THE ARCHITECTS' JOURNAL

standard contents

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

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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	Sloane 3158/1601
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
IWA	Inland Waterways Association. 11, Gower Street, W.C.1.	Museum 9200
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	MARS Group (English Branch of CIAM). Secretary: Gontran Goulden, Building Centre, 9, Conduit Street, W.1.	Mayfair 8641
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300
MOLGP	Ministry of Local Government and Planning. 23, Saville Row, W.1.	Regent 8411
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94-98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers. 10, Princes Street, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association, 14, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors, 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	Central 4444
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1.	Langham 1984
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TGC	The Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 69, Cannon Street, E.C.4.	City 4444
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866
WEDA	Welfare Equipment Development Association. 74, Victoria Street, S.W.1.	Victoria 5783
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

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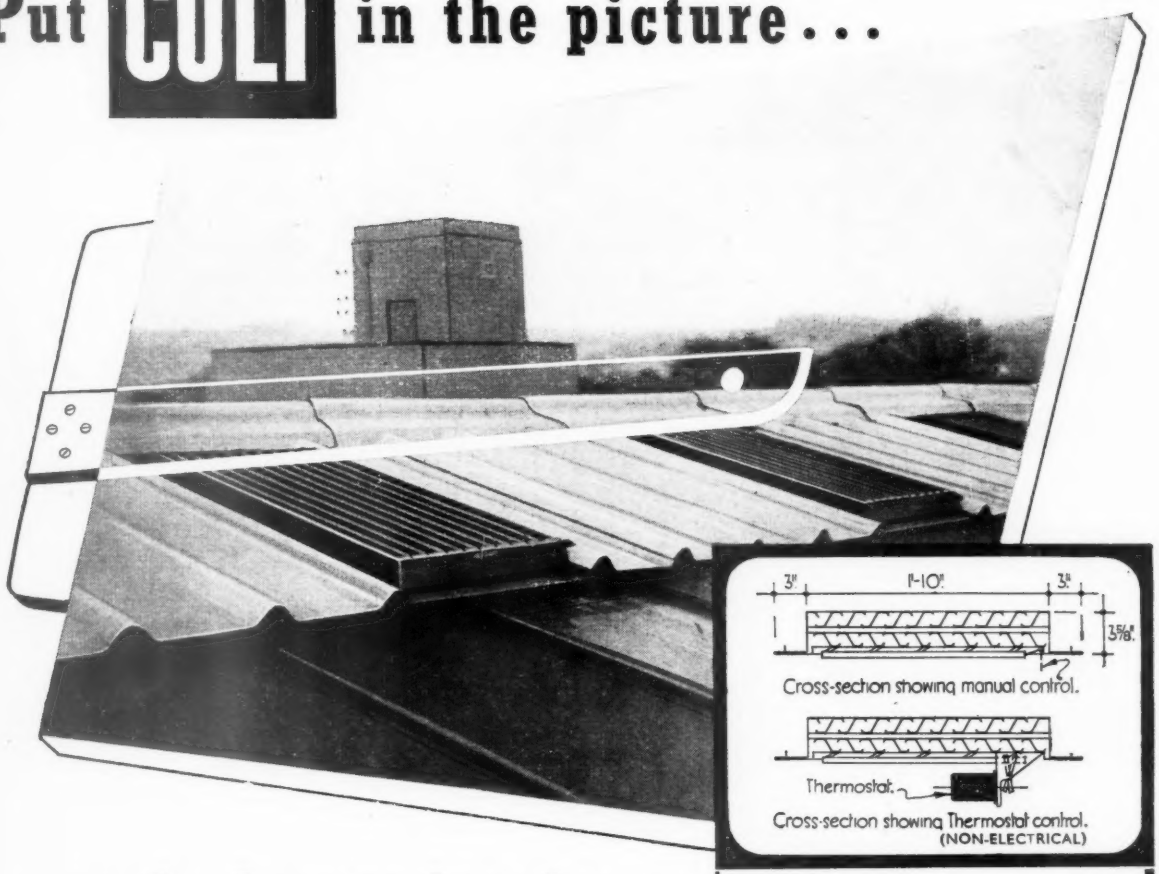

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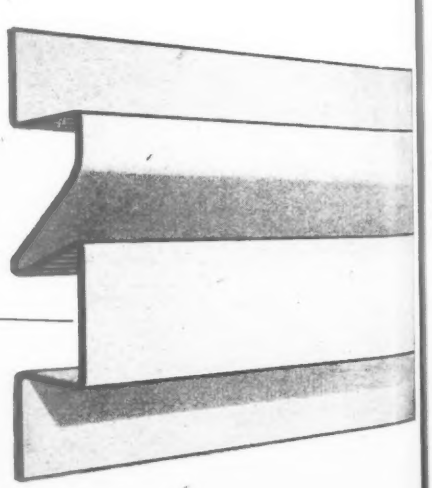

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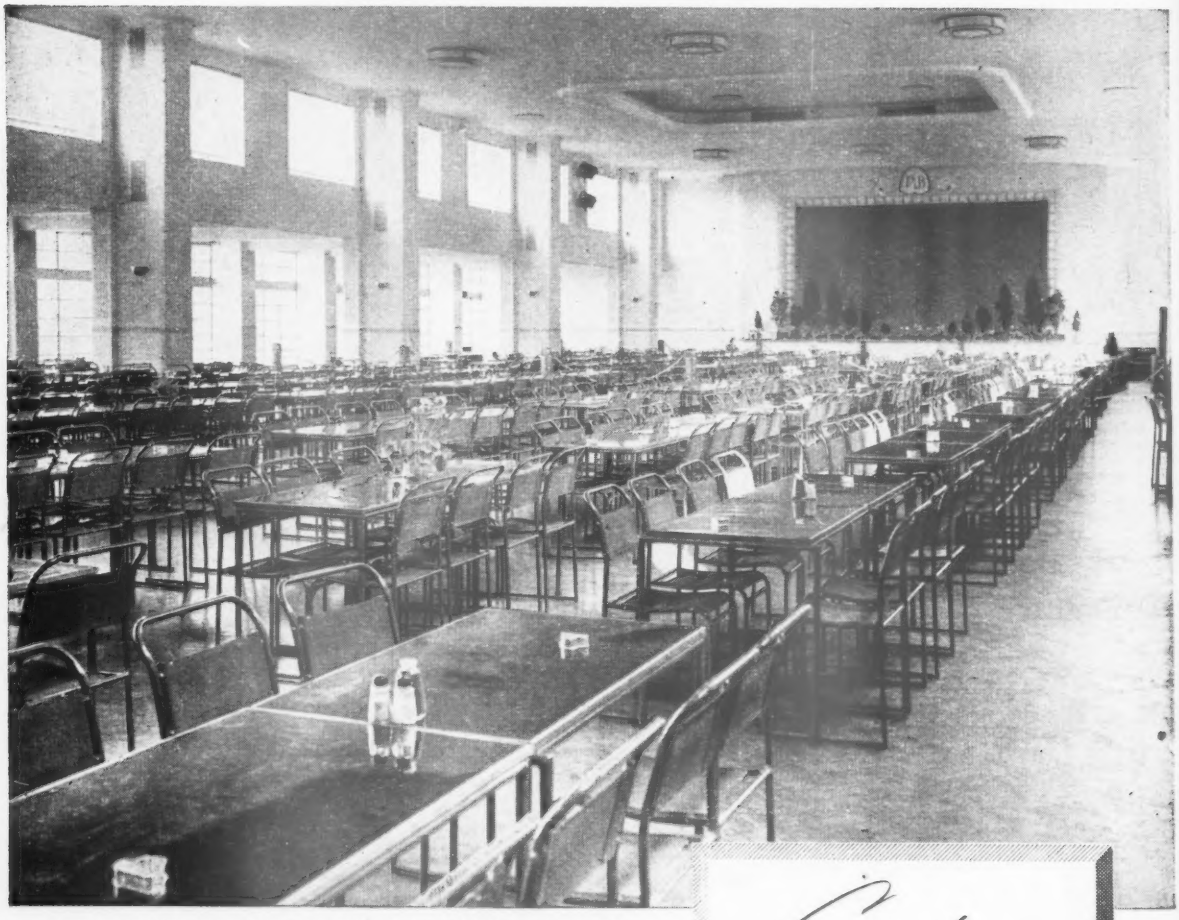
Paton & Baldwin Ltd. Canteen—Darlington
Photograph by courtesy of Paton & Baldwin Ltd. Architects: Sir Alex Gibbs & Partners, Queen Annes Lodge, London. S.W.1.



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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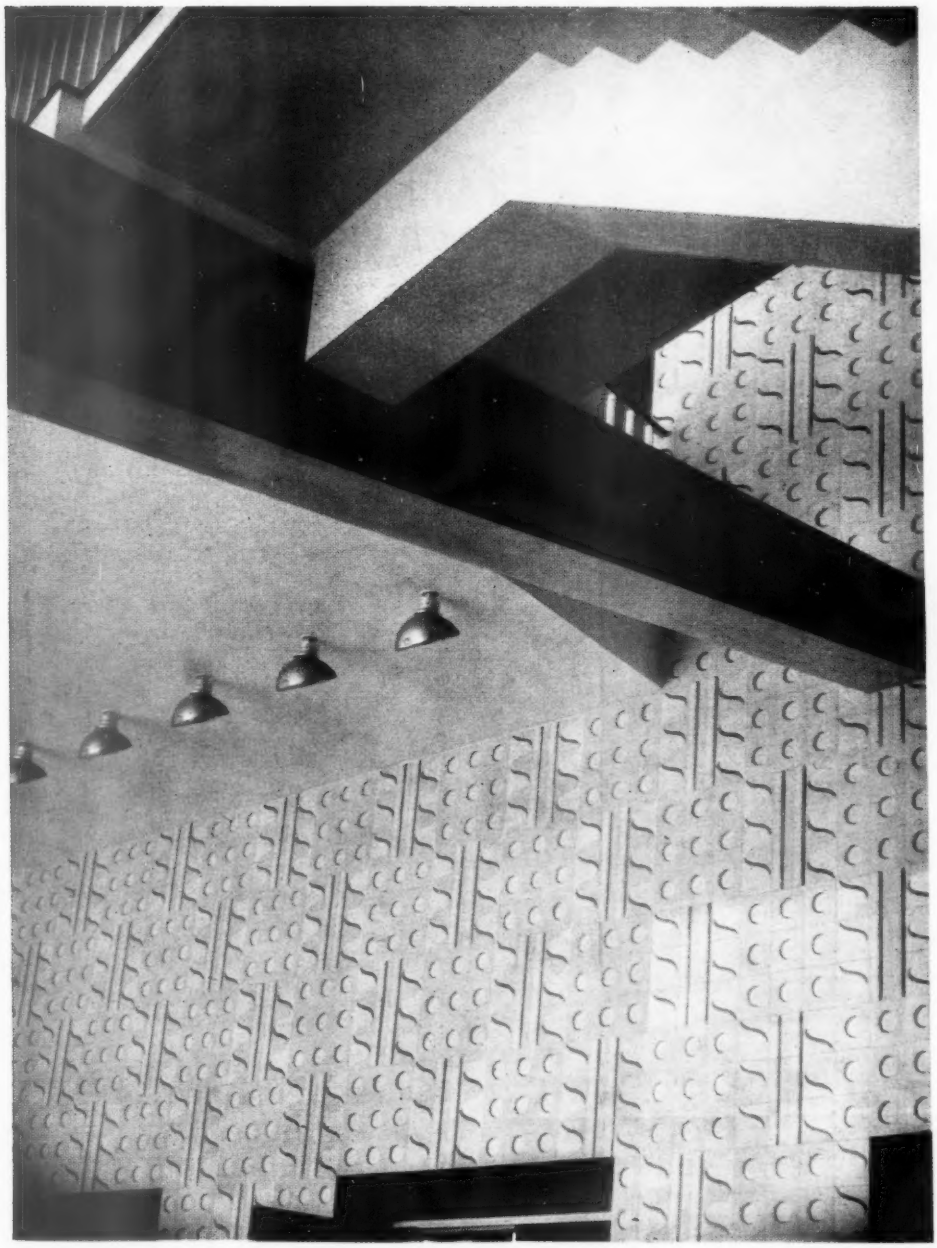

An example of the new Carter decorated tiling

Decorated tile wall in yellow and grey on off-white background at The Susan Lawrence Primary School, Lansbury Neighbourhood, Poplar. *Architects: F. R. S. Yorke, F.R.I.B.A., E. Rosenberg, C. S. Mardall, A.R.I.B.A.* The large scale pattern is built up of 6″ x 6″ units designed specially by Peggy Angus. The texture of the glazed tiles provides an added richness to this permanent decoration.

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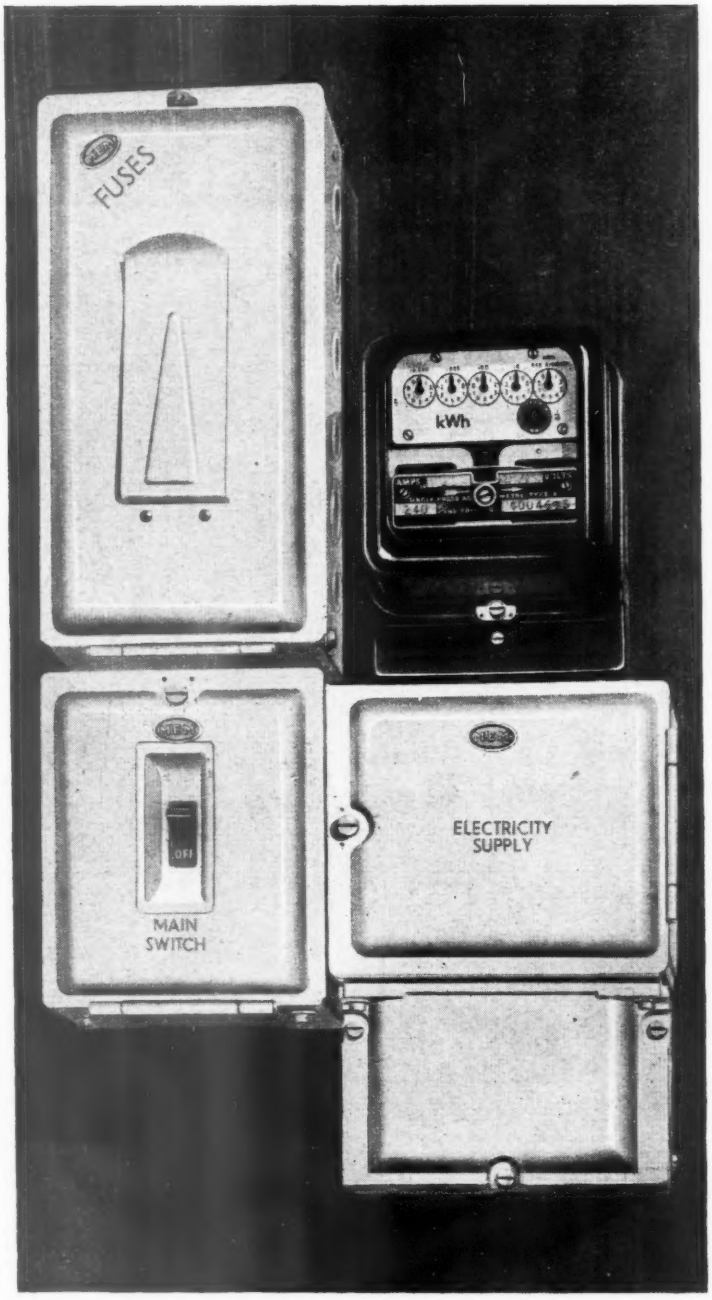

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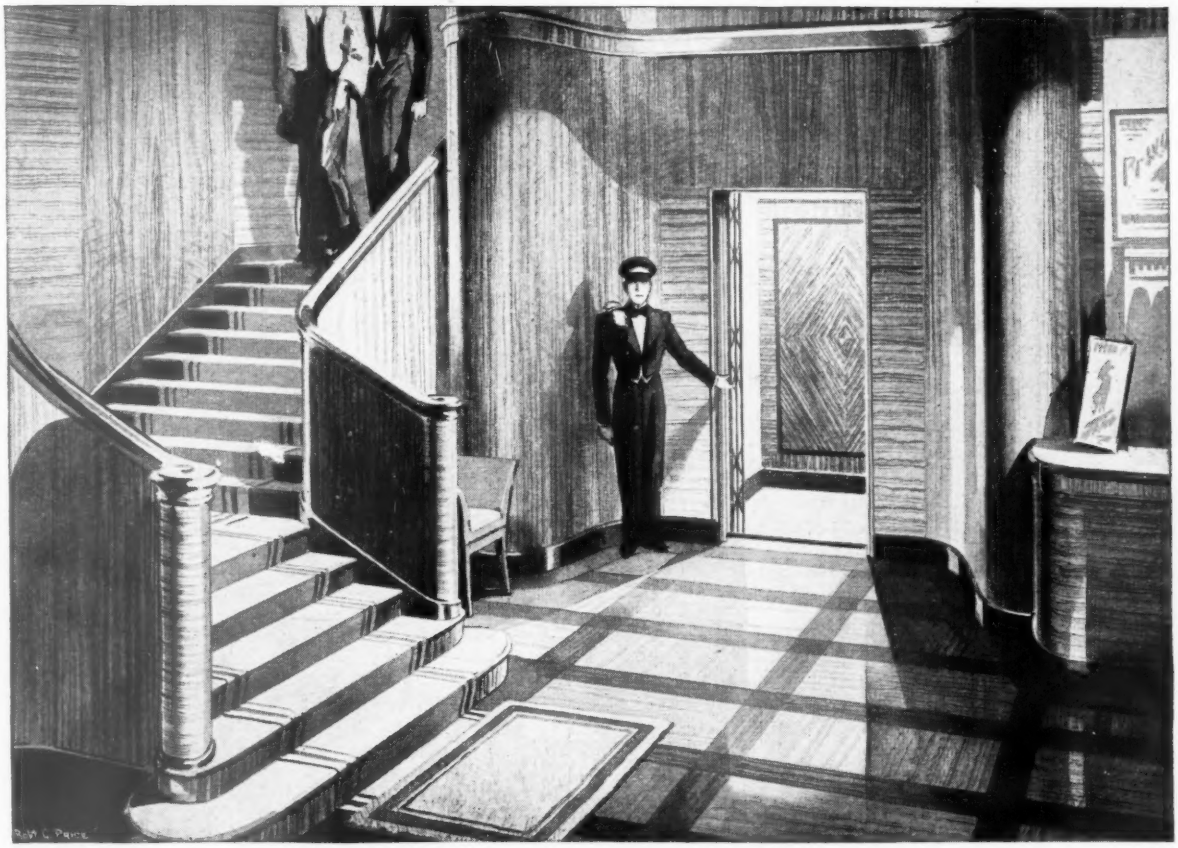

As the building industry increasingly realises the pleasing effects and the simplification in constructional methods made possible by the use of plywood—for partitions and panelling, floors, doors and ceilings, counter fronts and tops, built-in cupboards, the sheathing of radiators, and its many other applications indoors and out—more and more builders are turning to "Thamesply" because it is *very good plywood indeed.*

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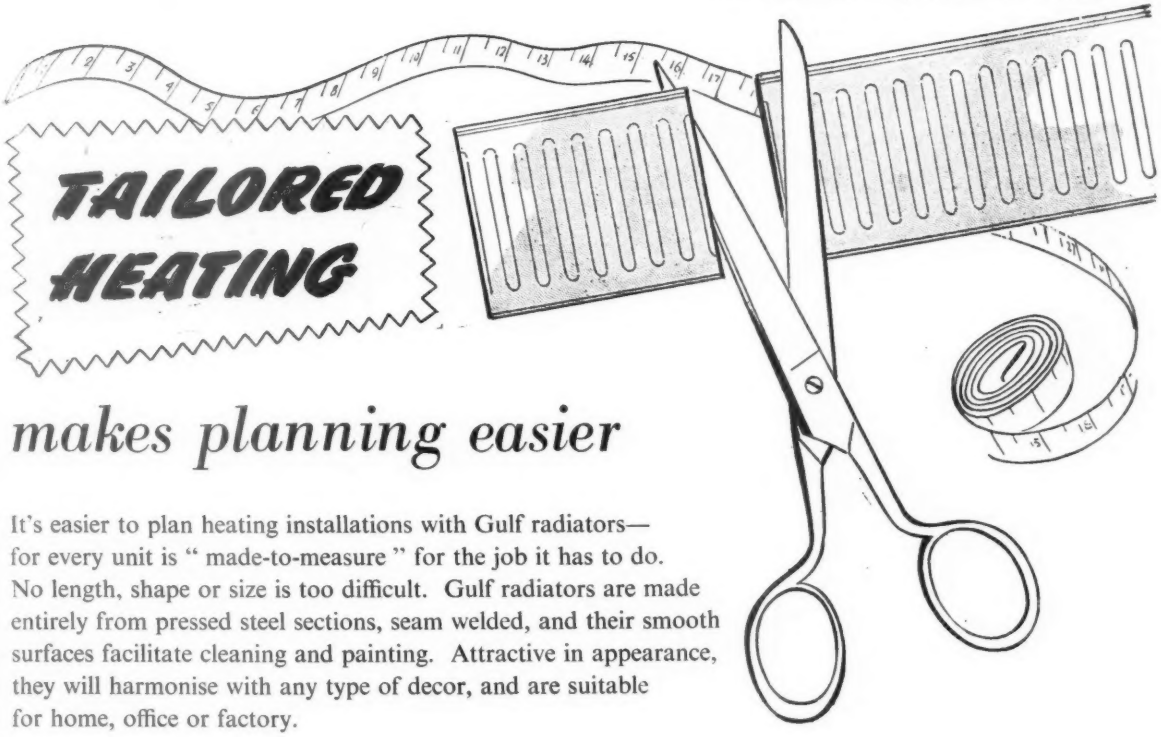

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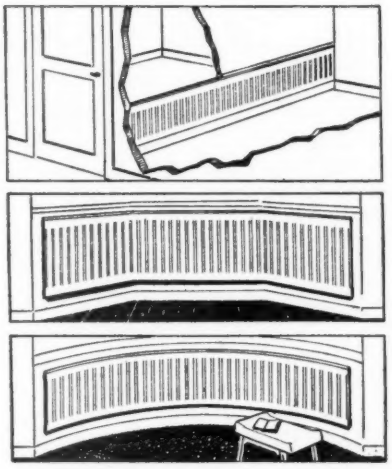

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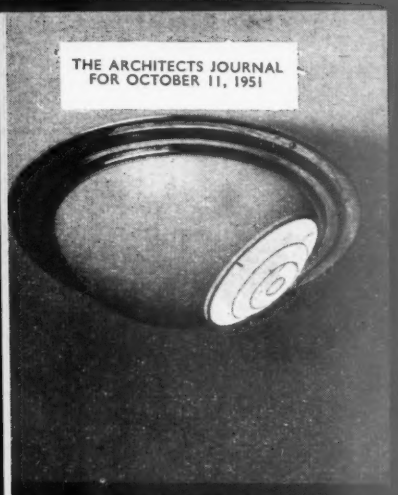

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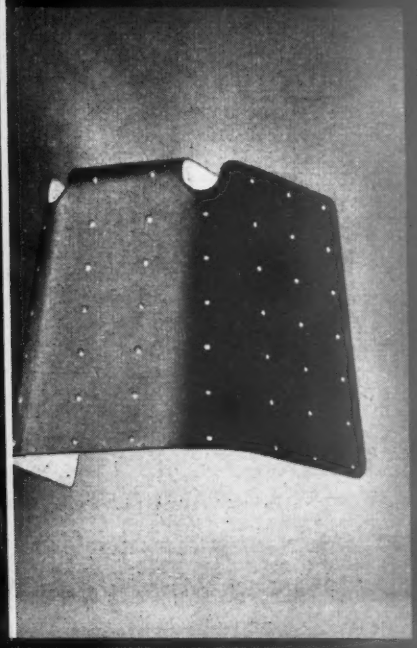
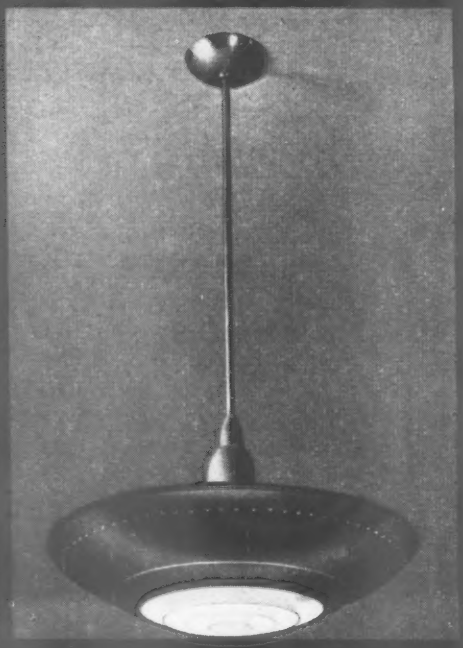
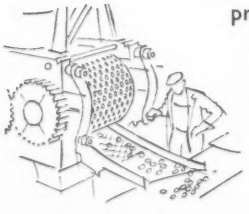


F.816 PENDANT. Finishes: bowl support and ceiling plate, off-white; lamp housing and bowl, gilt anodised aluminium; suspension, satin brass. Dust cover: obscured glass. Lamp: 200 watts.



F.936 CEILING. Finish: all off-white. Du cover: obscured glass. Lamp: 300/500 wat



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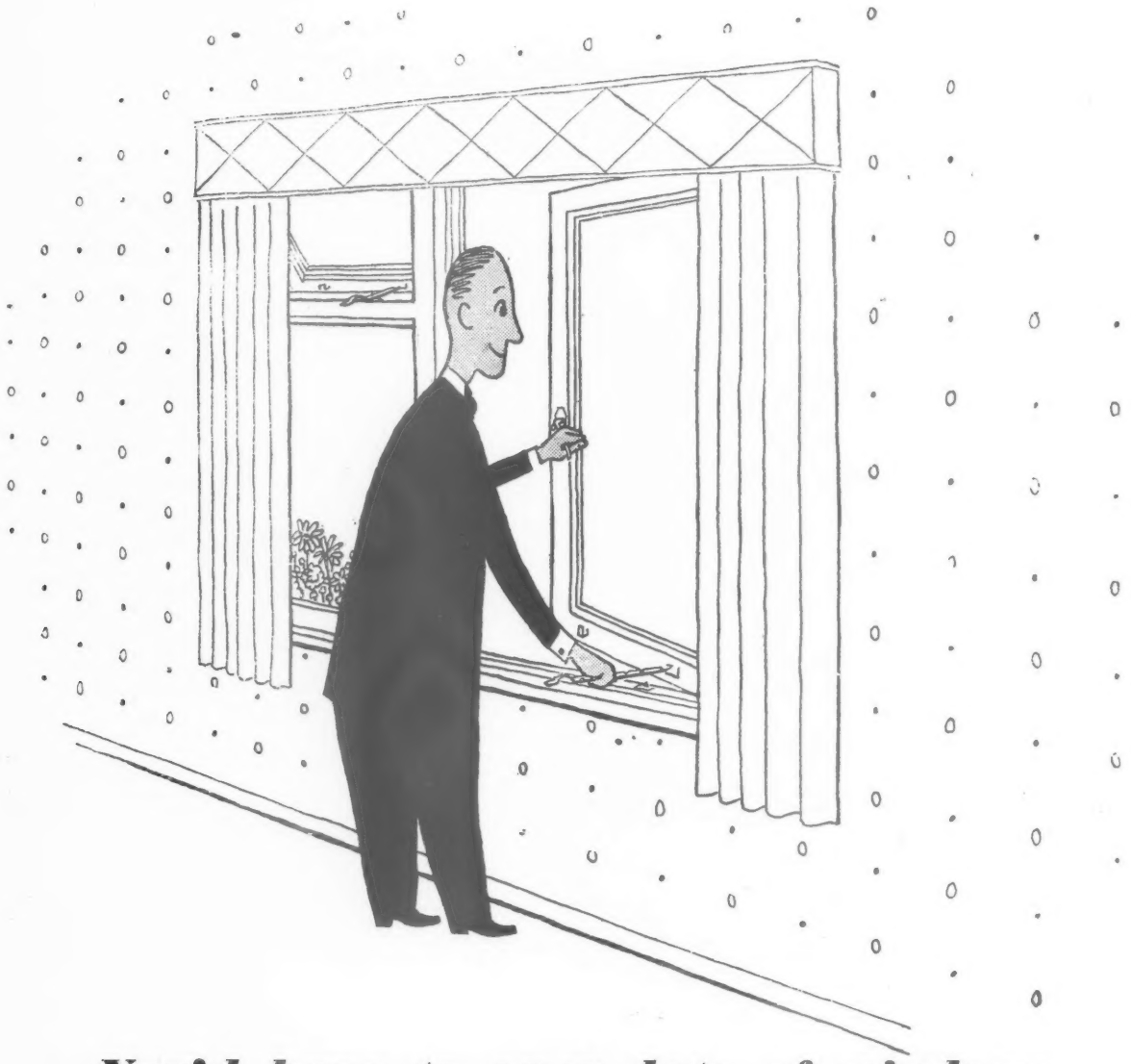

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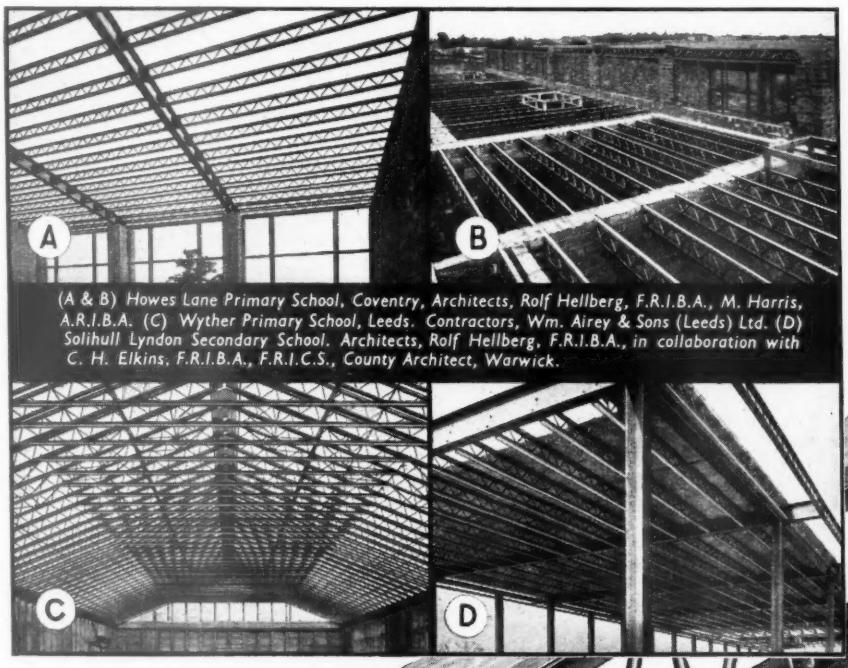
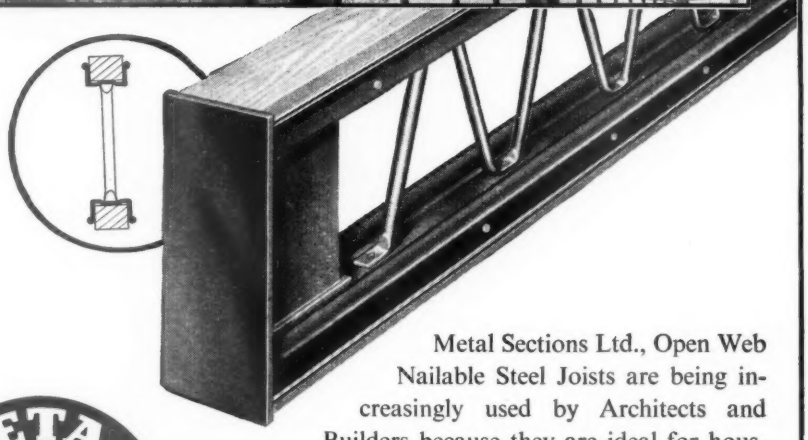


(A & B) Howes Lane Primary School, Coventry, Architects, Rolf Hellberg, F.R.I.B.A., M. Harris, A.R.I.B.A. (C) Wyther Primary School, Leeds. Contractors, Wm. Airey & Sons (Leeds) Ltd. (D) Solihull Lyndon Secondary School. Architects, Rolf Hellberg, F.R.I.B.A., in collaboration with C. H. Elkins, F.R.I.B.A., F.R.I.C.S., County Architect, Warwick.



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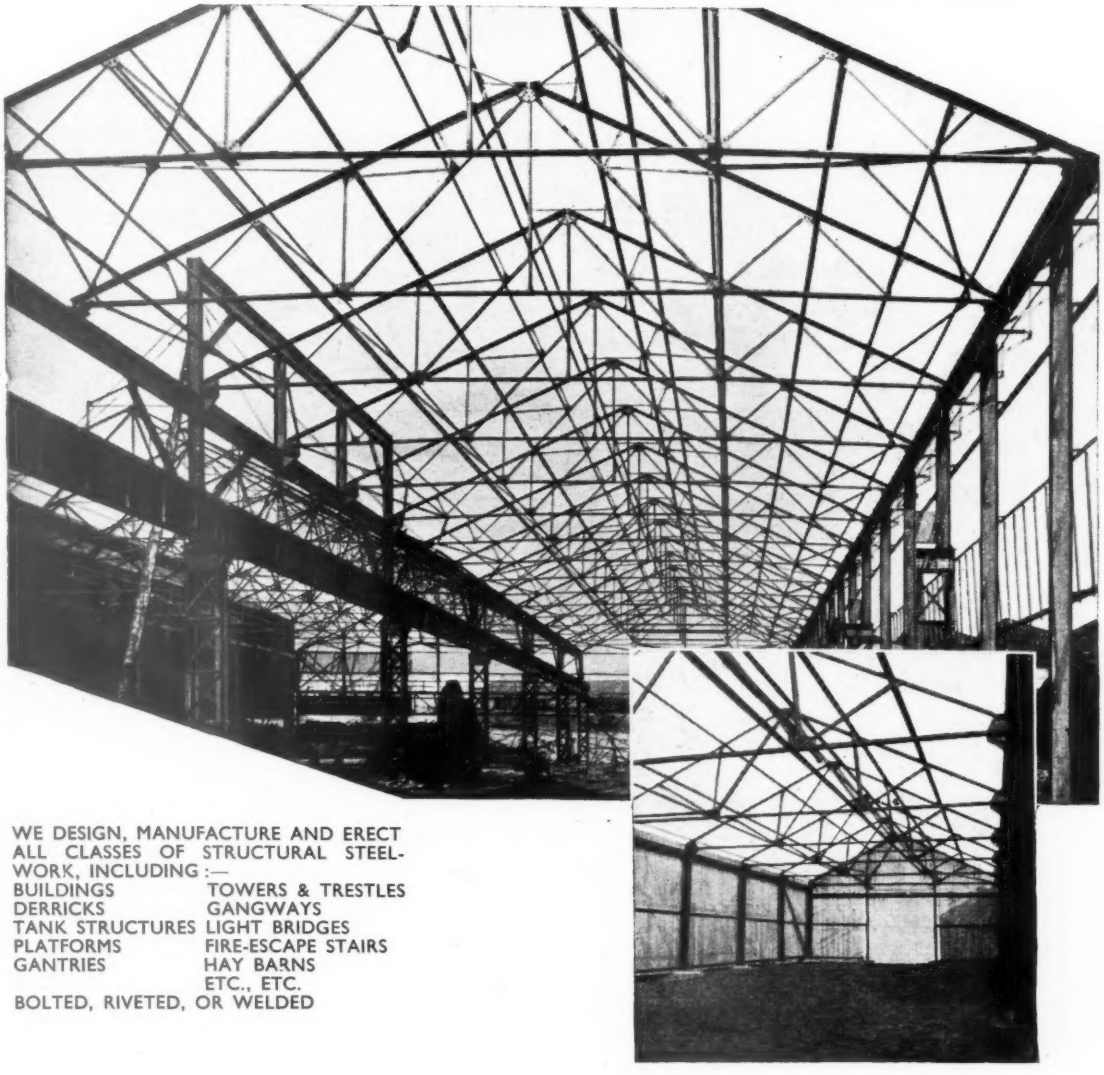

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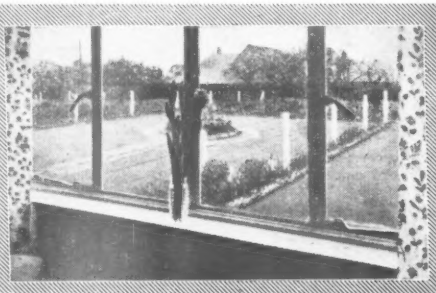

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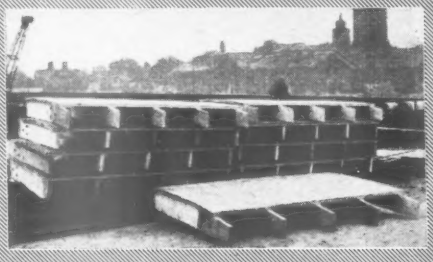

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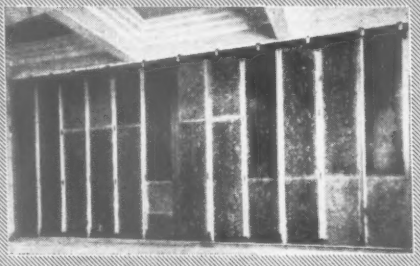

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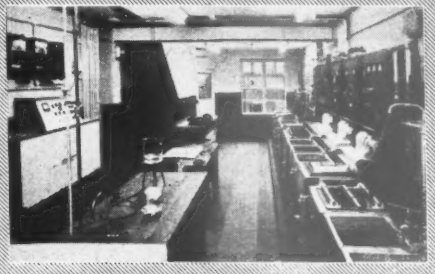

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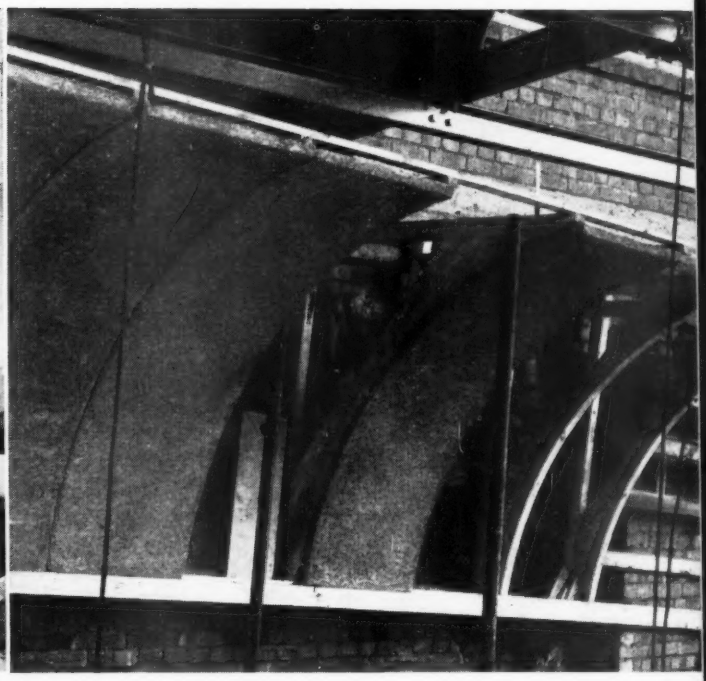

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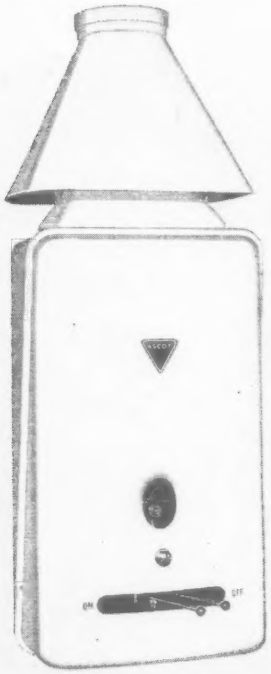

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THE ARCHITECTS' JOURNAL

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SOUTH BANK FAREWELL

Everyone, of course, will have his own memories—gay, sad, absurd, or irritable—of the Festival of Britain. But for some of us at least the last week on the South Bank—" Positively *Must* Close "—has added a few which I think will not quickly be forgotten.

*

It was a strange and rather macabre experience to wander for the last time, Press card in hand, among those now so familiar buildings, their surfaces polished with the passage of millions of eyes and worn smooth by the attrition of myriad camera lenses, and to know that each one of them was doomed. It was like the last farewell visit to a town which is to be engulfed in the making of a new reservoir or abandoned as a training area for troops. Defiantly the flags still fluttered, the fountains crashed, the metal and glass winked and glittered in the floodlights. Cockaded, groomed and patient, the buildings waited, like prize beef cattle, for the humane killer of official policy.

*

Against this sombre, light-shot background a few impressions stand out vividly. *Monday*, 4 *p.m.*—Attendance mounting. A higher sprinkling of gentry now, " long, rich, and bored as borzois "—bowler hats, coats and skirts, often a couple of children (last day of the hols?)—such figures seemed happiest perhaps with the Perspex car, the dinghies, and the South Down sheep, and ill at ease among the marvels of science or industry, or the warm, chipped cups of the tea bars. Now and then in the crowd, like the sudden tell-tale glimpse of a porpoise fin, the familiar face of an architect, listing no doubt his final quota of successes and disasters.

*

Tuesday, 11 *p.m.* — Excitement mounting. A party of distinguished architects seen waltzing on the Fairway, while the President of the RIBA executes an obstinate eightsome reel with a fellow Scot upon the promenade. Arc lamps, corduroy trousers and Central European accents denote a film unit at work. Everywhere to be seen the keen amateur photographer, with his anxious exposure meter.

*

Thursday, 9 *p.m.*—A three-hour cloudburst. Gutters bubbling and spraying, deserted concourses, the Lord Mayor of London, top-hatted beneath a ceremonial umbrella, boarding a river bus for the Director-General's farewell trip up river. Sir Alan Herbert, scornfully hatless, on the bridge. Dogged queues, newspaper-hatted, trail round the Telekinema in the downpour.

*

Friday, 1 *p.m.*—Record attendances. Paraplegics playing wheeled chair netball on the arena. Festival architects already seen at work on the back of restaurant menu cards, arguing over the plans for the future of the South Bank. In the crowded bar of the Press Room farewell parties seem to have been in non-stop progress for days.

*

Saturday, 9 *a.m.*—Before the first turnstiles have clicked open. Clean, misty, pale in colour, sharp and thin to the nose— a lovely morning and a death-bed repentance from the weather. On the empty Fairway a knot of cleaners listening to Geraldo, (dark glasses and belted overcoat) rehearsing the boys beneath the dew-dripping canvas. Behind the fountains in the distance the Lord Privy Seal, carnationed and cheerful, lumbering briskly round the site.

*

9 *p.m.*—The crowd boils and surges on the Fairway, carved horizontally by the violet slices of the arc lamps. Up in the Control tower the General Manager, a tense silhouette with a telephone at each ear.

*

11 *p.m.*—Gracie and " Wish Me Luck," and fainting bodies handed over the pink, upturned adoring faces. Newsvendors, rapt and oblivious of their headlines of Scarborough and Buenos Aires and Abadan. Sleep-struck tots, couples " hand in love," a few determined drunks—tooth-sucking little

men in large check caps clasping glasses of light ale.

*

Midnight.—Warm, starry, magical. Turnstiles clicking, champagne corks popping in the Royal Pavilion. Kenneth Horne and Richard Murdoch leave arm in arm, and each gets separately into his own Rolls Royce. Autograph hunters crowding Gracie's car, while within Ministers listen with impassive faces—minds perhaps in Scarborough?—to everybody's ideas of what to do with the site.

*

Sunday, 3.30 *p.m.*—Another superb September day, but with a cold east wind. The last service in the Royal Festival Hall, and for some reason a drop in the temperature of excitement. An admirable address from the Archbishop of Canterbury, but a slipshod choir and unfriendly music. Even the Hall itself seemed below par. The ventilation system seemed to have broken down—it was unbearably stuffy—and the flowers on the platform—never, incidentally, a strong point—quite unusually tasteless.

*

6 *p.m. Science Exhibition, South Kensington.*—The last visitors standing to attention while the National Anthem is played against the fantastic background of electrons and crystals. "Leaving school" farewells in the tea bar and bookstall. Martinis upstairs for a few Festival officials and their friends.

*

9.30 *p.m.*—Brigade of Guards wheeling and circling on the Fairway, distinguished guests hunched in overcoats against the bitter evening breeze, on the roof of the Regatta. The Archbishop has spoken, the Festival flags lowered to a roll of drums.

*

11.30 *p.m.*—Lights still shine, but the Exhibition is deserted except for cleaners and security men. The General Manager has gone home, almost for the first time for six months. A few more corks pop in the Royal Pavilion. No Ministers or actors tonight. A "last night on board" feeling in the air. Promises to ring up, to have lunch, to see you soon, and suddenly it's over.

*

Well, after the memories, I suppose, the verdicts. Or is it perhaps too early for these? How have Architecture, Science, and the Arts fared this Festival summer? Of one thing anyway I think we can be certain, that, for the first time for generations, architecture has been talked and written about by people who are not architects. In these days of technical miracles, science, it seems, has almost lost its power to bemuse, and now seems only to hint at the unimaginable. The Arts? Well certainly music and drama have flourished more mightily this year than ever before, and countless exhibitions have spread endless visual delights before us. But architecture, perhaps because she has been so long the Cinderella, has seemed this year to be the real princess, and we are grateful to all those who have assisted in her transformation—not only the architects, engineers, display designers and craftsmen directly concerned, but to those who have supported and guided their work, in particular, Sir Gerald Barry.

Prospero looks down from the musicians' gallery at Ferdinand and Miranda on the apron platform of Bernard Miles' quasi-Elizabethan theatre. See Astragal's note below.

ST. JOHN'S WOODEN O

I was delighted to find, on a belated visit to Bernard Miles' "Mermaid Theatre," at St. John's Wood, that the designers—Michael Stringer, C. Walter Hodges—and the architect, Ernest Freud (whose name is not, of course, mentioned in the Press hand-outs), have not carried this piece of pastiche too far. There are no Petts-Wood-Tudor trimmings nailed on to the shell of the building, which used to be a school assembly hall. Only the stage area has been designed in the Elizabethan manner. The result is entirely charming and quite forgivable. Forgivable because, although one would deplore the building of a permanent London

A drawing by Picasso, done in Rome in 1917, when he was working on ballet designs for the Diaghiliev company. Left to right are Massine Bakst and Diaghiliev. The drawing is from the retrospective exhibition of Picasso's work opening today at the ICA.

Sir Gerald Barry

During the Festival of Britain, architecture, as ASTRAGAL observes, became transformed from the Cinderella of the arts to the glamorous princess whom crowds, not normally accustomed to give her a thought, courted and admired. The fairy godmother who made the transformation possible was Sir Gerald Barry, and architects owe him a debt it will be difficult to repay for his consistent championship of the cause of good design. He has shown his belief in modern architecture over many years, for example by organizing the *News Chronicle* schools competition when he was editor of that paper, an enterprise which gave a lasting impetus to modern school design. Before that, when editor of the *Week End Review*, he was one of the first sponsors of the new word "planning." It was he indeed, we believe, who coined the word "unplanning," which has since entered the language. A brilliant choice as Director-General of the Festival, Sir Gerald immediately made clear what he thought of the architectural side of it by himself undertaking the chairmanship of the South Bank Presentation Panel. He was thus able to support and encourage the right kind of architecture at every stage. The chances that architecture had—and took so successfully—were of his making, and history should record that if Hugh Casson, Misha Black and the rest were the Paxtons, Barry was the Prince Consort, of 1951.

theatre as a replica of the Globe, one regards this gaily painted Florentine cabinet simply as a "live" museum piece.

*

This theatre will obviously be the happy hunting ground of the "back-to-the-wooden-O" enthusiast — or "pros-cenium-buster." But it will, I hope, serve to show him that there are a number of Elizabethan plays that are immensely improved by productions which make use of the technical equipment of the modern theatre. "The Tempest," one of the two presentations given so far at "The Mermaid" (which is closed for a while), is a case in point. Whether you regard this play as a simple, enchanting masque, or as a swan-song summing-up of the dramatist's philosophy, you will agree that it needs, not an intimate theatre with limited resources, but a large-scale elaborate production in which the magical island setting is kept firmly beyond the picture-frame and not brought into the audience's laps. There is nothing more disenchanting than sitting so near to the conjurer that you can see how it's all done.

OF AMICE AND ARCHITECTS

I have just been shown a leading article in *The Engineer* which approves of the Building Research Congress and welcomes the liaison between architects and engineers, but closes with the hope that the architect of the future may be an AMICE as well as an ARIBA. This would be an admirable thing, but I don't see how it can be done while we have our present system of training. After all, the RIBA and town planning exams. mean something like seven years' work, and even after that I can't see anyone managing the civil's exam. in less than another three.

*

I believe that in some of the continental schools which give engineer-cum-architect degrees, the course is the same for the first two years both for architects and engineers, and that thereafter they go their separate ways. We cannot do that unless our schools of architecture become more closely linked with engineering schools. It shouldn't be impossible to arrange a suitable alliance in a place like Cambridge, where the two schools are almost next door to each other.

ASTRAGAL

No. 3: Town Planning Editor

WHAT—NO *TOWN* PLANNING?

SINCE the passing of the Town and Country Planning Act of 1947, the first day of July in this present year has been regarded by planners as having an almost mystical significance, even though it has sometimes been referred to with the kind of joke which the Englishman uses so as not to seem overpowered by solemn things. For this was the date, laid down by Act and Regulation, on which Development Plans covering the whole country were to be submitted to the Minister of Town and Country Planning (now the MOLGP). But July, August and September have rolled by, and no more than a dozen of the 140 planning authorities have submitted their plans. The rest have been granted varying periods of extension—and it is probable that the extensions themselves will in many cases have to be further—and perhaps further still—extended.

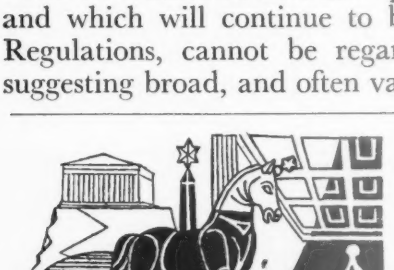
We do not profess to know the reasons for the delay: but since there must have been at least some four or five thousand people *directly* engaged in this planning during these years, to say nothing of the great numbers indirectly employed in other departments of central and local government, and since the plans themselves are only in the very broadest outline, the present situation cannot but be regarded as disappointing. To all, that is, except civil servants whose duty it will be to scrutinise, collate, evaluate, co-ordinate, pigeon-hole, re-de-pigeon-hole, and approve or disapprove them; and who clearly would have been overwhelmed if the planning authorities had kept to the time table which the central government had imposed upon them.

The published documents accompanying the plans so far submitted are undeniably weighty—the Durham "plan" (for example,) weighs well over half a stone (to be exact, 9½ lb.); and it contains plans for only *three* of the more than *two hundred* towns and large villages in the planning area. For the most part these documents consist of bulky, and generally impressive "written analyses" which are not statutorily part of the plan, accompanied by a very slight "written statements" and a one-inch-to-the-mile plan of the county. Though it is nearly impossible for anyone to speak of the quality of the plans, unless he has himself made a close study of the areas, it is likely that they are valuable broad contribution to the future *social* welfare of populations with which they are concerned. But in spite of the insistence of the Ministry of Planning that these plans are territorial (or land use) plans, they are nothing of the kind. How can a one-inch-to-the-mile map dotted with mere symbols be a genuine land-use *plan*? It is a mere *policy* document: a very necessary and probably a very valuable document. But it is that only, and nothing more.

As for the few town maps which have been prepared, what are we to make of them? It is a minor matter that the form in which they are required to be presented is repulsive. It

is a worse fault that they are almost unintelligible. But it is far worse again, indeed it is deplorable, that they are in part meaningless—and deliberately so. While some of the markings have specific meanings related to specific proposals for particular uses, some are mere symbols. The markings for road lines, for example (and these are extremely important in the matter with which architects are particularly concerned, namely, civic design) have no real meaning at all. The planners themselves do not know what they intend. The public, including the people whose properties are affected, cannot begin to have an inkling.

As the years go by, genuine town-plans which reflect firm intentions and have the democratic quality of being capable of being understood by those who made them, and by reasonably intelligent people besides, *may* be produced. But so far it would seem that the "plans" that have been produced, and which will continue to be produced under the present Regulations, cannot be regarded as more than documents suggesting broad, and often vague, policy.



Geoffrey Sayer

Gordon W. Jackson, F.R.I.B.A.

"Salaried Assistant"

"Ex-New Town Architect"

Eric Bellingham

The RIBA's "Undemocratic Administration"

SIR,—With reference to recent correspondence in the Architectural Press, we wish to inform your readers that we have been protesting vigorously to the Board of Architectural Education for the past nine months. We have stressed the arbitrary manner in which their ruling has been enforced upon students who began training before the introduction of the requirement of twelve months' post-graduate office experience.

The principle of introducing new conditions of qualifications after students have begun training is one which should be deplored throughout the profession. Yet, in fact, by their persistent refusal either to modify the conditions of exemption from the ruling, or even to make some statement in explanation of their attitude, the RIBA have shown remarkable lack of understanding of their student members' point of view. This lack of understanding may well be due to the fact that students have no voice whatsoever within the Institute, and in view of this rather undemocratic method of administration it is not really surprising to find students so discontented at what seems to them rank injustice.

We should suggest that, in the event of the RIBA reconsidering the method of applying their ruling, as suggested by the editorial in *The Builder* of August 17 last, the RIBA should call upon students personally to present their cases before the Board. In this way the present atmosphere of mutual tension could be dispelled.

GEOFFREY SAYER,
Chairman, AA Students' Committee

London

Why not 18 Prizewinners?

SIR,—I refer to the letter from Mr. Colin Oates under the heading "A Professional Hobby" in the AJ for September 22.

It has always seemed to me that the division of the prize premiums in important architectural competitions has been wrong, and consideration might be given in future to some alternative arrangement.

Normally there are three premiums only—the first and largest going to the winner who, after all, gets his reward in getting the work and publicity, and is possibly not so interested in an immediate cash return. After the third no competitor gets a penny, and sometimes not even thanks from the promoters.

I believe the younger members of the profession might be encouraged if they felt that there was a possibility of some reward, even though this be but a few pounds. Let us consider the total of £1,800 now being offered in a current competition which is in three premiums of £1,000, £500 and £300. I suggest there would be greater encouragement for the younger members to enter if this sum were sub-divided as follows:—1st, £500; 2nd, £350; 3rd, £200; 4th, £100; 5th to 10th, £75 each; 11th to 18th, £25 each.

My sub-division may not be ideal, but the principle is there. I can imagine a young man feeling very encouraged by being announced a prizewinner, even as no. 18 at £25, in an open competition. With £25 one could at least liquidate one's disappointment at the week-end.

GORDON W. JACKSON

Bournemouth

An Architect's Work for a Docker's Wage

SIR,—May I, through the medium of your journal, express my disgust, which I am sure must be felt by most salaried assistants these days, at some of the wages which are offered to them in advertisements.

Posts for architects with "all-round experience" or "several years practical experience" carry with them salaries varying between £400 to £500, with the qualifying clause "according to ability."

Is it not surprising that the status of the architect in the community is so low when his salary is comparative with that of the average building worker or dock labourer.

"SALARIED ASSISTANT"

New Town Red Tape

SIR,— We now have 14 New Town schemes in various stages of progress, and as an architect who has worked for a period of time on one of them I am now partially disillusioned with their conception "in practice."

The formation of Development Corporations to deal with the machinery of management and building appears on paper to be an ideal solution. In practice the staff organizations have become fair imitators of most of our local Government Departments. Consequently, they suffer from a top-heavy and completely unbalanced establishment to deal with projects which, to most far-sighted planners and architects, are the "dream-come-true" visions of a long-awaited revival in the "art of living."

The consequence of the "red-tape" and cumbersome machinery of the Corporations is the gradual strangulation of the original enthusiasm for the various projects when they were in their embryonic stage. Whatever one's ideas and theories on the physical aspect of new town plans are, these towns are generally acknowledged to be the only practical solution to the decentralization of our overcrowded cities. But to an architect imbued with the "spirit" to help with the creation of these towns, disillusionment coupled with frustration seems to be the order of the day.

The recruitment of architectural staff seems to be based on quite arbitrary rules and it is now a fact that first-class architects and engineers are no longer coming forward to fill the many vacant posts that appear now in the technical press. Why is this? Could it be that the great number of young contemporary architects now in this country are forewarned of the obstacles ahead of them?

"Ex-New Town Architect"

London

How to Heat Houses

SIR,—In commenting on the exhaustion of funds available to the Southern Electricity Board for capital development, (AJ September 20), ASTRAGAL says (with apparent regret) that it appears that after 1951 houses will have to be lit by candles and oil lamps, and heated with gas or *solid fuel*.

Whilst we do not claim that solid fuel is a good source of illumination (though the flames from a coal fire are a pleasant side light), we thought that every architect now knew that it provides the most efficient and economical means of house heating.

ERIC BELLINGHAM

CUJC London

[ASTRAGAL replies:—I quite agree. Nevertheless some people may like to use relatively uneconomic, inefficient, but clean and labour saving fuel, like electricity, which can be ubiquitous, and not tied to hearths and grates.]

HOUSING PROGRESS

Figures for August

In August 14,747 permanent houses were completed in Great Britain. During the previous month 15,965 houses were completed. The total number of houses finished under the post-war programme is now 1,101,462 (944,316 permanent and 157,146 temporary).

In Scotland 1,513 permanent houses were completed during August. The total number built since the war is 136,739 (104,563 permanent and 32,176 temporary).

COMPETITION

Winning Bus Shelter Designs

The winners in a competition for the design of bus shelters, organized by York City Council in collaboration with the York Civic Trust, have been won by (1) A. A. Wood, of Harrogate and (2) H. Green and Miss P. Nottingham, of York. The assessor was Austin Child.

Competitors were asked to design shelters that would be appropriate to their location —between the city walls and the station. The City Council has decided not to proceed with construction—at any rate for the time being—"partly on economic grounds."

COLOMBO

Misha Black to Act as Exhibition Consultant

Misha Black, Director of Design Research Unit, who was co-ordinating architect and designer to the South Bank exhibition, has been appointed consultant to the Ceylon government for the Colombo Plan Exhibition to be held next February in Colombo.

In addition, Mr. Black will also be responsible, in collaboration with his colleagues of Design Research Unit, for the detailed design of some of the pavilions and their displays. These will include several exhibits for the government of Ceylon and the whole of the United Kingdom pavilion.

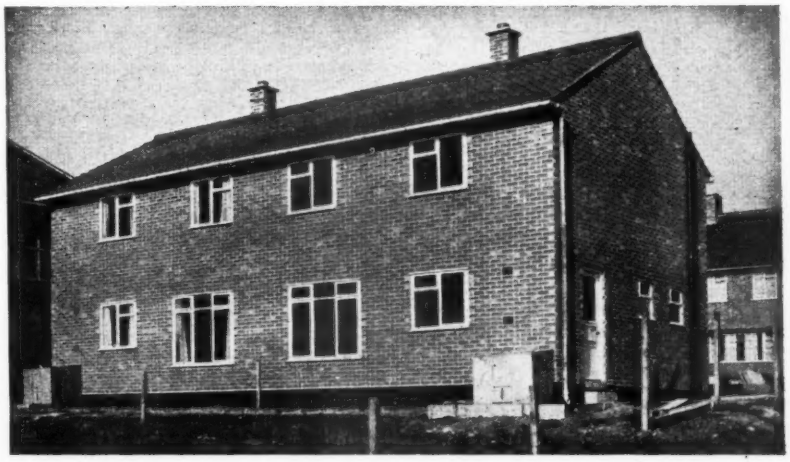
RFAC

Journal Editor Appointed

J. M. Richards, the JOURNAL'S House Editor, and one of the editors of the *Architectural Review* has been appointed a member of the Royal Fine Art Commission in succession to Raymond Mortimer. Professor W. G. Holford has been reappointed a member of the commission. The commission consists of a chairman and fifteen members. Each year two members resign and two appointments are made.

LOW COST OF HOUSING "HARDLY REMARKABLE"

This pair of "low-cost houses," officially "opened" recently at Ipswich, was built for the Eastern Federation of Building Trade Employers to designs by the architects, Hare and Pert. The houses cost only £1,106 each and man-hours totalled 2,038, instead of the average of 2,575 quoted in the second Girdwood Report. "This is hardly remarkable," writes one of our specialist editors, "considering that each house has an area of only 820 sq. ft. and that ceilings are 7 ft. 6 in., the bathroom is on the ground floor, there is no outside store and there is only one bedroom cupboard and one heating appliance. The architects are to be congratulated on designing a house, with this small area, in which all the rooms are larger than Housing Manual requirements and the placing of the bathroom downstairs has made possible a roomy first floor. But if the Federation's efforts have resulted in a saving of only ½d. per sq. ft. (the local council is building houses—to MOLGP requirements—for £1,265) were the efforts worth the trouble? The results of 15 years of building research are seen only in the use of TDA roof trusses in these "traditional" houses. Two good points may be noted. Firstly, the use of a degree of modular planning (the module was the brick, so no cutting was necessary). Secondly, the use of timber linings and architraves for the reveals of windows and doorways; this saves the expensive labour of plastering awkward corners. (General contractors: L. W. Gardiner and Son.)



INTERIOR DESIGN OF "SS PATRICIA"

A B Nordiska Kompaniet were responsible for the interior design of the new boat on the Swedish-Lloyd route, the "SS Patricia." Above is the second-class bar (the bar itself is decorated with bottle labels). Right is the second-class smoking room.

FRANK YERBURY

Journal Editor Honoured in Denmark

Frank Yerbury, the JOURNAL'S consulting editor, has become a Knight of the Order of the Dannebrog. Mr. Yerbury, who is the director of the Building Centre, London, received this honour in recognition of the interest which, for many years, he has shown "in furthering" the knowledge of Danish culture in Great Britain.

LCC

Plans for South Bank

A statement issued by the General Purposes Committee of the LCC says that negotiations are in progress as to the practicability of retaining, until permanent development necessitates their removal, the Lion and Unicorn Pavilion, the administration buildings, the Telekinema and possibly other exhibition buildings on the down-stream section of the South Bank Exhibition site. Garden features will be retained as far as practicable to preserve an attractive appearance pending redevelopment.

GOLF

RIBA Society's Autumn Meeting

The autumn meeting of the RIBA Golfing Society was held this year at Fulwell Golf Club. The leading scores were as follows:—*The Selby Cup.* R. Duncan Scott 86–19=67; H. St. J. Harrison 81–14=67; R. G. Scott 72–4=68.

R. Duncan Scott won the cup for the best score on the last nine holes. In the afternoon foursomes competition three pairs tied with one down. The competition, which was decided on the last nine holes, was won by R. G. Scott and E. H. Firmin.

Building Society's Meeting

The autumn meeting of the Building Alliance Golfing Society was held on the course of the Berkshire Golf Club on September 27. About 60 members were present. The "Builder" Trophy was won by Mr. J. Ashton with a score of 80.

Other prize winners were:—1st Singles: A. J. Carr, 76; 2nd Singles: H. V. Mabey, 77; 3rd Singles: G. Mansell, 78. 1st Fourball Foursomes Stableford: F. Pavletich and P. Hickey, 40; 2nd Fourball Foursomes Stableford: R. T. Warren and C. G. H. Stevens, 40.

HARVARD

A Landscape Architecture Scholarship

The Department of Landscape Architecture, Graduate School of Design, Harvard University, is offering a scholarship for the academic year, 1952-1953. The Scholarship carries a stipend of $600, the equivalent of the tuition for one year. Candidates must have received the Bachelor's degree, or equivalent, within the last four years. Students who are candidates for the degree in June, 1952 are eligible.

Further information may be obtained from the Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Massachusetts, USA.

NEW TOWN

At Congleton, Cheshire

The MOLGP have announced that Hugh Dalton has now decided to take formal steps towards setting up a development corporation to build a new town at Congleton, Cheshire. The main object of the new town will be to assist in meeting the formidable overspill problem faced by local authorities in South Lancashire. The Ministry have stated that careful consideration had been given to the problems of providing water and other services, the avoidance of land where there is a danger of subsidence due to salt mining, and the need for keeping away from valuable farm land. Mr. Dalton is consulting all the local authorities concerned and they have received a sketch of the site he has in mind. Subject to the outcome of his consultations he will make a draft designation order.

A proposal to build a new town at Mobberley, Cheshire, was abandoned in 1948 owing to the danger of land subsidence. Congleton, about twelve miles to the South of Mobberley, was then considered as an alternative site.

RHODESIAN HOTEL

Interior Designs by Dennis Lennon

The COID is to hold an exhibition at its headquarters (from October 23 to October 29) of hotel furnishings specially designed by Dennis Lennon for the Ridgeway Hotel, Lusaka, the capital of Northern Rhodesia. In April, 1951, the Lusaka Management Board published a development plan prepared for the region on the assumption of a large increase in the European and native population. The consultant architect and designer of the hotel, G. A. Jellicoe, provided in his plan for several centrally placed hotels. At the forthcoming exhibition there will be a selection of the prototype pieces which will include furniture for bedroom, lounge, dining-room and outdoor use.

NSAS

Britain Wastes Her Energy

"The largest store of energy which this country possesses is the energy it wastes."

This was the theme of the speech which Dr. J. Bronowski made to the National Smoke Abatement Society's recent conference at Blackpool.

Dr. Bronowski, who is the Director of the Central Research Establishment of the National Coal Board, emphasized the importance of modernizing grates both in homes and in factories. He estimated that this could save 20 million tons of coal a year and that it would cost only £50m.—half the sum that a hydro-electric scheme for the River Severn would cost.

He hoped that atomic fuels would come within 25 years but said that this did not mean we should do nothing in the meantime.

ROME SCHOLARSHIP

Closing Date Next Month

Applications for admission to the Rome Scholarship in Architecture, 1952, must be made before October 12 (tomorrow). They should be addressed to the Hon. General Secretary, British School at Rome, 1, Lowther Gardens, Exhibition Road, S.W.7.

MOW

Scarcity of Building Apprentices

In a report by the Building Apprenticeship and Training Council to the Minister of Works, it is stated that the building industry is likely to suffer in the future from a serious scarcity of properly trained apprentices unless vigorous action is taken. The report states that in May, 1950, there were only 88,000 apprentices compared with the 110,000 considered necessary. Only one-half of the 88,000 had a written agreement of apprenticeship as provided in the industry's national scheme. The apprenticeship force is also unbalanced as an abnormally high proportion of boys were attracted to carpentry and plumbing. The Training Council, on which employers and trade unions are represented, recommended that the industry's local organizations should stimulate recruitment, and at the same time ensure that employers provide sufficient apprenticeship vacancies. The Minister of Works has expressed concern at the contents of the report and has asked the industry's national federation to examine these recommendations and to inform him of the action they take.

DIARY

Eyes Which Do Not See. Theme for a conference of the Student Group of the Royal Society of Ulster Architects. At Castlerock OCTOBER 12, 13, 14.

Scottish Housing Since the War. A paper to be read by R. J. Gardner-Medwin. At the AGM of The Housing Centre Trust, 13, Suffolk Street, S.W.1, at 6 p.m. OCTOBER 16

The 1951 *Census.* Mark Abrams. At 28, King Street, Covent Garden, W.C.2. (Sponsor, Students' Planning Group.) 6.15 p.m. OCTOBER 18

Concrete Finishes. J. G. Wilson. At 66, Portland Place, W.1. (Sponsor, RIBA.) 6 p.m. OCTOBER 23

Some New Developments in Prestressed Concrete. A paper to be read by Dr. P. W. Abeles before the ISE, 11, Upper Belgrave Street, S.W.1, at 5.55 p.m.. OCTOBER 24

The Quantity Surveyor and the Building Contract. A lecture by Arthur J. Willis. (Sponsor, IQS.) At 98, Gloucester Place, W.1. 6.45 p.m. OCTOBER 24

RECONDITIONED ART GALLERY

The Walker Art Gallery, Liverpool, has recently been reconditioned and modernized by the city architect and director of housing, Ronald Bradbury. In the background of the picture of the entrance hall (right) may be seen one of the "rest spaces" which have been provided. Below: the lecture hall and cinema (originally a ground floor gallery). The proscenium and lecturer's reading desk are in sapele mahogany; curtains are blue velour. The tip-up seating is covered with dark blue upholstery. Below right: another view of the "rest space" in the entrance hall. General contractors: structural, William Moss and Sons, Ltd.; decorations, Waring and Gillow.

The MOE has recently published its Building Bulletin No. 5. The Bulletin is reviewed here by G. Noel Hill, Lancashire County Architect, and G. S. Pester and C. A. Spivey of his department.

REVIEW of Building Bulletin No. 5

G. Noel Hill, G. S. Pester and C. A. Spivey

Compared with previous issues, Bulletin No. 5 is unique. The subject of new Colleges of Further Education is one of unusual complexity, and the experience gained from colleges now in the course of erection is limited. In every sense Building Bulletin No. 5 is a pioneering work, presenting for the first time, and with courage, a clear architectural conception of what is required of a College of Further Education. It is often the fate of new ideas to be subjected to adverse criticism, and it is quite simple to "think up" a lot of difficulties which might arise, without making any constructive approach towards their solution by other means.

THE TASK

The pages of the introduction show that a College of Further Education is very different in conception from a pre-war Technical School. It must cater for educational, cultural, social, re-creative and leisure activities for persons over school age, and must thus create an environment in which a balanced personality can develop. The buildings are long-term investments and must be adaptable to changing circumstances, flexibly though compactly planned, and, on account of their great cost and the present day need for economy, it is necessary that they should be built in instalments. The task is thus extremely difficult. It is easy to imagine what would happen throughout the country without proper guidance, and in this respect the Bulletin is admirable in suggesting an approach to the problem which should enable Colleges to be built "piece-meal," without upsetting the unity of the final scheme, and at the same time maintain the flexibility necessary to safeguard future needs.

THE PROPOSALS

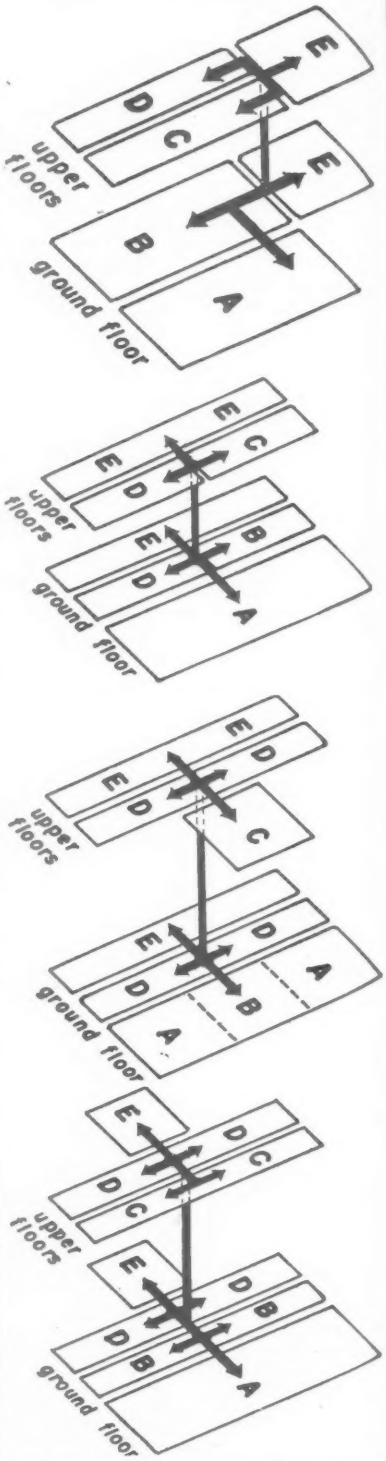
The need for close co-operation between educationist, architect, and specialist is stressed throughout. Design must be the result of teamwork, and this is very apparent in the first section which deals with the building up of schedules of accommodation for complete Colleges. It is essential to prepare a comprehensive, but adaptable, scheme for the long term needs at the initial stage, before any attempt is made to decide immediate building requirements.

The suggested method of building up the schedule so that the scheme can be quickly and proportionately planned and estimates of cost prepared, is briefly as follows:—

The nature and amount of teaching accommodation is first settled, and the maximum number of students to occupy this accommodation is calculated from a given table. Administrative and communal accommodation is then added on the basis of a given area per student place, and an allowance of one-third of the total area of the foregoing is added to cover circulations. Storage, canteen facilities, lavatory accommodation, etc., can be determined by reference to scales related to the capacity of the College, established by the above method. This part is, therefore, a most useful "ready reckoner" for organizer and architect. It keeps the design "on the rails" and is a great help in the production of a quick and comprehensive sketch design and estimate of cost.

Part 2 of the Bulletin concerns the scale of accommodation for instalments, and it is here that the pinch of economy will hurt most. The first instalment must be confined to a minimum, and must include only sufficient teaching space for immediate needs, together with a minimum of administrative and communal accommodation. The difficult problem of designing instalments which are complete entities in themselves, and which can be integrated into the plan as a whole, are discussed with great ingenuity in Part 5, and it is convenient for us to study this out of sequence.

General requirements of design are shown to be diverse. The building must satisfy the requirements of teaching and leisure around a communal focus. The physical conditions of noise, dust, dirt, vibration, loading, services and access must be taken into account. Orientation, so that all teaching rooms receive some sunlight during the day, should also be considered. Internal planning must be flexible to meet future known growth and unforeseen extension. Planning must be compact in the interests of economy, both in expenditure and land, and there must be easy inter-communication between all parts, vertically and horizontally. Instalments must be



(*Diagram 6 in Bulletin*) *Four arrangements of teaching accommodation to secure short and simple circulation between zones, separation of noisy zone* A *from quiet zone* E (*see key on opposite page*), *and vertical grouping of rooms requiring special services in zones* B *and* C.

workable units, and at the same time be part of the whole conception.

The Ministry then puts this disorderly and contradictory list of requirements through a process mill, the first stage showing how some order can be got by zoning rooms in terms of function, and condition, round a communal focus. Diagram 1, reproduced below, gives some indication of the approach. This is carried one stage further by the resolving of rooms in groups of accommodation within the same basic diagram. It is interesting to note that, even at this stage of plan analysis, the symmetrical courtyard and tee-shaped plans so common in pre-war Technical Schools are completely unsuited to meet the new conditions.

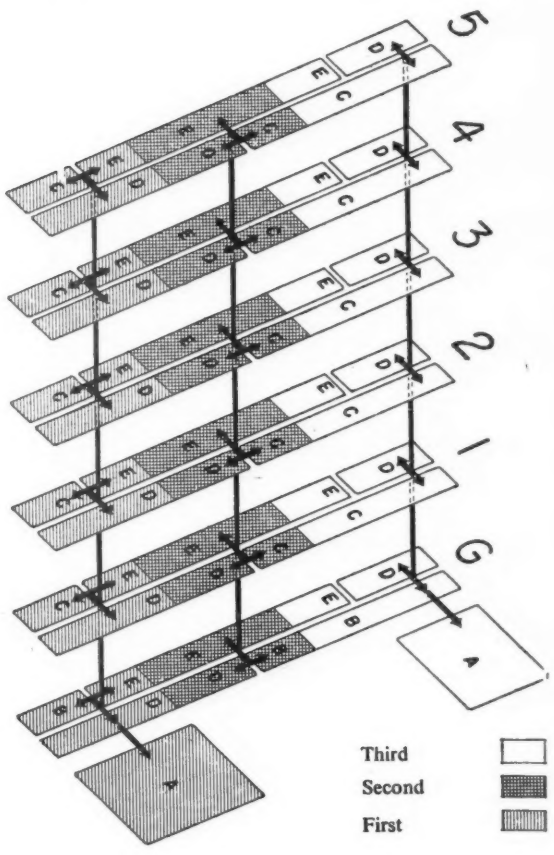
The next development deals with the zoning of teaching accommodation, which is considered under five headings, according to physical requirements. Diagram 6 is reproduced to give some idea of the stage now reached. Circulations are short, noisy rooms are separated from quiet rooms, and rooms requiring special services are grouped vertically. The value of this vertical grouping of rooms requiring special services becomes apparent when internal reorganization takes place, and departments are expanded or contracted vertically at will.

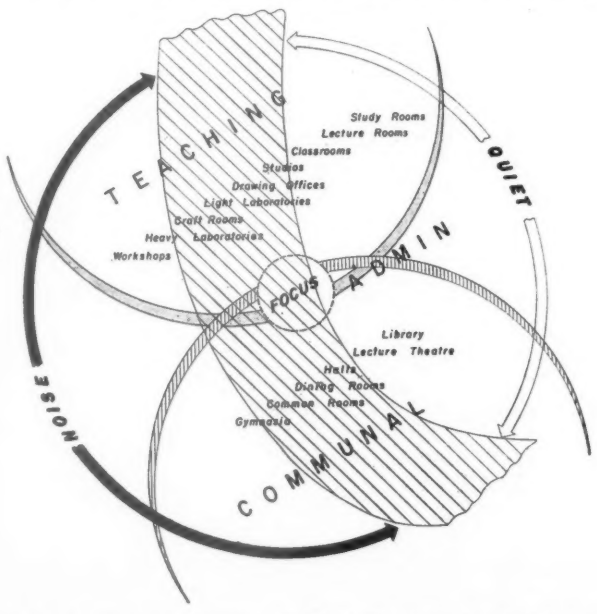
The question of growth is next considered, and a series of "assembly" diagrams illustrates how the products of the previous development, which are, in fact, instalments, can be put together to form a complete whole. The diagram shown on the right is typical. It is significant that the ends of instalments are not "stopped" and future growth is possible.

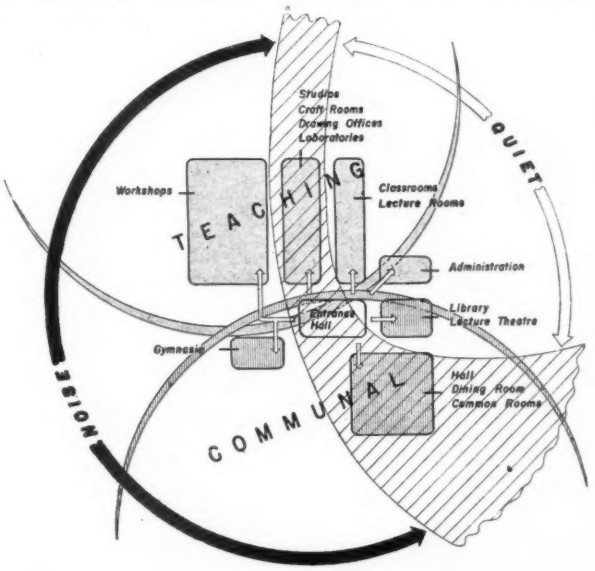
The general principles of zoning teaching accommodation and the growth of instalments is thus dealt with. Unfortunately, it is not always possible to have a balanced schedule of accommodation for each instalment, and temporary improvization is necessary. This is simply the misappropriation of an area allotted to a particular zone in the final scheme. For example, classrooms and studios can easily be housed temporarily in a workshop zone, but it should be noted that the reverse is impracticable. As much workshop, heavy laboratory and specially-serviced

(Diagram 8 in Bulletin) This diagram is designed to show a possible way in which extensions can be made to teaching accommodation while, at the same time, maintaining the principles and the advantages of zoning. It illustrates a six-storey building erected in three instalments.

KEY
A Workshops
B Heavy laboratories
C Light laboratories and craft rooms
D Studios and drawing offices
E Lecture rooms and classrooms

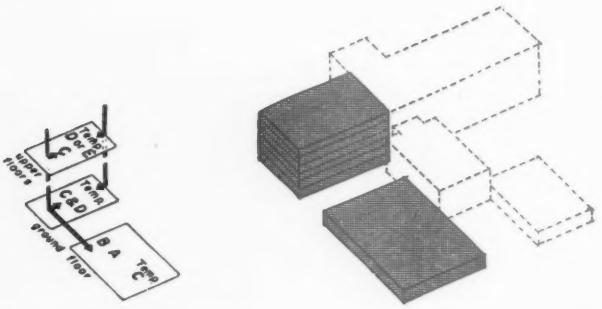






The diagram shown above (1 in Bulletin) illustrates the principles of zoning so that rooms in which similar work is done are grouped together. Accommodation is arranged so that rooms are zoned by function (teaching, communal and administrative) and "for conditions" (noise versus quiet, separated by a "buffer" zone, rooms which neither produce noise, nor need quietness). The diagram above (2 in Bulletin) shows how accommodation may be arranged in groups or blocks.

The three diagrams (No. 10 in Bulletin) on the left show the development of teaching accommodation in three instalments. The subjects for which provision is made in each instalment is listed. An aerial view, in block form, and a key to the arrangement of zones is also given for each instalment, showing its relation to the whole scheme. In each case A *represents workshops;* B, *heavy laboratories;* C, *light laboratories and craft rooms;* D, *studios and drawing offices;* E, *lecture rooms and classrooms.*



First instalment.

SUBJECTS :

Engineering :
Mechanical
Electrical
Motor

Building :
Brickwork
Carpentry

Plumbing
Plastering

Science :
Physics
Chemistry

Commerce :
Typewriting
Book-keeping
Commodities

Domestic Subjects :
Cookery
Housecraft
Needlecraft

Art and Crafts :
Painting
Drawing and Design
Graphic Design
Textiles
Dress Design

Second instalment.

ADDITIONAL SUBJECTS :

Architecture
Art and Crafts :
Pottery
Modelling
Casting

Science :
Biology

Physics (advanced)

Domestic Subjects :
Upholstery and repairs

SUBJECTS WITH INCREASED NUMBERS :

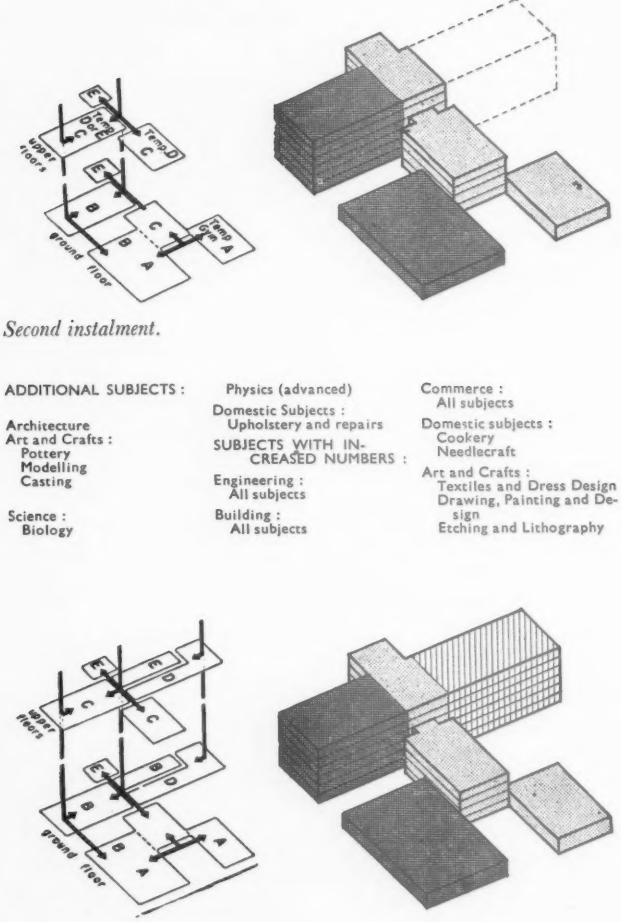
Engineering :
All subjects

Building :
All subjects

Commerce :
All subjects

Domestic subjects :
Cookery
Needlecraft

Art and Crafts :
Textiles and Dress Design
Drawing, Painting and Design
Etching and Lithography



Third instalment.

ADDITIONAL SUBJECTS :

Architecture :
Advanced

Science :
Chemistry (advanced)
Biology (advanced)

Commerce :
Display

Art and Crafts :
Metalwork
Display
Cabinet making
Photography
Catering

SUBJECTS WITH INCREASED NUMBERS :

Commerce :
All subjects

Domestic Subjects :
Housecraft
Upholstery and repairs

Art and Crafts :
Drawing, Painting and Design
Textiles, Dress
Design, Pottery, Modelling
Painting and Decorating

accommodation as possible, should be sited permanently at the outset.

To illustrate these principles, the Bulletin gives an example of the development of teaching accommodation of a typical College in three instalments, based on a specimen schedule of accommodation given in Appendix 1. The diagram reproduced (left) gives some idea of this scheme.

Section 5 ends with a note and diagram showing how the principles of zoning allow utmost flexibility in the arrangement of rooms within departments, and shows that it is possible to organize a College by departments within a building planned in functional zones.

FIRST IMPRESSIONS

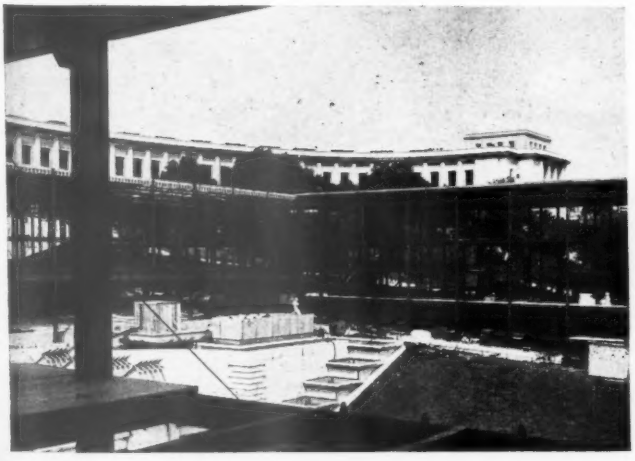
It is unfortunate if this review should assume the aspect of a précis, but it has been necessary to bring out the general approach in some detail.

It is difficult to grasp the whole significance of the work at once. On first reading, it appears to be too complicated. Further study "irons out" the complications, and shows these to be intricacies in a theme developed with a masterly logic which runs so smoothly that one becomes suspicious that the blind alleys of research have not been signposted, and somewhere there are hidden snags. Eventually it appears that the Bulletin is absolutely sound *as far as it goes*, but difficulties in application will arise unless it is carried further. The whole thesis is based on the assumption that all facts concerning the building will be known at the right time. In this connection, it would be most helpful if layout of machinery, equipment and services could be the subject of the next Bulletin. These are urgently needed at an early stage in planning and never seem to be available, with the result that internal planning modifications become necessary while the building is being erected. We know that all services required for a particular zone should be incorporated throughout that zone, but to cater for every condition which falls between the classifications mentioned in the Bulletin would be uneconomical.

Except for this criticism of omission, we feel that the work is excellent. Apart from the discussions in the Bulletin, the notes and schedules on planning requirements of individual teaching rooms contained in Appendix 3 are invaluable to anyone who is concerned with the design of Colleges of Further Education.

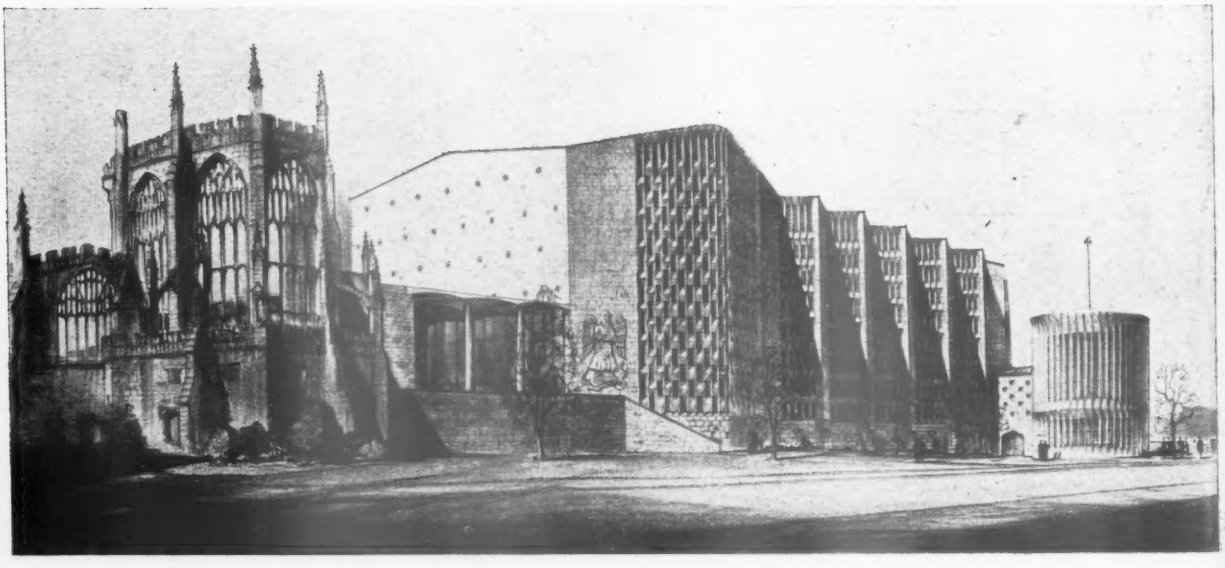
NEW BUILDING FOR UNO GENERAL ASSEMBLY IN PARIS

This building, due for completion this month, was designed by M. Carlu for the secretariat and committees of the UNO Assembly. As can be seen in the photographs, there is a slender steel frame, clad with horizontal bands of metal windows, with prefabricated panels, faced both sides with asbestos-cement, between. Floors are also in prefabricated units; of timber, faced with hardboard, as in these photos, and of precast concrete wherever the loads will be greater. After the General Assembly the building will be dismantled and re-erected on another site, for use as a permanent centre for international organizations.

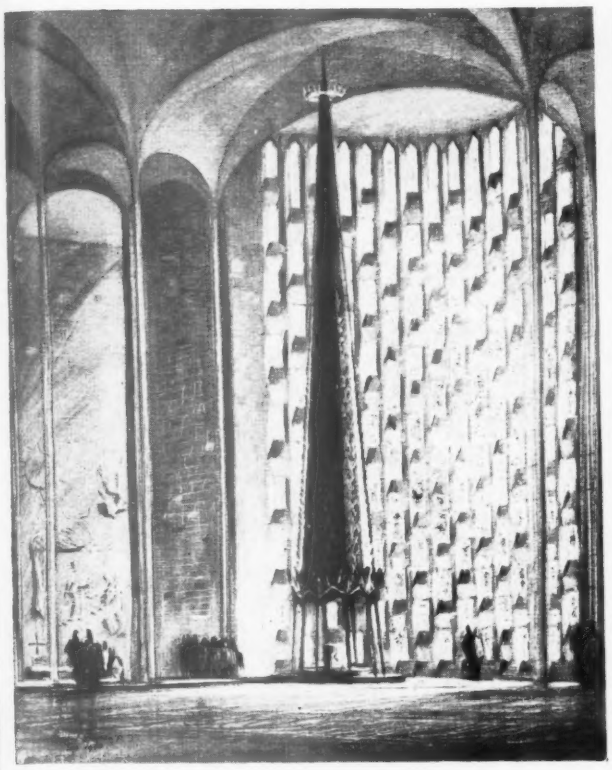


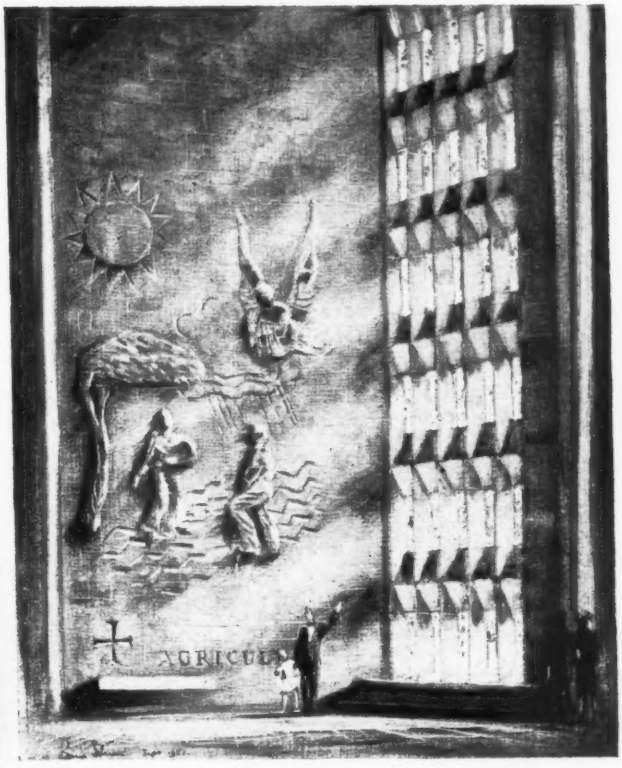
[IMPRESSIONS OF THE PROPOSED COVENTRY CATHEDRAL: BY

Basil Spence, the Edinburgh architect who won first prize in the Coventry Cathedral competition, and whose leisure hours are energetically given to self-imposed holiday tasks, such as model-making and painting, returned recently from a vacation in Spain with the oil-paintings and sketch reproduced on these pages. On the left is the Nave of the proposed Cathedral, looking towards the altar, which is surmounted by the charred cross, and backed by a great modern tapestry. Below is a sketch of the exterior from the south-east. The two paintings at the top of the opposite page show the font, with the Baptistry window behind it, and a "hallowing place" containing sculpture to the left, and a closer view of this recessed "hallowing place", showing the window which throws light upon it and towards the altar. Below these is a view from the old cathedral.



BY THE PRIZE-WINNING ARCHITECT, BASIL SPENCE





DOCK UNIT

in WARNER ROAD, CAMBERWELL, LONDON, S.E.5.

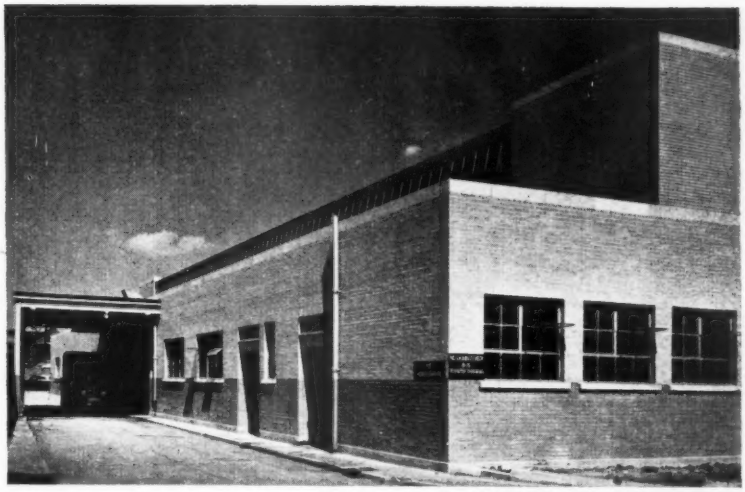
designed by C. HOWARD CRANE

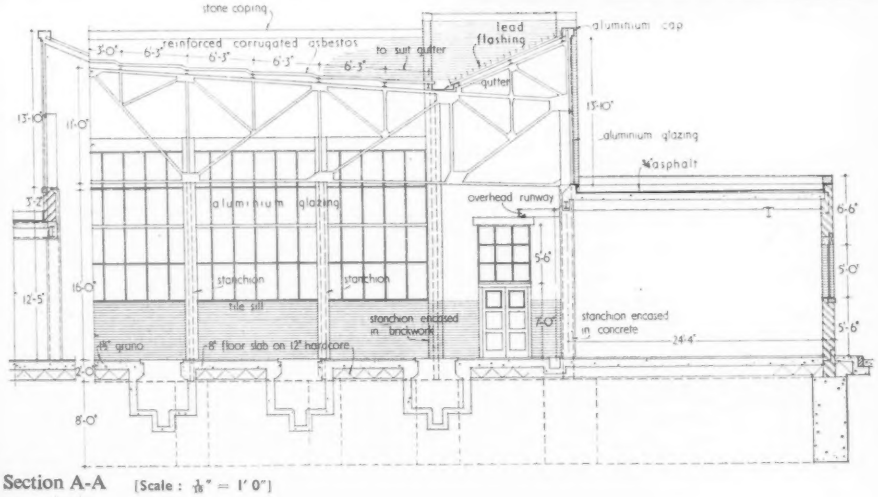
This is the first self-contained dock unit to be constructed for the London Transport Executive and has been designed in association with Thomas Bilbow, architect to the LTE. The new dock unit, forms the first phase of the reconstruction scheme for the Camberwell garage. It provides up-to-date maintenance facilities for the additional vehicles to be run in connection with the scheme for improving south London's bus services from the Camberwell and Walworth garages.

Looking west at the south-east facade.

SITE.—The building is situated between Warner Road and Camberwell Station Road, with the main entrance from a new 50-ft. road connecting the two. This new road will also serve the garage extension to be constructed to the north-east.

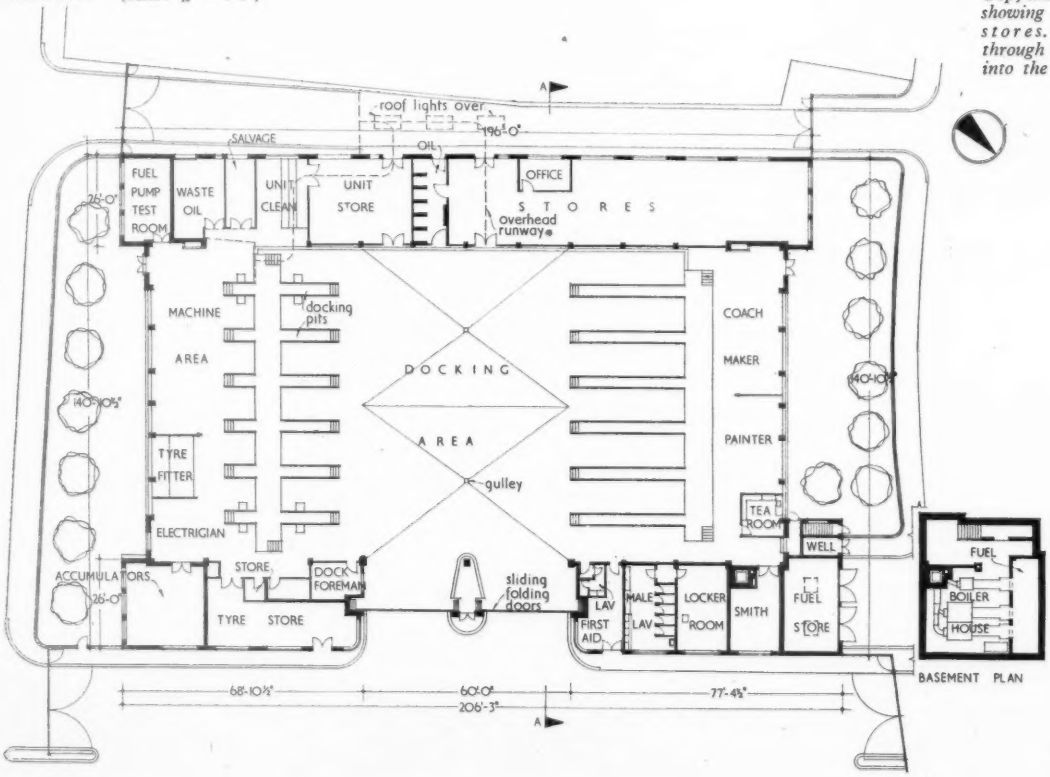
PLAN.—There is a large open working space forming the main block which contains the docking pits together with engineering and other shops grouped at either end. The main stores block to the south-west has a clear headroom of 14 ft. to allow for an overhead runway from under a canopy over the stores road through to the working area. Major docking pits of a new pattern have a communication trench in the centre instead of at the end.





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

Top, the south-west facade, showing entrance to the stores. Above, view through the glazed screen into the unit stores.



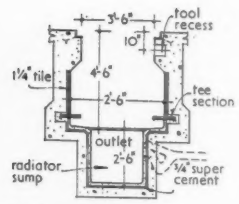
Plan [Scale : $\frac{1}{32}$" = 1' 0"]

DOCK UNIT

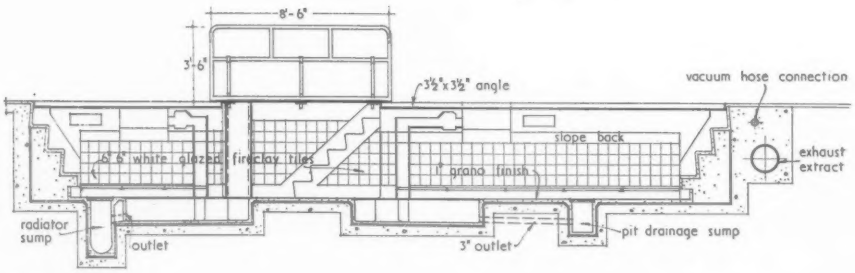
in WARNER ROAD, CAMBERWELL, LONDON, S.E.5

designed by C. HOWARD CRANE

Above left, looking across the docking pits at the south corner. Above, looking down the pits communication trench towards the north corner. Below, view looking west.



Section C-C



Section B-B

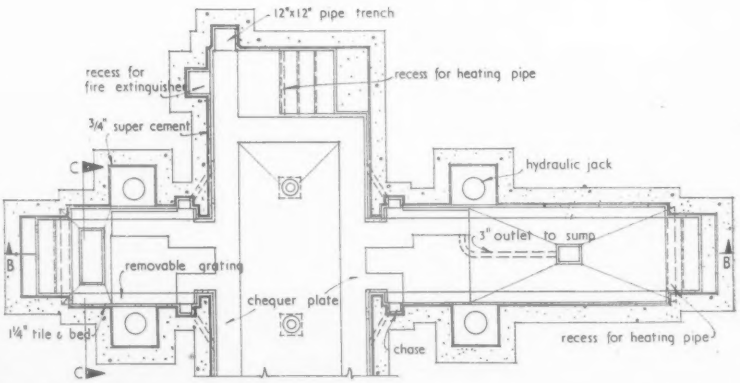
CONSTRUCTION.—The main building is steel-framed with lattice girders spanning 90 ft. on to stanchions at 15-ft. centres. The shape of the lattice girder is designed to give maximum height of vertical aluminium glazing at the sides, which obviates the need for sloping roof lights.

FINISHES.—The main roof is completely covered with reinforced asbestos decking insulated with fibreboard on the underside. The vertical aluminium glazing can be opened the entire length of the building in banks 4 ft. high. The external walls are of pressed silica bricks, light buff in colour and a 5-ft. 6-in. brown dado. Internally, the working area is tiled to a height of 5 ft. 6 in. and the floor is of 1½-in. hardened granolithic.

SERVICES.—A combination of radiators, unit heaters and pipe coils (in the pits) are used in the dock unit. The pits are supplied with air and oil, have oil drainage to a waste tank and an exhaust extract system. This latter system is concreted in under the floor with airtight manholes for cleaning.

The contract price was £80,131.

The general contractors were Halse & Sons, Ltd. For sub-contractors, see page 454.



Plan of typical pit [Scale : ⅛" = 1' 0"]

CONCERT HALL

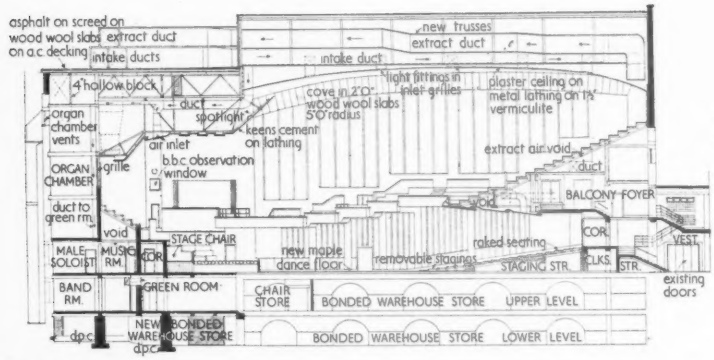
the reconstruction of COLSTON HALL, BRISTOL
designed by J. NELSON MEREDITH, city architect
senior assistant architect, T. S. SINGER

The Colston Hall, first opened to the public in 1867 under the direction of a company, was acquired by Bristol Corporation in 1919. These original premises, which were seriously damaged by fire, were rebuilt in 1936 to the design (left) of C. F. W. Dening. The interior has now been remodelled.

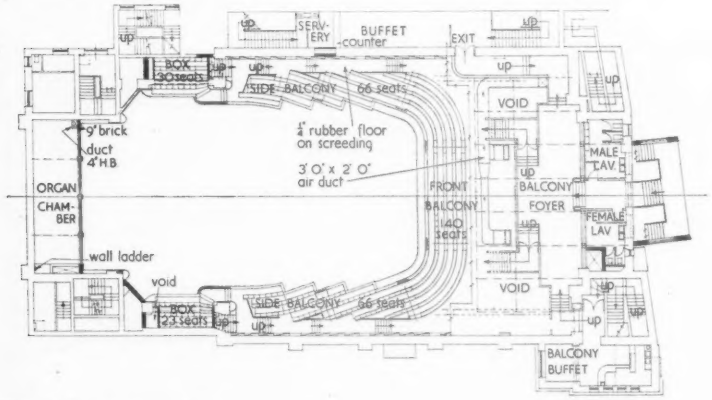
The auditorium, looking towards the orchestra platform.

CONCERT HALL

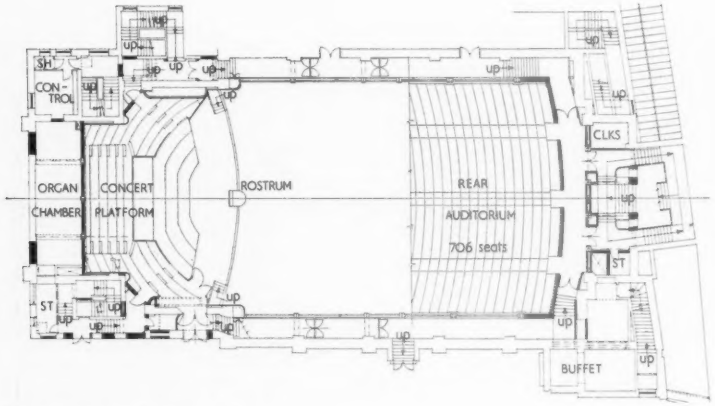
the reconstruction of COLSTON HALL, BRISTOL designed by J. NELSON MEREDITH, city architect



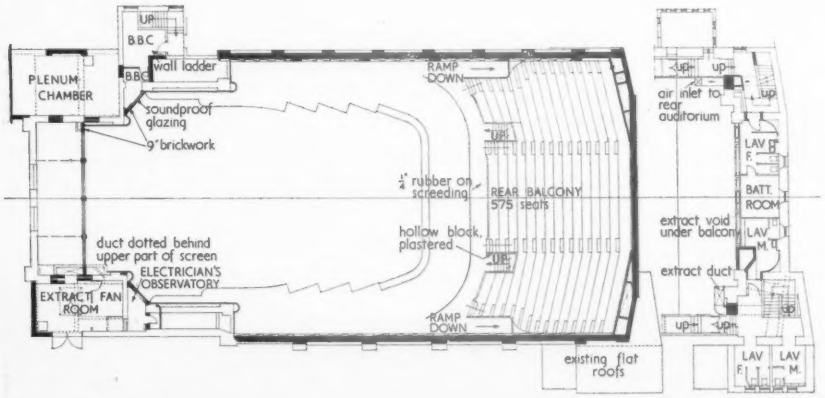
Longitudinal section



Plan at front balcony level



Plan at rear auditorium level



Plan at rear balcony level [Scale : $\frac{1}{16}$" = 1' 0"]

CONCERT HALL

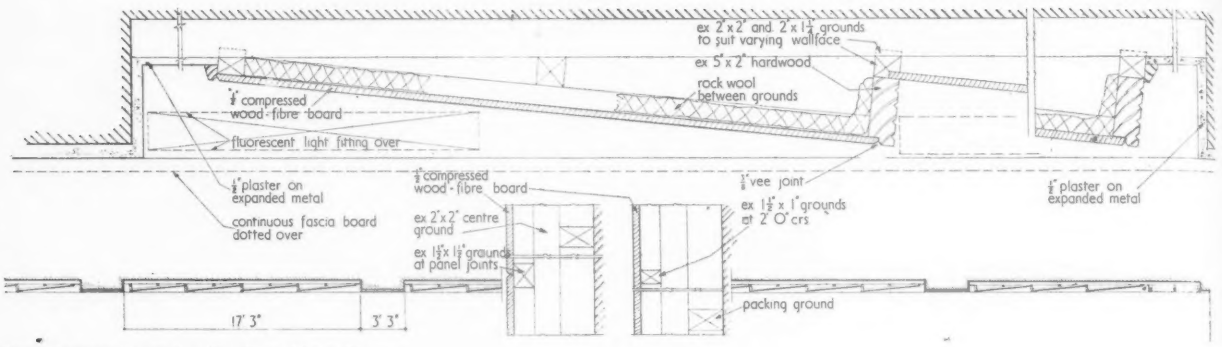
PLAN.—In the present scheme of remodelling of the interior of the hall the shape has been largely determined by the acoustical requirements for concerts. The corridor which runs round the main hall acts as a sound buffer and gives access to all parts of the building. The hall will seat 2,000 people, with room for an additional 182 in the choir seating. In order to avoid a large overhang of the balcony side balconies have been introduced. A soundproof room with a window overlooking the concert platform has been included for the use of the BBC opposite to this is a room for electricians and for control of amplifiers. A special side entrance has been provided (and an area allocated at ground-floor level) for invalids in wheel chairs. In addition to the large Green Room below the concert platform, rooms have been provided for the conductor, leader, male and female soloists and organist. Music store, cloakrooms, etc. have been provided.

CONSTRUCTION.—A considerable amount of new steelwork has been used. The roof, of 22° pitch, is carried on seven principal trusses at 14-ft. 9¾-in. centres and one gable truss. There is an overall span of 82 ft. 3½ in. and a height of 73 ft. 8½ in. from auditorium floor to the apex. The flat roof at the platform end is carried on a main lattice 6 ft. 6 in. deep over a span of 66 ft. The main plate girder for the balcony is 69 ft. long, 5 ft. 3 in. deep and 1 ft. 10 in. wide, and carries a load of 126 tons. The main lattice to the balcony has a similar span and is 12 ft. 4 in. high and 1 ft. 7 in. wide. Hollow tile

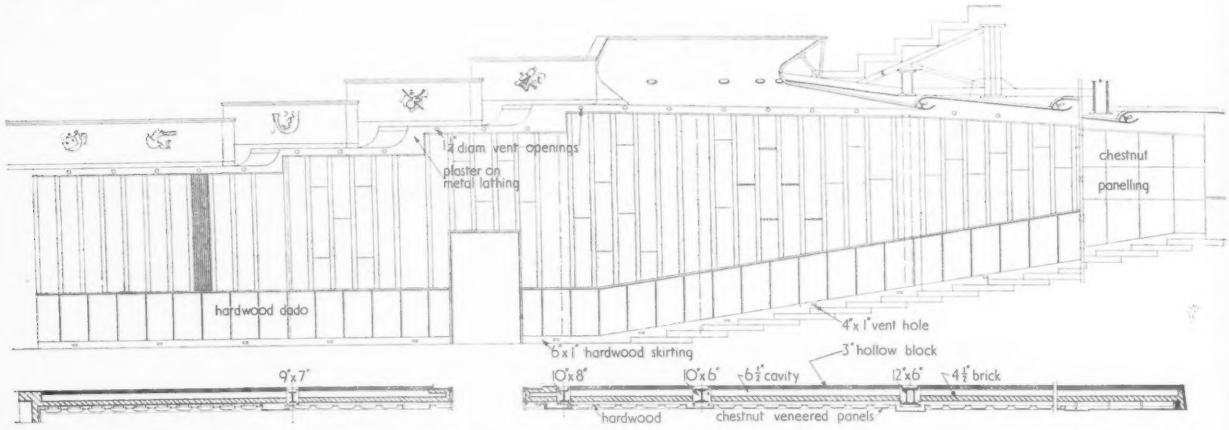
Auditorium looking towards the balcony.

floors are used in the foyer and buffet and for balcony steppings. Walls are of 2⅝-in. engineering bricks with light-brown rustic facings.

FINISHES.—It was considered very important that external noise should be excluded from the hall as much as possible owing to the serious effect intruding traffic noises could have on musical quality. In order to obtain a reverberation time of about 2 seconds at mid frequencies, it was necessary that materials giving acoustical correction should be incorporated where needed. To this end the main auditorium ceiling was formed of a hard plaster containing 750 resonator plugs on metal lath with a backing of 1½-in. vermiculite concrete to prevent any sound penetration from above. A solid reflector, partly in fibrous plaster and partly in *in situ* plaster on metal lathing over the platform, was needed to direct sound to the more distant parts of the auditorium. A polished hardwood floor was laid to



Plan of upper part of auditorium side walls



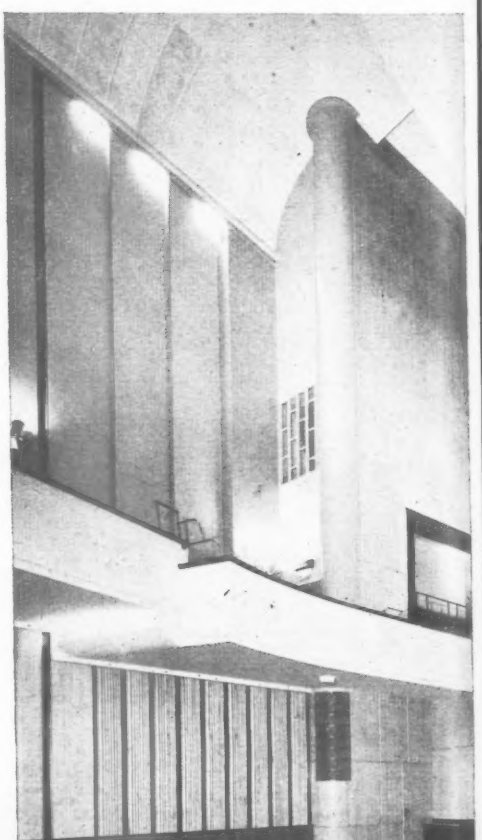
Elevation and plan of auditorium side wall under balcony level [Scale : $\frac{1}{12}$" = 1' 0"]

CONCERT HALL

the reconstruction of COLSTON HALL, BRISTOL
designed by J. NELSON MEREDITH, city architect

form a reflector in front of the orchestra. The auditorium side walls have panelling comprising vertical convex drums faced with chestnut veneer and 4-in. wide mansonia strips and a 3-ft. 6-in. high dado entirely of mansonia. The walls above balcony level are lined with saw-toothed panels with clear polished hardwood edges in red merenti. The front of the auditorium floor is level and has a polished strip surface of muhuhu so that the hall can be used for dancing or exhibitions. A specially-designed boxing ring has been designed to fit partly on the platform and partly on the auditorium floor. Tests have been carried out by the BRS on the acoustics, which have proved very satisfactory in all parts of the auditorium. When the hall is empty there is an appreciable echo on the platform, but this is not experienced when the hall is full. The reverberation time is quite long compared with other halls and the insulation is adequate although somewhat weak where the hall abuts the back street.

The general contractors were William Cowlin & Son, Ltd. For sub-contractors, see page 454.



Right, a side wall of the auditorium seen from the stalls, showing the acoustic treatment.

INFORMATION CENTRE · INFORMATION SHEETS
QUESTIONS AND ANSWERS · CURRENT TECHNIQUE
THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

The following, the concluding part of the article by Donovan Lee, deals with design aspects of prestressed concrete. We hope to follow this next week with a report on a symposium, entitled "Prestressed Concrete Statically Indeterminate Structures," held recently at the ICE.

PRESTRESSED CONCRETE

By Donovan Lee

(Part II)

As mentioned previously full use can be made of very high strength concrete when using prestressing. In fact good quality concrete is necessary to enable the full economic and technical benefits of prestressing to be realised.

CONCRETE QUALITY

Concrete used in prestressed work is generally designed to have a minimum 28-day cube strength of 6,000 lb. per sq. in. with low creep and shrinkage characteristics. For pre-tensioned work cube strengths of 8,000 lb. per sq. in. are frequently specified. The strength of concrete depends principally on the water-cement ratio as long as full compaction is achieved. Thus the production of high grade concrete centres on the careful control of the quantity of mixing water both as introduced separately and contained in the fine and coarse aggregate. That this can be achieved not only in a laboratory but also on the site has already been proved in a number of jobs. It requires a certain amount of initial training of the men behind the mixer, the use of weight batching, regular moisture measurement of the aggregate and closer supervision than is usual with ordinary reinforced concrete. However, in the long run, the improved quality of the concrete more than compensates for the extra effort and cost in producing it. A typical mix proportion for a concrete with a minimum 28-day cube strength of 6,000 lb. per sq. in. would be 1 : 1·4 : 3·0 by weight with a water-cement ratio of 0·42 using rapid-hardening cement. Graphs are available which give the mix proportions and water/cement ratio for a given aggregate grading and workability.

Efficient compaction is essential to ensure strength and durability. Tests have shown that the presence of 5 per cent. air voids due to under-compaction may result in a loss of strength of 30 per cent. As hand compaction is insufficient for the dry mixes employed, vibrators should be used. For the "individual mould" process, table vibrators are usual but for the "long line" process and for post-tensioning, vibrators clamped to the shuttering or immersion types of vibrators are universal.

DESIGN

In any simply supported prestressed concrete beam the magnitude and eccentricity of the prestressing force at a given section depends solely on the sum total of the wire, cable or bar forces and the position of their centroid. Thus, with reference to Fig. 7, if P_1 and P_2 are the forces, e_1 and e_2 are the eccentricities, θ_1 and θ_2 are the inclinations of the top and bottom bars, respectively, at section XX, the total longitudinal prestressing force on section XX is

$$P = P_1 \cos \theta_1 + P_2 \cos \theta_2.$$

As the angle of inclination is invariably small, for practical purposes $\cos \theta = 1$; therefore

$$P = P_1 + P_2.$$

the shear force induced is

$$V_P = P_1 \sin \theta_1 + P_2 \sin \theta_2$$

acting usually opposite to the load-induced shear.

The eccentricity of the total force P is clearly

$$e = \frac{P_1 e_1 + P_2 e_2}{P_1 + P_2}.$$

We thus have a section subjected to an eccentric load P acting at e from the centroid, which is equivalent to a concentric load P and a bending moment $M = Pe$.

If f_T and f_B are the stresses induced in the concrete, then, due to the concentric load

$$f_B = f_T = P/A_c$$

where A_c = area of concrete.

Due to the bending moment

$$f_B = \frac{M}{Z_B} = \frac{Pe}{Z_B} \text{ and } f_T = \frac{-M}{Z_T} = \frac{-Pe}{Z_T}$$

where Z_T and Z_B are the top and bottom section moduli respectively.

Thus the total stresses are

$$\left.\begin{aligned} f_B &= \frac{P}{A_c} + \frac{Pe}{Z_B} = \frac{P}{A_c}\left(1 + \frac{eAc}{Z_T}\right) \\ f_T &= \frac{P}{A_c} - \frac{Pe}{Z_B} = \frac{P}{A_c}\left(1 - \frac{eAc}{Z_T}\right) \end{aligned}\right\} \quad (1)$$

Equations (1) represent the fundamental equations of prestress. If P is the initial prestressing force, f_B and f_T are the initial prestresses. In the course of time P drops to ηP where η is the fraction of the remaining prestress, *i.e.*, 0·85 for cables, 0·84 for bars and 0·80 for pre-tensioned 0·08 in. dia. wires. Similarly, f_B and f_T drop to the same fraction. Let M_W be the bending moment due to the applied loading. Then the bending stresses are

$$f_B = \frac{-M_W}{Z_B} \text{ and } f_T = \frac{M_W}{Z_B}.$$

Assuming no tension is allowed, clearly the prestress f_B after all losses, *i.e.*, ηf_B, must not be less than the f_B due to load. At the same time, the sum of the prestress f_T and load f_T must not exceed the maximum design stress ; nor must the original prestress f_B exceed this figure. These conditions usually define the minimum section that can be used.

Let V_W be the shear force due to the load. As the prestress induces an initial shear V_P opposing this, the resultant maximum shear is either $(V_W - \eta V_P)$ or V_P. Let this be V. Then the maximum shear stress

$$s = \frac{VQ}{bI} \text{ where } Q = \text{1st moment of that area of the section above the centroid.}$$

I = 2nd moment of area.
b = width at centroid.

The resultant principal stresses caused by this shear stress are

$$P = f/2 \pm \frac{1}{2}\sqrt{f^2 + 4s^2} \quad (2)$$

where f is the prestress at the centroid $= \frac{P}{A_c}$.

This equation, taken with the $-vc$ sign, gives a tension and this must not exceed the safe limiting one which is usually taken as 1/15th of the design stress.

EXAMPLE

To design a post-tensioned beam of 30-ft. span to carry a superload of 1,000 lb./ft. in addition to its own weight :—

No bending tension allowed. Maximum compressive stress = 2,500 lb./sq. in. Section to be rectangular and high-tensile bars with an initial prestress of 42 tons/sq. in. to be used. $\eta = 0{\cdot}84$.

The Superload B.M. =

$$\frac{1{,}000 \times 30 \times 30 \times 12}{8} = 1{,}350 \times 10^3 \text{ lb. in.}$$

Assume that the beam self-weight is 250 lb./ft. Then, Self-Weight B.M. =

$$\frac{250 \times 30 \times 30 \times 12}{8} = 337 \times 10^3 \text{ lb. in.}$$

As mentioned previously, the majority of the self-weight B.M. can be absorbed by increasing the bar eccentricity at the centre. If the maximum stress at the bottom must not be more than 2,500 lb./in. the initial prestress may exceed this figure by the bending stress caused by the self-weight. After all losses have occurred the bottom prestress is only 84% of the initial. Thus, the applied bending stresses must only be 84% of (2,500 self-weight bending stress), *i.e.*, 2,100 + 84% of self-weight bending stress. It follows that at the most only 84% of the self-weight bending moment can be absorbed ; the remaining 16%, plus the superload will account for the effective prestress of 2,100 lb./sq. in.

Thus

Effective B.M. =

$$(1{,}350 \times 10^3) + 0{\cdot}16\,(337 \times 10^3) = 1{,}404 \times 10^3 \text{ lb./in.}$$

$$\therefore \text{ Min. } Z_B = \frac{M}{f_B} = \frac{1{,}404 \times 10^3}{2{,}100} = 668 \text{ in}^3$$

Try 20 in. × 10 in. section.

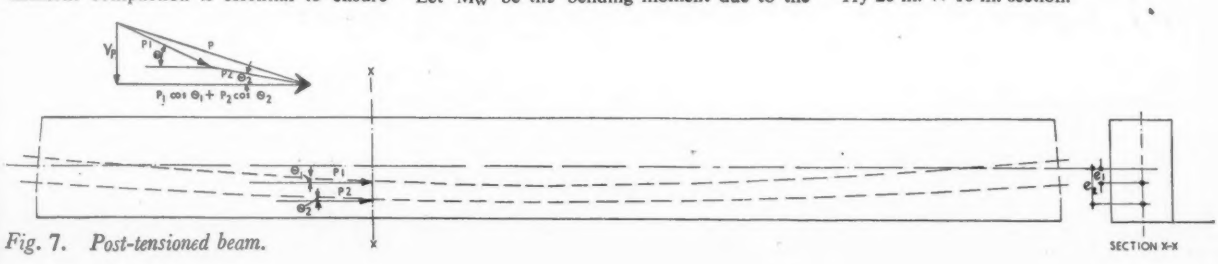


Fig. 7. Post-tensioned beam.

Then $Z_B = \frac{10 \times 20^2}{6} = 667$ in³, which is just right.

Also

$Z_T = 667$ in³.

$A_c = 200$ in².

$I = \frac{10 \times 20^3}{12} = 6{,}667$ in⁴.

$Q = 100 \times 5 = 500$ in³.

BENDING STRESSES

Due to Superload—

$$f = \frac{1{,}350 \times 10^3}{667} = \pm 2{,}020 \text{ lb./sq. in.}$$

Due to Self-Weight—

$$f = \frac{337 \times 10^3}{667} = \pm \quad 505 \quad \text{"}$$

$\pm 2{,}525$ lb./sq. in.

PRESTRESSES

Minimum initial prestress at bottom =

$$\frac{2{,}525}{0{\cdot}84} = 3{,}000 \text{ lb./sq. in.}$$

Minimum initial prestress at top = -505 lb. sq. in.

Adding equations (1) gives—

$$\text{Minimum } P = \left(\frac{f_T + f_B}{2}\right) A = \left(\frac{3{,}000 - 505}{2}\right) \times 200$$

$= 250{,}000$ lb.

$= 111{\cdot}5$ tons.

Minimum area of steel with an initial prestress of 42 tons/sq. in. $= \frac{111{\cdot}5}{42} = 2{\cdot}65$ sq. in.

say 2—1⅛-in. dia. bars—
Area = 1·99 sq. in. P = 83·4 tons
say 1—1-in. dia. bar—
Area = 0·78 sq. in. P = 33·0 tons

2·77 sq. in. 116·4 tons

Thus, the total prestressing force is 116·4 tons, *i.e.*, 260,000 lb., which in the course of time reduces to P, *i.e.*, 218,000 lb. The excess of prestress over the minimum required will be used to increase the prestress at the top.

From equations (1)—

$$3{,}000 = \frac{260{,}000}{200}\left(\frac{1 + e \times 200}{667}\right) \therefore e = 4{\cdot}4$$

If the bars are at 3-in. centres at midspan and arranged with the 1-in. dia. bar at the centre, the height of the bars will be 2·6 in., 5·6 in. and 8·6 in., respectively, from the bottom of the beam. (Fig. 8.)

At the end of the beam $f_T = 0$ as there is no stress due to any of the applied B.Ms. Then, from equation (1), the maximum eccentricity at the ends is $\frac{Z_T}{A_c}$ *i.e.*, 3·33 in. It is, however, more convenient to make the eccentricity at the ends zero. The bars will be curved parabolically and the spacing progressively opened up so that it is 4 in. at the end, as this is the practical minimum spacing for stressing.

AT MIDSPAN

Due to prestress alone—

$f_B = 3{,}000$ lb./sq. in.

$\eta f_B = 2{,}525$ lb./sq. in.

$$f_T = \frac{260{,}000}{200}\left(\frac{1 - 4{\cdot}4 \times 200}{667}\right) = -415 \text{ lb./sq. in.}$$

$\eta f_T = -348$ lb./sq. in.

Actual stresses in lb./sq. in. due to Prestress and Self-Weight—

Before Losses :

$f_B = 3{,}000 - 505 = 2{,}495$

$f_T = -415 + 505 = 90$

After Losses :

$f_B = 2{,}525 - 505 = 2{,}020$

$f_T = -348 + 505 = 157$

Due to Prestress + Self-Weight + Superload—

Before Losses :

$f_B = 2{,}495 - 2{,}020 = 475$

$f_T = 90 + 2{,}020 = 2{,}110$

After Losses :

$f_B = 2{,}020 - 2{,}020 = 0$

$f_T = 157 + 2{,}020 = 2{,}177$

As these stresses are within those specified, the design for bending is satisfactory.

SHEAR

The maximum shears occur at the supports.

Due to Superload—

$V_W = 1{,}000 \times 15 = 15{,}000$ lb. ↓

Due to Self-Weight—

$V_W = 250 \times 15 = 3{,}750$ lb. ↓

$18{,}750$ lb. ↓

The slope of a symmetrical parabola is given by the equation

$$= \frac{4\Delta}{2}$$

where Δ is the "rise." In this case, $\Delta = 4{\cdot}4$ in., so that at the ends of the beam

$$\theta = \frac{4 \times 4{\cdot}4}{30 \times 12} = 0{\cdot}0488 \text{ radians.}$$

Thus, the initial shear force due to the bars

$V_P = 260{,}000 \sin \theta = 12{,}700$ lb.

which, reduced to 10,700 after all losses.

Thus, the maximum shear is $(18{,}750 - 10{,}700) = 8{,}050$ lb. ↓ or $(12{,}700 - 3{,}750) = 8{,}950$ lb. ↑

This gives

$$s = \frac{VQ}{bI} = \frac{8{,}950 \times 500}{10 \times 6{,}667} = 67 \text{ lb./sq. in.}$$

As the prestress at the ends after all losses is

$$\frac{260{,}000 \times 0{\cdot}84}{200} = 1{,}090 \text{ lb./sq. in.}$$

the maximum principal tension is, from equation (2)

$$P_T = \frac{1{,}090}{2} - \tfrac{1}{2}\sqrt{(1{,}090)^2 + 4 \times (67)^2} = -5 \text{ lb./sq. in.}$$

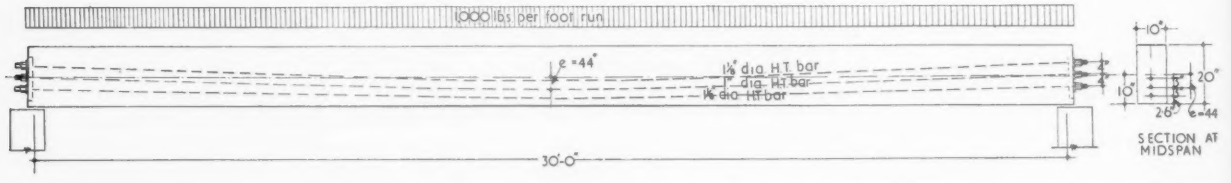
This is considerably less than that usually allowed, *i.e.*, $\frac{-2{,}500}{15} = -167$ lb./sq. in.

Thus, the design is also satisfactory for shear.

NOTES

1. Strictly speaking, an allowance for the bar ducts should be made in the calculation and the effect of the bars at the proper modular ratio, which is about 6, should also be included. However, these refinements do not appreciably alter the stresses and as the above method is on the safe side they are generally omitted except for very large structures.
2. The self-weight of the beam is only 210 lb. per foot run instead of the 250 lb. per foot run assumed. If this is left uncorrected the maximum stress of the bottom fibre will be 2,575 instead of 2,495 lb./sq. in.
3. From the calculations it is clear that the beam is far too strong against shear. Economies can be effected both in the amount of concrete and steel by making the beam of I shape with a web sufficient to accommodate the bars and take the shear stresses. If, however, only one or two of these beams are required a rectangular section might be better as the formwork costs are less ; there may also be aesthetic objections to the use of I-beams.

Fig. 8. *Example : post-tensioned beam with H.T. bars.*



This feature answers any question connected with building confidentially and free of charge. Questions to the Technical Editor, The Architects' Journal.

QUESTIONS AND ANSWERS

3048 PAINTING METALWORK

Q *We are faced with the problem of deciding what type of paint we should use on the canopies outside our theatres. They are made of mild steel, and we have found from experience that the paint we are using at present does not keep its colour more than a month or two and, often, peels badly. Although this may be due to the fact that the metal-work has not been properly prepared before painting has been carried out, we are not satisfied that we are using the best and most appropriate paint for the job.*

We should appreciate it, therefore, if you could give us a specification for the painting and, if possible, tell us how the paint should be made up.

A similar problem arises in connection with the fin signs at our theatres. These are constructed of a framework covered with lead-coated sheet steel, to which is attached neon lettering. We paint the metal-work in colours contrasting with those of the neon letters, and, here again, we have found that the paints which we have been using have deteriorated badly; the colours fade and the paint flakes off. What should we do?

A Lead is always a difficult metal to paint. One of the metallic lead dispersions in oil might provide a suitable base. But it would be highly desirable to consult a reputable firm of paint manufacturers, for, although the first coat is most important, the whole paint system should be built up in conformity with it.

As regards painting bare steelwork, success is entirely dependent on the preparation of the metal. A condition approaching "chemical cleanliness" is desirable. The steel must be thoroughly scaled and degreased, and it is advantageous to use a phosphate etch, for this provides the best possible key for the priming paint. This should be a paint having definite rust-inhibiting properties. For brush application, red lead in linseed oil should be used. For dipping or stoving it is best to use a proprietary paint on a zinc chromate base.

As with all painting, the remainder of the paint should conform with the composition of the primer and the advice of a paint manufacturer is invaluable.

WORKING DETAIL

STEPS: PUBLISHING HOUSE IN NEW YORK

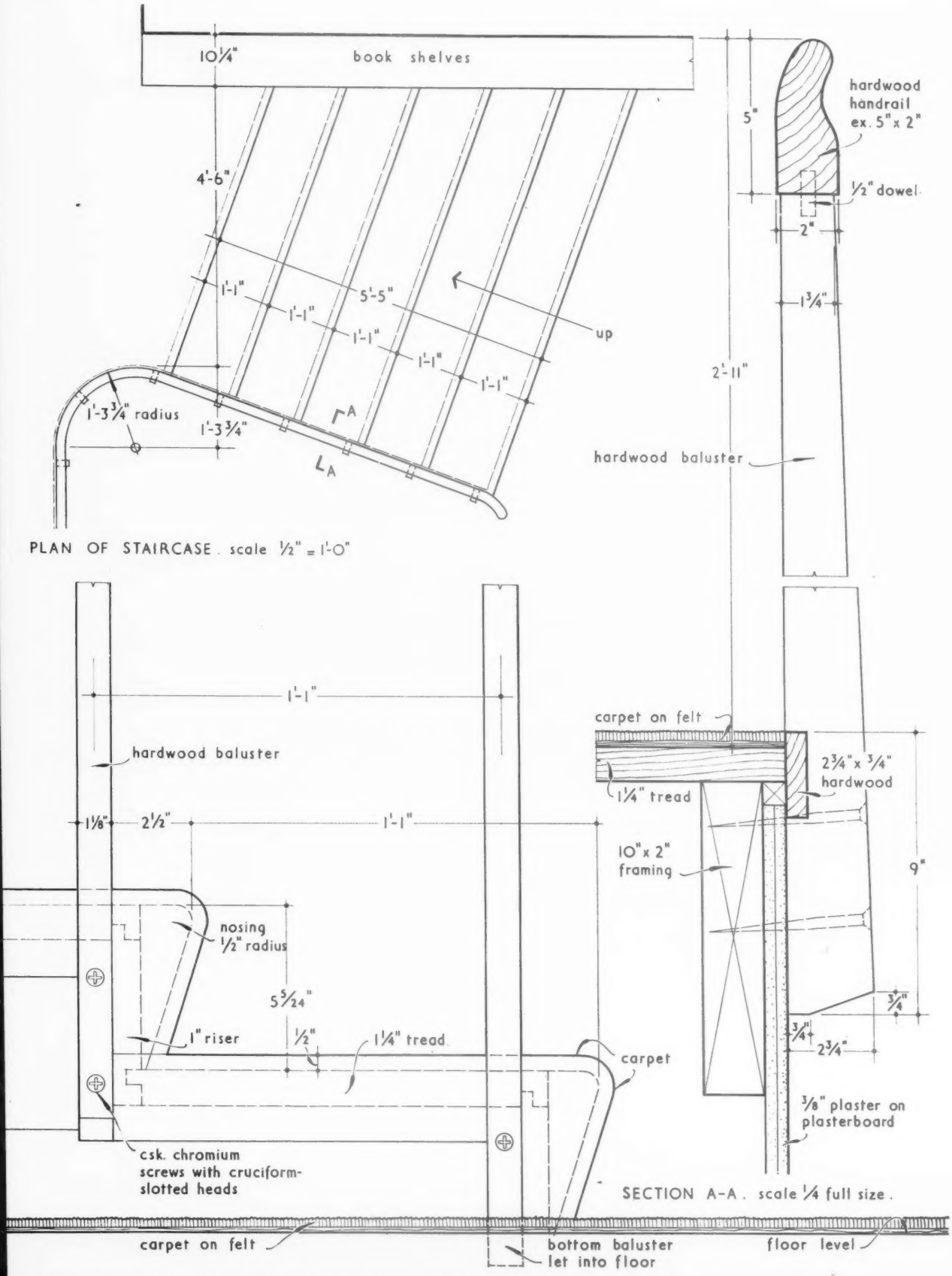
Caleb Hornbostel, architect

The short flight of shallow steps between two floor levels has a moulded hardwood handrail supported by very simple tapered balusters.

WORKING DETAIL **STAIRCASES : 7**

STEPS : PUBLISHING HOUSE IN NEW YORK

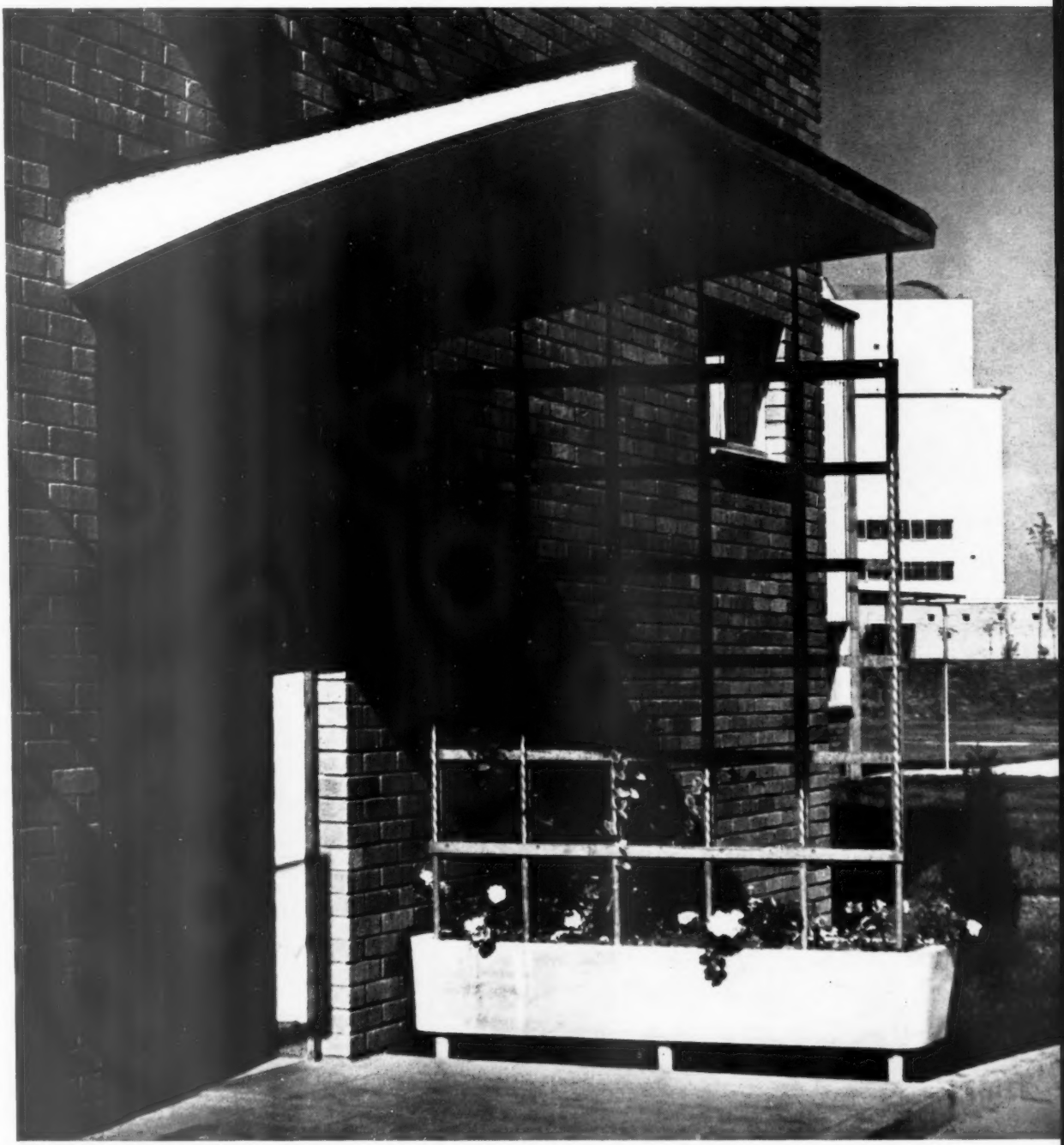
Caleb Hornbostel, architect



WORKING DETAIL — COVERED WAYS AND CANOPIES : 3

PORCH GRILLE AND FLOWER BOX: AIRCRAFT BUILDINGS AT FILTON

Eric Ross, architect

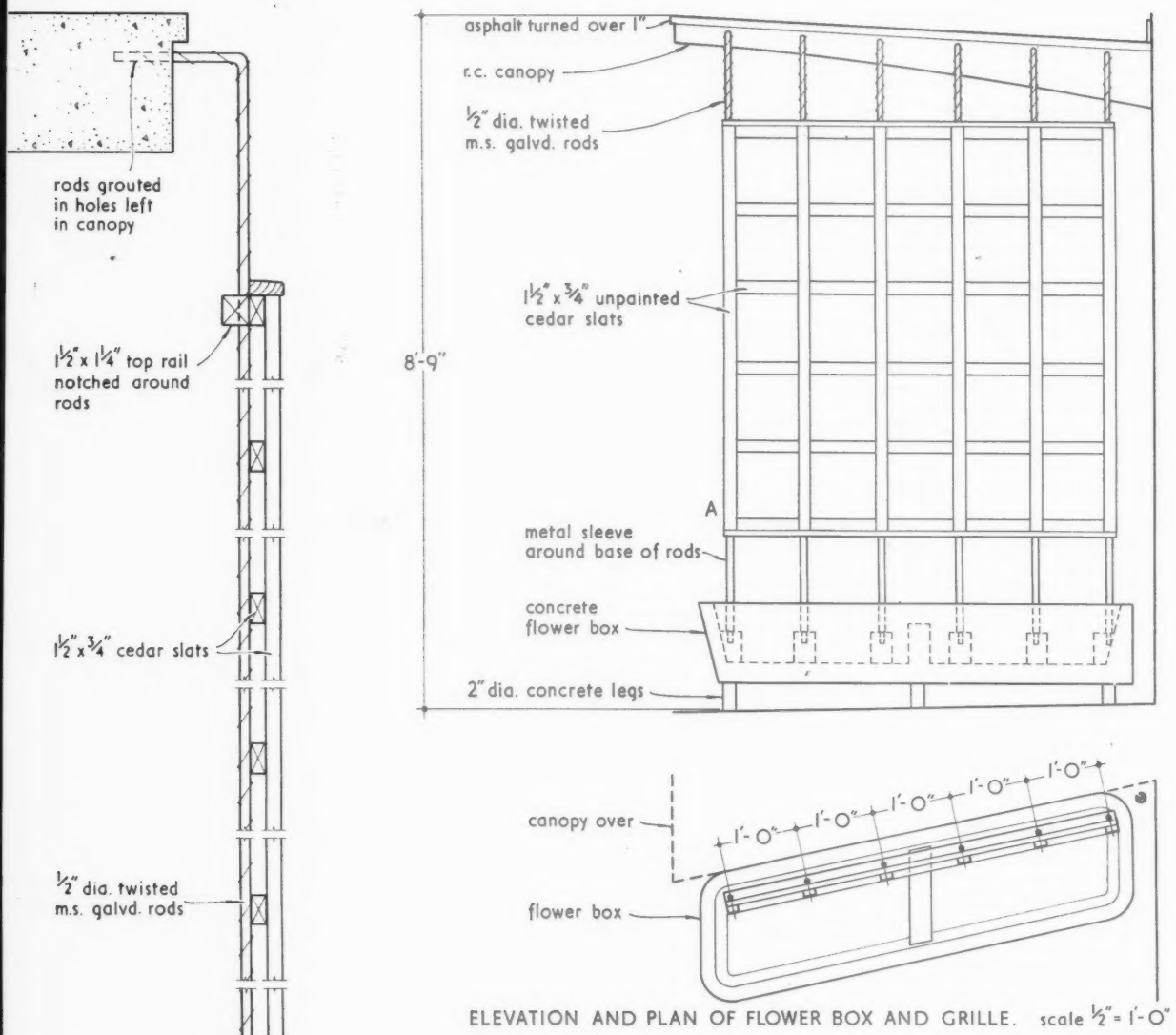


The vertical slats of the natural cedarwood grille are supported by twisted steel rods grouted into the concrete flower box and carried on up to the door canopy.

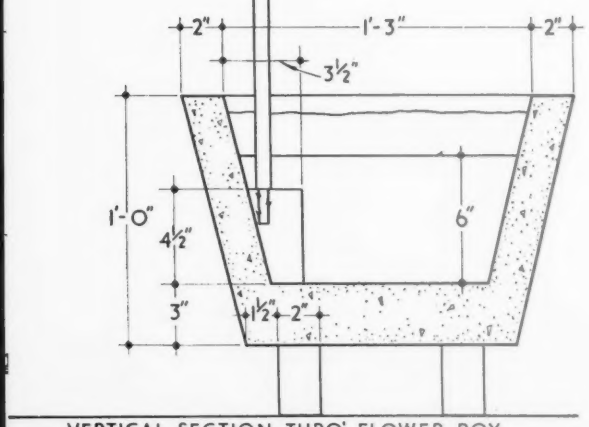
WORKING DETAIL **COVERED WAYS AND CANOPIES : 3**

PORCH GRILLE AND FLOWER BOX : AIRCRAFT BUILDINGS AT FILTON

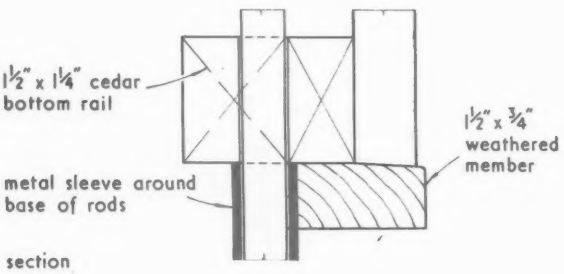
Eric Ross, architect

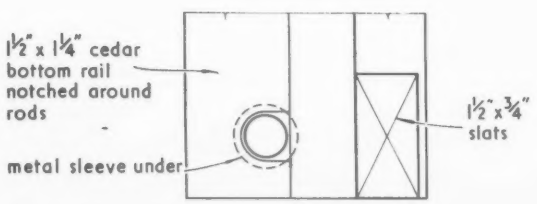


ELEVATION AND PLAN OF FLOWER BOX AND GRILLE. scale ½" = 1'-0"



VERTICAL SECTION THRO' FLOWER BOX AND GRILLE. scale 1½" = 1'-0"





ENLARGED DETAILS AT A. scale ½ full size

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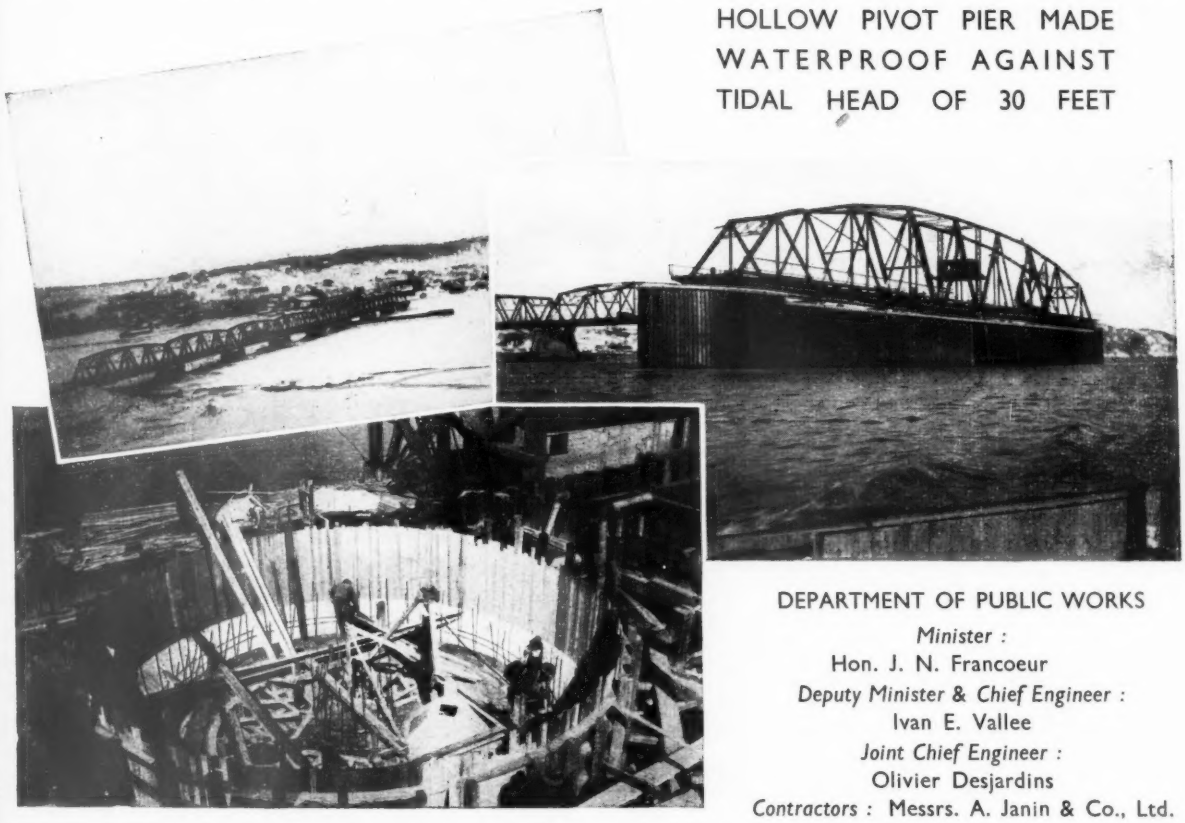
CHICOUTIMI BRIDGE, QUEBEC PROVINCE, CANADA

HOLLOW PIVOT PIER MADE WATERPROOF AGAINST TIDAL HEAD OF 30 FEET



DEPARTMENT OF PUBLIC WORKS
Minister :
Hon. J. N. Francoeur
Deputy Minister & Chief Engineer :
Ivan E. Vallee
Joint Chief Engineer :
Olivier Desjardins
Contractors : Messrs. A. Janin & Co., Ltd.

Consulting Engineers to the Department of Public Works : Messieurs Monsarrat & Pratley

THE pivot pier is a circular hollow shaft of 30 ft. diameter, built of reinforced concrete, in the centre of the protection pier. The river at this point has a tidal range of 23 ft. and the pivot pier, which supports the 375 ft. swing span, has the greater part of its outer surface exposed to the air at low tides. In view of the severe winter conditions that prevail in this district it was essential to prevent leakage of water into the hollow shaft because freezing of this water would result in serious damage. The concrete was mixed 4-2-1 and its complete impermeability was assured by the addition of 'PUDLO' Brand waterproofing powder to the cement, this mix gave a strength, under compression, of well above 3,000 lb. per square inch at seven days. The work was done in 1932, and on January 3rd, 1934, Messrs. A. Janin & Company wrote, saying "*At various times since the completion of the pier inspections were made and have revealed that the concrete is 100 per cent. waterproof.*" It is of special interest that the placing of the concrete and the formation of the work joints were carried out in strict accordance with the recommendations made in the Printed Directions for Use, thus providing the best possible evidence of the complete reliability of this information based upon experience.

'PUDLO'

BRAND
CEMENT WATERPROOFER

KERNER-GREENWOOD & COMPANY, LIMITED

KING'S LYNN NORFOLK

Sole Proprietors and Manufacturers

The word 'PUDLO' is the Registered Trade Brand of Kerner-Greenwood & Co., Ltd., by whom all articles bearing that Brand are manufactured or guaranteed.

We are exhibiting at the Building Trades Exhibition, Olympia, November 14th–28th, 1951. Stand No. 332, Row 'S'

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

INFORMATION CENTRE

7.32 Practice
ESTIMATING

Estimating for Builders & Civil Engineering Works. Spence Geddes. (George Newnes Ltd. 1951. 63s.)

A book of nearly 500 pages dealing with the analysis of prices for building and civil engineering work; of particular interest to builders, engineers and surveyors.

The opening sections explain, in detail, the different forms in which tenders may be invited, the individual elements which contribute to the total cost, and the allowances to be made for "preliminaries," overheads and profit. Following this, are two extremely useful sections on the output of plant and labour and the working cost of plant per hour.

The rest of the book is subdivided, under the usual trade headings, and gives analyses of prices for a very comprehensive selection of items.

Mr. Geddes is already well known for his book on administration and costing (see 7.29:11.1.51) and as was to be expected, his latest work is well written, informative and thoroughly up to date. It should be of considerable value both to estimators and to would-be estimators.

13.75 materials: timber
BEETLE ATTACK

House Longhorn Beetles—An Enemy in the Roof. Dr. R. C. Fisher (Municipal Journal. 3rd Aug. 1951.)

General description of beetle and recent attacks by them in this country.

Some concern has been felt in recent years on account of the numerous attacks on roof timbers which have been made by a beetle not previously common in this country. The attacks have occurred largely in the Camberley district, but there have been attacks in other districts in the same area and a few even as far away as Leicester.

This article describes the beetle, its form of attack, and the steps taken so far to discover suitable treatment. In some countries this beetle is a serious menace to roof timbers, especially to the sapwood of softwoods, and the possibility of an increase in the number of these attacks is viewed, therefore, with much concern.

13.76 materials: timber
DRY ROT

Dry Rot in Timber. W. P. K. Findlay (Journal of the Royal Society of Arts, July, 1951.)

General paper on dry rot. Some interesting historical notes. Good general statement but not as detailed or useful to technicians as the FPRL bulletin on the subject.

13.77 materials: timber
AFZELIA FLOORING

Resistance to Wear of Afzelia as Flooring. F. H. Armstrong. (Wood, Sept., 1951.)

Seventh of series of reports. Abrasion tests show afzelia does not have high resistance to wear. Rift sawn should be satisfactory for general utility floors where smoothness is not important. Tendency to splintering precludes use for heavy-duty floors. If used in strips, pre-boring for nails advisable.

13.78 materials: timber
FLOORING

Resistance to Wear of Panga Panga as Flooring. F. H. Armstrong. (Wood. Aug, 1951.)

Sixth of series of results of tests on flooring timbers. Shows Panga Panga to have high resistance to abrasion and suitable for decorative or hard-wear use either in strip or block form. Some loss of smoothness with flat sawn material under heavy use.

15.92 materials: applied finishes and treatments
TILE AND SLAB FLOORS

Tile Flooring and Slab Flooring. BS C of P 202 and sub-codes 202.101, 202.102 and 202.103. (British Standards Institution, 1951. 3s.)

General design consideration, the sub-floor, protection and maintenance; followed by sub-codes on clay tiles, concrete tiles and brick flooring; natural stone, cast stone and composition block flooring.

In the general code a number of obvious points are mentioned. Three important requirements are emphasized: the choice of a suitable base, the need for protection after laying, and the use of the correct type of polish. And the reader is reminded that too much polish should not be used.

Sub-Code 202.101 *Clay-Tile, Concrete-Tile and Brick Flooring.*

This commences with long extracts from BS 1286 and BS 1197 which should not need repeating here but, since it occurs, one may inquire why standard sizes for clay tiles differ from those for concrete tiles by the thickness of a joint, for anyone setting out a job carefully is, thereby, prevented from changing from one type to the other. This appears to be a really bad example of non-standardization among the standard makers. The remarks on quality of bricks are unhelpful.

Under "design consideration" it is stated that "clay tiles and concrete tiles are suitable in domestic buildings, for kitchens, halls, passages, etc.; for other buildings such tiling can be recommended wherever the noise of footsteps is not an objection." What a statement for a Code to make! Are these floors seriously recommended for, say, the Directors' office of the BSI or a private ward in a hospital? A good deal of the rest of this sub-code is on much the same plane but there is an important statement about having a

1 Sociology. 2 Planning: General. 3 Planning: Regional and National. 4 Planning: Urban and Rural. 5 Planning: Public Utilities. 6 Planning: Social and Recreational. 7 Practice. 8 Surveying, Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes, Treatments. 16 Materials: Miscellaneous 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation-Acoustics 23 Heating, Ventilation. 24 Lighting. 25 Water Supply, Sanitation. 26 Services Equipment: Miscellaneous: 27 Furniture, Fittings. 28 Miscellaneous.

separating layer between the base and the tile finish in all cases except small rooms. This separating layer can either be ¼ in. of compacted sand or a layer of bituminous felt, tar-felt or building paper. The tiles are then laid on about ⅜ in. thick mortar. This method of laying has been used widely in other countries but, as yet, does not seem to have been generally accepted in Great Britain. The Code suggests that an expansion joint should be formed between the floor and the surrounding wall. It is not clear how this can be arranged when, as often, it is required that the floor should finish with a coved skirting tile.

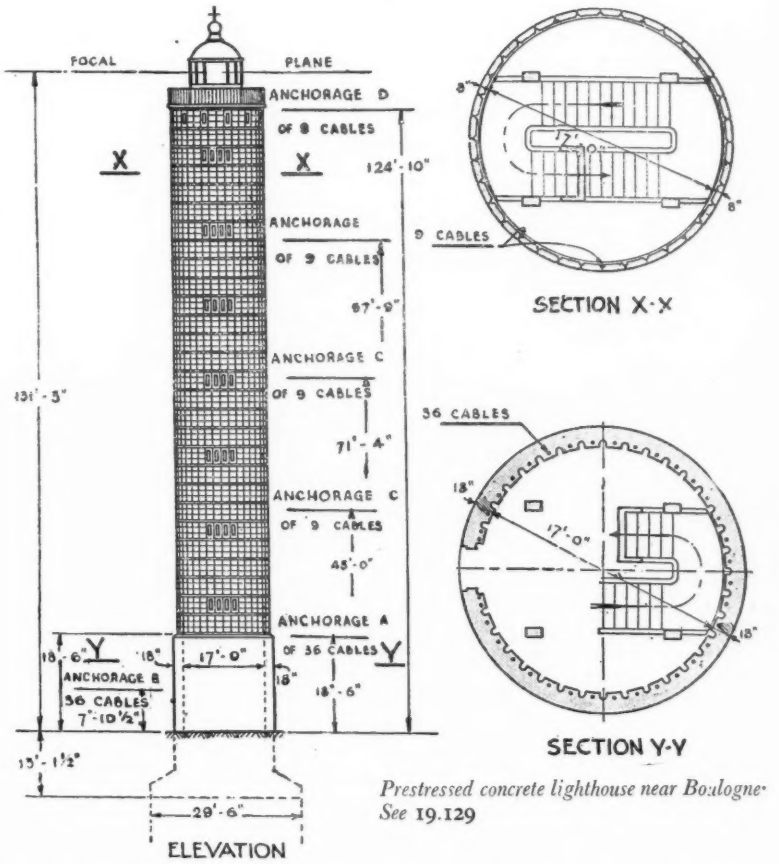
There is a reference to the possibility of laying tiling on a bituminous composition but, apparently, there is no experience to show whether or not this is likely to be successful.

With regard to jointing, the code refers to the irregular shape of some types of tile and the need, therefore, for wide joints. By "wide" it seems to mean ¼ in. Many architects now appear to like using joints a good deal wider than this, partly because they like them and partly because ¼ in. is not always sufficient to accommodate variations in tile size. It would have been useful to know whether the authors of the code had any objections to these wider joints.

Sub-Codes on Natural Stone and Cast Stone and on Composition-Block Flooring

These follow much the same lines as the title sub-code. A good deal of the information is rather obvious and there are a few things which are difficult to understand; for example, why, if internal slab floors must be bedded solid, to avoid breakage, may external paving be bedded on pads only? A useful warning is the need for a damp proof membrane under composition block finishes where rising damp can occur. This is necessary because of the moisture movement of the blocks.

Although containing some useful information, this Code seems altogether too vague in many places and full of reiteration.



Prestressed concrete lighthouse near Boulogne. See 19.129

16.76 materials: miscellaneous
AGGREGATES

Sampling and Testing of Mineral Aggregates Sands and Fillers. BS 812:1951. (British Standards Institution. 6s.)

A complete revision of earlier specification, with many additions and improvements. Will avoid need for test methods being inserted as appendices to individual materials specifications.

This is a specification which deals with testing methods and as such is a valuable tool for the industry, although not one likely to be used a great deal by the architect himself. The tests are those usually carried out by testing laboratories, but the architect should be aware of the carefully determined standard methods which are available for use when the need arises. The present Standard is sufficiently comprehensive to make the reproduction of test methods in Specifications on individual materials unnecessary. One hopes that, as a result, the individual specifications may become less expensive. Testing of slag and clinker is not covered in this BS.

There is a clear tabulation of types of aggregate, according to group, petrological name, shape, size, etc., of particles, and surface texture. The glossary includes four pages of rock names.

18.88 construction: theory
BRICKWORK

Brickwork. BS C of P 121.101. (British Standards Institution. 1951. 6s.)

Final Code dealing with brickwork generally, including materials, mortars, damp-courses, general workmanship and the functional qualities of brickwork.

This Code, now issued in final form, deals with brickwork generally. Other Codes deal with particular aspects such as foundations, loadbearing walls and flues.

The information is good useful general material covering normal building requirements. Related matters, such as damp-courses and wall ties, are dealt with and mortars are treated in some detail. Functional aspects, such as weather resistance, durability and heat and sound insulation, are described and, as far as possible, values are tabulated.

Although there is nothing very new in the information given, there is much which is not yet accepted as common practice, especially the description of mortars and the warnings given about the use of strong cement mixes. The notes on possible troubles from sulphates are also important. There are clear diagrams showing correct treatment of damp-courses and flashings—all very obvious when seen but all too often not detailed correctly on the drawing board.

A good general treatment—especially worth while to students.

19.129 construction: details
PRESTRESSED CONCRETE TOWER

A Prestressed Concrete Lighthouse. (Concrete & Constructional Engineering, Aug., 1951. pp. 257-258.)

Precast, prestressed units combined with post-stressing, in construction of 125-ft. high lighthouse. System could be applied to any high circular tower.

An *in-situ* concrete plinth extends 18 ft. 6 in. above the ground and the mass foundation. It has an internal diameter of 17 ft. and walls 18 in. thick; 36 post-stressing cables, each of eighteen wires, extend from the top of the plinth into the foundation, where they are anchored by a U-bend. The tops of the cables are anchored by Freyssinet cones.

The shaft rises 106 ft. 3 in. above the plinth and is constructed of precast concrete segments. Each fourth course consists of a prestressed concrete ring (compressed circumferentially), 4 in. deep, 8 in. wide and 18 ft. 4½ in. external diameter. Between the rings are three courses of precast blocks (36 per course), 13¾ in. deep and 7 in. wide. Special segments are provided to take windows and the cables for post-stressing. These are of the Freyssinet type, in 4 sets of 9 vertical cables, each consisting of twelve 0·2 in. diam. wires, anchored in the plinth and terminating at various heights of the tower as shown in the diagram.

THE LIBRARY OF INFORMATION SHEETS

I.B32 REFERENCE BACK

Readers are asked to note the following revision and to amend their copy of the Information Sheet in question: The note at the bottom left of the drawing reading "vanishing parallel *for descending planes" should read "vanishing* level *for descending planes."*

19.130 construction : details
CASEMENT WINDOWS

Wood Casement Windows. BS 644: Part 1: 1951. (British Standards Institution. 3s.)

Revision of 1945 Standard. Sections now stronger and range of types simplified.

This revised version of the 1945 Standard will be welcomed on account of the change to a stronger section—a change which many people had found by experience to be desirable. Moreover, in windows without glazing bars the casements are given deeper bottom rails.

The standard range covers windows without glazing bars, with horizontal bars only and with both horizontal and vertical bars. It is doubtful whether the designs will please all architects. Multi-light windows 4 ft. 0¼ in. high and windows of the 5 ft. 0¼ in. high sub-light series with glazing bars have the pane immediately below the vent light or above the sub-light smaller in height than the others, in order to maintain the line of glazing bars with adjoining lights. This is a difficult problem and this particular solution is not entirely successful.

21.39 construction : miscellaneous
PLANT

Freight Handling. Productivity Team Report. (Anglo-American Council on Productivity. 1951. 2s. 6d.)

Specialized but contains useful information for architects and builders, especially those engaged on large factory projects. 53 pp., diagrams and photographs.

24.152 lighting
STANDBY POWER PLANTS

Standby Power Plants. I. J. Crowley. (Progressive Architecture [USA]. June, 1951.)

Although relating primarily to American practice, this article provides a useful summary of factors to be considered in determining the type of power unit to be employed. Diesels are most highly favoured, and installation methods, operational safeguards and tests are described.

24.153 lighting
ROOF LIGHTING IN SCHOOLS

Schools with Controlled Daylighting. (Architectural Forum. [USA]. July, 1951. p. 158.)

The Southgate Elementary School, Seattle, Washington, has ceiling following the pitch of a low-pitched roof; 8 ft. 8 in. to the eaves, with small windows of the hole-in-the-wall type and a laylight 9 ft. 10 in. from the floor, illuminated by a large skylight in the roof. Immediately below the skylight are motorized louvres, controlled by photo-electric cells to maintain 150 foot-candles on the working plane. On dark days, if the illumination value drops to 35 foot-candles, lights are switched on to raise it to 70 foot-candles.

This is interesting as a mechanical tour-de-force but of doubtful value for English practice.

25.80 water supply and sanitation
COPPER TRAPS

Copper and Copper Alloy Traps and Wastes. BS 1184: 1951. (British Standards Institution. 3s.)

Revision of 1944 BS, with additional sizes to cover solid down traps. Full details of sizes with clear diagrams.

28.15 miscellaneous
BUILDING INDUSTRY

Ministry of Works Annual Report for 1950. (HMSO. 1951. 1s. 6d.)

33 pages of extremely varied statistics and information, some of which is of considerable general interest.

A first inclination to push this publication aside as being just another rather dull report of past history would be unwise. It covers a very wide range of information, some parts of which would be of interest to almost anyone connected with building. You can discover what ancient monuments were added in 1950 to the list of buildings for which MOW is responsible or you can get the ammunition to start a fight about the Government's office-building activity. You can read that the overall rise in price of materials and components was 8 per cent. —which ought to help in explaining final accounts to clients—or you can read with surprise of the volume of export of glazed tiles to Canada or glass to USA. You can see that of 117,000 registered firms less than 1,200 employ 100 operatives and over 90,000 firms employ less than 5 operatives. Altogether a mine of miscellaneous background information about the industry. None of it very vital knowledge in the daily round but interesting nevertheless.

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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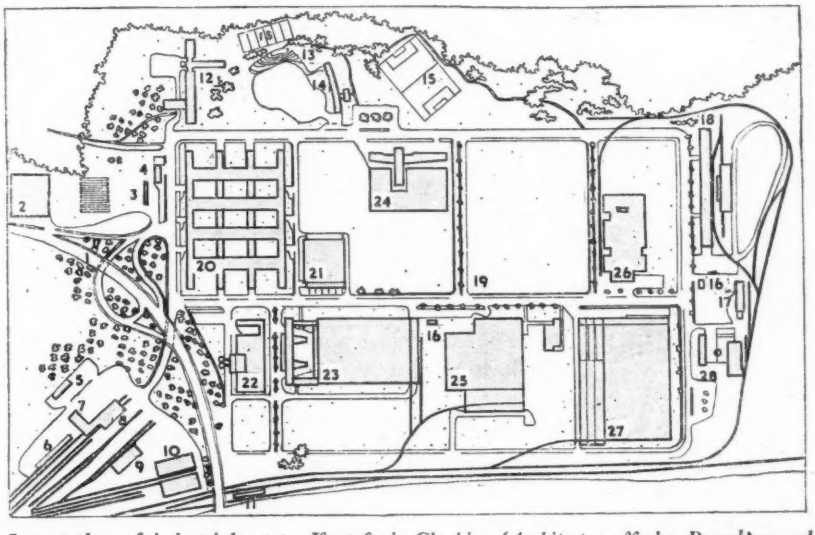
A.J. 11 10.51

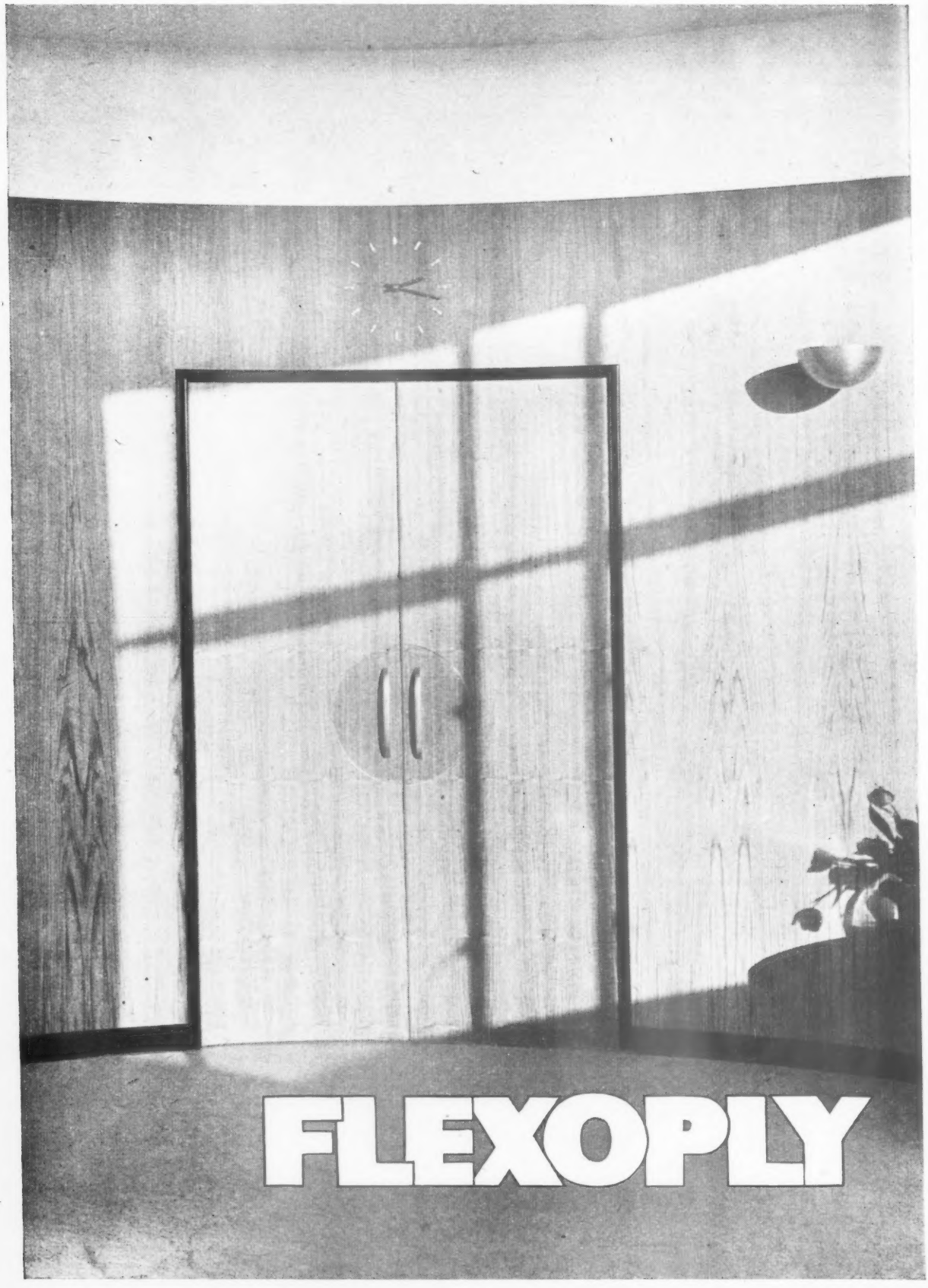
The plan printed below appeared in our issue for September 27 (page 386) with an inaccurate key. The correct key is given here.



Layout plan of industrial estate, Knutsford, Cheshire. (Architects : Yorke, Rosenberg and Mardall.)

KEY

1. Main-road
2. Bus garage
3. Petrol pumps
4. Fire station
5. Builder's yard
6. Loading bank
7. Inwards shed
8. Outwards shed
9. Fish
10. Warehouse
11. Railway station
12. Administration
13. Sun terrace
14. Cafe and shops
15. Sports ground
16. Transformer
17. Boiler house
18. Cement-products
19. Area for future development
20. Flatted factory
21. Narrow Band weaving
22. Fresh food factory
23. Electrical engineering
24. Printing
25. Light engineering
26. Light alloys
27. Agricultural implements
28. Dry ice factory


FLEXOPLY

This feature covers both the production and marketing of new materials and designs of equipment as well as the general trend of developments within the Building Industry.

THE INDUSTRY

By Brian Grant

SYNTHETIC ADHESIVES

The photograph on this page shows the new exhibition room recently completed by Aero Research to display their wide range of modern synthetic glues, especially in the woodworking industries. Synthetic adhesives are now used for all sorts of purposes in the joinery trades, where a high resistance to heat or humidity or solvents is required, and this firm has done a great deal of work with adhesives of all types. It should not, of course, be assumed that these special adhesives are to replace the usual casein and other glues, which are still perfectly satisfactory for normal purposes; there are, however, many designs where particularly high strength is needed, or some of the other qualities already mentioned. As examples of what can now be done with synthetic bonding, it is interesting to see such things as squash rackets with the handles bonded to the heads, dinghy shroud plates glued to hull planking and linings bonded to brake shoes. Quite soon after the war I happened to see a prototype nursery school table which had T-section legs end-glued to a multi-ply top without any framing. When this sort of thing can be done successfully it is worth thinking again about joinery design to see how it can be simplified. Incidentally, it is well worth asking for this firm's monthly Technical Notes, which, although they often have nothing whatever to do with the building industry, are always interesting, and a simple method of keeping up to date with current developments. (*Aero Research Ltd., Duxford, Cambridgeshire.*)

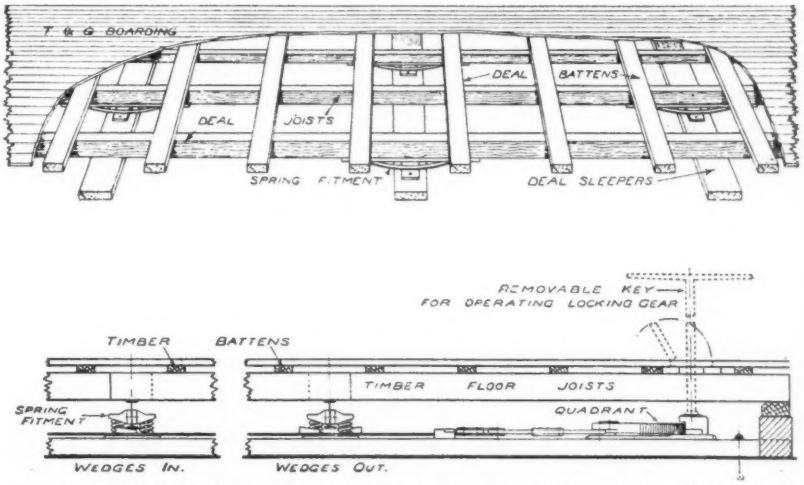
PAINT DEVELOPMENTS

This week there are two useful new paints to record. The first is Refrac, a fire retardant paint which reduces flame spread and withstands temperatures up to 1,000 deg. C. It is made in a number of different colours and can be applied by brush or spray, having a covering capacity of from 15 to 20 yards per gallon. It is intended mainly for internal use, and should be waterproofed with Silicaseal or some similar compound if it is to be used externally.

Tests carried out by the joint fire research organization of the DSIR and the Fire Offices Committee show that fibre insulating board and Douglas fir plywood treated with Refrac are both in Class I for flame spread under the standard test, whereas untreated they are found in Class IV. Class I is described as "very low flame spread," whereas Class IV is "rapid flame spread." The official report on the tests says that "the flaming which occurred on these specimens was not of the usual type in which a flame front advances steadily from the point of ignition. Instead, no flame front as such was apparent, but the burning progressed by the cracking of the paint film in isolated positions near the hot end of the specimen, flames issuing from each crack for a short time, but not spreading beyond their parent crack."

Since a number of architects and housing authorities are extremely worried about the rate of flame spread in untreated fibre board, it is useful to know that something can be done about it. (*Anglo-American Export Co. Ltd., 60, Ebury Street, London, S.W.1.*)

The other paint is a heat resisting black bitumen based enamel introduced by Tretol Ltd., to withstand temperatures up to 400 deg. F., and it is equally suitable for inside or outside use on such things as metal chimneys, stove pipes, hot water pipes and all metal fitments. Three coats are recommended, and protection is also given against weak acid and alkali fumes; covering capacity is 45 to 50 square yards per gallon on metal, less with asbestos cement. (*Tretol Ltd., 12/14, North End Road, London, N.W.11.*)



Morton's NVS elliptical spring fitments. The bottom diagram shows the longitudinal section.

SPRING FLOORS

The two drawings on this page show Morton's Valtor spring floor. The steel springs are connected to light steel girders supporting the floor, and the drawing shows the patent locking device which can be supplied if it is necessary to have a floor which can be made rigid. The gear consists of a pair of flat steel bars under each line of spring supports, the bars being wound lengthways by a removable key which passes through a small trap flush with the floor. The bars carry wedges which are drawn under the floor girders, thus taking the weight off the springs. Steel coil springs are normally used, but where only a medium degree of resilience is required, or where the depth available from base concrete to finished floor is no more than 7 in., an alternative fitting with an elliptical spring is available. The firm also supplies temporary floors and stages, and with the ordinary sprung wooden floor it is also possible to arrange illuminated glass floors which are also sprung. (*Francis Morton (Spring Floors) Ltd., Dawley Road, Hayes, Middlesex.*)

WALL VENTS

Plastic Products, of Greenhithe, have just introduced a gypsum plaster wall vent which can be easily and quickly fixed. It is made in standard sizes of 12 in. by 9 in., 9 in. by 9 in., 9 in. by 6 in., and 9 in. by 3 in., but other sizes can be made to order. The ventilator is reinforced with sisal fibre and is fired, during the application of the plaster finishing coat, by dipping it in water and applying a stiff paste of gypsum plaster. After mixing it can be painted or distempered. (*Plaster Products (Greenhithe) Ltd., Greenhithe, Kent.*)

A new exhibition room for Aero Research.

Obituary

We regret to announce the death, on September 16, of F. H. Nicholls, manager of the Ruberoid Co. Ltd.'s offices in Birmingham. Mr. Nicholls joined the company in 1918.

Corrections

The telephone number of Acrow (Engineers) Ltd. (Ambassador 3456: 20 lines) was wrongly given in their advertisement published on September 27.

The qualifications of Mr. F. M. Gross, M.S.I.A., were inaccurately stated in the advertisement for Osters and Fleming (A.J. October 4).

Buildings Illustrated

Reconstruction of Colston Hall, Bristol. (Pages 443-446.) Architect: J. Nelson Meredith, F.R.I.B.A., City Architect. Senior assistant architect in charge: T. S. Singer, A.R.I.B.A., A.M.T.P.I. Assistant architects: S. G. Howitt, L.R.I.B.A.; W. F. Holland, A.R.I.B.A. Consulting engineers (heating and electrical): Hoare Lea, and Partners. Quantity surveyors: Bernard & Son (A. G. Taplin, F.R.I.C.S.) Acoustical advisers: The Department of Scientific & Industrial Research Organ consultants: Dr. H. K. Andrews; Dr. W. K. Stanton. Clerk of Works E. W. Giddings, M.I.C.W. General contractors: William Cowlin & Son Ltd. Sub-contractors: Structural steelwork (including design, door furniture and fittings), Gardiner Sons & Co. Ltd.; reinforced concrete floors, The Kleine Co. Ltd.; heating and ventilation, The Brightside Foundry & Engineering Co. Ltd.; electrical installation. F. H. Wheeler (Bristol) Ltd.; seating, The Walturdaw Cineman Supply Co. Ltd.; tubular furniture, Neeta Ltd.; sanitary work, G. F. Tuckey; carpet in conductor's room, Baileys (Bristol) Ltd.; roofing, The Universal Asbestos Manufacturing Co. Ltd.; terrazzo work, The Bristol Art Floors Ltd. absorbent ceiling cove, The Marley Tile Co. Ltd.; rollers under removable staging and boxing ring, F. & R. Edbrooke Ltd.; decorative paints, The Imperial Chemical Industries Ltd.; John Hall; dance floor, Horsley Smith & Co. (Hayes) Ltd.; concert platform floor, Stevens & Adams Ltd.; sound insulation to ducts, Newalls Insulation Co. Ltd.; doors, Southerns Ltd.; plaster work, A.C.V. Telling (Bristol) Ltd.; Gyproc Products Ltd.; felt roofing, The Asphalte Specialists Ltd.; metal lathing, The Steel Bracketing and Lathing Ltd.; handrails, balustrades and bronze rails, M.A.C. Engineering (Bristol); floor finishes, Korkoid Decorative Floors; plaster motifs, designed by E. Pascoe; coat of arms, H. H. Martyn & Co. Ltd.; fire alarm system, Gough Bros. (for Associated Fire Alarms Ltd.); public address system, The General Electric Co. Ltd.; lighing fittings, Troughton & Young (Lighting) Ltd.; scaffolding, Scaffolding (Great Britain) Ltd.; coffee machines and boilers, W. M. Still Ltd.; internal telephones, The Reliance Telephone Co. Ltd.; fire appliances, The Fire & Safety Engineers Ltd.

Leagrave County Primary, Junior and Infants' Schools, Luton. (October 4, pages 408-410.) Architects: Howard V. Lobb & Partners, F/A.R.I.B.A., A.M.T.P.I. Assistant Architects: A. P. Hodgson, A.R.I.B.A. and F. I. Martindale, A.R.A.I.A. Landscape Consultant: H. F. Clark, F.I.L.A.; carving and modelling, Geoffrey Deeley, M.B.E., F.R.B.S.; Quantity Surveyor: Oswald A. Parratt, F.R.I.C.S.; Clerk of Works, H. J. Ratcliff. General Contractors: T. & E. Neville, Ltd. Sub-contractors: wood block flooring, The Acme Flooring & Paving Co. (1904) Ltd.; suspended ceilings (Junior School only), Anderson Construction Co. Ltd.; landscape and planting, F. C. Andrews; blinds and curtains, J. Avery & Co.; electrical installations, Barlow & Young Ltd.; tarmacadam paving, Ch.ttenden & Simmons (Contracting) Ltd.; cedar wood shingles, W. H. Colt (London) Ltd.; metal windows, Crittall Manufacturing Co. Ltd.; fencing and gates, S. G. Day; sanitary fittings, Dent & Hellyer Ltd.; steelwork, Dorman, Long & Co. Ltd.; suspended ceilings (Infants School only), Eastwoods Specialists Ltd.; asphalte roofs (Infants School only), Field & Palmer Ltd.; w.c. cubicles (Infants School only), Flexo Plywood Industries Ltd.; ironmongery (Junior School only), James Gibbons Ltd.; lightning conductors (Junior School only), J. W. Gray & Son Ltd.; rolling shutters, Haskins Rolling Shutters; curtains, Gerald Holtom; facing bricks, Ibstock Brick & Tile Co. Ltd.; glass domes, T. & W. Ide Ltd.; railings (Junior School only), Light Steelwork (1925) Ltd.; built up bituminous roofing, Macartney Ltd.; asphaltic tile pavings (Infants School only), The Marley Tile Co. Ltd.; terrazzo pavings, (Junior School only), Marriott & Price Ltd.; outdoor coloured concrete paving, Noelite Ltd.; vermiculite spray finish, C. & T. Painters Ltd.; sound reproducing equipment, Philips Electrical Ltd.; hose reels, Pyrene Co. Ltd.; cloakroom fittings, N. F. Ramsay & Co. Ltd.; cement glaze, Robb's Cement Enamel Finishes Ltd.; heating and ventilating, Rosser & Russell Ltd.; flush doors, Saro Laminated Wood Products Ltd.; tubular lattice beams (Infants School only), Scaffolding (Great Britain) Ltd.; tiling and terrazzo slabs (Infants School only), W. B. Simpson & Sons Ltd.; special light fittings, Troughton & Young (Lighting) Ltd.; asbestos cement cavity decking, Turners Asbestos Cement Co. Ltd.; Ironmongery (mainly Infants School), Yannedis & Co. Ltd.; w.c. partitions, Zanelli (London) Ltd.

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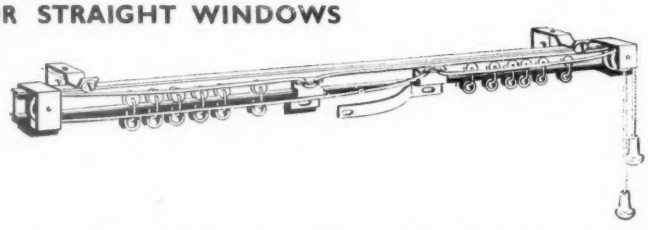

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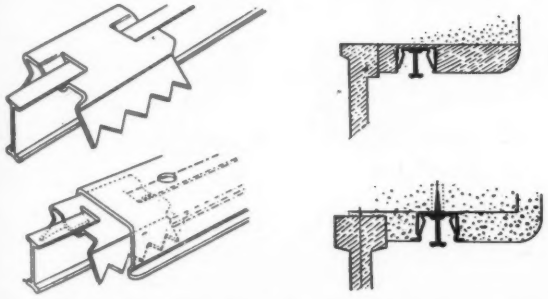

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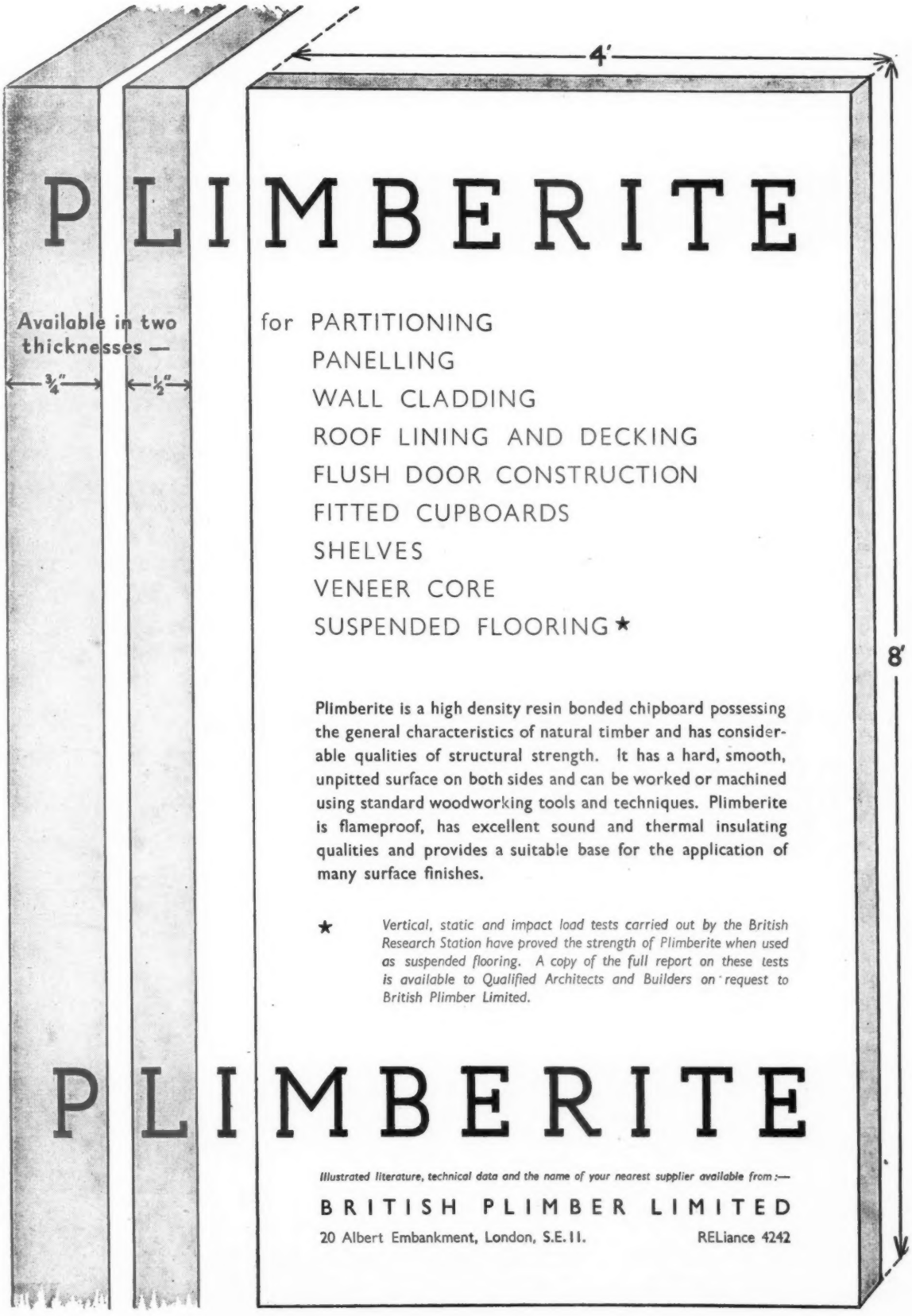

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CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

BOROUGH OF ERITH.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with the National Scale, A.P.T., II, commencing at £470 and rising by annual increments of £15 to a maximum of £515 per annum, plus London area weighting.

Applicants, who should be capable of preparing plans, specifications, estimates and Bills of Quantities for building works, should have had a good architectural training and be neat draughtsmen.

The appointment will be subject to the National Conditions of Service, to the Council's Regulations governing staff, to one month's notice in writing, and to the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Applications must be on the form to be obtained, together with a list of duties, from the Borough Engineer and Surveyor, Town Hall, Erith, Kent, and be delivered to him not later than 16th October, 1951.

Canvassing, either directly or indirectly, will disqualify.

J. A. CROMPTON,
Town Clerk.

Town Hall, Erith, Kent. 4443

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of CLERK OF WORKS (salaries up to £660, plus 10 per cent. on first £600 and 7½ per cent. on any remainder) in Housing Division of Architect's Department, to supervise erection of Multi-storey Blocks of Flats. Applicants should have considerable experience in modern reinforced concrete and steelwork construction, and have supervised large building contracts. Position superannuable.

Application forms, to be returned by 20th October, 1951, obtainable from Architect to the Council, County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/HCW. (1151). 4449

CITY OF BATH.
CITY PLANNING AND ARCHITECTURAL DEPARTMENT.

Applications are invited for the appointment of CHIEF ARCHITECTURAL ASSISTANT, Grade A.P.T., VII (£685-£760) per annum. Applicants must be Registered Architects, and preference will be given to those who are Associates of the Royal Institute of British Architects. They should have good experience in design and construction of Municipal housing and other works.

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

Applications, stating age, qualifications and experience, together with the names and addresses of three referees, should be sent to the City Planning Officer and Architect, 2, Princes Buildings, Bath, not later than the 19th October, 1951.

The Corporation are prepared to render assistance to the successful candidate in securing housing accommodation if required.

JARED. E. DIXON,
Town Clerk.

Guildhall, Bath.
September, 1951. 4457

COUNTY BOROUGH OF MIDDLESBROUGH EDUCATION COMMITTEE.
ASSISTANT ARCHITECTS.

Applications are invited for two posts of Assistant Architects, one on Grade A.P.T. VII and the other A.P.T. V in the Education Offices. (Education Architect: P. R. Middleton, Dipl. Arch., A.R.I.B.A.) The Committee have a large building programme in hand and the posts offer excellent opportunities in the design and construction of modern school buildings.

Forms of application and conditions of service may be obtained from the Director of Education, Education Offices, Woodlands Road, Middlesbrough, to whom completed forms should be returned, not later than Saturday, 20th October, 1951.

E. C. PARR,
Town Clerk.
4484

BOROUGH OF CROSBY.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
ARCHITECTURAL ASSISTANT.

Applications are invited from persons holding an appropriate qualification for the above appointment. Salary in accordance with the National Scale of Salaries, *viz.*, A.P.T. IV (£530 to £575 per annum).

Applications, on forms obtainable from the undersigned, to be delivered not later than noon on Monday, the 22nd October, 1951.

HAROLD O. ROBERTS,
Town Clerk.

Town Hall, Waterloo, Liverpool, 22. 4483

BURGH OF ALLOA.
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Senior Assistant Architect, on the staff of the Council's Architect, at a salary of £520-£565, placing on grade according to experience.

Applicants must be Registered Architects. Preference will be given to candidates who are Members of the R.I.B.A., and who have knowledge of Local Authority Housing Design. Experience in quantities is essential.

The post will be superannuable, and the successful applicant will be required to pass a medical examination.

A house will be made available if required.

Applications, giving age, qualifications and experience, accompanied with the names and addresses of two persons to whom reference may be made, should be sent to Mr. W. H. Gillespie, L.R.I.B.A., Burgh Architect, Municipal Buildings, Alloa, not later than 31st October.

WILLIAM MALTMAN,
Town Clerk.
4476

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS, with recognised training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments.

Salary: Architectural Assistants, £340-£575 per annum; Leading Architectural Assistants, £570-£675 per annum. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, some of them have long term possibilities, and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference WG10/BS. 4304

MANCHESTER REGIONAL HOSPITAL BOARD.
DIVISIONAL ARCHITECTS—AMENDED ADVERTISEMENT.

Applications are invited for posts of Divisional Architect in the Architect's Department of the Board's Headquarters Staff. Salary £750, with annual increments of £25 to £850 a year. National Health Service conditions and superannuation.

Applicants must be registered architects and have passed the Final Examination of the R.I.B.A. They should have had wide experience in design, planning and construction, and in the preparation of working drawings for important hospital buildings; and should possess administrative ability.

Applications, stating age, qualifications, experience and names and addresses of not more than three referees, should be received by me not later than 22nd October, 1951.

J. GIBBON,
Secretary of the Board.

1, North Parade,
Parsonage Gardens,
Manchester 3. 4500

FIFE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited from persons having suitable qualifications for appointment as ARCHITECTURAL ASSISTANT at the County Offices, Cupar. Candidates should preferably be qualified architects, holding A.R.I.B.A. and registered architects. Previous local authority experience would be an advantage. Salary £570 rising by two annual increments of £20, two of £25 and one of £15 to a maximum of £675 per annum. Consideration may be given to meeting the housing needs of the successful candidate. The appointment is superannuable and the person appointed will require to undergo a medical examination for superannuation purposes. Applications, stating age, previous experience and qualifications, accompanied by copies of recent testimonials, to be lodged with the undersigned not later than 20th October, 1951. No canvassing.

J. M. MITCHELL,
County Clerk.

County Buildings, Cupar, Fife.
27th September, 1951. 4485

CITY OF CARDIFF EDUCATION COMMITTEE.
THE COLLEGE OF TECHNOLOGY AND COMMERCE.

Principal: DR. A. HARVEY.

Welsh School of Architecture: Applications are invited for the post of ASSISTANT LECTURER AND STUDIO INSTRUCTOR in this Department of the College. Candidates should have been trained in a recognised School of Architecture and be Associates of the R.I.B.A.

The salary will be in accordance with that for Assistants, Grade B, £450×£25—£725, plus allowances for degree (or degree equivalent) and training, the minimum starting salary being thus £564 per annum.

Forms of application, together with further particulars, may be obtained from the undersigned, to whom they should be returned as soon as possible.

ROBERT E. PRESSWOOD,
Director of Education.

City Hall, Cardiff. 4502

ARCHITECTS, MAINTENANCE SURVEYORS, QUANTITY SURVEYORS, AND LANDS OFFICERS.

THE CIVIL SERVICE COMMISSIONERS invite applications for permanent appointments to the basic grades given above, in a number of departments in England and Scotland. Applications will be accepted at any time up to and including 31st December, 1951. Selected candidates will be interviewed as soon as possible after the receipt of their application forms. Successful candidates may expect early appointments. Candidates are advised to apply as early as possible.

All candidates must be at least 25 and under 35 years of age on 1st January, 1951, with extension for regular service in H.M. Forces, and up to two years for permanent Civil Servants. All candidates must have the appropriate professional qualifications and experience.

The salary on appointment will be fixed according to age. The London salary for men aged 25 is £575 rising by annual increments of £25 to £750 and by £30 to £900.

(The next higher grades are: Main grade £900×£30—£960×£40—£1,200, senior grade £1,250×£50—£1,450.)

Salaries for women and for officers appointed to the provinces will be somewhat lower.

Forms of application and copies of the regulations with full details of qualifications required from the Civil Service Commission, Scientific Branch, Trinidad House, Old Burlington Street, London, W.1, quoting No. 3405TA. Completed application forms should be returned as soon as possible. 4482

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
COLLEGE OF ART 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 YEAR MASTER in Architecture.

Salary will be in accordance with the Burnham (Further Education) Scale, 1951, for Senior Lecturers (£1,000×£25—£1,150 per annum). Breadth of vision, technical competence and enthusiasm are of the greatest importance. 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 Art and Crafts, Margaret Street, Birmingham, 3, on receipt of 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.

October, 1951. 4492

COUNCIL OF THE COUNTY OF ABERDEEN.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for appointment as ASSISTANT QUANTITY SURVEYOR. The salary scale applicable to the appointment is £520 rising by annual increments to £660 per annum.

Candidates should have passed the Intermediate Examination of the Royal Institute of Chartered Surveyors (Quantities Division).

The appointment is subject to the Local Government Superannuation (Scotland) Act, 1937, and the successful candidate will require to pass a medical examination.

Conditions of appointment and forms of application may be obtained from the undersigned and should be returned completed not later than Friday, 26th October, 1951.

Canvassing of members of the Council, directly or indirectly, in connection with the appointment shall disqualify the candidate.

CHAS. HORNAL,
County Clerk.

County Buildings,
22, Union Terrace, Aberdeen.
29th September, 1951. 4493

CITY OF COVENTRY.
ARCHITECTURAL AND PLANNING DEPARTMENT.

Applications are invited from qualified persons for the appointment of a QUANTITY SURVEYING ASSISTANT, Grade A.P.T. VII (£685×£25—£760 per annum).

Housing accommodation may be made available in certain circumstances.

Paragraph 44 of the Charter applies to all employees.

Applications, on forms obtainable from the undersigned, by Monday, 22nd October, 1951.

D. E. E. GIBSON,
City Architect and Planning Officer.

Bull Yard, Off Warwick Row,
Coventry.
28th September, 1951. 4494

LONDON COUNTY COUNCIL.

Applications are invited for a post of ARCHITECT (Grade II, £700 to £840 basic) in Historic Records Section of Architect's Department. Position requires special knowledge of period architecture and decorative styles; experience in maintenance and preservation of ancient buildings and objects; preparation of material for records and publication; technical advice on corporate property. Superannuable. Salary subject to addition of 10 per cent. on first £600 and 7½ per cent. on remainder.

Application forms, to be returned by 31st October, 1951, obtainable from Architect, The County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/HR. (1186) 4495

CITY OF WAKEFIELD.
CITY ENGINEER'S DEPARTMENT.
PRINCIPAL ARCHITECTURAL ASSISTANT, GRADE VII.

Applications are invited for the appointment of a Principal Architectural Assistant, on Grade A.P.T., VII (£685×£25 to £760), the appointment being subject to the Local Government Superannuation Act, 1937, and to the passing of a medical examination. Applicants should have extensive experience in Municipal Housing and General Municipal work, and must be A.R.I.B.A.

Applications, endorsed "Principal Architectural Assistant," stating age, qualifications, present and previous appointments, details of experience, and whether related to any member or senior officer of the Corporation, together with copies of two testimonials, should be sent to me not later than Saturday, 20th October, 1951. Canvassing will be a disqualification.

THE COUNCIL WILL GIVE CONSIDERATION TO THE PROVISION OF A HOUSE FOR THE SUCCESSFUL CANDIDATE.

W. S. DES FORGES,
Town Clerk.

The Town Hall, Wakefield.
29th September, 1951. 4499

ISLE OF WIGHT COUNTY COUNCIL.

Applications are invited for the appointment of SENIOR PLANNING ASSISTANT, at a salary on Grade VII, A.P.T. Division of the National Scales (£685-£760). Candidates must have passed the Final Examination of the Town Planning Institute or of the Royal Institute of British Architects, and preference will be given to applicants who have had previous achitectural experience either in the service of a local authority or in private practice. A travelling allowance will be paid for the use of a car on official duties in accordance with the Council's scale.

Forms of application may be obtained from the undersigned, to whom they must be returned completed, together with a copy of one recent testimonial and the names of two referees, not later than the 19th October, 1951.

L. H. BAINES,
Clerk of the County Council.

County Hall, Newport, I.W. 4501

CITY OF STOKE-ON-TRENT.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited from suitably qualified persons for the following appointments to the permanent staff:—

(*a*) ASSISTANT QUANTITY SURVEYOR. Salary A.P.T., Grade III (£500-£545).

(*b*) ARCHITECTURAL ASSISTANTS. Salary A.P.T., Grade III (£500-£545).

Previous experience of Local Government work is not essential.

Applications, stating date of birth, particulars of training and experience, etc., with copies of two recent testimonials, should be received by J. R. Piggott, F.R.I.B.A., City Architect, Kingsway, Stoke-on-Trent, Staffs., and endorsed with the title of the appointment applied for, not later than Monday, 22nd October, 1951.

HARRY TAYLOR,
Town Clerk.

Town Hall, Stoke-on-Trent. 4512

COUNTY BOROUGH OF TYNEMOUTH.
BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) SENIOR ASSISTANT ARCHITECT (Schools). Grade VII (£685 to £760).

(*b*) ARCHITECTURAL ASSISTANT. Grade II, III or IV (£470 to £575) according to qualifications and experience.

Housing accommodation. The Corporation may be prepared to assist in the provision of housing accommodation in cases of difficulty for appointment (*a*).

Necessary application forms can be obtained from the Borough Surveyor, 16, Northumberland Square, North Shields, together with conditions of appointment.

FRED. G. EGNER,
Town Clerk.

Northumberland Square,
North Shields. 4517

BOROUGH OF ILKESTON.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.
BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade VI (£645-£710) of the A.P.T. Division of the National Scales.

The appointment is subject to one month's notice on either side, and the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Candidates for the appointment must be registered architects with good experience in the design of houses and estate development. Previous Municipal experience will be an advantage.

Candidates must disclose in writing whether or not they are related to any member or senior officer of the Council. Canvassing will disqualify.

No housing accommodation can be offered.

Forms of application, conditions of appointment and any other information can be obtained from A. O. Marshall, M.I.Mun.E., M.I.Struct.E., F.I.A.A., Borough Surveyor & Water Engineer, Town Hall, Ilkeston, to whom the applications are to be submitted by Monday 12th November, 1951.

J. YATES.
Town Clerk.

Town Hall, Ilkeston.
4th October, 1951. 4524

BOROUGH OF ROYAL TUNBRIDGE WELLS.
BOROUGH SURVEYOR AND WATER ENGINEER'S DEPARTMENT.
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

The Council invite applications for the above appointment at a salary in accordance with the National Scale A.P.T. VIII (£735×£25—£810). Candidates must be A.R.I.B.A. or hold an equivalent qualification, and should have had considerable experience of Municipal Housing.

The appointment will be subject to the provisions of the Local Government Superannuation Act and to the successful candidate passing a satisfactory medical examination.

Candidates when making application must state whether to their knowledge they are related to any member or senior officer of the Council.

Applications in candidate's own handwriting, together with the names of two persons to whom reference may be made, stating experience, to be submitted to the Borough Surveyor and Water Engineer, Town Hall, Tunbridge Wells, not later than Saturday, 27th October, 1951.

JOHN WHITEHEAD,
Town Clerk.

Town Hall, Tunbridge Wells.
October, 1951. 4522

BURGH OF HAMILTON.
CHIEF ASSISTANT PLANNING OFFICER.

Hamilton Town Council invite applications from suitably qualified Architects, Civil Engineers or Chartered Surveyors, for the permanent appointment of Chief Assistant Planning Officer. Applicants must have a knowledge of Town Planning Law and Practice.

The salary will be Grade A.P.T., VI (£645-£710), or if the successful applicant holds A.M.T.P.I., A.P.T., VII (£685-£760). A house is available for the successful applicant, if required, during the terms of the appointment.

The appointment is subject to the Local Government (Scotland) Act, 1937.

Applications, stating age, full particulars of qualifications and experience, together with copies of recent testimonials, should be lodged with the undersigned not later than Thursday, 25th October, 1951.

Canvassing, either directly or indirectly, will be a disqualification.

JOHN R. McLEAN,
Town Clerk.

The Town House, Hamilton.
4th October, 1951. 4507

THE URBAN DISTRICT COUNCIL OF KEYNSHAM.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, in the Engineer and Surveyor's Department, at a salary in accordance with A.P.T., VI (£645×£20 and £25 to £710).

Applicants must have had wide experience in the design and preparation of housing schemes and other architectural work, and possess a suitable technical qualification.

The appointment will be subject to one month's notice on either side, to the Local Government Superannuation Act, 1937, and to the submission of a satisfactory medical report.

Applications, stating age, qualifications, and particulars of experience, accompanied by two recent testimonials, should reach the undersigned not later than first post on Monday, 22nd October, 1951.

Housing accommodation will be made available if required by the successful applicant.

GEO. R. ASHTON,
Clerk of the Council.

Council Offices, Keynsham, Bristol.
2nd October, 1951. 4531

BOROUGH OF CROSBY.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
CHIEF PLANNING ASSISTANT.

Applications are invited from persons having an appropriate qualification for the above appointment.

Salary in accordance with the National Scale of Salaries, *viz.*, A.P.T. VI (£645-£710 per annum).

Applications on forms obtainable from the undersigned, to be delivered not later than noon on Monday the 29th October, 1951.

HAROLD O. ROBERTS,
Town Clerk.

Town Hall, Waterloo,
Liverpool, 22. 4526

BOROUGH OF ILFORD.
APPOINTMENT OF TEMPORARY ARCHITECTURAL ASSISTANT GRADE IV.

Applications are invited for the position of Temporary Architectural Assistant on the staff of the Borough Engineer's Department.

Salary in accordance with Grade IV of the A.P.T. Division, *viz.*, £530×£15—£575 plus London Weighting.

Candidates should possess approved qualifications and have general architectural experience in Municipal Buildings, particularly with regard to the preparation of contracts and of working drawings.

The appointment will be subject to one month's notice on either side, to the provisions of the Local Government Superannuation Act, 1937, the National Conditions of Service and to medical examination.

Forms of application obtainable from the Town Clerk, Town Hall, Ilford, should be returned not later than the 5th November, 1951. 4527

COUNTY BOROUGH OF CROYDON.
ASSISTANT ARCHITECTS.

Applications are invited for the appointment of two Assistant Architects from persons having a good general knowledge of the architectural work of a local authority:—

(1) Grade A.P.T., VI (£645 to £710) plus London Weighting (£30 at age 26 and over). Applicants should be A.R.I.B.A.

(1) Grade A.P.T., Va (£600 to £660) plus London Weighting (£30 at age 26 and over).

The Council do not offer housing accommodation.

Forms of application obtainable from the Borough Engineer, Town Hall, Croydon, must be returned to him by 5th November, 1951.

Canvassing will disqualify.

E. TABERNER,
Town Clerk.

4525

CANNOCK URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECT.

Applications are invited for the above-named appointment. Salary £900-£1,100 per annum. Conditions of service as contained in the recommendations of the Joint Negotiating Committee for Chief Officers.

Favourable consideration will be given to the provision of housing accommodation for the successful applicant, if required.

Further particulars and forms of application are obtainable from the undersigned.

Closing date 7th November, 1951.

W. C. SPEEDY,
Clerk of the Council.

Council House, The Green,
Cannock, Staffs.
3rd October, 1951. 4528

THE URBAN DISTRICT COUNCIL OF FELLING.
APPOINTMENT OF ARCHITECTURAL ASSISTANT—CHIEF HOUSING OFFICER'S DEPARTMENT.

Applications are invited for the above appointment at a commencing salary of £640 per annum, being the third increment of Grade Va of the National Salary Scales rising, subject to satisfactory service, to £710 per annum being the maximum of Grade A.P.T., VI.

Forms of application together with particulars and conditions of employment may be obtained from the undersigned to whom they must be returned not later than Saturday, the 27th October, 1951.

Preference will be given to applicants having a knowledge of quantity surveying.

The Council are prepared to provide housing accommodation, if necessary, for the successful applicant.

Canvassing will disqualify any applicant.

(Signed) JOHN DONKIN,
Clerk of the Council.

Council Buildings,
Felling, Gateshead, 10.
5th October, 1951. 4529

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
APPOINTMENT OF STAFF TO ARCHITECT'S BRANCH.

Applications are invited for the following appointments in the Architect's Branch of the Birmingham Education Department (Architect to the Committee: Mr. Alex Steele, A.R.I.B.A.).

(i) ASSISTANT ARCHITECT. Salary A.P.T. V (£570-£620). Applicants must be registered or chartered architects and should have had good general experience in the preparation of schemes and working drawings for educational buildings.

(ii) ARCHITECTURAL ASSISTANT. Salary A.P.T. IV (£530×£15—£575). Applicants should have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognised Schools of Architecture and worked in an architectural office for a period of two years. They should be capable of preparing working details for major contracts.

(iii) ARCHITECTURAL ASSISTANT. Salary A.P.T. III (£500×£15—£545). Applicants should either (i) have attended a full-time course in architecture, passed the R.I.B.A. Intermediate Examination or its equivalent and subsequently worked one year in an architectural office; or (ii) have served or be serving articles of pupilage or worked in an architectural office for three years and have passed the R.I.B.A. Intermediate Examination or its equivalent. They will be expected to prepare working drawing details under supervision.

Application forms, which may be obtained from the undersigned on receipt of a stamped addressed envelope, must be returned not later than 31st October, 1951.

E. L. RUSSELL,
Chief Education Officer.

Education Office,
General Purposes Branch,
Margaret Street, Birmingham, 3. 4530

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANT, of R.I.B.A. Intermediate standard, with office experience, required immediately. Starting salary £400 to £500, according to experience. Apply, with full details, to Deacon & Laing, F./A.R.I.B.A., 9, St. Paul's Square, Bedford. 4470

ARCHITECT'S ASSISTANT required for Andover, Hants, Branch Office. Must be third or fourth year student. Write, with copies testimonials, and state salary expected to Box 4445.

SENIOR ARCHITECTURAL ASSISTANT for busy General Practice. First-class man of all-round ability. Apply Jennings, Homer & Lynch, 3 and 5, Church Street, Brierley Hill. Telephone 7545/6. 4503

ARCHITECTURAL ASSISTANT, R.I.B.A., Final standard. Good prospects. Apply Jennings, Homer & Lynch, 3 and 5, Church Street, Brierley Hill. Telephone 7545/6. 4504

THE following vacancies occur on the Architectural Staff of leading Oil Company:—(*a*) SENIOR ASSISTANT, £500-£700. Should be A.R.I.B.A. or studying for Final examination. Sound practical experience essential, including levels, specification and supervision. (*b*) TWO ASSISTANTS, £350-£500. Should have passed Intermediate R.I.B.A. and have sound practical experience. An appreciation of contemporary design and construction is desirable. Reply, giving full particulars, to Box 4486.

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ASSISTANT ARCHITECT required in West Country by an Organisation engaged on large scale programme of Prefabrication. Candidates should be preferably, though not necessarily, Registered Architects, and should have a good general experience of house design and construction. Salary within Grades VA and VI, according to experience. Pension scheme after probationary period. Box 4423.

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They should have some teaching experience and also practical experience in design and construction.

(2) SENIOR LECTURER IN BUILDING. Applicants should be suitably qualified to control and teach in ordinary and higher national diploma and certificate courses, and should preferably have some teaching experience as well as industrial experience.

(3) LECTURER IN QUANTITY SURVEYING. Applicants, who will be required to supervise and teach in surveying course, should be Associates of the R.I.C.S., and preferably have some teaching experience.

(4) STUDIO MASTER IN ARCHITECTURE. Applicants, who will be required to give instruction in design and construction, should be Associates of the R.I.B.A., and preferably hold the degree or diploma of a recognised school.

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