distinguished only by following their grain. In "carcass" work, which is the name given to the box-like casing of which the outside of a chest of drawers is typical, this method is commonly used. It has one great disadvantage, which prevents its being used, for instance for doors, where a constant width is important, and that is that the movement which takes place in each board is cumulative, and the total movement is equivalent to what might be expected from a single plank of the same width as the whole unit.

(b) In positions where the boards are used in conjunction with ledges, rails and other members in which the grain is in the opposite direction, the fixing between the two must be designed to make allowance for the movement of the boards. An example of such fixing is shown in Fig. 5. Since the boards will move as one, but the ledge will not move correspondingly because its grain goes in the opposite direction, the screws are made to run in slots and it will be seen that whilst such screws hold the boards close against the ledge, they do not prevent them moving laterally.

(c) Fig. 6 shows another elementary method of joining up small pieces of wood to make a larger unit, but both the principle and its applications are different. Here the joints are not glued and each batten is free to move independently of the next. The joints will open and close with the movement of the battens, probably in an uneven manner. To avoid unsightly appearance, the joints are accentuated in a way which tends to conceal irregular movement. This is done sometimes by shaping the edges of each board in a "V" as shown; half-rounds and square rebates are other possible variations. A ledge becomes an essential part of the system since the boards would otherwise fall apart, but it can be screwed or nailed to each board without slots because each board is free to move either side of the screw. By way of illustration, if each board were screwed twice in its width it would theoretically be necessary to provide slots; but in practice, the movement across one board would not be enough to make this necessary. Boards put together with unglued joints in the way that has been described are used where the movement across the

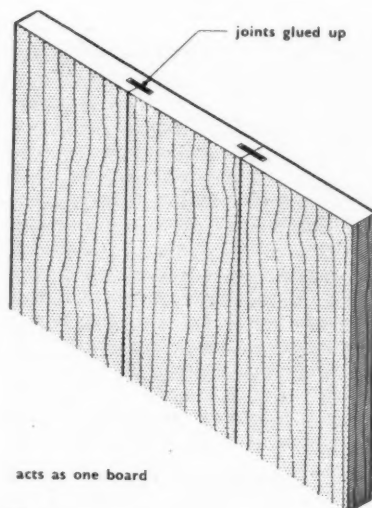


Fig. 4

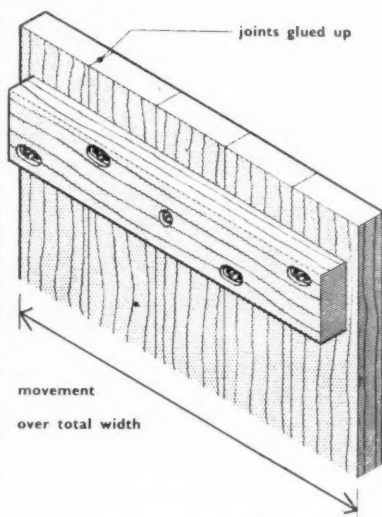


Fig. 5

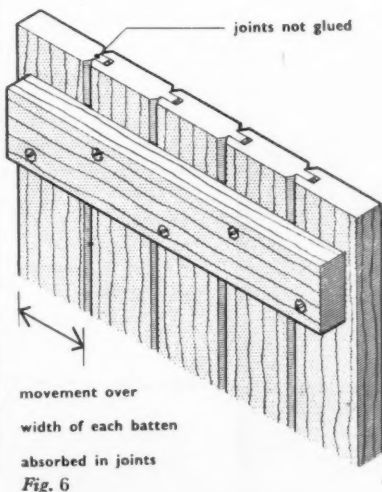


Fig. 6

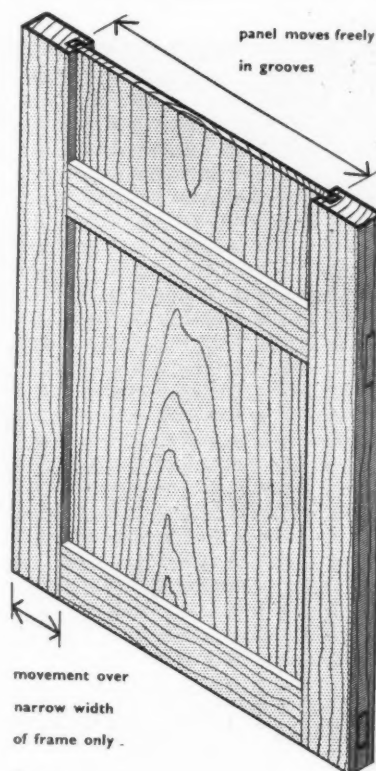


Fig. 7

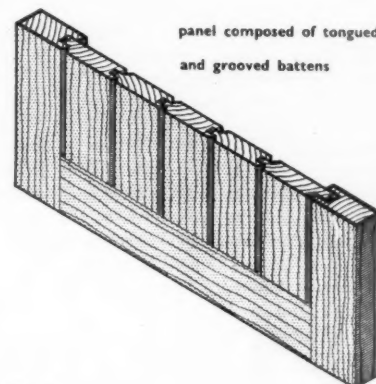


Fig. 8

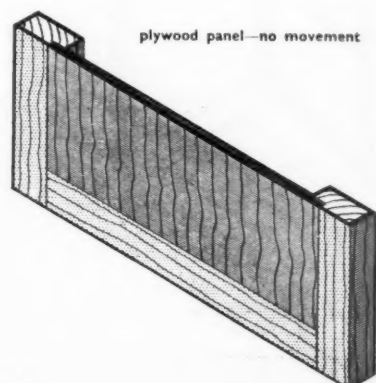


Fig. 9

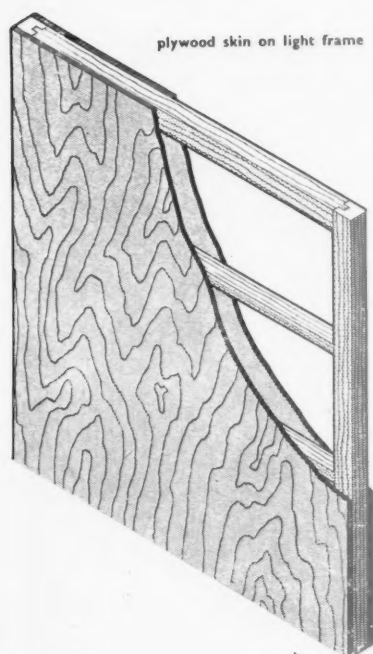


Fig. 10

total width must be kept low, and where it does not matter that the joints show.

(d) Fig. 7 illustrates what is perhaps the most commonly used method of achieving the flat areas of wood which we are considering. It consists of the stable skeleton frame with an infilling panel which can be allowed to move freely within the grooves that house it. Fig. 8 shows a variant in design embodying the same principle. Formerly, the panel consisted of solid wood and its size was limited by the amount of movement which could be accommodated in the grooves and also by the strength of solid timber in the thicknesses which are practicable for panels. With the introduction of plywood this restriction in size

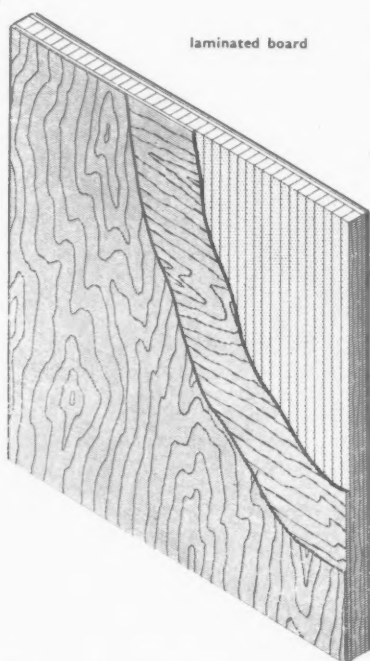


Fig. 11

no longer applies and very large panels can be incorporated. Plywood, however, has not only the advantage that it can be produced in large areas, but also that the movement is negligible in both directions. Because of this characteristic it can be used in conjunction with a frame without allowance for movement.

(e) Fig. 9 illustrates how advantage can be made of the stability of plywood to provide a flush infilling to the frame. It would not be possible to achieve this with a solid wood panel since the joints at either side of the panel would open and close.

(f) Recognition of the considerable strength of plywood—yet another of its advantages—has enabled very light frames to be used

in conjunction with it to produce large units which are thin compared with traditional framing, and which are very stable and very strong. The stresses in the unit are taken by both the plywood itself and also by the frame. When two sheets of ply are used, as in Fig. 10, the function of the frame is largely to keep the ply apart and to prevent twisting. In certain instances the frame is not jointed and the plywood is merely glued to the members of the frame which are laid out in a position to receive it. The method is, however, expensive unless used on a mass-production scale.

(g) The methods so far described involve work in the joiners' shop, and the units are made to specific sizes. The unit shown in Fig. 11, however, is a manufactured composite board obtainable ready-made in large areas, and it is intended for cutting to the required size. It is used in much the same way as the glued-up boards described in (d) and since it has the low movement in both directions characteristic of plywood, it has largely replaced traditional "solid" construction. Plywood of sufficient thickness to avoid twisting would probably be much more expensive than the blockboard shown.

THE USE OF SKELETON FRAMES AND FLAT AREAS OF WOOD IN JOINERY COMPONENTS

As a basis for designing joinery it may be of help to think of components in terms of the skeleton frames and the flat areas of wood which we have been discussing.

Thus:—A window consists of a series of skeleton frames.

A door consists of a flat area of wood (Fig. 12). Doors, in fact, make a very convenient illustration since their various patterns exemplify nearly all the systems described above.

A bookcase consists of flat areas of wood joined to form a box-like structure (Fig. 13). A table consists of a combination of a

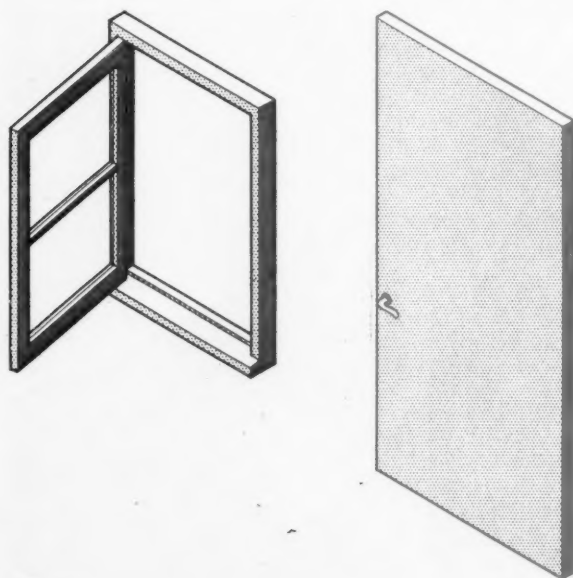


Fig. 12

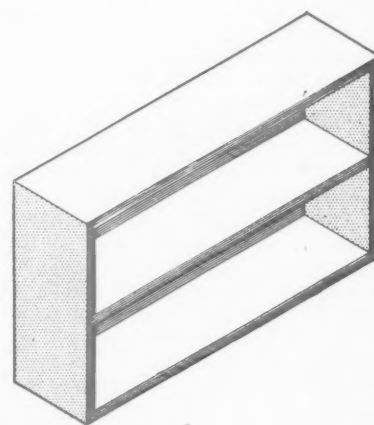


Fig. 13

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WORKING DETAIL**HANGAR DOORS: AIRCRAFT BUILDINGS AT HATFIELD***James M. Monro and Son, architects*

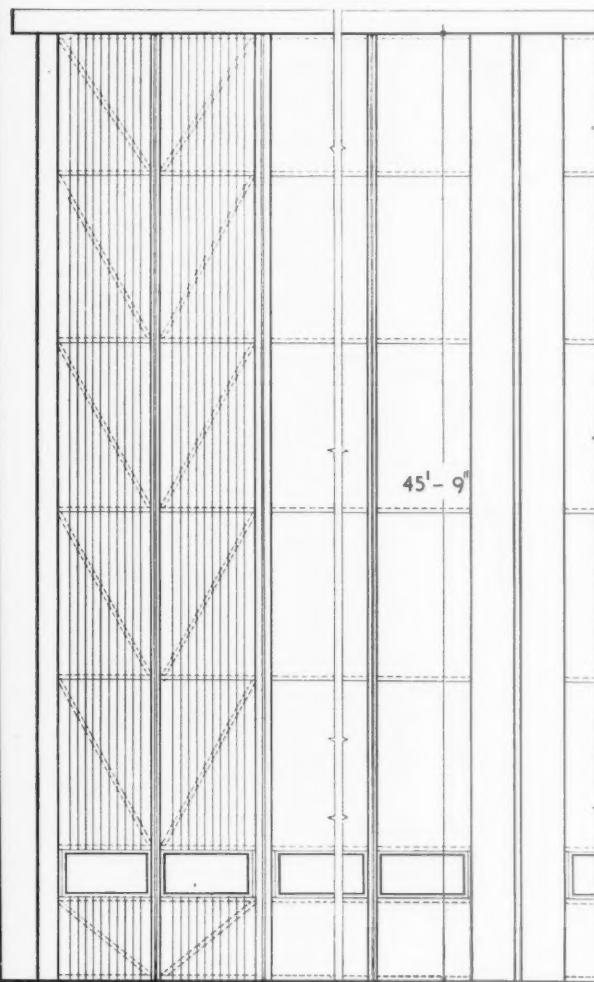
The aluminium alloy doors are designed to present a corrugated face on plan when closed to give additional strength against wind pressure. Power for opening and closing the doors is provided by two 3-h.p. motor units contained within the two meeting stiles (described as "power mullions" in the drawing). Sheaves situated at the head and foot of these stiles open and close the doors by easing them along a stationary cable. Each separate leaf of the door is hinged to a "sliding upright" which transfers the weight to the supporting structure. All hinges are sealed when the doors are closed by means of rubber extrusions and rubber aprons exclude draughts at the head and foot, while the doors themselves are packed with brass wool for insulation. A glazed stone-ware channel runs beneath the bottom rails to keep the threshold free of moisture.

WORKING DETAIL

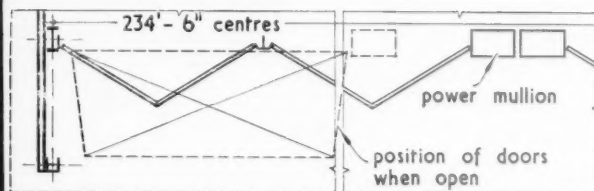
HANGAR DOORS: AIRCRAFT BUILDINGS AT HATFIELD

James M. Monro and Son, architects

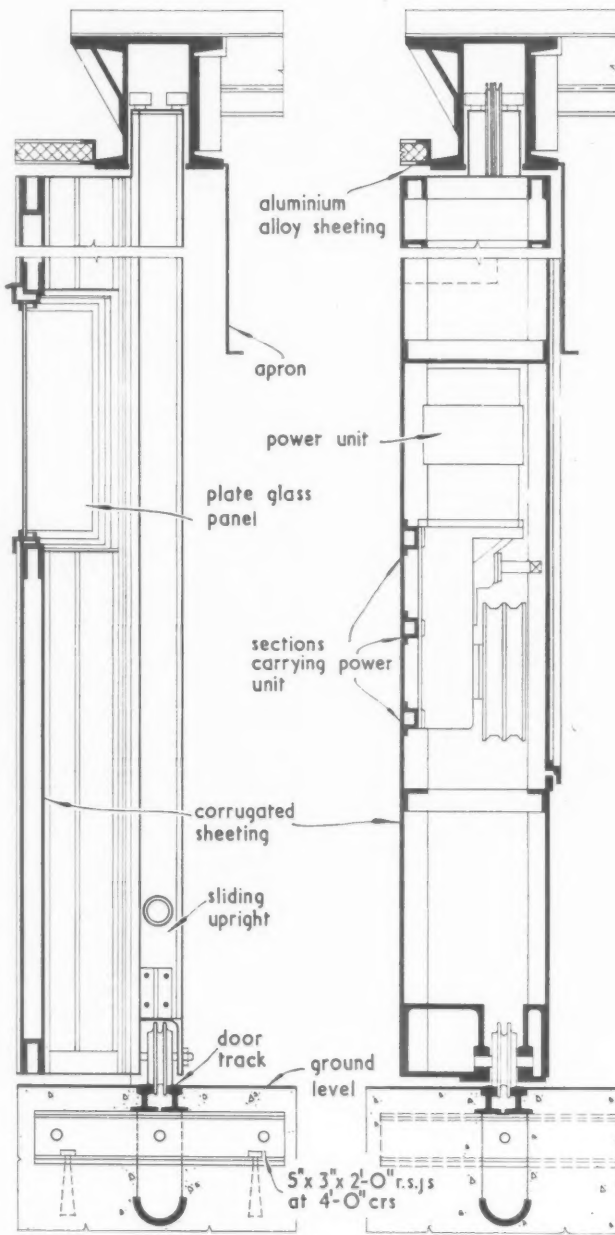
DOORS: 22



ELEVATION OF HANGAR DOORS.

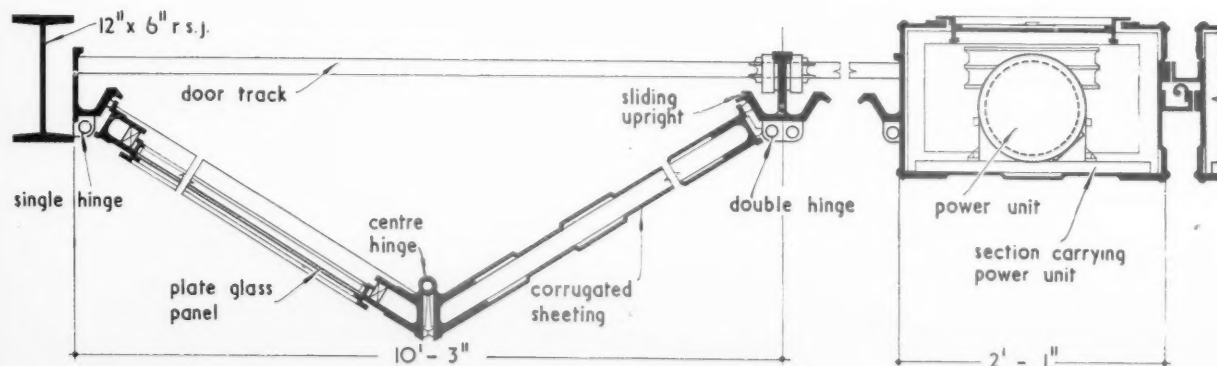


PLAN SHOWING DOORS CLOSED. scale $\frac{1}{8}'' = 1'-0''$



VERTICAL SECTION THRO' HANGAR DOOR. scale $\frac{3}{4}'' = 1'-0''$

SECTION THRO' POWER MULLION



PLAN OF HANGAR DOORS AND POWER MULLION

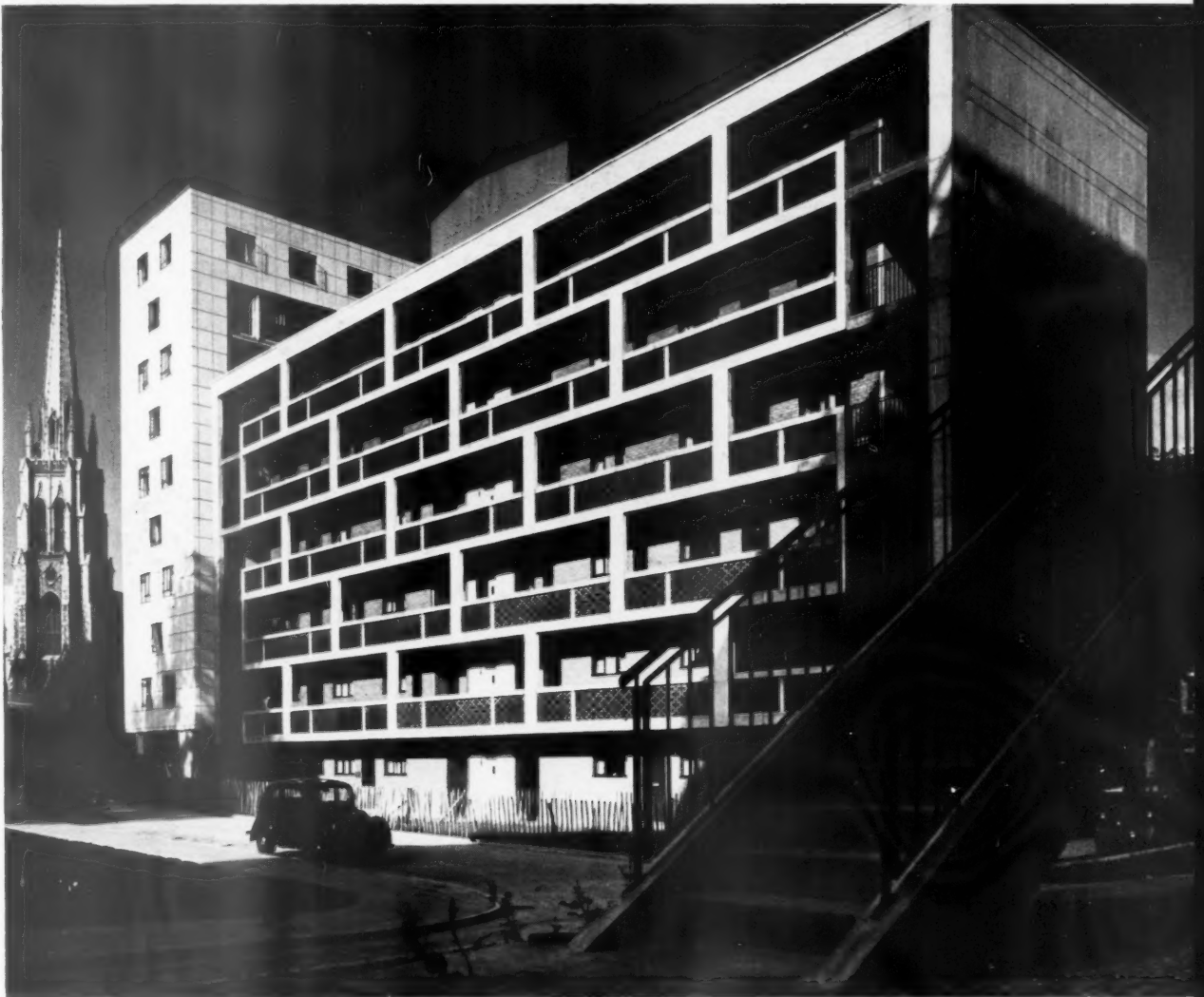
scale $\frac{3}{4}'' = 1'-0''$

WORKING DETAIL

BALCONIES: 13

ACCESS BALCONY: FLATS IN LONDON, W.2

Tecton—Drake and Lasdun, architects ; Ove Arup and Partners, structural engineers



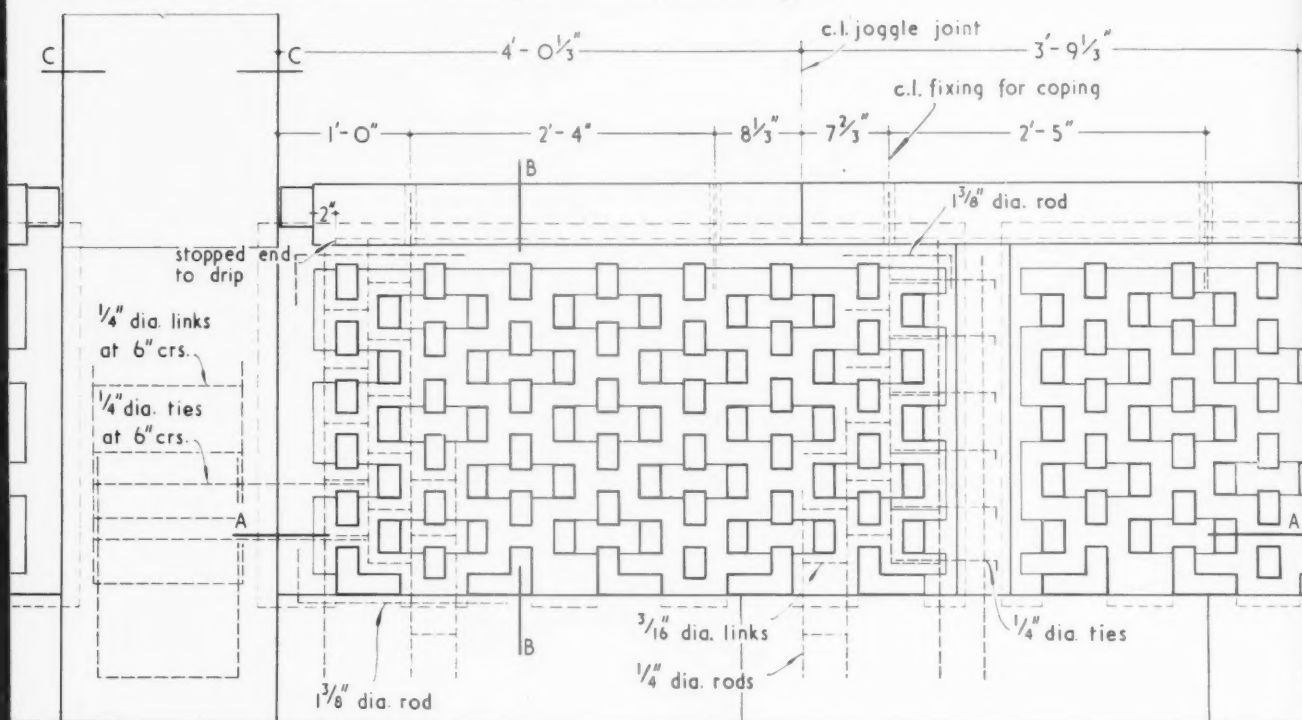
The balustrade is a part pre-cast, part in-situ, concrete structure. The floor slab of the gallery is rebated to receive the infilling slabs, the projecting reinforcing rods of both being spliced together and the joint cast in-situ, while the pre-cast stone forward edge of the floor slab serves as shuttering. The vertical pre-cast stone facings likewise serve as shuttering to the in-situ columns. The infilling slabs are cast with an aggregate of black Cornish granite and black pigment in ordinary cement, the external face having a raised surface which is polished to expose the aggregate. The facings and the coping have a Portland stone finish.

WORKING DETAIL

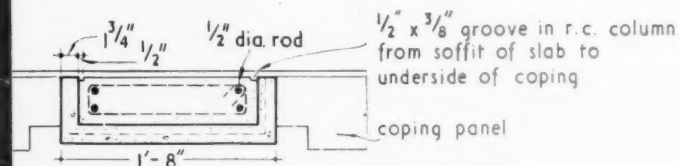
BALCONIES: 13

ACCESS BALCONY: FLATS IN LONDON, W.2

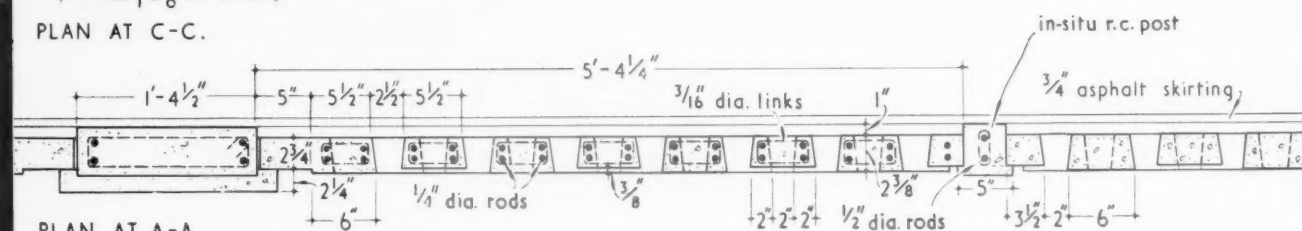
Tecton—Drake and Lasdun, architects; Ove Arup and Partners, structural engineers



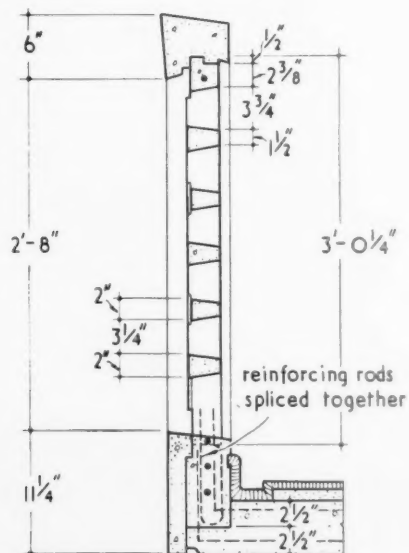
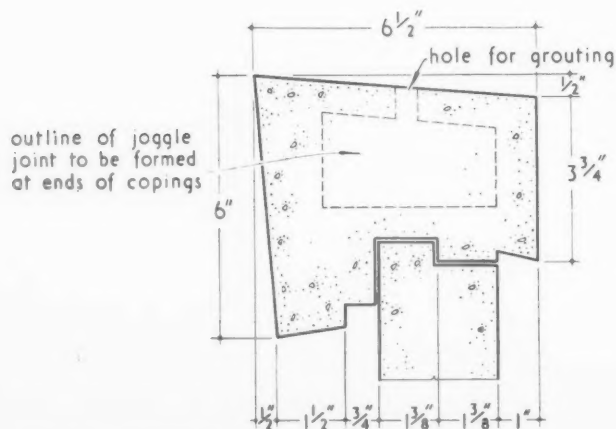
ELEVATION OF BALUSTRADE PANELS.

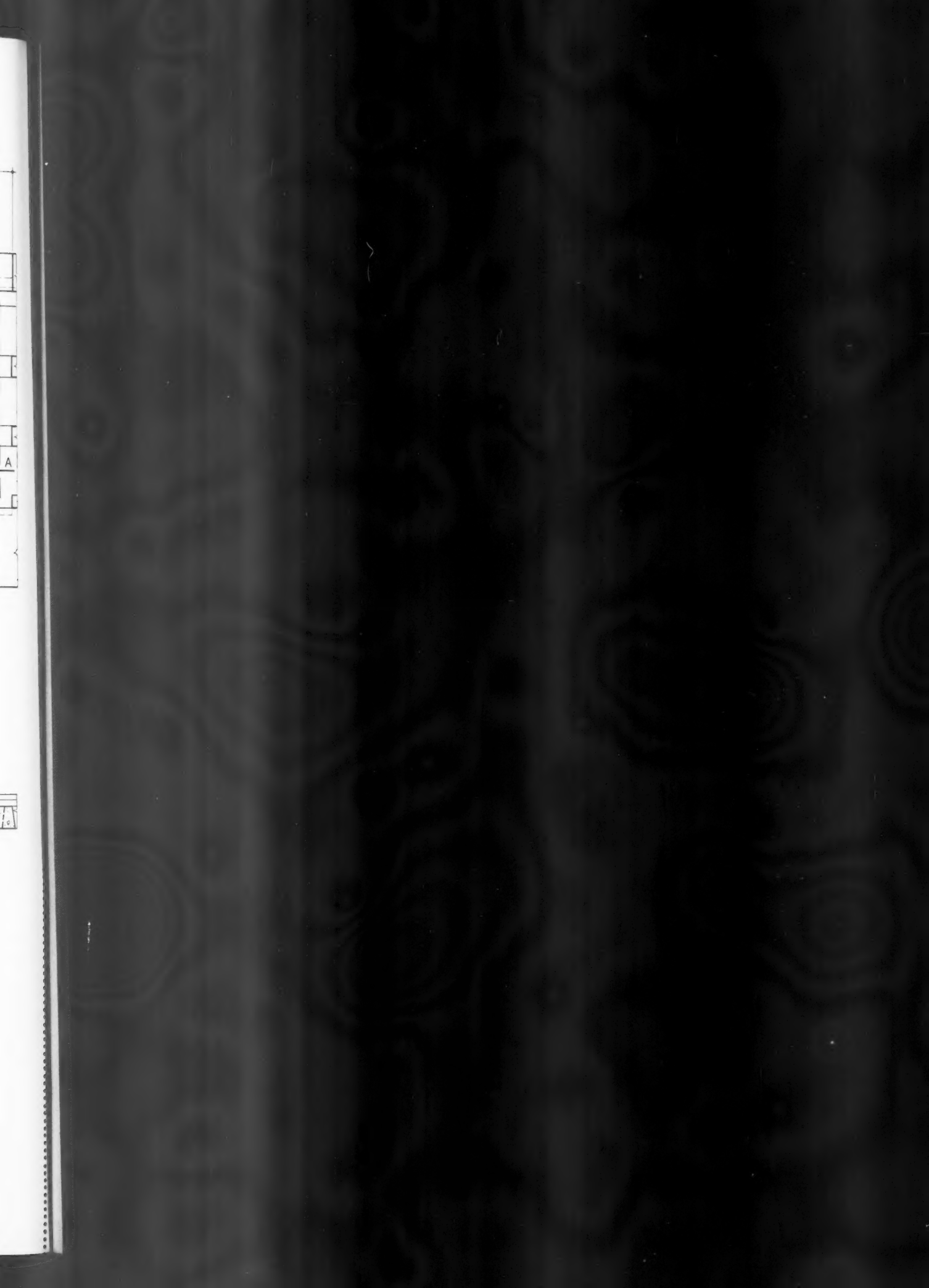


PLAN AT C-C.



PLAN AT A-A.

SECTION B-B. scale $\frac{3}{4} = 1'-0"$ TYPICAL SECTION THROUGH COPING PANELS.
scale $\frac{1}{4}$ full size



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Fig. 14

skeleton frame and a flat area of wood (Fig. 14).

A length of laboratory benching consists, probably, of a complex of both, though the method of putting the units together may involve the use of separate connection pieces or rails which do not come strictly into either category (Fig. 15).

The choice of construction for different kinds of component and conditions of manufacture is discussed below, but before proceeding with this it should be made clear that in endeavouring to make a simple analysis of joinery there is a danger of excluding much that does not conveniently fit. We recognize that there are many miscellaneous items such as architraves, cornices, and even such important components as staircases and their balustrades to which the analysis does not wholly apply.

Assuming, however, that for the most part this analysis of joinery is valid, it remains to discover what factors influence the designer in choosing any one of the systems which we have described. That is to say, why in one instance he would choose to use battens and ledges, and in another a framed panel; or glued-up boards rather than blockboard, and so on.

The variations are almost limitless, since there are so many different components each of which can be made in many different ways. Every designer will have his personal preferences and will adopt methods to suit his particular requirements. These will no doubt be modified from time to time by experience and by the practical advice of the joiners or manufacturers who work from his drawings. Nevertheless, every design will be subject to certain constant factors, amongst which are:—

CHARACTER

The difference in aesthetic quality of traditional moulded wall-panelling from a flush veneered plywood wall lining must be obvious. The character of each is determined by the constructional details of the method used.

Again, if very high quality and finely finished work in hardwood were required, it would demand a different method of con-

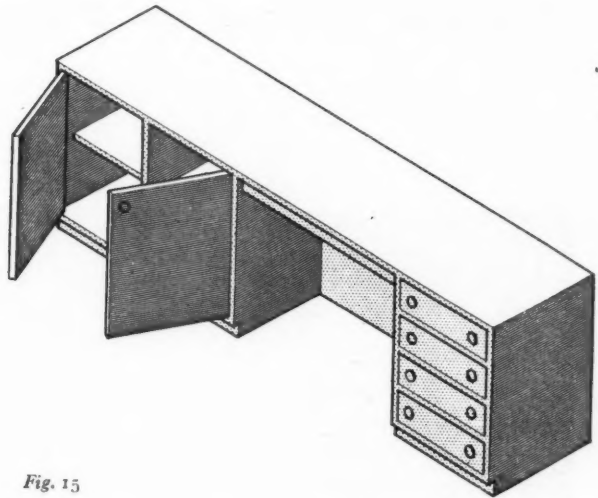


Fig. 15

struction from a cheap counterpart in painted softwood.

ECONOMY

When, for example, only a few cupboards

are required in softwood, it would probably be cheaper for them to be made with solid sides, but similar cupboards made in numbers would be cheaper framed and panelled with plywood. On the other hand, if they

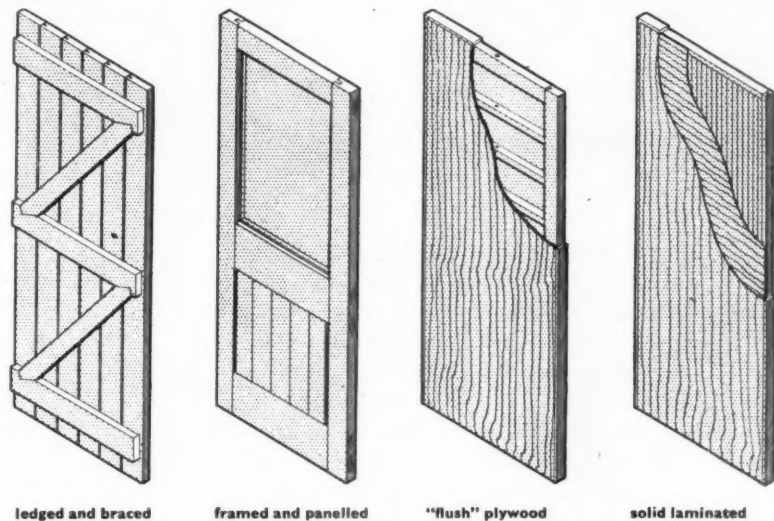
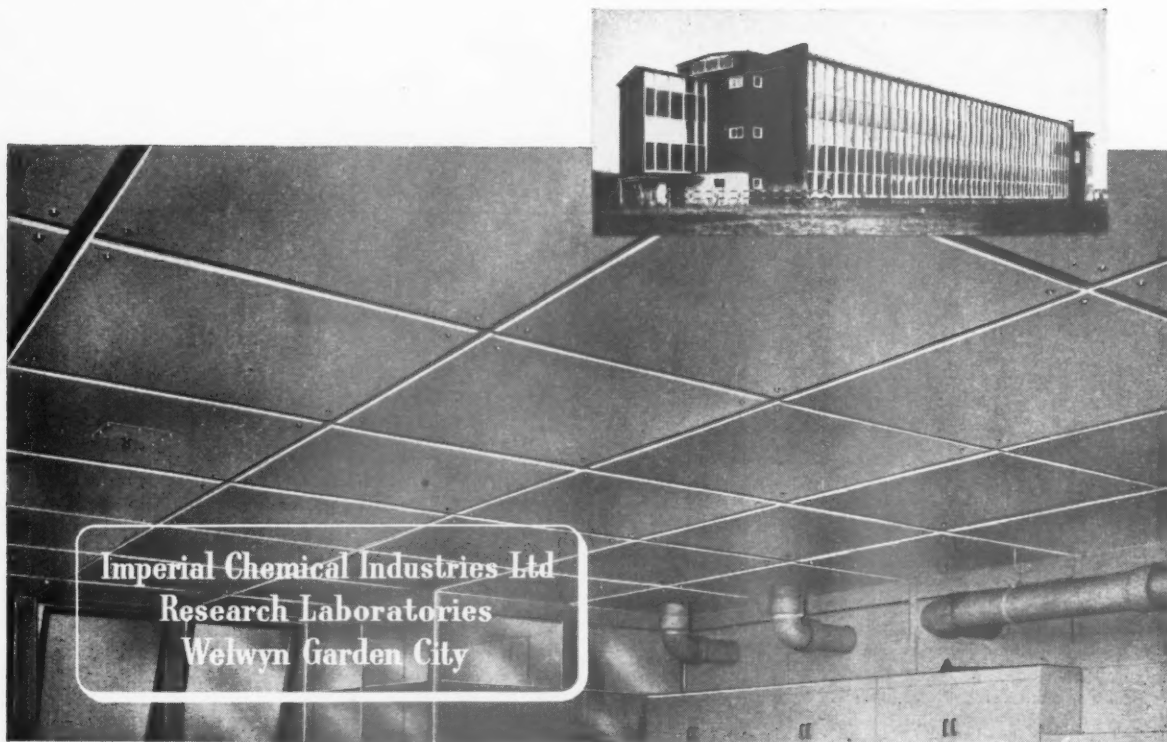


Fig. 16. Four kinds of door each of which has characteristics which make it suitable for particular applications and for which one or other of the general methods of construction already described is especially appropriate. Left to right: A LEDGED AND BRACED door is simple to make and cheap, and presents a neat, weatherproof face on the battened side; for these reasons it is often used for low cost exterior doors. It has no glued joints; the centre battens are free to move within the limits set by the two outside ones, which will always fit the width of the door frame. The diagonal braces are necessary to keep the door rigid and to prevent it from "dropping" (i.e., sagging downwards from the hinge side). FRAMED AND PANELLED doors consist of a stable skeleton frame with glued joints, the openings of which are filled with thin panels of either solid timber or plywood. A door of this type can be divided into any number of panels, vertically or horizontally, separated by additional framing members. Openings can also be filled with glass. By contrast with ledged and braced doors they are associated with more expensive work and their construction allows considerable elaboration. The example shown has a glazed upper part, the lower panel being of tongued and grooved boards. FLUSH PLYWOOD doors make use of the advantages of plywood to provide an unbroken surface. The type shown has two thin plywood faces glued to a "core" of light softwood framing. The cavity is ventilated and a hardwood tipping conceals the core and the edges of the plywood. Because of their construction flush doors are very suitable for mass-production, and their manufacture has become specialized and economical. Owing to the fact that ordinary plywood does not withstand the weather, flush doors were for long not used outside, and the particular character which they have could not be made use of in this position. The introduction of synthetic resin glues in the manufacture of the plywood itself and of the doors has, however, made this use possible. SOLID LAMINATED doors are made of thick blockboard, usually with a facing veneer and a hardwood tipping. Being completely solid and of uniform thickness, they are used in positions where extra strength, fire protection or sound insulation is required.

Pre-war quality for Post-war work



Imperial Chemical Industries Ltd
Research Laboratories
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Architects: J. Douglass Mathews & Partners

General Contractors: Holland & Hannen and Lubbock Ltd.

The constructional feature of the ceiling panels was a core of $1\frac{1}{2}$ " compressed granulated cork slab bonded on both sides to sheet Aluminium, the underside sheet being perforated to provide sound absorption. A synthetic resin adhesive was used which would, in fact, withstand immersion in boiling water. The size of each panel was 3' 10" x 3' 10" and the metal was turned over on all edges to make a seal. They were grooved for fixing with "Armourply" strips, 2" wide, to make up the 4' module.

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were required to have a polished hardwood finish, it is likely that veneered blockboard would be more economical than solid hardwood boards jointed in their width. Although hardwood is itself generally cheaper than blockboard, the labour involved in jointing the boards accurately and "cleaning up" the joints for a good finish adds considerably to the cost.

MOVEMENT

The elimination of undesirable movement, which we have already discussed, will often dictate the method of construction as can be seen from the examples.

CHARACTERISTICS OF PLYWOOD AND COMPOSITE BOARDS

The introduction of these boards which have relatively little movement has much altered the design of joinery; and a visit to any manufacturer's shop will prove the extent to which traditional methods are being modified to take advantage of their stability. Nevertheless, it is also evident that, by contrast with some of the work of the furniture and cabinet-making industries, very little joinery is designed to take advantage of some of the other properties possessed by plywood. Whereas radio cabinets are frequently made from bent and moulded plywood, such items as drawers, which could be similarly made, are still constructed in a traditional way, largely for reasons of economy.

WEATHER

Components which are exposed to the weather must be designed so that their construction will not suffer from the damp, and must incorporate only those materials which are weatherproof. For many years plywood was not satisfactory when used out-of-doors, and constructions which relied upon it failed. This has not, however, applied since the introduction of resin-bonded exterior grade plywood, though a prejudice against it still exists.

FINISH

Even in two components which were exactly similar in shape, the construction might well be different according to whether the finish were to be polish or paint.

SIZE

The size of a component will clearly influence its construction, not only for reasons of strength, but also for convenience of handling and installation. For example, it would not be possible to transport a whole range of cupboards and drawer units if they were constructed as one in the shop; their construction would therefore have to be modified to enable them to be built in smaller units and joined in some way on the site.

SITE WORK

Apart from the site fixing and fitting of separate factory-made components, so-called built-in cupboards and other components are often required in such few numbers that they can readily and cheaply be made by the joiner on the site. The choice of method here depends largely upon the type of firm employed; the specialist joinery manufac-

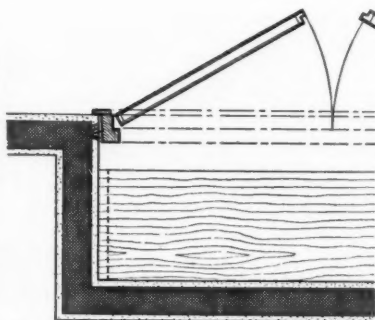


Fig. 17

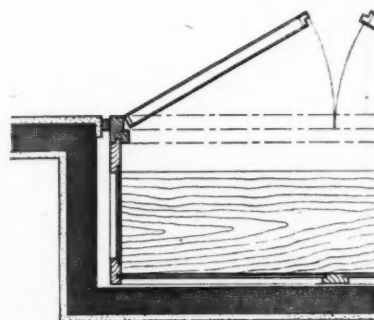


Fig. 18

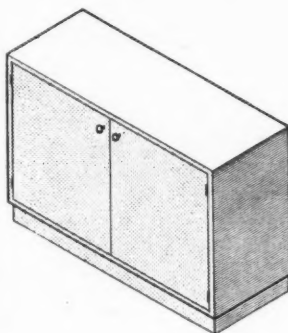


Fig. 19

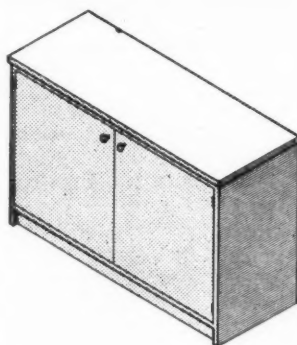
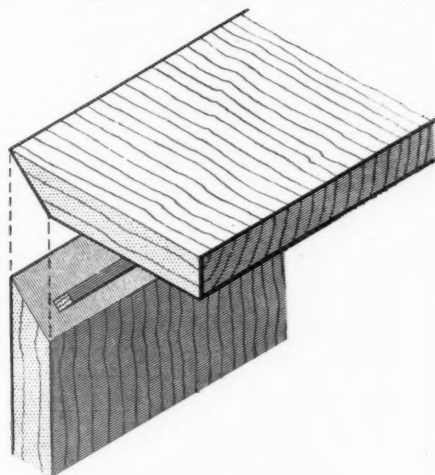
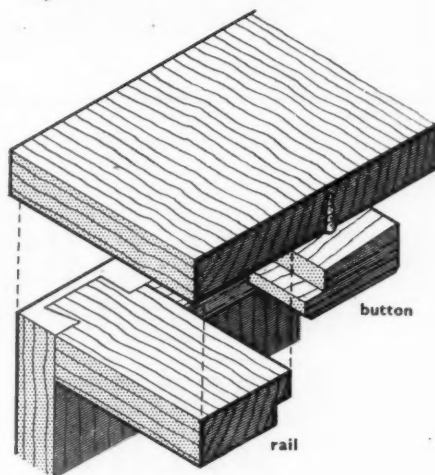


Fig. 20



Figs. 17 to 20. These examples of cupboards show the way in which appearance, economy, and other factors affect construction. Fig. 17 shows the cheapest way of making a "built-in" cupboard in a recess. The recess is first plastered (or finished in a similar way to the walls of the room) and rough timber grounds are incorporated for the fixing of a normal door frame. Shelves are fixed to battens plugged to the wall. A better quality and more expensive method is shown in Fig. 18. Here the cupboard is lined with wood, and the unit is made up as a complete "carcass"; the door frame is of hardwood, behind which is a softwood framing clad with plywood flush to the inside. Shelves are housed into the framing members. Some allowance in size must be made for building in, and the gap afterwards closed by a hardwood strip "scribed" to the wall, or by other means. Some similar method of construction is essential if drawers are part of the design, since the carcass sides are required in order to support the drawer runners. The cupboard unit illustrated in Fig. 19 has been designed with its top returning flush with the sides, showing no end grain. To achieve this, it is necessary to use a mitred corner, which is expensive. The mitre shown in the example is, however, more economical than, for instance, a secret dovetailed joint which would be an alternative. A more economical method of constructing the cupboard, but which necessitates an alteration in appearance, is shown in Fig. 20. Here the top is allowed to oversail the front and sides, and is fixed with "buttons" (i.e., small wooden cleats which are screwed into the top and engage in grooves in the carcass). The carcass sides are connected by rails. This arrangement allows for movement in the top, which is essential if the sides are framed.



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Figs. 21
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Very lit
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Fig. 22
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Support
built in
"dry"
the site

turers and the larger builders' shops have a preference for completing as much of the work as possible in the shop, and cutting site work to a minimum. This may involve apparently unnecessary duplication, such as having plywood backs to cupboards which

will be fixed against a plastered wall, and yet still be more economical. On the other hand, many smaller builders may find it more economical to make use of the walls against which the components are to fit. This will require a modification in the de-

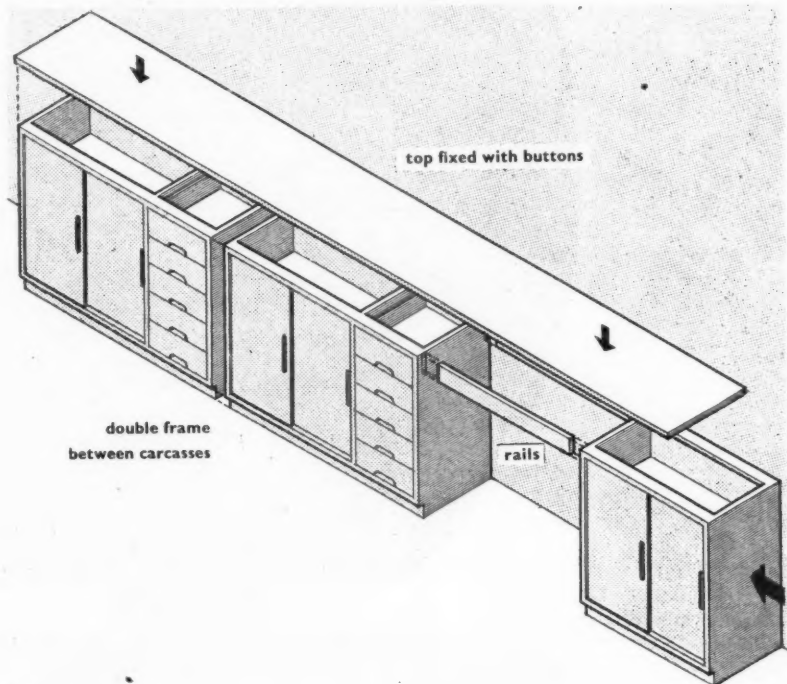


Fig. 21

Figs. 21, 22 and 23 (page 59). Joinery components which are too large to be transported and installed as one unit, have to be designed to be broken down into smaller pieces which can be fitted together on the site. Fig. 21 shows a simple way of doing this for continuous benching. The component is made as a series of complete carcasses, which are placed against each other or joined by rails, the top being fixed afterwards with buttons. Very little site work is involved, a consideration of some importance since more accuracy is possible if the major part of the work is done in the factory; this advantage offsets the otherwise uneconomical duplication of structure at the points where the units meet. Another method of achieving the same object is illustrated in Fig. 22. Here the benching is built up of separate cross-frames connected at the front and back by rails. Supports for shelves and runners for drawers can be built into the frames. The whole unit is put together "dry" in the shop, taken to pieces, and assembled on the site and the joints finally glued or screwed.

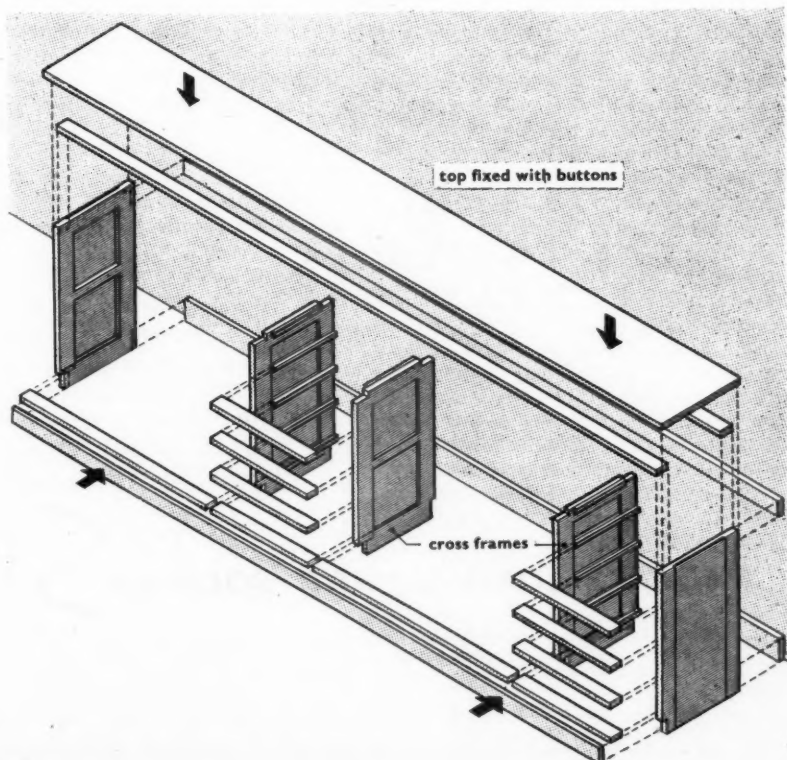


Fig. 22



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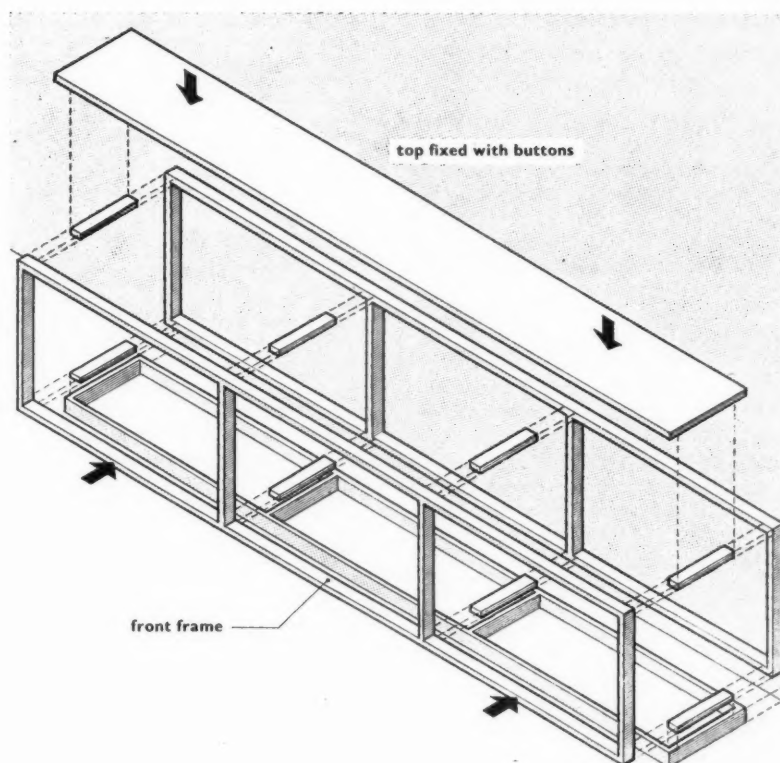
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sign, probably entailing less work in the shop and more site work. The accompanying illustrations of doors, cupboards and continuous benching serve to show how design is influenced by these considerations.

Acknowledgments to Samuel Elliott & Sons (Reading) Ltd., D. Burkle & Son Ltd. and J. L. Green & Vardy Ltd. for their assistance.

Fig. 23. In some instances it may be more advantageous to construct the unit with front and back frames, as shown. This might occur in a unit designed with a finely finished hardwood top and front, and sliding doors, the rest of the carcass being made of softwood. The hardwood front frame could be assembled and the doors fitted accurately in the workshop. This method would not, however, be suitable if drawers were included in the design, since the runners would then have to be made on the site. NOTE: Joints have been omitted from Figs. 21, 22, and 23, since they are intended to show only the general principles of construction.



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16.114 materials: miscellaneous

NEW TYPE FLETTON

Frog Up or Frog Down. BRS Digest No. 71. Nov., 1954. (HMSO, Nov., 1954. 3d.)

Fletton bricks are now being made with a frog which is U-shaped instead of V-shaped. This gives a much larger "hollow" which, if laid frog up, would require a considerable amount of mortar. Also, if laid frog up and filled with mortar the possible advantage of light weight or some very slight improvement in thermal insulation is lost. BRS states that although tests on the new brick have not yet been made, the information available from tests on V frog bricks and from cavity bricks and blocks is sufficient to be able to state that the U brick laid frog downward and unfilled will meet the rules

set out in the Third Schedule of the Model Byelaws for solid and cavity walls in most types of brickwork. The Digest explains the basis for this conclusion and also refers to less common conditions in which it may be necessary to consider the effect of the two methods of laying. The chief point to watch seems to be where concentrated or eccentric loads occur. Omission of frog filling by reducing weight will reduce sound insulation, but only to a very slight degree—note that a cavity in the brick does not add sound insulation as is still somewhat commonly supposed.

24.179 lighting
DAYLIGHTING

A Study of the Interreflection of Daylight using Model Rooms and Artificial Skies. National Building Studies Research Paper No. 24. DSIR. (HMSO, 1954. 2s.)

Although the now well-known "daylight factor protractors" still serve a useful purpose, experience has shown that they do not give a correct picture of the lighting intensity within rooms, especially in rooms with large areas of light-coloured walls and ceilings which serve as good reflectors. In fact the protractors should always have been called Skylight or Direct Light Protractors, for they indicate only the light which is received directly from unobstructed areas of sky.

This Research Paper describes the methods devised for calculating the total daylight factor at a point in a room, together with a slide-rule calculator prepared to simplify the computation for the designer.

It appears, however, that the Calculator illustrated in the Report is only applicable

to one particular shape of room. Apparently it is intended to develop the method to allow for changes in room shape, window areas, etc. When that has been achieved the result should be extremely useful in everyday practice. Until then the Report does not make clear just what one is to do, though it would appear that the article published in the AJ on August 5, 1954, is a later statement which does, in fact, give an answer!

24.180 lighting
PRINCIPLES OF LIGHTING

Some General Principles of the Lighting of Buildings. BRS Digest No. 70. (HMSO, Oct., 1954. 3d.)

There is nothing new in this note for those who have followed recent developments on design for good lighting, but the Digest sums up, in simple language, the main factors which go to provide good seeing conditions. Both artificial and daylighting are discussed. Perhaps the last two sentences are the most important—"On no account should lighting be considered to be merely a matter of windows or fittings. The whole environment enters into that which constitutes a good lighting installation."

26.115 services and equipment: miscellaneous
ELECTRIC WASHING MACHINES

Washing Machines. (Elect. Review Dec., 1954.)

Similar to earlier lists of other electric appliances, this tabulates all types of washers with name, type, size, capacity of work, electric load, type of finish, etc., together with net price and purchase tax.

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

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13.1.55

Buildings Illustrated

House at Taidwood, Iver Heath, Buckinghamshire, for the Hon. Lionel Brett M.A., A.R.I.B.A. (AJ, January 6.) General Contractor: John Deverill Ltd.; Sub-contractors: roofing felt, The Ruberoid Co. Ltd.; laminated flooring, Masters & Andren Ltd.; central heating and plumbing, Subtrades Ltd.; boilers, Janitor Boilers Ltd.; door furniture, Lockerbie & Wilkinson (Birmingham) Ltd.; plaster, Callow & Keppich Ltd.

Announcements PROFESSIONAL

Mr. Arthur Lindsay, A.S.T.C. (ARCH.), A.R.I.B.A., has relinquished his post as Architect to the Department of Housing, Accra, and commenced in private practice on his own account in the Gold Coast. His new address is P.O. Box 1343, Accra, Gold Coast, West Africa, where he will be pleased to receive trade catalogues.

Mr. W. E. Bodenham, A.F.A.S., Incorporated and Registered Architect and Incorporated Surveyor, has moved to new offices at 74, Worcester Street, Kidderminster (telephone: 4169), where he will be pleased to receive trade catalogues.

Mr. H. P. Tischler, A.R.I.B.A., Chartered Architect, has changed his name to Mr. H. P. Trenton, A.R.I.B.A., Chartered Architect, and remains at 3, Upper Park Road, Flat 3, London, N.W.3.

Messrs. Davis, Belfield and Everest, Chartered Surveyors, of 38, Prince of Wales Road, Norwich, Norfolk, have taken into partnership Mr. J. V. R. Cully, T.D., F.R.I.C.S., who has been manager of their Norwich office for a number of years. The name of the firm remains the same.

The partnership between Mr. A. T. Wright, A.R.I.B.A., and Mr. R. G. Mason, F.R.I.C.S.,

practising as Messrs. Wright & Mason, Chartered Architects and Quantity Surveyors, at 10B, Castle Meadow, Norwich, has been dissolved. Mr. Wright will continue to practise as a Chartered Architect and Mr. Mason as a Chartered Surveyor at the above address, where they will be pleased to receive trade catalogues, etc.

Mr. Arnold E. Towler, A.R.I.C.S., has commenced in private practice on his own account as a Chartered Quantity Surveyor at Manfield Chambers, 117, Fishergate, Preston, Lancashire. Telephone: 56823.

Berkeley L. Moir, DIP. ARCH., DIP. T.P., F.R.I.B.A., A.M.T.P.I., and W. Helen Moir, DIP. ARCH., A.R.I.B.A., have opened an office in the Prudential Buildings, South Parade, Rochdale, and are practising as Chartered Architects and Town Planning Consultants under the title of Moir and Bateman, F/A.R.I.B.A.

TRADE

Mr. J. S. Sheppard has been appointed Joint Sales Manager for Messrs. Permanite Ltd.

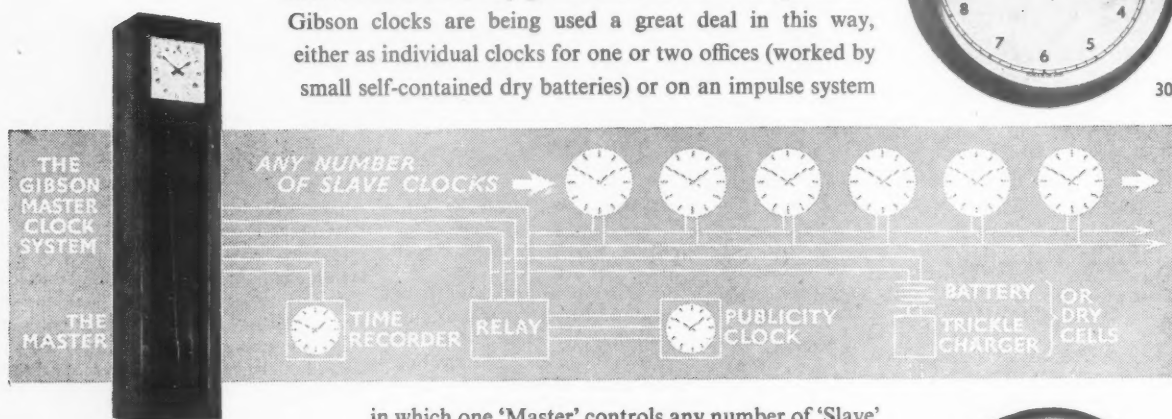
Messrs. L. J. Fisher and Co., of 30, Anzac Avenue, New Zealand, have been appointed the sole Agents for all types of Arens Controls.

British Insulated Callender's Cables Ltd. announce that the telephone number of their Reading Branch office is now Reading 55074/5; that of their Exeter and Plymouth branches Exeter 67308 and 3514, and Plymouth 60257 and 65151; the address of their Middlesbrough District office is now 55/57, Borough Road, Middlesbrough, telephone number 43644. In the same Company Mr. P. R. Dunn, B.Sc., M.I.E.E., succeeds as Chief Engineer Mr. T. D. Hollingsworth, who has been appointed to the Board.

Mr. D. W. Wood, B.A., brother of the Managing Director, has joined the staff of Messrs. Concrete Ltd.

PLAN for CLOCKS

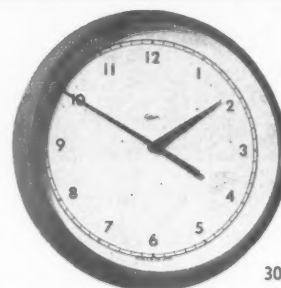
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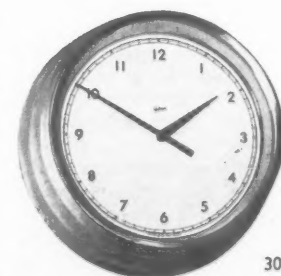
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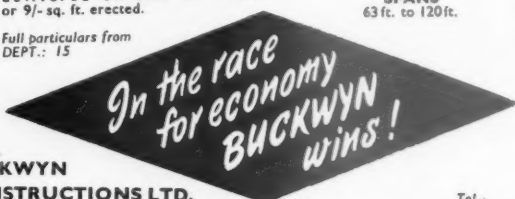
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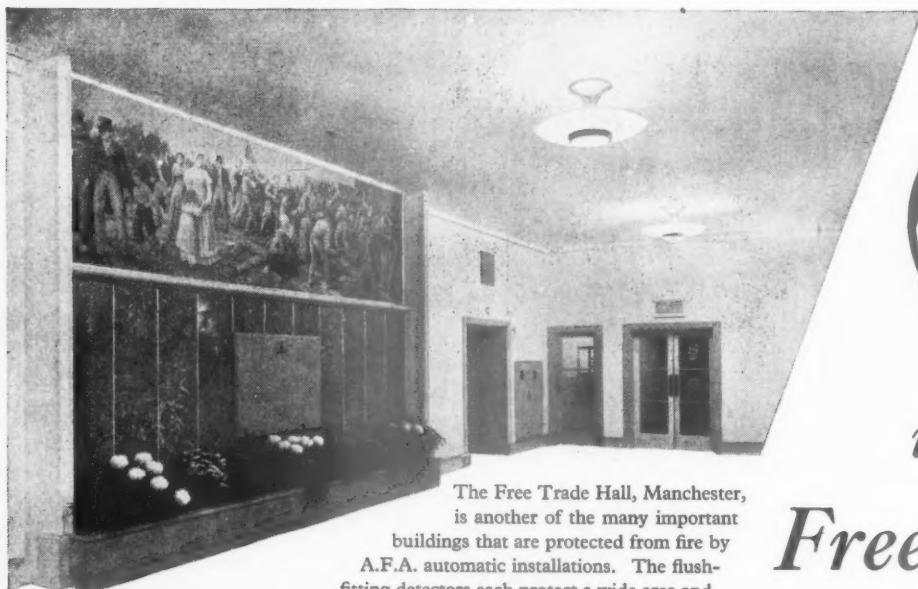


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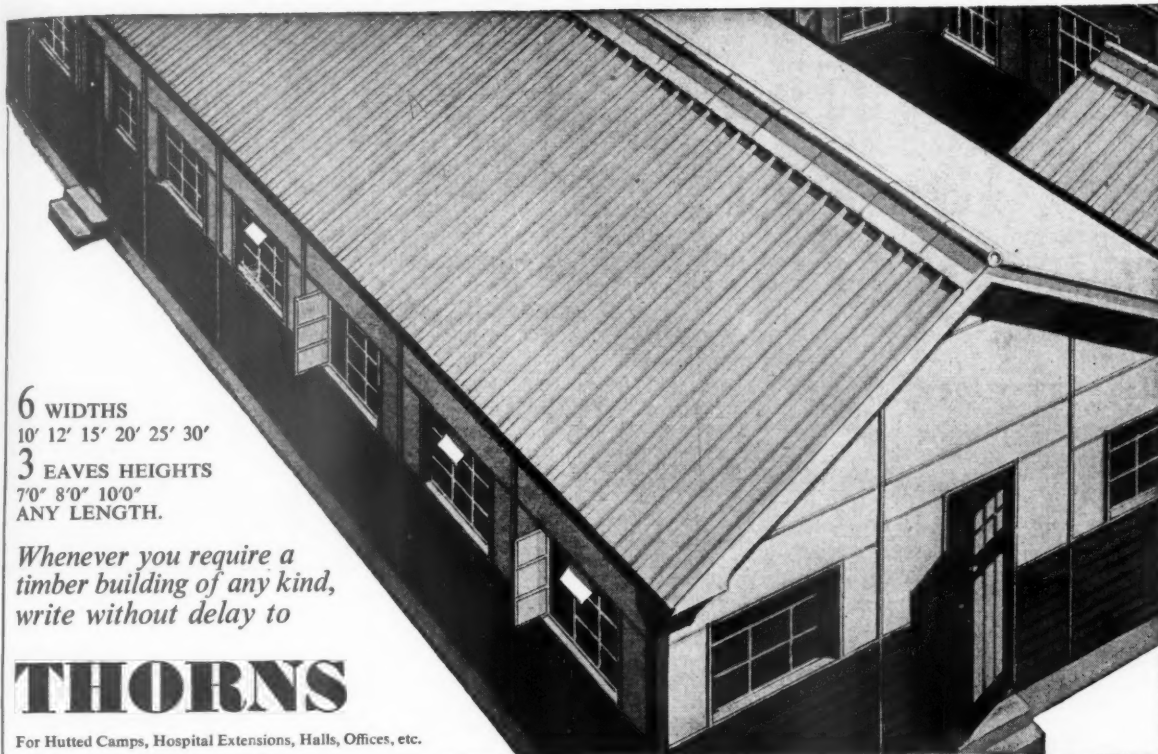
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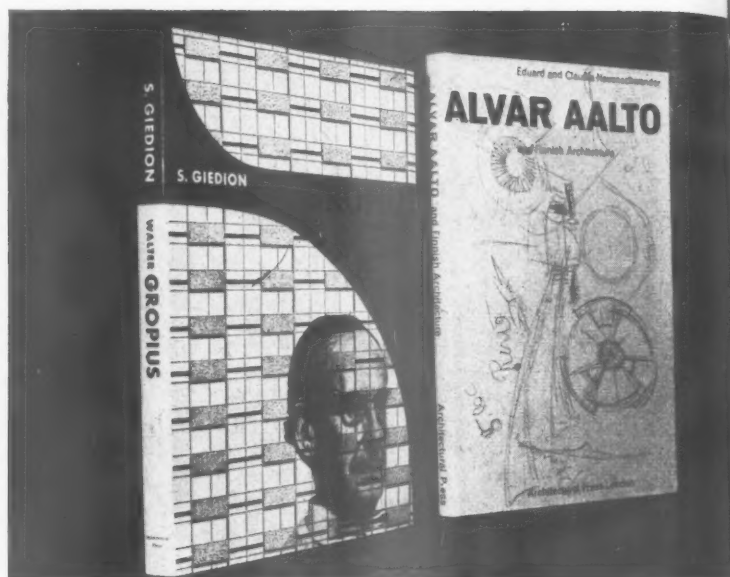
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Eduard Neuenschwander worked in Alvar Aalto's office for three decisive years, decisive because during these years Aalto became absorbed with the design of large-scale projects. Aalto had, of course, worked on large-scale projects before: but now realization immediately followed the drafting stage. Aalto almost deliberately destroyed his sketches and plans. Even photographs of his major works are extremely rare. This book—possible only because Neuenschwander, in daily working contact with Aalto, succeeded in collecting and preserving original material—shows the great works and projects completed from 1950 to 1952 as well as numerous earlier buildings, and is thus a unique document and a standard work for every architect. Text and captions are printed in English, French and German simultaneously. Size 10½ ins. by 7½ ins., 192 pages with approximately 300 photographs, plans and detailed layouts. Price 50s. net, postage 1s. 3d.

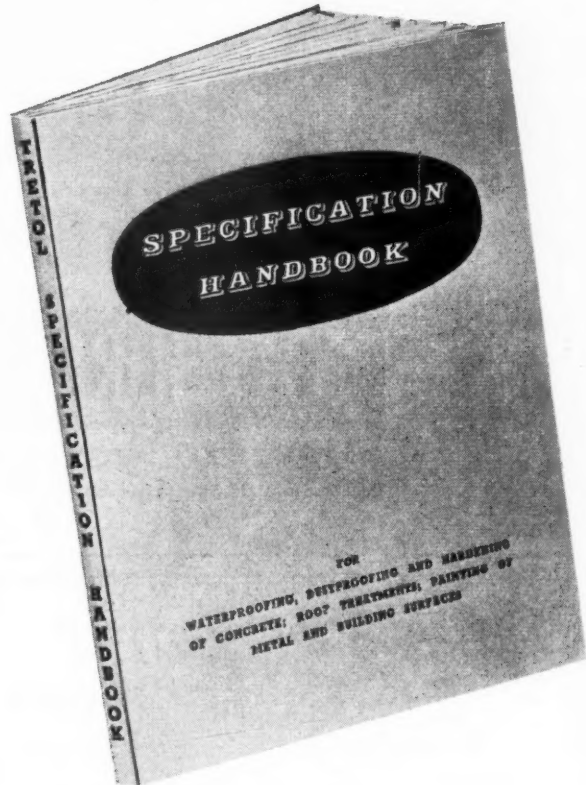
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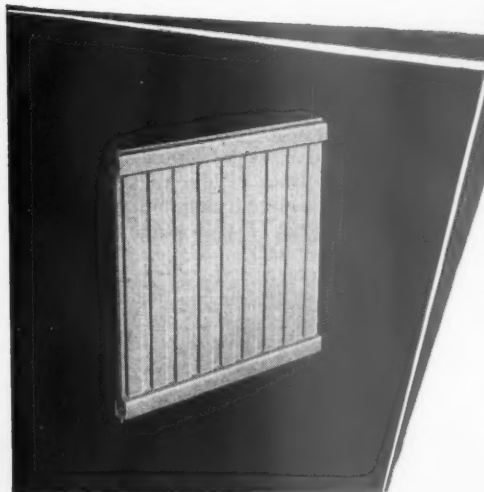
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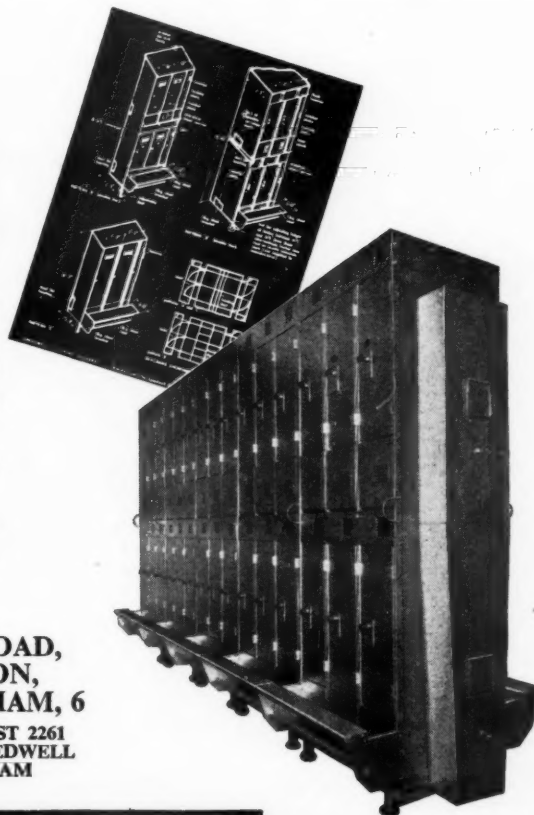
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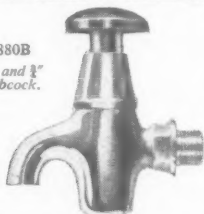
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- Non-concussive self-closing action
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- As easy to re-washer as an ordinary tap
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880B
1/2" and 3/4" Bibcock.



884B
1/2" Stopcock.



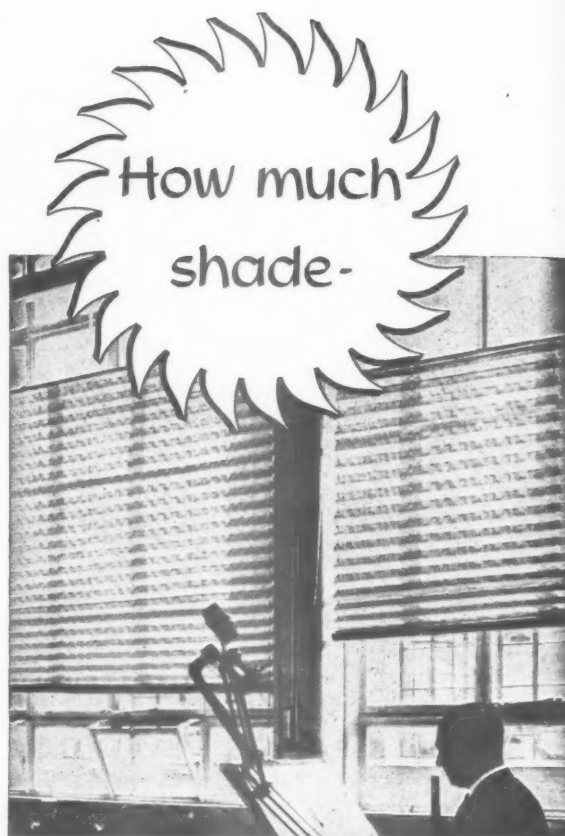
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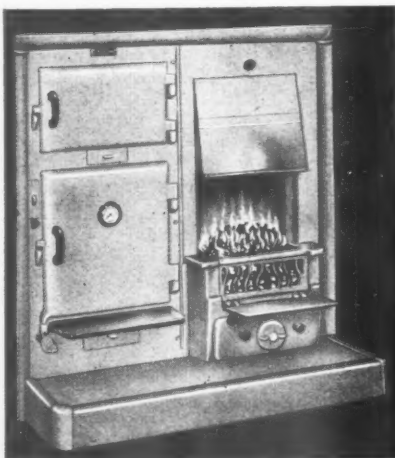
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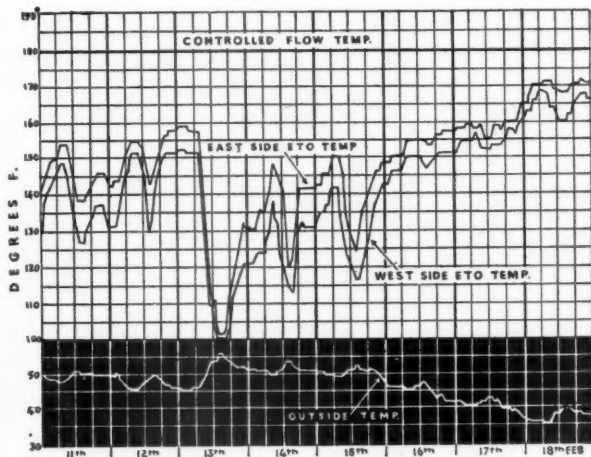
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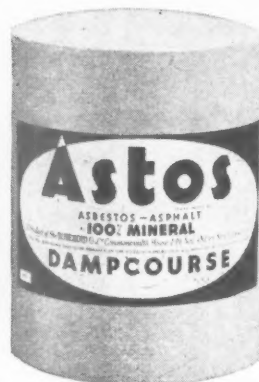


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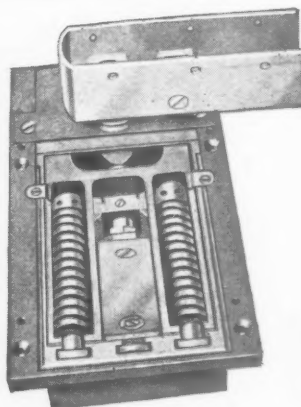
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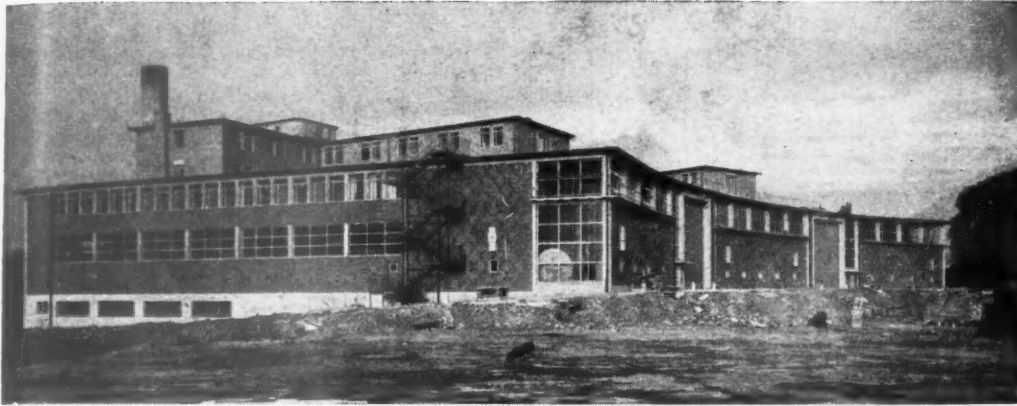
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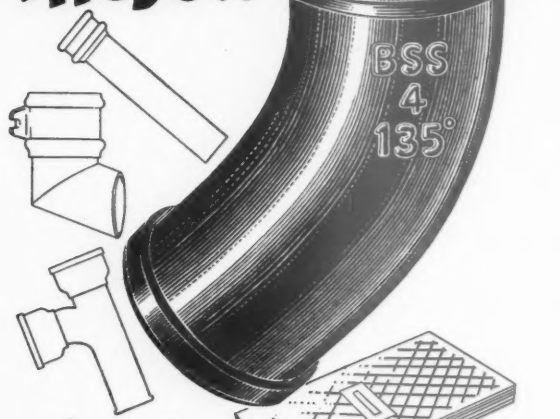
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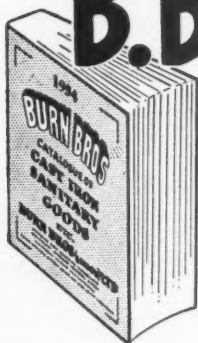
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The Office Worker and the Balance of Power

THE MEN WHO WORK IN OFFICES—and,
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more ways than ever before.

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the ground floor to, say, the seventh.
They use electricity to add the figures
(and to do more complicated calculations). They use it to light and heat
the offices, to work the intercom-
munication systems, the recording
machines, and so on—and they use it
to make the office cup of tea. This
consumption of electricity by the
office workers is good news for all the
other consumers of electricity, too.
Why?

It's a matter of balance. Different jobs
need electricity at different times of the
day and night. These varied demands
help to even out the load on the power
stations. When generating plant is
continuously operated the price of
electricity is kept low. All users
benefit, therefore, the more widely
electricity is used, for more and more
purposes.

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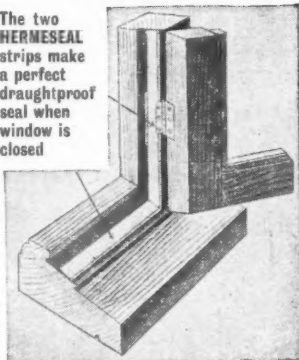
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will reduce the loss of heat through the average window by at least *half*, and through doors by an even greater amount. The actual rate of cold-air infiltration, the source of all draughts, can in turn be reduced by anything *up to 95%*, according to type of construction.

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BEFORE draught-exclusion = 1908.0 cu. ft. per hr.
AFTER " " = 264.6 cu. ft. per hr.
PREVENTION achieved = 1643.4 cu. ft. per hr. or 86.1%

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will reduce the loss of heat through a roof-area by at least 70%. This loss, in the average house, is about *one-third* of all the heat lost in various ways from the structure as a whole.

EXAMPLE: Average "U" values of a number of Pitched roofs of NEW but varying construction. "U" = B.Th.U./sq. ft./hr./1 deg. F.

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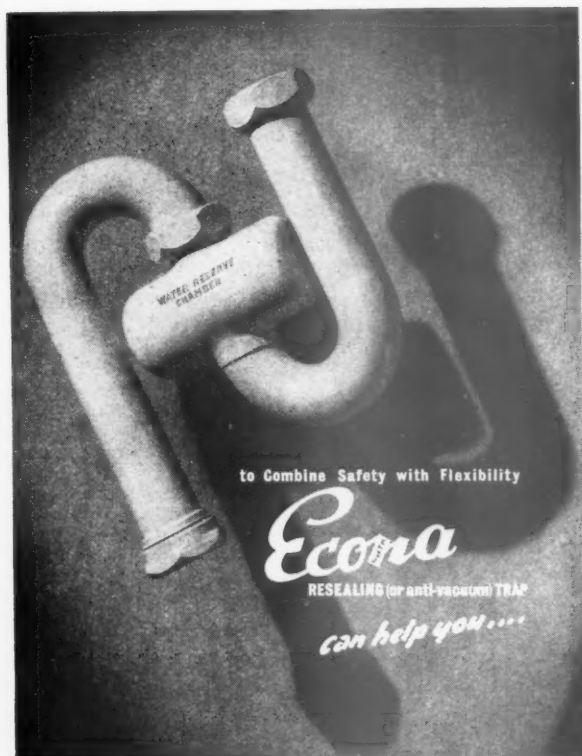
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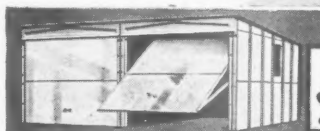
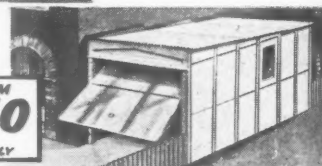
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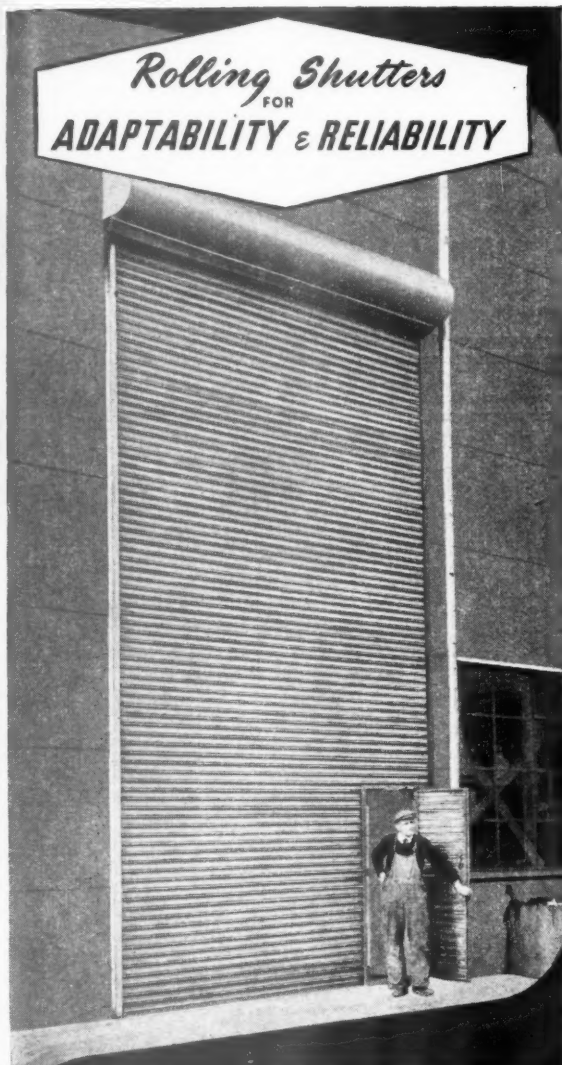
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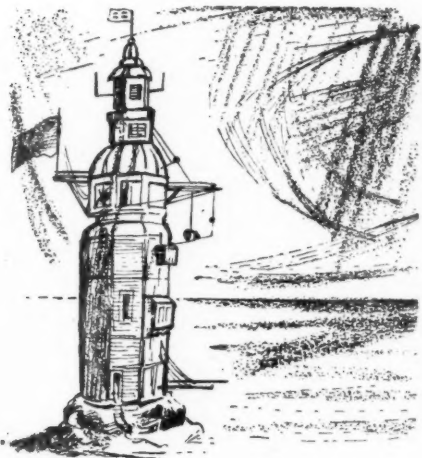
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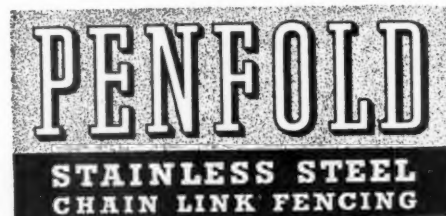
WINSTANLEY'S FOLLY...

DURING THE WINTER OF 1892, one man in Britain who had every reason to appear concerned was Sir James N. Douglass. Standing alone upon wave swept rocks some 14 miles from Plymouth was the lighthouse he had but recently erected—the Eddystone. No doubt, when lying abed and hearing the wind blustering outside, thoughts of the first builder of the lighthouse came into his mind. This was Henry Winstanley, an eccentric who created a wooden structure, pagoda-like, covered with paintings and gilded inscriptions, Winstanley would brook no criticism of his 'masterpiece' and stated that he wished he might be in the lighthouse during the worst storm that could be imagined.

In 1703 he got his wish. When morning came, after a night of furious tempest, Winstanley, the keepers and the tower had gone—the rock was completely bare!

Douglass, however, was a man of different calibre. He had learned from the past and, into his own building, put the experience of himself and others. Wisely, he chose his materials with the greatest care for he knew, too well, the destructive power of the elements. From the laying of the first stone until the light shone out over the dark waters, he radiated supreme confidence—and time has proved how justified this confidence really was.

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CLASSIFIED ADVERTISEMENTS

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

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

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

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

LONDON ELECTRICITY BOARD.

ARCHITECTURAL DRAUGHTSMEN.
Applications are invited for the above positions in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants should be neat draughtsmen and preferably have had several years' experience in an Architect's office.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade 6—£535 10s.—£661 10s. per annum, inclusive of London Allowance.

Application forms obtainable from the Personnel Officer, 46, New Broad Street, E.C.2, to be returned by 22nd January 1955. Please enclose addressed envelope and quote ref.: V/1785/A on envelope and all correspondence.

7046

BOROUGH OF ILFORD.

BOROUGH ENGINEER'S DEPARTMENT.
(a) SENIOR ASSISTANT ARCHITECT, Grade A.P.T. IV/VI.

(b) ASSISTANT ARCHITECT, Grade A.P.T. IV.

Salary for post (a) £675-£1,000 per annum, plus London weighting. Commencing salary (not exceeding £840 p.a., excluding London weighting) commensurate with qualifications and experience.

Salary for post (b) £675-£825 per annum, plus London weighting.

Candidates for both appointments must be Associate Members of the R.I.B.A., and have thorough knowledge of architectural works, particularly in regard to the design and development of public buildings of all types. For appointment (a) candidates should have had a minimum period of six years' practical experience as above-mentioned. Posts permanent, superannuable, and subject to medical examination.

THE COUNCIL IS PREPARED TO CONSIDER, IF NECESSARY, THE PROVISION OF HOUSING ACCOMMODATION IN CONNECTION WITH BOTH THESE APPOINTMENTS.

Applications on forms obtainable from the Town Clerk, Town Hall, Ilford, on receipt of stamped, addressed envelope, to be returned by 15th January, 1955.

7059

COUNTY BOROUGH OF SMETHWICK. BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications from candidates, appropriately qualified, are invited for the following appointments:—

(1) PRINCIPAL ARCHITECTURAL ASSISTANT, salary (new A.P.T. V) £750-£900 per annum.

(2) ARCHITECTURAL ASSISTANT, salary (new A.P.T. III) £600-£725 per annum.

The work of this section of the department includes housing, housing redevelopment, new schools and general municipal building.

(3) SENIOR ENGINEERING ASSISTANT, salary (new A.P.T. V) £750-£900 per annum.

(4) ENGINEERING ASSISTANT, salary (new A.P.T. IV) £675-£825 per annum.

Previous experience in housing redevelopment, road and sewerage works will be an advantage.

(5) Two TOWN PLANNING ASSISTANTS, salary (new A.P.T. IV) £675-£825 per annum. Applicants should have had experience in Town Survey and Schemes of Redevelopment.

(6) PRINCIPAL QUANTITY SURVEYING ASSISTANT, salary (new A.P.T. V) £750-£900 per annum.

(7) Two QUANTITY SURVEYING ASSISTANTS, salary (new A.P.T. IV) £675-£825 per annum.

The work to be undertaken comprises Building and Civil Engineering quantities and the preparation of estimates.

(8) BUILDING SURVEYOR, salary (new A.P.T. V) £750-£900 per annum.

The successful applicant will be required to carry out periodic inspection of municipal buildings, prepare dilapidation reports and valuations.

The above posts are subject to the provisions of the National Scheme of Conditions of Service, the Local Government Superannuation Acts 1937-53, to the passing of a medical examination and to termination by one month's notice on either side.

Forms of application can be obtained from the Borough Engineer & Surveyor, Council House, Smethwick, and should be returned, suitably endorsed, together with copies of two recent testimonials, not later than 24th January, 1955.

E. L. TWYBROSS.

Town Clerk.

Council House, Smethwick, 40. 7079

BOROUGH OF WIDNES. BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of:—

ARCHITECTURAL ASSISTANTS, Grade A.P.T. IV (£675-£825).

Applicants must be registered architects, preferably Associate Members of the R.I.B.A. Experience with a Local Authority will be an advantage.

Housing Accommodation will be provided if needed.

The appointments will be subject to the National Scheme of Conditions of Service as adopted by the Council to the Local Government Superannuation Acts, and to the successful candidates passing a medical examination. Applications, stating full particulars of age, experience and qualifications, present and previous employment (with dates) together with the names and addresses of two referees, to be sent to the Borough Architect, Brendan House, Widnes Road, Widnes, not later than 10 a.m. Monday, 24th January, 1955. Canvassing directly or indirectly will disqualify.

FRANK HOWARTH.

Town Clerk.

Town Hall, Widnes. 28th December, 1954. 7049

URBAN DISTRICT COUNCIL OF CORBY. ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the under-mentioned appointments in the department of the Engineer and Surveyor:—

(1) SENIOR ARCHITECTURAL ASSISTANT. Salary in accordance with new Grade A.P.T. IV (£675-£825), commencing at £675 per annum.

Applicants must be Registered Architects, and should have considerable experience in design, construction and contract administration.

(2) SENIOR QUANTITY SURVEYOR. Salary in accordance with new Grade A.P.T. IV (£675-£825), commencing at £675 per annum.

Applicants must have passed Final R.I.C.S. (Quantities Section) and be thoroughly experienced in the preparation of Bills of Quantities, adjustment of variations, and settlement of final accounts. Previous experience of substantial contracts for local authority housing is desirable.

The provisions of the Local Government Superannuation Acts, 1937-1953, will apply in respect of each appointment. Housing accommodation will be made available to successful candidates, if married.

Forms of application may be obtained from the undersigned, and requests therefor should indicate the position for which application is being made. Completed forms must be received not later than 9 a.m. on Saturday, the 22nd January, 1955.

G. B. BLACKALL.

Clerk of the Council.

Council Offices, Corby, Northants. 23rd December, 1954. 7057

BOROUGH OF WREXHAM. (a) PLANNING ASSISTANT. (b) ARCHITECTURAL ASSISTANT.

Applications are invited for the following appointments:—

(a) PLANNING ASSISTANT—Salary A.P.T. Amended Grade IV (£675-£825 per annum, according to experience).

(b) ARCHITECTURAL ASSISTANT—Salary (£625-£675 per annum). (Subject to award for specialist classes.)

Applicants for appointment (a) should be A.M.T.P.I. or have taken a University Course in Town Planning. Preferably they should be Associates of the R.I.B.A.

Applicants for appointment (b) should be Associates of the R.I.B.A.

Housing accommodation available (if married). Form of application, particulars and conditions of Service may be obtained from the Borough Engineer and Surveyor, 31, Chester Street, Wrexham.

Applications with the names of two referees to be delivered to the undersigned in an envelope appropriately endorsed not later than the 24th January, 1955.

PHILIP J. WALTERS.

Town Clerk.

Guildhall, Wrexham. December, 1954. 7038

BOROUGH OF WALTHAMSTOW. BOROUGH ARCHITECT, ENGINEER AND SURVEYOR'S DEPARTMENT.

APPOINTMENT OF SENIOR ASSISTANT QUANTITY SURVEYOR AND ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of one SENIOR ASSISTANT QUANTITY SURVEYOR on Grade IV A.P.T. Division (£705-£855, inclusive of London Weighting), and one ASSISTANT QUANTITY SURVEYOR on Grade II A.P.T. Division (£590-£670, inclusive of London Weighting).

Applicants for the appointment of Senior Assistant Quantity Surveyor must have passed the final examination (Quantities Sub-Division) of the R.I.C.S., and applicants for the appointment of Assistant Quantity Surveyor must have had at least two years recent practical experience.

Applications, with names of two persons for reference, should be received by the undersigned not later than Friday, the 28th January, 1955, endorsed "Quantity Surveyor."

G. A. BLAKELEY.

Town Clerk.

Town Hall, E.17. 8066

CITY OF SHEFFIELD. CITY ARCHITECT'S DEPARTMENT.

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

SENIOR ASSISTANT ARCHITECT (Housing) Grade A.P.T. IV (£675-£825 p.a.).

This post is in the Housing Design Section, which is responsible for a large housing programme consisting of estates in the outer and inner areas. It offers considerable scope to progressive architects to gain experience on a variety of house types and flats, including a substantial proportion of high flats, garages, shopping centres, and other buildings incidental to estate development.

The post is superannuable and subject to medical examination.

Applications stating age, education and training, qualifications, present and past appointments (with dates and salaries), experience, and the names and addresses of two referees should reach me by Tuesday, 25th January, 1955.

JOHN HEYS.

Town Clerk.

Town Hall, Sheffield, 1. 7078

GLENROTHES DEVELOPMENT CORPORATION.

Applications are invited from suitably qualified persons for appointment as ARCHITECT/PLANNER. Salary scale £830/980 with placing according to qualifications and experience. Applicants should be Associates or equivalent of the R.I.B.A. and the T.P.I. with general architectural and planning experience particularly in the field of civic design.

The Corporation will provide a house to let, if required. Medical examination. Applications stating age, experience and qualifications, together with the names of three referees must reach the Secretary, Glenrothes Development Corporation, Glenrothes, Fife, not later than 20th January, 1955.

7071

AYCLIFFE DEVELOPMENT CORPORATION. JUNIOR ARCHITECTURAL ASSISTANT A.P.T.II (£560-£640).

Applications are invited for the above appointment.

Candidates should have passed the R.I.B.A. intermediate examination and have had two years' office experience.

Appointment subject to N.J.C. Conditions, superannuation and medical examination.

Housing accommodation if necessary. Applications stating age, experience, details (including salaries) of present and former employment and addresses of two referees, should be forwarded before 28th January, 1955.

A. V. WILLIAMS.

General Manager.

Newton, Aycliffe. Co. Durham. 8064

COUNTY COUNCIL OF ESSEX. Required on the established staff:

(a) Sectional ASSISTANT ARCHITECT APTD VI, salary not exceeding £1,000.

(b) ARCHITECTURAL ASSISTANTS, APTD II, salaries not exceeding £640.

Appointments (a) and (b) offer opportunities for design and supervision on a variety of buildings—colleges, libraries, day and boarding schools, police and fire stations and health buildings—and successful candidates will have much responsibility within the group system.

(c) SENIOR ASSISTANT ARCHITECT, APTD V, salary not exceeding £900, in a small liaison group dealing with the work of private architects. The duties are largely administrative—to interview and discuss proposals with many of the leading private architects, and to have consultations with officers of Ministries and other departments of County Council.

Candidates for posts (a) and (c) must be members of the R.I.B.A.

Commencing salary will be fixed according to experience and qualifications.

Application forms from H. Conolly, County Architect, County Hall, Chelmsford (state post for which form is required), to be returned with copies of three testimonials by 28th January, 1955. Canvassing disqualifies.

8060

COUNTY BOROUGH OF GLOUCESTER. CITY ARCHITECT'S DEPARTMENT.

Applications are invited from persons with suitable qualifications and/or experience for the following permanent appointments:—

(a) ASSISTANT ARCHITECT, Within A.P.T. III (Amended). £600×£225-£725. Registered or R.I.B.A. (Final).

(b) ARCHITECTURAL ASSISTANTS. Within A.P.T. II (Amended). £560×£220-£640. (Inter. R.I.B.A. standard.)

(c) ARCHITECTURAL ASSISTANTS. A.P.T. I (Amended). £540×£220-£580. (Part Inter. R.I.B.A. standard.)

Superannuable posts. Medical examination. Municipal experience not essential. Projects include multi-storey flat redevelopment, schools, public buildings in shell-concrete, etc.

Applications stating age, married or single, training, qualifications, experience, previous and present appointments, with copies of recent testimonials or names of referees, to J. V. Wall, A.R.I.B.A., City Architect, Suffolk House, Gloucester, not later than 24th January, 1955.

8069

CITY OF WAKEFIELD.

CITY ENGINEER'S DEPARTMENT.
ARCHITECTURAL ASSISTANT—AMENDED
GRADE III.

Applications are invited for the permanent appointment of an Architectural Assistant on amended Grade III (£600-£725). Applicants should be A.R.I.B.A. and have good experience of Housing, Schools and General Municipal Work.

Applications giving age, and full particulars of experience with the names of two referees to be sent to the undersigned by the 26th January, 1955.
W. S. DES FORGES, Town Clerk.
Town Hall, Wakefield. 8058

CARDIGANSHIRE COUNTY COUNCIL.
APPOINTMENT OF ARCHITECTURAL
ASSISTANT.

Applications are invited for the appointment of Architectural Assistant on A.P.T. III £600-£725. Applicants should have passed the R.I.B.A. Intermediate Examination.

Commencing salary will be according to qualifications and experience.

The appointment is in the County Architect's Department, County Hall, Aberystwyth.

Application forms can be obtained from the County Architect and these must be returned to the undersigned not later than 31st January, 1955.

J. E. B. CARSON,
Clerk of the County Council. 8057

Syddfa'r Sir,
Marine Terrace,
Aberystwyth.
3rd January, 1955.

COUNTY COUNCIL OF RENFREW.

The Council invite applications for the Architectural post of PRINCIPAL ASSISTANT to the Master of Works (Education Property). The post is graded APT/VII/VIII (£790-£915 w.e.f. 16/5/55) and applicants should be Registered Architects, Members of R.I.B.A. or R.I.A.S., and have some experience as a Senior Assistant. The post is non-renewable. Applications stating age, qualifications and experience, together with names of two referees, should be sent to the County Clerk, County Buildings, Paisley, immediately.

CITY AND COUNTY OF THE CITY OF
EXETER.

Applications are invited for the following appointments on the staff of the City Architect's Department:—

(a) SENIOR ASSISTANT ARCHITECTS on the establishment of the Department, salary within new A.P.T. Grade IV (i.e., £675 to £825 per annum) according to experience. Candidates must be Associate Members of the R.I.B.A. Preference will be given to those experienced in the design and construction of civic buildings and schools.

(b) ARCHITECTURAL ASSISTANT on the establishment of the Department, salary within new A.P.T. Grade II (i.e., £560 to £640 per annum) according to experience. Candidates must have passed the Intermediate examination of the R.I.B.A. Preference will be given to those with experience in housing and school work.

(c) ARCHITECTURAL ASSISTANT on the temporary staff, salary within new A.P.T. Grade I (i.e., £500 to £580 per annum) according to experience. Preference will be given to candidates who have passed the Intermediate examination of the R.I.B.A.

(d) HEATING AND ELECTRICAL ENGINEERING DRAUGHTSMAN on the temporary staff. Salary in accordance with the General Division Scales (i.e., £320 per annum at the age of 23, rising to £400 per annum, or £350 per annum at the age of 23 rising to £475 per annum dependent on qualifications). Applicants must have had experience of heating, hot water and electrical installations.

All the above appointments are subject to passing a medical examination, and to one month's notice on either side. The appointments on the establishment of the Department are subject to the provisions of the Local Government Superannuation Acts 1937 and 1953.

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

Applications, stating age, qualifications, previous and present appointments and salaries, full details of experience and the earliest possible date when available, together with copies of recent testimonials, should be delivered to H. B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, 2, Southernhay West, Exeter, not later than the 28th January, 1955.

C. J. NEWMAN,
Town Clerk. 8056

Exeter,
January, 1955.

KENT COUNTY COUNCIL.

ASSISTANT COUNTY ARCHITECTS.

Applications are invited for two appointments of ASSISTANT COUNTY ARCHITECTS at salaries within the range £1,412 10s.—£1,780 a year, according to qualifications and experience.

Candidates must be Fellows or Associates of the Royal Institute of British Architects, and have had wide experience in the practice of architecture.

Further details and forms of application obtainable from the County Architect, Springfield, Maidstone, to whom applications must be returned by not later than the 11th February, 1955. 8026

ROXBURGH COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for the appointment of ASSISTANT ARCHITECT (2). Salary scale Grades V to VI with placing within that scale according to qualifications and experience.

Candidates must be registered architects and preferably Members of the Royal Institute of British Architects.

The appointments are subject to the Local Government Superannuation (Scotland) Act, 1937, and to satisfactory medical examination.

Applications, accompanied by one copy each of three recent testimonials, should be lodged with the undersigned not later than 21st January, 1955.

Canvassing, directly or indirectly, in connection with the appointment will disqualify.

JAMES R. HUME,
County Clerk.

County Offices,
Newtown St. Boswells.
4th January, 1955. 8050

KENT COUNTY COUNCIL.

ASSISTANT ARCHITECTS.

Applications are invited for the following appointments:—

(1) TWO ASSISTANT ARCHITECTS at salaries within the range £750-£900 a year.

(2) FOUR ASSISTANT ARCHITECTS at salaries within the range £675-£825 a year.

Candidates must be Associates of the Royal Institute of British Architects, and have had experience in the design and construction of modern buildings. The selected architects will be working in groups.

Further details and forms of application obtainable from the County Architect, Springfield, Maidstone, to whom applications must be returned by not later than the 4th February, 1955. 8027

MONMOUTHSHIRE COUNTY COUNCIL.

APPOINTMENT OF ARCHITECTURAL AND
QUANTITY SURVEYING STAFF.

Applications are invited for the following positions for the County Architect's Department under the N.J.C. Conditions:—

TWO ARCHITECTURAL ASSISTANTS. Salary £625-£725 per annum. Grade A.P.T. III.

TWO QUANTITY SURVEYING ASSISTANTS. Salary £560-£640 per annum. Grade A.P.T. II.

Forms of Application, particulars of posts and conditions of service, can be obtained from the undersigned.

Applications, together with copies of three testimonials, must be forwarded to the County Architect, Queen's Hill Newport, Mon., not later than 29th January, 1955.

VERNON LAWRENCE,
Clerk of the Council.

County Hall, Newport, Mon. 7094

BRITISH ELECTRICITY AUTHORITY.
MIDLANDS DIVISION.

Applications are invited for the following appointments in the Generation (Construction) Department at Wolverhampton. N.J.B. service conditions, superannuable appointments, salaries within Schedule "D" of the Agreement.

(a) SENIOR DRAUGHTSMAN (ARCHITECTURAL), Grade 4, £750 to £850 per annum (Vacancy No. 353MD).

(b) SENIOR DRAUGHTSMAN (ARCHITECTURAL), Grade 5, £640 to £740 per annum (Vacancy No. 854MD).

(c) ENGINEERING DRAUGHTSMAN (MECHANICAL), Grade 6, £510 to £630 per annum (Vacancy No. 855MD).

Applicants for these positions should have received sound technical training and practical experience, in particular for (a) and (b) in the layout and design of main and auxiliary buildings associated with power stations, and for (c) in the layout of plant for new generating stations, including turbines, boilers, and similar equipment. Appropriate technical qualifications an advantage.

Apply, quoting the vacancy number, on form AE6, available from the Establishments Officer, 53, Wake Green Road, Moseley, Birmingham, 13, by 22nd January, 1955. 7095

BOROUGH OF BRENTFORD AND CHISWICK.

Applications are invited for the following temporary appointments:—

(a) ARCHITECTURAL ASSISTANT. A.P.T. Division, new Grade II (viz., £560-£640 per annum, plus London weighting). A modern flat is available for letting on a service tenancy to the successful candidate for this post.

(b) JUNIOR ARCHITECTURAL ASSISTANT. A.P.T. Division, new Grade I (viz., £500-£580 per annum, plus London weighting).

Candidates for each post should preferably have passed the Intermediate Examination of the R.I.B.A. and be used to preparing working and detailed drawings. The posts offer excellent opportunities for gaining experience and advancement.

Application form, with full particulars and conditions of each appointment, available from the undersigned. Completed applications to be returned by 21st January, 1955.

W. F. J. CHURCH,
Town Clerk. 7096

Town Hall, Chiswick, W.4.

METROPOLITAN BOROUGH OF LEWISHAM.

Applications are invited from suitably qualified candidates for the post of ASSISTANT ARCHITECTS (TWO). Salary within the range £510-£930 p.a., according to experience and qualifications. Further particulars and form of application from the Town Clerk, Lewisham Town Hall, Catford, S.E.6. Closing date: 29th January, 1955. 8036

CITY OF LEICESTER.

CITY ARCHITECT'S DEPARTMENT.
CENTRAL REDEVELOPMENT AND HOUSING.
Applications are invited for the following posts:—

(a) ASSISTANT ARCHITECTS. Salary £675-£825 per annum, according to experience.

(b) ARCHITECTURAL ASSISTANTS. Salary £560-£640 per annum.

Applicants for (a) must be Registered Architects and those for (b) must have passed the Intermediate Examination of the R.I.B.A. Applications, stating age, experience, qualifications, past and present appointments with present salary, together with copies of two recent testimonials, should be sent to the undersigned not later than Friday, 21st January, 1955.

J. H. LLOYD OWEN,
City Architect. 8046

10, Loseby Lane, Leicester.

COUNTY BOROUGH OF HASTINGS.

ARCHITECTURAL ASSISTANT.

Applications are invited for the above vacancy on Grade A.P.T. III, £600-£725, the commencing salary to be determined in accordance with the applicant's qualifications and experience.

The appointment will be subject to the National Scheme of Conditions of Service, the passing of a medical examination, and to one month's notice in writing on either side.

Applications, stating age, qualifications (which must include A.R.I.B.A. or equivalent), present and previous appointments and salary, accompanied by copies of not more than three testimonials, should be forwarded to the Borough Engineer, 37, Wellington Square, Hastings, not later than 24th January, 1955.

Canvassing will be a disqualification.

N. P. LESTER,
Town Clerk. 7093

Town Hall, Hastings.

COUNTY COUNCIL OF NORTHUMBERLAND.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the post of JUNIOR ASSISTANT AND TRACER (Male) on the permanent staff of the Heating and Electrical Section of this Department.

Salary within the General or Higher General Division of the National Scale of Salaries, i.e., £290 per annum at 21 years, rising to £470 per annum, according to age and qualifications.

Applicants should have had some experience of work in a drawing office, as the duties include the tracing of drawings.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, and the successful candidate will be required to pass a medical examination.

Applications in writing, stating age, qualifications and previous experience, and accompanied by two recent testimonials, to be forwarded to the County Architect, County Hall, Newcastle-upon-Tyne, 1, not later than Monday, 17th January, 1955. 7090

COUNTY COUNCIL OF NORTHUMBERLAND.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the post of ASSISTANT QUANTITY SURVEYOR on the permanent staff of this Department. Salary within A.P.T. Grade II (revised), £560, rising to a maximum of £640 per annum.

Applicants should have experience in abstracting, billing and measurement of work on site, and preference will be given to those who have passed the Intermediate Examination of the Royal Institution of Chartered Surveyors.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, and the successful candidate will be required to pass a medical examination.

Applications in writing, stating age, qualifications and previous experience, together with the names and addresses of two referees to whom reference can be made, to be forwarded to the County Architect, County Hall, Newcastle-upon-Tyne, 1, not later than Monday, 17th January, 1955. 7091

EASINGTON RURAL DISTRICT COUNCIL.

ENGINEER'S DEPARTMENT.

SENIOR ARCHITECTURAL ASSISTANT—

GRADE A.P.T. IV (£705-£825).

Applications are invited for the above-mentioned appointment.

Applicants must have had previous Municipal experience, have been trained in the office of a Municipal Engineer, Architect or Surveyor, be experienced in Municipal Housing and General Architectural work. Preference will be given to candidates who have passed the Final Examination of the Royal Institute of British Architects.

The Council have development proposals for a modern seaside resort, including swimming pool, major recreational buildings and catering establishments, and also complete proposals for redeveloping 12 small townships between 5,000 and 12,000 inhabitants as a complementary scheme for the new town of Peterlee.

The appointments are subject to the National Scheme of Conditions of Service and the Local Government Superannuation Acts. The successful applicant will be required to undergo a medical examination.

If required, housing accommodation will be provided.

Forms of Application may be obtained from the undersigned, and must be returned, accompanied by copies of two recent testimonials, to reach the undersigned not later than first post on Tuesday, the 1st February, 1955.

J. W. GRAY,
Clerk of the Council.

Council Offices, Easington, Co. Durham. 7092

**BOROUGH OF HEMEL HEMPSTEAD.
BUILDING SURVEYOR AND PLANNING
ASSISTANT, NEW A.P.T., IV.**

Applications are invited for this appointment on the new salary, Grade A.P.T., IV, at £675 per annum, rising to £825 per annum. HOUSING accommodation will be available.

Applicants should hold an appropriate qualification, preferably of the Royal Institution of Chartered Surveyors or the Town Planning Institute. They should have had experience of Development Control, Building Inspection and allied matters, and should be accustomed to dealing with correspondence. Some knowledge of building valuations and improvement Grants would be an advantage.

The appointment will be subject to the Local Government Superannuation Acts, to the National Conditions of Service from time to time in force, and to the passing of a medical examination. It will be terminable by one month's notice in writing on either side.

Applications, stating age, education, qualifications, present and previous appointments, with details of experience and names of two referees, should be submitted to A. H. Turner, A.M.I.C.E., Borough and Water Engineer, Market Square, Hemel Hempstead, not later than Saturday, the 22nd January, 1955. Canvassing will disqualify, and applicants must state whether to their knowledge they are related to any member or senior officer of the Council.

C. W. G. T. KIRK,
Town Clerk.

Town Hall, Hemel Hempstead, Herts.
3rd January, 1955. 8019

**WILLENHALL URBAN DISTRICT COUNCIL.
ARCHITECT'S DEPARTMENT.**

Applications are invited for the post of ASSISTANT ARCHITECT, at a salary in accordance with Grade A.P.T., IV (£675-£825), commencing at £675 per annum. The post is subject to the Local Government Superannuation Acts, N.J.C. conditions, and to one month's notice on either side. Applicants should be qualified but Local Government experience is not essential. The Council's varied programme of work includes immediate schemes for Community and Shopping Centres. Applications, stating age, qualifications, experience, and the names of two referees, should reach the Clerk of the Council, Town Hall, Willenhall, Staffs., by the 24th January, 1955. 8038

Applications are invited for the post of CONSULTING ARCHITECT to the Government of Sind, Pakistan.

Age: 35 to 45, older men considered.
Qualifications: Good Diploma in Architecture, several years' practical experience.

Pay: Rs.1,200-1,400 per month, and allowances.
Housing concessions, free passages, medical attendance, and generous leave arrangements.
Contract: Three years in the first instance.
One rupee equals 2s. 2d. approximately.

Application forms and further particulars are available from the Recruitment Officer, Education Division, Office of the High Commissioner for Pakistan, 39, Lowndes Square, London, S.W.1. Last date for receipt of applications: 3rd February, 1955. 8031

**CITY AND COUNTY OF BRISTOL.
CITY ARCHITECT'S DEPARTMENT.**

Applications invited for the following permanent staff appointments:-

(a) ASSISTANT QUANTITY SURVEYOR, Grade II (£560-£640 p.a.).

(b) ASSISTANT ARCHITECTS, Grade II (£560-£640 p.a.).

(c) ASSISTANT ARCHITECTS, Grade I (£500-£580 p.a.).

(d) JUNIOR ASSISTANT, General Division (£275 at age of 20).

For (a) applicants should have passed the R.I.C.S. Intermediate Examination or equivalent, or qualified in accordance with paragraph 23 of the National Conditions of Service. For (b) and (c) applicants must have passed the R.I.B.A. Intermediate Examination or equivalent, or qualified in accordance with paragraph 28 of the National Conditions of Service, and have had good experience, including preparation of working drawings, details, etc. For (d) applicants must be not less than 20 years of age and have had suitable education and experience. Duties include tracing, colouring of prints, assisting with surveys, and generally to work under the supervision of Assistant Architect.

HOUSING ACCOMMODATION AVAILABLE, IF NECESSARY, AT AN ECONOMIC RENT.

Further particulars and application forms obtainable from me. Applicants must state the post for which they are applying. Completed application forms to be received by 22nd January.

THE CITY ARCHITECT.

The Council House, Bristol, 1.
31st December, 1954. 7089

PADDINGTON BOROUGH COUNCIL.
require JUNIOR to train as QUANTITY SURVEYOR'S ASSISTANT. Salary £200 p.a. at age 16, rising to £505 p.a. at age 28. Candidates should possess G.C.E. (3 ordinary passes). The post affords an opportunity and experience for candidates studying for Quantity Surveying Professional Examinations. National Conditions of Service. Superannuation. Write age, experience, education, and names of two referees to the undersigned by 29th January, 1955 (quoting A.197).

W. H. BENTLEY,
Town Clerk.

Town Hall, Paddington Green, W.2. 8063

**BOROUGH OF OLDBURY.
BOROUGH SURVEYOR'S DEPARTMENT—
ARCHITECTURAL SECTION.**

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

(a) ONE ASSISTANT ARCHITECT, Grade V (£750-£900).

(b) TWO ASSISTANT ARCHITECTS, Grade IV (£675-£825).

(c) ONE ASSISTANT ARCHITECT, Grade II (£560-£640).

Applicants for appointment (a) should be Associate Members of the R.I.B.A. The Architect appointed will be required to take charge of a clearance area development scheme, and previous experience of this type of work is desirable. In addition applicants should have experience in the layout of contemporary housing schemes and the design and construction of Municipal houses and multi-storey flats.

Applicants for appointment (b) will be graded within Grade IV, according to qualifications and experience, and should have knowledge of housing and education work and be capable of administering building contracts.

For appointment (c) applicants to be good architectural draughtsmen, with experience in the preparation of working drawings and details from preliminary sketches.

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

Applications, giving particulars of age, qualifications and experience, and the names of two referees, should be delivered to the undersigned not later than Thursday, 27th January, 1955.

Housing accommodation will be made available to married applicants if possible.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings,
Oldbury, near Birmingham.
5th January, 1955. 8045

LEEDS REGIONAL HOSPITAL BOARD.

Applications are invited for the following appointments on the staff of the Board's Architect:-

(a) ARCHITECTURAL ASSISTANT (£440-£625).

Applicants must have passed the Intermediate Examination of the A.R.I.B.A.

(b) SURVEYING ASSISTANT (£440-£625).

Applicants must have passed the Intermediate Examination of the A.R.I.C.S. or an examination recognised by the Institution as equivalent.

(c) SURVEYOR'S CLERK (£370 at age 24 or over-£455).

Applicants must have had suitable training, including three years' technical experience in Quantities with a Quantity Surveyor or Building Contractor.

All the above salary scales are at present under review.

Applications stating age, experience, qualifications, together with the names and addresses of two referees, to be sent to the Secretary to the Board, Park Parade, Harrogate, by not later than 31st January, 1955. 8065

**SOUTH CAMBRIDGESHIRE RURAL
DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL
ASSISTANT.**

Applications are invited for the appointment of Architectural Assistant in the Department of the Council's Architect. Salary will be within the amended Grade II, A.P.T. Division (£560-£640), of the National Scales of Salaries.

Architectural experience in housing is necessary, and candidates must be capable of surveying, levelling, and preparing working drawings and specifications.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the National Scheme of Conditions of Service, to a satisfactory medical examination, and one month's notice in writing on either side.

Forms of application can be obtained from the undersigned, to whom they must be returned not later than first post on Monday, the 24th January, 1955.

Housing accommodation in the Rural district may be provided for the successful candidate if required.

Canvassing, directly or indirectly, will disqualify.

B. G. CRAFT,
Clerk to the Council.

County Hall, Hobson Street, Cambridge. 8061

**BOROUGH OF COLNE.
ARCHITECTURAL ASSISTANT (NEW
GRADE III).**

Applications are invited for this permanent whole-time appointment in the Borough Engineer and Surveyor's Department. Salary, new A.P.T., Grade III (£600-£725). Appointment subject to medical examination. Provision of HOUSING ACCOMMODATION will be considered if required. Applicants must be experienced in the preparation of Plans, Specifications and Quantities, with particular reference to housing development, and should have had a thorough training in design and building construction. Previous Municipal experience not essential. Preference to holders of a recognised examination qualification.

Applications, endorsed "Architectural Assistant," stating age, qualifications, experience, and names of two referees, to be delivered to the undersigned by 17th January, (first post). Canvassing in any form will disqualify.

L. A. VENABLES,
Town Clerk.

County Hall, Hobson Street, Cambridge. 8061

**BOROUGH OF MALDEN AND COOMBE.
BOROUGH ENGINEER AND SURVEYOR'S
DEPARTMENT.**

**APPOINTMENT OF CHIEF ARCHITECTURAL
ASSISTANT.**

Applications are invited for the above permanent appointment from persons with good architectural experience, preferably in a Municipal office, and who are Associates of the Royal Institute of British Architects.

The salary will be in accordance with the amended Grade A.P.T., IV, of the National Scale of Salaries, i.e., £675, rising, subject to satisfactory service, by annual increments of £30 to £825 per annum, plus London weighting, the commencing salary to be dependent upon the successful candidate's experience and qualifications. A call allowance, at present £50 per annum, may be paid to the person appointed for the use of his private car on official business.

The Council will endeavour to provide the successful candidate with housing accommodation if deemed necessary.

Applications, on forms to be obtained from John Apse, A.M.I.C.E., Borough Engineer and Surveyor, Municipal Offices, New Malden, Surrey, should be returned, endorsed "Chief Architectural Assistant," to the undersigned not later than the 31st January, 1955.

Canvassing, directly or indirectly, will disqualify.

HAROLD E. BARRETT,
Town Clerk.

Municipal Offices, New Malden, Surrey. 8044

**LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.**

Vacancies for ARCHITECTS, Grade III (up to £692 10s.), and ARCHITECTURAL ASSISTANTS (up to £739 10s.), in Schools and Housing Divisions.

Particulars and application forms from Architects (AR/EK/A/2), County Hall, S.E.1. (1058) 2386

**COUNTY BOROUGH OF BOURNEMOUTH.
BOROUGH ARCHITECT'S DEPARTMENT.**

Applications are invited for the following appointments:-

ASSISTANT ARCHITECT. Established post.

Salary Grade A.P.T., III (£600-£725 p.a.). Applicants must be Registered Architects, Members of the R.I.B.A., and have knowledge of requirements of Education Act, 1944.

ARCHITECTURAL ASSISTANT, I. Unestablished post. Salary Grade A.P.T., II (£560-£640 p.a.). Applicants must have had two years' experience, preferably of education building, after passing R.I.B.A. Inter. Exam.

JUNIOR ASSISTANT QUANTITY SURVEYOR. Unestablished post. Salary Grade A.P.T., I (£500-£580 p.a.). Applicants must be experienced in working up and taking off on minor works.

Successful candidates will be appointed at present salary if within the incremental scale.

Application Forms and further particulars from Borough Architect, Town Hall, Bournemouth. Completed applications, with copies of three recent testimonials, must reach me by 10 a.m. 22nd January, 1955.

A. LINDSAY CLEGG, Town Clerk. 7088

**OFFICE OF THE RECEIVER FOR
THE METROPOLITAN POLICE DISTRICT.**

Applications are invited for unestablished appointments as LEADING ARCHITECTURAL ASSISTANTS in the Architect and Surveyor's Department. The work is concerned with the design and construction of police dwellings and buildings, and candidates will be required to work in the Westminster area.

Rates of Pay* (Men):-£665 x £20-£725 x £25-£780.

*Women: £580 x £20-£640 x £25-£665.

The scales quoted are subject to an increase of approximately 3 per cent., while a 45-hour week is being worked and also to the addition of a Pay Supplement of £25 or £30 per annum, according to the point reached on the scale.

Conditioned hours—44 per week.

Annual Leave—24 days.

Application forms from the Chief Architect, Architect and Surveyor's Department, New Scotland Yard, London, S.W.1, marking the envelope "Architectural Assistants." 6006

**BOROUGH OF WESTON-SUPER-MARE.
ASSISTANT ARCHITECT (PUBLIC BUILDINGS), GRADE A.P.T., II (£560-£640).**

Applications are invited for the above appointment from Architectural Assistants who possess the Intermediate Examination of the R.I.B.A., and have worked for a minimum period of one year in an Architect's office.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the terms of the National Scheme of Conditions of Service, and to termination by one month's notice on either side. A medical examination will be necessary.

Applications, stating age, qualifications, present and previous appointments (with salaries), together with details of experience and the names of two persons to whom reference can be made, should reach the Borough Engineer and Surveyor, Town Hall, Weston-super-Mare, not later than Thursday, 20th January, 1955.

R. G. LICKFOLD,
Town Clerk.

Town Hall, Weston-super-Mare.
29th December, 1954. 7083

CARDIGANSHIRE COUNTY COUNCIL.**APPOINTMENT OF ASSISTANT ARCHITECTS.**

Applications are invited for the following appointments:—

(1) Two ASSISTANT ARCHITECTS on A.P.T. IV £675-£825. Applicants should be members of the R.I.B.A.

(2) Two ARCHITECTURAL ASSISTANTS on A.P.T. I-II £500-£640. Applicants should preferably be Students R.I.B.A.

Commencing salary will be according to qualifications and experience.

The appointments are in the County Architect's Department, County Hall, Aberystwyth.

Application forms can be obtained from the County Architect and these must be returned to the undersigned not later than 24th January, 1955.

J. E. R. CARSON,
Clerk of the County Council.Swyddfa'r Sir,
Marine Terrace,
Aberystwyth,
16th December, 1954. 7056**RURAL DISTRICT COUNCIL OF HATFIELD****APPOINTMENT OF ARCHITECTURAL ASSISTANT.**

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT at a salary in accordance with Grade A.P.T. II (£560-£640).

Preference will be given to candidates who have studied at a Recognised School of Architecture and who have passed the Intermediate Examination of the R.I.B.A. Apply with full particulars and copies of two testimonials to Mr. J. H. Parker, A.R.I.B.A., Architect to the Council, 82 Great North Road, Hatfield, not later than 21st January, 1955.

E. F. CULL,
Clerk to the Council.16, St. Albans Road,
Hatfield,
24th December, 1954. 7042**WEST SUFFOLK COUNTY COUNCIL.****JUNIOR ARCHITECTURAL ASSISTANT.**

N.G.C. service conditions. Salary £500-£580 (A.P.T. Grade II). Post pensionable; medical examination. Applicants should be Probationers of the Royal Institute of British Architects with not less than two years office experience.

Application forms, obtainable from the Clerk of the County Council, Shire Hall, Bury St. Edmunds, to be returned by 25th January, 1955. 7045

Architectural Appointments Vacant

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 16-64 inclusive, or a woman aged 16-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

REQUIRED for Architects' office, Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 2325.**BUILDING SURVEYING ASSISTANT** (about R.I.C.S. Final Standard) with at least two years' practical experience required by City firm of Chartered Surveyors & Architects. 3925**ARCHITECTURAL ASSISTANT**, intermediate standard required as a personal assistant to a principal in a large general practice in the Home Counties. The appointment will offer opportunity for works in all stages of architecture and in the administration of a private practice. Enthusiasm and ability essential. Box 5063.**SENIOR ASSISTANT ARCHITECTS** required with experience of work on commercial and industrial buildings. Salaries up to £915 per annum for suitably qualified applicants.**ASSISTANT ARCHITECTS** also required, capable of preparing working drawings and details from preliminary sketches. Salaries up to £745 per annum.

Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester. 4919

ASSISTANTS required Manchester District—one qualified or of final standard, one intermediate standard. State salary required. Box 4853.**EXPERIENCED** Senior and also Intermediate to Final standard ASSISTANTS required. Applicants to have knowledge of commercial work, including offices and stores, etc. London experience is essential. Box 4890.**PROBATIONER or STUDENT R.I.B.A.** required in the Architectural Department of a large engineering company near Nottingham. Wide variety of work, 5-day week. All facilities for part-time training, including a day off per week with pay to attend College. Applications in writing, stating age, details of education, and previous experience, if any, to Box 6099.**ARCHITECTURAL ASSISTANT: Intermediate** approaching final. Commercial and industrial work; large-scale contracts. Watson, Johnson, Stokes, Victoria Square, Birmingham. 4895**ASSISTANT** required in busy practice in West End, in early twenties, about Intermediate R.I.B.A. standard. Excellent opportunities for gaining all-round experience. Box 5092.**CO-OPERATIVE WHOLESALE SOCIETY, LTD.****ARCHITECTS' DEPARTMENT, LONDON.**

Applications are invited for the following appointments:—

(a) ASSISTANT ARCHITECTS, of Inter-R.I.B.A. standard.

(b) SHOPFITTING DRAUGHTSMAN, with wide experience in store planning and design.

(c) WORKER-UP, with experience of commercial/industrial buildings.

The salary range offered for the above appointments is up to £46 per annum, according to age and experience, with prospects of up-grading.

Applications, stating age, experience, qualifications, and salary required, to W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leaman Street, London, E.C.1. 6015

ARCHITECTURAL STAFF, all grades wanted, interesting and varied work of contemporary character; light and airy offices. Apply J. Seymour Harris & Partners, 4, Greenfield Crescent, Edgbaston, Birmingham, 15. 6086**BUILDING and ARCHITECTURAL ASSISTANT** wanted in City Architects and Surveyors' office; good draughtsman, Inter. standard. Apply by letter, Vigers & Co., 4, Frederick's Place, E.C.2. 6088**ARCHITECTURAL ASSISTANT** required in estate developers and contractor's office. Agree to prepare designs, working drawings and details from sketches and on own initiative. Phone Tate Gallery 4301. 6085**ARCHITECTURAL ASSISTANT** urgently required, experienced in preparation of working drawings, details, specifications and supervision, for South West London Office. Apply in writing, giving full particulars of experience, age and salary required to Box 6056.**SENIOR ASSISTANT ARCHITECT** required for large practice in West Indies, to work under resident Partner. First class opportunity for capable man with initiative and tact. Applicants should be qualified, have had good experience and be able to produce highest references as to ability and character. Apply in writing giving age and experience to W. H. Watkins, Gray, F.R.I.B.A. & Partners, 57, Catherine Place, Palace Street, London, S.W.1. 6051**SENIOR ASSISTANT** required for permanent position in recently extended offices at Leicester branch. Apply in writing to C. Edmund Wilford, A.R.I.B.A., 2, Hastings Street, Leicester. 6053**ARCHITECTURAL ASSISTANT or BUILDING DRAUGHTSMAN**, age up to 35, required for work on industrial buildings. Preference given to candidates with Inter. R.I.B.A., but this not essential, although O.N.C. in building is the minimum acceptable qualification. Applicants should have experience in foundation work, drainage and factory buildings. Permanent position at attractive salary. Assistance with housing given if necessary. Write in confidence to Personnel Manager, Michelin Tyre Co., Ltd., Stoke-on-Trent, Staffs., giving all relevant information. 7041**ARCHITECTURAL ASSISTANT** required, Intermediate to Final standard, with office experience, for small busy practice. Shaw & Lloyd, F.R.I.B.A., 74, Gt. Russell Street, W.C.1. Museum 9693. 7027**ASSISTANT** required, with office experience. Apply Burgess, Holden and Watson, Chartered Architects, Beaconsfield, Bucks. 7028**Cecil Howitt & Partners, Architects, St. Andrew's House, Mansfield Road, Nottingham, require JUNIOR ARCHITECTURAL ASSISTANTS**, preferably Inter. R.I.B.A. standard. Please apply in writing, giving full details and stating salary required. 4705**ARCHITECTURAL ASSISTANTS** required. Varied work. Write stating age, training, experience, present salary. All interview expenses paid. G. de C. Fraser, Son & Gearey, Chartered Architects, 27, Dale Street, Liverpool. 8067**RESIDENT REPRESENTATIVE** required for East Anglia and East Midlands by leading nationally known manufacturers of prefabricated timber buildings. Applicants must have sound knowledge of building construction with some experience of timber of prefabricated structures. This is an opportunity for a capable sales executive able to initiate, maintain and successfully finalise technical and commercial negotiations at high level. Send fullest details of career, age, experience and salary level to Box No. 7007.**TWO ARCHITECTURAL ASSISTANTS** wanted. Either Inter. or fully qualified, with two or three years' experience. Salary £450 to £550, depending on ability. Full details to Guy Morgan and Partners, 12a, Eaton Square, S.W.1. 7058**ASSISTANT—Inter. standard—immediately.** E. B. Musman & Partners, 12, Upper Berkeley Street, W.1. 7019**FULLY experienced man** wanted to supervise Architectural works in Far East. Similar experience essential, and knowledge of the Far East an advantage. Engagement for period of the work estimated at two years, with possibility of permanent engagement afterwards. Box 7066.**ARCHITECTURAL ASSISTANT** required for Taunton or Tiverton offices. At least Intermediate R.I.B.A. standard, with previous private practice experience. H. S. W. Stone & Partners, F.R.I.B.A., 20, The Crescent, Taunton. 7029**RONALD WARD & PARTNERS** require

several ARCHITECTURAL ASSISTANTS. Apply 29, Unesham Place, Beigrave Square, S.W.1. or telephone Belgrave 3561. 7023

SENIOR ARCHITECTURAL ASSISTANT wanted for busy private practice. Large scale high-class work. Administrative ability looked for. State age, training, experience, present salary. Herbert J. Rowe, F.R.I.B.A., Martins Bank Building, Liverpool, 2. 7032**ARCHITECTURAL ASSISTANTS** and DRAUGHTSMEN urgently required in Architects' Department (Head Office). Appointments on a permanent basis, with good prospects for applicants with initiative and having sound practical experience and knowledge. Salaries ranging from £500 to £800 per annum, according to experience and ability. Write, giving brief particulars of qualifications and experience, to Chief Architect, George Wimpey & Co., Ltd., 27, Hammersmith Grove, London, W.6. (Envelopes to be marked "Staff Vacancies.") 7048**VICTORIA** office requires both junior and intermediate grade ARCHITECTURAL ASSISTANTS. Applicants should be interested in planning for modern industry, the presentation of schemes and the working up of details, etc. Please reply stating previous experience and salary required to Box No. 7072.**ARCHITECTURAL ASSISTANT** required for London Office. Detailing experience essential. Box 7080.**URGENTLY** required in busy City office, with increasing commitments, SIX JUNIOR ASSISTANTS, of Intermediate standard. Excellent opportunities for candidates with enthusiasm and drive to gain all-round experience in a practice dealing with projects of national and historic interest. Salary range £403-£569. Box 7067.**SENIOR DESIGN DRAUGHTSMEN** required by Engineers. Preferably experienced in Structural or Mechanical Engineering. 5-day week. Pension scheme. Excellent prospects. Write in first instance, giving details of age, experience, and salary required, to British Ropeway Engineering Co., Ltd., Plantation House, Mincing Lane, London, E.C.3. 7000**ASSISTANT** of intermediate standard with several years office experience, required immediately. Must be good and accurate draughtsman. Apply stating age, when available, previous experience and salary required to Felix Walter, F.R.I.B.A., 7, Gainsborough Road, Ipswich, Suffolk. 8049**ARCHITECTURAL ASSISTANT** required, intermediate to final standard. Write giving full particulars of previous experience and salary required to Graham Crump & Denis Crump, F.R.I.B.A., 43, George Street, Croydon—Five-day week. 8018**ASSISTANT** Wanted, small office, Kensington. Inter. standard. Opportunity to gain good experience. Five-day week. Write with full particulars and salary required. Box 8020.**ASSISTANTS**, Junior and Senior, required. Commencing salary £600 per annum and £800-£900 per annum, according to qualifications. Write, giving details, to E. D. Lyons, L. Israel & T. B. H. Ellis, 26, Seymour Street, W.1. 8043**ARCHITECTURAL ASSISTANTS** required immediately for busy practice in W.C. London area. Write, stating experience and salary, to Box 8039.**JUNIOR ARCHITECTURAL ASSISTANT** required at once in Southampton office, preferably completed National Service. Write, giving age, training and experience, and present salary, Box 8940.**EXPERIENCED ASSISTANTS** required for pleasant London office, with large programme of work abroad—Hospitals, Offices, Schools, etc. Good prospects for single applicants and opportunity for travelling abroad after initial period in London. Box 8041.**ARCHITECTURAL ASSISTANT** required immediately; inter. standard. Write stating experience and salary required to T. Anders, 100, High Road, Ilford, Essex. 8021**ARCHITECTURAL DRAUGHTSMEN** required by Ilford Limited, for staff architect's office. Applicants should have completed at least one year's office experience. Apply in writing, stating age, training and experience to: Ilford Limited, Romford, Essex. 8024**EXPERIENCED REINFORCED CONCRETE DESIGNERS and ARCHITECTURAL DRAUGHTSMEN** required by large Building and Civil Engineering Contractor. Permanent employment and good prospects for suitable candidates. Apply Box 8023.**SENIOR ARCHITECTURAL ASSISTANT**, Final Standard, required immediately. Please apply in writing, stating age, experience and salary required, to Howell, Freeman & Batten, 17, Blagrove Street, Reading. 8025**FIRM** of Architects in Crawley require JUNIOR ASSISTANTS of up to Intermediate standard. Applicants should be good draughtsmen and preferably have contemporary outlook. Apply Box 8028.**ARCHITECTURAL ASSISTANT** required in small Chelsea Office. Intermediate to Final Standard. Apply H. St. John Harrison, F.R.I.B.A., 8, Smith Street, S.W.3. Tel. SLO 7360. 8037

ARCHITECT'S ASSOCIATE urgently required for young country practice in Central Cornwall. Salary according to ability and probably not exceeding £600 at commencement. Qualifications: Age limit, 35; conscientious, fast and generally perfect draughtsman, accurate surveyor, sound construction and good designer. Imaginative frivolity in moderation appreciated. Box 8029.

A.R.I.B.A., with busy and growing practice in the City, requires young ASSISTANT with several years' experience in Architects' office. Good salary and prospects. Box 8032.

ASSISTANT required by Architects in Victoria District. Inter or Final Standard. Factory, Church, Domestic Works, Flats, etc. Kindly state experience and salary required. Box 7098.

ARCHITECTS of R.I.B.A. Final Standard required with initiative and imagination, for research and development of prefabricated structures destined for world markets. Apply A. M. Gear, A.R.I.B.A., at 12, Manchester Square, London, W.1. 8000

ASSISTANT, about R.I.B.A. inter standard, required by London Architects. Write giving details and salary required to Box 8001.

ARCHITECTURAL ASSISTANTS, all grades, urgently required for work on University Buildings. Write full particulars, including salary required. Lanchester & Lodge, 10, Woburn Square, W.C.1. 8002

CAPABLE ARCHITECTURAL ASSISTANT required in London Architects' local office at Haywards Heath to take charge of contracts in the district. Write stating age, qualifications and salary required to Box 8004.

CHIEF ASSISTANT-STAFF ARCHITECT to London Property Development Company required at once. Competent qualified Chief Assistant for shop, showroom and office buildings. Good salary and prospects to right man. Apply to Mr. S. M. Haines, 38, Upper Grosvenor St., London, W.1. MAYfair 8944. 8005

ARCHITECTURAL ASSISTANT, school-trained with at least two years' experience, for industrial projects: contemporary outlook. Five-day week. Apply by telephone or letter for interview. Clifford Tee & Gale, F.F.R.I.B.A., 43, Frederick Road, Birmingham, 15. Edgbaston 3676. 8010

ARCHITECTURAL AND SURVEYING ASSISTANT required, capable usual office drawing experience, specifications, land and property surveys. Age, experience, salary to Gilbert & Hobson, 69a, Castle Street, Farnham, Surrey. 8011.

JUNIOR ASSISTANTS required. Poulton and Freeman, Ambassador 221. 8013

AN immediate vacancy for a capable **SENIOR ASSISTANT** occurs in private office in the Westminster area. Applicants must be good practical draughtsmen and have a knowledge of design. The position offers considerable scope for initiative, and the successful applicant must be prepared to work under a minimum of supervision. The practice is very varied and offers practical experience of works in the widest architectural field. Reply, stating age, experience, and salary required to Box 8054.

PROGRESSIVE London firm opening branch office North-West Hertfordshire requires capable ASSISTANTS for interesting school and other work. Inter and Final standard. Write stating experience and salary required to Box 8014.

WEST END Firm of Architects requires ASSISTANT for drawing office. Good draughtsmanship and thorough knowledge of building construction. Write full details experience and salary required. Box 8053.

ARCHITECTURAL ASSISTANT required urgently, good opportunities and experience in industrial, commercial and domestic work. Also **JUNIOR ASSISTANT**, Intermediate standard. Apply: K. Luther Davies, A.R.I.B.A., A.R.I.C.S., 41, High Street, Newport, Mon. 8012

ASSISTANT for Westminster office, for industrial and commercial work. Must be good draughtsman. Salary according to experience. Write, stating full details. 8055

WEST END Firm of Architects requires **EXPERIENCED ASSISTANT**. Thorough knowledge all phases of architectural practice necessary. London experience preferred. Capable taking charge of contracts under direction of Principal. Write full details experience and salary required. Box 8052.

ASSISTANT required mainly for interesting school and other work by Architects in West Central area. Salary in region of £600 per annum, 5-day week. Full particulars to Box 8015.

ARCHITECTURAL ASSISTANT required, R.I.B.A., Intermediate standard, completed or exempt National Service. Five-day week, varied practice in London Area. Write giving particulars of capabilities. Salary £600 to £700 according to experience. Box 8016.

ARCHITECTURAL ASSISTANTS required in busy Coventry office, handling wide variety of work. All standards up to Intermediate or equivalent. Good salaries. Travelling expenses paid to applicants selected for interview. Pension scheme available. W. S. Hattrell & Partners, 1, Queens Road, Coventry. 8017

Architectural Appointments Wanted

SENIOR EXECUTIVE, of Managerial status, having connection amongst Architects, Government Departments and Councils, and with experience of metal window and ancillary trades, is desirous of making change to position offering greater scope of activities. Box 900.

ARCHITECT (34) A.R.I.B.A., school-trained, five years' comprehensive practical experience, wishes to join practice. Southampton/Winchester area. Box 8003.

ASSOCIATE, 34, wide experience of private practice as **CHIEF ASSISTANT** with full responsibility throughout projects, seeks appointment with prospects of partnership. Box 8022.

REQUIRED—**SENIOR** with 14 years Architectural background, 12 years practical farming (wartime C.O.), would welcome a position where both—preferably—experiences could be fully utilised. Box 8006.

SENIOR (43), with definite contemporary bias, seeks interesting and responsible post. Sketch scheme to completion and supervision. Industrial, commercial, flats, domestic, conversions. Efficient perspectives. Designer with past competition successes. Registered 1941 (Not R.I. Member). London preferred. Minimum £880 p.a. Box 8007.

Other Appointments Vacant

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

ARCHITECT'S SECRETARY required, with good shorthand and typing speeds, and general experience with Architects or comparable. Write Gordon and Fitch, 9, Mansfield Street, W.1. or telephone LANGham 2636. 8063

CLERK OF WORKS required for large office building contract in Westminster. Apply Box 8030.

GOOD Contemporary **DESIGNER** interested in interior decoration, required in West End office for interesting and important projects. Must be first class draughtsman. Salary £1,000 to £1,200 p.a. Box 7097.

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SHORTHAND/TYPIST-SECRETARY required by Architect with small W.1 practice. Box 8034.

THE Site Survey Company, Blackheath, London, S.E.3. Tel. LEE Green 8597, will be pleased to quote for urgent surveys to any scale for sites in this country or abroad. 8006

SENIOR ASSISTANT required for practice in shop, showrooms, interior reconstruction and exhibitions. Give salary required and details of experience. Box 8009.

YOUNG lady with at least three years' office experience, required by architects as **SHORTHAND/TYPIST**, and secretarial duties later. Must be keen and efficient. Write stating age, experience and salary required. Armstrong and MacManus, 28, Gloucester Place, W.1. 8053

SECRETARY required to work for principals of professional firm, Victoria District. Applicants please write stating experience, salary required, and when available. Box 7099.

ARCHITECTURAL DRAUGHTSMAN required for London office of major Oil Company. Applications, stating age, present position, qualifications and experience and salary required, to Box 8051.

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STUDENT R.I.B.A., school-trained, with three years' office experience, partially completed finals. Recupercating after illness, requires work at home. Sketch plans, working drawings, specifications, etc. Would also assist research work or technical literature preparation. Box 8048.


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I.A.A.S. FORTHCOMING EXAMINATIONS. AMENDED NOTICE.

The Incorporated Association of Architects and Surveyors will hold the following examinations during the week beginning 6th June, 1955:—

- Architects' Section:
 - Intermediate grade.
 - Final grade (Parts I and II).
 - Quantity Surveyors' Section:
 - Intermediate grade.
 - Final grade (Parts I and II).
 - Direct Final grade.
 - Building Surveyors' Section:
 - (Including Municipal)
 - Intermediate grade.
 - Final grade (Parts I and II).
 - Direct Final grade.
 - Land Surveyors' Section:
 - Intermediate grade.
 - Final grade.
 - Direct Final grade.
 - Fire Surveyor's Section:
 - Direct Associate grade (Parts I and II).
- The examinations will be held in London, and at selected provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 14th March, 1955.

Full information on application to the General Secretary, I.A.A.S., 75, Eaton Place, London, S.W.1. 4946

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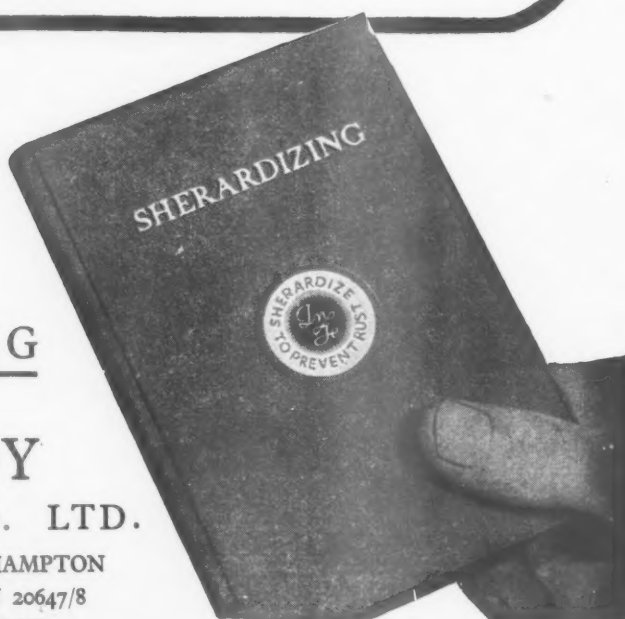
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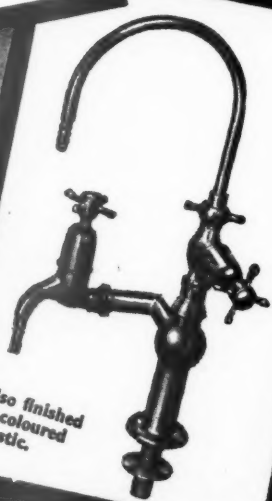
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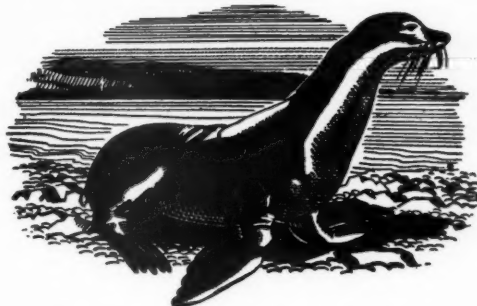
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