THE ARCHITECTS' JOURNAL

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

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
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
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. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Flaxman 7766
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. Millbank, S.W.1.	Whitehall 5140
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. 28, Victoria Street, S.W.1.	Abbey 3333
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., Borough Architect, Town Hall, Newport, Mon.	Newport 3111
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.	Whitehall 6322
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. 35, Old Queen Street, S.W.1.	Victoria 9040
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. 8, Buckingham Palace Gdns, S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors, 5, Arundel Street, Strand.	Temple Bar 6633
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	Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	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. Buckingham Palace Gdns., S.W.1.	Sloane 2837
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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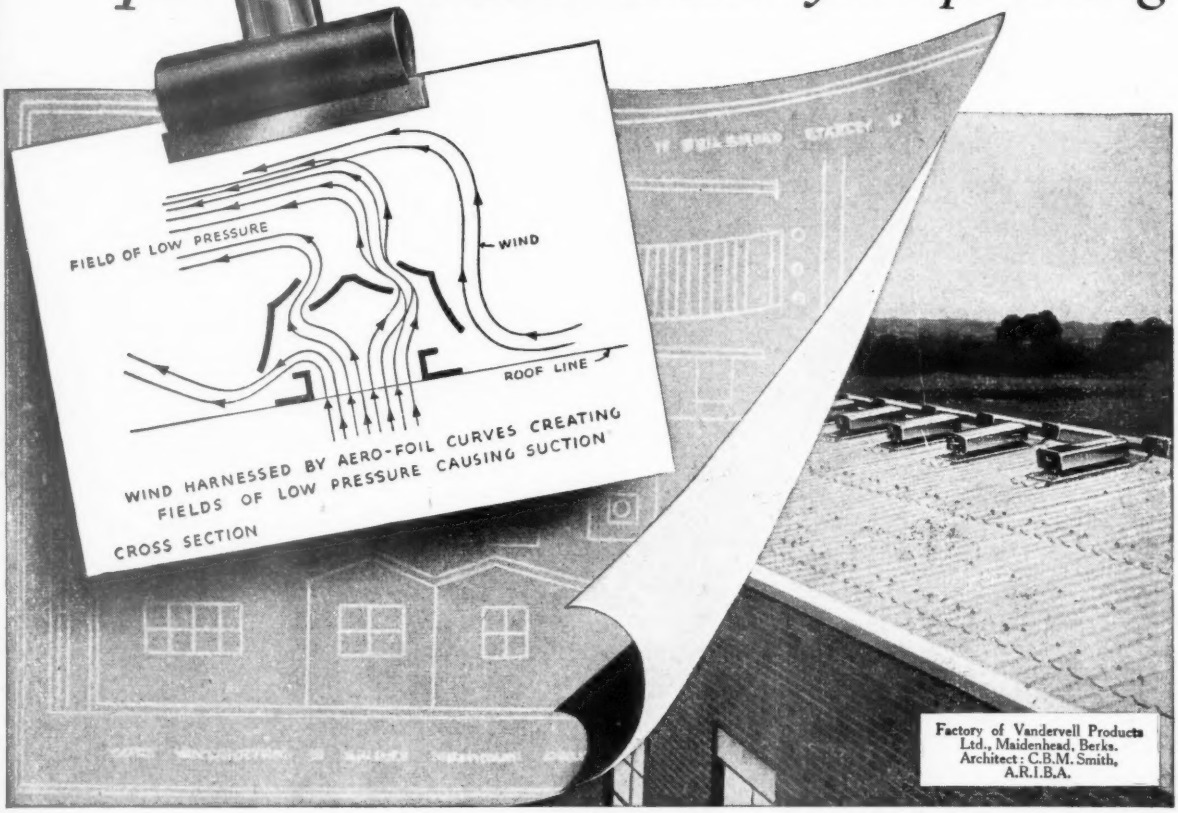

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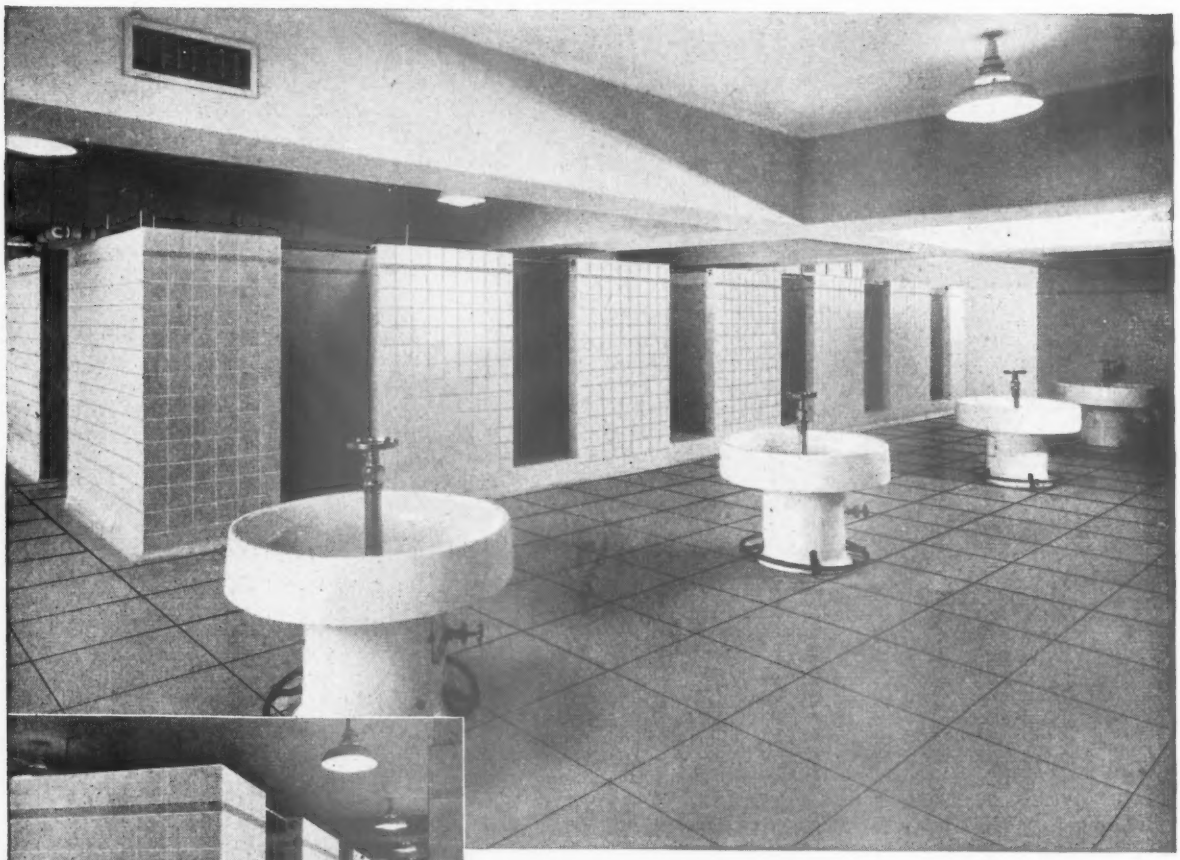
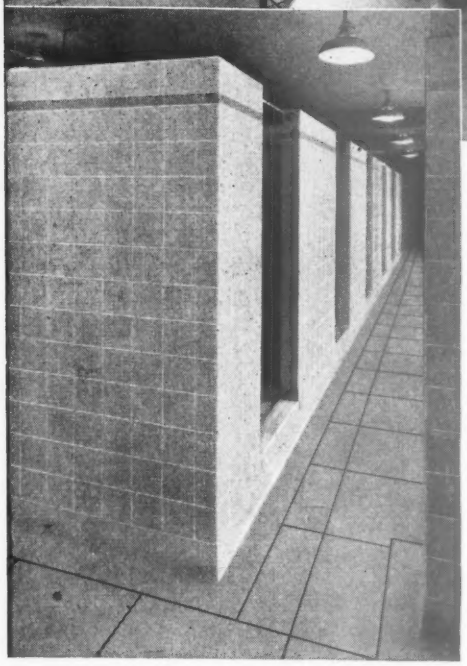


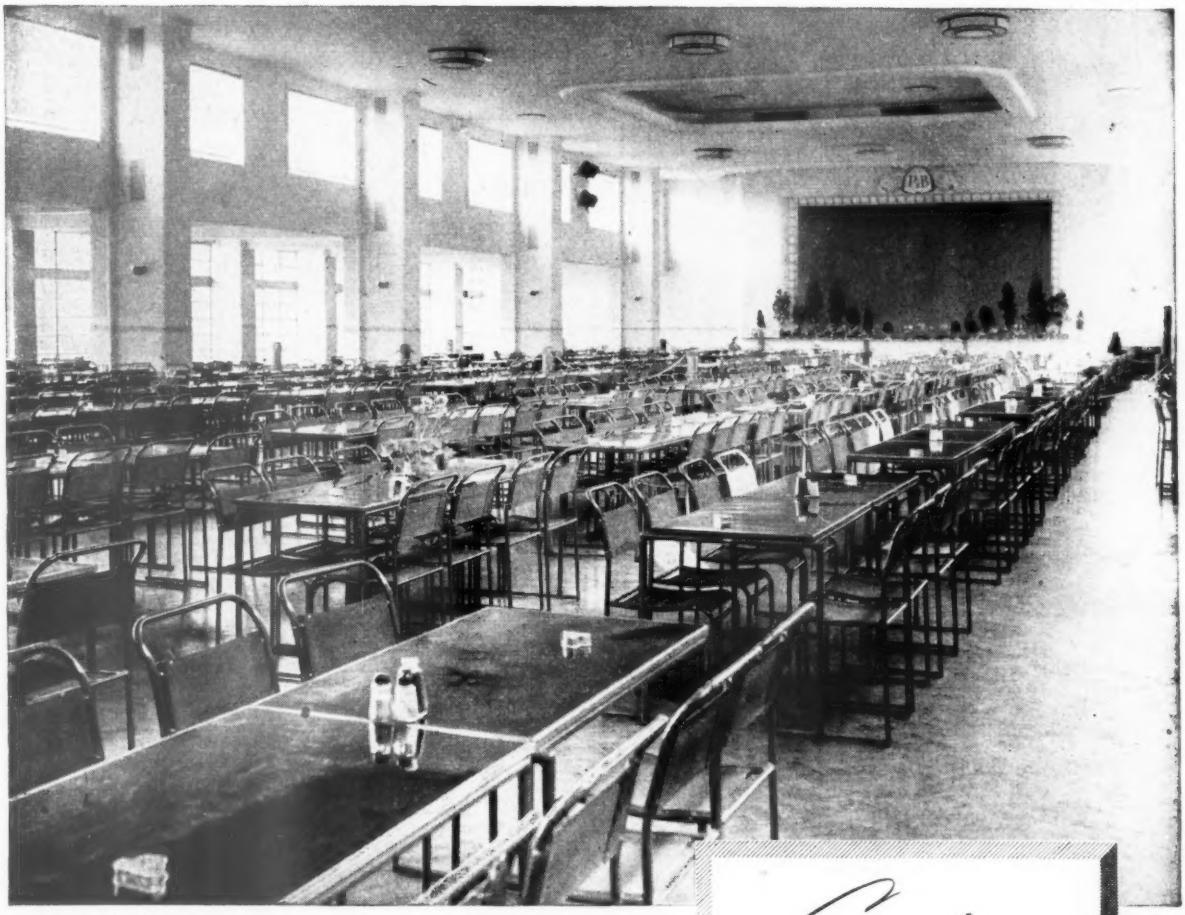


Architects: L. J. Couves & Partners,
Consulting Engineers: Merz & McLellan
Contractors: Sir Robert McAlpine & Sons

TILES and TERRAZZO

Another excellent example of the combination of tiling and terrazzo carried out by the Carter Group is shown in these photographs of the Men's Lavatories at Poole Generating Station of the British Electricity Authority (Southern Division). The tiles were made by Carter & Co. Ltd. Poole, and fixed by Carter & Co. London Ltd., the terrazzo was prepared and laid by Art Pavements & Decorations Ltd. The wall tiling is carried out in 6″ x 6″ Light Mottles with a 2″ border tile in Brown Mottles and the floor in closely jointed 12″ x 12″ precast terrazzo tiles with ebonite strips at 2 ft. intervals. In the North of England and Scotland, Commercial Marble & Tiles Ltd., Newcastle-on-Tyne, carry out work in both materials.

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



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

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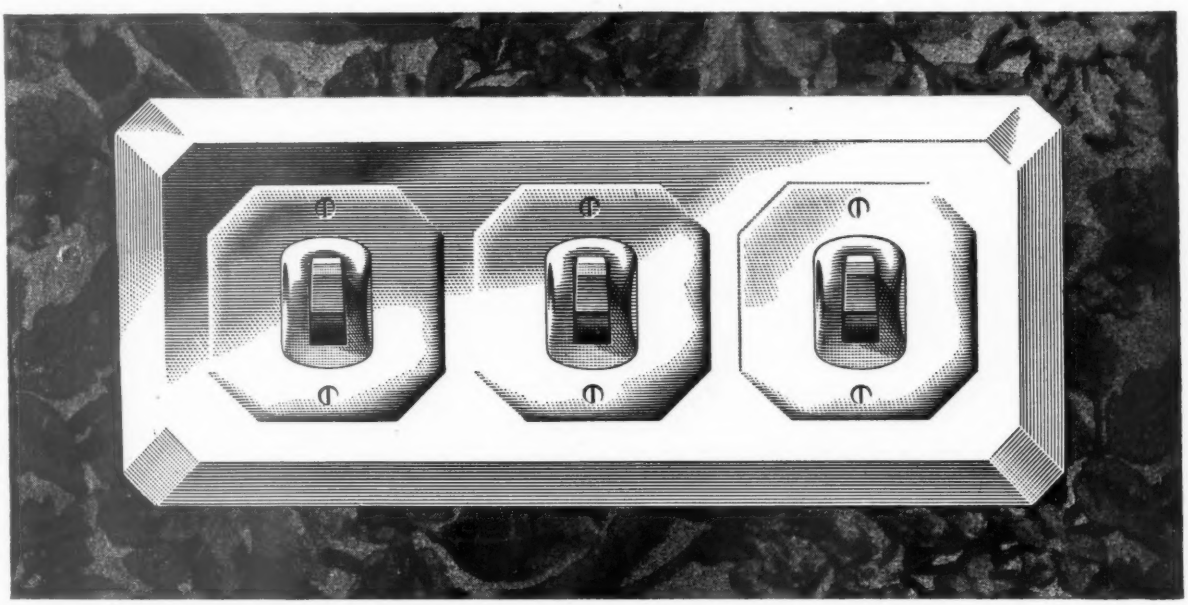

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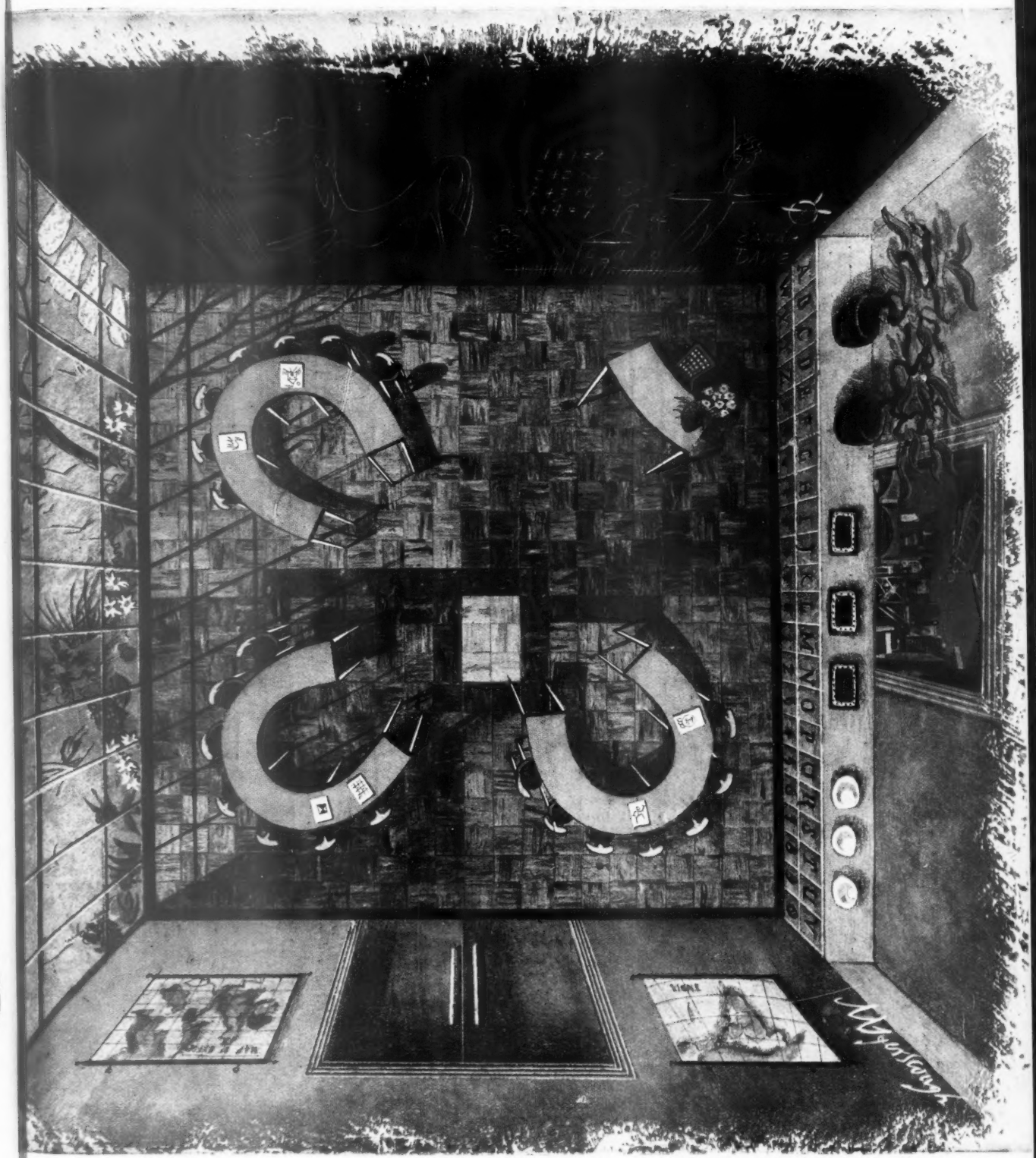

Design for a Nursery Schoolroom. From the original Collage by R. Myerscough-Walker

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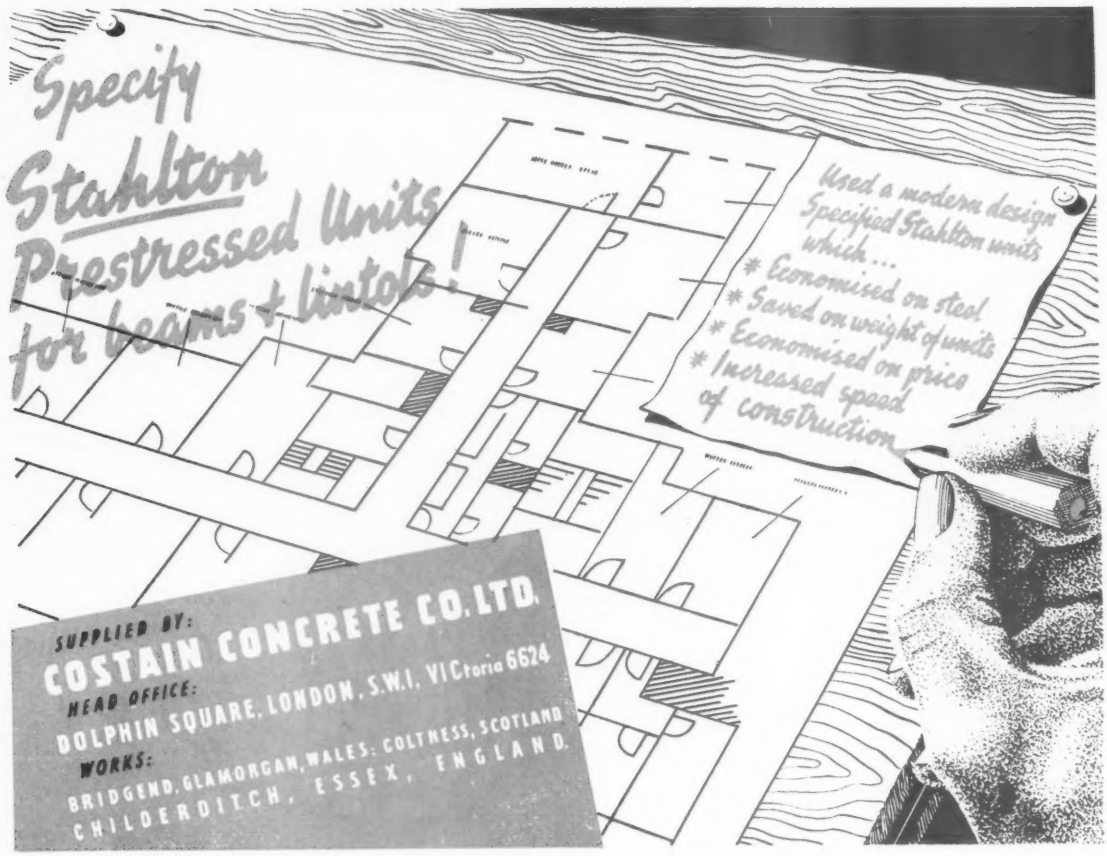

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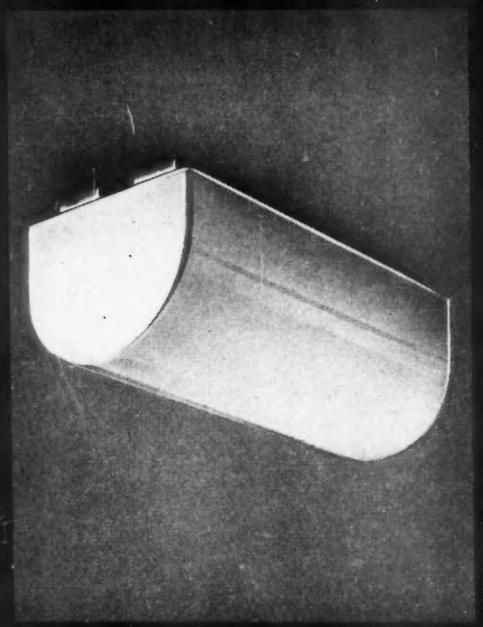
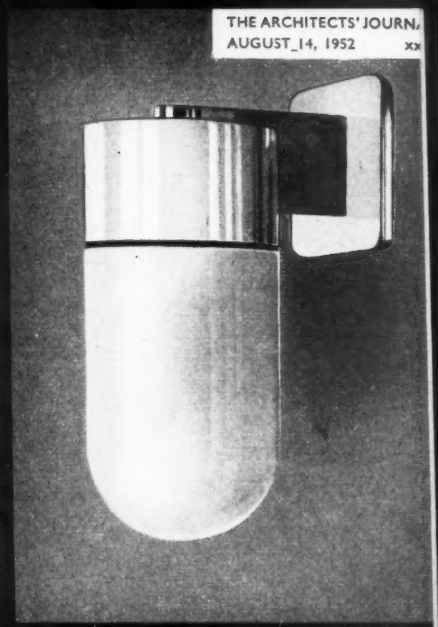


U.100 Ceiling. Trough. Finish: cadmium. Glass: white flashed opal. Lamp: up to 60 watts.



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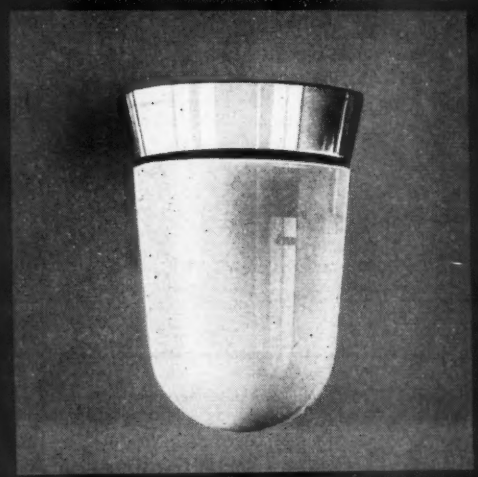
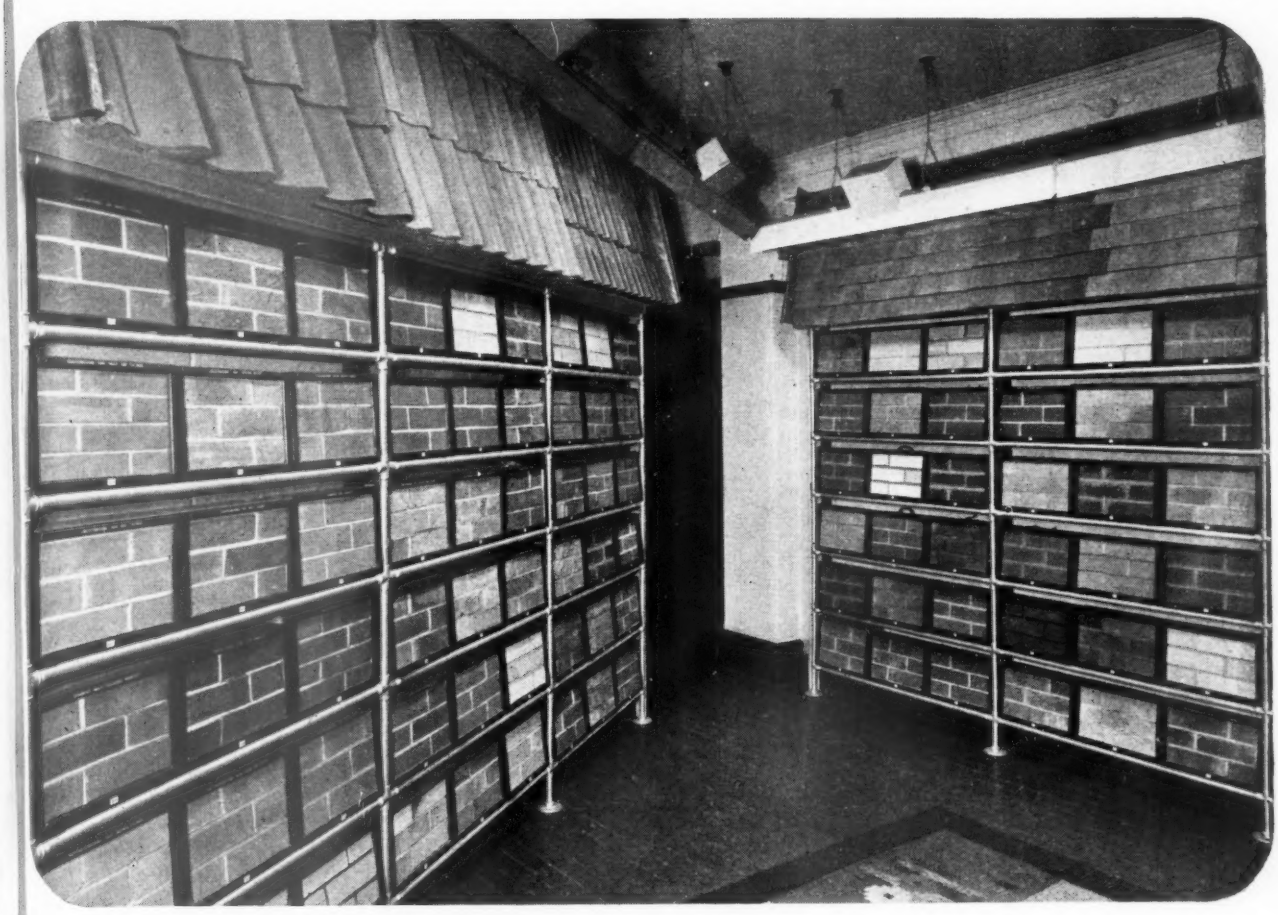
U.6 Ceiling. Small Conical. Finish: chromium or coinage bronze. Glass: white flashed opal. Lamp: up to 60 watts.



U.4 Ceiling. Bowl. Finish: chromium or coinage bronze. Glass: white flashed opal. Lamp: up to 60 watts.



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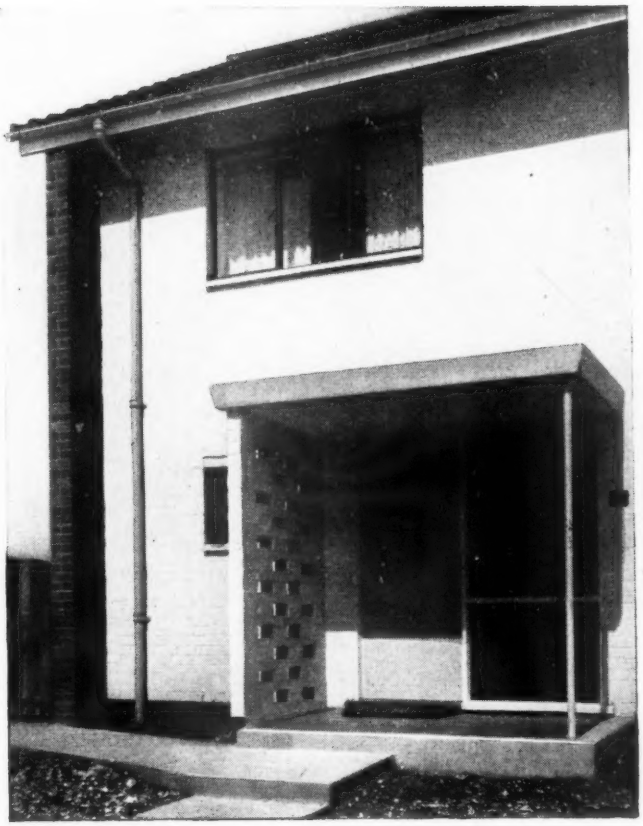
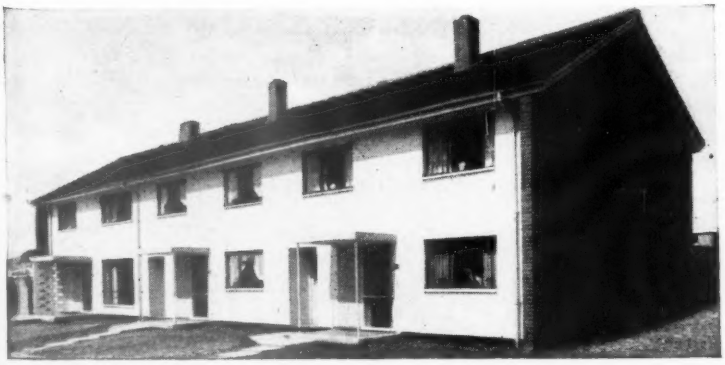


Architect: O. Carey, A.R.I.B.A. General Contractors: Tersons Ltd. Painting Contractors: Sindalls Ltd.



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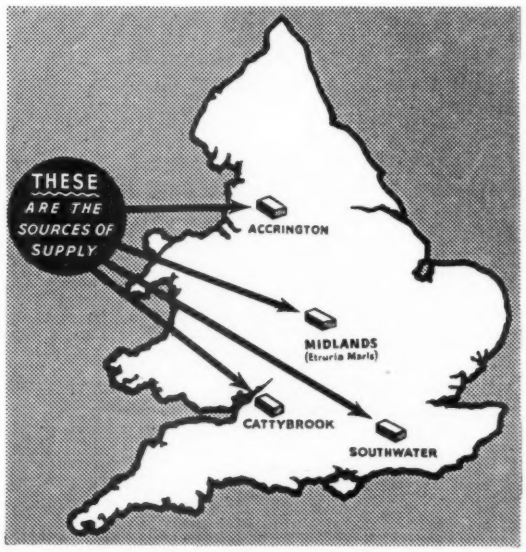

★ "Structural Recommendations for Loadbearing Walls." British Standard Code of Practice, CP 111 (1948). Published at 5s. by the British Standards Institution, 24-28, Victoria Street, London, S.W.1.

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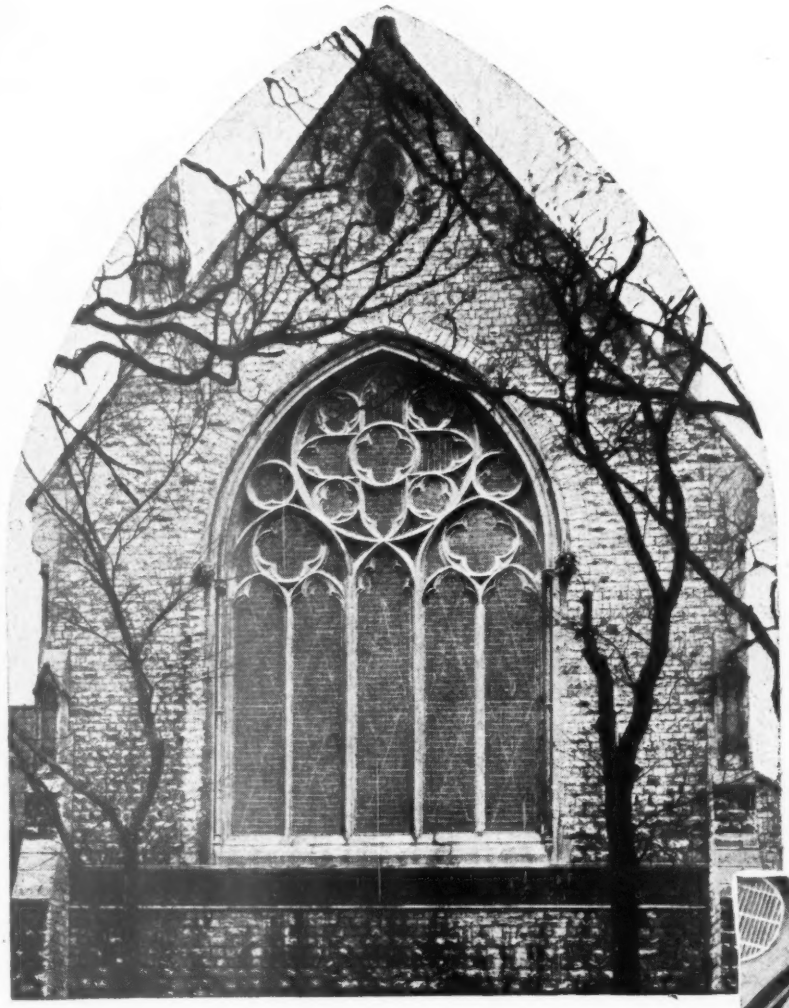

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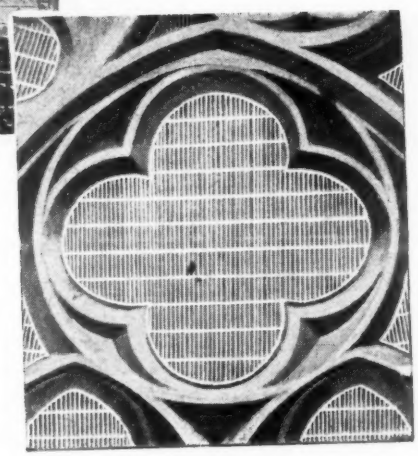

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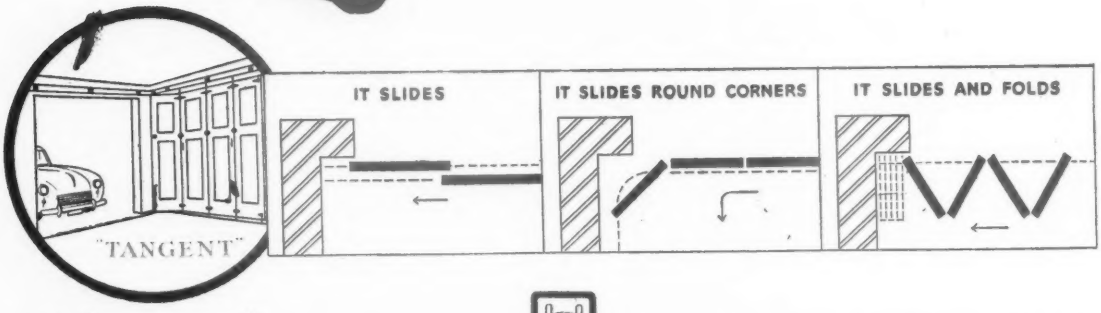

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THE ARCHITECTS' JOURNAL

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THE GROPIUS CHALLENGE

Some weeks ago the JOURNAL'S editors commented on Walter Gropius's challenge to the profession. His thesis was that if the architect is ever again to assume his historic role of master-builder—in the context of an industrialized society—then his nineteenth century ideas about being a professional gentleman have got to be scuppered. The architect, said Gropius, has to go into contracting and into industry. That, after all, is the logical development of the Bauhaus idea at a rather higher level. The lesson for this country is plain enough; the "profession" is moving towards a crisis. The JOURNAL'S editors have pointed out that the "profession" will not save itself so long as it can think only in terms of what they called a "dream norm" wherein private architects work—via the RIBA Form of Contract—for private clients, at six per cent. That "norm" is going—going the same way as the Dodo.

*

The US reaction to Gropius takes up six large glossy pages in the current issue of *The Forum*. It is lively. Of course, there is the odd diehard who says that "we"—the architects—"have nothing to be ashamed of." Gropius never said we had—it was the future, not the past, he was concerned with. For the rest there is only an enthusiastic response—qualified by the reminder that FLW said it all fifty years ago. That is nearly true, but then FLW said it fifty years too soon; Gropius may have said it just in time, both for the US and the UK.

*

There are three facts that have got to be faced:—(1) The complex modern building *can* only be dealt with by a team. (2) That team has got to be led by a master-builder. (3) The architect—if architecture is to exist—must qualify for that position. It is all quite simple, but not always entirely palatable.

Q E D

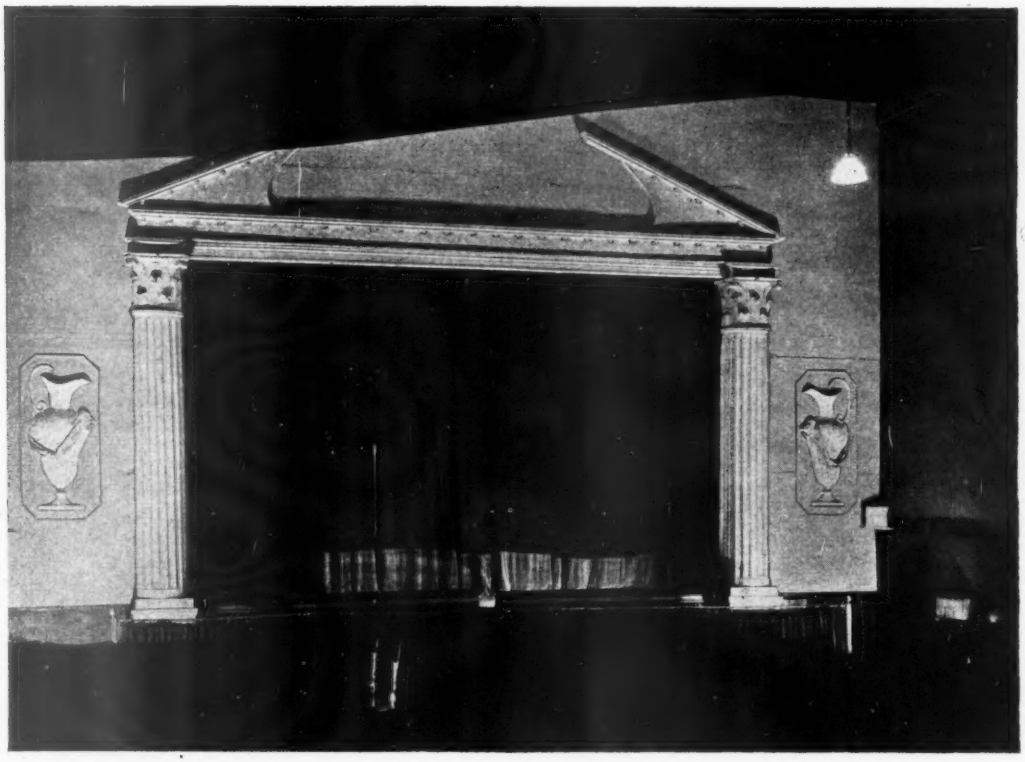
Stephen Leacock once reminded us of the versatility and diligence of those three characters named A, B and C who are constantly emptying cisterns, catching trains that pass each other at Manchester or running in sack-races from X to Y. This week A has telephoned ASTRAGAL to explain that he is rather envious of B. Apparently they are now both architectural students; but whereas A finished his five-year course last year and has had to put in twelve months' practical work before sitting for his RIBA associateship exam next November, B—who has only just finished his course—is also entitled to take the exam this year.

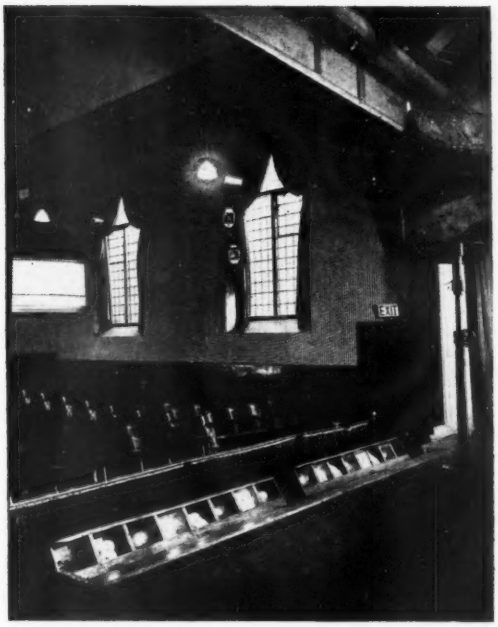
*

You may find nothing surprising in that. After all, B is always emptying his cistern faster than A, and A is never heard to complain; he knows he is just no good at emptying cisterns. This time, however, A thinks he has real cause for complaint. Because the RIBA has recently postponed its ruling about the compulsory twelve-months' practice, A finds that, although he has worked for fifty-two weeks longer than B, he has got no further. All of which is doubtless disappointing in these days of "free-for-all" fights for jobs. But however unfortunate A's plight may be, ASTRAGAL is impressed by the silence of C, who has too much imagination and too great a sense of vocation to bother about the other fellow getting better chances than himself. C may be hopeless when it comes to emptying a cistern, but he will probably make a good architect, however many regulations are made and repealed around him.

PAUSE FOR EDUCATION

In this month's *Architectural Review* J. M. Richards is once more the David slinging at architectural Goliaths—in this instance the recent buildings of Oxford and Cambridge Universities. "The worst way of paying respect to ancient monuments," he writes, "is by surrounding them by watered-down versions of themselves or with structures bearing caricatures of the various systems of ornament proper to another age and culture." Apart from two Cambridge buildings (University Health Centre at Fenner's Sports Ground, by Macgregor and Roberts,





This early Victorian theatre at Henley-on-Thames, which had its "warm" interior destroyed in 1935, has recently been restored. The new proscenium arch (top) is the work of John Piper. The false panels which had been placed over the "Methodist church" windows have been removed (right) and the auditorium has been decorated in traditional dark red and gold. The exterior (above) is unfortunately spoiled by crude lettering. *See also page 184.*

and engineering laboratories in Fen Causeway, by Easton and Robertson—"genuinely contemporary in spirit . . . though some reservations must be made"), he condemns the twenty or so post-war buildings under four categories—full-dress period style, whimsical-eclectic, modified Georgian and nondescript. They richly deserve castigation, and it is only to be regretted that Mr. Richards confined himself merely to comments on the visual appearance of the buildings—a course which is always open to the charge of being superficial—in that architecture today is more often judged from the standpoint of both appearance and function in synthesis.

*

No doubt one of the reasons Mr. Richards did not pursue such a course was because of the controversial subject of the laws of libel. Whereas the appearance of a building can be freely commented on, it *can* be unwise to suggest that an architect has been inefficient. Which is one of the chief reasons, of course, why you go on seeing atrocious work going up and no one says anything about it all.

TOWN PLANNING AGAIN

The formidably erudite (just read her footnotes) Dr. Lang, who also writes in this month's *Review*, in a really fascinating article searches the past for a theory of town planning as a visual art. Shatteringly enough there never has been one, or so it appears. Imagery, magic, social reform, or reasons of defence, may have shaped our towns, but art never. "There do exist, nevertheless," write the editors, "many examples of actual townscape for which we have to thank accident or

Pleasing Revival

Pleasing decay? Not exactly, though the inventor of that expression, John Piper, is very much associated with the subject of this photograph. He is, in fact, one of the people whose work may launch the early-Victorian Kenton Theatre (left of picture) at Henley-on-Thames on its most pleasing decade. A short season of ballet, presented by John Cranko, of Sadlers Wells (with decor by John Piper and Osbert Lancaster) has recently come to an end in the theatre. It was so popular that the promoters are hoping to make Henley's theatre a Glyndebourne-in-miniature. But whatever success they may have with their productions, they have already been very successful with their "restoration" of the theatre. A new proscenium has been designed, built and painted by Mr. Piper (see page 183) and something of the Victorian cosiness that the theatre had before 1935, when a misguided management "did it up," has been recaptured. A venture of this kind must, of course, attract the fast-car-loads of people who create cultural cults. But it *can* be a means of spreading the word about good design. Other "reps." please copy.

the intuition of their creators." Which statement may make us a little more sympathetic towards the designers of those towns illustrated elsewhere in this issue of the JOURNAL.

*

It is often suggested that in this self-conscious age the intuitive design sense has been lost. It would be interesting to know how much intuitive design has been crippled by enlightened laws of building and town-planning introduced in a social-reform conscious age. For instance, two examples: the rigid rule that house fronts must always be a minimum of seventy feet apart, and the limit to the number of risers in a stair between landings. The latter is a regulation which surely makes Wren's wonderful stair in St. Paul's quite without the law. There must be many more regulations which limit the architect's scope and, for worthy reasons, inhibit good design.

RETAIL SOCIAL

ASTRAGAL'S eye, roving through the Westwood brothers' new shops book,* was arrested by the sentence: "shopping must not be regarded merely as a necessity: for the hard-working housewife it has become one of the main social occasions." Alas, only too true, but sad to find in a chapter devoted to the self-service shop, which ASTRAGAL hoped might save him time when he is sent out with the ration books. The trouble is, of course, that most men want to see priced windows, and then be in and out like lightning, and not spend time chatting and expecting to be reminded of what they want. Why, incidentally, does no shop ever put up a list of what isn't, temporarily, in stock? Too many of us have stood in time-wasting queues to find out that "it won't be in till to-morrow."

*

Dear, dear; all these prejudices and nothing much about the book. But we don't need to be told that the Westwood's know their job (Austin Reed's and many others), or that they can write (their previous shop book). This book is good honest feet-on-the-ground stuff and is well stocked with pictures and plans. The cost figures are helpful too, but, as the authors agree, they must be used, like all figures nowadays, with extreme caution.

ASTRAGAL

* *The Modern Shop.* By Bryan and Norman Westwood. (Architectural Press, 30s.)

POINTS FROM THIS ISSUE

The Editors

HIGHER SALARIES NEEDED

"TOO many local authorities," write the Guest Editors on page 188 of this issue, "try to get cheap architects and succeed in getting bad architecture expensively." This sentence concludes a persuasive argument that the salary for architects in the post of group leader should be between £1,500 and £2,000 a year. That, even at the present cost of living, is not chicken feed. It is, perhaps, the minimum remuneration which an intelligent architect in charge of a small design team of from, say, four to ten architects and draughtsmen should receive in return for the heavy responsibilities he undertakes. He would almost certainly get more if he were a partner in a private firm doing the same amount of building work. But then, the public architect has certain other advantages, in the form of a pension and so on, to compensate for this lower figure. And, indeed, the local authority would hardly be adequately safeguarding public money if the services of their own architects cost consistently more than those of private architects.

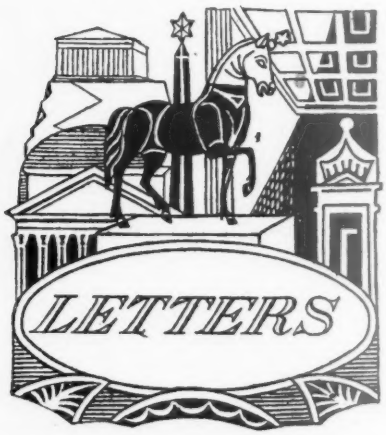
There is no doubt that the present salaries of official architects are too low to attract the calibre of men needed in the very responsible middle range of posts—those posts, in fact, where the bulk of the work is done; and, it must be admitted, reluctantly, only too often done badly. The chief architects, who in experience and knowledge are probably the best fitted for the task, are too immersed in administrative work to do the actual designing, so the work frequently falls on the shoulders of the immature or the incompetent. The proposal put forward by the Guest Editors in this week's article for the reorganization of offices on group-working lines will not be adequate, in itself, unless accompanied by an adjustment in the salary scales so as to provide a rich inducement to outstanding designers in the form of key architectural posts at executive level.

FLATS IN THE NEW TOWNS

Many people must have looked in vain for guidance from the New Towns on the problem of providing a balance between houses and flats. Policy on this matter differs from town to town. Readers will see this for themselves in the reports

on Stevenage and Harlow by D. Rigby Childs (pages 190-202). It was originally intended that 30 per cent. of the homes built in Harlow's first neighbourhood should be flats, whereas in Stevenage the percentage favoured has been between 3 per cent. and 5 per cent.—a figure that is now to be slightly increased.

There are several issues—æsthetic and financial—involved in the *Flats v. Houses* controversy. We do not intend to discuss them here. Suffice it to say that decisions about the use of flats in New Towns seem generally to have been half-hearted, arbitrary and dictated by too narrow a view of costs. We suggest that investigation should be made of the possibility of building low-cost, four-storey blocks, containing one maisonette group over another—an arrangement which should be satisfactory for families, as well as for other tenants.



"*Mendicant*"
H. F. Clark, A.I.L.A.
J. Rigg

Overcrowding in the Profession

SIR,—Coming soon after a remarkably one-sided correspondence about salaries, P. G. Hemingway's letter (A.J., July 31) draws attention to the question of over-crowding in the profession—from which springs both the very real grievance on the score of remuneration and justifiable concern about prospects of employment.

The present state of affairs, with hundreds of people qualifying every year, benefits employers and the RIBA's subscription lists, and no one else. Employers, in particular, are very content with matters as they now stand—and justifiably so, with a prospect of dirt-cheap labour for years ahead.

From the assistants' point of view it is very difficult to deal with the question of over-crowding for the following reasons:—

(1) Nowhere have assistants achieved such representation as will give them an effective voice in matters which vitally affect them—a queer situation these days—especially considering that it is mainly the money contributed by assistants which keep the professional bodies going. To quote an Irish colleague: "It is a case of the toad maintaining the harrow."

(2) Architects in private practice naturally oppose any move to curtail the supply of cheap labour.

(3) Architects in control of public departments gain personal "kudos" for running an efficient department on the cheap. In view of the niggardly rates of pay awarded by the National Joint Council there should be no difficulty about this.

(4) For the benefit of those who maintain that the proper method of airing grievances is *via* one's local association I would say that the majority of assistants are very loathe to adopt this course. There is a firm and widespread belief that employer-members take note of such "rebels" and that harm to the latters' careers and prospects is likely to be the result.

Two or three years ago it did seem that things were improving, as, owing to demand out-pacing supply, employers were beginning to offer more reasonable salaries to experienced men, but out-pourings from the RIBA's recognised schools soon ham-strung that prospect. There is no doubt that these schools are the villains of the piece, and they should be closed to new enrolments for at least five years as a first step on the road to reasonable pay for the assistant architect. With regard to the latter point, a man with ten years' experience (including training) should receive a minimum salary of £1,040 per annum, and those employers who cannot, or will not, pay this figure should aspire to less qualified assistance.

Too long has the profession been organised for employers by employers, and it is high time that the employed architect achieved at least that security in his job which comes from controlled entry into a profession plus rates of pay in proportion to both the time and expense devoted to attaining registration and the increasingly high standard of professional competence which will be demanded by employers as the numbers of unemployed assistants increase.

MENDICANT.

Landscape Architecture : Educational Facilities

SIR,—The letter in the AJ, July 31, from Howard Frobisher on the subject of training in landscape architecture is so inaccurate and misleading that it might be as well to have the facts stated.

There is not "a three-year course for full-time students at Brixton," either in landscape architecture or anything else. The School of Building has a five-year course in architecture and a two-year part-time course in town planning. There is not "a Chair of Landscape Architecture . . . at Durham." The University of Durham has a one-year, post-graduate course in landscape architecture leading to a diploma. The position of external students living in the provinces is admittedly difficult. There are, as yet, no comprehensive correspondence courses in landscape architecture, though Mr. Frobisher might have benefited from the non-examinable course in garden design published by the Horticultural Correspondence College at Dawlish. This course covers ornamental horticulture, the layout of gardens and ornamental grounds, garden construction and garden design. In London it is possible for students to undertake the two-year evening lecture course at University College, which leads to a certificate. For full-time students the only course available is still the three-year diploma course in landscape at Reading University. Reading University has also recently instituted a one-year, post-diploma course for those already holding a diploma or a certificate in landscape architecture who may wish to undertake research.

Apart from courses of lectures in landscape at various schools of architecture and town planning, these are the only available educational facilities. The position is not satisfactory, but is not, I think, quite so infantile as your correspondent imagines.

H. F. CLARK.

Hampstead.

French With Tears

SIR,—Judging from current planning literature from the Old Country, it would appear that Le Corbusier has come something of a cropper with his Marseilles flats. The twelve-to-the-acre men have risen in a solid phalanx to heap contumely on the scintillating head of our Gallic colleague. This is in the nature of a tragedy; in fact, it's just not cricket, and will be quickly decried by those who have had the pleasure of seeing a Frenchman of the Jeanneret school cover the lecture hall floor with piles of planning cartoons á la Corbusier. What a shower of creative inspiration, and how welcome after the freezing blast of Nordic austerity.

Le Corbusier has proved himself human by making an alleged *faux pas*, which, of course, could never happen to a twelve-to-the-acre man. And yet this giant, along with Gropius, has started a renaissance in architecture and planning by wedding art to industry. He who has not been thrilled by his lucid thumb nail sketches is indeed on the road back to Ruskin. His genius lies in his ability to urge us out of our suburban ruts towards new solutions.

The young architectural or planning Candide, on the brink of taking a continental planning holiday, must therefore beware those Pangloss types who would have us believe that everything is for the best in our satellite worlds.

Remembering that M. Jeanneret is human, our Candide must first of all beard him in his own den; then proceed to Marseilles to the scene of the alleged crime; get a week's digs in the alleged habitation with a Frenchman, and find out what makes the ensemble tick or tremble. He should then forget planning and the stern admonitions of Eton's illustrious head, and proceed to have a carefree time.

Thus refreshed and back among Nordic necessity, he may even lighten the burden of austerity for those around him, and may also convince the Responsible Authorities and even the Bye-law Moguls, that the next lot of council houses could do without the usual front trimming of pigwire fences.

At least he will learn that the best of all possible worlds must have variety and inspiration if it is to thrive.

J. RIGG.

Pretoria.

In the JOURNAL *of June 26 there appeared a description which the Guest Editors had obtained of group working in a county architect's department. This was a practical example of a method of organizing the architect's office which had been discussed with the Guest Editors in an earlier article (see the* JOURNAL *of May 15) by two young architects who had worked as members of groups. In the following article the Guest Editors give their own carefully considered views on the organization of the large office and describe the role of the chief architect and the group architect. Guest Editors, left to right, above: Stirrat Johnson-Marshall, Chief Architect to the MOE; Robert Matthew, Architect to the LCC; Robert Gardner-Medwin, Chief Architect and Planning Officer to the Department of Health for Scotland; and Donald Gibson, City Architect and Planning Officer of Coventry.*

The Guest Editors

ORGANIZING THE LARGE OFFICE: THE CHIEF ARCHITECT'S VIEW

WE did not want to confine our ideas about running a large office to those of the chief, so we invited two young architects to give their views. They came out strongly in favour of a group system of organization, and in our discussions with them there emerged a fairly clear picture of the type of group which they had in mind. A number of factors essential to its successful working were also brought out. Most important of these was the role of the group leader, who they considered should have a considerable amount of authority, both in technical issues and in regard to human relations, including staffing. In addition the status, pay, and working conditions of the architect members of the groups should, they felt, be better than those which applied today to the average qualified "architectural assistant."

THE CHIEF ARCHITECT

The last article, which described the group method as it was working out in practice in one particular office reinforced the case for this improvement. In principle we agree with it, and so we now propose to discuss the ways in which it alters the relative responsibilities of some of the key architectural posts in an office.

Perhaps we ought to start off by looking at the beam in our own eye and say first what we think should be the role and qualities one might expect of the chief architect in the large office. But before doing so we would like to re-emphasize the point which we made in previous articles, that the large public architectural office is, with one or two exceptions, a comparatively new phenomenon, and is still in a state of evolution.

The role of the chief architect, then, as we see it, must be primarily that of co-ordinator and policy maker, but he must also remain a creative architect. He is the man to whom the clients (whether they be Council, Board, Executive or Corporation) go for advice on broad policy matters, but except in respect of one or two key jobs, not for detailed items. **On no account should he look on himself as the one and only architect, who employs senior and junior "architectural assistants." It is essential that both he and his clients should regard the qualified architect as a responsible person, and not as an assistant.** (Incidentally, we suggest that the RIBA Public Relations Committee could materially assist in this aim.)

Most important is the attitude of the chief towards his group leaders whom he should regard very much as partners in a private office. In addition to his main role as policy maker and director, his only means of remaining an architect is to associate himself in absolute detail with at least one of the projects of his office. In order to do this he must be at least a part-time member of a group.

HIS RELATIONSHIP WITH GROUP LEADERS

Our guests regarded as a key point the relations of the chief architect with the group leaders. In order that he may do his job properly he must be available for consultation at frequent intervals, and he must give sufficient time to be familiar with the work of each qualified architect, so as to be able to evaluate the contribution to the office as a whole. This, of course, raises the question as to how many he can effectively supervise, and hence the optimum size of the office. **Although this varies with the type of work and the kind of office, two of our members engaged on widely different work have found that they can manage between thirty and forty qualified architects in this way and that it would be difficult to deal with greater numbers. Assuming this to be true, we still think that a good office of greater size is possible, provided that some of the important responsibilities now vested in the chief are devolved upon one or more very senior architects, who might be called a divisional architect, and who would control a number of groups.**

It is thus clear that in the case of a very large office of a hundred or more qualified architects perhaps three of these posts would be desirable. In a central authority office mainly

engaged on advice and research one would expect a higher proportion of divisional architects to group leaders.

HIS DESIRABLE QUALITIES

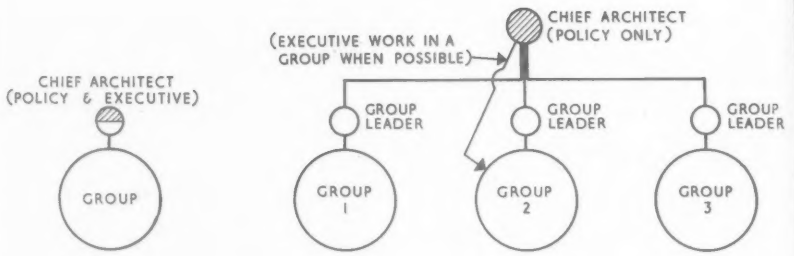
Setting out the role of a good chief architect is comparatively simple compared with trying to describe his desirable qualities. Good leaders are rare enough in any sphere of activity, and architecture is a more than ordinarily difficult profession from which to produce them. The very sensitiveness which is such a necessary part of the designer's skill sometimes tends to militate against his ability to organize efficiently, and, of course, this, in the past, has been made an excuse for attempting to reduce the status of the architect. He must, then, have the vital quality of leadership, and not of autocratic leadership, but as co-ordinator of a team. He must also be an able designer, and up to date in his knowledge of the latest advances and techniques in building and planning. In addition, he needs to have diplomacy and tact in good measure, a keen critical faculty, to be a good judge of character, and to have insight for choosing the right man for the job. So, perhaps, one can continue to enumerate desirable qualities until one has the picture of a philosopher rather than an architect. But the real test will always be whether or not he attracts the best architects to work with him.

To summarize, then, we see the role of the chief architect in an office of over thirty architects as being responsible for the policy of the whole office, but no longer responsible for the implementation of every bit of work carried out by the office (this duty having been delegated to group leaders, and in the case of the very large office, to divisional architects and group leaders). **The chief architect will now be free to spend some substantial part of his time in identifying himself so closely with the work of one of the groups in the office that he is able to remain an architect in the whole sense of the word. Such realistic day-to-day experience is, we feel, a prime requisite to anyone concerned with the formulation of a live architectural policy—and this goes for central, as well as local, government offices.**

This proposal must be set against the present tendency in the large office to promote senior architects away from the drawing board so that after a period of isolation from it they have to rely for their appreciation of new architectural problems on secondhand experience.

THE GROUP LEADER

Having said something about the chief architect, and all this naturally includes the divisional architect, or deputy if there is one, we must now turn to the role of the leaders of the groups into which we think a large office should be subdivided. Our first suggestion is that their status and responsibility should, as we have already said, be similar in many respects (except those which come under the heading of policy) to those of a junior partner in a private office. That is, theirs should be the responsibility for the design and construction of all buildings erected under their direction. Their staff duties should include all the day-to-day problems associated with running a group, but major ones, such as appointments or dismissals, are the prime responsibility of the chief, who, in dealing with them, will, of course, consult closely with the group leaders.



THE SMALL OFFICE THE MEDIUM SIZED OFFICE (30-40 ARCHITECTS)

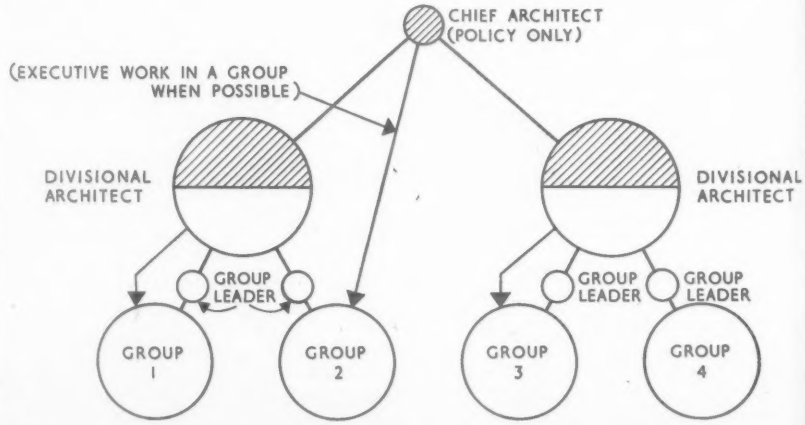
This diagram, together with the one below, indicates graphically the architectural organization proposed by the Guest Editors in the accompanying article. It will be seen that the vital key role of the Group Leader is common to all sizes of office, from small to very large.

HIS SALARY

It follows that we are here putting forward what amounts to a new type of architectural job, one which has been made necessary by the changing nature of the profession as a whole. The new job carries with it exacting responsibilities, and should have a generally recognized status, both morally and financially. **Our conception of the responsibilities of a group leader is that they should be much nearer than at present to the responsibilities of his immediate chief. We believe that the salary of the group leader should be at least 75 per cent. of his chief's ; and even at the present level of chief architects' salaries this would mean that group leaders' salaries would range from £1,500 to £2,000. A reasonable salary for this position which we described in an earlier article as "nearly at the top of the architectural tree."**

It may be said that a department run on the lines of these responsibly led groups would cost more in salaries. It would certainly alter the balance of remuneration. But in our experience the total salary bill would probably be less because by bringing higher skill in closer touch with design, work would be done much more surely, and, therefore, more rapidly. In any case, the reduction in administrative time would save considerable overheads, and a far more important financial gain would result on the buildings themselves. All the evidence goes to show that the higher the skill of the designer the better value for money of the finished article. Too many local authorities and clients try to get cheap architects and succeed in getting bad architecture expensively.

One of the most important prerequisites for the success of the group system, by the way, is that the chief architect and his group leaders should have a broadly similar approach to the



THE LARGE OFFICE (50+ ARCHITECTS)

job. This is assured if the chief is at all times readily accessible to them. It is important to remember that the raising of status of the group leaders in no way implies any diminution in the status of the chief, and is only the logical result of trying to make a more reasonable distribution of responsibilities.

THE SIZE OF THE GROUP

As we are dealing with general principles, and not with their application, we do not propose to set down here what we think is the maximum number of qualified architects which a group leader should have working with him. Obviously, much depends on the type of building or building programme, and in certain cases he might be called upon to co-ordinate the contributions of several different kinds of experts, as in hospital building. As a general guide, however, we agree with the views of our guests, who thought that about ten was nearing the upper limit.

QUALITIES REQUIRED FOR GROUP WORKING

Let us now try to set out some of the qualities which we expect to find in the average qualified architect member of a group. We will assume that he will enter straight into a group on leaving a school of architecture. He will serve an initial stage, to correspond at least to the practical experience period before associateship is granted. From then on, if he is good enough, he is a full member of a group, and his progress will be much as described in the article on the practical working of a group (see the JOURNAL for June 26, p. 785), until he himself becomes a group leader. In addition to his ability a great deal depends on his training, both in the amount of his technical knowledge and in the way he has learned it. You will remember that our young architect guests described the confusion that has been created in student minds by the use of the description of "group working" to a tuitional system that is quite different from that required in the office. It is important that students should have a good working idea of what the kind of group working we have in mind actually means, and this could best be imparted by doing practical experience in an office where it is in operation. As for the nature of the school training, a universal grumble today is that it is much too theoretical, and we would like to return to this problem in a later article.

Working in a group also demands a new approach from architects. Nearly all the architectural problems facing us are such that they cannot be solved by the solitary artistic genius: the job is one for collaboration, for the synthesis of many brains and imaginations. One might say that architecture today is more than one man deep, and that it requires people of high calibre to meet this challenge.

MOHLG

Housing Progress

The number of permanent houses and flats completed in Great Britain during June was 20,466, compared with 17,203 in June, 1951. This brings the total for the first six months of 1952 to 110,964 houses and flats, compared with 92,086 for the same period of 1951, and the total number of homes completed under the post-war programme to 1,284,459 (1,127,313 permanent and 157,146 temporary).

Other figures from the Housing Returns* show that of the houses and flats completed in June, only about 13 per cent. were built for private builders, and less than one per cent. for housing associations.

The number of houses and flats under construction on June 30 was 251,705, which is 18 per cent. more than were under construction at the end of June, 1951.

Housing in the New Towns

Houses and flats completed in New Towns in England and Wales by June 30 numbered 5,571. A further 6,700 were under construction at that date.

In the lead was Hemel Hempstead, with 1,093 completed and 1,243 under construction. Harlow came next, with 1,084 completed and 980 under construction. Only one New Town—Corby—had no houses or flats completed, but over 500 were under construction there.

* *Housing Return for England and Wales*, June 30, 1952 (HMSO. 1s. 3d.). *Housing Return for Scotland*, June 30, 1952 (HMSO. 9d.).

Housing in London

By June 30, 1952, the LCC had completed 54,318 houses—43,540 new permanent houses, 2,913 rebuilt war-destroyed houses and 7,865 temporary houses. By the same date the Metropolitan Boroughs had completed 33,597 houses—21,602 new permanent houses, 4,635 rebuilt war-destroyed houses and 7,360 temporary houses. Thus the LCC and Metropolitan Boroughs combined have built since the end of the war 87,915 houses (permanent and temporary). This represents one house to every 39 persons in the LCC and Metropolitan Borough areas.

"Use Imagination," says Macmillan

Commenting on the latest housing progress figures (see above) last week, Harold Macmillan, Minister of Housing and Local Government, said that, as a result of building more People's Houses, "we are getting more houses out of the same amount of materials. In the tenders approved month by month the proportion of houses of this type has increased rapidly. In January it covered 24 per cent.; in March it was 45 per cent.; in June it was 67 per cent. But," Mr. Macmillan added, "I am not trying to prescribe a single standardized house: I want architects to exercise their imagination and resource."

The Minister gave some figures for home production of materials: the output of bricks, cement and tiles had gone up by roughly 10 per cent. compared with last year, but we still had to economize in the use of timber, for which "we are almost entirely dependent on imports from abroad." Mr. Macmillan expressed confidence that architects and designers ("the back-room boys of housing") would find new and ingenious ways of saving still more timber.

HOUSING PROGRAMME

Hugh Gaitskell's Comments

Hugh Gaitskell, speaking at Bletchley last Saturday, claimed that nearly all the houses now being completed were started under the Labour Government. Admitting that more new houses are now being started he said, "This is hardly surprising, seeing that they are now building a smaller and inferior house." Another reason, he added, was that labour and materials had been switched from industrial and school building, which had fallen sharply.

It seemed unlikely, said Mr. Gaitskell, that the new defence programme would involve a cut in the building programme for the current year, but there was a "smoke screen" over the prospects for future years.

ABBEY THEATRE

Architects Appointed for Re-building

The directors of the Abbey Theatre, Dublin, have appointed Michael Scott to prepare plans of a new theatre to be built on the site of the original theatre, destroyed by fire in July, 1951. Pierre Sonrel, widely recognized as the foremost French theatrical architect, is to be associated with Mr. Scott as consultant.

The auditorium of the new theatre is to be slightly larger than the one it will replace; it will seat about 700 people. There will be a well-equipped stage, which will make possible the production of many plays which could not be performed on the old Abbey stage. Within the same building there will also be a smaller theatre designed to seat about 200. This will be used for the production of experimental plays and plays in the Irish language.

Mr. Scott had, before the Abbey Theatre was destroyed, already prepared outline schemes for its reconstruction; he has also done work on the Gate Theatre and the Theatre Royal, Dublin, and he has acted on the stage of the Abbey Theatre.

M. Sonrel is technical adviser to the Arts Section of the French Ministry of Education; deputy chief architect of the Ministry of Reconstruction and Town Planning and acted as consultant when alterations were carried out at the Old Vic.

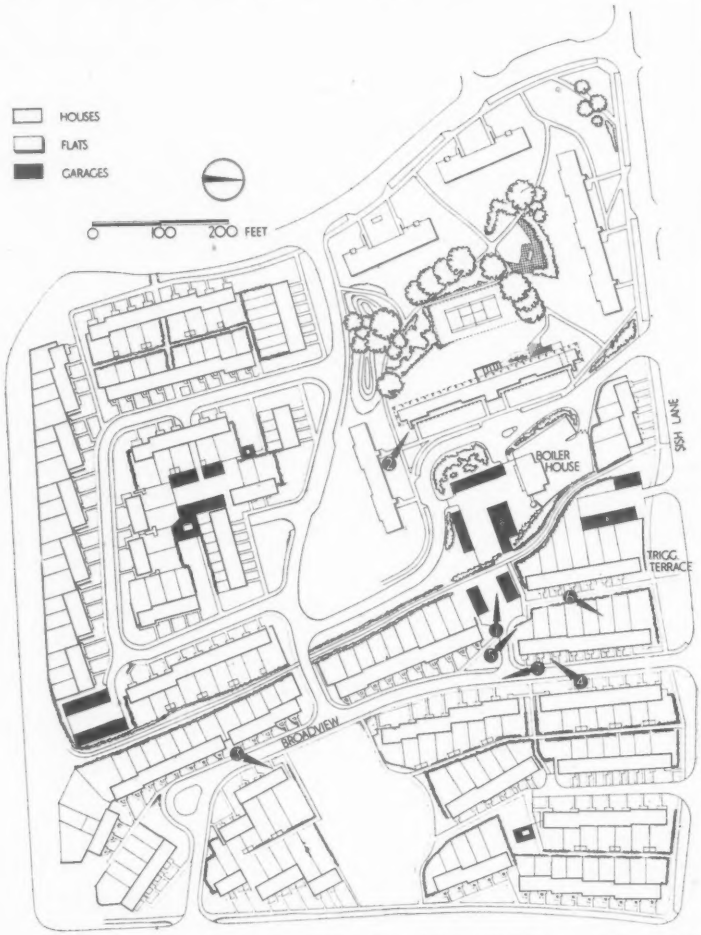
HOUSING LAYOUT IN LONDON'S NEW TOWNS

The series of reports on London's New Towns which began in the issue of June 26 are continued here by D. Rigby Childs, with reports of Stevenage and Harlow, giving particular attention to the relationship between houses and flats. The points from which photographs were taken are indicated on the site plans.

3 : STEVENAGE

By D. Rigby Childs

The part of New Stevenage which I have selected for most of my illustrations is part of Stony Hall neighbourhood, known as Stony Hall (East). This is the site where building first began; it is an area of particular interest, for it contains a successful scheme of terrace housing and the well-known Sish Lane flats group. From the beginning the chief architect planner for Stevenage was Clifford Holliday; he resigned a short time ago, his place being taken by Donald Reay, formerly chief architect to East Kilbride Development Corporation.



Site plan of Stony Hall East neighbourhood

View 1

STEVENAGE : SISH LANE FLATS

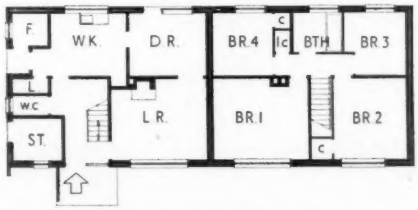
View 1:—*Before its own Architect-Planner's Department had been established, the Stevenage Development Corporation appointed Yorke, Rosenberg and Mardall, in conjunction with Clifford Holliday, to design a group of flats near Sish Lane on one of the few sites where building could begin in advance of the laying out of new roads and services. The Sish Lane flats have always been one of the most discussed features of Stevenage. View* (1) *is one of the most characteristic views one gets of the scheme from the housing at Stony Hall. On the other side of the flats the group still seems to stand very much in isolation. The levels at Stony Hall vary and beyond the neat little balustrading wall which can be seen in View* (1) *the site drops away about 25 ft. to the level of the gardens around the flats. The blocks are grouped in the form of a hollow rectangle. This arrangement, in combination with a single high block and several low blocks, should make the best use of site acreage* (6·1)*; density,* 18·2 *dwellings/acre. The boiler house stands independently—a large yard for small boiler coal and ashes can intrude upon the domestic atmosphere of a flat scheme.*

View 2:—*This close-up view shows the bold appearance of the gable end and staircase walls of the seven-storey block. Such a close view may seem harsh, but seen in conjunction with the long line of balconies, glass balustrading, metal supports and the coloured walls behind, it helps to form an overall picture which is considerably mellowed. It is surprising to learn that there are only* 110 *flats in all, for the general layout suggests a greater number. Originally, however, there was to have been about twice the number of flats : these were planned in detail, but the project was cut down by* 50 *per cent. about a year ago. The scheme is an example of how architects' work can suffer as a result of hasty administrative decisions.*

View 2

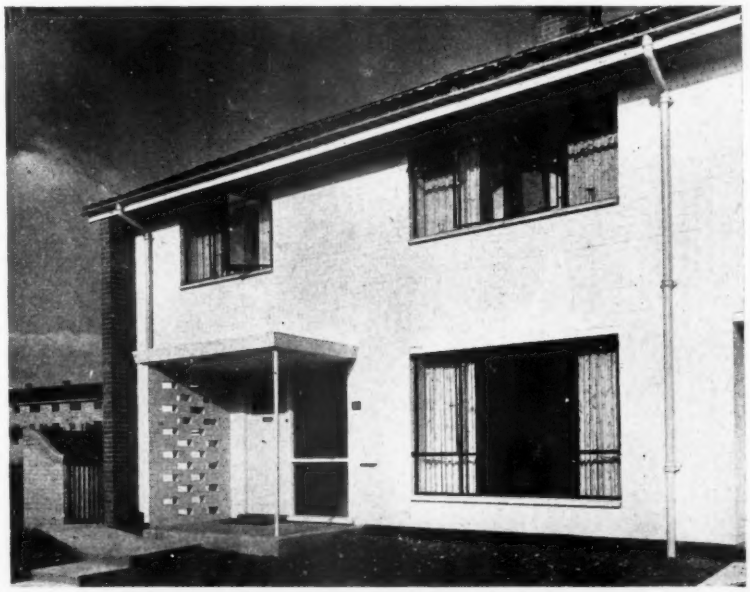
STEVENAGE : HOUSING DESIGN

View 3:—*Housing in Stevenage has a very restrained character. This view is typical of the type of work being done. It has a typical Stevenage porch with a honeycomb flank wall and, so to speak, a "Corbusier" concrete slab over. The front walls of the house are painted and it has a brick gable wall. In Stony Hall eight house types have been used. The same house plans have been used at Monkswood and Whomerley Wood. Each of these sites, however, has been laid out by a different architect, that at Stony Hall being designed by F. O. Carey. No building for the middle-income groups has started in Stony Hall. A policy for this difficult question which arises in the early stages of development of the New Town has not been settled. Three pairs of semi-detached houses (Class III) with and without garages have been built in Monkswood and twelve more pairs with garages are planned. In future schemes it is intended to make more varied provision for the middle-income group as business interests in the town expand. At the same time, sites are being set aside for private development in compact selected areas. The demand is so far very small—only one private house is so far being built and only two other sites have been leased—but it may increase at a later stage in the development of the town. If such areas do not become popular, the Corporation will itself*



View 3. Ground and first floor plans
[Scale : $\frac{1}{8}$" = 1' 0"]

View 3



View 4

View 5

View 6

View 4. First and ground floor plans [Scale: 1/8" = 1' 0"]

develop them for middle-income tenants and, in the event of a possible change in its powers, sell house property to interested tenants.

View 4 :—*This house at Stevenage is faced with grey buff rustic Flettons and roofed with a type of interlocking clay tile. The porch is similar to the one seen in the previous view. Particularly pleasant is the arrangement of fenestration and the clear distinction between the entrances to the house and to the store. Apparently, however, the dwarf wall hiding the dustbin is liable to be knocked over when the bin is being collected. As already mentioned, the levels of Stony Hall are undulating and this house stands below pavement level.*

View 5 :—*A close-up of the houses which can be seen on the right in View* (1). *The plan of this house is similar to that of* (4); *it has three bedrooms for five people. This terrace housing, facing Trigg Terrace, is one of the most delightful features of Stevenage to date. There is a pleasant quiet sense of intimacy about the terrace forecourt which derives from the footpath access. Incidentally, on one chimney there can just be seen the H-type television aerial; regulations now insist on a single rod type on the eaves fascia.*

STEVENAGE: SPACE AROUND HOUSES

View 6 :—*This also shows Trigg Terrace. This is a view of the back gardens of houses between the terrace and Broadview. In time the hedge which has been planted will mature and the general atmosphere, which is more pleasant than the photograph suggests, should be seemly. Incidentally, the low 3 ft. 6 in. high fences are a great 'improvement over their counterparts, 4 ft. 6 in. to 5 ft. high. In the photograph can also be seen the short anti-gossip walls. (The stores have been built internally.) These back gardens are about 50 ft. long and the rows of houses are spaced about 80 ft. apart.*

View 7

STEVENAGE: ROADS AND FOOTPATHS

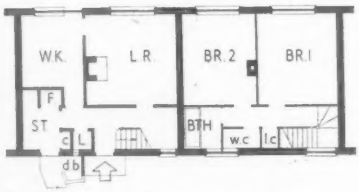
View 7.—*This is the most successful example of terrace housing in Stevenage. The architects at Stevenage have integrated individual houses into a terrace and then grouped one terrace with another in a manner reminiscent of the heyday of 18th–19th century building. The quality of this particular layout is due to such grouping and also to the liveliness of the combination of windows at conventional and at intermediate levels. Changing contours also contribute to the appearance of the housing. The houses on the left are built of oatmeal sand limes with tarred plinths; those on the right are the houses seen in View (4,) but here can be seen the flower-boxes and the steps leading down to the houses. The general colour scheme in the foreground is relieved in the distance by a group of houses which are colour-washed pink and others which have roofs of black slate. Another good feature at Stevenage is the use of macadam road dressing sometimes, in place of concrete. Stabilised hogging has been used as a base and replaces the normal hardcore concrete base. While this makes for great saving in cost, the appearance is certainly more satisfactory, especially in summer time; furthermore, the difficulties of concrete jointing are avoided and maintenance is made easier. The layout of the houses has been influenced by the method of laying out the services. Up to the present all services have occupied a service strip 25 ft. wide extending between the back edge of the footpath and the front of the houses. This arrangement means that the services secure the maximum protection possible but it has the disadvantage of being inflexible. The precise position of house blocks has to be fixed about twelve months before building is started and any necessary alterations raise difficult problems. The system tends to confound building operations and to make them less smooth than they might be, particularly in view of the shortage of services materials which delay laying and means there are two contractors on the site at the same time. However, the recent decision of the Corporation to allow tenants to have front garden space will probably mean that the service system will have to be reviewed, since any maintenance would involve digging up the tenant's front garden. As to front gardens, it has been the intention of the Corporation to maintain the space between the pavement and the house fronts by sowing grass in all forecourts and by planting trees in accordance with the landscape architect's plans. But the Corporation has recently decided to allow a part of each forecourt to be enclosed as a garden, to be maintained by the tenants, many of whom have said they would like to do this; and up to 50 per cent. of the forecourts may be dealt with in this way. After hearing much about the garden-commons idea which is supposed to be flourishing at Stevenage, it is disappointing to find that only two such commons are being laid out. These are in Whomerley Wood. The houses around them are unfinished and it is too early yet to know whether these commons, backing on to a wood, will contribute anything new to back-garden planning.*

STEVENAGE: MONKSWOOD

View 8.—*The layout of services at Monkswood (as described above) has had a marked influence on housing layout. An interesting thing about Monkswood is that it shows the effect a somewhat different site and a lower density can have on the appearance of housing, even when the same types are used. Monkswood is at the conventional housing density of nine to ten houses to the acre compared with that of fourteen to fifteen to the acre at Stony Hall, but in many ways the housing at Stony Hall is at the right density for terrace housing. As already mentioned, the housing types in this area of Monkswood, which is part of the Bedwell neighbourhood, are the same types as designed at Stony Hall, the layout being by a different*

View 8

View 9



View 9. Ground and first floor plans

View 10. Ground and first floor plans
[Scale : 1/24" = 1' 0"]

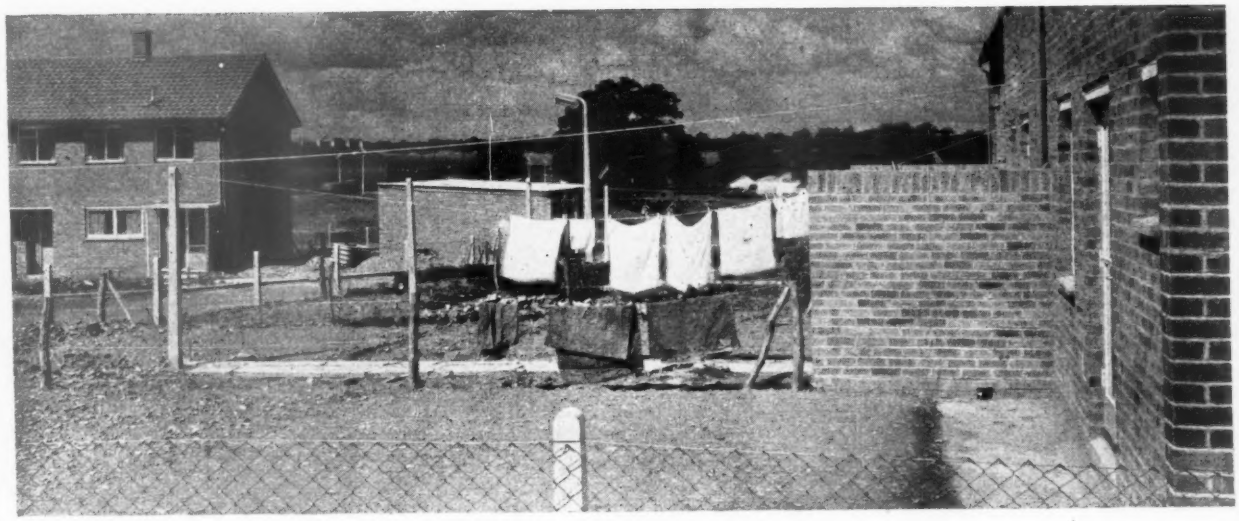
View 10

architect (L. Aked). The appearance of Monkswood is scrappy at present and it will certainly need all the skill of a landscape architect to make this part of Stevenage attractive. Apart from the question of density, the difference between the layout of Stony Hall and Monkswood is that at the former the housing follows more or less parallel lines along the contours whereas in the latter a more geometrical layout has been adopted for a flatter site.

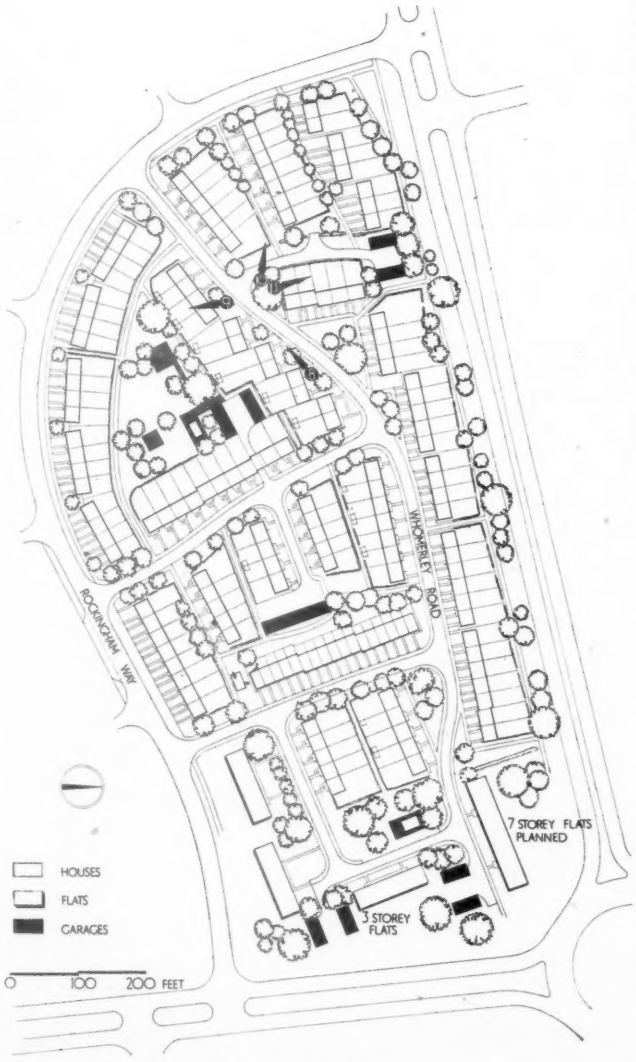
View 9.—*This is another example of how architects' work can suffer from administrative action applied too quickly. The porch has lost half its hood as a result of Mr. Attlee's financial cuts some time ago.*

View 10.—*This is a close-up of the two-bedroom, four-person house with a pleasant arrangement of windows referred to earlier under View (7). This terrace, served by footpath access from either end, is an admirable use of this device. There is a street lamp at the end of the terrace and another one not far off. One of the disadvantages of the footpath access system is that if the path becomes too long, public street lighting has to be provided along the path, thus partially off-setting the economy of the system.*

View 11.—*This last view of Stevenage is not very complimentary to the New Town. It has been taken from a point close to the foregoing views. It is only fair to add that since this photograph was taken the Corporation at Stevenage has decided to spend a considerable sum on the building of flank walls to gardens at Monkswood and Whomerley Wood which flank on to roads.*



View 11



Site plan of Monks Wood neighbourhood

STEVENAGE: FUTURE PROGRAMME

Building at Stevenage is now getting into a swing. Roadworks are well advanced and by next year it would not be surprising to hear that after the slow start made the building organization has sufficiently got into its stride to place this New Town in the lead, or near the lead, for output. If this is so the present sprawl of building sites would take on some kind of homogeneous character not at present apparent. The general impression of the current work is one of sameness, but in time this tendency should be counteracted.

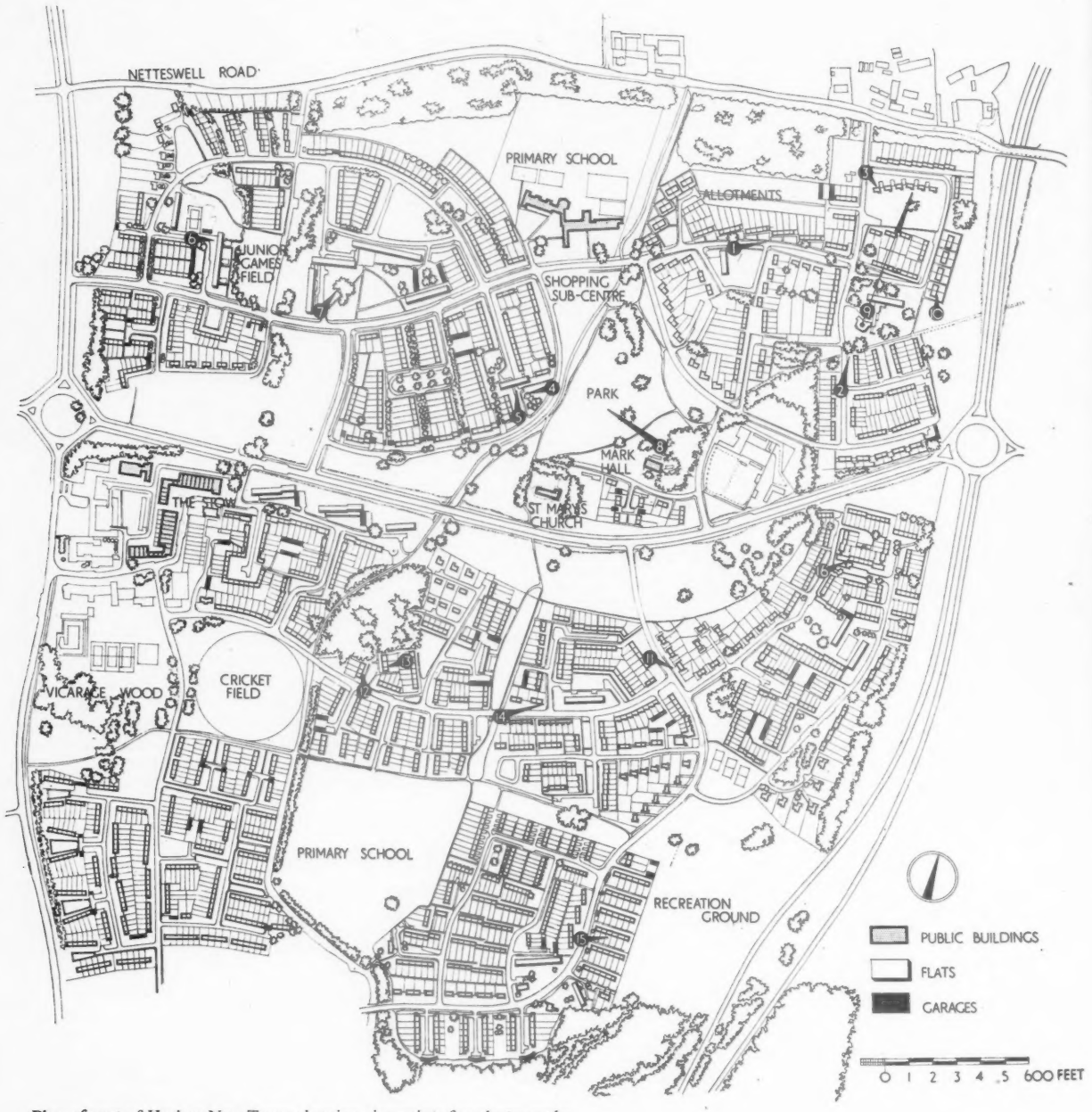
In the first place, the policy of the Corporation has been recently directed to a general tightening up of residential density without greatly altering the net density of dwellings/acre. Some modification of the policy for flats has also occurred. Originally, 15 per cent. of dwellings were to be flats: in June, 1951, this proportion was cut down to between 3 per cent. and 5 per cent., but some latitude is now being allowed.

There is another basic fact to be considered, and that is the organization of the architect-planner's department. Broadly speaking, this department is responsible for all work undertaken by the Corporation. In order that the work should not carry the stamp of one man, the department has been divided into several groups; each group is responsible for the building of a certain section of the town from start to finish. It designs its own house plans and the accompanying layout plan and designs and supervises the designs of the individual houses in detail, together with their related buildings. It is too early to see the effects of this particular method of organization.

CREDIT AND DEBIT

The chief contribution which appears to have been made at Stevenage is the good relationship between blocks of terrace housing at Stony Hall, where these are laid out to a density of about 14/15 dwellings to the acre—about the maximum for housing at current space standards. The layout is economical in space, attractive to look at, and requires the minimum expenditure on landscaping. This layout for a small area looks well, but if carried out over a much larger area it would undoubtedly become monotonous.

Criticism must be made of the juxtaposition of a large seven-storey block of flats and two-storey housing with the usual pitched roof. The height of a long line of seven floors seems to be out of scale with the housing. No doubt this effect, seen at Stony Hall, would have been less apparent if the projected flats scheme, with its full combination of high and low blocks, had not been so drastically curtailed.



Plan of part of Harlow New Town showing viewpoints for photographs

4 : HARLOW

By D. Rigby Childs

Of all the New Towns, Harlow has the greatest reputation for being the centre where advanced ideas on town design have been, and are being, translated into practice; it must be acknowledged that this is due to the enterprise of the Corporation in encouraging its architect-planner, Frederick Gibberd, and his team of professional colleagues, both on the Corporation's staff and in private practice, to set—and reach—a high standard of design and to the Corporation being willing to find out—through trial and error—the relative merits of different ideas on layout and design.

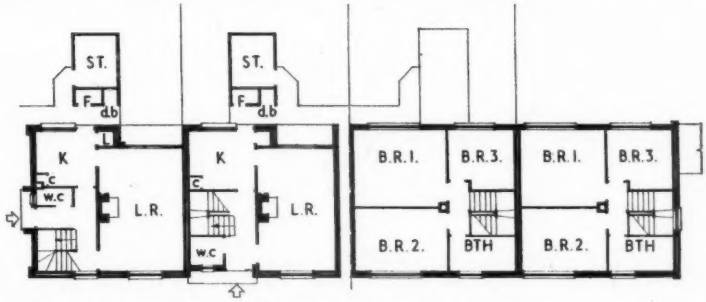
Harlow is to be a comparatively large town; it is now being planned for 80,000 people and the net density of persons to the acre will be fifty, compared with forty at Stevenage—a difference which, in itself, will have considerable bearing on the appearance of these two towns. The following report on Harlow covers a wider field than of other towns, as it is not possible to select one small area and say "That is Harlow." This report first discusses Mark Hall North, where building began, and then deals briefly with the recent work at Mark Hall South.

HOUSING DESIGN

View 1.—*This housing group—Stackfield—was designed by Frederick Gibberd. The major part of the first floor is faced with elm boarding. The western gable wall of each block is rendered and the roofs have a covering of dark brown pantiles. Front doors are painted black. The blocks are linked by a 7-ft. wall of multi-coloured stocks, containing an open-work, white painted timber gate. The line of chimneys form an integral part of the design. Built to Housing Manual standards, this is one of the most attractive groups in Harlow. Young trees have been planted, grass laid in the forecourts and flowers have bloomed. An enormous asset is the presence of old trees.*

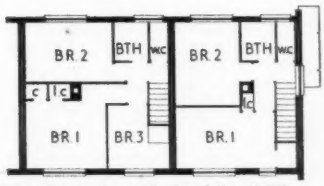
View 1

View 2.—*This terrace of "reduced area" housing is being built next to the well-known "Lawn" group of flats. These houses, designed to "Houses 1952" standards, represent two-thirds of the current production of Standard I houses, i.e., houses for lower income groups. Facing bricks generally in this group are rustic flettons. To close the view at the end of the tunnel access a timber screen is provided.*

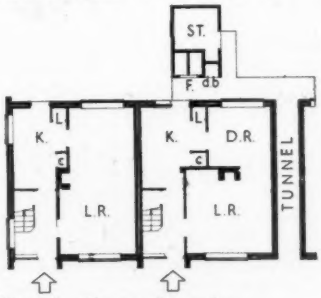


View 1. Ground and first floor plans [Scale : $\frac{1}{24}$" = 1' 0"]

View 2



First floor plan [Scale : $\frac{1}{24}$" = 1' 0"]



View 2. Ground floor plan

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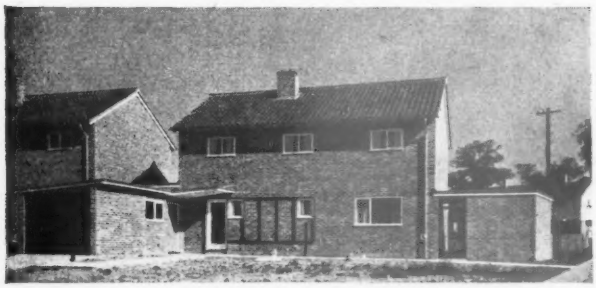


View 3

View 4

View 3 :—*This house for middle-income people at Broomfield, by Harlow Design Group, is an interesting example of planning : a projecting garage screens the entrance to the stores. Next to the front door is a frame up which a creeper can be grown. The combination of the mono-pitch over the garage and porch raking to the side and the tile pitch roof over the house does not seem wholly successful. The view of a number of these houses, on the other hand, is rather pleasant.*

View 4 :—*Maxwell Fry and Jane Drew whole-heartedly embarked upon a policy of mono-pitch roofs in the part of Mark Hall North for which they have been responsible as architects. These little houses, with projecting party walls, seem to stand more as individual houses rather than as part of a terrace.*

View 4. First and ground floor plans [Scale : $\frac{1}{4}$" = 1' 0"]

View 5

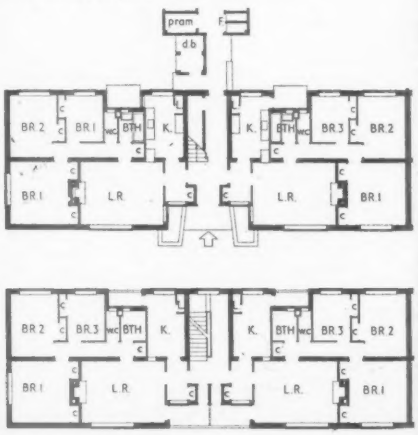
HARLOW : FLATS

View 5 :—*Adjoining the rather naive little block of houses of View 4 is this sophisticated block of flats, redolent in design of the abstract and cubistic designed phase of the late 1930's. It is a relief, after miles of two-storeyed walling and eaves, to find a large opening at ground level. In its way this is the most accomplished piece of elevational treatment at Harlow.* (*Architects, Maxwell Fry and Jane Drew.*)

View 6 :—*This small block of three-storey flats, designed by the Corporation architects, adjoins the tenants' common room : between the two is a pergola through which views can be obtained of the playground beyond and of open country—destined to be laid out for industry.*

View 6

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



View 6. Upper floor plan

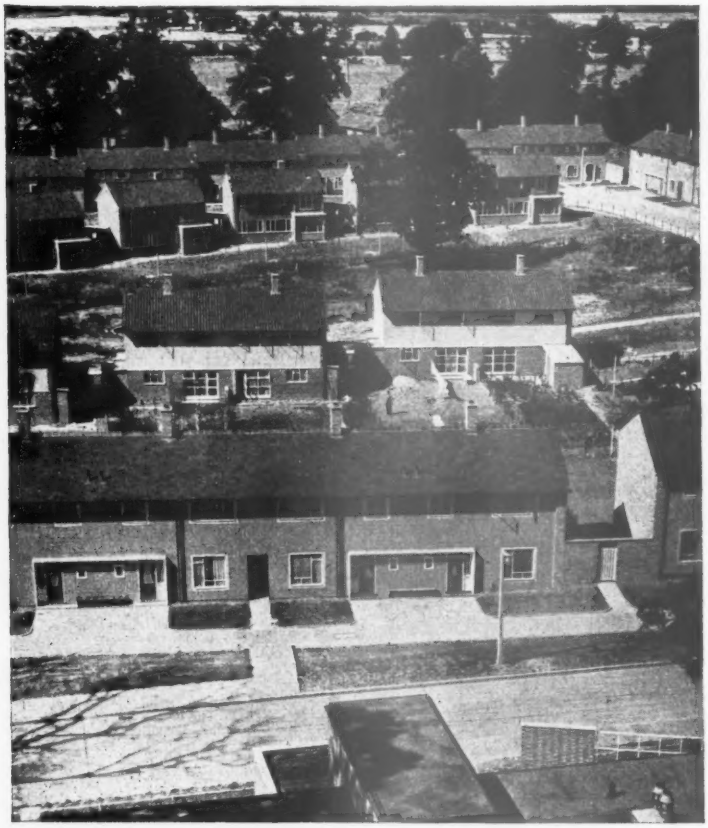
View 7

View 7 :—*This four-storey block of flats was designed by Maxwell Fry and Jane Drew. A combination of flat walling and balconies laid out in long terrace form has a scale and a general humanity about it which seems to be in proportion to the form of urban or suburban development that has taken place in the New Town. Would that a word could be coined to express New Town building. It is not urban in the sense of being metropolitan and it is delusory to think so ; nor is it suburban. What is it ?*

HARLOW : SPACE AROUND HOUSES

View 8 :—*Harlow has always been known as a "green" town, though a good deal of its open space policy is being modified in the light of experience. It is being found, for instance, that small areas of playgrounds are expensive to maintain ; equally small verges and odd corners at road junctions laid with grass are not an economic proposition ; these corners are now being finished with a hard surface. But it is in the major wedges of open space which lie between the housing areas that forms the characteristic feature of open space planning in Harlow. Much of this cannot be appreciated yet, for the land still has to be cleared up from the builders' work and laid out either with new grass or with trees. This picture of a green wedge looks over the park-land towards the housing and flats at the Chantry. Here the combination of two-, three- and four-storey buildings sited on the undulating levels can be appreciated to the full. One notes, however, that a substantial screen wall is not always successful for screening the usual back garden activities. It is pleasant to find that the Corporation is laying out wide verges, ten or more feet wide, along the major highways, between the roadway and the official hard paving. These wide verges, which are part of the official open space allocation, are meant to be a relief to sore feet on a hot summer's day, or to provide a highway for horse-riding.*

View 8

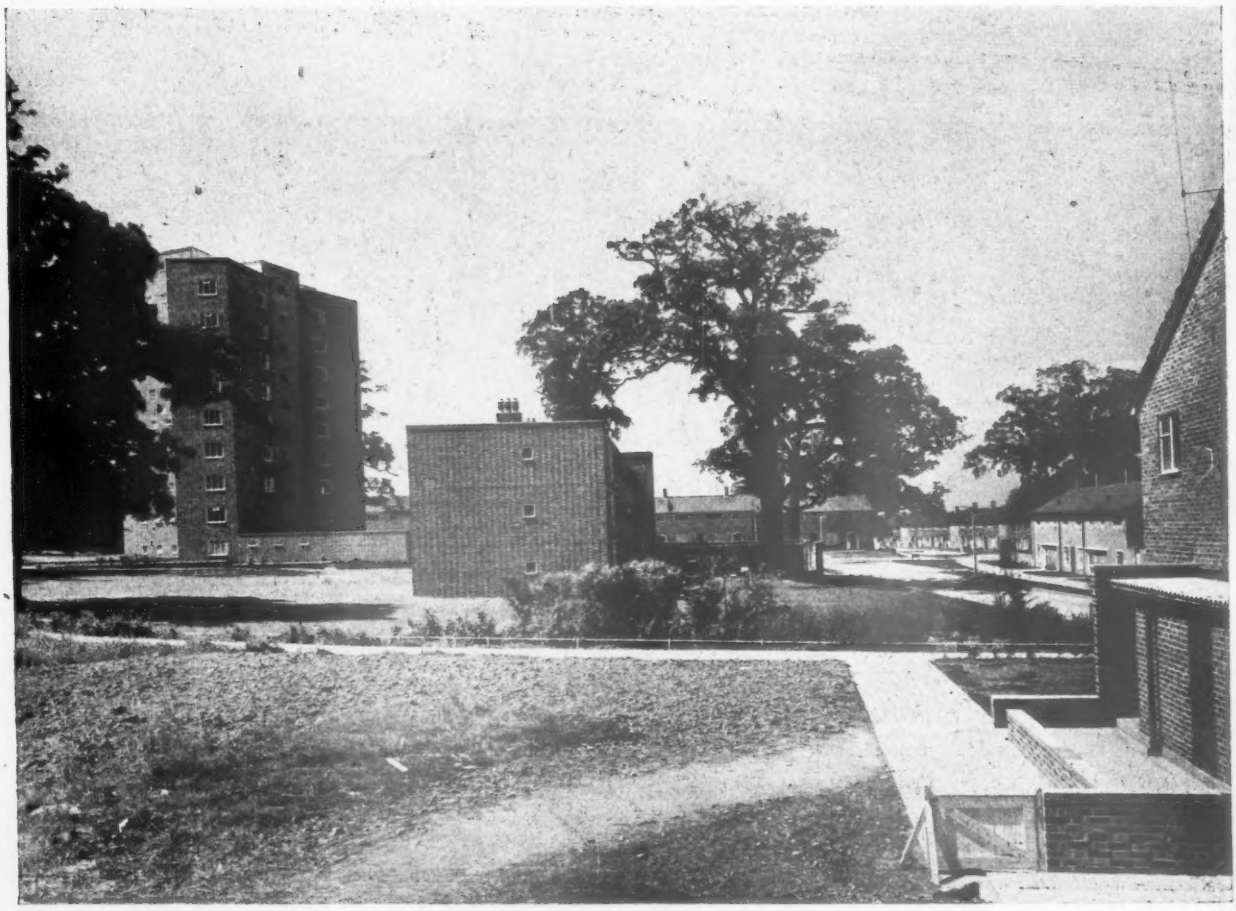


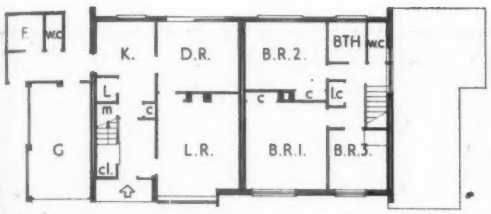
View 9

View 9.—*To complete this section on space around houses, here is the housing area around the "Lawn", designed by Frederick Gibberd. The view is from a window on an upper floor of the "Lawn", looking north over the group of housing in the foreground. The fronts, with rendered walls coloured grey, blue tiles around the porches, and the cobbles set among the paving have an atmosphere of their own. Beyond, the small gardens; the average ration in Harlow is* 100 *square yards: and beyond these is a small local open space not yet landscaped. Behind this, the backs of houses whose fronts appear in View* 3.

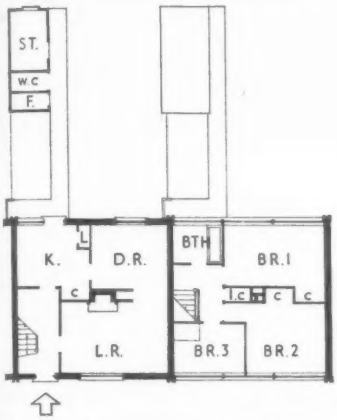
View 10.—*A few yards away is one of the most delightful examples of housing layout in Harlow. There are many points of interest in this design—the quality of brickwork to be seen in the "Lawns" group, careful thought in the design of dwarf walls, gates and low railings, and the clever use of old trees. But it is a pity that the builders of Harlow have not broken away from the harsh appearance of the white concrete road.*

View 10

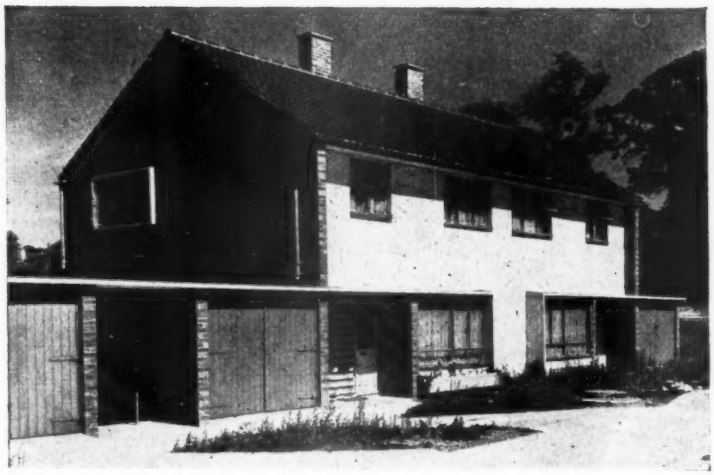




View 11. Ground and first floor plans [Scale : $\frac{1}{16}$" = 1' 0"]



View 12. Ground and first floor plans [Scale : $\frac{1}{16}$" = 1' 0"]

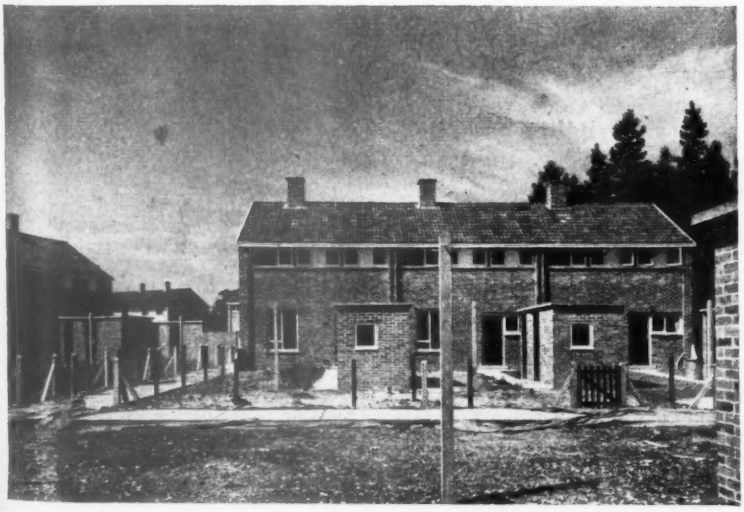


View 11

HARLOW: MARK HALL NORTH

Mark Hall North represents the flowering of ideas which were current immediately after the war. There is little likelihood that we shall see another Mark Hall North in any of the New Towns. Building today has to be at a higher density; we must economize in land use; the farmers want the land to grow food and we must economize in building costs and in the provision of services.

View 12



View 13

HARLOW : MARK HALL SOUTH

The pattern which is likely to spread over Harlow as a whole—and Harlow will be a town of 80,000 people—can be seen being formed in Mark Hall South, and although there is very little work which has been long finished, this report includes some examples of housing which are now being completed.

The distinguishing feature about Mark Hall South is that it is being designed by a number of architects under the supervision of the Corporation's architect-planner. They include the Harlow Design Group, H. T. Cadbury-Brown, Richard Sheppard and partners, and Yorke, Rosenberg and Mardall.

The number of people to be housed in Mark Hall South is about 5,600; they will live in 1,592 houses and 205 flats (*i.e.*, 1 flat to about 8 houses). The houses and flats will be spaced at 15·8 dwellings per acre. The comparable figures for Mark Hall North are 4,200 people in 672 houses and 295 flats (total planned): houses and flats on the average being spaced at 11·5 dwellings per acre.

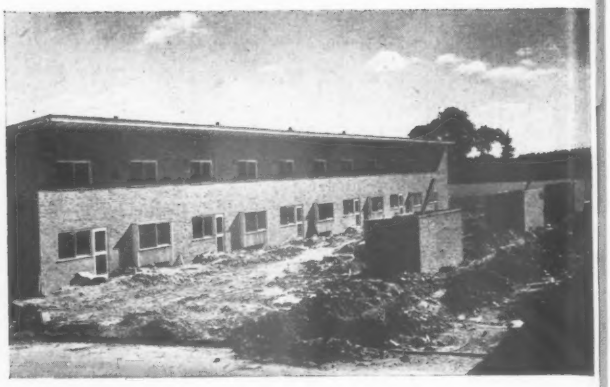
View 11.—*Another type of house for middle-income people. A semi-detached house with garages designed by Harlow Design Group. Brick—rustic flettons—gable walls with rendered fronts finished with white cement paint. Metal windows on 2-ft. module. Neat entrance to store.*

View 12.—*This terrace of three houses was designed by Cadbury-Brown. The general proportions of the terrace, which is sited in Cooks Spinney containing many clumps of pines, are pleasing. But surely the abnormally high cill to the bedroom windows will be annoying to the occupants of the bedrooms?*

View 13.—*The backs of these terrace houses by Cadbury Brown are dominated by the brick-built stores. It is a welcome change to find these stores built in a facing brick. The density in this area is high and these stores clutter up the back gardens. In the latest house types being evolved, the stores are included in the house block.*

View 14

View 14 :—*Church Field, designed by Richard Sheppard, is a combination of two-storey houses semi-detached in terraces and three- and four-storey blocks of flats. Richard Sheppard, like Cadbury-Brown, has gone in for one particular type of brick and has relieved this occasionally with stucco. The four-storey block of flats undoubtedly gives a measure of relief to the overall effect of housing. The general atmosphere should be pleasant.*



View 15

View 15 :—*Here, near Ladyshot, is the area being designed by F. R. S. Yorke, another housing area consistently using one material, mono-pitch roofs and (generally) footpath access to terraces. There is wood facing to the new form of bay window with polished wood fronts. Which is the back and which is the front of these houses is hard to tell, but, in any case, the occupants will have a splendid view of their own or somebody else's store.*

View 16

View 16:—*To bring to an end this report of Harlow, here is a view of two-storey flats placed at the corner of a block of houses. In many ways the design of this block is interesting, and the general appearance of the elevation and the low dwarf walls dividing up the forecourt is pleasant. The flats have a share in the very small yard ; one cannot help wondering if this is sufficient. If one walks around to the gardens behind these houses one finds a general service area—a block of garages, stores, and access for the dustman. This back access is a very good point, but this back court is more a yard than a garden.*

HARLOW: FUTURE PROGRAMME

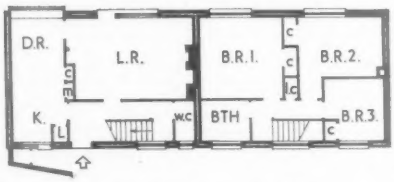
In future flats will generally be distributed in the ratio of one to every ten houses. By contrast, in Mark Hall North, flats were planned almost in the ratio of one in three; about half this number have been built so far. This includes the very successful " Lawns " group and the Tanys Dell group of four-storey flats which, incidentally, are centrally heated. The principal remaining block to go up is a ten-storey block designed by E. C. P. Monson for the area south of the Tanys Dell group.

About one-third of the town is now being planned in detail. The town centre will be in an area to the West of the Mark Hall and Nettleswell neighbourhoods. It is said that to achieve an urban build-up towards the town centre use will be made of fairly formal layouts and multi-storey flats in the areas adjoining. This conscious build-up towards the centre seems an artificial arrangement which may force the planning into an unnecessary strait-jacket. Harlow is to be built at a more or less constant density. In modern times there is little logic in changing the pattern of development around a town centre; indeed, a rapid contrast between the informal housing areas and the formality of the town centre would be more than welcome.

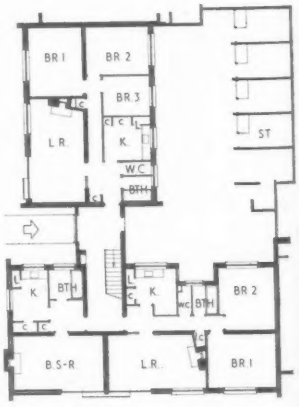
CREDIT AND DEBIT

The most distinctive contribution at Harlow is the variety in planning and design of houses and flats: this is not to suggest that the town planning—conceived in terms of landscape-building—is not distinctive; it is, but the full effects of the planning cannot yet be seen.

It will have been apparent that the Corporation's policy for variety of layout and building is to commission private architects to carry out work in addition to the architect-planners department. The repetition of house-types is limited; each new housing area has certain new house-types. Variety is further sought by the use of differing facing materials and colour schemes. An indirect contribution to variety is being made by the employment of small builders on about 200 houses a year; this gives an opportunity of easily ringing the changes on design. The whole work is co-ordinated by the architect-planner.



View 15. Ground and first floor plans
[Scale : $\frac{1}{24}$" = 1' 0"]



View 16. Ground floor plan
[Scale : $\frac{1}{32}$" = 1' 0"]

The policy of entrusting the design of housing areas varying in size between about 100 and 300 homes to different architects is certainly succeeding, within the current limitations, in producing a many-sided character to Harlow's development. Nevertheless, it is difficult to avoid the conclusion that whatever variations are made in the detailed design, two-, three- or even four-storey house blocks look much like each other and spread thickly over the ground. So it is very encouraging to hear that in Area 15 " Ladyshot and Fesant's Croft," the architect (F. R. S. Yorke) for the 230 houses and 56 flats is expecting soon to build a tenants' meeting room. It will stand on stilts in a prominent part of the site. It is the single vivid feature, which, in itself, may be quite small in scale and reasonably cheap to build, that can form the occasional distinctive landmark.

TECHNICAL SECTION

A firm of roofing tile manufacturers has written to the JOURNAL complaining that, in spite of the fact that stocks are by no means abundant, they often receive orders requiring materials to be delivered within a few days, or even within a few hours. Just as the contractor needs his drawings in good time, the supplier needs his orders in good time.

It is not suggested that late ordering is always the architect's fault. Often it is due to poor liaison between the contractor's site organization and his order placing office. However, even in this case, the architect is indirectly responsible. Failure to order materials at the proper time is usually a sign of general inefficiency, and inefficient building is usually bad building.

Good planning, in both senses of the word, starts in the architect's office Only an efficient architect can justifiably criticize his contractor's inefficiency.

This week's special feature

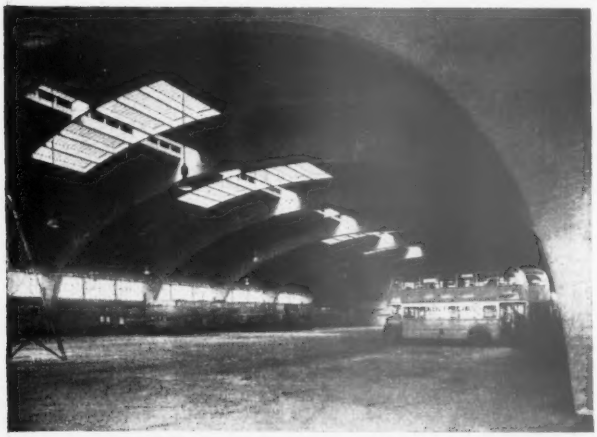
19 CONSTRUCTION: DETAILS
shell concrete roofs

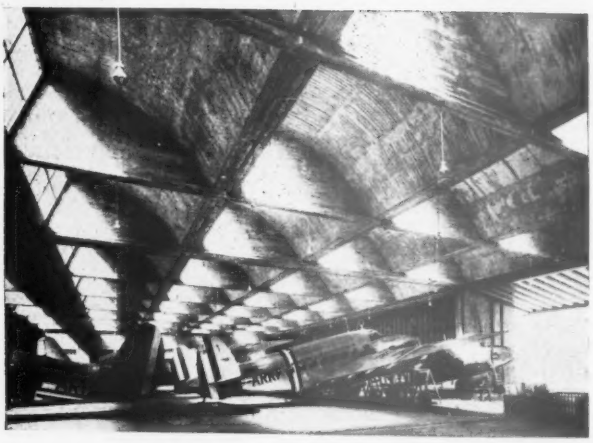
The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

Continuing the JOURNAL'S *survey of shell concrete construction, we reprint below a summary of the paper presented by Edward D. Mills to the recent CCA symposium on this subject. Mr. Mills describes the various types of shell now being used. This is followed, on page 206, by a summary of the paper presented by E. Leslie Gale to the symposium dealing with architectural aspects of the subject. It is regretted that, owing to shortage of space, it has not been possible to include the discussions which followed these papers.*

One of the major difficulties connected with large span construction arises from the self weight of the materials employed, and for this reason reinforced concrete in its normal form is not ideal. The development of various forms of stressed skin structure, where the enclosing monolithic membrane is capable of transmitting loads in more than one direction simultaneously, has resulted in a wider and more economical use of reinforced concrete in large span construction because of the considerable saving in dead weight. The reinforced concrete shell is a development of the structural slab making use of the slab's ability, when suitably shaped and reinforced, to transmit loads in all directions within its surface.

The most common concrete shell roofing is the construction of shells curved in one direction only in the form of





Above, Fig. 1, canteen at Dagenham for May and Baker Ltd. (architect, Edward D. Mills), with roof consisting of 5 long barrels, each 25 ft. wide and 48 ft. span. The barrels cantilever 5 ft. beyond the stiffening beams. Left, Fig. 2, bus garage at Wythenshawe Manchester (architect, G. Noel Hill), with roof consisting of a series of 168-ft. wide short barrels each spanning 42 ft. between 2-hinged arches. Left, Fig. 3, aeroplane hangar in Algeria, with north-light shells spanning 35 ft. Below, Fig. 4, the Fronton Recoletos hall in Madrid; 2 intersecting shells covering a clear area 180 ft. long and 106 ft. wide.

barrel vaults. This lends itself most readily to repetition and standardization and can therefore be used to cover any type of building of large area which is capable of being divided into a number of standard rectangular bays. Cylindrical shells can be constructed either in the form of long barrels where the distance between the stiffening beams is greater than the width of the barrel (Fig 1), or short barrels where the spacing of the stiffening beams is smaller than the width of the barrel (Fig. 2). The latter are generally continuous over two or more spans, while the former may be used both for continuous structures and single spans. Short barrels are commonly used on large, single-span structures used as garages, aeroplane hangars or similar buildings, where the roof height resulting from the curve of the shell can be used to advantage.

ASYMMETRICAL BARREL VAULTS

Asymmetrical barrel vaults are particularly suitable for the construction of north-light roofs, and provide a very good distribution of natural light, see Fig. 3. This is an asymmetrical shell, where the north-light shells span 35 ft. between main beams, 16 ft. deep, and with a clear span of 155 ft. They are particularly suitable for industrial use where a high standard of daylighting is essential and where it is necessary for direct sunlight to be excluded. The Fronton Recoletos hall in Madrid (Fig. 4) shows an unusual application of two asymmetrical shells, intersecting without a stiffening beam at the point of intersection, and covering an area 180 ft. long and 106 ft. wide, with a shell thickness of $3\frac{1}{8}$ in.

GLAZED SPANDRILS

On the Continent many industrial buildings have been erected with symmetrical short shells; each shell being tilted, with glazing introduced in the spandril formed where each shell projects above the adjoining one, giving a series of conoidal shapes, the shape of the shell being retained by means of an internal bowstring truss (Fig. 5). It is claimed that this particular form of north-light roof gives a more even distribution of light than the normal asymmetrical north-light shell, but so far it has not been used in Great Britain. Shell roofs of this type have been constructed in South Africa without the internal bowstring truss, and these have proved satisfactory.

Even the cylindrical shell roof has a wide variety of forms and alternate barrels and inverted barrels can be arranged to form a large-scale corrugation, as used for the cantilevered canopy of Michael Scott's bus station at Dublin.

The second principal type of shell construction is the shell curved in two

WORKING DETAIL

LIBRARY CEILING: SCHOOL IN OREGON

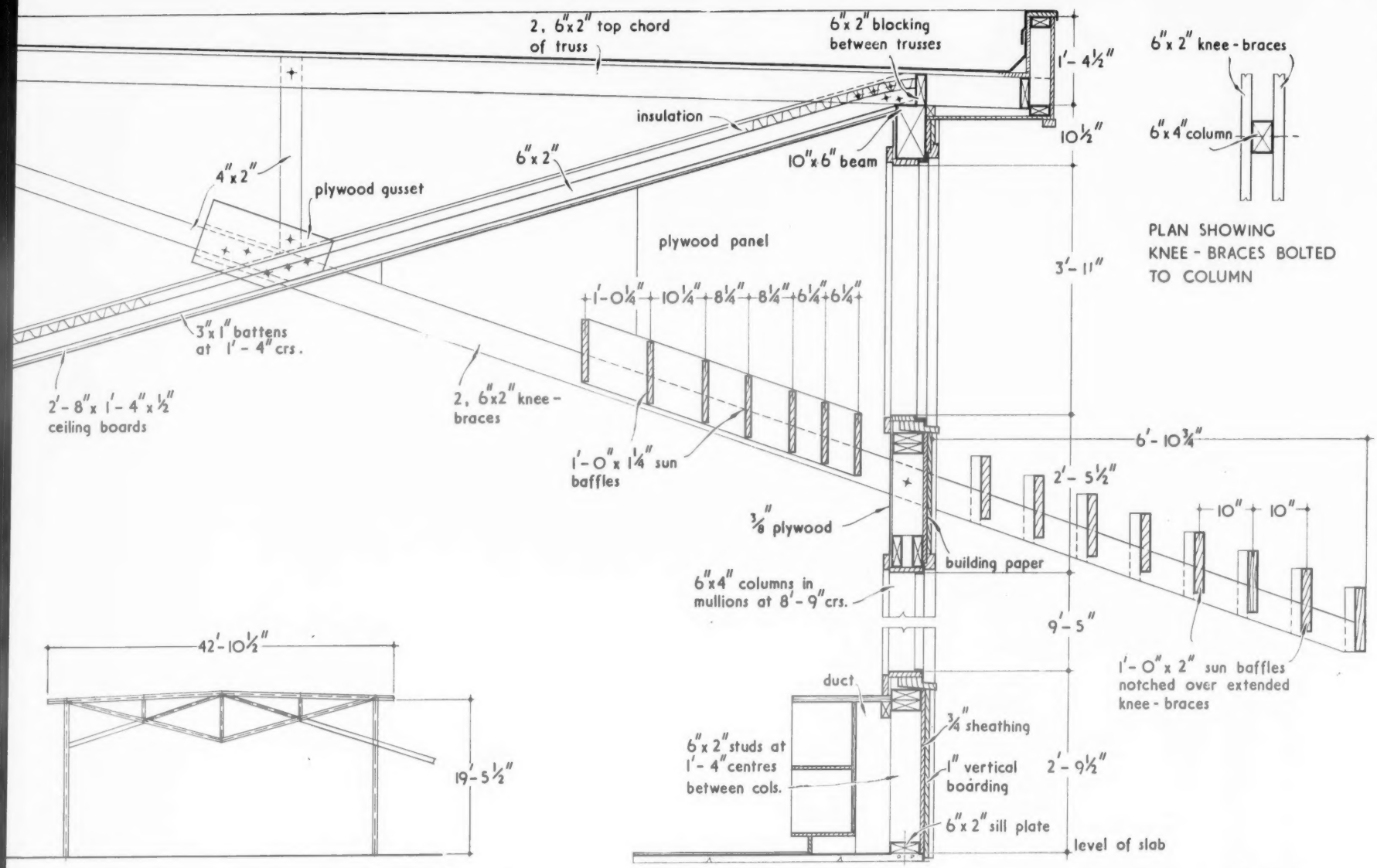
Wilmsen and Endicott, architects

The timber sun baffles controlling the glare from the upper lights are extended outwards to form a screen over the main windows.

WORKING DETAIL

LIBRARY CEILING: SCHOOL IN OREGON

Wilmsen and Endicott, architects



VERTICAL SECTION SHOWING TRUSS. scale 1/16" = 1'-0"

VERTICAL SECTION THROUGH WALL SHOWING SUN BAFFLES. scale ½" = 1'-0"

WORKING DETAIL

CUPBOARD: SHOWROOM IN LONDON, W.1

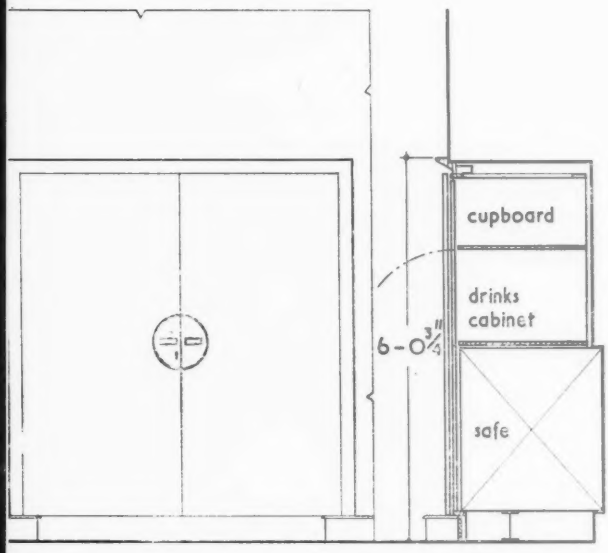
Michael Rachlis, architect

One half of the recessed fitting is occupied by a safe with cabinet for drinks above: the other half is a hanging cupboard for coats.

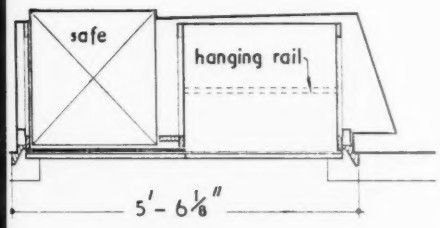
WORKING DETAIL

CUPBOARD: SHOWROOM IN LONDON, W.1

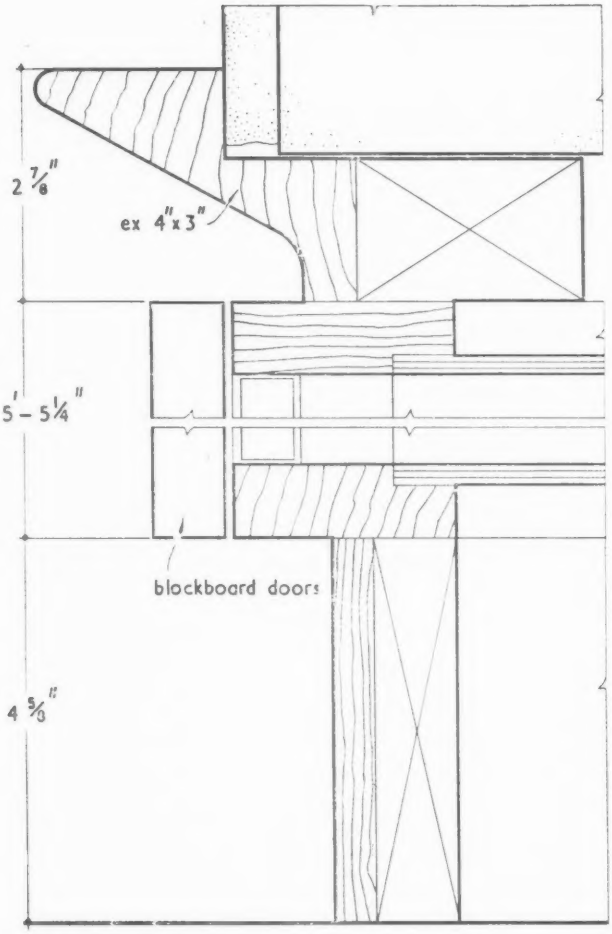
Michael Rachlis, architect



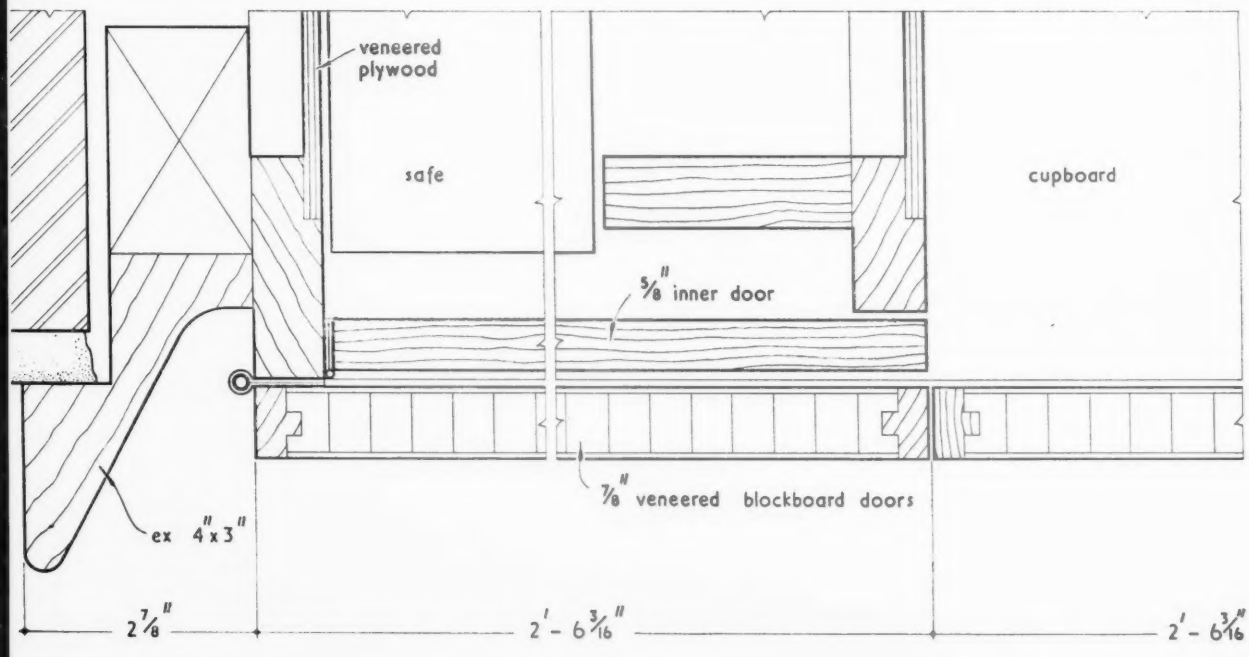
ELEVATION SECTION



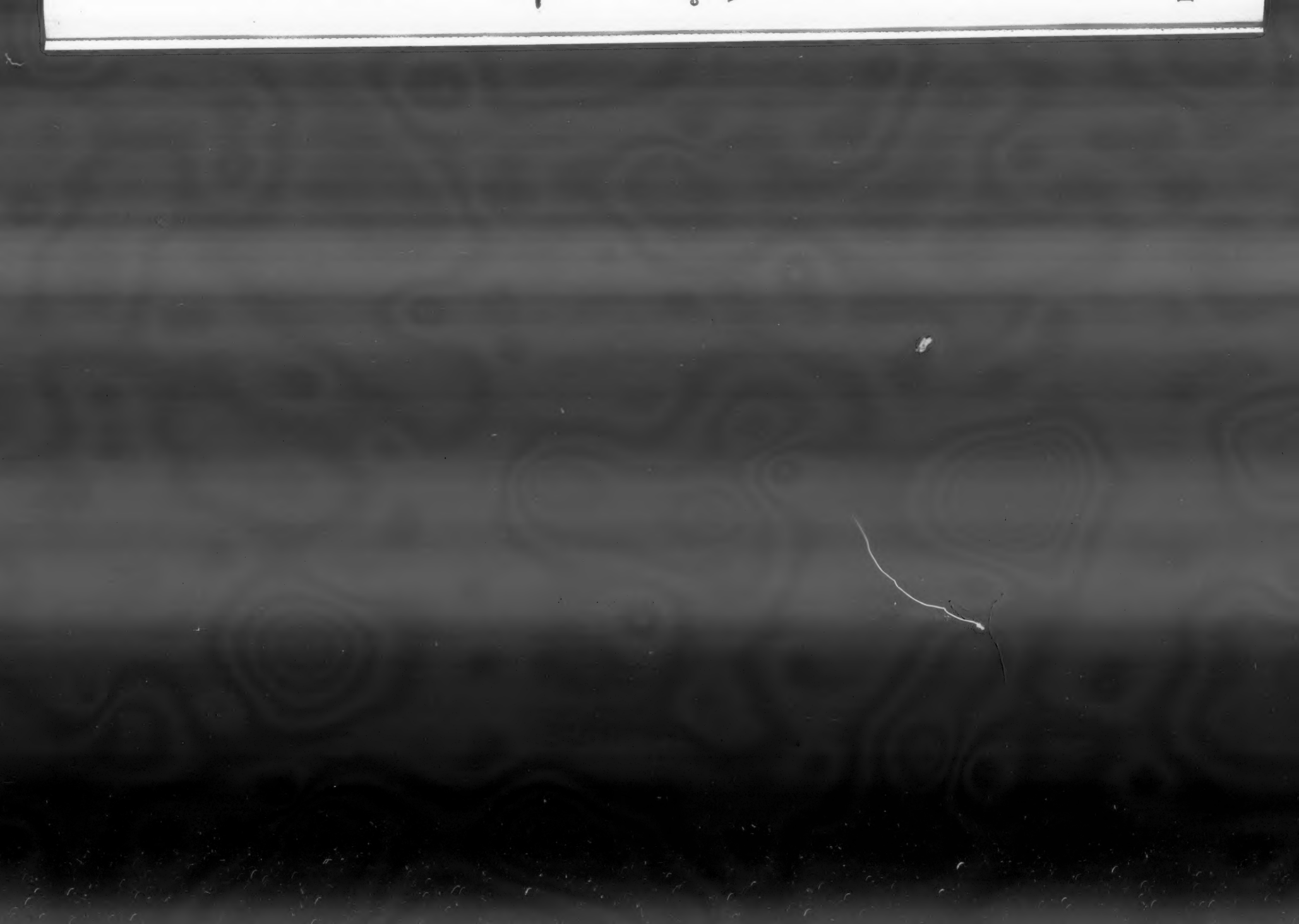
PLAN OF CUPBOARD UNIT scale 3/8" = 1' - 0"

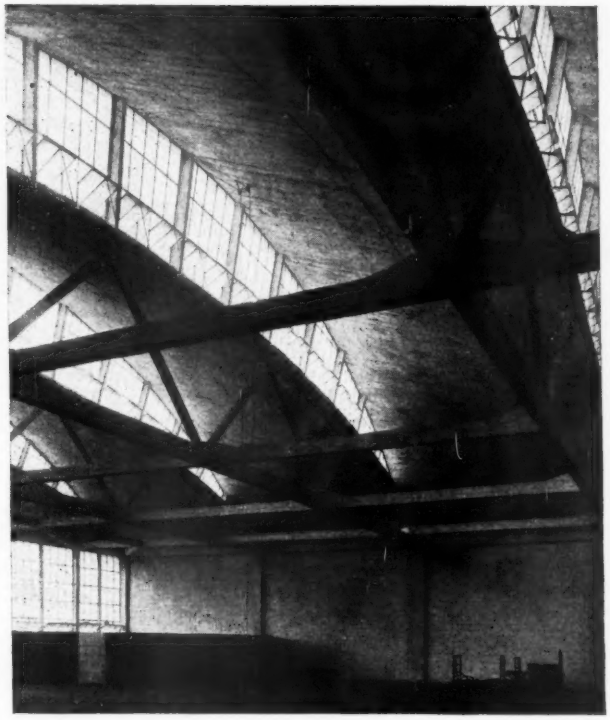


VERTICAL SECTION THROUGH CUPBOARD



PLAN OF JAMB AND DOORS scale 1/2 full size





Right, Fig. 5, factory at Aulney sous Bois, France, with short barrels tilted so that spandrils can be glazed. Above, Fig. 6, shell dome at Brynmawr (Architects' Co-operative Partnership).

directions. Fig. 6 shows one of the nine shell domes covering the main production floor of the Brynmawr factory. Each dome is 90 ft. × 70 ft. and 3 in. thick, stiffened by reinforced concrete lattice girders along the four sides which provide clerestory lighting. The domes are supported at the four corners and separated by a flat concrete walkway. To improve daylighting so that the circular piercings can be eliminated from the shell, domes of this kind can be designed with sloping sides to give a higher skyfactor, and it has been suggested that such domes could be designed with a span of 300 ft. and a concrete thickness of about 4 in.

IRREGULAR DOMES

Shells curved in two directions are not restricted to regular plan forms. The concert hall roof of the Broadcasting Centre in Copenhagen is a shell 4¾ in. thick covering a fan-shaped area. Although shells of this type can be adapted to many forms of buildings, the engineering calculations are exceptionally complicated, and the shuttering costs make erection expensive unless the work is carried out on a large scale.

Another form of shell dome consists of a series of cylindrical shells intersecting to cover a polygonal area, with ribs at the intersections. These ribs carry only direct force to the supports. The largest domes of this type in the world form the roof to the Leipzig Market Hall, designed by Dischinger and Ritter. The domes are each 248 ft. in diameter, with a roof light at the crown of the shell 92 ft. in diameter; the shell is 3½ in. in thickness. It is of interest to compare these domes with a traditional example, such as St. Peter's, Rome, which has a diameter of 131 ft. and a total weight of 10,000 ton. The Leipzig domes have a diameter of 248 ft., yet weigh only 2,160 ton.

PRECAST SHELLS

Considerable experimental work has been carried out in the past few years on shell construction and it is obvious that new and interesting design developments can be expected in the future; among these are the possibility of precasting shells and the combination of prestressing techniques and shell construction. The report of the Joint Intelligence Objective Agency on German Construction Methods records the mass-production of precast cylindrical concrete shells each covering an area of 33 ft. × 16 ft. for a large steel works at Kattowitz in Upper Silesia.

There is undoubtedly a considerable future in this line of development, because of the possible savings in shuttering costs, which form a large portion of the cost of any shell roofing job. In Czechoslovakia small cylindrical shells have been constructed entirely of glass blocks with thin reinforced mortar joints between the blocks. In Spain the Madrid Hippodrome stadium is roofed with a series of hyperboloid shells with a cantilever of 42 ft. from the point of support (Fig. 7). At the 1939 Swiss Exhibition in Zurich, Robert Maillart built an exhibition hall in the form of a parobolic shell 2⅜ in. thick, 70 ft. long, 52 ft. 10 in. wide and 37 ft. high. In the USA a number of elliptical shell domes have been constructed for such purposes as sewage treatment plant filters. These domes are up to 150 ft. in diameter, with a concrete thickness of 3½ in.

One of the advantages of shell concrete is its economical use of steel; generally a shell concrete structure uses only about two-fifths of the steel required for a comparable building designed for structural steel.

Fig. 7, Madrid Hippodrome stadium, Spain, shells cantilevered 42 ft. from point of support.

The architect of some of the earliest (and the most recent) shells erected in this country—Mr. Gale, in his paper given at the recent CCA symposium on shell concrete, dealt with various constructional problems associated with shell roofs, including waterproofing, insulation, rainwater disposal, lighting (natural and artificial) and internal finishes. The summary below comprises the major part of the paper, the illustrations are those Mr. Gale showed when he presented it.

ARCHITECTURAL PROBLEMS OF SHELL CONCRETE CONSTRUCTION

By E. Leslie Gale

The first problem is to decide the shape of the shell roof and the grid spacing of the supporting columns. Special shapes and very large spans are possible, but the smaller the spans the more economical will be the overall cost and the consumption of steel per unit area.

Internal stiffening beams break the continuity of the roof and impede the services and it is preferable to design with upstand stiffening beams or arch ribs. Since the roof space is clear of truss members it follows that the building will have a greater effective height than the height of the enclosing walls and the measurement from the floor to the springing of the arch can be 2 ft. or 3 ft. less than the comparable measurement from floor to tie beam in a steel-framed structure.

For any length (L) of shell there must be a general rise—generally $\frac{L}{10}$.

If the rise is too great in relation to the chord width the slopes of the barrels at the valleys will be too steep for the concrete to be placed without top shuttering.

The most economical grid is a ratio, span to chord width, of 2:1 (the span being the length of the shell between supporting columns). Larger ratios up to 4:1 are possible but these designs will require dropped valley beams instead of the more simple feather edge valley.

The grid spacing of a northlight barrel is generally about 3:2. It should be remembered that the maximum length of glazing bar which can be used without the introduction of an intermediate glazing purlin is 10 ft. 6 in.

Roofs with northlights (or southlights below the equator) are only necessary where sunlight must be expressly excluded from the building. In northlight design the arch rib upstand is to be preferred, as it gives a clear soffit to the shell roof. In any case, the continuous valley beam at the foot of the glazing slope should be designed with an even face internally to facilitate running services.

CONSTRUCTION

The thickness of the shell is generally $2\frac{1}{2}$ or 3 in. The reinforcement usually consists of layers of fabric near the top and bottom of the shell with longitudinal or diagonal bars between. In addition there are short bars connecting the shell to the beams along the ends and edges of the barrel.

The proportions by volume of the concrete are usually:—1:2:4 for foundations, columns, beams, slabs and shells, and $1:1\frac{1}{2}:3$ for upstanding portions of beams where the stresses are usually higher. The maximum size of coarse aggregate used in the shell is usually $\frac{3}{8}$ in.; for the remainder of the work it is usually $\frac{3}{4}$ in.

The shell should be concreted in one operation, construction joints in the shell being reduced to a minimum, but in no case may they be within 8 ft. of an internal stiffening beam. The portion of an upstand beam above the shell should be concreted as soon as possible after the shell.

It is important to cure the shell concrete by covering it with hessian or similar absorbent material, kept constantly wet for seven days.

BS C of P 114:1948 provides a useful basis for specifications. The recommendations in this Code, entitled *The Structural Use of Normal Reinforced Concrete in Buildings*, cover materials, placing of reinforcement, mixing of concrete and testing.

Finally, by reason of the intricacy of the reinforcement and the thinness of the shell, it is suggested that a contractor experienced in reinforced concrete work should be employed. A competent foreman is essential and stress should be laid on the importance of adhering to the engineers' drawings and instructions. Close supervision is imperative.

THERMAL MOVEMENT

As the shell expands and contracts within calculable limits the following precautions are suggested to keep the rest of the structure free from movement:

(*a*) Enclosing walls can be carried on ground beams supported on column foundations but there must be expansion jointing between wall panels and columns.

(*b*) Where windows are taken up to the underside of stiffening beams or edge beams the sashes can be divorced from the main structure by allowing the window heads some freedom of movement in small channel lintels.

(*c*) Care must be taken in dimensioning any internal glazed or other frames taken up to the soffit of the shell; adequate clearances must be allowed to enable the shell to move and some form of slotted fixing is desirable.

Fig. 1. Aerial view of standard factories at Crawley New Town, all constructed on a 40-ft. by 20-ft. grid, with shell concrete barrel vault roofs.

(*d*) Attention must be given to weathering the junctions of shell with stiffening and edge beams and where openings are made through upstand beams for the passage of rainwater. Cover flashings must allow for movement.

INSULATION

As a simple roof covering a concrete shell 2½ in. thick has a low resistance to the passage of heat. Its value is about the same as corrugated asbestos or corrugated iron, *i.e.*, 1·4 to 1·5. It follows that for the majority of shell roofs some form of additional insulation will be required. The most common method of insulation seems to be to use a ½-in. soft board left as permament shuttering. This soft board serves the purpose of giving a fair face to the soffit of the roof not always obtainable with some forms of temporary shuttering.

The use of soft board in this manner is unsatisfactory. Various methods have been tried in the endeavour to make the board stick to the underside of the shell by scarifying and wetting the top surface of the board and by using various forms of clips. No positive method seems to have been developed which guarantees that the board will adhere to the shell after the shuttering supports have been removed.

Soft boards have a tendency to curl when they dry out. There is difficulty in treating the joints and staining arises from various causes which affects decoration.

With modern forms of shuttering there is no need to use soft board to obtain a fair face to the soffit. In any case, the insulating medium is more efficient in most cases if it is placed on top of the shell. Soft boards are not suitable for use with a wet process. If, for economic reasons a soft board has to be used, it is better to specify a fibre board than a pulp board as the latter is liable to disintegrate when very wet. When selecting the material for external forms of insulation, lightness, ease of fixing, suitability as underlay for waterproofing material and cost should be considered.

Suitable materials include soft board, foamed slag, vermiculite and expanded clay aggregates.

With lightweight screeds care must be taken to see that they dry out thoroughly and are protected from rain before the weatherproof finish is laid, otherwise the material will lose its value as an insulator and may disintegrate and have a deleterious effect on the final external finish.

EXTERNAL FINISHES

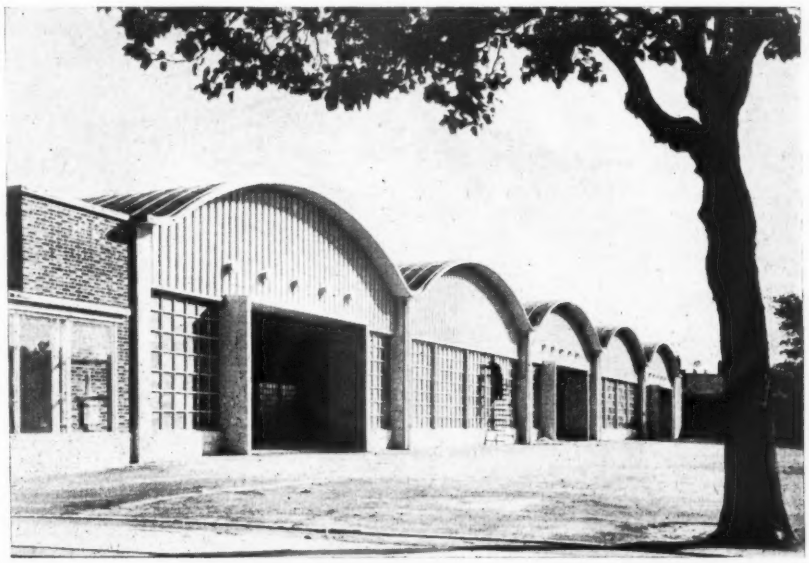
Shell roofs sometimes have no external weathering, reliance being placed on the compactness of the concrete itself with the addition of a waterproofer in the mix. This, however, is not good practice.

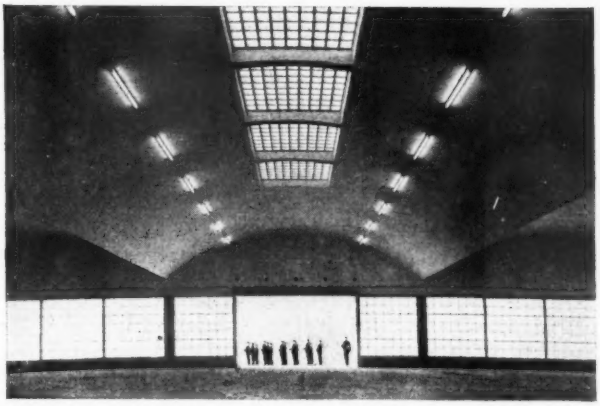
Materials available for covering are:

i. Bitumen/hessian processes, used with success during the war but requiring periodic maintenance.

ii. Cold bitumen processes. Various proprietary materials are available.

iii. Bituminous roofing. The most widely used of all the finishes. A single layer of heavy duty material





Above, Fig. 2, and, right, Fig. 3, Marine Barracks at Deal (architects, Leathart and Tingay). Note how tidy the interior is, compared with early examples of shell barrel vaults; the good treatment of natural and artificial lighting; and the pleasing effect of the ribbed concrete stiffening beams.

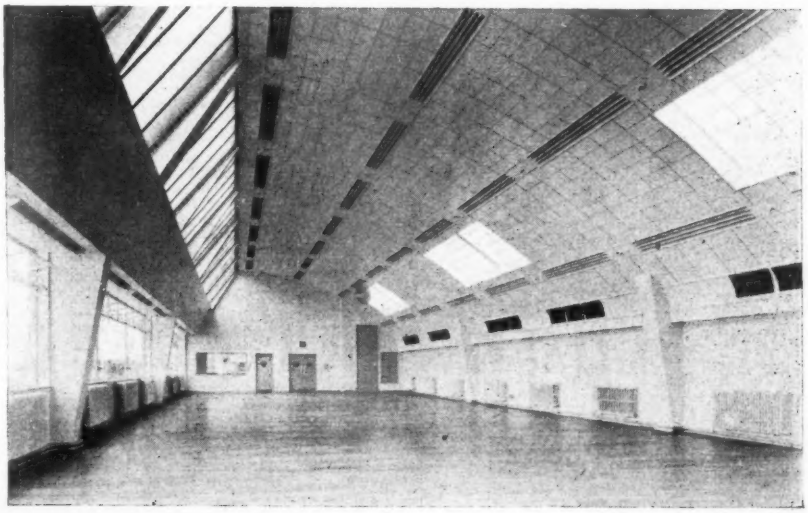


Fig. 4. Recently completed research laboratory at Birmingham, roofed with a single north-light shell. The north-light is double glazed. Ventilation grills can be seen arranged neatly along the edge beam on the right of the photograph. (Architects, Clifford Tee and Gale.)

This Specialized Age

The Geologist

In this atomic age the geologist plays an increasingly important part. Using his specialist knowledge gained through years of training he scours the world tracking down the mineral deposits needed by industry and the scientist.

This is the age of specialization. With the advance of modern knowledge, no one man is able to excel in everything and in the field of human endeavour the final product is inevitably the result of co-operation by specialists. So it is with architectural planning. Working under the captaincy of the architect, the team of specialists all play their part and take responsibility for different sections of the project.

Over the years, Lockhart Equipment Ltd., have gained a reputation as specialists in the planning and equipping of Industrial Canteens, Hotels and Restaurants. Experienced technicians are at all times available to provide specialist service to the architects, which includes the preparation of layout plans and the submission of appropriate quotations, whether it be for a completely new installation or the reorganisation of existing facilities. Lockhart Equipment Ltd., offer a fully comprehensive service whereby every item of catering equipment from the largest refrigerator down to the smallest piece of crockery, cutlery, furniture, linen, etc., is planned for and supplied so that the whole unit can be handed over complete and ready for operation.

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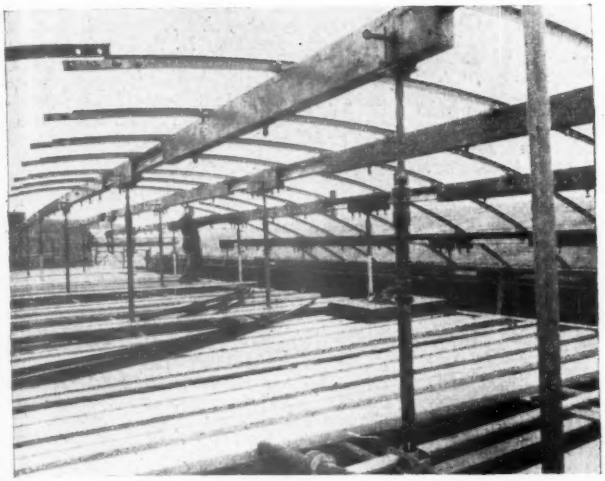


Left, Fig. 5, "Kwikform" patent, adjustable, tubular steel formwork for barrel vaults. The ribs only are purpose-made. The framework is covered with sheet steel. Below, Fig 6, a useful device for changing lamps in fittings attached to shell roofs. William Moss's "Beanstalk", a hydraulic working platform, which folds to pass through a door.

with a mineral surface is adequate if bonded with compound to the insulation.

iv. Asphalte. This is rather heavy and relatively expensive.

For solar reflection roofs can be treated with felspar chippings or a lime and tallow wash.

INTERNAL LIGHTING

Provided a modern system of shuttering is used, it is quite safe to leave the soffit of shell roofs as struck from the steel forms. Some slight indication of patterning will remain, but this is not unpleasant.

The soffit adapts itself to the use of normal plasters or special vermiculite plaster. Asbestos spray is being used more extensively as an internal finish to shell roofs as it provides for thermal insulation, anti-condensation and gives some measure of sound absorption. The U value of ½-in. spray on 2½ in. shell concrete is 0·43.

The material can be roughly pressed back with a wood float to give a rough textured finish or a plaster type finish can be given with a surface slightly less hard than ordinary plaster.

For decorative effect, the asbestos fibres can be impregnated with a pigment and sprayed to give a coloured textured finish.

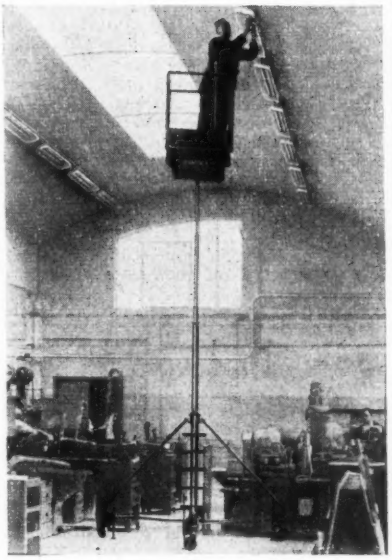
NATURAL LIGHTING

In northlight shell roofs the ordinary system of patent glazing is adapted.

With normal roof designs alternative methods of daylighting are available:

i. Continuous lanterns or skylights. These must be kept away from the stiffening beams as agreed with the engineer.

Some architects favour the use of precast concrete frames curved to the radius of the shell and set with glass lenses. This system seems to be more appropriate to shell roofs. The lenses give a wide distribution of light and better insulation than sheet glazing.



There is an advantage in the freedom from maintenance.

ii. Individual fixed lights, either rectangular or circular on plan using patent glazing or domes. A square light has been introduced, the design being based on the largest size sheet of glass permissible without the introduction of a glazing bar.

Standard circular dome lights have been used with success but the makers should be consulted in special cases where domes are not fitted on a level bed. Care must be taken in fixing to ensure that no strain is imposed on the glass.

SERVICES

In general terms the beauty of a shell roof lies in the unobstructed roof space and one of the major problems confronting the architect is to see that, after having taken the trouble to construct a roof from which truss members have been eliminated, he does not proceed to clutter it up with an array of pipes, unit heaters and conduits, which become all the more unsightly against the smooth clean interior surface.

It is, therefore, essential in shell concrete construction that a master plan of the services is prepared before the job starts, co-ordinating the position of all pipes and conduits which may then be concealed in the shell itself, or arranged alongside beams. The position of all holes through stiffening beams and arch ribs and fixings for pipes must be known at the outset.

Heating and Ventilation

If unit heaters at high level are used, these are best mounted from the columns or beams and not slung from the shell.

Ducts from plenum systems can be arranged longitudinally along the valleys with discharge points through grilles at intervals. (See Fig. 4.)

Electric Lighting

Far too little use has been made hitherto of the shell as a light reflector; so many otherwise pleasant shapes have been ruined internally by some form of pendant dropped from the shell and terminating with a series of reflectors in tungsten lighting or horizontal lines of fittings for fluorescent tubes which, though practical as a light source, serve to give a depressing tunnel effect at night.

Effective lighting has been obtained by fixing bare fluorescent tubes in continuous lines to the soffit of the shell with the chokes grouped together on the stiffening beams. Again, batteries of tubes have been mounted, unobtrusively, on either side of valley beams, casting the light upwards to give a very effective diffused light. Some of the paint manufacturers have produced distempers with a high reflective value.

Surface Water Drainage

The problem of drainage from the catchment area provided by a series of barrel vault roofs is quite simple. The valleys between barrels are themselves huge gutters and the junctions between barrels and edge beams form admirable eaves gutters.

It is not necessary to have any internal rainwater pipes; indeed, surface water drainage systems can be planned on most economical lines if advantage is taken of the very large sectional area of gutter formations provided by the shapes of the roofs.

BATTLE OF THE (FESTIVAL) BRIDGE

Sir Francis Meynell, Director of CCA, has taken us gently to task for an oversimplified summary of his argument in the Battle of the (Festival) Bridge (JOURNAL for July 17). We reported his war cry as merely "save steel." More justly it should have been rendered as "save steel and cement"—in other words, use prestressing where it is appropriate. Sir Francis sets store by this amplification because he is understandably proud of the fact that CCA is free and eager to promote economy in building techniques not less when cement can be saved than when another industry's product is involved.

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

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ADDRESS.....

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AJ 14.8.52

Buildings Illustrated

Housing at Stevenage New Town, Hertfordshire. (Pages 190-195.) Contract No. 42—Stony Hall East. Architect: Professor Clifford Holliday, M.A., F.R.I.B.A., A.M.T.P.I. (former Chief Architect and Planner); Deputy Chief Architect: L. G. Vincent, A.R.I.B.A., A.M.T.P.I.; Architect in charge of contract: O. Carey, A.R.I.B.A.; Assistant architect: J. P. Halliwell, B.ARCH., A.R.I.B.A.; Designers of house types: L. Aked, B.ARCH., A.R.I.B.A.; O. Carey, A.R.I.B.A.; P. Barefoot, A.R.I.B.A.; D. S. Craig, A.R.I.B.A.; General Contractor: William Sindall, Ltd.; Sub-contractors: Bricks, The Uxbridge Flint Brick Co., Ltd., The Dunbrik Co., Ltd., Henry S. Greenham (1929), Ltd., The Stonehenge Brick Co., Ltd.; roofing tiles (Sterrebert interlocking), Langley (London), Ltd.; metal windows and door frames, Williams & Williams, Ltd.; precast cills, Wettern Bros., Ltd.; sanitary fittings, Pratt (Watford), Ltd.; heating appliances, Bratt Colbran, Ltd., Ideal Boilers, Ltd.; fireplace surrounds, Bratt Colbran, Ltd.; ironmongery, Walker & Wood, Ltd.; electrical installation, The Eastern Electricity Board; doors, William Sindall, Ltd.; kitchen units, The Jayanbee Joinery, Ltd.; gas installation, The Eastern Gas Board; soil and waste assembly, Econa Modern Products, Ltd.; external wall finishes (Silexine plastic emulsion coating), Silexine Paints, Ltd.; flooring, The Marley Tile Co., Ltd.; painting, Murray & Jones, Ltd.; roof insulation, Fibreglass, Ltd.

Contract No. 55—Monks Wood. Architect in charge of contract: L. Aked, B.ARCH., A.R.I.B.A.; Assistant architect on contract: R. E. Owen, A.R.I.B.A.; Designers of house types: L. Aked, B.ARCH., A.R.I.B.A., O. Carey, A.R.I.B.A., D. S. Craig, A.A. DIP., A.R.I.B.A., P. Barefoot, A.R.I.B.A., Miss C. Wood, A.R.I.B.A., A.M.T.P.I.; General contractors: Tersons, Ltd.; Sub-contractors: Bricks, London Brick Co., Ltd., E. H. Smith (London), Ltd., Richard Parton, Ltd., Young & Marten, Ltd., Messrs. L. Y. Ames, Eastwood Sales, Ltd.; roofing tiles, Marley Tile Co., Ltd.; metal windows, door frames, Williams & Williams, Ltd.; precast cills, Tercrete, Ltd.; sanitary fittings, Kirby Bros., Ltd.; heating appliances, fireplace surrounds, The Standard Range & Foundry Co., Ltd.; ironmongery, H. & C. Davis & Co., Ltd.; electrical installation, The Essay Electric Co.; doors, C. W. Norris, Ltd.; kitchen units, Tom M. Scotney, Ltd.; gas installation, The Eastern Gas Board; soil and waste assembly, Econa Modern Products, Ltd.; external wall finishes (Silexine plastic emulsion coating), Silexine Paints, Ltd.; flooring, Semtex Co., Ltd.; paint, Sir W. A. Rose & Co., Ltd.; distemper, Sissons Bros.

Housing at Harlow New Town, Essex (Pages 196-202). Architect-Planner: Frederick Gibberd, F.R.I.B.A., M.T.P.I.; Executive Architect: V. Hammett, B.SC., A.R.I.B.A., A.R.I.C.S.

Mark Hall North, Areas 1 to 8.—General contractors: Geo. Wimpey (I-III); Kirk & Kirk, Ltd. (II); Gilbert-Ash, Ltd. (III); D. Chaston & Co., Ltd. (IV); W. J. Reeves (Bishop's Stortford), Ltd. (IV); R. C. Darlington (IV); S. C. Aldridge, Ltd. (IV); R. L. Willingdale (IV); W. Dobie & Sons (VIII).

Mark Hall South, Areas 9 to 15.—General contractors: Geo. Wimpey & Co., Ltd. (IX, Part i, XII and XV); Kirk & Kirk, Ltd. (IX, Part ii, and XI); Chas. S. Foster (IX, Parts iii and iv).

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.

BOROUGH OF WIDNES.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, at a salary in accordance with A.P.T., Grade IV, of the National Scale of Salaries, commencing at the minimum of the grade.

Applicants must be student R.I.B.A. and have worked in an Architectural office for at least two years subsequent to having passed the Intermediate Examination.

The appointment will be subject to the National Scheme of Conditions of Service as adopted by the Council and to the Local Government Superannuation Act, October, 1937, and to the successful candidate passing a medical examination.

Applications, stating full particulars of age, experience and qualifications, etc., together with names and addresses of two referees, to be sent to the Borough Architect, Brendan House, Widnes Road, Widnes, not later than Friday, the 29th August, 1952.

Canvassing, directly or indirectly, will disqualify.

FRANK HOWARTH,
Town Clerk.

Town Hall, Widnes.
23rd July, 1952. 7195

WORTLEY RURAL DISTRICT COUNCIL.
(Population: 45,167. Rateable Value: £249,359)
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT AND ASSISTANT ARCHITECT

Applications are invited for these appointments as follows:—

I. CHIEF ARCHITECTURAL ASSISTANT—salary in accordance with A.P.T. VI of the National Scales (£570—£735).

II. ASSISTANT ARCHITECT — salary in accordance with A.P.T. V of the National Scales (£595—£645).

Applicants for post I should be Members by examination of the R.I.B.A. and preferably have had municipal experience. Applicants for post II should preferably have passed the final examination of the R.I.B.A., and should at least have passed the intermediate.

Housing accommodation available if required.

Forms of application may be obtained from the undersigned, to whom applications must be delivered not later than 25th August, 1952.

ADRIAN M. KELLY,
Clerk.

Council Offices,
Grenoside, Sheffield. 7189

BOROUGH OF ROMFORD.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the above appointment on the permanent staff in the Borough Engineer and Surveyor's Department. Salary within Grade VI of the A.P. & T. Division.

Applicants should be Registered Architects, and the possession of an additional qualification will be an advantage. They must possess good general experience and a knowledge of housing design and layout. No housing accommodation available.

Particulars and conditions may be obtained from the undersigned, who should receive applications not later than Monday, 25th August, 1952.

Canvassing will disqualify.

J. TWINN,
Town Clerk.

Town Hall, Romford.
August, 1952. 7238

CRAWLEY DEVELOPMENT CORPORATION require a JUNIOR ASSISTANT ARCHITECT, on the salary scale £440-£580 p.a., at the R.I.B.A. Intermediate Examination standard, and experienced in architectural practice. Contributory superannuation is provided.

Application forms from the Chief Architect, Broadfield, Crawley, Sussex, are returnable by the 30th August.

C. A. C. TURNER,
Chief Executive.
7237

SOUTH-EASTERN ELECTRICITY BOARD.
JUNIOR ARCHITECTURAL ASSISTANT, Surveyor's Department, Headquarters. Salary, £500 p.a., under N.J.C., Grade II. Applicants should be competent draughtsmen, able to prepare detail drawings and carry out site surveys.

Applications, stating age, qualifications and particulars of present and previous appointments, accompanied by copies of two recent testimonials, must reach the Surveyor, 10, Queen's Gardens, Hove, 3, by 25th August, 1952.

A. L. BURNELL,
Secretary.

August, 1952. 7228

CITY OF SHEFFIELD.
APPOINTMENT OF CITY ARCHITECT.

Applications are invited from suitably qualified and experienced persons for the post of City Architect of the City of Sheffield. The salary attached to this appointment is £2,400 per annum, rising by annual increments of £100 to a maximum of £2,700 per annum.

The person appointed will be responsible for such architectural work as may be required by the various Committees and Departments of the Corporation. In particular he will be required:—

(*a*) To advise on the suitability of land for housing purposes, to survey such land, to prepare the layout of Housing Estates, and to prepare the detail plans, specifications, bills of quantities and estimates required for the development of such estates (including the roads and sewers); and

(*b*) to carry out similar duties in connection with the siting and erection of schools and other educational buildings.

The appointment will be subject to a medical examination, three months' notice on either side to be given at any time, the provisions of the Local Government Superannuation Act, 1937, and the Conditions of Service contained in the Memorandum of Recommendations of the Joint Negotiating Committee for Chief Officers of Local Authorities.

Forms of application may be obtained from me, and applications, accompanied by three testimonials specially given for this appointment, must reach me not later than *6th September*, 1952.

Canvassing, whether direct or indirect, is prohibited and will be a disqualification.

JOHN HEYS,
Town Clerk.

Town Hall, Sheffield, 1.
August, 1952. 7239

CORBY DEVELOPMENT CORPORATION.
QUANTITY SURVEYOR.

Applications are invited for the appointment of a Quantity Surveyor in the Chief Architect's Department within the scale £600×£25—£700.

The appointment is in connection with large-scale construction projects associated with the development of a New Town, and candidates should have experience in "taking off" and in the settlement of accounts.

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

Applications, stating age, education, training, qualifications, experience, past and present appointments and salaries, together with the names of two persons who can speak from recent knowledge of the applicants and to whom the Corporation can refer, must be received by the undersigned not later than 27th August, 1952. Envelopes should be endorsed "Quantity Surveyor."

The Corporation will endeavour to assist the successful candidate in the matter of housing accommodation if this is required.

R. F. BROOKS GRUNDY,
General Manager.

The Stone House, South Road,
Corby, Northants. 7123

CITY OF NOTTINGHAM EDUCATION COMMITTEE.
COLLEGE OF ART AND CRAFTS.

Principal: ALFRED H. RODWAY, A.R.C.A.
Head of School of Architecture: D. W. NOTLEY, B.Arch. (Hons.) Liverpool, A.R.I.B.A.

Applications are invited for the post of full-time STUDIO MASTER in the School of Architecture, which is recognised for exemption from the R.I.B.A. Final Examination. Duties to commence on the 1st September, 1952, or nearest date possible thereafter. Candidates should be fully qualified Architects, preferably holding the degree or diploma of a recognised school. Subject to the conditions governing full-time teaching service, the person appointed will be given such opportunities as may be practicable to maintain professional practice.

Salary: Burnham Scale for Grade B Assistants, £450×£25—£725; women, £405×£20—£580, plus allowances.

Application forms and further particulars from the Principal, College of Art and Crafts, Waverley Street, Nottingham, to whom the forms should be returned by 30th August, 1952.

F. STEPHENSON,
Director of Education.

Education Office, South Parade, Nottingham.
31st July, 1952. 7218

HAMPSHIRE COUNTY COUNCIL

Applications are invited for the appointment of a TECHNICAL ASSISTANT in the County Planning Department at a salary in accordance with A.P.T. III-IV of the National Scales (£525—£600).

Applicants should have had a thorough architectural training, have passed the Intermediate examination of the Royal Institute of British Architects, and have had previous Local Government experience on the design and layout of neighbourhood units and housing schemes, preferably in a Planning Department.

The appointment is pensionable and will be subject to a satisfactory medical report. Officers using their own cars when travelling on County Council duties will receive travelling allowance on the County Scale for the time being in force.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names and addresses of two persons to whom reference may be made, should be sent to the County Planning Officer, Litton Lodge, Clifton Road, Winchester, not later than the 22nd August, 1952. 7215

COUNTY BOROUGH OF CARLISLE.
CITY ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of a PRINCIPAL ASSISTANT ARCHITECT (General Work). Salary, A.P.T., Grade VII (£685-£760).

Applicants must be Members of the Royal Institute of British Architects. Housing accommodation is available if required.

Forms of application and conditions of employment may be obtained from the City Engineer, 18, Fisher Street, Carlisle, to whom applications should be returned not later than Monday, 1st September, 1952.

H. D. A. ROBERTSON,
Town Clerk.

The Town Clerk's Office,
15, Fisher Street, Carlisle. 7216

COUNTY BOROUGH OF BARNSLEY.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF SENIOR PLANNING ASSISTANT.

Applications are invited for the appointment of a Senior Planning Assistant in accordance with the A.P.T., Grade VI, commencing salary £645 per annum. A car allowance will be paid in accordance with the prevailing scheme for essential users. The appointment will be subject to the Scheme of Conditions for A.P.T.C. Services, to the General Conditions of Service within the Corporation as varied from time to time, and to the provisions of the Local Government Superannuation Act, 1937.

The successful applicant will be required to pass a medical examination, and the appointment will be subject to one month's notice on either side.

Candidates must have had extensive experience in Town Planning and must be Corporate Members of the Town Planning Institute or hold an equivalent qualification.

Applications, stating age, present and previous appointments, experience, qualifications, etc., together with the names of three referees, should be addressed to the Borough Engineer and Surveyor and Planning Officer, Town Hall, Barnsley, to reach him not later than the 30th August, 1952.

Canvassing will disqualify, and applicants should disclose in their application whether or not, to their knowledge, they are related to any senior official or member of the Council.

A. E. GILFILLAN,
Town Clerk.

Town Hall, Barnsley.
August, 1952. 7219

THE UNIVERSITY OF MANCHESTER.

Applications are invited for three LECTURESHIPS IN ARCHITECTURE. For two of the posts candidates should have special interests in building construction and the theory of structures. Salary on a scale £500 to £1,100 per annum; initial salary according to qualifications and experience. Membership of F.S.S.U. and Children's Allowance Scheme. Applications should be sent not later than 1st September, 1952, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained. 7182

WEST SUSSEX COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments at salaries in accordance with the National Scales of Salaries:—

(*a*) ASSISTANT QUANTITY SURVEYOR, Grade V, A.P.T. Division (£595 to £645 per annum);

(*b*) ASSISTANT ARCHITECT, Grade V, A.P.T. Division (£595 to £645 per annum);

(*c*) ASSISTANT ARCHITECT, Grade II, A.P.T. Division (£495 to £540 per annum).

Further particulars in respect of each appointment may be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 26th August, 1952.

T. C. HAYWARD,
Clerk of the County Council.

County Hall, Chichester.
31st July, 1952. 7229

THE NORTH-WESTERN ELECTRICITY BOARD.
APPOINTMENT OF SENIOR DRAUGHTSMAN (ARCHITECTURAL), NO. 1 SUB AREA HEADQUARTERS, MANCHESTER.

Applicants should have received a technical education up to H.N.C. (Building) level, and have had considerable experience in the preparation of estimates and complete working drawings of all types of sub-stations and office buildings, etc.

Salary range: £547/£651 p.a. N.J.C. Schedule "D," Grade V. Entry according to experience and qualifications.

Applications to Sub-Area Secretary, No. 1 Sub-Area, The North-Western Electricity Board, Town Hall, Manchester, P.O. Box 493, by 23rd August, 1952. 7247

COUNTY BOROUGH OF EASTBOURNE.
ASSISTANT ARCHITECT, GRADE A.P.T., V, £595-£645 p.a.

Applications are invited for the above appointment; candidates should be Members of the Royal Institute of British Architects.

Applications, stating age, present position and salary; qualifications and experience, together with the names of two referees, to be sent to the undersigned by noon on Monday, 25th August, 1952.

RAYMOND WILLIAMS, B.Sc., A.M.I.C.E.,
Borough Engineer and Surveyor.

4, Saffrons Road, Eastbourne.
5th August, 1952. 7227

PADDINGTON M.B.C. require JUNIOR ARCHITECTURAL ASSISTANT (A.P.T., I, £495×£15—£540 p.a.) (£10 less if under 26). Candidates should be preparing for Inter. R.I.B.A., be used to preparing working drawings, and be good draughtsmen. N.J.C. conditions, superannuation, one month's notice. Write age, qualifications, experience, names and addresses of three referees, to Town Clerk (A.82), Paddington, W.2, by 25th August, 1952. 7240

LANCASHIRE COUNTY COUNCIL

Applications are invited for the appointment of COUNTY PLANNING OFFICER—salary £2,500 by £125—£2,750. The Council will apply any National scales which may be formulated. Applicants must possess organising and administrative ability and have had wide experience in the preparation and administration of planning schemes.

Experience and knowledge of housing and industrial development will be an advantage. Appointment superannuable and subject to medical examination.

Applications, stating age, qualifications and experience and giving names and addresses of three referees to be sent to the Clerk of the County Council, County Hall, Preston, by 30th August and endorsed "County Planning Officer." 7220

CITY OF LEICESTER EDUCATION COMMITTEE
LEICESTER COLLEGE OF ART

Principal: Kenneth Holmes, O.B.E., A.R.C.A.

Applications are invited for the post of HEAD OF THE DEPARTMENT OF ARCHITECTURE. The Diploma of the Department is recognised for exemption from the Final Examination for the Associateship of the R.I.B.A.

Salary: Burnham Technical Scale, Head of Department, Grade III, £1,190 by £25—£1,340.

Applications should be sent to the Registrar, College of Art, The Newarke, Leicester, as soon as possible.

ELFED THOMAS,
Director of Education.
7214

CITY AND COUNTY OF KINGSTON UPON HULL
APPOINTMENT OF DEPUTY TOWN PLANNING OFFICER

Applications are invited from suitably qualified persons for the appointment of Deputy Town Planning Officer to the Council at a salary in accordance with A.P.T., Grade X (£895 by £40 by £40 by £50 to £1,025).

The appointment will be subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services; to such other conditions of service as have been specified from time to time by the Council; to the provisions of the Local Government Superannuation Act, 1937, and to three months' notice in writing on either side.

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

Applications, on a form which may be obtained at my office, must be delivered to the undersigned on or before the 15th September, 1952.

E. H. BULLOCK,
Town Clerk.

Guildhall, Kingston Upon Hull.
1st August, 1952. 7221

NATIONAL COAL BOARD.—Applications are invited for the under-mentioned posts in the Architectural Services Section of the Production Department at London Headquarters. The posts are superannuable, and salary, in the scales mentioned below, will depend on qualifications and experience.

ONE ARCHITECT, Grade I (£900×£35—£1,200, plus London Location allowance of £62 at the minimum of the scale, rising to £86 per annum at the maximum). Candidates must be Associate Members of the R.I.B.A., and have had a minimum of 10 years' experience in the profession. Experience in the planning of modern laboratories and workshops would be an advantage. (Ref. No. TT/516.)

TWO ARCHITECTS, Grade II (£600×£25—£650 ×£30—£900, plus London Location of £42 at the minimum of the scale, rising to £62 per annum at the maximum). Candidates must be Associate Members of the R.I.B.A., and have had experience in preparing sketch plans, working drawings and specifications. (Ref. No. TT/517.)

Apply in writing, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates), to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope clearly with the *relevant TT Reference Number quoted above.* Original testimonials should *not* be forwarded. Closing date, 30th August, 1952. 7217

FIFE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for appointment as ARCHITECTURAL DRAUGHTSMAN on salary scale £435 by £20 to £535 per annum. Candidates must have experience in an Architectural Drawing Office and be quick and accurate draughtsmen. Applications, stating age, experience, etc., and enclosing copies of recent testimonials, to be lodged with the Manager, Ministry of Labour, Preston Lodge, Cupar, not later than 23rd August, 1952.

J. M. MITCHELL,
County Clerk.

County Buildings,
Cupar-Fife.
1st August, 1952. 7222

URBAN DISTRICT COUNCIL OF CORBY
APPOINTMENT OF JUNIOR ASSISTANT QUANTITY SURVEYOR

Applications are invited from persons 22 years of age or over and who have completed their National Service, for the appointment of Junior Assistant Quantity Surveyor. The post offers scope and facilities for the successful candidate to qualify as a Chartered Surveyor. Previous suitable experience associated with works of building erection is essential.

The salary offered is in accordance with Miscellaneous Division III (£375—£440 per annum) of the National Scale of Salaries, and housing accommodation will be made available to the successful candidate, if married.

The provisions of the Local Government Superannuation Act, 1937, will apply.

Application forms, to be obtained from the undersigned, should be completed and submitted not later than noon on Thursday, 28th August, 1952.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby, Northants.
6th August, 1952. 7235

CITY OF BIRMINGHAM EDUCATION COMMITTEE
COLLEGE OF ARTS AND CRAFTS
BIRMINGHAM SCHOOL OF ARCHITECTURE

Principal: Meredith W. Hawes, A.R.C.A., N.R.D.
Director of the School of Architecture: A. Douglas Jones, Dip. Arch. (Liverpool) F.R.I.B.A.

Applications are invited for the appointment of a full-time SENIOR LECTURER IN ARCHITECTURE whose most important duties will be to give construction lectures to the students of the first three years of the course. An able designer with a broad outlook and with enthusiasm for architecture and for teaching is required for this post.

Salary will be in accordance with the Burnham (Further Education) Scale, 1951, for Senior Lecturers (£1,040—£25—£190 per annum). The successful applicant will be required to take up duty as soon as possible.

Forms of application may be obtained from the Principal, College of Arts and Crafts, Margaret Street, Birmingham, 3, on receipt of a stamped addressed foolscap envelope and must be returned not later than ten days after the appearance of this advertisement.

E. L. RUSSELL,
Chief Education Officer.
7236

COUNTY BOROUGH OF ROCHDALE.
APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of Assistant Quantity Surveyor, in the Department of the Borough Surveyor, at a salary of £595-£645 per annum (Grade A.P.T., V).

Applicants must have passed the Final Examination of the R.I.C.S. (Quantities Section), and should have had considerable experience in the preparation of Bills of Quantities, measurement of site works, and the preparation of Statements for Interim and Final Payments.

The appointment will be subject to the provision of the Local Government Superannuation Acts, and to the selected candidate passing a medical examination. Canvassing is prohibited, and candidates must disclose whether to their knowledge they are related to any member or senior officer of the Council.

Applications, stating age, qualifications, and full particulars of experience, together with the names and addresses of two persons to whom reference may be made, and endorsed "Assistant Quantity Surveyor," must be delivered to the Borough Surveyor, Town Hall, Rochdale, not later than 9 a.m. on Thursday, 4th September, 1952.

K. B. MOORE,
Town Clerk.
7246

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.

NORTHERN RHODESIA.—With view to taking charge of office in absence of Principal, qualified SENIOR ASSISTANT, preferably office trained and single. Salary, £780 for first year, with considerable increase thereafter if satisfactory. Prospects of partnership. Write Box 7241.

A LARGE INDUSTRIAL ORGANISATION with headquarters in the Midlands and other factories in various parts of the country is considering the appointment of a fully qualified architect to look after their factory buildings and to act as Consultant on any new building projects. Applications, in writing, should give full particulars of experience, age and salary required. Box 7233.

EXPERIENCED ASSISTANT required immediately in London office to work on large project in new town. Good draughtsmanship and sound knowledge of design and construction essential. Apply in writing stating experience, age and salary required. Clifford Tee & Gale, 5, Buckingham Palace Gardens, S.W.1. 7212

EXPERIENCED SENIOR required in well-known London Architect's office, with view to partnership, 35/40 preferred. Give complete details of past experience, age, salary required, when free. Box 7245.

ARCHITECTURAL ASSISTANTS with 3 to 5 years' experience required immediately. Good salary and prospects. Five day week. Write to Messrs. J. M. Sheppard & Partners, 38, Bedford Place, W.C.1, giving particulars of age, qualifications, experience and salary required. 7198

Architectural Appointments Wanted

A. R.I.B.A. (28), conscientious worker, with a few years' experience, including L.A. housing, wishing to extend experience seeks appointment with small London firm offering scope for imaginative, practical, and administrative ability. Box 525.

YOUNG Lady, Inter. R.I.B.A., and about 2 years' experience, requires position, London or Essex. Box 524.

ARCHITECT'S ASSISTANT. Final standard, capable handling medium contracts to final account. Five years' office experience, requires progressive position in small London office preferably with contemporary outlook. Box 522.

ARCHITECTURAL ASSISTANT desires engagement London. Commercial, domestic, conversions, etc. Design, wrk. drgs., details, surveys. Box 526.

ARCHITECTURAL DRAUGHTSMAN with some years of varied work seeks position in London office. Box 523.

STUDENT R.I.B.A., school trained and passed final except professional practice, desires position in progressive practice. Varied experience. Box 520.

ASSISTANT, recently completed school course, wishes to add to his office experience immediately in London area. Box 517.

ASSISTANT requires responsible position. Good general experience, including private and L.A. housing (low cost), farm work, church and school work, etc. Surveys, lay-out, specifications. Prepared to take charge from sketch stage to final settlement. Box 518.

REGISTERED ARCHITECT, A.R.I.B.A., (office trained) requires permanent position as SENIOR ASSISTANT in Guildford, Dorking, Horsham area. Age 28. 6 years' varied post-war experience in private practice and public utility. Married. Own car. Available October. Box 519.

STUDENT R.I.B.A. wants post as ARCHITECT'S ASSISTANT. Age 23. No previous office experience. School trained to Intermediate. Taking night class course for Final. London or Home Counties preferred. £5 a week. Box 521.

Other 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.

SHORTHAND-TYPIST, 18-25 years, required by Architects and Consulting Engineers, W.C.1 district. Salary £250-£350 according age and experience. Box 7211.

THE MERCHANT ADVENTURERS LTD. require a first-class Draughtsman interested in Contemporary Lighting Fittings design. Write giving full particulars and salary required to 43, Portland Road, W.11. 7223

PROGRESSIVE Firm of Cast Stone Manufacturers, S.W. England, requires responsible Assistant for Contract Department. Preparation of working drawings from architect's originals. Good prospects. Architectural or building surveying experience advisable. Pension Scheme. Box 7231.

A VACANCY occurs on the technical staff of "The Architects' Journal" for someone with a keen interest in and a sound knowledge of building construction. Write, giving age and experience to the Technical Editor, "The Architects' Journal," 9, Queen Anne's Gate, London, S.W.1. 7169

Services Offered

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

A. R.I.B.A., with good all round experience, requires part time or free lance work to help his growing practice. MUSeum 9106. 7206

EXPERIENCED SECRETARY / BOOKKEEPER (28), 5½ years' private architects' office, seeks similar position. Central London or South Essex. Available 1st October. Box 7230.

ARCHITECT, 10 years' professional experience at home and abroad, some teaching experience, seeks appointment as CORRESPONDENCE SCHOOL TUTOR in Building Subjects. Box 7225.

QUALIFIED HEATING AND VENTILATING ENGINEER offers services for the preparation of heating and ventilating estimates, schemes, specifications and working drawings. Fees by arrangement. Box 7226.

EXPERIENCED PERSPECTIVE ARTIST prepared to execute Drawings from Architect's own details and plans, for about 9d. per sq. in. Box 7243.

ADVERTISER, having unsurpassed personal top level connections throughout Wales with Architects, Building and Civil Engineering Industry and Municipal Engineers and Surveyors, seeks position with reputable firm as local SALES MANAGER or REPRESENTATIVE. Box 7234.

SURVEYING and Levelling of Building Sites and Measured Drawings undertaken by experienced Surveyor at moderate charges. Box 6683.

TYPEWRITING, DUPLICATING.—Bills of Quantity, Specifications, etc., expertly typed/duplicated. Express service. Work collected/delivered. JOSEPHINE HALL & PARTNERS, 501/2, GRAND BUILDINGS, TRAFALGAR SQUARE, W.C.2, WHI. 6411/2, and 87, High Street, Tunbridge Wells. Telephone: 1255. 7005

DUPLICATING.—Bills of Quantity, Reports, etc. Prompt service; accurate work. Send to Fisher's, Hythe Street, Dartford, Kent. 7160

CONVERSIONS, ALTERATIONS, EXTENSIONS, and all small Building Contracts efficiently carried out at keen prices by enthusiastic South London builder. Parsons, 18, Maplestead Road, S.W.2. TUL: 3062 for immediate attention. 7191

EXPERIENCED REPRESENTATIVE, keen and imaginative, with good connection among London Architects, seeks appointment with good prospects with firm of repute. Highest references. Box 7197.

For Sale or Wanted

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

RECONDITIONED EX-ARMY HUTS, and manufactured buildings. Timber, Asbestos, Nissen type, Hall type, etc. All sizes and prices. Write, call, or telephone, Universal Supplies (Belvedere) Ltd., Dept. 25, Crabtree Manorway, Belvedere, Kent. Tel.: Erith 2948. 6803

PRACTICE in progressive West Cumberland industrial development area for sale, owing to death of Fellow. Varied and particularly interesting owing proximity English Lake District. Box 7202.

80,000 (approx.) Multi-coloured Fireplace Briquettes, 6 in. by 3 in. by 2½ in. 120,000 (approx.) Assorted Bullnose, Squints, Overlos, Covettos, Radiating Arch Tiles, Sancy Arch Tiles, Tiles, Tile Slips, Hob Corners, Bullnosed Corners. Best offers. D. S. MacKenzie, Elmhurst, East Street, Selsey, Sussex. 7242

Miscellaneous

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

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works, 96/107, St. Paul's Road, N.1. Canonbury 2061.

MAIN FINCHLEY ROAD.—First-class Ground Floor Office Accommodation, also 3 Upper Floors, available. Suitable for professional purposes or substantial concern. Practically adjoining Tube. Full particulars, apply Box 7244.

WIMPOLE STREET, W.1.—Up to 5/6 offices available in private house, all newly decorated; other rooms occupied by accountants; moderate rent. Write Box 7224.

Educational Announcements

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

I.A.A.S.
FORTHCOMING EXAMINATIONS

The Incorporated Association of Architects and Surveyors will hold examinations at Intermediate and Final grades in the following sections during the week beginning 24th November, 1952:—
ARCHITECTURE.
QUANTITY SURVEYORS.
BUILDING SURVEYORS — Municipal.
BUILDING SURVEYORS — Non-Municipal.
LAND SURVEYORS.

The Examinations will be held in London, and at certain provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 1st September, 1952.

Full information on application to the Examinations Officer, I.A.A.S., 75, Eaton Place, S.W.1. 6968

R.I.C.S., I.A.A.S., and I.Q.S. Exams.—Postal Courses conducted by the Ellis School (Principal: A. B. Waters, M.B.E., G.M., F.R.I.B.A.), 103B, Old Brompton Road, S.W.7. KEN. 4477/8/9. Descriptive booklet on request. 7020

R.I.B.A. and T.P.I. EXAMS.—Stuart Stanley (Tutor Sch. of Arch., Lon. Univ.) and G. A. Crockett, M.A./B.A., F./A.R.I.B.A., M./A.M.T.P.I. (Prof. Sir Patrick Abercrombie in assn.) prepare Students by correspondence tuition. 10, Adelaide, Street, Strand, W.C.2. TEM. 1603/4.

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