The Architects' JOURNAL for December 23, 1954

THE ARCHITECTS' JOURNAL

standard contents

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

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THE ARCHITECTURAL PRESS

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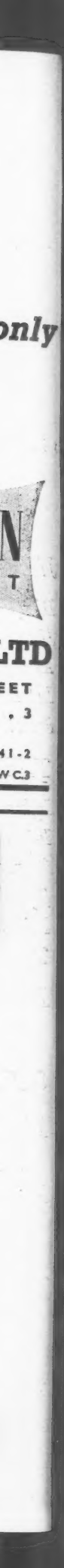
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 5491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated),. Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 67, Oxford Street, W.1.	Gerrard 0021
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organisation, Ltd., Melbourne House, Aldwych, W.C.2.	Temple Bar 4561
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. 67, Oxford Street, W.1.	Gerrard 0021
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215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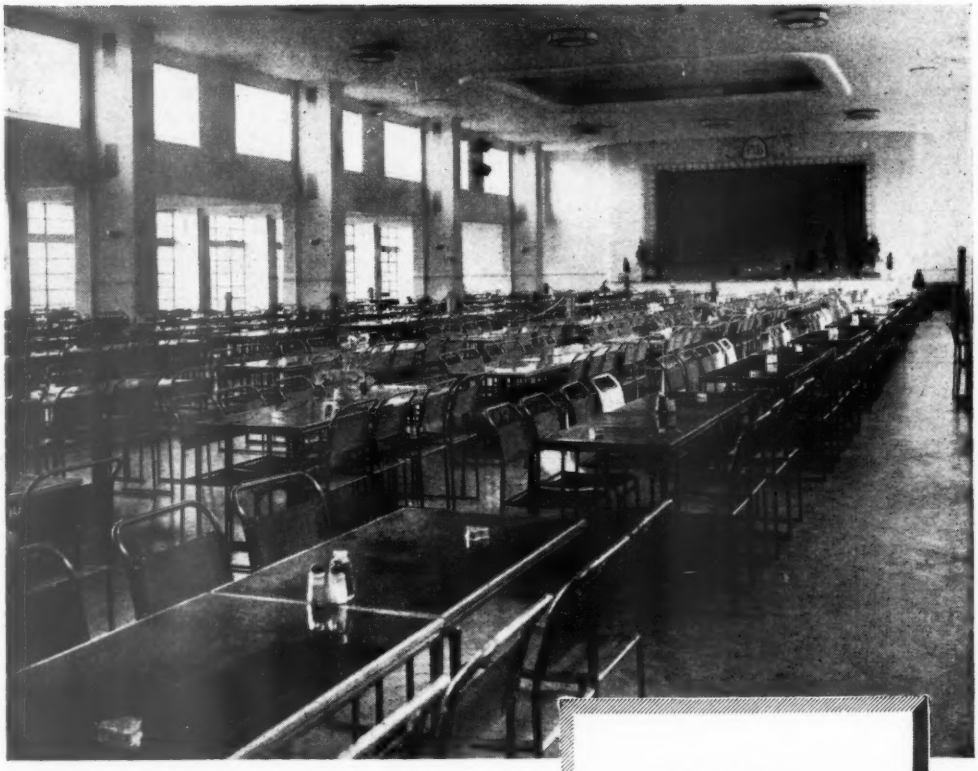

Photograph by courtesy of Paton & Baldwin Ltd. Architects: Sir Alex Gibbs & Partners, Queen Anne's Lodge, London, S.W.1

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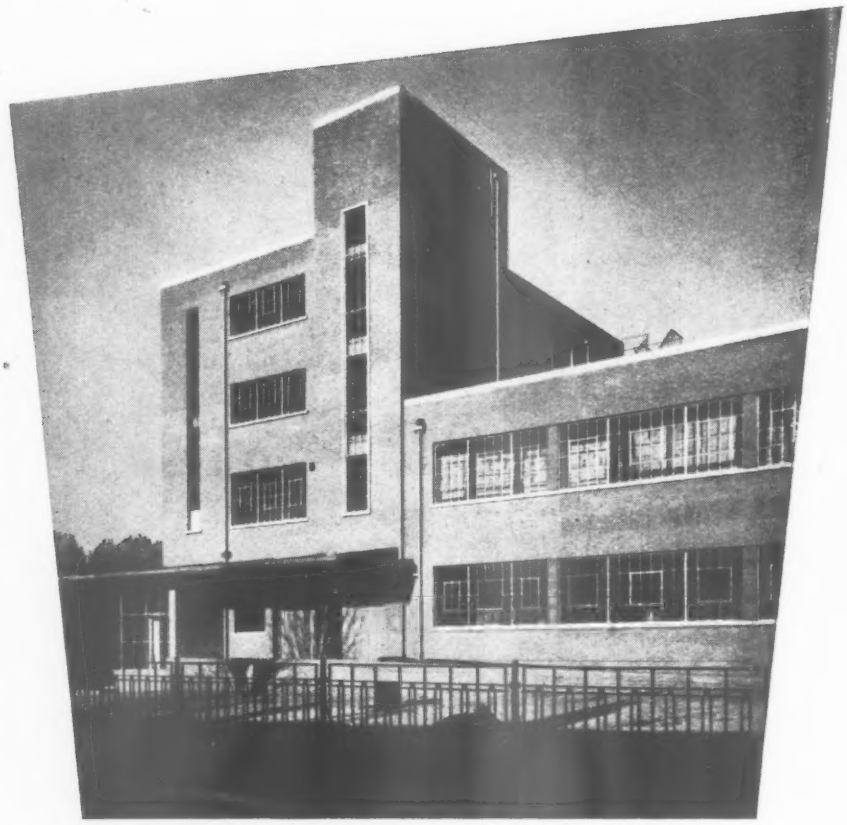

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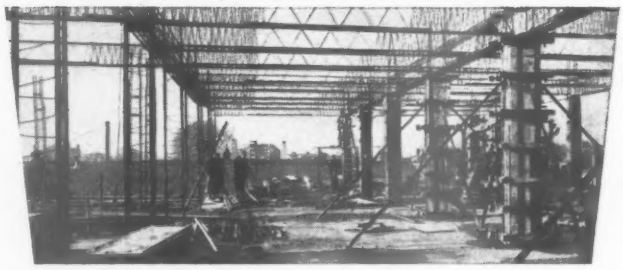

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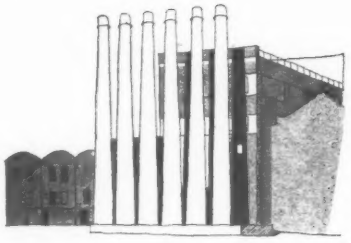

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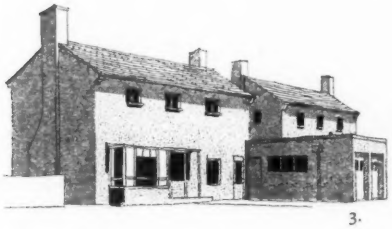

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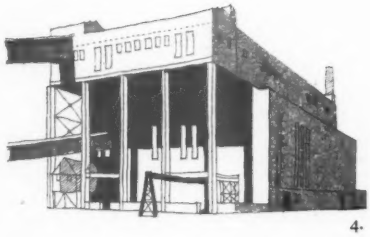

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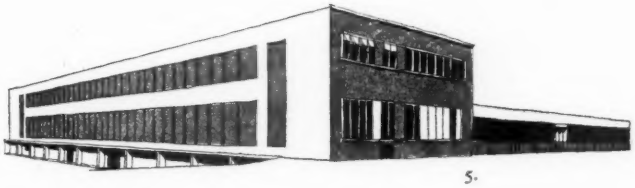

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6. FLATS, LILESTONE ESTATE, MARYLEBONE, FOR LONDON COUNTY COUNCIL.
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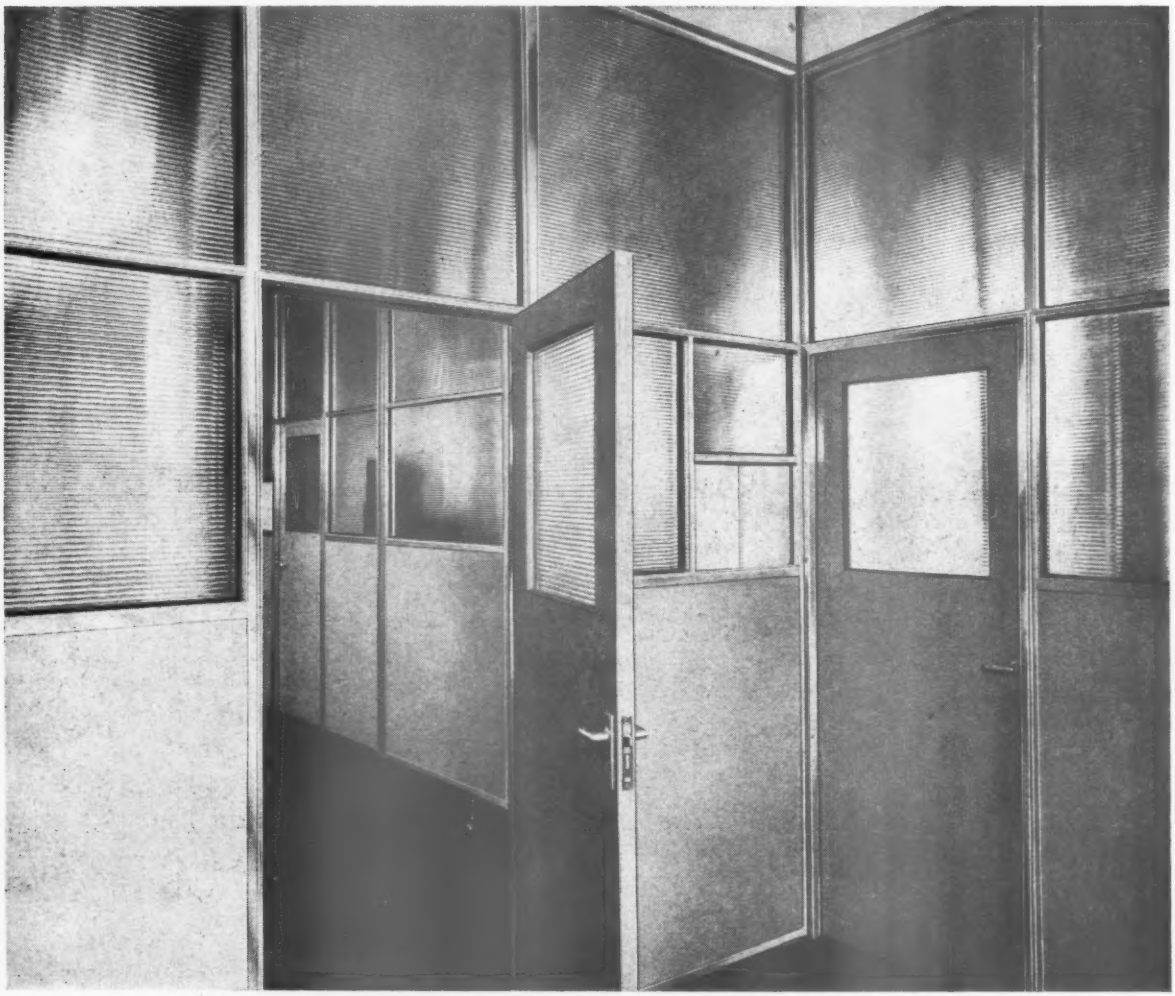

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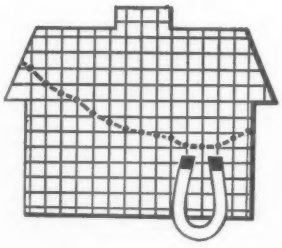

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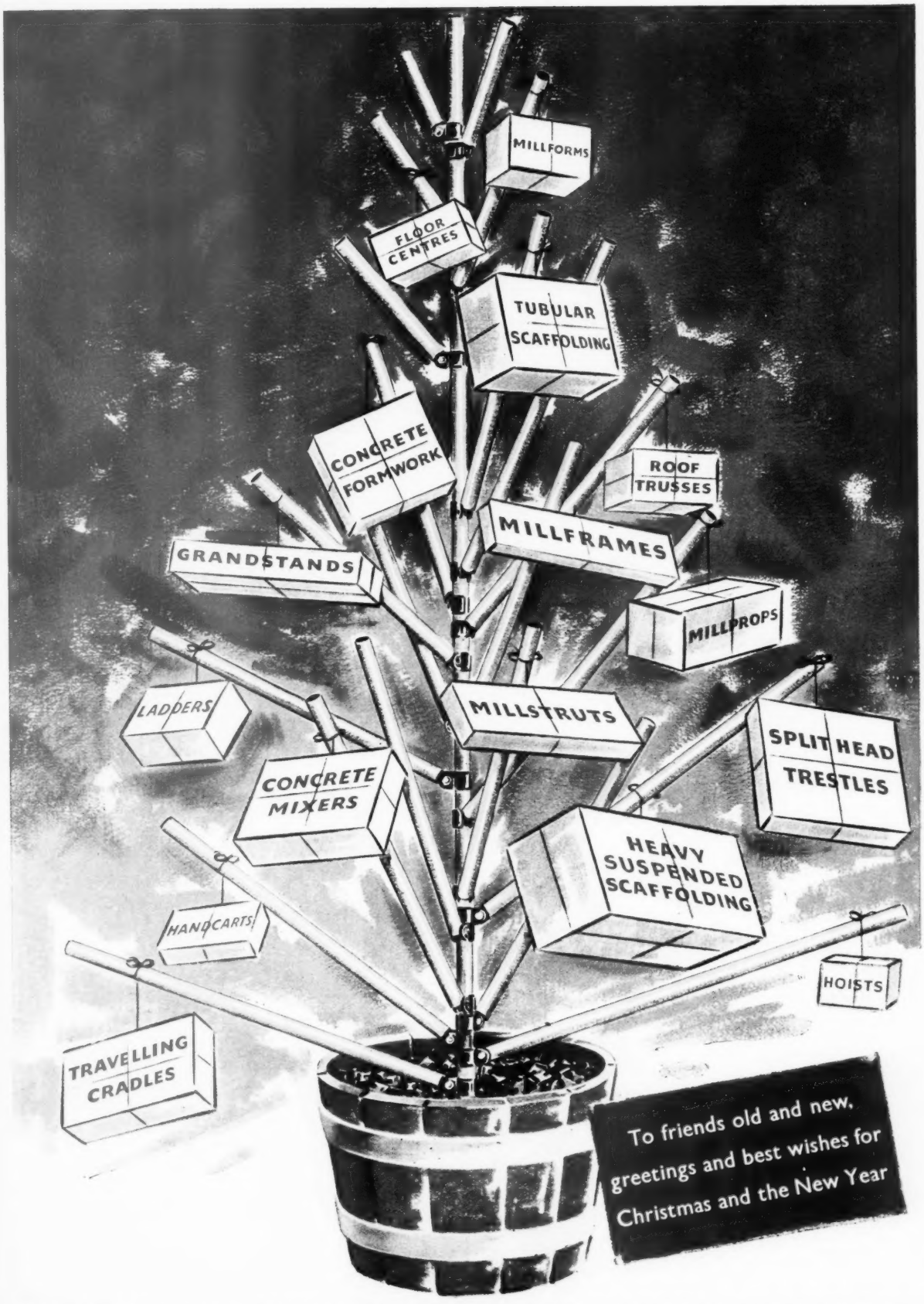

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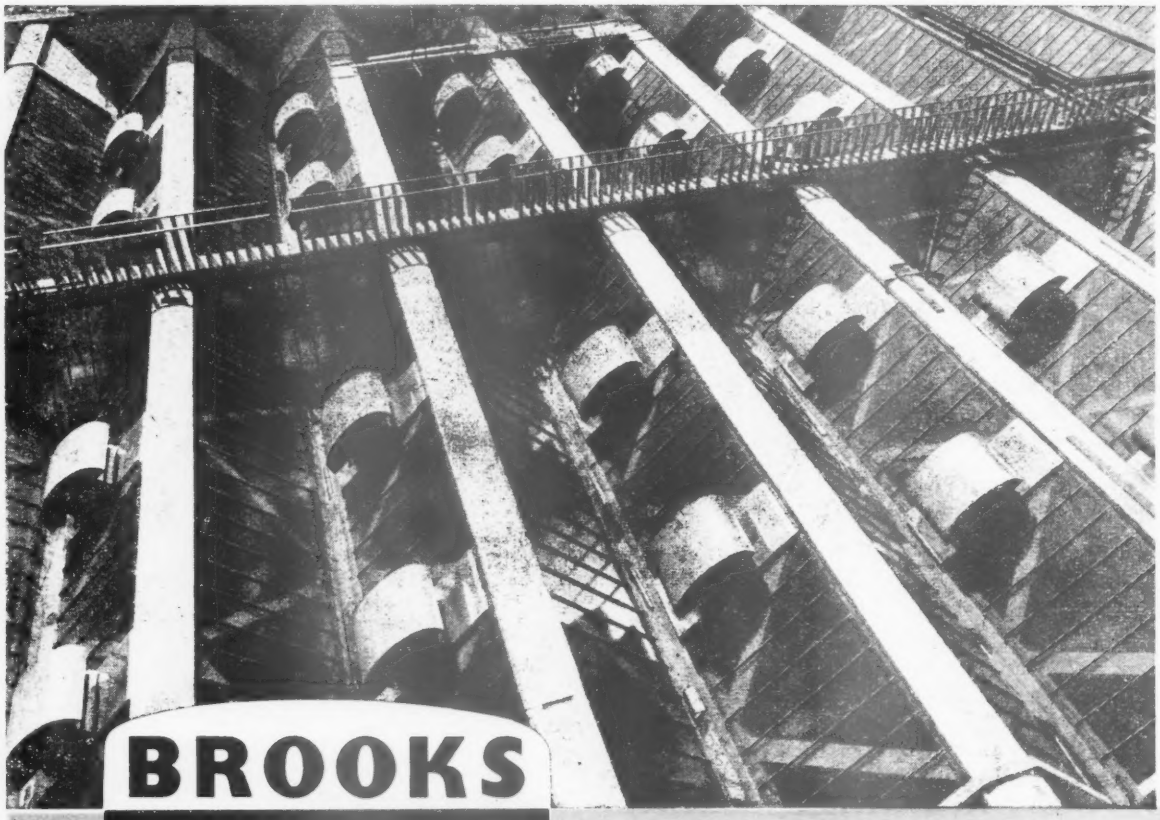

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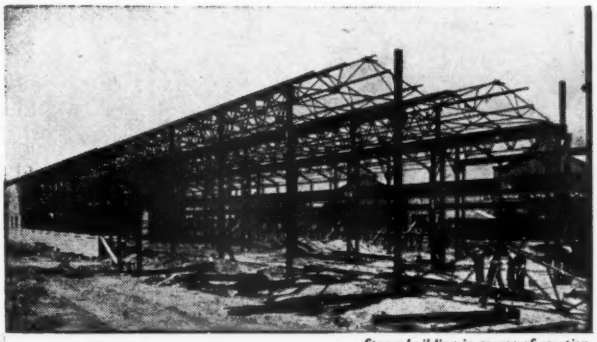

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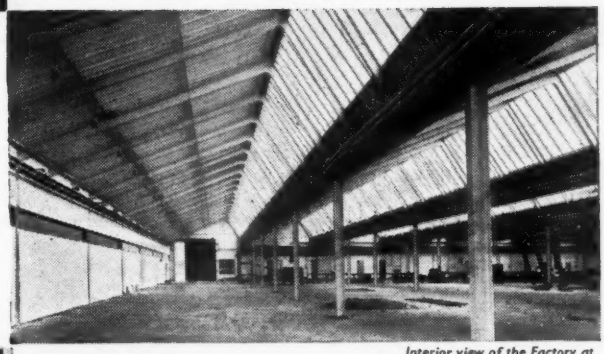

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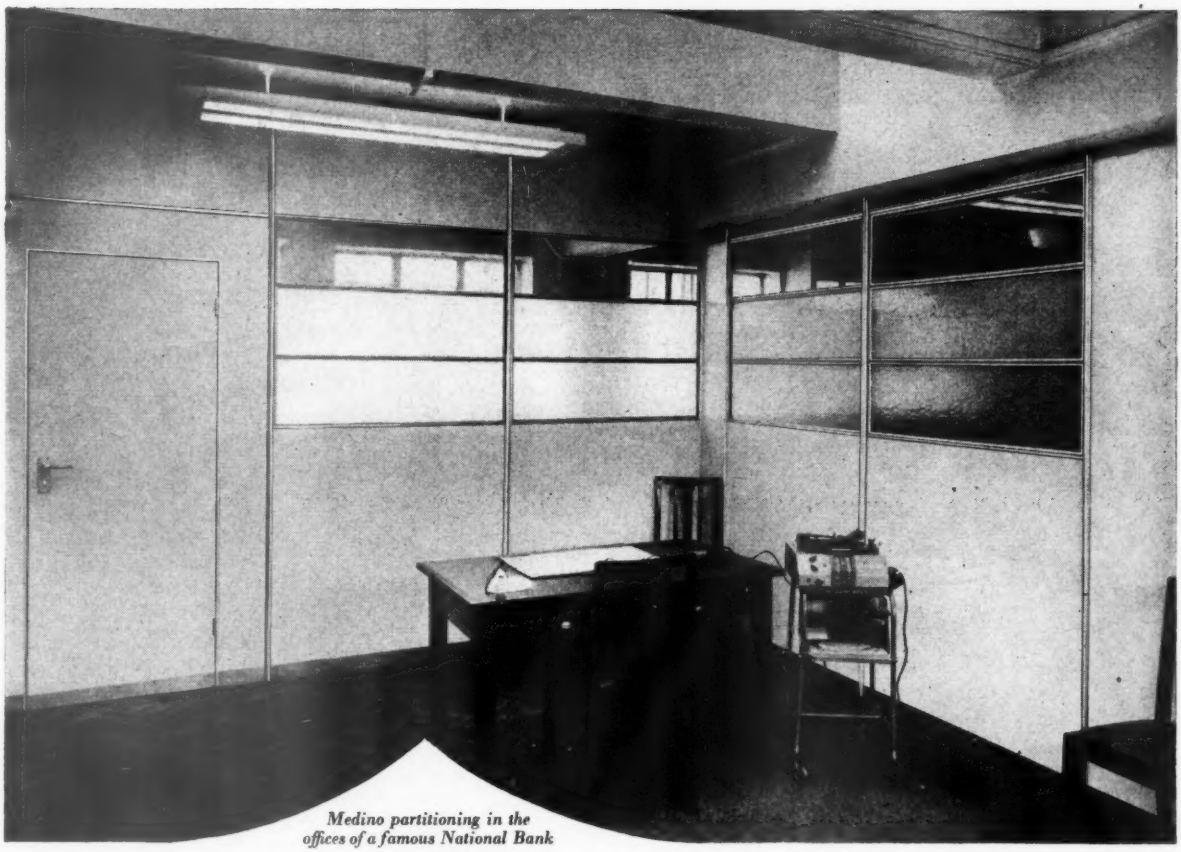

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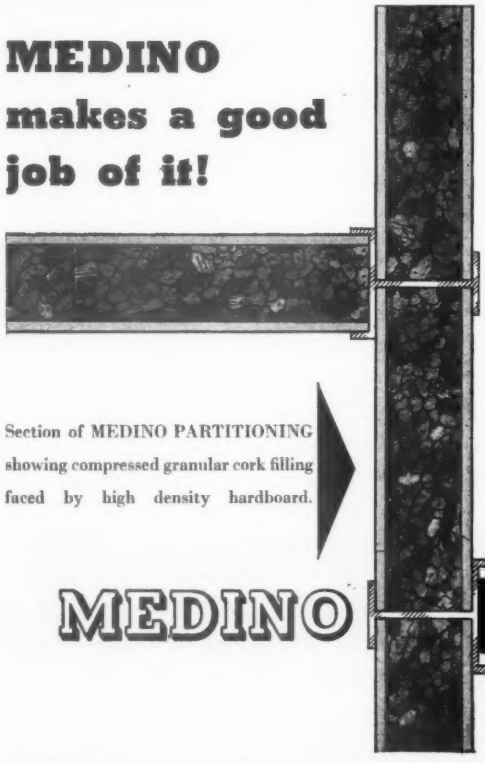

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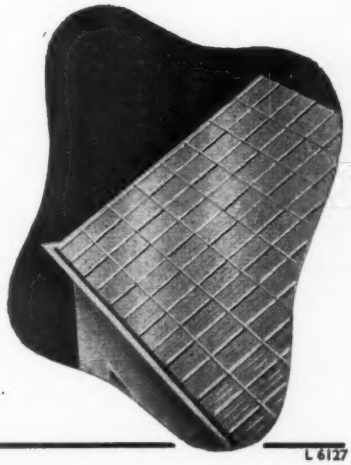

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The January 1954 special Preview issue of *The Architectural Review* aroused great interest throughout the profession and rapidly went out of print. A similar Preview issue will therefore be published in January, 1955. It will survey the most interesting buildings to be erected in Britain next year, illustrating over fifty projects by means of plans, perspectives and photographs of models. Most leading architects are represented and news is given of several important projects not previously disclosed. *The Architectural Review* is published monthly, price 5s.; the annual subscription is £2 18s. 0d. post free.

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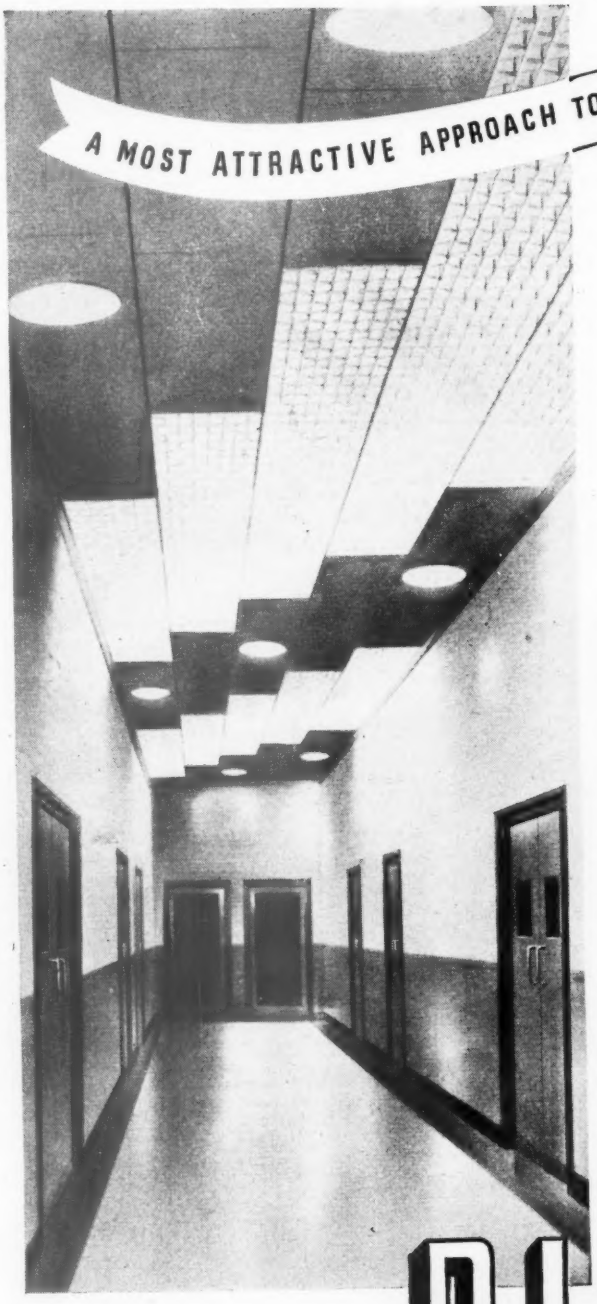

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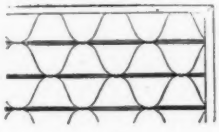

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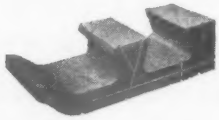

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AJ

THE ARCHITECTS' JOURNAL

9, 11 & 13, Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

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VOLTE FACADES?

Will architectural developments in the Red parts of the world be altogether different from what we have been expecting? Or has there been a mere palace revolution—a shift of emphasis, so to speak, from the chief architect to the valuer? Was Edward Crankshaw justifiably excited or not in the *Observer* of December 12? He reported that after an eight-day debate in Moscow, "which drove the European Security Conference off the front page of *Pravda*," current work was condemned as "monumental, derivative, burdened with pointless ornament, bombastic and corrupt." True enough—but it is also extremely virile and there is a lot of it. If architecture, from Berlin to Pekin, can "go modern" *and* keep its virility—that virility now so lacking in the epicene West—then almost anything might happen.

*

It would seem, as a matter of fact, that the architecture of social realism has been costing too much per cubic metre. The result has been a pasting for the panjandrums of the Academy and—one supposes—a victory for Moscow youth over Leningrad reaction. ASTRAGAL will await events impatiently, but knowing that results will be a long time coming. It is exciting news, all the same.

CAN THERE BE SCULPTURE?

The four articles that have appeared in *The Observer* in the last four weeks on the subject of "Can there be Sculpture?" have given ASTRAGAL some amusement. R. Furneaux Jordan, taking the failure of the TUC competition as his starting-point, deplored the divorce of architecture and sculpture. Reg Butler, not—apparently—caring in the least so long as the sculptor could get on with his job in his own private world, was prepared to tell the public to keep out. John Berger did not mind how bad sculpture might be—for the time being—so long as it was public and alive. And Nikolaus Pevsner contented himself with assembling a few historical facts to prove how right everybody was. All rather deplorable. Nobody defended the sculptors or suggested a remedy.

JORDAN ON PEVSNER

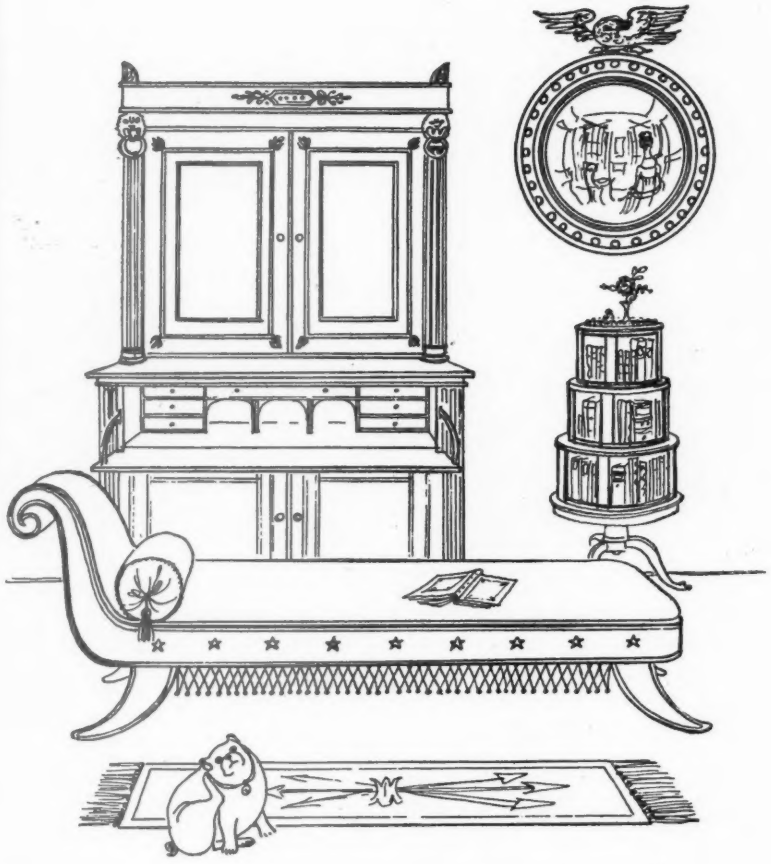
In another talk in the ICA's *Books and the Modern Movement* series, R. F. Jordan recently took on the formidable task of weighing up the value, to us here and now, of Professor Pevsner's *Pioneers of the Modern Movement*. After reminding us that the book was written twenty years ago, about events which finished twenty years before that, he went on to direct his criticism primarily at the three main classes of Pioneers whom the professor discusses: William Morris and his followers, the *Art-Nouveau* designers, and the engineers. It was the engineers alone, he felt, who could properly be called pioneers of what we now consider to be the Modern Movement.

*

The others, whatever the value of Philip Webb's *Red House* as shock-tactics, whatever interest in iron the *Art-Nouveau* may have shown, were side issues to the main line of development, which ran from the Crystal Palace and the railway engineers to Frank Lloyd Wright and the Fagus factory of Walter Gropius. To demonstrate this point, Mr. Jordan told a story, new to ASTRAGAL, about meeting, in the early thirties, an elderly architect in a raging temper. The occasion of his wrath was the MARS Group exhibition, the first organized manifesto of the Modern Movement in England—and the irate architect was C. F. A. Voysey, who appears in Professor Pevsner's book as one of that movement's pioneers.

BRIXTON AGAIN

The Brixton School of Building has just finished one of its annual joint architect-building student programmes. The stylish corner illustrated in the



The drawings reproduced on this page are by Barbara Jones. They come from her book "English Furniture at a Glance." (See note below)

photo (below) was the joint effort of the students of architecture and the students of nine crafts: paviors, bricklayers, masons, plumbers, carpenters, joiners, woodwork machinists, plasterers and decorators. The architects first had a competition among themselves and then took their winning design to the crafts, who either did what was asked or argued the toss. Most argumentative, it seems, were the woodwork machinists and the plasterers; the plasterers—it seems—have had their appetite for initiative whetted by working for the film industry.

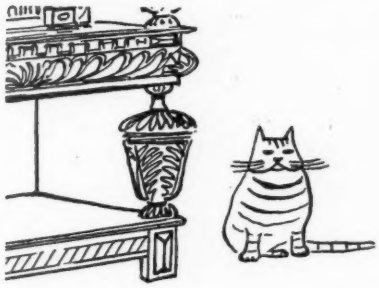
This is the beginning of something very good in education. Let us hope that all the forces which make this kind of programme so difficult—lack of space, lack of time, and the coldness of examining bodies—will be progressively overcome.

FOUR-LEGGED FRIENDS AND OTHERS

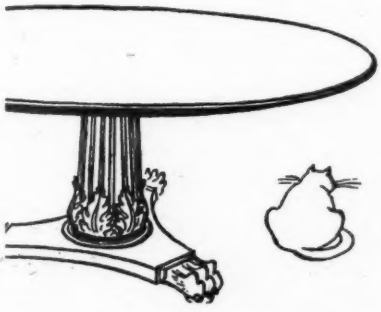
Nothing gets in the architect's hair as much as the furniture-lifeman, who, when you make a sweeping gesture to show William Kent's grand use of the Corinthian order, or Robert Adam's subtlety in modelling space, starts to haggle about gadrooning, or scutcheons, or some other period fiddle that the average architect wouldn't recognize if it were served up on a plate. A vote of thanks, therefore, to Barbara Jones for her *English Furniture at a Glance*,* which is a large-pocket manual of furniture-recognition, with a glossary which should enable you to wear down even the most informed opposition.

* Architectural Press. 8s. 6d.

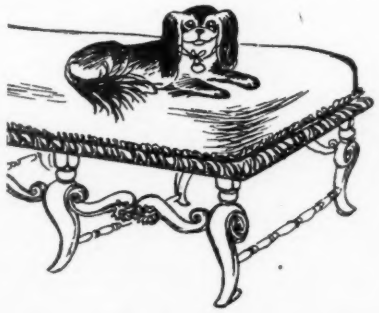
This useful volume covers everything from Gothic to Contemporary, with suitable background information, illustrations of typical pieces, occasional sarcastic comments (" in certain circles *un banc bien fait* has had rather less prestige than *un banc* made rather crudely "), a very concentrated capsule history, in chart form, and a remark-



able number of domestic quadrupeds. Just what these lovable bundles are doing in the book it is difficult to say—perhaps they are intended to give a scale reference. ASTRAGAL is very pleased to see them, and reproduces a few here, as an earnest of the



truth, and wit, of the other illustrations in the book, which is recommended as that last-minute Christmas present you were looking for. Talking of which, a happy one to you. And if you didn't open your JOURNAL before the holiday, and are reading these greetings in the



cold unfriendly light of an after-Christmas office, please accept my sympathy instead.

ASTRAGAL

Guest Editors, 1955

This is the team of Guest Editors which is to investigate building costs and report its findings in the JOURNAL during next year. Left: top to bottom, Noel Stanley Farrow, Cleeve Barr, James Nisbet. Above: top, Ivan Tomlin; bottom, E. F. L. Brech. Details about these Guest Editors are given on the opposite page, and the lines on which they intend to conduct their investigation are referred to in the editorial.

WHO THEY ARE

NOEL STANLEY FARROW, *M.B.E. (Military Division), MIOB, has been general manager of the building division of Howard Farrow, Ltd., since 1946. Before the war—in which he did six years RE service abroad, and was discharged on reserve with the rank of Lt.-Col.—he was an agent on building and civil engineering contracts. (He had qualified as a building surveyor, but later resigned from the RICS). He was a member of the Building Productivity Team which went to America in 1950. For the last two years he has been a member of the Building Research Board. He is also a member of the council of the LMBA. Hobbies: rugby football (armchair critic), swimming, sailing, bee-keeping. Also a smallholder.*

A. W. CLEEVE BARR, *A.R.I.B.A., is senior architect (development) in charge of technical development and research for the Housing Division of the LCC Architect's Department. He began his career in the banking world and enjoys the odd distinction (for an architect) of being an associate of the Institute of Bankers. He abandoned finance and went to the Liverpool School of Architecture. His training was interrupted by the war, when he was an RAF liaison officer with the Russian Air Force. After the war he completed his training at the Northern Polytechnic. He spent three years as a member of the primary schools group, Herts. CC, then took up his present job. Hobbies: an absorbing interest in scientific methods of building, and colour photography.*

JAMES NISBET, *A.R.I.C.S., is senior quantity surveyor of the Architects and Building Branch, Ministry of Education. He trained at the Dundee School of Architecture, where the syllabus included joint study with the architectural students in the Dundee City Quantity Surveyor's Department, and by correspondence courses. He qualified in 1948, having served in the RE as a captain; he was a Bailey Bridging instructor at OCTU and at the School of Military Engineering, Middle East. He is a member of the RICS and belonged to its Junior Organisation Quantity Surveyors Committee from 1949 to 1953 when he was responsible for week-end residential training courses for junior quantity surveyors. He is greatly interested in the history of quantity surveying and his researches led to his being awarded the Ryde Memorial Prize for a paper on the subject, in 1952. He led the team of quantity surveyors which evolved the cost analysis and cost planning technique published in MOE Building Bulletin No. 4 —a technique which gives far more precise and creative cost knowledge at the design stage of school building than that afforded by the bill of quantities. Hobby: climbing; "conquests" include Glencoe, Ben Nevis and Skye.*

IVAN TOMLIN, *A.I.B.E., is chief estimator and surveyor, Building Division, Howard Farrow, Ltd. He began professional training under an engineer and surveyor to a local authority. He then joined a building contractor, first as an assistant quantity surveyor and later (after he had done his national service in the coal mines) as a contractor's agent and surveyor. During this period he was engaged on jobs as varied as housing, aerodromes, and a fenland pumping station. He joined Howard Farrow in 1948. Here, in addition to estimating and quantity surveying, he has been engaged in developing the firm's incentive scheme and both standard and unit costing. He is the London treasurer of the Institute of Building Estimators. Chief hobby: trout fishing.*

E. F. L. BRECH, *B.A., B.Sc., (Econ.), M.I.I.A., is senior partner of Messrs. Urwick-Orr and Partners, Ltd., management consultants. He belongs to a profession which few architects will have encountered—a profession which exists because it is now recognized (in industries other than building) that management and organization are as technical as the industrial processes themselves. His contribution to building has included advice on the planning of contract operations, cost controls, the apportionment of management and supervisory responsibilities and economical ways of doing things on the site and in the workshop. He is a member of the Institute of Industrial Administration. (He has been chairman of its London Centre.) He is the author of "Management. Its Nature and Significance," and co-author, with Col. L. Urwick, of "The Making of Scientific Management." He believes that the standard of management ability in the contracting world is much too low, and that building has a long way to go before it compares favourably with other industries. Hobbies: theatres, music.*

The Editors

THE AJ INVESTIGATES COSTS

WHY do building tenders vary so much? Why are original estimates so often widely different from final accounts? Why do attempts to simplify constructional design produce such meagre reductions in cost? And what proportion of the total cost is represented by, say, floor finishes, windows, partitions or roofs?

These are questions the architect must often ask. In asking them he shows that he has lost control of costs; and because he has lost control, he is in danger of losing his proper and responsible place as leader of the building team.

Because of this we have asked the experts who are introduced to readers opposite to become the JOURNAL's Guest Editors for 1955, and to examine the whole problem of building costs. There are three major items on their programme:

They will consider the purpose of the bill of quantities and its use by the architect and the contractor. In this connection they will discuss methods by which builders price building work and the factors which affect their tenders.

They will also consider the types of cost "breakdown" that are most informative and most useful to architects. Methods of preparing such "breakdowns" will be explained and examples will be given and compared.

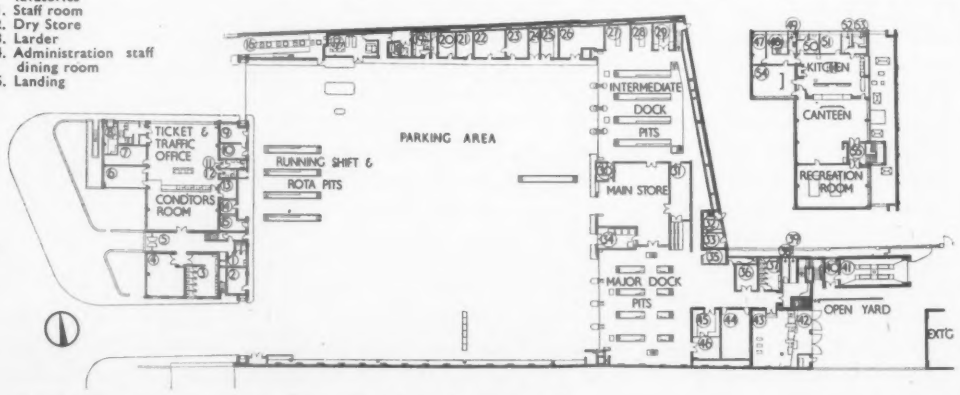
The team will also consider labour materials and overheads, the two things that govern cost. They will consider how much each of these contributes to the total cost, and they will try to decide how far the architect and the builder can control building economy. Their investigations will be made with the assumption that the architect's work should not stop when the drawings are finished. Planning, as the profession is beginning to realize, should, in fact, include many things which have always been regarded as outside the architect's province.

BUS GARAGE FOR LONDON TRANSPORT EXECUTIVE,

This garage, just south of Pullman Court, is one of those erected as part of the South London Tramway Conversion Scheme, and occupies the site of the former Streatham Hill tram depot, seen in the photograph, left. The garage was designed by Adie, Button and Partners, in association with Thomas Bilbow, architect to the London Transport Executive. The consulting structural engineer was A. E. Beer. The photograph above shows the main entrance to the garage and the administrative block, seen from the north-west across Streatham Hill. On the opposite page: top, the west and south facades of the two-storey office block; centre, the high-pressure cleaning building to the east of the garage; bottom, the covered parking and servicing area. The two-storey block contains administrative offices, lavatories and locker rooms on the ground floor and a canteen, recreation room and kitchen on the first floor. This block has a steel

KEY

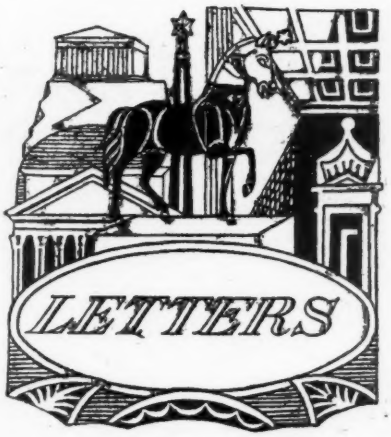
1. Female staff lavatories
2. Night Foreman and Assistant Foreman
3. Male staff lavatories
4. Locker room
5. Notice hall
6. District Superintendent
7. Ticket and stationery store
8. Garage Attendant
9. Garage Engineer
10. Engineer's Clerk male
11. Administration,
12. Administration, female
13. C.D. Inspector
14. Area
15. First aid room
16. Fuel store
17. Machine room
18. Incinerator
19. Lavatories
20. Blinds, bills and advertisements
21. Washers' store
22. Washers' lockers
23. Drying room
24. Salvage
25. Waste oil
26. Tyre store and fitter
27. Coach Maker
28. Painter
29. Smith
30. Storeman's office
31. Unit store
32. Entrance to culvert
33. Store
34. Oil store
35. Dock Foreman's office
36. Fuel pumps
37. Mechanics' lavatory
38. Salt
39. Sand
40. Steam jenny
41. High pressure cleaning
42. Fuel bunker
43. Boilerhouse
44. Mechanics' lockers
45. Accumulator room
46. Electrician
47. Supervisor's office
48. Escape stair
49. Male cloaks and lavatories
50. Locker room and lavatories
51. Staff room
52. Dry Store
53. Larder
54. Administration staff dining room
55. Landing



Ground floor plan [Scale : $\frac{1}{16}$" = 1' 0"] First floor plan (top right)

BRIXTON, LONDON, S.W.16

frame, 9-in. external walls, partly faced with 4½-in. Portland stone, on north, west and south facades, and a 13½-in. brick wall on the rear facade. The bus entrance to the parking area is on the north side. The roof consists of 14-ft. deep steel lattice girders spanning 173 ft. 6 in. and carrying metal corrugated sheeting and patent glazing. Contractors: Perrys (Ealing), Ltd. Sub-contractors, p. 792.



Eric de Maré, A.R.I.B.A.
Peter Collins, A.R.I.B.A.
S. H. Eagleson and R. John Lansdown, A.R.I.B.A.

The Circus

SIR,—They shouldn't leave the façades of The Circus, Bath, severely alone (AJ: December 9). They should put back the glazing bars in the windows. The eyes are old men's eyes without lustre seen from outside, and inside they must be glaring. The complete Georgian window not only gives scale and looks right in a Georgian façade but it is functional in a most subtle way because the glazing bars reduce the discomfort of glare like miniature baffles. And the bars must be tapered in section so that they do not make harsh silhouettes against the light.

ERIC DE MARE.

London.

Building Genders

SIR,—I imagine that when Mr. Craig referred to Gandon's buildings as "masculine" and "feminine" (AJ: December 9, ASTRAGAL'S comments) he was very rightly applying the terminology of 18th century criticism to an 18th century building. This terminology derives from Vitruvius, who stated that the Doric order was based on the proportions of a man, the Ionic order of a matron, and the Corinthian order of a maiden. Even though columns and entablatures might not be used, the orders were still "expressed" in the general proportions of buildings, which were thus masculine or feminine.

PETER COLLINS.

Manchester.

Verbal Shadow-Boxing

SIR,—ASTRAGAL is wrong (December 9): at least two architects were present at the ICA Seminar: two who, far from finding the talk sizzling (only the Espresso machine sizzled during the lecture), found it both unbearably dull and needlessly vague. Mr. del Renzio promised us impudence and toe-treading, but gave us nothing but verbal shadow-boxing; he called on Logical Positivism but failed to be either positive or logical—so these two architects left as soon as convenient.

That they could not be recognized as architects is accounted for by the simple facts that they were not in regulation ICA uniform and did not have six-inch scales sticking out of their breast pockets.

S. H. EAGLESON and R. JOHN LANSDOWN.

London.

GOLD MEDAL

1955 Award to John Murray Easton

John Murray Easton, to whom the Queen has awarded the Royal Gold Medal for Architecture (1955), on the recommendation of the RIBA, is the partner of Sir Howard Robertson (also a Gold Medallist).

Mr. Murray Easton, who was born in Aberdeen in 1889, went into partnership with Sir Howard Robertson in 1919. In 1929 the practice was amalgamated with that of Stanley Hall, an association that continued until Mr. Hall died in 1940.

In the early 'twenties Mr. Murray Easton acted as architectural editor of the *Building News* until its union with the *Architect*. In 1929 he was awarded the Godwin and Wimperis Bursary of the RIBA and, as a result of travel and research, produced a report on "Modern Health Centres in Europe."

Before and since that time he has visited many countries, including the USA and Canada, and more recently Hong Kong and Malaya with incidental glances at India, Burma and Siam.

He was president of the AA in 1939 and a vice-president of the RIBA from 1945 to 1947. He has been on the Council—with two breaks—since 1939. Since the early 'twenties he has served on various committees of the Council, including the Finance and House and the Hospitals Committees.

In 1928 Easton & Robertson won the London Architecture Bronze Medal for the new hall of the Royal Horticultural Society, in Westminster, and in 1936 the firm (now Stanley Hall & Easton and Robertson) received a similar award for the Nurses' Home of The Hospital for Sick Children.

In the following year they were awarded the RIBA Architecture Bronze Medal for Essex, Cambridge and Hertfordshire, for the new buildings for Gonville and Caius College, Cambridge. Mr. Murray Easton's connection with Cambridge goes back to 1930 and continues to the present day. His largest work there—the New Chemistry Laboratories—is still in course of construction and, with one of his partners, he is now planning a new Addenbrookes' Hospital.

Recently the Worshipful Company of Tylers and Bricklayers presented him with their Annual Gold Medal which is awarded for the best brick building erected in London within the last three years. This was for the new Students' Hostel of St. Bartholomew's Medical School.

At present he is planning a new hospital for Kowloon (Hong Kong) and a virtually new University of Malaya. With another partner he is designing a large office block in the City and one in the country.

RIBA

No more Licentiateships

Further admissions to the class of Licentiates of the RIBA will be discontinued as from December 31, 1955.

Since January 1, 1934, the class of Licentiates has been open only to those whose names are on the register maintained by the Architects' Registration Council of the United Kingdom. As from August 1, 1940, admissions to this register on a practice qualification, apart from a few exceptions under Regulation 26B, were discontinued and only those who qualify by the examinations recognised for the purpose may be admitted to the register. These examinations are identical with those which qualify candidates for the Associateship, RIBA.

There has therefore been a period of 21 years in which persons holding a practice qualification have had the opportunity to apply for election as Licentiates.

ARCUK

Maintenance Scholarships

The Architects' Registration Council of the United Kingdom offer for award in June, 1955, certain maintenance scholarships in architecture. The scholarships will consist of a grant for the payment of one-third of the school fees, and, when necessary, a maintenance allowance. The scholarships will be renewable from year to year until the student has finished his school training. They will be available for students of British nationality who could not otherwise afford such training to enable them to attend architectural schools approved by the council. Students must, before submitting applications for ARCUK maintenance scholarships, find out from their local education authority whether that authority has any form of financial assistance available in cases such as theirs.

Applications will not be considered if no steps have been taken by students to secure such other assistance as may be available. The scholarships will be available both for students who have already begun their training and for students wishing to begin their training. Scholarships will not be granted to students who will be less than 17 *years of age on October* 1 *of the year in which the examination is taken.*

Particulars and forms of application may be obtained from:—The Secretary to the Board of Architectural Education, Architects' Registration Council of the United Kingdom, 68, Portland Place, London, W.1.

Copies of previous years' examination papers may be obtained on payment of 6d.

The closing date for the receipt of applications, duly completed, is January 31.

BROWSERS INVITED

A reading room is provided by the JOURNAL'S publishers, *The Architectural Press*, in their house at 9, Queen Anne's Gate, S.W.1. The current list of the firm's publications which may be seen there includes books by or about Le Corbusier, Sigfried Giedion, Walter Gropius, Howard Robertson, Frederick Gibberd, F. R. S. Yorke, Alvar Aalto, J. M. Richards, John Piper, C. C. Handisyde and Peter Shepheard. These, and many others, together with *Information Sheets, Working Details* and back numbers of the JOURNAL and the *Architectural Review* may be browsed through in comfort. The room is open from Monday to Friday in office hours.

COMPETITIONS

Electrical Sign

The first illuminated sign design competition to be held in this country (sponsored by the Electrical Sign Manufacturers' Association) is to be judged by the following panel. Sir Hugh Casson, Misha Black, E. H. Doubleday, President of the Town Planning Institute and County Planning Officer for Hertfordshire, Norman Moore, president of the Advertising Association, and J. H. G. Pearce, chairman of the Electrical Sign Manufacturers' Association.

The competition, which is open to all, has three main purposes: to foster an improvement in the design of illuminated signs; to encourage young designers to take an interest in illuminated sign design technique; and to create a better appreciation of the value and importance of illuminated signs for identification and advertising purposes.

The closing date is January 31. The prizes will be: first £100, second £50, and third, £25. At least one of them will be awarded to an amateur designer.

Full details can be obtained from the Electrical Sign Manufacturers' Association, 103, Kingsway, London, W.C.2.

Snowdonia Symbol

A prize of £50 is offered for the best designed symbol for the Snowdonia National Park.

The symbol should be recognizable at a glance and be readily distinguishable by people passing in trains, motor-cars or buses. It should be capable of use either on its own or in conjunction with milestones, direction boards, etc., and easily recognizable when reduced to medallion size as for example on a badge or armlet. It should also be capable of being used in black and white or in colours. And it should be capable of reproduction at a reasonable cost, if possible by local craftsmen.

The competition will be judged by a panel of judges appointed by the Snowdonia Park Joint Advisory Committee. Particulars can be obtained from the clerk to the Joint Advisory Committee, County Offices, Penarlag, Dolgelley, Merioneth. The closing date for entries is January 31.

DIARY

Watercolours and Drawings by Kenneth Rowntree. Exhibition at the AA, 34, Bedford Square, W.C.1. UNTIL DECEMBER 23

Italian Furniture, Pottery, Glass and Basketwork. Exhibition at Heal & Son, 196, Tottenham Court Road, W.1. Usual shopping hours. UNTIL DECEMBER 23

Chandigarh: the Capital of the Punjab. Talk by Maxwell Fry. At the RIBA, 66, Portland Place, W.1. 6 p.m. (Preceded by announcement of awards of prizes and studentships.) JANUARY 14

FLATS

in CATHCART ROAD, LONDON, S.W.10

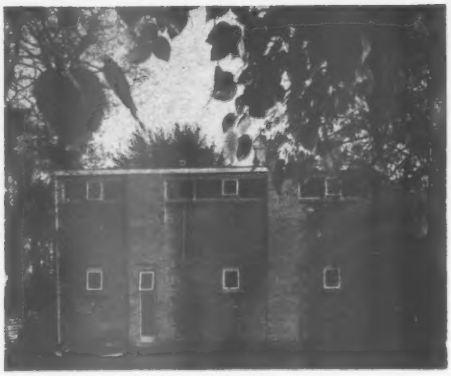
designed by SIR HUGH CASSON and NEVILLE CONDER

chief assistant, RUPERT PURKIS, interior decoration HENRY STEPHENSON

quantity surveyors, A. W. WILSON and PARTNERS

Fig Tree Cottage has been built on land which formed part of the client's own back garden. A small ground floor flat was built for the client's mother and has access to his garden. An upper flat and garage were built to be let. The flats were built in width closely within existing party fence walls and the site is 1 ft. 9 in. below street level. Steps from the entrance lead up to a concrete bridge which spans through the two forking trunks of a large Fig tree.

Living area of upper flat and bedroom beyond.



Top left, the main entrance door seen from the concrete bridge leading from Cathcart Road. Top right, bookcase and cupboard unit between living room and bedroom in the upstairs flat. Below it is the north-west facade from the garden. Above, the south-east facade. The site is 1 ft. 9 in. below road level.

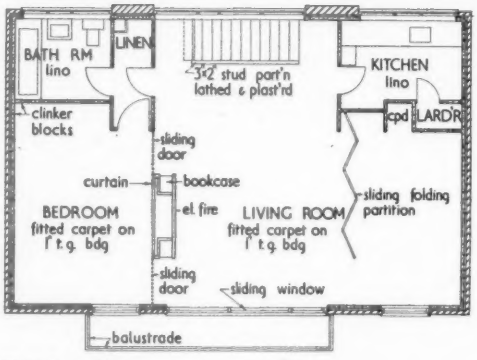
FLATS

in CATHCART ROAD,
LONDON, S W.10
designed by SIR HUGH CASSON
and NEVILLE CONDER

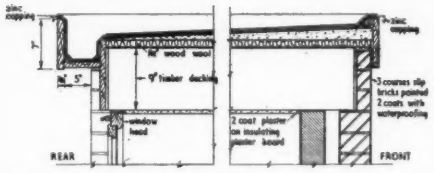
PLAN.—The client wished the flats to be built as near to the road as the building line allowed, which brings the big windows of the upper flat very close to the fig tree, giving from the inside the feeling of a room in a tree top. The client also required that his own garden should be overlooked as little as possible and windows on the north side are therefore small and placed high. The upper floor flat is designed so that the living area can be divided into three rooms, or opened into a single area broken only by the unit between living room and bedroom, containing a cupboard, bookcases and electric fire.

CONSTRUCTION.—The flank walls are carried on foundation beams to avoid interference with the fence wall foundations. Traditional strip foundations are used elsewhere. The external cavity walls have an inner skin of insulating concrete blocks. The first floor is of timber joists, spanning between walls, and reinforced concrete beams, one of which runs the whole length of the front elevation and supports a cantilevered balcony. The roof is of a standard timber plywood construction in one span.

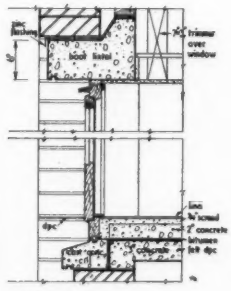
Above left, part of the south-east facade from the garage approach. Above, the facade facing Cathcart Road from the north-east.



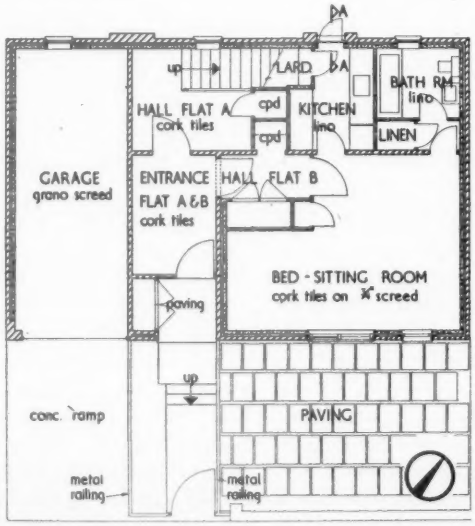
First floor plan



Gutters and eaves details



Section A-A
[Scale : ½" = 1' 0"]



Ground floor plan [Scale : 1/12" = 1' 0"]

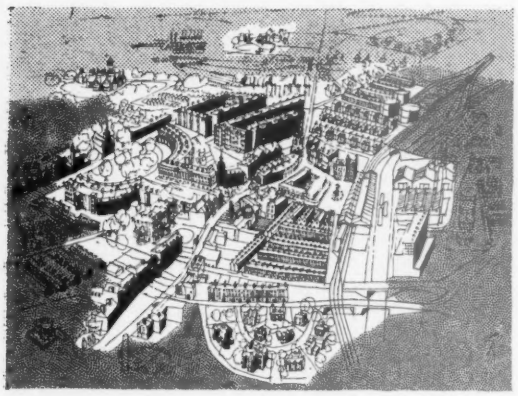
FINISHES.—The roof is finished with woodwool slabs, screeding and roofing felt and is lined inside with insulated plasterboard. Facing bricks are yellow stocks and on the rear elevation there are panels of second-hand stocks matching the existing garden walls. The lower part of the front elevation is finished with a white rendering. All the ground floor rooms and the upstairs bathroom and kitchen are finished with cork tiles; the rest of the upper floor is close-carpeted on under-felt. The walls generally are plastered and distempered.

SERVICES.—The flats are all-electric, including the heating, which is by a number of radiant glass thermo-panels, in addition to the electric fire in the living room.

The contract price was £4,030, which is approximately £3 per sq. ft.

The general contractors were Hall & Hayward Ltd.

For sub-contractors see page 792.



Felix Walter, the JOURNAL'S *Guest Editor for* 1954, *who has been making a study of all aspects of the conversion of buildings, asked Ernest Watkins to write the following article on problems of management and ownership. Mr. Watkins gives advice to the would-be "converter" on what he should do either if he intends to use the property as a long-term investment, or if he wants to recover immediately his capital outlay (plus a profit), and release himself from too much responsibility in managing the property. Next week Mr. Watkins and Mr. Walter will write about grants and loans.*

CONVERSIONS: SOME PROBLEMS OF

OWNERSHIP AND MANAGEMENT

Anyone undertaking a conversion scheme faces these alternatives for what may be called the end-product of his plan :

1. He may intend to retain the property as a personal investment, looking to the rents obtainable to provide him with a return on his capital outlay, or
2. He may wish to recover immediately his capital outlay, and a profit, from those who will occupy the converted premises, and thereafter divest himself of as much responsibility as possible over the future management of the property.

Personal Ownership and Management

If the property is maintained as an investment by the owner after conversion, there are, broadly speaking, two methods by which it can thereafter be managed, i.e., the management can be handled direct by the owner, or by agents on his behalf, or he may incorporate a limited company in which he is the sole, or the principal, shareholder, and transfer the property to that company.

Very little need be said about the first: the principal consideration is taxation (which will be dealt with in a later article). In addition to the owner's liability for tax on excess rents and his ability to recover the excess costs of repairs, the owner may charge management expenses in connection with the property as an allowable deduction against his income. These will be limited to his actual outgoings—insurance, postage, travelling expenses, and so on.

An alternative method is to form a limited company for the ownership and management of the property. There is then much more certainty in the recovery of management expenses. Since the company is a separate legal entity, its accounts are dealt with separately by the Inspector of Taxes and normal management expenses are accepted as a charge against profits.

The mechanism of a company, e.g., the fact that it has issued shares enables the owner to dispose of, by sale or by gift, a part of his interest in the property by the transfer of a corresponding number of shares. If the owner is in a position to be attracted by plans for dispositions of his estate which will reduce the death duties payable on his death, a company can provide a satisfactory method of securing this.

Disadvantages are: (i), a company must have at least two members and if an outsider is brought in as a director he will presumably require some fees for his services; (ii), there is the initial capital expense (the cost of the formation of a private company is approximately £25) which may be too much for a single property to bear economically.

Disposal

If the conversion scheme produces one or more single houses, with no continuing burden on the undertaker as landlord in respect of the repair and maintenance of common features or services, the answer is simple; the undertaker of the scheme sells the property outright. He may do so by an outright sale of the freehold. He may sell the freehold at a lower price and reserve to himself a chief rent (which is the right to receive out of the property in perpetuity a fixed annual sum) and sell the chief rent separately. He may grant a long lease of the property in consideration of the immediate payment of a capital sum and a covenant to pay a low annual rent (or ground rent) during the period of the term and then sell the freehold subject to the lease. All these methods both bring in the full capital value of the property and end his interest in it.

Different, and more complex, problems arise when there remains some function to be performed by a landlord. It arises most frequently—and probably the majority of conversions will be of this pattern—where the converted building consists of flats. Someone must thereafter be responsible for both the organization and the payment of the common services that still have to be performed; the maintenance of the structure, of the common stairs and passages, and, possibly, maintenance and servicing of a lift. All that will require that a future owner, whoever he may be, has an income from the tenants (or an effective right to call on them for periodic contributions) which will be sufficient to meet the yearly outgoings under these heads.

St. Julian's, near Sevenoaks, Kent, whose conversion by Leo de Syllas is described on pages 778-784

A method which has been used (e.g., in the schemes at Blackheath, illustrated in the JOURNAL for March 11) is to combine the leases of each separate flat with a Deed of Mutual Covenants. The lease is, basically, a common form of full-repairing lease for a section of a building. It begins with the demise of the flat, the grant of the usual rights over the parts of the building and its curtilage used in common by all the tenants, and the reservation to the lessor of the facilities he needs for general maintenance and supervision.

Then follows the grant of the term (90 years, less ten days) and the reservation of the annual rent, and then come the lessee's covenants, in the common form: To pay the annual rent, the rates and taxes on the flat and a proportion of the fire insurance on the whole building, to keep the interior in repair (with a covenant to repaint, etc., every seventh year), to contribute to the expense of the repair and upkeep of the parts used in common, and so on. There is a provision against structural alterations without prior consent from the lessor and one incorporating a set of separate regulations as to the use made of the flat, of the " good neighbourly " kind. The lessee is free to assign the lease without prior consent save during the last seven years of the term, but all assignments of the lease must be registered.

The covenants by the lessor include one to insure the whole of the building. Otherwise they are usual, save for one ; the lessor himself covenants to contribute to the joint cost of maintenance in respect of any flat not let on lease containing a provision imposing that liability on its lessee. This ensures that, whether or not, all the flats in the building are let the proportion of the joint cost of upkeep borne by each tenant does not exceed that which he would pay if all the flats were let.

There is one final point of importance in the form of the lease used: the division of the cost of the maintenance of the common parts of the building and its amenities is based on the rateable value of the individual flats. Each lessee pays a proportion equal to the proportion which the rateable value of his flat bears to the sum of the rateable values of all the flats. This is obviously desirable, from the individual's point of view, where the flats are of varying sizes and so of different values. The purpose of the Deed of Mutual Covenants is this:—A series of leases of a building of this kind create rights as between each lessee and the lessor. They do not create mutual rights and obligations between the lessees themselves. Normally, if any one tenant fails to perform his obligations—more specifically, fails to pay his share of the common costs—it is only the lessor who can enforce performance of the covenant. The form of mutual covenant deed used in this case gives each lessee a right *vis-a-vis* each of the others to compel any one of them to carry out the common obligations in each of the leases and pay his contribution. It strengthens very considerably the powers of those actually living in the building to see that the cost of the services and work they will enjoy is fairly shared and that each lessee keeps in line.

This system of development and finance by the sale of long term leases of each flat is not without its weaknesses. Ninety years is a long time. Inevitably the individuals who constitute the " Lessor " will change. Those who have a personal pride in, or sense of obligation over, the success of the plan will be replaced by those who look at it more coldly. At some moment, some individual in the position of Lessor will ask: " Why should I ? " and that; in the current phrase, is the sixty-four dollar question. Fundamentally, the adequate maintenance of property rests upon either one or two possible incentives; first, that it is worth somebody's while to maintain it, secondly, that the owner is a body with a duty to maintain it, and, if property is privately owned (using those words in their widest sense), it is on the first incentive that reliance had better be based. Nothing but harm comes from the destruction of that incentive if nothing is put in its place.

When a building is let out to tenants at rack rents, the owner has an incentive to secure its proper maintenance (by enforcing the covenants to repair that he has secured from the tenants) because if he does not the level of the rents he can secure from the building will fall. Where a building is leased for a long period at a low ground rent, at first the lessee will have an incentive to maintain because the value of his lease depends on it. Gradually the emphasis shifts until, in the end, it is the owner of the freehold who has the greater incentive as his right to resume possession comes nearer. How do these basic matters apply to this kind of property management?

The risk inherent in the plan is that it will fall between the two stools. The original lessor, the developer, will have discharged his function when he has let the last flat. Thereafter, the annual rent he receives from each flat will do no more than cover his outgoings on the management of the building (they may not do that over the full ninety years, but that is another point). The real incentive to maintain the structure should lie with the tenants of the building as a whole, but they are handicapped in dealing with the structure because they are not necessarily organized as a body and certainly they do not possess all the legal powers that the lessor automatically has. The system of the Deed of Mutual Covenant goes some way to meet that situation, but not all the way. There remains some divorce between interest and power. It will be necessary at some stage to consider how the gap can be bridged; for the moment, the point is that it exists.

The second weakness is the inevitable change in the value of money over any period as long as ninety years. Inflation is a process which we have long fought against and never defeated. The value of any payment expressed in terms of any currency will not be the same in A.D. 2044 as it is now, and it is immaterial whether we think of it as a fall in the value of money or as a rise in the cost of living. To some extent that objection is met, in the case of this particular scheme, by the provision which relates each tenant's liability to contribute to common costs of maintenance to the rateable value, for the time being, of the premises he occupies. That establishes a yardstick which is far more stable than one expressed in a currency. But there is still the monetary rent reserved by each lease, intended to give the lessor an income out of which to pay his management costs. It is virtually certain that, at some time during the ninety years, those annual rents will not do anything of the kind. What then? The lessor, whoever he may then be, will then have on his hands an interest in a building which steadily loses money for him each year. He will have little incentive to be interested in it, or in its problem, for his reversionary rights, if they exist, may be still too remote to be of any value. Yet it is difficult to see that prospective tenants of the flats would willingly accept a long lease in which the yearly rent they had to pay would fluctuate with, say, the movement of the index of retail prices. This is a problem that still has to be solved.

Another possible solution for the property owner may be found in a housing association.

Housing Associations

Housing associations were first officially recognized as a separate and desirable class of housing agency by the Housing and Town Planning Act of 1909. They are defined in Section 188 of the Housing Act 1936 as follows:

" A society, body of trustees or company established for the purpose of, or amongst whose objects or powers are included those of, constructing, improving or managing or facilitating or encouraging the construction or improvement of, houses, being a society, body of trustees or company who do not trade for profit or whose constitution or rules prohibit the issue of any capital with interest or dividend exceeding the rate for the time being prescribed by the Treasury, whether with or without differentiation as between share and loan capital."

There is a National Federation of Housing Societies, whose office is at 12, Suffolk Street, Pall Mall, London, S.W.1. This co-ordinates their work and the association is officially recognized under the Housing Acts as the " Central Association " of the movement. The association acts in a generally advisory capacity and gives advice

and practical assistance to groups of individuals who wish to form an association.

Housing associations have two functions. The first is to build new houses, and by far the largest group of these are engaged in what are known as " Self-Build " schemes, schemes in which individuals join together to give their labour, under technical management, to the construction of houses in which they will subsequently live. The other function of housing associations is to own and manage existing buildings, frequently for some special purpose, and from that point of view they are well adapted to the management of conversion schemes. They are bodies which can obtain the appropriate assistance and grants from local authorities. They are also convenient instruments for the continuing management of property after conversion.

Housing associations are commonly incorporated as corporate bodies, either under the Companies Act 1948 or under the Industrial and Provident Societies Acts 1893-1928. The second method is recommended because the Industrial and Provident Societies Acts are intended to encourage the incorporation of bodies that are non-profit making; that is one of the social elements in the housing associations. To incorporate a body under these Acts, not less than seven persons, together with one acting as secretary, must adopt a form of rules and apply for registration to the Registrar, of Friendly Societies (the National Association of Housing Societies undertakes the formalities at an inclusive cost of £15). On incorporation those who have signed the rules become a committee of management and hold that office until the first annual meeting of the association. They must then retire but may seek re-election. The committee of management, thereafter must consist of not less than five nor more than fifteen members, and at each subsequent annual general meeting a third of the committee must retire but may be re-elected.

There are two methods by which the housing association framework can be applied to the management of conversion schemes. The first, appropriate to a small scheme, is where the tenants in the buildings themselves, because they have either directly or indirectly become the owners of it, have an interest in its future in this dual capacity. A housing association may acquire the building and the tenants themselves either become or nominate the committee of management. As landlords, the tenants constituting the committee would, of course, have to subordinate their individual interests to the prudent management of the property as a whole, including the fixing of rents, the control of tenants and tenancies, and the provision of suitable reserves for future repairs and decorations.

The model rules for an association operating in this way prepared by the National Federation (and known by them as " Model G1952 ") contain the following provisions as to finance:

i. Initial capital is raised by the issue of shares to the nominal value of £1 each, all such shares being transferable but non-withdrawable. The association should provide at least 10 per cent. of the total capital required in this way. The model rules provide that no member, other than a local authority, a county council or another Industrial and Provident Society, may hold more than £500 of share capital in the association. The return on this investment will be limited to 5 per cent.

ii. The balance of capital needed may be raised by the committee of management by way of loan, with or without the security of a mortgage of the property concerned, provided that the rate of interest payable does not exceed the rate for the time being prescribed by the Treasury, at present 5 per cent. (The normal interest for housing association loans is between 2½ and 3½ per cent.)

If the association consisted entirely of tenants, it would be advisable to provide in the rules that, on any one tenant vacating his flat, the remaining tenants have the option to buy from him his shares in the association and that machinery for fixing a price at which they were to be transferred is likewise set out in the rules.

At some point plans for conversions become sufficiently important to a locality to justify the formation of a housing association animated by what may be called the sense of local communal responsibility. The undertaker of such a scheme may wish to transfer future responsibility for the landlord's side of the property to such a body; local initiative itself may think in terms of creating an association for the purpose of carrying out the whole conversion operation itself. In either case, early contact with the local authority is advisable, for aid over finance in the shape of grants or loans, or both, and for aid in the establishment of the body itself. In this case, since the resulting association will become something in the nature of a public enterprise, it would seem desirable that the committee of management should be independent of the tenants themselves.

The essence of the housing association is that it is a body of people working primarily for social ends, not for profit.

Limited Companies

A third possible method for future management is by means of a limited company incorporated under the Companies Act, 1948, for this escapes the rigid limitation on investment return which is an essential feature of industrial and provident societies. There are various methods by which the final situation can be reached, but this final situation is that the undertaker's interest in the building converted becomes vested in a limited company in which the tenants hold all, or a majority, of the shares. The company then, in effect, becomes a tenants' management organization, carrying out the landlord's responsibilities and drawing its income, in one way or another, from the tenants. Its purpose, of course, will not be to make a large profit and pay a large dividend; it will be to run the property as economically as possible, bearing in mind the need to build up some reserves. The tenants are either all directors or appoint the board of directors. A tenant who desires to sell his interest in his flat may be required to sell both his lease and his shares in the company. In practice, this method must be limited to cases where there are not more than fifty tenants, for fifty is the maximum number of shareholders possible in a private company.

All arrangements under which tenants, or a committee of tenants, manage the property they occupy are vulnerable to friction between individuals. There is an additional risk where the organization takes the form of a limited company. A tenant leaving and disposing of his lease will probably wish also to sell his shares, but, in the case of a private company, the directors have a right to refuse to register any transfer of shares. Unless the internal regulations of the company are carefully framed, this may result in a real limitation on the right of an outgoing tenant to get the best price possible for his interest, and thus reduce the value of that interest below that which it would, unfettered, command in the free market.

Ultimately the final decision will be made in the mind of the prospective tenant. He faces a certain capital expenditure, his contribution to the original cost of the whole property before conversion and to that of the conversion of the part he is to occupy (which he may pay directly or, indirectly, by purchasing the interest of an outgoing tenant). That expenditure may well be less than the capital cost of acquiring or building a separate house with equivalent accommodation and amenities. As against that, he also faces the risk that he will not be able to recover the whole of his original outlay when he, on his turn, wishes to move and dispose of his interest. True, he also faces the risk of loss on the sale of any interest in land, through changes in market values, but the risk of loss is the greater where he has a restricted and special form of property interest to sell. The value he gets for his money whilst in occupation may outweigh this

in his mind; that depends on the individual confronted with the original choice.

The following example, from a development on these lines known as St. Julian's, Sevenoaks, illustrates the capital and annual commitments involved in such plans. The figures below are for a typical 3-4 roomed self-contained flat within the existing converted building:

	£
Proportion of net capital cost of original building plus the conversion cost of communal areas	500
Cost of conversion of individual flat	500
Total capital cost borne by the tenant	£1,000

Annual charges:	£
Income tax (including Schedule " A ")	
Rates	
Central heating	
Domestic hot water	
Electric light (power supplied on separate meters) ..	
Maintenance	168
Proportion of interest and capital repayments on mortgage on the whole building	
Administration:	
(*a*) Cleaning, etc.	
(*b*) Secretarial	
	£168

St. Julian's, Sevenoaks, Kent

Architect : Leo de Syllas

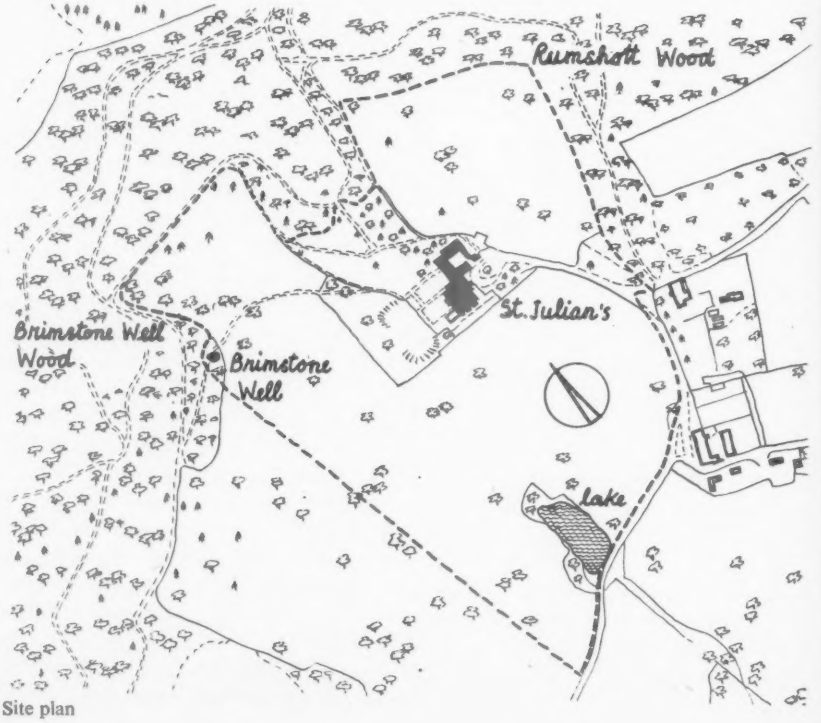
Site architect : Jennifer Dennis

St. Julian's from the east, with the main entrance on the right

THE SCHEME: *This is an example to illustrate the principles of a non-profit-making private limited company where shares are held by all the residents (flat occupants). Although certain additional amenities are provided, such as a restaurant-dining service and a nursery school, which incurs greater obligations between residents than in ordinary flat dwelling, it is in no way a communal organization. The company has been in existence for more than three years and the administration has developed a flexible organization which will best suit the particular needs of the shareholders.*

Although the company was first floated with a basic scheme providing accommodation for the original shareholders, the policy now is to plan further flat units to meet the needs of new residents who may select the floor spaces they prefer and even submit their own conversion schemes for the Board's approval. An example of this approach is illustrated later.

Through interest or necessity, many young married women continue their occupation after marriage, but with the arrival of young families such freedom is curtailed inevitably. The facilities and services provided by this particular

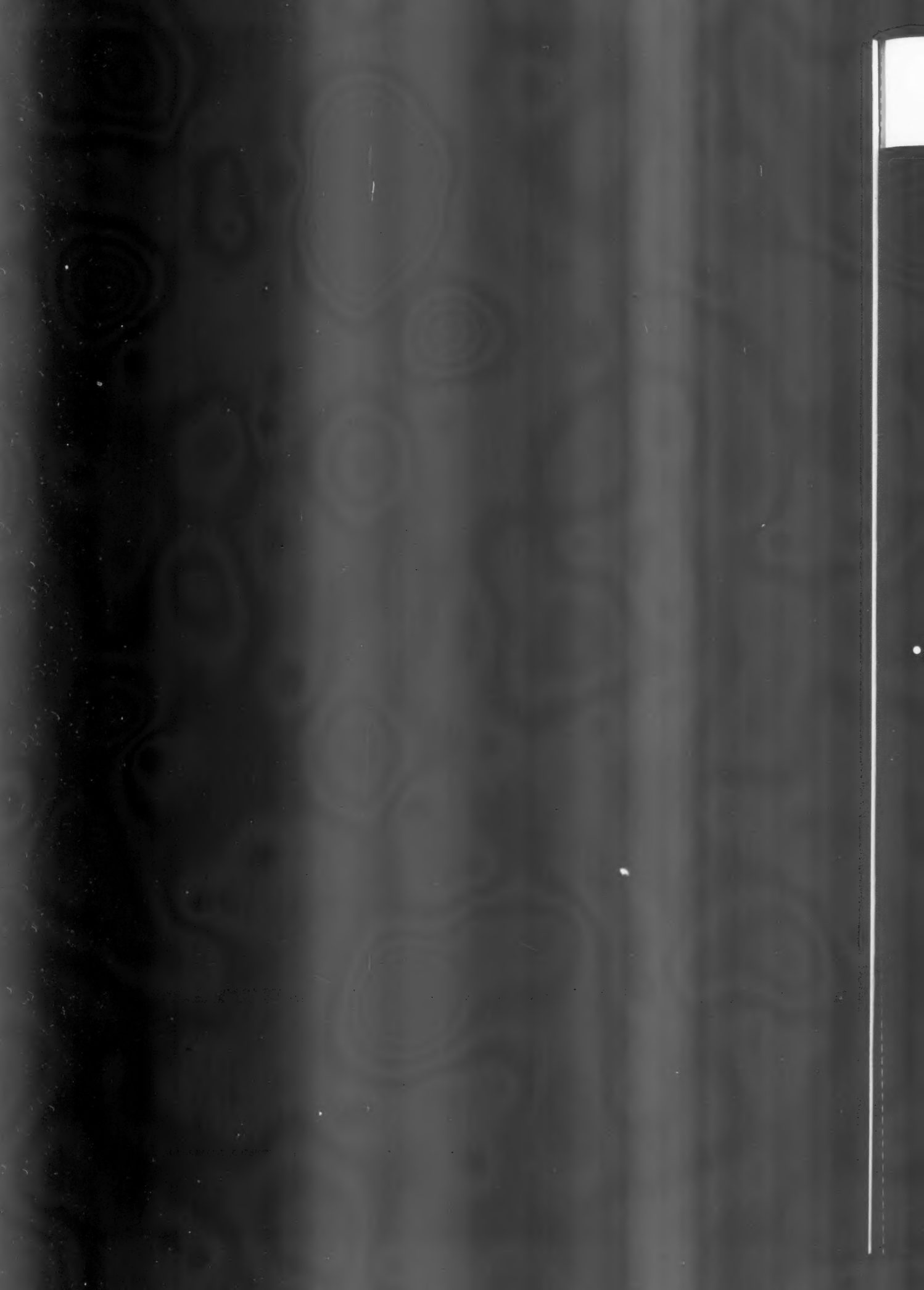


Site plan

£

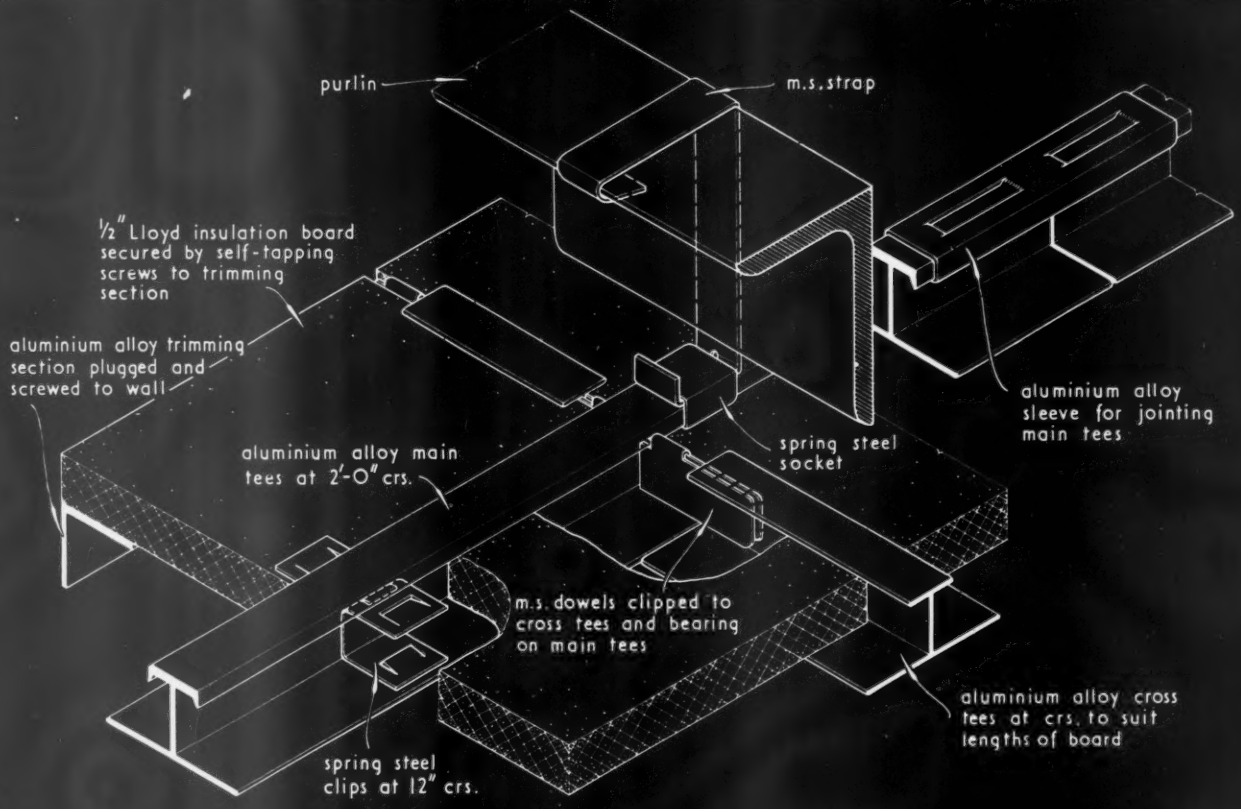
168

£168

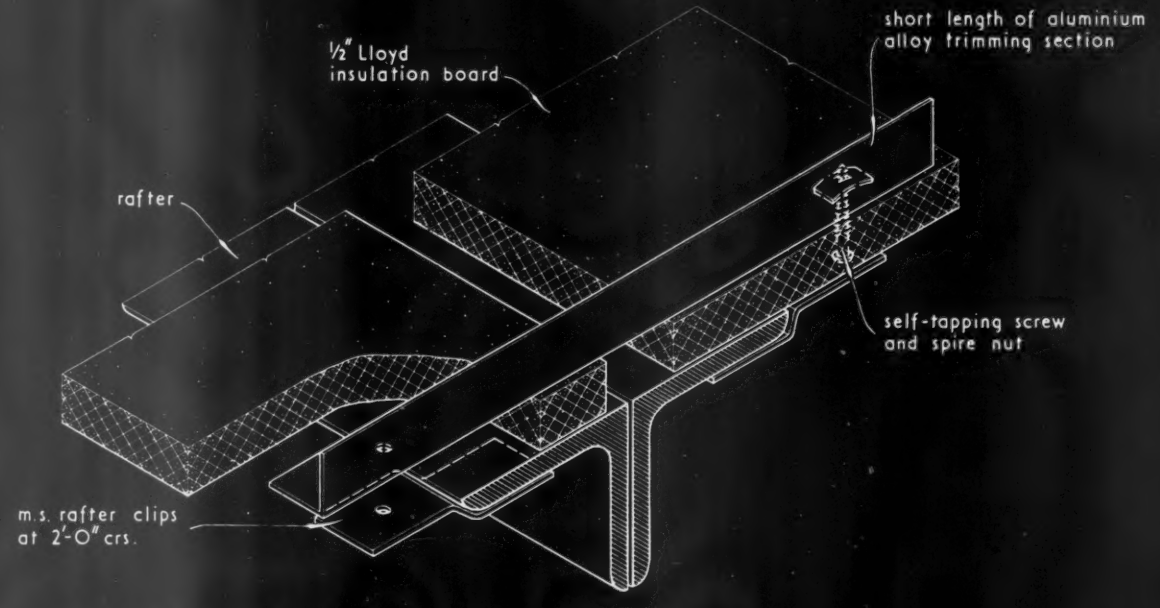


CEILINGS | BUILDING BOARD

The Architects' Journal Library of Information Sheets 499. Editor: Cotterell Butler, A.R.I.B.A.



GENERAL ASSEMBLY OF COMPONENT PARTS.



DETAIL OF FIXING OVER RAFTER.

LLOYD L.A.I. SYSTEM OF BOARD FIXING. (Patent No. 653336)

Manufacturer: Bowaters Building Boards Ltd.

22.D2 LLOYD L.A.I. SYSTEM OF BOARD FIXING

This Sheet describes a system of board fixing consisting of Lloyd standard insulation board and supporting and jointing members of aluminium-alloy tee section. The system can be applied, without drilling, to roof or ceiling structures of steel, concrete or timber. The metal supports may be fixed to rafters, purlins or beams of most shapes including those of angle, channel, tubular and rectangular cross section. The system is arranged so that the boards may be fixed either horizontally, to form a suspended ceiling, or parallel to the roof, as a lining. When used as a ceiling the boards and supports may be suspended from the roof structure on long hangers or from the ceiling or floor members. When used as a roof lining the system is suitable for fixing either below or above the rafters. The boards are secured to the metal supports by means of spring steel clips which ensure freedom from vibration, disturbance by wind pressure, etc.

Components

Main tees: These are of extruded aluminium alloy. The standard section is $1\frac{5}{8}$ in. by $\frac{7}{8}$ in. and is available in lengths from 6 ft. 0 in. to 12 ft. 0 in. in 1-ft. increments. The maximum span for this section is 6 ft. 0 in.

Cross tees: These are of extruded aluminium alloy. The section is $1\frac{5}{8}$ in. by $\frac{3}{4}$ in. in standard lengths of 1 ft. $10\frac{1}{2}$ in.

Clips: These are of spring steel and hold the longitudinal edges of the boards at 12-in. centres.

Dowels: These are of mild steel and connect the cross tees to the main tees.

Straps: These are of mild steel and secure the main tees to the structure.

Sockets: These are of spring steel and clip on to the top flanges of the main tees to form a fixing for the supporting straps.

Sleeves: The main tees are jointed by means of sleeves which fit over the top flange.

Rafter clips: These are of mild steel and secure the insulation board to the rafters.

Trimming sections: Aluminium alloy angle sections are used for trimming boards at walls, openings, ridge, etc.

Insulation Boards

Lloyd standard insulation boards, $\frac{1}{2}$ in. thick, 2 ft. wide and in lengths from 6 ft. 0 in. to 10 ft. 0 in. in 1-ft. increments, are used with this system.

Finish

Aluminium alloy components are supplied with a natural finish. All steel components are sherardised.

Sound Absorption

The $\frac{1}{2}$-in. insulation board has an average sound absorption coefficient of 0·3.

Thermal Insulation

Thermal resistance: For calculating the U value of $\frac{1}{2}$-in. Lloyd insulation board the thermal resistance can be taken as 1·43.

Thermal transmittance coefficients (U): The following tables give U values for various constructions with or without Lloyd L.A.I. system of board fixing.

Pitched Roofs

Roof covering	U (unlined)	U (with lining under purlins)
Corrugated asbestos cement ..	1·40	0·32
Corrugated protected metal ..	0·90	0·28
Clay tiles on battens and felt ..	0·70	0·26
Clay tiles on battens, felt and boarding	0·35	0·19

Flat Roofs

Roof construction	U (unlined)	U (with suspended lining)
6-in. reinforced concrete covered with asphalt	0·63	0·25
6-in. reinforced concrete with asphalt covering on 2-in. lightweight concrete screed ..	0·36	0·19
6-in. hollow tile or hollow concrete slab with asphalt covering	0·48	0·22
6-in. hollow tile or hollow concrete with asphalt on lightweight concrete screed ..	0·31	0·18
Metal decking covered with bitumen felt on $\frac{1}{4}$-in. Lloyd insulation board	0·37	0·20

Intermediate Floors (Heat Flow Upward)

Floor Construction	U (without lining)	U (with suspended ceiling)
6-in. reinforced concrete with $1\frac{1}{2}$-in. granolithic finish ..	0·50	0·23
6-in. hollow tile or hollow concrete slab with $1\frac{1}{2}$-in. granolithic finish	0·40	0·20

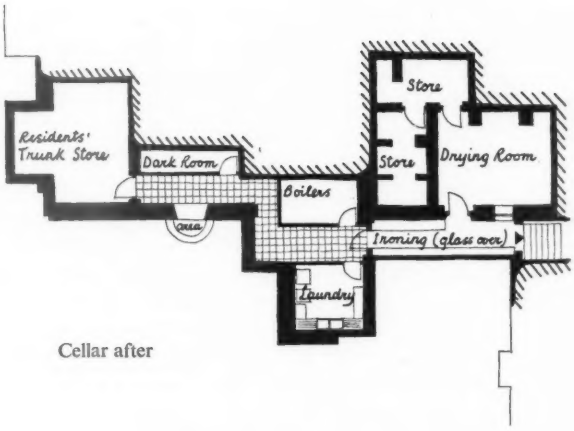
External Walls

Wall construction	U (without lining)	U (with lining clear of wall)
Corrugated asbestos cement ..	1·20	0·30
Corrugated protected metal ..	0·82	0·27

Compiled from information supplied by:

Bowaters Building Boards Limited.
Address: Bowater House, Stratton Street, London, W.1.
Telephone: Grosvenor 4161.

46.Z (A-F) ALPHABETICAL INDEX TO DEC. 23, 1954

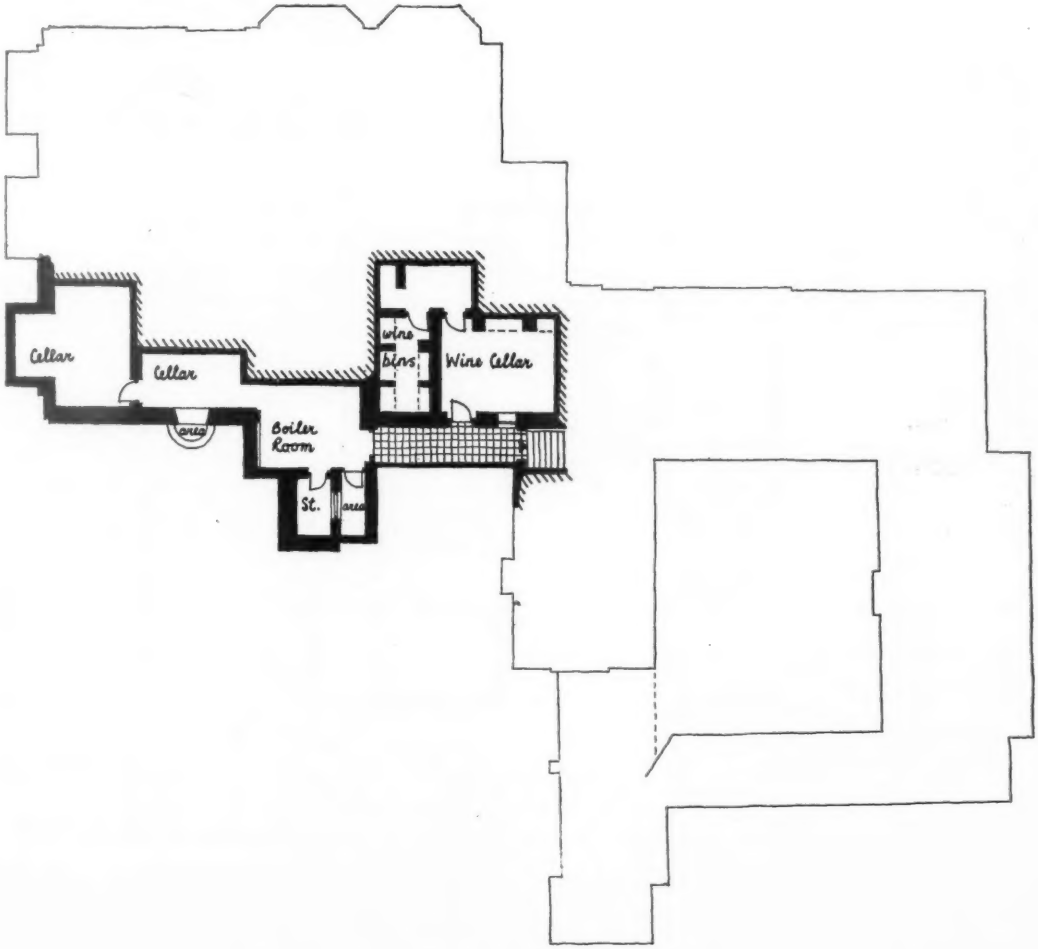


Cellar after

The south wing, with the residents' lounge on the left and the main dining room on the right

company are such that, after the initial "family production" period wives can, if they wish, revive their original occupations, knowing that their children will be cared for properly. These provisions attract young families and as their numbers increase the basic charges for such services are reduced automatically. But although families outnumber at present single residents there is every indication that the needs of single people and couples without children have been equally well studied.

THE HOUSE: *The first problem was to find a reasonably accessible house which could be converted economically and provide adequate accommodation. St. Julian's, near Sevenoaks, a 19th century mansion overlooking the Weald, is five miles from the station and four and a half miles*



Cellar before [Scale: $\frac{1}{16}$" = 1' 0"]

from Sevenoaks shopping centre—and the property possessed all the essentials for the success of such a scheme. It is a remarkable house because there seems no end to the number of flats which can be carved from the areas within the existing structure. Poky attics can be converted into excellent flats simply and cheaply. Open-plan units are created merely by the removal of non-structural partitions and the introduction of continuous dormers which provide additional floor space lost originally through lack of head room.

ACCOMMODATION: *At present there are twelve flats for residents occupied by nine families, having seventeen children between them, plus three single residents. In addition, there are nine children belonging to the resident staff. Seven of the nine families already occupy their own permanent flats and it is estimated that without structural extensions the house can provide ultimately twenty flats in all.*

ADMINISTRATION: *To run the house on behalf of the residents (shareholders) there is a Board consisting of:*

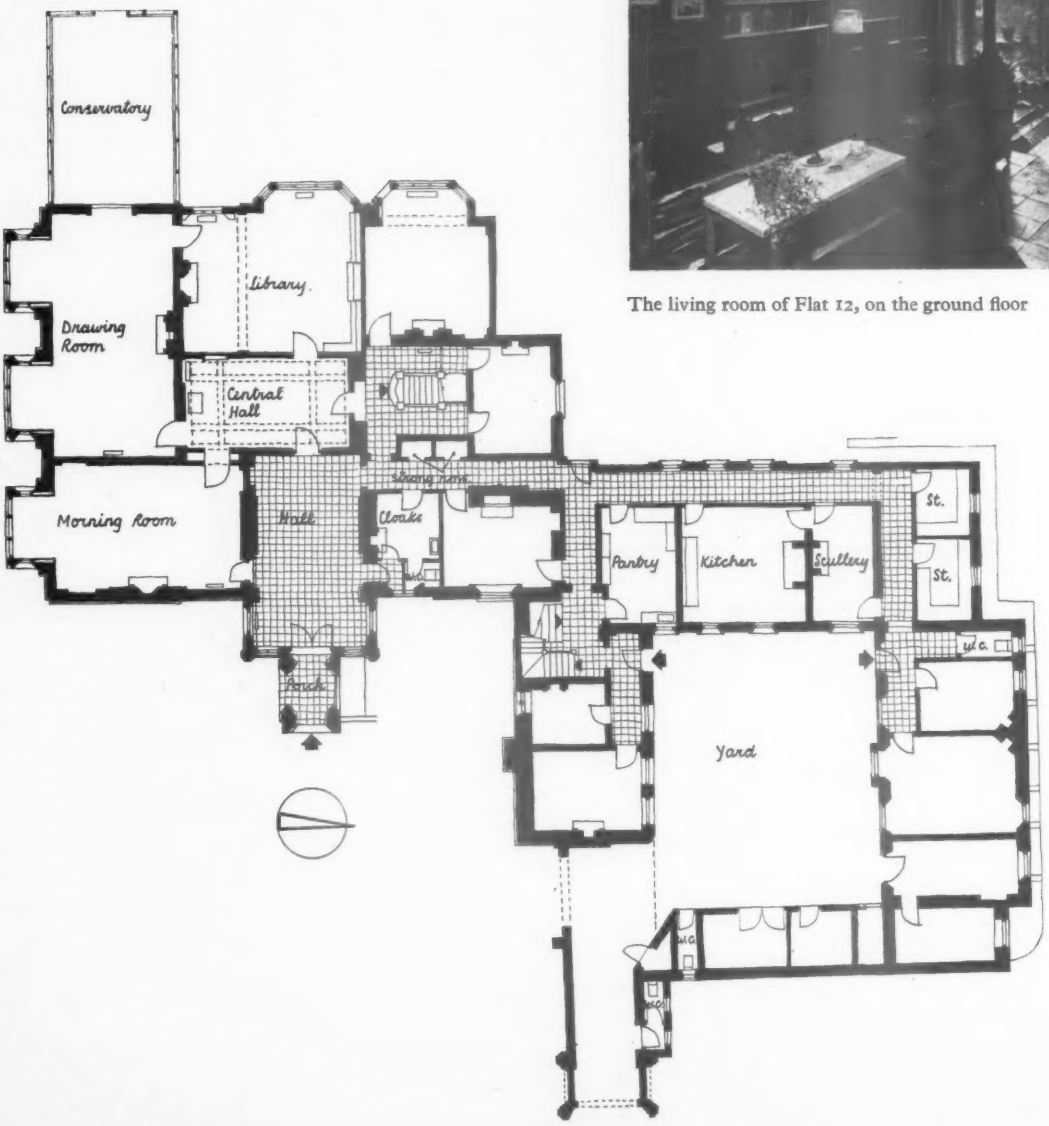
Chairman
4 directors } *elected annually*
1 administrative secretary—full time.

The secretary's duties are mainly those of accountancy. This is an arduous task for, apart from the customary ledger work, a cost account system has been devised to maintain separate records for each service—and in the shareholders' interests no one service is allowed to be subsidised by another.

STAFF: *To maintain the house there is a staff of ten, nine of whom live in: 4 nursery nurses (two are S.R.N.), 1 housekeeper, 3 kitchen staff, 1 man for inside general works, 1 resident carpenter.*

By comparison with other employment, conditions are better generally and rates of pay higher. All staff have 1½ days off each week

The living room of Flat 12, on the ground floor



Ground floor before

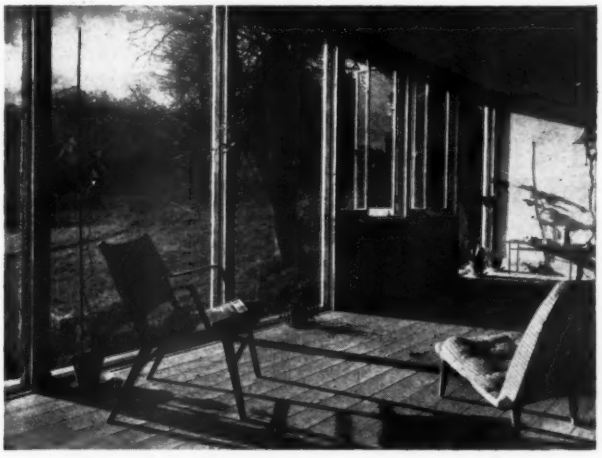
plus two hours per day. While on duty they wear a uniform, but when off they benefit from the same equal rights and service as the residents. Staff bedrooms are sited so that when on duty as "baby-watchers" they are within calling distance of all flat units. Although the percentage of staff to residents may appear high at first, this number is considered the minimum for the size of house and duties included. With the present number of residents, staff overheads are not down to the economic minimum, but this level will be reached when the remainder of the house has been converted and is occupied.

CAPITAL: *To purchase and to convert the house to stage I, which provided accommodation for the original shareholders, at a cost of something over £20,000, the initial capital was raised by the shareholders in part by: (a) share capital, (b) debentures, (c) loans on mortage to individual shareholders.*

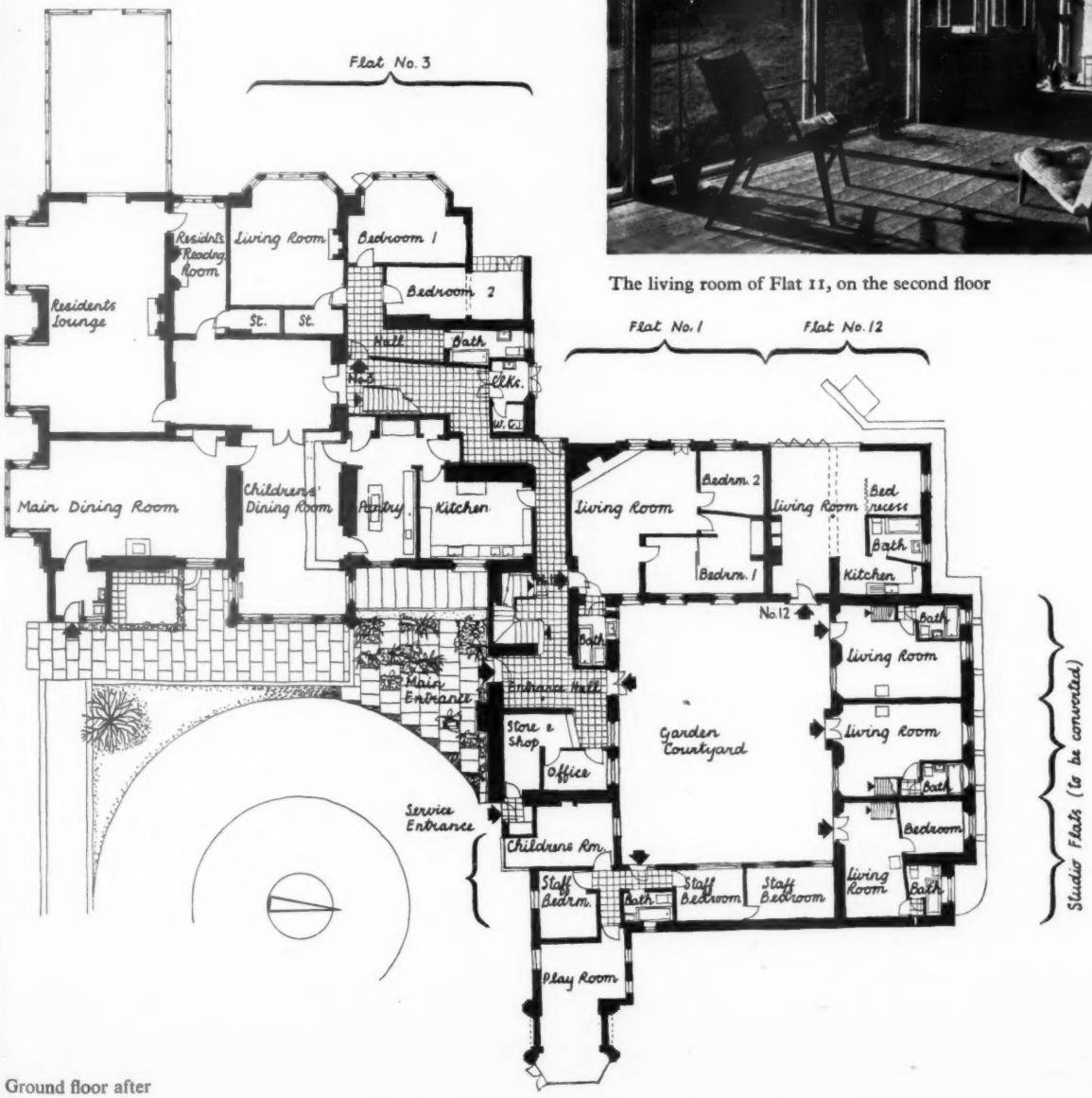
The company's accountants insisted upon the capital being repayed over a period of 15 years, whilst mechanical fittings were to be depreciated and written off in 10 years.

SHARES: *The resident families each purchase, as a basic investment, 200 £1 shares which entitles them as shareholders to one vote in the government of the project. Both husband and wife may purchase these shares by which they can acquire additional voting powers. In fact, families have normally two votes (or 400 £1 shares) and the single individual (non-family) is required to purchase 200 £1 shares for one vote.*

DEBENTURES: *In addition to the basic investment referred to above, a further sum is invested in Debentures the total of which when added to the ordinary shares represents the capital cost of the accommodation provided plus a proportion of the conversion costs and services of the shared, or public, spaces throughout the house. The intention is that all shares are proportional to the accommodation which each resident shareholder enjoys.*



The living room of Flat 11, on the second floor



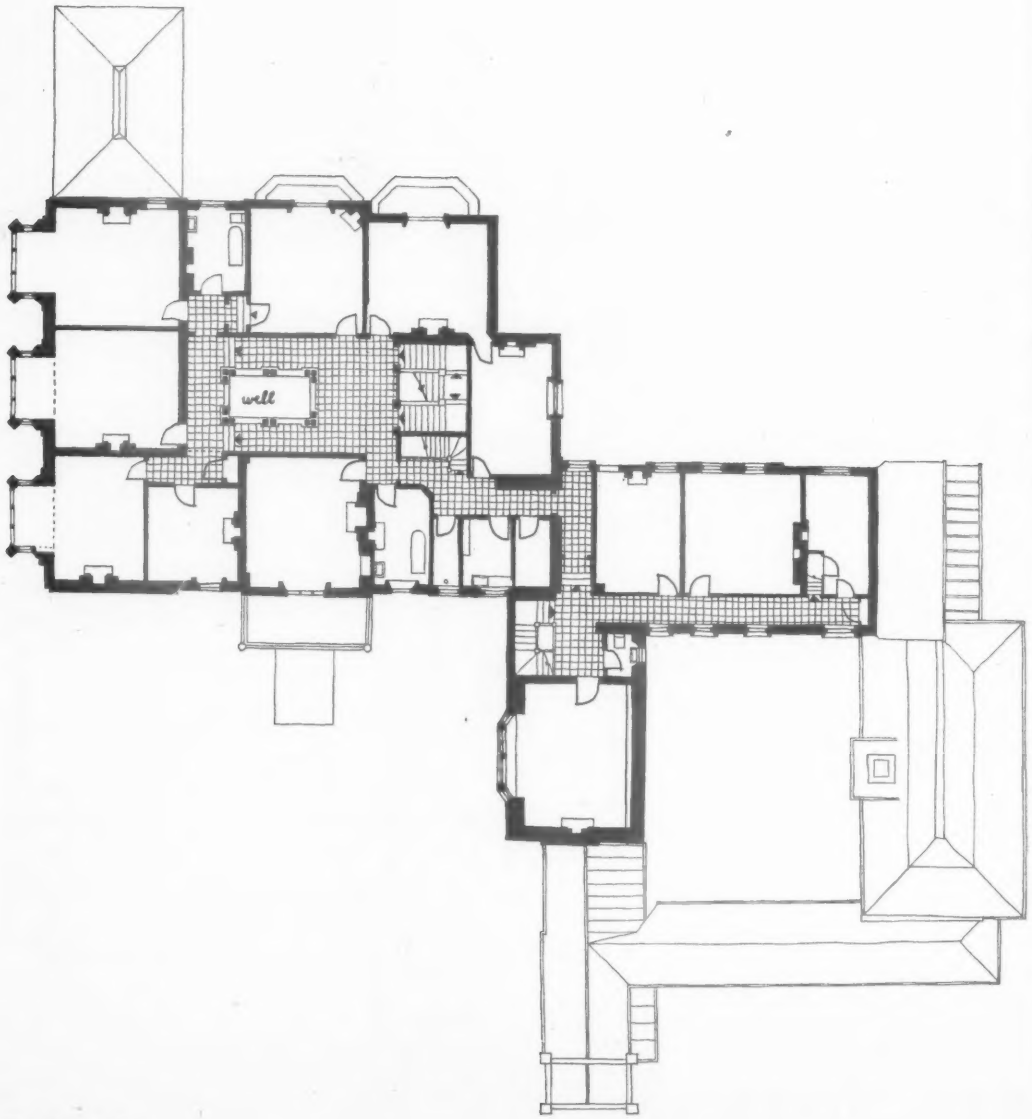
Ground floor after

The new open tread staircase near the dining room, leading to the first floor landing

LICENCES: *To estimate the comparative value of all flat units, from which is assessed each resident's contribution of outgoings, an index figure of, say,* 100 *is given for a particular room standard. This is gauged by its size and orientation and all other habitable rooms are assessed by direct comparison with this particular valuation. In other words, a fair-sized room with a southerly aspect would cost more than one of the same size facing west. The board makes a preliminary valuation which is put to the shareholders for approval or revision. Generally speaking the licence itself is a quarterly charge in place of rent—and each resident's share is based upon the habitable space value of his own flat, which is reflected by his own index figure. The following items are included in this quarterly charge: Rates, taxes, central heating, domestic hot water, electric light (electric power is metered separately), maintenance, repayment of mortgage, administration* (i. *Staff wages for cleaning.* ii. *Administrative Secretary's salary*).

It might be as well to mention here that the wages of the nursery and dining room staffs are not chargeable to the quarterly licence but are debited to the club accounts which are separate entities in themselves.

CENTRAL SERVICES: Heating and hot water: *The boilers are controlled electrically, oil fired, and completely automatic. The installation is serviced quarterly under contract.* Water supply: *This is a private supply owned by the company. It is also automatic and is serviced monthly.* Electric power: *Each flat is supplied with power. Residents' demands vary considerably and for this reason metering is separate and outside the licence charge.* Additional services and facilities: *The original large ground floor drawing room has been retained and is really a common room for the benefit of residents and off-duty staff, both of whom may use it for general recreation, parties, film shows, concerts and etcetera.* Dining club:



First floor before

This is self-supporting financially, and the charge for meals is based on current costs of food, staff and fuel. The quarterly subscription is £2 (not open to the general public) and there are special weekly rates for regular users. Residents are encouraged to take advantage of this service, as well as the nursery club where this applies, but by taking a licence there is no obligation to join either. **Nursery club:** *All children under eleven years may be members. Subscription rates vary with services provided—i.e., a 24-hour child care service costs £3 per week exclusive of food which is covered by a dining room subscription for each child. For the under fives there is a nursery class by trained nanny-cum-teachers—for the 5-11 year group transport facilities are provided to schools in Sevenoaks at a weekly charge of about 7s. 6d. each.*

Although the cost of these amenities may appear high, one has to remember that when the wife is free to pursue some outside occupation the family benefits from two wage-earners instead of one.

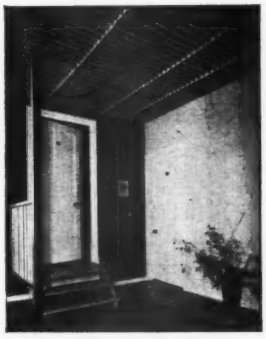
SHOP: *Another service provided by the company—bulk buying by the dining club makes this amenity possible and is easily organized. With the nearest shopping centre 4½ miles away, this shop is an essential addition to the organization.*

GARDEN: *The 18 acres surrounding St. Julian's is mainly pasture land, with a small lake below the house. Residents and staff are encouraged to work in the gardens when they feel inclined but no regular gardener is employed at present. Play areas for wet weather are provided for the children and they have considerable freedom throughout the grounds, but there are areas reserved for adults where they can enjoy peace and quiet—as well as magnificent views—undisturbed by the twenty-six or more children of all ages.*

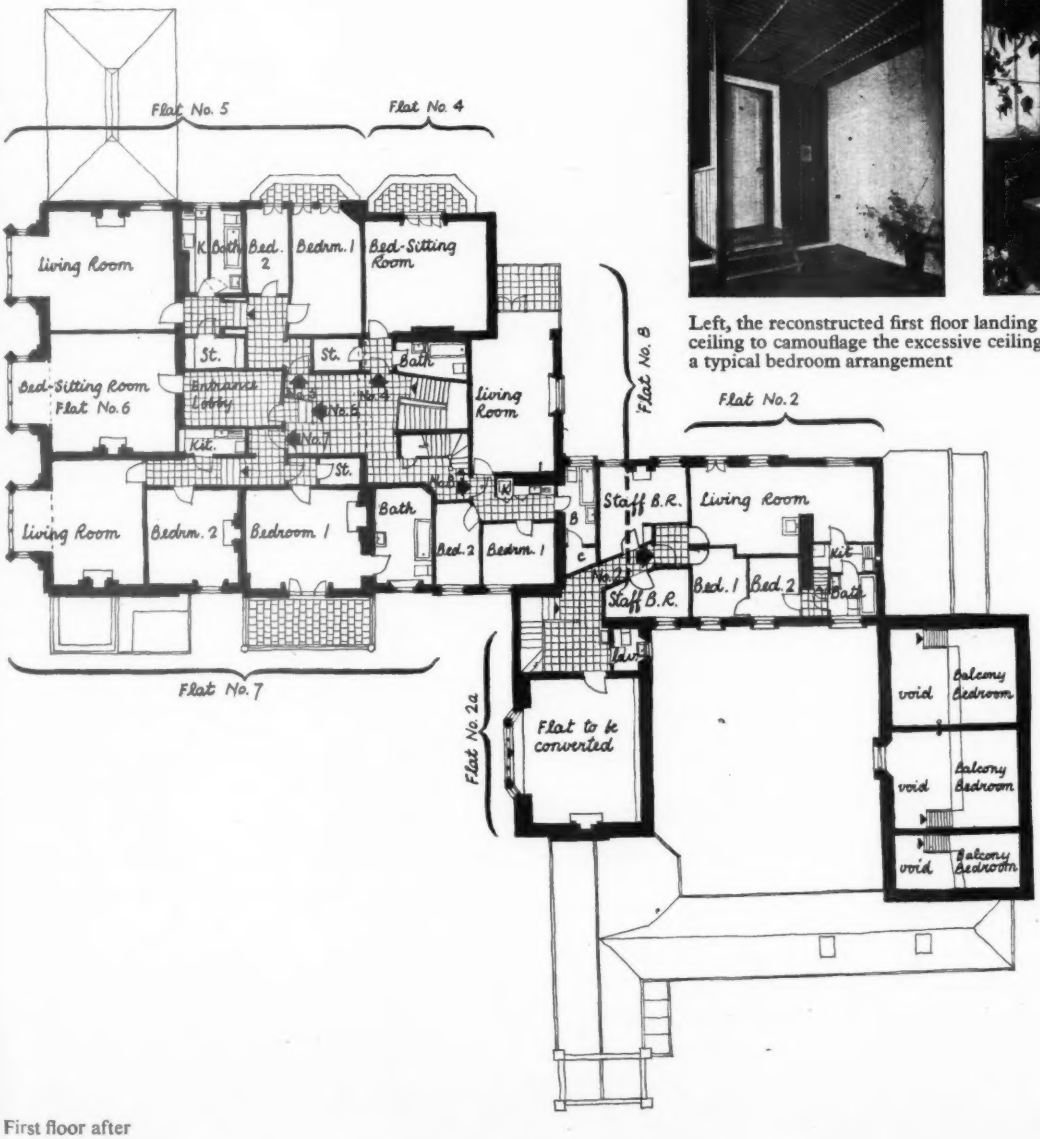
PLANNING A NEW FLAT UNIT: *Whereas the majority of flats converted already were designed as one scheme by the company, new shareholders now may select the floor space most suited to their needs. Some decide to live for a while in their chosen pitches before settling the new layout finally. Usually the company prepares the conversion details, but where a resident also happens to be an architect, he may submit his own proposals to the board for their approval.*

Flat 11, on page 784, is such a case. (The residents are Colin Jones and Jennifer Dennis). The shareholder has had his scheme approved by the board and the work is under way already. The structural roof work is carried out on a contract basis and the remainder by direct labour—from experience this has proved economical.

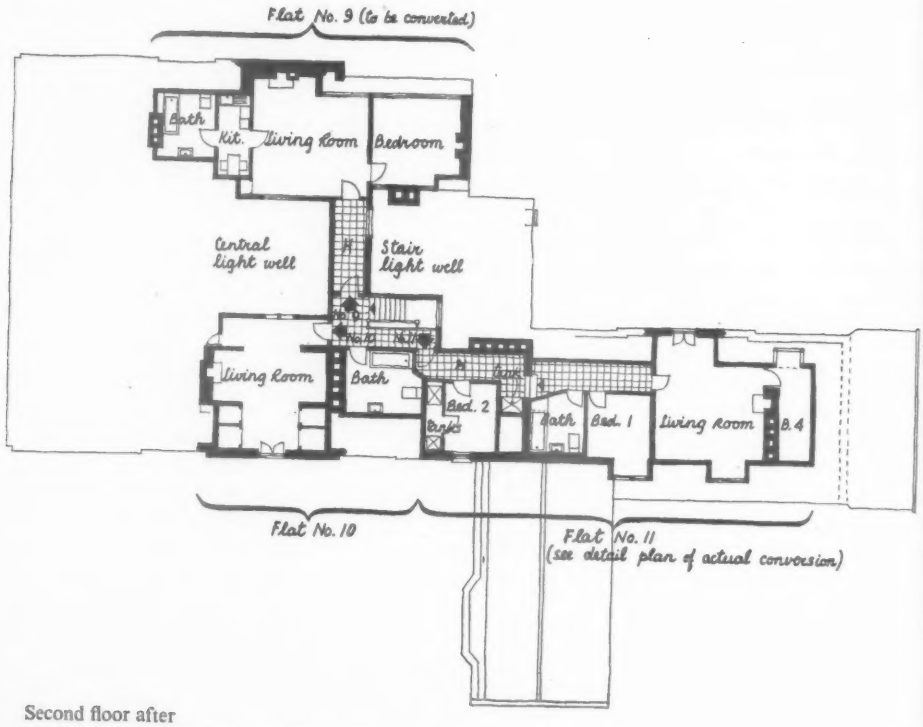
To the company, the structural conversion cost of this unit is about £500. The value of the new flat, assessed on the basis described earlier, is £1,000, and the resident will purchase 400 £1



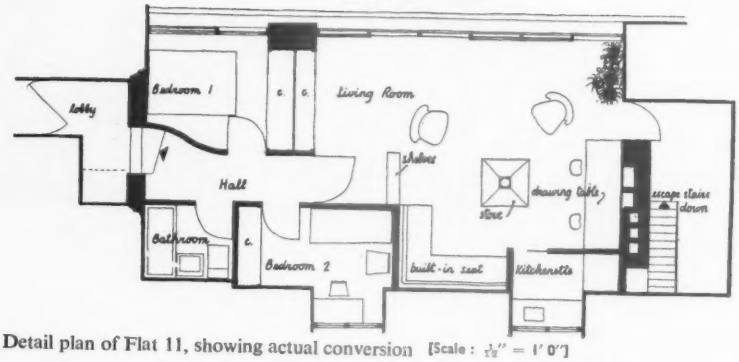
Left, the reconstructed first floor landing with suspended ceiling to camouflage the excessive ceiling height. Right a typical bedroom arrangement



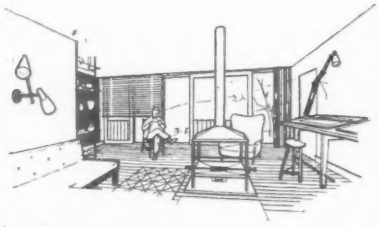
First floor after



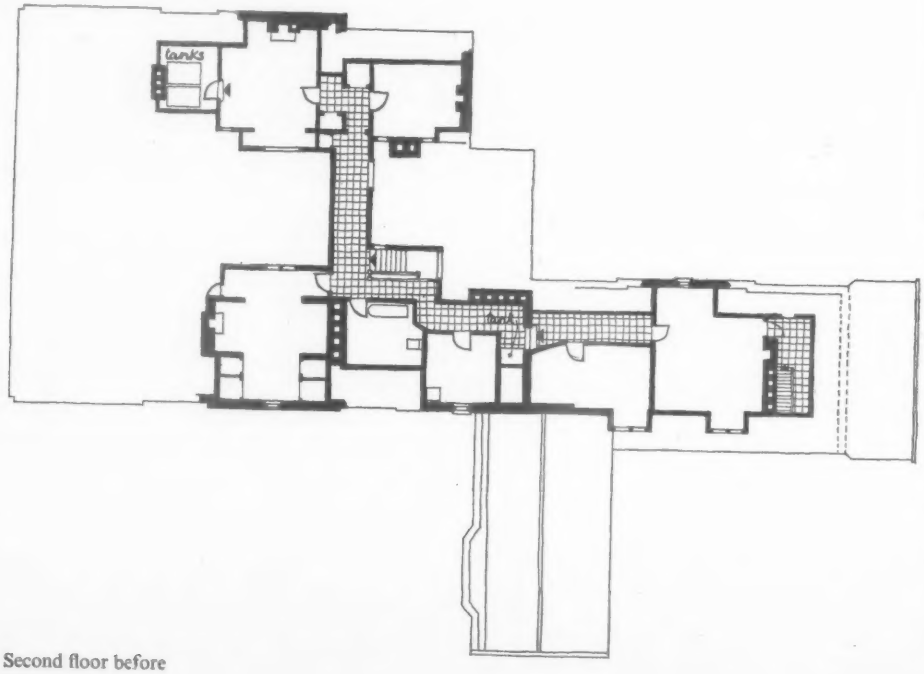
Second floor after



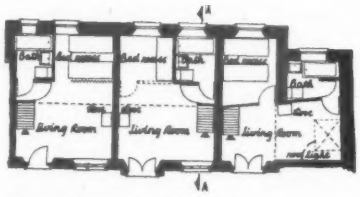
Detail plan of Flat 11, showing actual conversion [Scale : $\frac{1}{32}$" = 1' 0"]



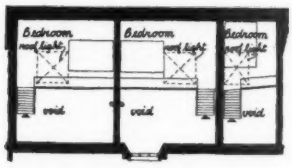
Sketch of Flat 11



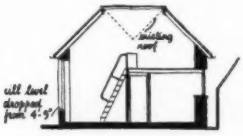
Second floor before



Conversions of stable block : ground floor



Upper level



Section A-A

shares, entitling his wife and himself to two votes, and the balance of the cost will be covered by debentures. The quarterly licence for the flat will be £42.

DETERMINING ONE'S INTERESTS: *To date, no shareholder has relinquished his interest, but the company's rules are that six months' notice shall be given. If the shareholder provides vacant possession and the flat is emptied of personal belongings, no licence is payable during the period of notice. The company has first option to buy the flat but it is the resident's liability to dispose of it.*

---

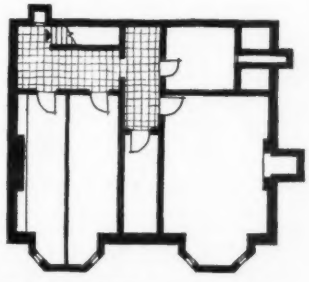
76 Waverley Street, Nottingham

Architect : C. A. Pilkington (Borough Architect)

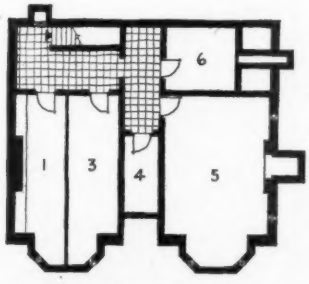
THE SCHEME : *Overlooking the Arboretum, near the centre of Nottingham, this Victorian house, typical of so many throughout the country, conceals behind its rather forbidding facade a dwelling of considerable size. It is indeed surprising that six self-contained flats can be planned within. The conversion involved no structural alteration apart from the removal of the secondary staff staircase, the blocking up of some doorways and the provision of a limited number of new windows.*

PLANNING DETAIL : *Each flat, which contains a living room, one bedroom and separate kitchen and bathroom, is approached from the existing staircase. The rooms are unusually large with living rooms varying between 330 and 220 sq. ft. Bedrooms average about 193 sq. ft. Improvements compared with repairs account for approximately 78% of the capital outlay and this suggests that the general condition of the fabric must have been in a reasonable state of repair. The major proportion of improvement costs is absorbed by new partitioning, kitchen fitments, bathroom sanitary fittings, plumbing and electrical installations.*

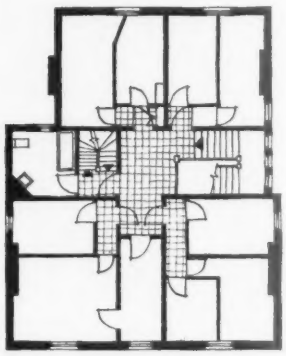
The small but damaged windows in the basement have been replaced by air bricks to maintain through-ventilation and the outbreak of dry rot in the same area has been treated. Even if used for storage by tenants, as is intended, this area of more than 1,000 sq. ft. seems wasted on storage



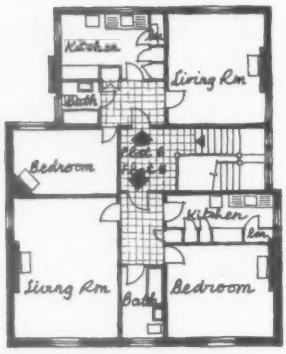
Basement before
[Scale : $\frac{1}{16}$" = 1' 0"]



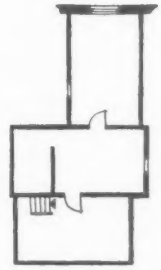
Basement after. Figures show stores for 5 flats (store for flat 2 on ground floor)



Second floor before



Second floor after



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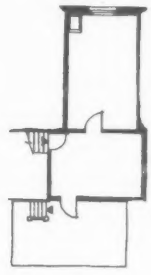

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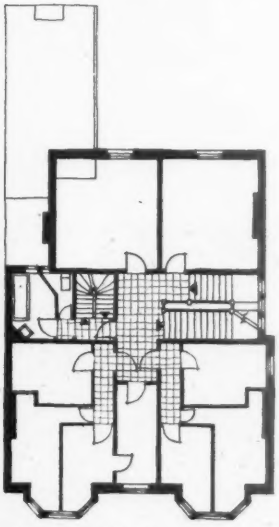
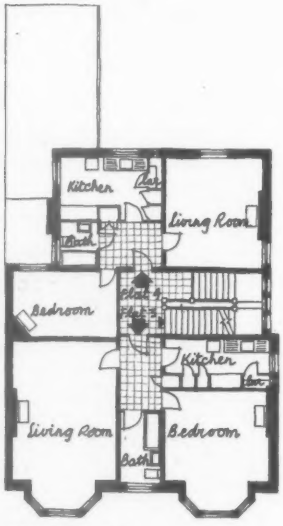
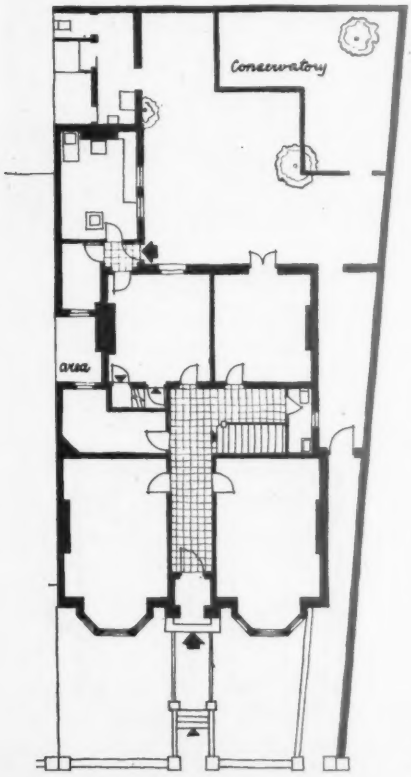


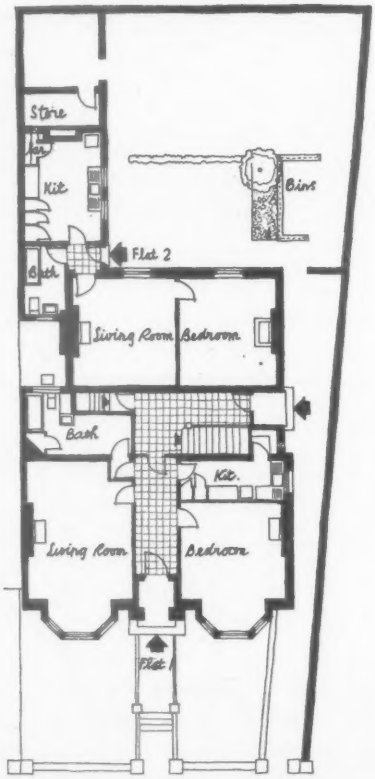
First floor before



First floor after



Ground floor before



Ground floor after

alone; the 330 sq. ft. storage space allotted to flat no. 5 is more than a single flat really needs. Finance permitting, this surely is a case for perhaps two communal rooms to have been provided at the north-east end of the basement where some natural light and ventilation could have been obtained through the walls of the two bay windows. The many uses to which such space could be put have been discussed elsewhere. It would have been interesting to have learnt how tenants would have reacted when given two communal rooms to use as they wished.

COSTS : *The costs of this conversion based on tenders received were as follows:*

	£	% of gross total
Repairs	985	20·5
Improvements ..	3,590	75·0
	4,575	
Administration ..	225	4·5
Gross cost ..	£4,800	100·0

Divided between the six flats provided, the average cost per unit is £800.

RATEABLE VALUES : *Before conversion, the rateable value of the single house was £52 and now it is £162 divided thus:*

Flat No. 1 (G.F. front)	£33
Flat No. 2 (G.F. rear)	£27
Flat No. 3 (1st F. front)	£30
Flat No. 4 (1st F. rear)	£25
Flat No. 5 (2nd F. front)	£25
Flat No. 6 (2nd F. rear)	£22

TECHNICAL SECTION

Architects who visit the interesting exhibition " Oil Fuel at Home," which has been organized by Shell Mex & BP Ltd., at the Building Centre*, will be struck by one curious trade anomaly. Though there are now 22 different types of oil burner on the market, there are, as yet, no boilers to match them; boiler makers, it seems, only design for solid fuel. A characteristic of the solid fuel boiler is a large area of primary surface (i.e., directly in contact with the burning fuel) and a small area of secondary surface (i.e., in contact with convection currents). But with oil firing these proportions should be, if not reversed, at least equalized. With the result that, if you are to get the best service from an oil burner when it is installed in a standard boiler, you must include what is called an " economizer " to give the additional secondary surface. This set-up in the industry is no disadvantage to those who wish to turn existing systems over to oil with the least expense, but it is most annoying for those who wish to design a new installation and must buy a boiler which doesn't suit, and then put in an extra piece of equipment to make the best of it.

* Open until December 31. Monday—Friday, 9.30 a.m.–5 p.m. Saturday, 9.30 a.m.–1 p.m. Closed December 24–28

20 CONSTRUCTION: COMPLETE STRUCTURES
Unité d'habitation, Nantes: 2

In the issue of December 2 a correspondent who had made a special visit to Nantes on behalf of the JOURNAL, *described both the general scheme and the detailed construction of Le Corbusier's second " Unité d'habitation." This week the same correspondent concludes his report by discussing the technical achievement of the job, with special reference to value for money.*

It is remarkable that although l'Unité is already a dominant landmark (you catch exciting glimpses of it from the train as you approach Nantes from the North through the dockyards of the Loire) when you get close to it, it appears no larger than life, and the scale throughout is so surprisingly intimate that even your sceptical correspondent felt there was evidently something in the Modulor! Fig. 1 indicates how well it takes place with church and calvary of the French landscape. The scale of the building seems to be such that it benefits from a quality of finish which is not so much rough as rough-hewn.

SOUND TRANSMISSION

The floor construction (Fig. 2) represents a high standard of sound reduction against both airborne and impact noises. The construction of the party walls however, (Fig. 3)—a construction recommended it seems by the Conservatoire des Arts et Metiers—is such that English experience

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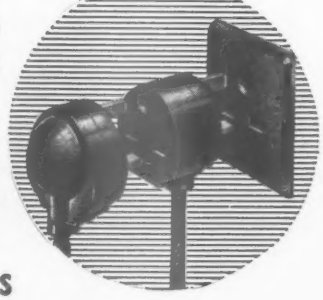

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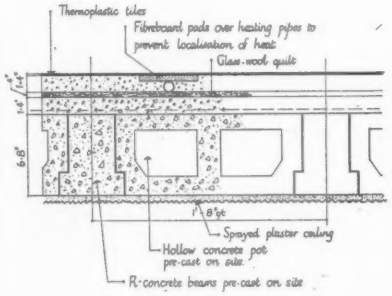
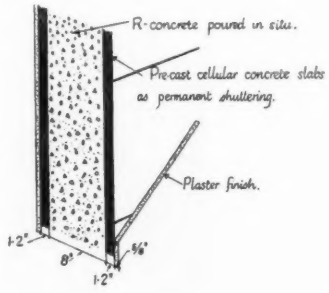
Fig. 1 (*above*). *Unité* 2 *in its setting. Fig.* 2 (*below, left*). *Section through floor. Fig.* 3 (*below, right*). *Section through party wall.*





would lead one to expect little more than about 50 db reduction from one flat to another. However, although your correspondent was not, of course, equipped for taking correct quantitative measurements of sound reduction, it seemed remarkable to him that in a building where a great deal of noisy work was in progress, no disturbance was noticed once the door of a completed flat was closed.

DAYLIGHTING

There was no need for any *brise soleil* in the dark and dismal rain-blown conditions under which the flats were inspected. Nevertheless the amount of daylight reaching the innermost parts of the flats seemed surprisingly low. This is probably due to the fairly low height (7 ft. 4 in. above finished floor level) of the sun-break across the balcony in relation to the considerable depth of room and to the fact that the flank walls of the balcony are in colours having a fairly low reflection coefficient (about 20-30 per cent.). Very little light is reflected from the floors which, in the specimen flat, at any rate, is finished with a dark brown-black thermo-plastic tile.

Little attention seems to have been paid to the quality of the natural light, and, in particular, dark colours have been placed on interior surfaces lying in the same plane as the windows, and this produces, even on a dull day, quite uncomfortable contrast between void and solid. (Fig. 4).

FIRE PRECAUTIONS

The main shell of the building is, of course, of incombustible materials and party walls and floors obviously offer a high grade of fire resistance. Nevertheless, by English standards, certain criticisms would be justified. As nearly all internal partitions are of light ply-wood construction, spread of flame inside each flat would be very rapid, and most English fire regulations would require virtual elimination of combustible partitions in a building of this height. On the other hand, the building is supplied with fire hydrants and, in places, with sprinklers and it is arguable, no doubt, that in the circumstances it may be more reasonable policy to concentrate on fire extinction, though this would not be the view of English experts.

COST

As far as can be ascertained, French building costs appear to be comparable with those in England. Thus for a house qualifying for the maximum State subsidy, the maximum allowable cost per square foot is in the region of 42s. The only way the French seem to be able to get down to this figure is by accepting a standard of construction which, although it doubtless serves its purpose well enough, would need the skill of the jerry builder to accomplish in this country. Blocks of flats built for this figure usually have a reinforced concrete frame filled in with walls of hollow clay block construction finished in a rendering which, one supposes, binds the whole thing together. (Fig. 5). It also seems to be generally admitted that when this figure is achieved Architecture is not—a refreshing aspect of French realism.

The Corbusier flats represent a very much higher standard of construction, though, since they do not conform to the standard plans issued by the Ministry of Reconstruction, they attract a lower subsidy. However, the Nantes Unité is said to be about 40 per cent cheaper than the Marseilles block. The four reasons given for this are:

1. Marseilles was begun under the orders of the Ministry of Reconstruction before all studies had been properly completed, and the whole job was built in too great a hurry.
2. At Marseilles the flats were inserted into the frame of the building like drawers into a chest, but this was an expensive method of construction, particularly as the tolerances allowed were insufficient.
3. At Marseilles there was no time to build a prototype.
4. At Nantes the contractors and their workmen are full of enthusiasm for the enterprise.

Nevertheless, because of its high standard of construction, l'Unité is undeniably more expensive than the bulk of other domestic work. This can however be justified by the higher standard of external finish and construction, which will no doubt lower maintenance costs; by the higher standards of sound reduction and by the services, particularly hot water supply and heating, which are included in the building. In this last respect it is perhaps worth noting that the French are just as resistant as the English, if not more so, to the provision of communal heating, which has to be paid for whether it is being used or not; even though this means, in genuine working class flats, the provision of individual hot water and central heating by means of expensive gas-fired boilers.

Fig. 4 (*left*). *Living room interior. Fig.* 5 (*right*). *Characteristic French low cost building.*

BRICK Production up again

Figures for the 12 months ending June show a further substantial rise in brick production. Output for the previous 12-month period was exceeded by 460 millions.

The accompanying diagram reflects the success of the industry's development programme.

New and extended works, new machinery and new methods are being employed to ensure an adequate supply of bricks for all building requirements.

The Brick Industry is 'Delivering the Goods!'

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

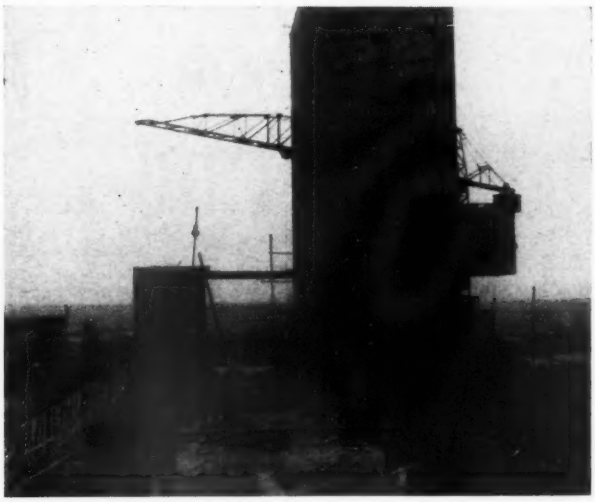


Fig. 6 (right). Concreting plant and Tower Crane. Fig. 7 (extreme right). Water Tower, and Tourists' observation box cantilevered off it.

The sel'ing price of a three-bedroomed flat in the Nantes Unité is about £3,100. This is not to say however that the flats are being built for sale. Instead, tenants must undertake to buy shares equivalent to this selling price over an extended period of years, beginning with an initial deposit of 15 per cent. and followed by monthly payments. The system is therefore similar to an English mortgage, except that instead of purchasing the freehold, the tenant becomes the holder of resaleable shares. In practice this means that in order to have a three-bedroomed flat, one would have to pay a deposit of £164 and £10 a month rent over thirty-five years. This compares with about £6 10s. a month for similar accommodation in a non-purchasing scheme, which would be considered within the means of a man occupying the kind of position which in this country would command £800 or £900 per year.

It should, however, be remembered that the generous system of family allowances in France would probably enable a tenant who required that amount of accommodation because of the size of his family (wife and three children) to make only half the full deposit and to benefit from a substantial contribution to his monthly rent.

CONCLUSION

The abiding impression this building leaves is not that it is the consummation of a Master Mind, or a noble and impressive contribution to the Twentieth Century, but rather that here is something which is eminently sensible, far from outrageous, not even particularly experimental. But it is a crushing reminder of the timidity of everyday conceptions. Why, it leaves one asking, if we are going to have flats at all, should we be afraid of going higher than three storeys? Why should we boggle at going up to ten? There is undoubtedly far more privacy in one of these flats than in any semi-detached house in an English suburb, and there is emphatically no suggestion of the ant heap.

It is not difficult to imagine the Garden City crank objecting to the idea of approaching one's home through a burrow. But there is no doubt at all that these "burrows" are infinitely less inhuman than the bleak open balcony access which we all know too well. The corridor passes no bedroom, bathroom or kitchen window, but only the discreet private entrance to each flat; and it is far less boring to walk for perhaps ten seconds from the lift to one's own home than through the unrelieved mediocrity of a suburban avenue.

Even if the blaze of publicity surrounding the Master may tempt one to cynicism, one cannot but be humbled by the sheer competence of both the conception and its execution.

NOTE: This concludes our "progress report" on Nantes. In both artic'es metric sizes and French francs have been given their nearest English equivalent.

The author wishes to record his thanks for generous and unstinting assistance given him by the Ministry of Reconstruction at Nantes, and by M. Le Corbusier's site architect, M. le Marchand.

CORRECTION: In the first article on Nantes published on December 2 a sentence became transposed in such a way as to be misleading if not nonsensical. Following a description of the main reinforced concrete structure (on page 691) it was stated that "cellular concrete was used in an attempt to reduce sound transmission," and this may have suggested that the structure itself was of cellular concrete. In fact, the comment was intended to apply to the cellular concrete slabs used as permanent shuttering and referred to *later* in the article.

INFORMATION CENTRE

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

10.115 **design: building types**

A CLIENT'S BOOK

Houses of Today. Colin Penn. (Batsford 1954. 30s. 0d.).

This is really intended for the man who wants a house built but is not quite converted to the idea of employing an architect. It takes the possible client by gentle stages through the many aspects of getting a house designed and built, from site planning to details of equipment. The text is well sprinkled with illustrations, sometimes clearly illustrating an idea or argument but sometimes without any very obvious reason other than that they are quite pleasant. The illustrations are rather carefully chosen to represent a wide range of designs of recent small houses. There is a helpful chapter on finance but in places the book seems to get a little too technical for some laymen and it is questionable whether pages from a typical Bill of Quantities, included as an appendix, should be included since so many small house jobs are done without Quantities. This is an attractively written book which would be really useful to many prospective house owners. One hopes it will fall into the hands of many.

15.124 **materials: applied finishes, treatments**

PAINTING PROBLEMS

2nd Series of 500 Questions of Painting and Decorating. James Lawrance (Sutherland Publishing Co. Ltd. 1954. 12s. 6d.).

Architects are always being faced with difficult questions about decoration and especially with problems of re-decoration of old premises. The author of this book, who is well known as an authority on the subject, has made a second collection of problems and answers. Not a book to be read but useful to know of as a reference to consult when an awkward question crops up. Taken at random from the index, the following give some idea of the scope:

Bacon factory, painting ironwork in.
Cleaning and varnishing teak.
Flock papers, hanging.
Painting church seats.
Removing Cardinal polish from rustic bricks.

15.125 **materials: applied finishes, treatments**

EMULSION PAINTS

Spotlight on Emulsion Paints. J. G. Everett. (The Decorator, November 15, 1954.)

Useful information in the form of questions and answers which covers most of the ordinary conditions and problems which arise with this still fairly new material, *e.g.*, does it adhere well over oil paint? Should it be used in rooms subject to condensation? etc. A useful article.

15.126 materials: finishes
PORCELAIN ENAMEL

New Developments in Architectural Porcelain Enamel. Robert A. Weaver. (Progressive Architecture. October, 1954.)

Although it has been used more in the USA than here, Porcelain Enamel had not really been used as much as at one time seemed likely. This article describes recent developments which seem likely to make it much more popular. The main improvements are the production of a matt finish and the use of laminated panels. These latter make the use of fairly large panels possible with freedom from "crowning." The article describes the material and its uses in fair detail and is sufficient to make one hope that someone will have the initiative to follow up the ideas here.

20.221 construction: complete structures
EXAMPLES OF CONCRETE STRUCTURES

Reinforced Concrete and Prestressed Concrete Structures. Riccardo Morandi. (Libreria "Dedalo" Editrice. [Rome.] 1954. L. 4.600.)

A magnificently prepared book illustrating the work of Italian Engineer Riccardo Morandi, of interest to architects and engineers.

Although trained as an engineer, Riccardo Morandi has obviously learned a good deal about architecture in his 27 years since leaving Rome's Engineering School. The 141 pages and more than 160 illustrations describe some extremely pleasant building works and some very fine engineering achievements. The text is in both Italian and English. The book is divided into three sections, the first being an introduction with a general survey of structural work, the second devoted to examples of industrial and building works, and the third to bridges. Sufficient information is given in photographs, line diagrams and cross sections (some showing reinforcement) to show the form and proportions of the structure, the arrangement of reinforcement and constructional methods, but it is general rather than detailed.

23.202 heating and ventilation
IMMERSION HEATERS

Immersion Heaters. (Electrical Review, November 12, 1954.)

Tabulated list of types of electric immersion heaters under makers' names with details of type, size, loading, price and purchase tax and other notes. Some illustrated. As it appears that a 2-kW. heater can vary in cost from about £3 to £10, it is useful to have a full list to refer to.

23.203 heating and ventilation
ELECTRIC HEATERS

Low Temperature Heaters. (Electrical Review, October 1, 1954.)

Tabulated data on wide range of low temperature electric heaters of wide variety of types Data include sizes, rating, finish and cost. Some of the fittings are pleasantly designed and make use of up-to-date manufacturing techniques while others still pander to the curious taste of what one hopes is a limited section of the public, for example, the brief introductory note says: "log and coal effects are usually associated with the electric fire, but this season one manufacturer has incorporated them into a range of convector heaters, the whole having the appearance of a portable fire, as indeed it is."

24.175 lighting
CALCULATIONS FOR REFLECTED DAYLIGHT

Lighting: reflected daylight. By R. G. Hopkinson. ARCHITECTS' JOURNAL, August 5, 1954.

For some years now architects have been able to estimate from drawings the amount of direct daylight received at any point in a room by means of such devices as the Building Research Station Daylight Factor Protractors. Computations of the amount of reflected daylight in a room, however, have until recently been out of the question for all but the lighting specialist, for no simple rules have been available. This article shows in an admirable manner the steps that are being taken at the Building Research Station to remedy this deficiency. The calculation of the indirect components of daylight is admittedly a little more difficult than the well-known BRS Daylight Factor Protractor method, but the writer shows how, by means of simple arithmetic and the use of nomograms, the average and minimum indirect components of daylight in side-lit rooms can be computed. For architects who have more than a passing interest in problems of daylight this is an important article.

24.176 lighting
CALCULATIONS FOR REFLECTED DAYLIGHT FOR ROOFLIGHTS

Lighting: calcu'ation of the indirect daylight component for roof-lights. By R. G. Hopkinson. ARCHITECTS' JOURNAL, September 16, 1954.

This article tells architects how to calculate the indirect components of daylight for top-lit rooms. It complements the main article by the same author on methods for calculating the reflected daylight in side-lit rooms, published in THE ARCHITECTS' JOURNAL. August 5, 1954.

24.177 lighting
ARTIFICIAL LIGHTING INSTALLATION FOR MEAT GRADING AND INSPECTION

Lighting a meat grading and inspection room. IES Lighting Data Sheet 5-2. Journal of Illuminating Engineering Society (USA), February, 1954.

A brief illustrated description of an artificial lighting installation for a large meat grading and inspection room for the James Allan Packing Company, San Francisco. The objective was to provide well-distributed lighting giving a natural appearance to the meat and with the minimum of heat. For this reason fluorescent lighting was chosen in preference to incandescent filament lamps. General illumination was provided with vapour-tight fittings each containing two 40-watt lamps and mounted 11 ft. above the floor at 7-ft. centres and just above the trolley tracks for moving the meat. The illumination levels on the vertical surface of a carcase after 600 hours' operation ranged from 10 lumens per sq. ft. at 2 ft. above floor level to 30 lumens per sq. ft. at 9 ft. from the floor. The installation was reported by company officials and employees to give satisfaction.

QUESTIONS & ANSWERS

Questions to the Technical Editor are answered confidentially and free of charge.

3080 MODEL BYELAWS

Q I would be glad of your advice on the interpretation of the new Model Byelaws relating to external walls of small houses, and in particular the fire resistance requirements.

I have recently made an application to a local authority for permission to erect a bungalow, which was designed with gable roof construction, the gables being constructed of cavity block as a continuation of the 10½-in. cavity wall below. The block gable construction was then to be faced with cedar shingles on creosoted battens and roofing felt, the lowest course of shingles reaching window head level.

I am informed by the Engineer to the Local Authority that he will recommend this form of construction for disapproval, as in his view the new Byelaws (Clause 35) preclude the use of a combustible surface to any wall which is less than 10 ft. from the boundary of the property (which is so in this case).

I have pointed out to him that under Clause 33 "any wall complying (in respect of its stability) with the provisions of the third schedule shall be deemed to satisfy all requirements relating to the incombustibility and fire resistance of external walls contained in Byelaws 35, 39, etc.," and that on reference it will be seen that the construction which I propose does comply with the rules of the Third Schedule.

I have also pointed out that sub-clause 14 of the Third Schedule could also be interpreted to give even greater flexibility to the design of gables such as I now propose, and that in fact the Byelaws are quite clear in stating that where a gable relies on block or brick for its stability, there is no intention of applying the requirements of Clause 35 as regards incombustibility and fire resistance.

The Engineer disagrees with this view on the grounds that the addition of a combustible surface to the block construction takes the proposed gable wall outside the terms of Clause 33.

A Model Byelaw 35 is designed to prevent the spread of fire to buildings adjoining the site of a small house. Consequently the external wall of such a building must, under the Table to Byelaw 35, be either "externally incombustible" or "incombustible throughout." The terms are defined in Byelaw 32 (3) and (4), and would exclude cedar shingles as a covering externally because they are not incombustible.

Paragraph 14 of the Third Schedule excludes paragraph 6 of the Schedule as far as gables are concerned, but would not appear to exclude the provisions of Byelaw 35.

Byelaw 33 refers to the Third Schedule in respect of walls of bricks, stone and unreinforced concrete, but again would not appear to exclude Byelaw 35.

F

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

ENQUIRY FORM

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

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Please ask manufacturers to send further particulars to :—

NAME .....

PROFESSION or TRADE

.....

ADDRESS .....

.....

23.12.54

Buildings Illustrated

Garage for London Transport in Streatham Hill, Brixton, London, S.W.16. (Pages 769-770.) Architects: Adie, Button & Partners, F/F.R.I.B.A., in association with Thomas Bilbow, F.R.I.B.A., Architect to the London Transport Executive. Consulting Engineers: (Structural) A. E. Beer, A.C.G.I., M.I.STRUCT.E., M.CONS.E.; (Electrical) J. H. Coombs & Partners; (Heating and Ventilation), designed and installed under the supervision of H. Carter, A.M.I.C.E., M.I.STRUCT.E., New Works Engineer, London Transport Executive. General contractors: Perrys (Ealing) Ltd. Sub-contractors: structural steelwork, The Aston Construction Co. Ltd.; bricks, E. H. Smith (London) Ltd.; Portland stone, Frank Mortimer Ltd.; artificial stone, T. Richardson; precast concrete floors, Concrete Ltd.; asphalt and felt roofing, General Asphalte Co. Ltd.; felt roofing (docks), E. H. Smith (London) Ltd.; roof sheeting, Robertson Building Service: asbestos cavity decking, E. H. Smith (London) Ltd.; metal windows and doors, Mellowes & Co. Ltd.; wall and floor tiling, Parkinsons (Wall Tiling) Ltd.; terrazzo, Malacarp Terrazzo Co. Ltd.; sliding and folding doors, Geo. W. King Ltd.; rolling shutters, Haskins Ltd., Dennison Kett Ltd.; flush doors and joinery, D. Burke Ltd.; plumbing and plastering, Alan Milne Ltd.; patent glazing and lanterns, Williams & Williams Ltd.; electrical installation, Tanjon (N/C) Ltd.; ironmongery and sanitary fittings, W. N. Froy & Sons Ltd.; heating and ventilation, C. W. Evans & Sons (London) Ltd.; sprinklers, Mather & Platt Ltd.; duct covers, Dover Engineering Works, Broads Ltd., and Jaconello Ltd.; balustrading, Geo. Wright (London) Ltd.; fuel oil tanks, John Bellamy Ltd.; lubricating oil tanks, Tecalemit Ltd.; conductors' counter, R. Cattle Ltd.; notice cases, C. J. Cole & F. A. Cole Ltd.; kitchen hood and screen, Geo. Wright (London) Ltd.; cat ladders, B. Finch & Co. Ltd.; painting, Wm. Winstanley & Co. Ltd.; paints, Hadfields (Merton) Ltd.; glazing gantry, Light Steelwork (1925) Ltd.; cycle racks, Alfred Odoni & Son Ltd.

Flats at "Fig Tree Cottage," Cathcart Road, London, S.W.10. (Pages 771-773.) Architect: Sir Hugh Casson, R.D.I., M.A., F.R.I.B.A., and Neville Conder, A.R.I.B.A. Chief Assistant: Rupert Purkis, A.R.I.B.A.; Interior, colour and finishings, Henry Stephenson, M.S.I.A. Quantity Surveyors: A. W. Wilsons & Partners. General Contractor: Hall & Hayward Ltd. Sub-contractors: dampcoures, Ruberoid Co. Ltd.; concrete blocks, Broad & Co. Ltd.; reinforced concrete, The Helical Bar & Engineering Co. Ltd.; London stock bricks, Broad & Co. Ltd.; special roofings, H. Newsom, Sons & Co. Ltd.; roofing felt, Durable Asphalte Co. Ltd.; patent flooring, Damman & Co. Ltd.; electric wiring, S. Goodchild; electric light fixtures, Merchant Adventurers of London Ltd.; electric heating, E. K. Cole Ltd.; water heaters, De La Rue & Co. Ltd.; sanitary fittings, Adamsez Ltd.; door and window furniture, James Gibbons Ltd.; garage door gear, Acrow (Engineers) Ltd.; revolving doors, Geo. W. King Ltd.; sunblinds, Avery & Co. Ltd.; insulating plaster, British Plaster Board (Manufacturing) Ltd.; metalwork, H. & C. Davis & Co. Ltd.; kitchen fitments, Peerless Built-in Furniture Ltd.; wallpapers, Arthur Sanderson & Sons Ltd.

Announcements

Mr. F. P. O. Strange and Mr. C. D. Wenham have been appointed Sales Manager and Contracts Manager respectively of Teddington Industrial Equipment Ltd.

Mr. Peter F. Bridle has been appointed as Managing Director of Silexine Paints Ltd. He was formerly Manager of the paint production side of Thos. Parsons & Co. Ltd. Mitcham.

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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 COUNTY COUNCIL.

Grade III ENGINEERS (salary up to £892 10s.) and SURVEYING ASSISTANTS (up to £739 10s.) required in District Surveyor's Service. Qualifications A.R.I.B.A., A.M.I.Str.E., or A.R.I.C.S.; structural knowledge essential. Particulars and application forms from Architect (AR/EK/DS/2), County Hall, S.E.1. (1025). 3511

LONDON COUNTY COUNCIL.

Architects and surveyors required for safety regulations of theatres and special buildings, and for general building regulation work. Salaries up to £892 10s., according to experience. A.R.I.B.A. or A.R.I.C.S. essential. Particulars and application form from Architect (AR/EK/TBR/3), The County Hall, S.E.1. (843) 3487

MINISTRY OF WORKS.

LEADING ARCHITECTURAL ASSISTANTS required for drawing offices in the Chief Architect's Division in London, Edinburgh and various provincial offices.

Candidates must have had at least three years architectural training, good experience in an architect's office, and be of Intermediate R.I.B.A. standard. London salary £710—£834 per annum. Rates elsewhere slightly less. Starting pay according to experience. Prospects of promotion and establishment.

State age, full details of training and experience, and office desired, to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.10(F), Abell House, John Islip Street, London, S.W.1. 4732

MINISTRY OF WORKS.

ARCHITECTURAL ASSISTANTS required for drawing offices in London, Edinburgh and various provincial offices, including Aldermaston, Berks; Harwell, Berks; Nancekuke, Cornwall; Ranskill, Notts; and Bishopton, Renfrew.

Candidates must have had at least three years architectural training, some experience in an architect's office, and be of Intermediate R.I.B.A. standard.

London salary £442—£695 per annum. Rates elsewhere slightly less. Starting pay according to age and experience. Prospects of promotion and establishment.

State age, full details of training and experience and office desired, to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.10(F), Abell House, John Islip Street, London, S.W.1. 4731

BOROUGH OF WORTHING.
ARCHITECTURAL ASSISTANT—NEW GRADE II.

Applications are invited for appointment as ARCHITECTURAL ASSISTANT in the Architect's Section of the Borough Engineer's Department.

Applicants should be suitably qualified, having passed at least the intermediate examination of the R.I.B.A. and have had experience in design and in the preparation of working drawings for work carried out by Local Authorities, including school buildings.

The appointment will be on the new A.P.T. Grade II (£560—£640 per annum) and is subject to the National Scheme of Conditions of Service of Local Government Officers, to the Local Government Superannuation Acts and to the successful applicant passing satisfactorily a medical examination.

Applications endorsed "Architectural Assistant," stating age, status, qualifications, experience, present and past appointments with dates and accompanied by at least two copies of recent testimonials, should be sent to the Borough Engineer and Surveyor, Town Hall, Worthing, so as to reach him not later than Friday, 7th January, 1955.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall,
Worthing.
6th December, 1954. 5075

COUNTY BOROUGH OF NEWPORT, MON.
AMENDED ADVERTISEMENT.

Applications are invited for the appointment of a SENIOR HEATING ENGINEER—Grade 5 (£750—£900 p.a.). Incremental Position on Scale according to experience and qualifications.

Candidates must be Associate Members of the Institute of Heating and Ventilating Engineers. Conditions of appointment and service and Forms of Application obtainable from the Borough Architect, Civic Centre, Newport, Mon., to whom applications should be sent not later than Monday, the 10th January, 1955. 6031

CHESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of a PLANNING ASSISTANT (Architectural) in the Headquarters Office on revised A.P.T. Grade II (£560 × £20—£640).

Duties will entail work on housing and town centre layouts with building sketch designs. Applicants should have experience in design and possess a good knowledge of building construction. Preference will be given to those who have passed Intermediate R.I.B.A.

Forms of application and details of the conditions and duties attaching to the appointment can be obtained from the County Planning Officer, to whom they should be returned by 5th January, 1955.

KENNETH O. MALE,
County Planning Officer.

County Planning Department,
Bridgegate House,
Lower Bridge Street,
Chester. 5055

CITY OF BATH.
CITY PLANNING AND ARCHITECTURAL DEPARTMENT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, in accordance with the Scale £625—£675. Applicants must be Registered Architects with good experience in the design and construction of Housing and other Local Authority works.

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

Applications stating age, qualifications and experience, together with the name and addresses of three referees, should be sent to the City Planning Officer and Architect, 7, North Parade Buildings, Bath, not later than 31st December, 1954.

JARED E. DIXON,
Town Clerk.

Guildhall,
Bath. 5077

COUNTY BOROUGH OF EAST HAM.
ARCHITECTURAL & VALUATION STAFF—HOUSING DEPARTMENT.

(*a*) SENIOR ARCHITECTURAL ASSISTANT, salary new A.P.T. IV (£675—£825*). Applicants should preferably be Associates R.I.B.A. and have had experience in housing work of a local authority.

(*b*) ARCHITECTURAL ASSISTANT, salary new A.P.T. II (£560—£640*).

(*c*) ARCHITECTURAL ASSISTANT, salary new A.P.T. I (£500—£580*).

Applicants for (*b*) or (*c*) should have passed the Intermediate Examination of the R.I.B.A. and have had experience in the detailing of flats and houses.

(*d*) VALUATION ASSISTANT, salary new A.P.T. III (£600—£725*).

Applicants should be qualified surveyors by examination and experienced in valuation and acquisition of properties.

(*Plus London Weighting).

Further details and forms of application (returnable by the 10th January, 1955) from the Town Clerk, Town Hall, E.6. 5076

COUNTY BOROUGH OF CROYDON.

Applications are invited for the following appointments in the School Architect's Section:—

1. SENIOR ASSISTANT ARCHITECT.
Salary: £675×£30—£825 p.a., plus "London weighting." Must be Member of the R.I.B.A., with considerable experience in preparing sketch plans and working drawings.

2. JUNIOR ARCHITECTURAL ASSISTANT.
Salary: £500×£20—£580 p.a., plus "London weighting." (Inter. standard R.I.B.A. required.)

Applications on forms from the Chief Education Officer, Katharine Street.

Closing date, 1st January, 1955.

No living accommodation offered.

E. TABERNER,
Town Clerk.
6033

COUNTY BOROUGH OF WOLVERHAMPTON.
APPOINTMENT OF CHIEF PLANNING ASSISTANT.

CHIEF PLANNING ASSISTANT required on the staff of the Borough Engineer and Planning Officer, at a salary in accordance with New Grade VI (£825—£1,000 per annum). Superannuable post. Medical examination. N.J.C. Conditions of service.

Candidates should be Corporate members of the Town Planning Institute, preferably with an appropriate additional qualification, and must have wide experience in all aspects of Town and Country Planning, and administrative ability.

Particulars of the appointment may be obtained from the Borough Engineer and Planning Officer, Town Hall, Wolverhampton, to whom applications should be submitted by 12th January, 1955.

A. G. DAWTRY,
Town Clerk.

Town Hall,
Wolverhampton. 6037

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Vacancies for Grade II District Surveyors' Assistants (£892 10s.—£1,071) in District Surveyor's Service.

Qualifications A.R.I.B.A., A.M.I.,Str.E., or A.R.I.C.S.; Structural knowledge essential. Particulars and application form, returnable by 8th January, 1955, from Architect, AR/EK/DS/2, The County Hall, S.E.1. (1601). 6017

CITY OF PETERBOROUGH.
APPOINTMENT OF QUANTITY SURVEYOR, CITY ENGINEER'S DEPARTMENT.

Applications are invited from qualified QUANTITY SURVEYORS for the above appointment. Applicants should have wide experience, including taking off bills for new schools. State salary required.

Any further information can be obtained from the City Engineer & Surveyor (Mr. L. H. Robjohn, M.B.E., A.M.I.C.E.).

Closing date for receipt of applications, 31st December, 1954.

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
December, 1954. 5074

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 × £20—£725 × £25—£780.

Women.—£580 × £20—£640 × £25—£665.

* The scales quoted are subject to an increase of approximately 3 per cent., while a 45½-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." 6005

CUMBERLAND COUNTY COUNCIL.

Applications are invited for the following appointments—N.J.C. Service conditions; posts pensionable; subject to medical examination; commencing salary within Grades according to qualifications.

SENIOR ASSISTANT ARCHITECT.—New A.P.T. Grade V (£750—£900). Should be A.R.I.B.A., preferably with Schools experience.

ASSISTANT ARCHITECTS (3).—New A.P.T. Grade IV (£675—£825). Should be A.R.I.B.A.

ARCHITECTURAL ASSISTANTS (6).—New A.P.T. Grade II (£560—£640). Should have passed Intermediate R.I.B.A.

Applications on forms obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15, Portland Square, Carlisle, to be received by him not later than Friday, 7th January, 1955.

G. N. C. SWIFT,
Clerk of the County Council.
5073

CITY OF LEICESTER.

Applications are invited for the appointment of MAINTENANCE CLERK OF WORKS in the City Surveyor's Department. The salary will be in accordance with Grade 1 (amended) £500—£580 according to qualifications and experience, and the appointment is subject to the provisions of the Local Government Superannuation Act, 1937.

Applicants should have a good knowledge of building construction and be experienced in the maintenance of buildings, preparation of brief specifications, sketch drawings, etc., together with the supervision of work, checking and clearing accounts.

Applications, including age, qualifications and experience, together with copies of testimonials, should reach the undersigned not later than 8th January, 1955.

JOHN L. BECKETT, M.Inst., C.E.,
City Surveyor.

Town Hall,
Leicester. 6044

BOROUGH OF BURY ST. EDMUNDS.
APPOINTMENT OF CLERK OF WORKS.

Applications are invited for the appointment of Clerk of Works for housing contracts at a salary of £11 per week.

Applicants to have a thorough knowledge of all branches of the building trade, and to be capable of taking charge.

The appointment will be subject to one month's notice on either side and is superannuable.

Applications, endorsed "Clerk of Works," stating age, previous appointments and full details of experience, together with the names of three referees, to be delivered to the undersigned by 8th January, 1955.

HOUSING ACCOMMODATION WILL BE PROVIDED IF REQUIRED.

N. C. GOLDSMITH,
Borough Engineer and Surveyor.

Borough Offices, Bury St. Edmunds.
14th December, 1954. 6041

CAERNARVONSHIRE COUNTY COUNCIL.

Applications invited for post of DRAUGHTSMAN, Misc. III (£395—£460) in Planning Department. Further particulars from Clerk of County Council, Caernarvon. Closing date 8th January. 6036

BOROUGH OF EDMONTON.

QUANTITY SURVEYING ASSISTANT (established) required for Borough Architect's Department, new scale A.P.T. III, £600 × £25—£725 plus London weighting, £10 to £30 according to age. Candidates must be suitably qualified. Applications on forms from Town Clerk, Town Hall, Edmonton, must be delivered by 4th January. 6039

BOROUGH OF CHATHAM.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the appointment of ASSISTANT ARCHITECT within present Grade V (commencing at £625, subject to revised future grading).

Housing Accommodation will be made available if required.

The person appointed is required for the redevelopment of central areas, and other works offering considerable scope.

Conditions of appointment and form of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Chatham, to whom completed application forms should be returned not later than Monday, 3rd January, 1955. 5091

URBAN DISTRICT COUNCIL OF COULSDON AND PURLEY.
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a SENIOR ARCHITECTURAL ASSISTANT in the Engineer & Surveyor's Department.

Salary in accordance with the revised Grade A.P.T. IV (£675 × £30—£825) plus London Area Weighting. Applicants should be Chartered or Registered Architects, experienced in the preparation and execution of Municipal Housing Schemes by Contract, the maintenance of Public Buildings, etc. Preference will be given to candidates who have passed the final examination of the Royal Institute of British Architects.

The appointment will be subject to Scheme of Conditions of Service, Local Government Superannuation Acts, medical examination and termination by one month's written notice on either side. Applications on forms to be obtained from the Engineer & Surveyor to the Council at the address stated below, giving age, details of experience, qualifications, etc., accompanied by copies of two recent testimonials, must be submitted to him by not later than first post on Thursday, 6th January, 1955.

Canvassing in any form will be a disqualification.

ERIC F. J. FELIX,
Clerk of the Council.

Council Offices,
Purley, Surrey.
December, 1954. 6038

CAMBRIDGESHIRE COUNTY COUNCIL.

Applications are invited for the following appointments:—

(*a*) One ARCHITECTURAL ASSISTANT—A.P.T. II (£560—£640)

(*b*) One BUILDING INSPECTOR—Grade A.P.T. II (£560—£640).

Applicants for (*a*) should have passed the Royal Institute of British Architects Intermediate Examination, or its equivalent at one of the recognised Schools of Architecture, and have worked in an Architect's office for a period of two years; should have a good knowledge of construction and details, and be able to prepare drawings from preliminary sketches.

Applicants for (*b*) should have a technical and practical knowledge of all building operations, and be capable of preparing schedules of dilapidations, reports, estimates and specifications, checking builders' accounts, supervising works of maintenance, and be fully experienced in the duties of a Building Inspector. The successful applicant should be able to drive a car, which will be provided by the County Council.

Applications, stating age, qualifications and experience, accompanied by one recent testimonial, and the names and addresses of two referees, should be sent to the Clerk of the County Council, Shire Hall, Cambridge, not later than Wednesday, 5th January, 1955.

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

The selected candidates will be required to pass a medical examination.

CHARLES PHYTHIAN,
Clerk of the County Council.

Shire Hall,
Cambridge.
9th December, 1954. 5090

WARWICKSHIRE COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
SENIOR ASSISTANT ARCHITECTS.

Applications are invited for the appointment of two SENIOR ASSISTANT ARCHITECTS on Grade A.P.T. V (£750—£900), and one on Grade A.P.T. IV (£675—£825). Applicants should be members of the Royal Institute of British Architects and the successful applicant for one of the Grade A.P.T. V posts will undertake the reorganisation of rural schools to bring them up to the required standard.

Applicants for the other posts should have had experience in the design and construction of large buildings and experience in non-traditional forms of construction will be an advantage.

The appointments are on the established staff and will be subject to the provisions of the Local Government Superannuation Acts 1937-53 and the successful applicants will be required to submit a satisfactory medical certificate.

Applications to be made on forms which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall,
Warwick.
10th December, 1954. 6016

CITY OF CHESTER.

City Engineer and Surveyor's Department. Applications are invited for the post of ARCHITECTURAL DRAUGHTSMAN in Miscellaneous Grade IV of the National Whitley Scale, i.e., £440—£520.

Applications in candidate's own handwriting, stating age, present position, experience and qualifications, accompanied by copies of two testimonials and endorsed "Architectural Draughtsman" should be delivered to the City Engineer, Municipal Offices, Chester, not later than Monday, 3rd January, 1955.

Canvassing either directly or indirectly will be a disqualification and relationship to any member or official of the Council must be disclosed. 6043

MIDDLESEX COUNTY COUNCIL—COUNTY PLANNING DEPARTMENT.

PLANNING ASSISTANT Grade IV (£705 to £855 p.a., if 26 years or over). Should have architectural qualifications and be capable of controlling staff engaged on town planning work.

DRAUGHTSMAN Grade I (£520—£610 p.a. if 26 years or over) in Area Planning Office. Duties include preparation of plans and maps. Town Planning experience desirable and preference given if student of Town Planning Institute.

Established, pensionable posts, subject to medical assessment and prescribed conditions. Application forms from County Planning Officer, 10, Gt. George St., S.W.1, returnable by 13th January (quote P.633 AJ). Canvassing disqualifies. 6030

CITY OF BELFAST.

Applications are invited for the following positions in the City Surveyor's Department:—

ARCHITECT, *Class I*:—
Candidates must be Registered Architects. Salary: £655 × £25—£955 × £15—£970 per annum.

ARCHITECT, *Class II*:—
Candidates must be Registered Architects. Salary: £550 × £25—£850.

The work of the Architectural Section includes the design and construction of covered swimming baths, welfare homes, school health clinics, sports pavilions, etc.

HEATING AND LIGHTING ENGINEER:—
Candidates must be Corporate Members of the Institution of Mechanical Engineers or the Institution of Heating and Ventilating Engineers, capable of advising on and with practical experience in the preparation of space heating and electric lighting installations; a knowledge of building plumbing work would be an additional advantage. Salary scale: £655 × £25—£955 × £15—£970 per annum.

The minimum salary for the above posts is linked to age 26, with one increment for each year up to age 32.

Reciprocal pension arrangements exist with Local Authorities in Great Britain and Northern Ireland.

Application forms and further details from Room 39, City Hall, Belfast. Completed applications must reach the undersigned not later than 12 noon on 15th January, 1955.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast.
P.O. Box 234.
6th December, 1954. 6002

BASILDON DEVELOPMENT CORPORATION.
CHIEF ARCHITECT'S DEPARTMENT.

Applications are invited for the following posts on the staff of the Chief Architect/Planner, Noel Tweddell, A.R.I.B.A.:—

(*a*) ASSISTANT ARCHITECTS, Grade IVB, salary £760—£860.

(*b*) ASSISTANT ARCHITECTS, Grade IVA, salary £660—£760.

One applicant for post (*a*) will be selected to work in a Housing Group and must have experience in contemporary house design, preparation of working drawings and supervision of contracts; another applicant will be selected to work in the Industrial Section and must have experience in the design of small and medium size contemporary factories, preparation of working drawings and the supervision of contracts.

The successful applicants for post (*b*) will work in a Housing Group and must have experience in contemporary house design, preparation of working drawings and supervision of contracts. Town planning experience will be an asset.

These appointments give an exceptional opportunity to young and progressive architects to design and build in the contemporary idiom.

A construction programme will be carried out exceeding £3,000,000 a year for the next three years and will comprise all types of buildings in a New Town. There is excellent scope for advancement and variety of work for assistants with initiative, energy and enthusiasm.

All applicants must have a professional qualification in Architecture.

The commencing salary within each grade will be in accordance with experience and ability. All appointments are subject to the provisions of the Local Government and Other Officers Superannuation Act and medical examination.

House accommodation in the New Town may be available.

Applications must be made on the special form (obtainable from the Chief Architect) to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, by the 31st December, 1954, and the envelope endorsed with the relevant appointment. 6004

BOROUGH OF HEMEL HEMPSTEAD.
ARCHITECTURAL ASSISTANT,
NEW GRADE, A.P.T., II.
HOUSING ACCOMMODATION AVAILABLE.

Applications are invited for the appointment of an Architectural Assistant in the Borough and Water Engineer's Department at a salary in accordance with the New Grade II of the A.P.T. Division of the National Scale of Salaries (applicable from 1st January, 1955), i.e., £560, rising to £640 per annum.

Preference will be given to candidates who have passed the Intermediate examination of the R.I.B.A., and have had experience in the design and working drawings of dwelling units or public buildings for Local Authorities.

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, and will be terminable by one month's notice in writing on either side.

Applications, stating age, education, qualifications, present and previous appointments, and details of experience, together with the names of two persons to whom reference may be made, should be sent to A. H. Turner, A.M.I.C.E., A.R.I.C.S., Borough Engineer, Market Square, Hemel Hempstead, Hertfordshire, not later than 15th January, 1955.

Canvassing will disqualify, and applicants must state whether, to their knowledge, they are related to any member of the Council or to any senior officer of the Corporation.

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

Town Hall, Hemel Hempstead, Herts.
15th December, 1954. 6047

Vacancies exist for basic grade DRAUGHTSMEN in the Architectural branch of the Directorate of Fortifications and Works, War Office, Chessington, Surbiton, Surrey. Candidates must have had at least three years' architectural training, some experience in an architect's office, and be of Intermediate R.I.B.A. standard. A full and varied programme of design is undertaken, including married quarters, barracks, hospitals, schools, and clubs, also layouts of estates and cantonments, both for Home and Overseas.

All applicants must be British of British parentage.

Salary range is £390 (may be somewhat less if under age 21)—£655, plus overtime. Starting pay according to age, qualifications, and experience, with annual increases subject to satisfactory service. Prospects of promotion and establishment. Canteen facilities. State age, full details of training and experience, to Secretary of State for War, War Office (C.5A), R.503, Northumberland House, W.C.2. 6050

BOROUGH OF MARGATE.
TECHNICAL STAFF.

Applications are invited for the following appointments in the Borough Engineer's office:—

(*a*) ARCHITECTURAL ASSISTANT, Grade A.P.T., II or III (new) (£560-£640) or (£600-£725).

(*b*) ENGINEERING ASSISTANT, Grade A.P.T., II (new) (£560-£640).

Applicants should have the following qualifications and experience: (*a*) Intermediate or Final examination of the Royal Institute of British Architects, with general experience; and (*b*) Intermediate examination of a recognised professional body, with general knowledge of work in a Municipal Engineer's office.

Applications, under the following headings, should reach Mr. W. L. Armstrong, B.Sc., Borough Engineer, 38, Grosvenor Place, Margate, not later than first post on Tuesday, 4th January, 1955, in envelopes marked "Technical Assistant," and bearing no name or mark indicating the identity of the sender:—

(1) Name, (2) age, (3) married or single, (4) education, (5) professional qualifications, (6) present appointment, (7) previous appointments, (8) experience, (9) names and addresses of two referees.

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

Canvassing will disqualify and applicants should disclose in writing any relationship which exists between them and any member or Chief Officer of the Council.

T. F. SIDNELL,
Town Clerk.

Town Clerk's Office.
46, Grosvenor Place, Margate.
15th December, 1954. 6040

MINISTRY OF WORKS.

TEMPORARY ASSISTANT ARCHITECTS required for duty in London.

Candidates must be Registered Architects by examination, or Registered Architects who, since registration, have passed any professional examination in Architecture recognised by the Architects' Registration Council of the United Kingdom as qualifying for registration under the Architects' (Registration) Acts. They must also possess professional experience in private or outside practice, or in the service of a Local Authority or Government Department.

Salary range: £729-£1,117 per annum, according to age and experience.

State age and full details of training and experience to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.17(D), Abell Touse, John Islip Street, London, S.W.1. 6048

BISHOP AUCKLAND URBAN DISTRICT COUNCIL.
ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT to work under the direction of the Council's Architect, Surveyor and Engineer. The salary for the appointment will be in accordance with Amended Grade III of the A.P.T. Division of the National Scales, commencing at £675 per annum and rising by two annual increments of £25 to a maximum of £725 per annum. Applicants must be Corporate Members of the Royal Institute of British Architects. The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953 and also to one month's notice on either side. If required, housing accommodation will be provided within a reasonable time after the appointment is made, but this must be vacated if and when the appointment is terminated.

Applications, stating age, qualifications, experience and present appointment, accompanied by the names and addresses of two persons to whom reference can be made, must reach the undersigned not later than Tuesday, 28th December, 1954.

R. W. BLYTHE,
Clerk of the Council.

Town Hall,
Bishop Auckland.
10th December, 1954. 6032

COUNTY BOROUGH OF BLACKPOOL.

Applications (to be received by 17th January, 1955) are invited for the post of CHIEF TOWN PLANNING ASSISTANT A.P.T. (Revised) Grade VI—£825—£1,000 p.a. in the Borough Surveyor's Department.

Application form and particulars obtainable from the Borough Surveyor (Arthur Hamilton, B.Sc.) P.O. Box 17, Municipal Buildings, Blackpool.

The Council is unable to give any assistance in the provision of housing accommodation.

TREVOR T. JONES,
Town Clerk.
6003

Architectural Appointments Vacant

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

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

BOX 4588. Advertiser thanks all those who replied. Position is now filled. 5097

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.

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. 5051

A VACANCY occurs in a small Knightsbridge office for an ASSISTANT of Inter. or Final standard, good prospects for right man, write stating age, experience. Salary by arrangement. Box 5060.

ARCHITECTURAL DRAUGHTSMAN required in S.E. London. Good salary and conditions. Superannuation scheme. Application in writing, giving full details of age, experience, and qualifications, to Male Staff Officer, N.A.A.F.I., Kennings Way, S.E.11. 5049

JUNIOR ARCHITECTURAL ASSISTANT required for private practice in Boston, Lincs. Write stating experience and salary required. Box 5059.

ARCHITECTURAL ASSISTANT, intermediate standard required immediately for Company Architect's Office in Kingston-on-Thames area, dealing with industrial buildings. Write giving details of experience, age and salary required. E. Hill Aldam & Co. Ltd., Britannic Works, Haslemere Avenue, Earlsfield, S.W.18. 5062

ADAMS, Holden & Pearson require SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS immediately. Write giving particulars of experience and salary required to 38, Gordon Square, W.C.1. 5067

JUNIOR ASSISTANT required, busy private office West Central London. Write Box 5066.

ARCHITECTURAL ASSISTANT required, intermediate to final standard. Write giving full particulars of previous experience and salary required to Graham Crump & Denis Crump, F./A.R.I.B.A., 43, George Street, Croydon. 5017

ARCHITECTURAL ASSISTANT required immediately. Five-day week. Write to J. M. Sheppard & Partners, 38, Bedford Place, W.C.1, giving particulars of age, qualifications, experience and salary required. 5025

ARCHITECTURAL ASSISTANT required by University of Cambridge Department of Estate Management. Applicants should have passed the R.I.B.A. Intermediate Examination and have had at least two years' experience in the office of a practising architect. Interesting and varied work and excellent prospects. Applications giving full details regarding age, experience and present salary to Secretary, Department of Estate Management, 74, Trumpington Street, Cambridge. 5036

ASSISTANT DESIGNER required for progressive design studio, experienced man, capable of carrying out high quality graphic designs, finished drawings, working details and specifications for Display and Exhibition Stands. Experience in general Industrial Design for Consumer products an advantage. Box 5026.

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 4858.

ARCHITECTURAL ASSISTANT, of at least Inter R.I.B.A. Standard, required by Midland Firm designing "whole systems of construction" for large scale industrial and commercial projects. Good experience of accurate detailing essential. Salary according to ability and experience. Box 4861.

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.

ARCHITECTURAL ASSISTANT, aged 23-27, with at least 3 years' drawing office experience, preferably in connection with industrial and commercial buildings, required by City firm of building surveyors. Salary £450-£600. Box 4888.

ARCHITECTURAL ASSISTANT: Intermediate approaching final. Commercial and industrial work; large-scale contracts. Watson, Johnson, Stokes, Victoria Square, Birmingham. 4896

ARCHITECTURAL ASSISTANTS required in West End Architect's office. Those studying for Inter. to Final R.I.B.A. Examination or qualified. Varied practice, specialising somewhat in factories, city offices and stores. Write, giving full particulars to Box. N.959, Willings, 362, Gray's Inn Road, W.C.1. 4953

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. 4964

RILEY & GLANFIELD seek male ASSISTANT of experience for factory, Church, domestic and public house work. Ability to assume responsibility for design and supervision. Good draughtsmanship essential. Salary to be agreed. CHA 7328. 5009

ARCHITECTURAL ASSISTANTS required for St. Albans office. Intermediate standard. Apply, giving full details of experience and salary required, to Keith P. Roberts, L.R.I.B.A., 17, Verulam Road, St. Albans. (Telephone: St. Albans 6886.) 4990

ARCHITECTURAL ASSISTANT required, with experience in design of industrial buildings, and capable of preparing surveys, working drawings and details. Applications, stating age, education, experience and salary required, should be addressed to E.M.A., Cadbury Brothers, Ltd., Bournville, Birmingham. 4737

ARCHITECTURAL ASSISTANTS required, about Intermediate standard, for varied and interesting high grade work. 5-day week. Apply in writing only, giving full details of experience, to Sir Giles Scott, Son & Partner, 3, Field Court, Gray's Inn, W.C.1. 5098

ARCHITECTURAL ASSISTANT required by the John Lewis Partnership for lay-out and store-fitting details on large re-building programme in W.1. area. Previous experience of shop-fitting helpful but not essential. Minimum salary £400 per annum. Write, giving full details, to Director of Personnel, 32, Cavendish Square, London, W.1. 6000

QUALIFIED ASSISTANT—R.I.B.A., Finals/or near., for Bournemouth Office. Must carry out contracts from sketches to final accounts. Reply stating salary required and when free and give references. Box 5099.

JUNIOR ASSISTANT required, preferably with some office experience, for Housing projects. Salary £550 or according to ability. Sir Lancelot Keay, Basil G. Duckett and Partners, 80, Wimpole Street, W.1. 6026

SHOPFITTING DRAUGHTSMAN required. Experienced in first-class work. Salary £750—£1,000 and permanency offered to capable applicant—S. J. Stephenson, Gillis & Partners, 2, Saville Chambers, North Street, Newcastle-on-Tyne. 6027

W. H. WATKINS, GRAY, FF.R.I.B.A., & PARTNERS, require ARCHITECTURAL ASSISTANTS, of Intermediate standard, for Bristol office. Applicants should preferably have passed R.I.B.A. Intermediate, and be studying for Final. Must be good draughtsmen and have good practical experience. Contributory pension scheme in operation. Apply in writing, giving age, experience, and salary required, to 1, Clare Street, Bristol, 1. 6034

MANCHESTER.—New progressive practice has vacancy for first-class ASSISTANT, preferably with some experience in modern school design. Work mainly good quality ecclesiastical and educational, and appreciation of both traditional and contemporary design, combined with sound constructional ability, essential. Excellent opportunity for really capable man to develop own ideas and take some degree of responsibility. Salary by arrangement. Box 6035.

THE UNIVERSITY OF LIVERPOOL. APPLICATIONS are invited for the following posts:—

(*a*) Leverhulme RESEARCH FELLOW and LECTURER in the Department of Civic Design, at an initial salary within the range £550—£1,000 per annum, according to age, qualifications and experience, tenable normally for two years and renewable for a third year.

(*b*) Leverhulme RESEARCH FELLOW in the School of Architecture or Department of Civic Design, tenable for one year at a value of £500, renewable for a second year at a value of £550.

The successful candidates for both Fellowships will be required to take part in a research programme under the general direction of the Head of the Department. This research programme includes problems of town planning, architecture and landscape design. Successful candidates will be expected to take up their duties on 1st February, 1955, or as soon thereafter as possible.

Applications, stating age, details of qualifications and experience and whether National Service requirements have been fulfilled, together with the names of three referees, should be received not later than 15th January, 1955, by the undersigned, from whom further particulars of each post may be obtained.

STANLEY DUMBELL,
Registrar.
6029

THE BRITISH TRANSPORT COMMISSION invite applications for the appointment of WORKERS-UP for Bills of Quantities for Architectural building work. Salary up to £620 at age 36. Residential and other travelling concessions available. Applications, with particulars of age and experience, to be addressed to Civil Engineer, London Midland Region, British Transport Commission, Euston Grove, London, N.W.1. 6001

LONDON, W.1.—Architect requires a capable ASSISTANT, to start immediately or in January. 5-day week. Apply, stating experience and salary required, to Box 6006.

JUNIOR ASSISTANT, of Intermediate standard and with office experience, required for practice in North Hampshire. Apply, with salary required. Box 6007.

ARCHITECTURAL ASSISTANTS required, up to Final standard R.I.B.A. Able to assume responsibility for working drawings, details and design of Commercial, Industrial and Domestic Buildings. Preparation of Survey and Site Layouts and Drainage an advantage. Good draughtsmanship with knowledge of contemporary building methods and materials essential. Please apply in writing, stating age and full details of experience, to Box 5096.

ARCHITECTURAL ASSISTANT required, Surrey. Part or full time; experienced draughtsman; interesting domestic work. Box 6008.

TWO ARCHITECT'S ASSISTANTS required in busy West End office. One post Inter.-R.I.B.A. and one studying for Inter. Excellent prospects. Large schools programme. Box 6012.

INDUSTRIAL Architects, S.W.1, require ASSISTANTS, up to 30 years of age. Intermediate standard. Salary £400 to £600, according to experience. Apply Box 6013.

WELL-KNOWN Multiple Shoe Company have vacancy for ARCHITECTURAL ASSISTANT in Shop Design Department for projects in U.K. and overseas. Must have a real interest in contemporary design and be capable of producing or developing new ideas. Regular employment in virile expanding company, with excellent staff amenities. Contributory pension fund. Possibility of accommodation for young married man. Apply Box 6014.

ARCHITECTURAL ASSISTANTS required, Inter. R.I.B.A. standard. Experience in industrial and factory work an advantage, but not essential. Westminster area. Write, stating experience and salary, to Box 6046.

ARCHITECT requires ASSISTANT, Intermediate standard, R.I.B.A., London, S.W.3 district. Please reply, stating age, experience, and salary required to Box 6045.

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.

ARCHITECTURAL ASSISTANT, with initiative and ability to take charge of drawing office of Manchester Architects and Surveyors. Good knowledge of design, construction and specification writing essential. Excellent prospects. State age, salary and experience. Box 6049.

CO-OPERATIVE WHOLESALE SOCIETY, LTD. ARCHITECT'S 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 £745 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, Leman Street, London, E.1. 6015

WEST END Architects require female ASSISTANTS, Inter. and Final standard, for industrial and commercial buildings. Salary £500-£700, according to experience. Ring Mayfair 3245. Box 6018.

INTERMEDIATE and JUNIOR ASSISTANTS required for work on interesting contemporary projects. Apply in writing, stating experience, to John H. D. Madin, 83/85, Hagley Road, Birmingham, 16. 6010

ARCHITECTURAL ASSISTANTS, of Intermediate standard, required by busy West End Architects for work on various types of buildings. Excellent opportunity for experience in buildings of contemporary design, with possibilities for advancement in the future. Commencing salary from about £500 per annum, according to age and experience. Apply, giving particulars of age, training, and experience to Box 5095.

EDGWARE.—JUNIOR ASSISTANT required for small contemporary office. Interesting and varied work on domestic and industrial projects. State experience and salary required. 'Phone STO. 6686 or evenings 9035, or write Box 5094.

SENIOR ASSISTANT, R.I.B.A., Final Standard, required immediately for busy Surrey practice. Sound general experience including design and administration jobs essential. Excellent prospects for responsible man. Please state age, qualification, past experience and salary required. Box 6042.

SENIOR ARCHITECTURAL ASSISTANT is required, with good practical experience, for a responsible position in a small city office with mixed practice. Write, stating qualifications, practical experience, age, and salary required, to Box 6028.

ARCHITECTURAL ASSISTANTS of skill and energy required for busy London and North-West London offices engaged on large projects. 5-day week. Salary range, £500-£900 p.a., plus bonus. Box 6025.

ARCHITECTURAL ASSISTANT, of at least Inter.-standard and with good experience, wanted for private London practice, to work on the design and development of systems of construction, such as Curtain Walling, Dry-partitioning, etc., and their application in Buildings. Apply by letter, giving age, training, experience, and salary required, to Box 6024.

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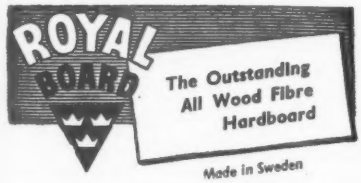

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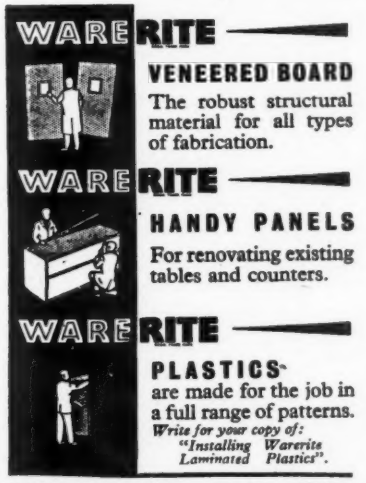

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