

FINE ARTS DEPT.

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The Architects' JOURNAL for May 10, 1951 No. 2932 Vol. 113

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# THE ARCHITECTS'

PRICE:  
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**ROYAL FESTIVAL HALL**  
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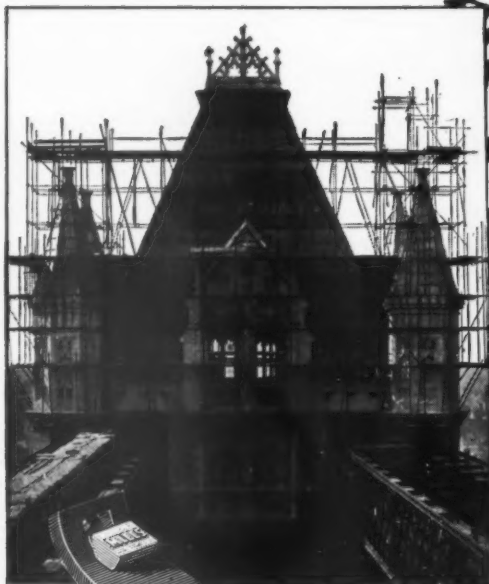
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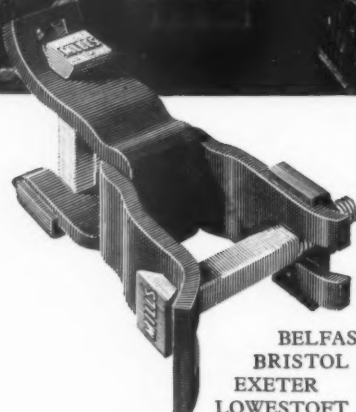
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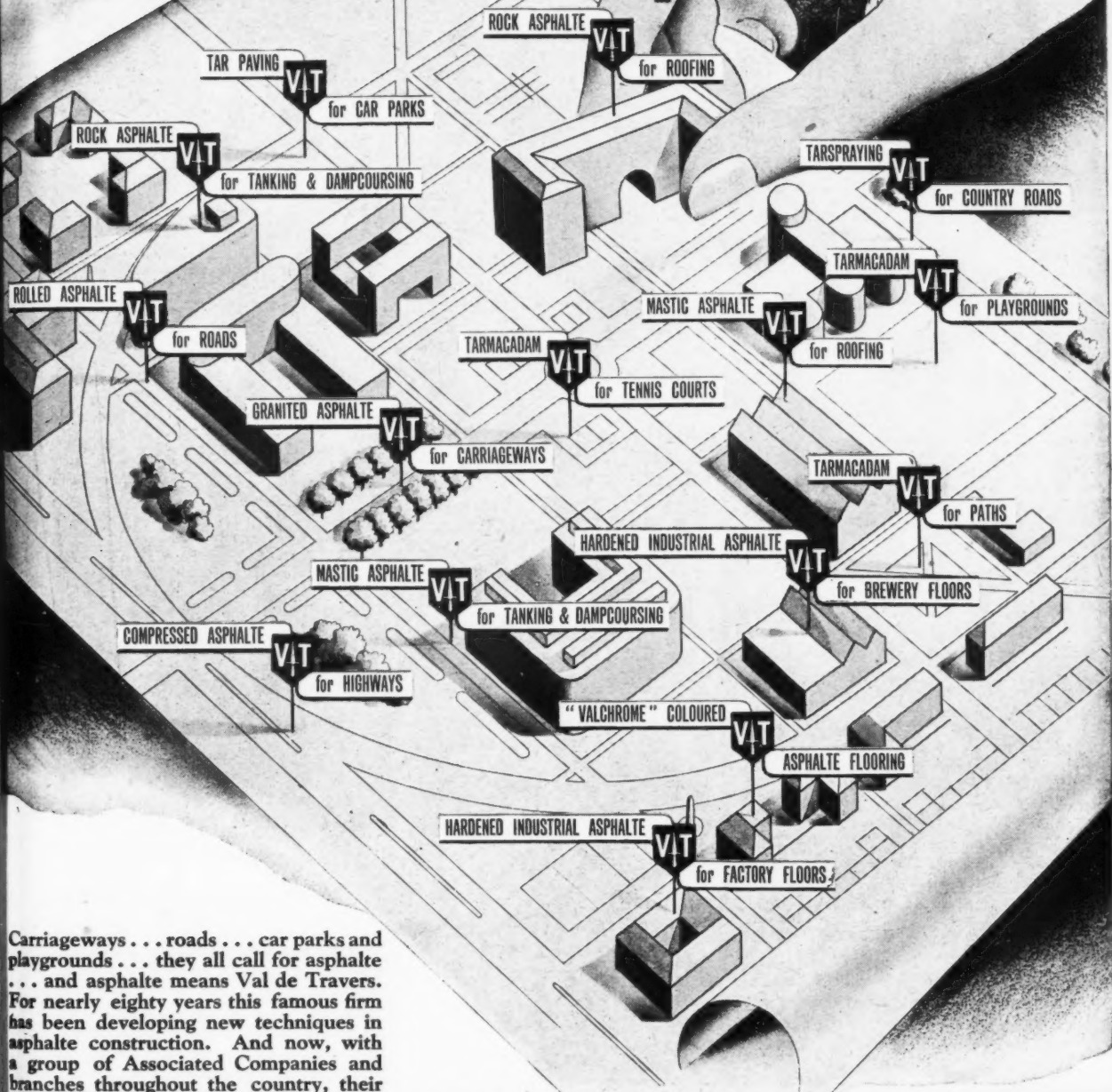


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# Plan for Asphalte



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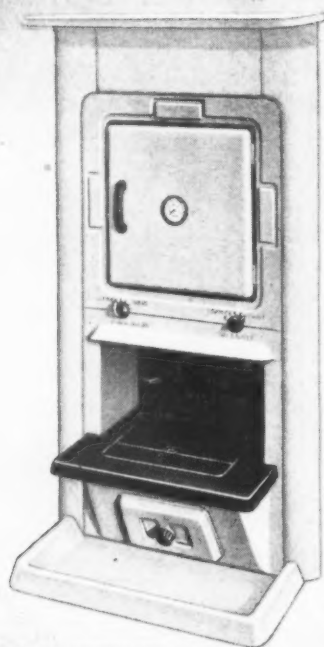
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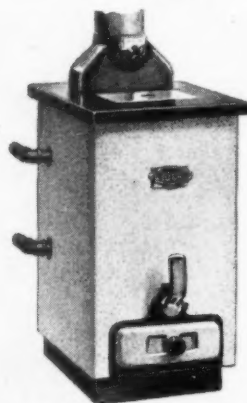
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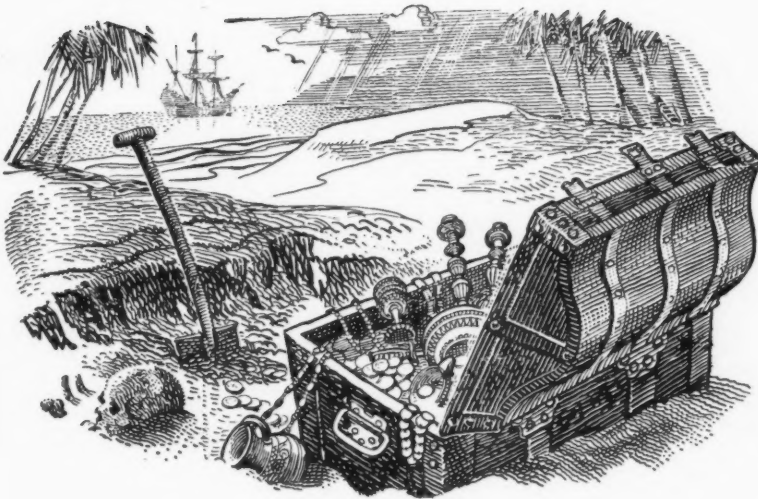
Waterway encircles fire and gives high output per  
square foot of heating surface. Bright, clean finish,  
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*It was Shakespeare who wrote : " the purest treasure mortal times afford, Is spotless reputation." To others, treasure merely conjures up a picture of gold and jewels found on desert islands. But, in fact, treasure is anything of real service to mankind. Consider therefore the innumerable uses of Expanded Metal which impinge upon the daily round of work and leisure, almost from the cradle to the grave.*

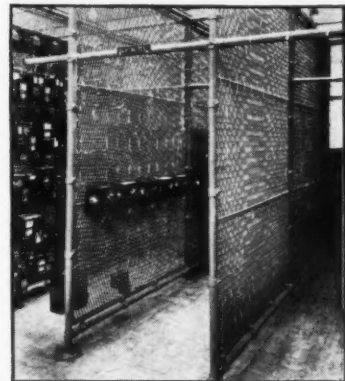
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**S**een or unseen it does its job. It is hidden in the structure of a building as reinforcement for concrete or brickwork ; or as a background and " key " for the plaster which has made possible the beautiful and intricate suspended ceilings and the strong, fire and impact resisting plaster partitions. Among the countless visible uses are : guards for machinery, windows, trees, heaters and radiators ; surrounds to lift shafts ; ventilators ; letter trays and waste paper baskets ; openwork flooring and partitions ; pedestrian barrier guards ; decorative grilles for radio and loudspeaker systems.

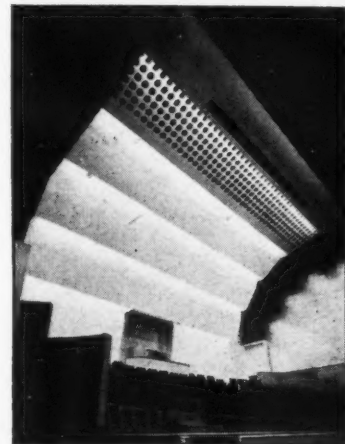
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**I**n schools, homes, public buildings, shops, factories, offices, cinemas and theatres ; roads, railways, waterways, and the vehicles and ships which travel on them ; even in radio and television there is a constant reminder of the ever-increasing value of Expanded Metal Products for a hundred and one uses.

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*Below : " BB " Expanded Metal Lathing used for Acoustic Proscenium Hood at Civic Halls, Wolverhampton. Architects : Messrs. E. D. Lyons & L. Israel, A/R.I.B.A., London.*

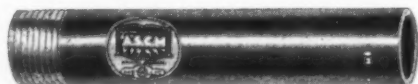


## Expanded Metal Products

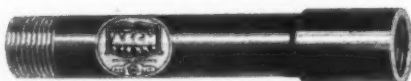
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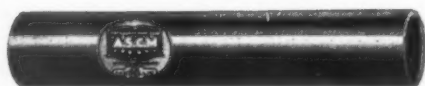
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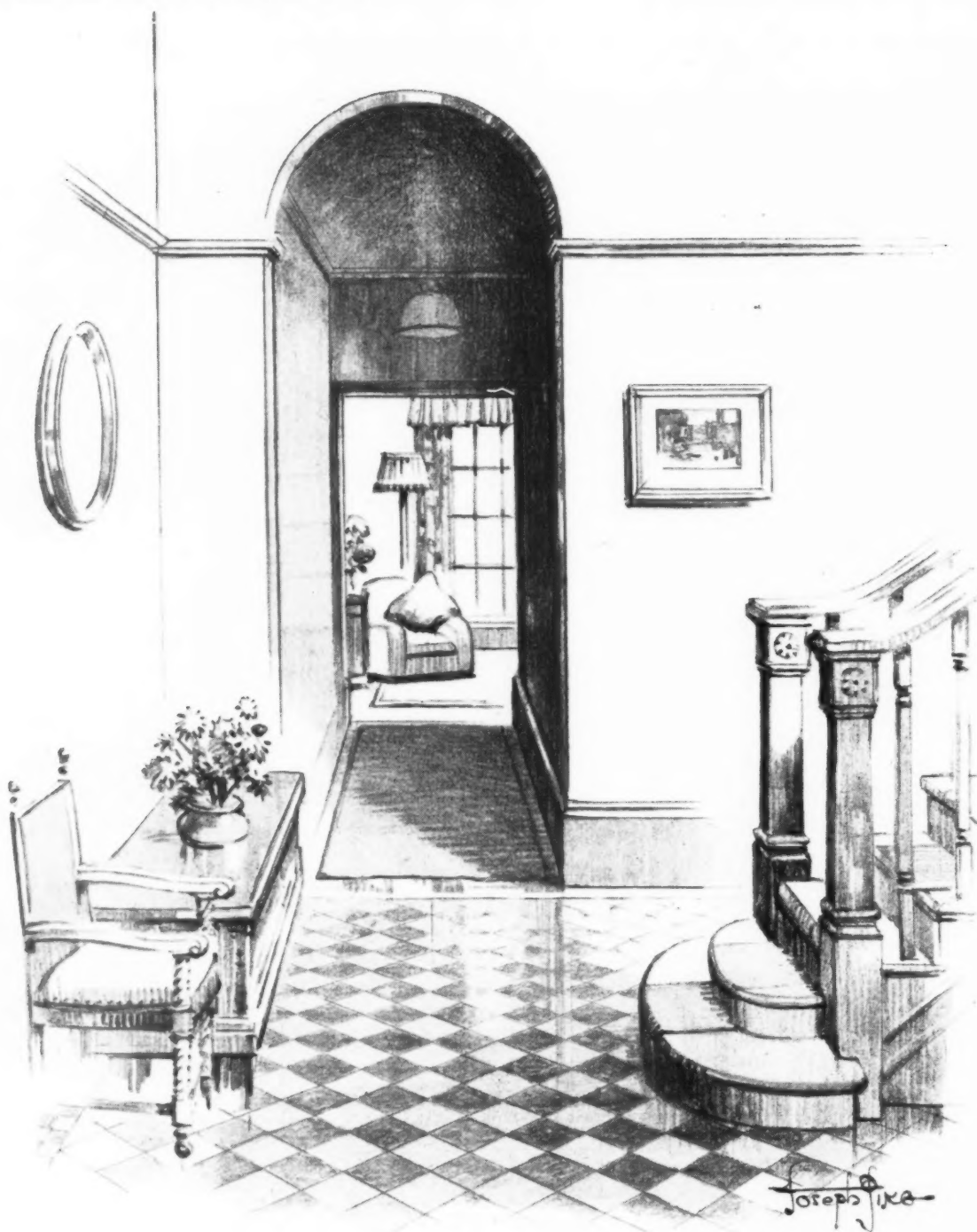
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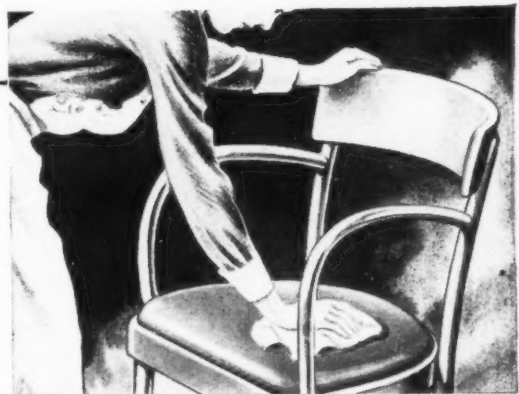
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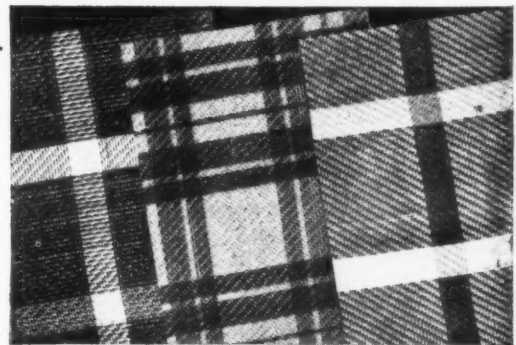
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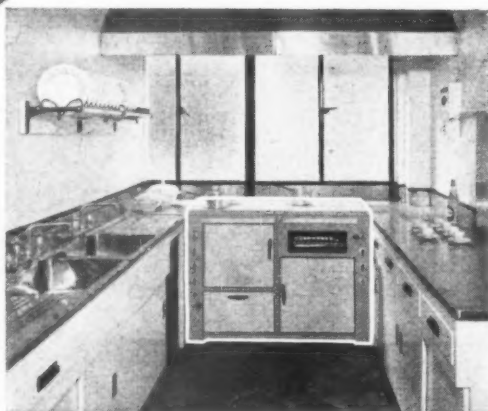


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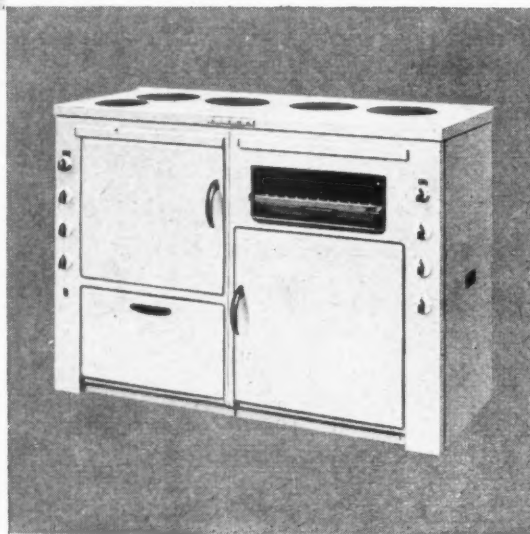
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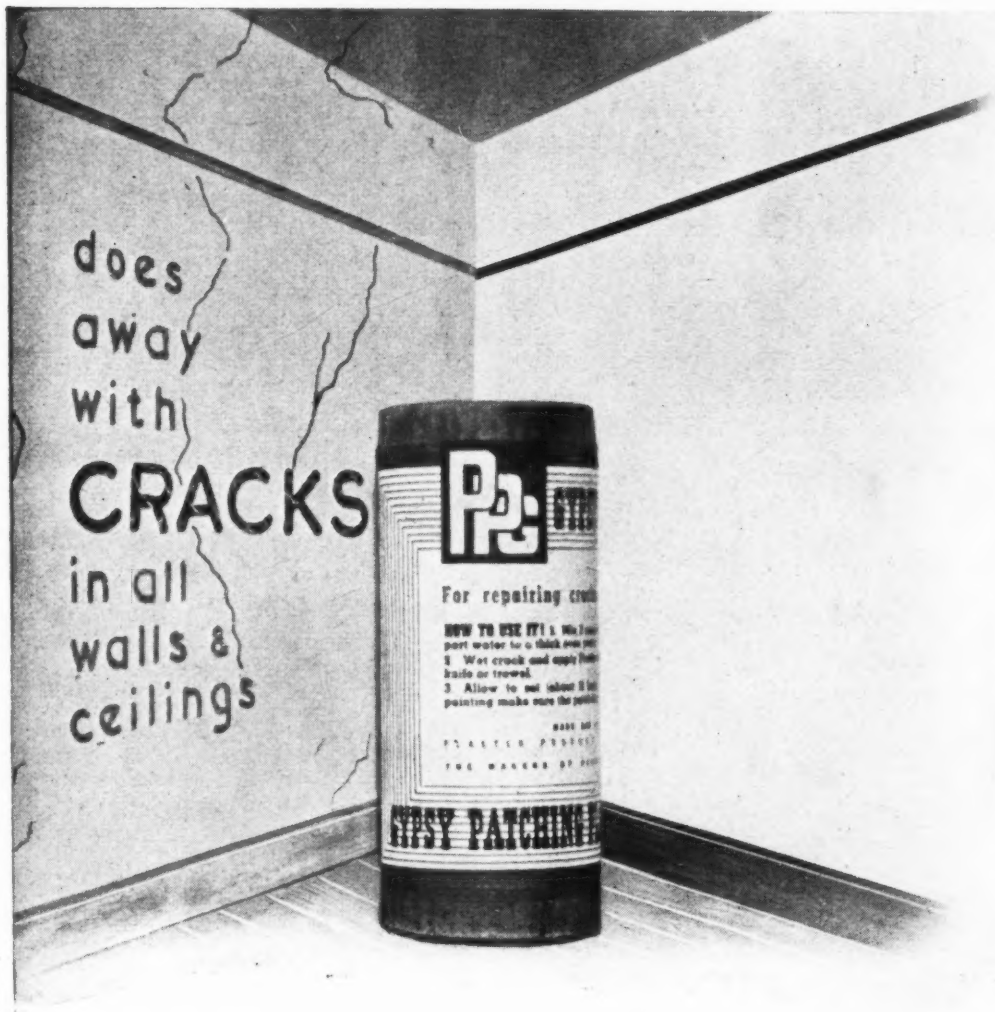
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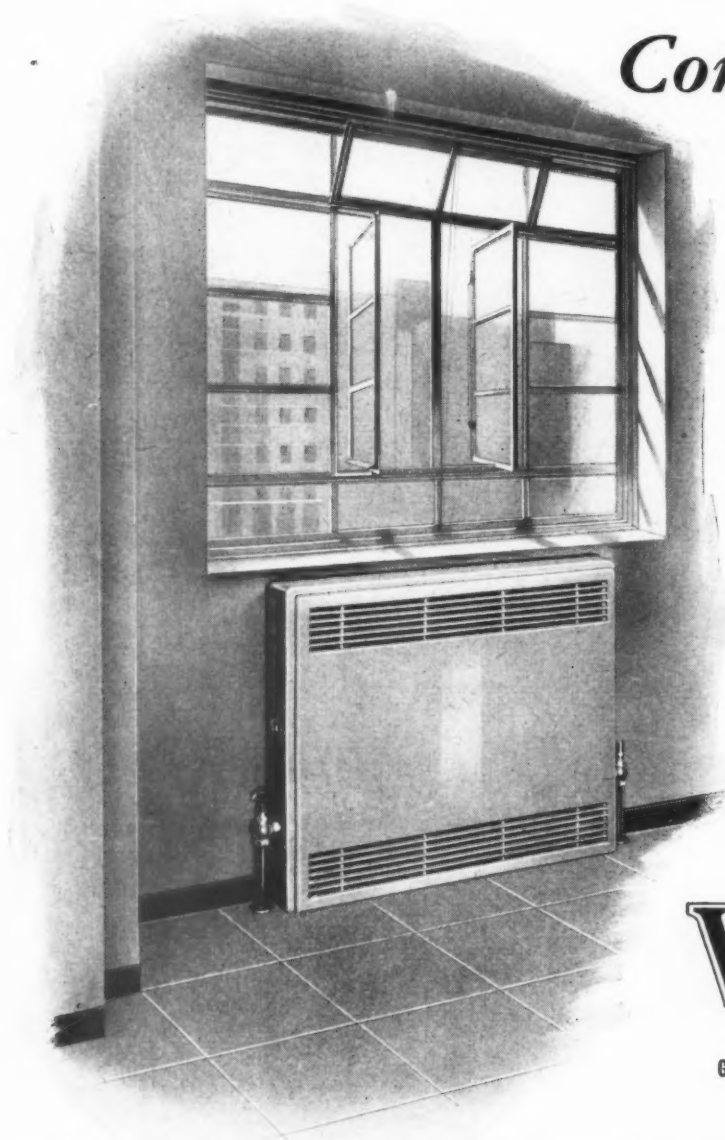
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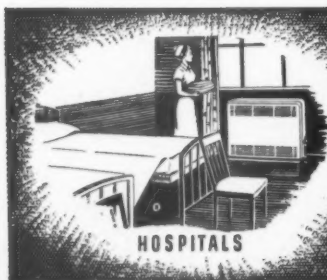
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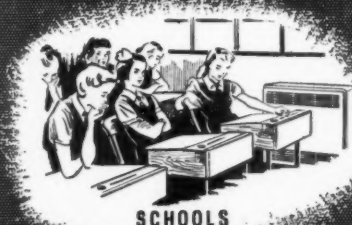
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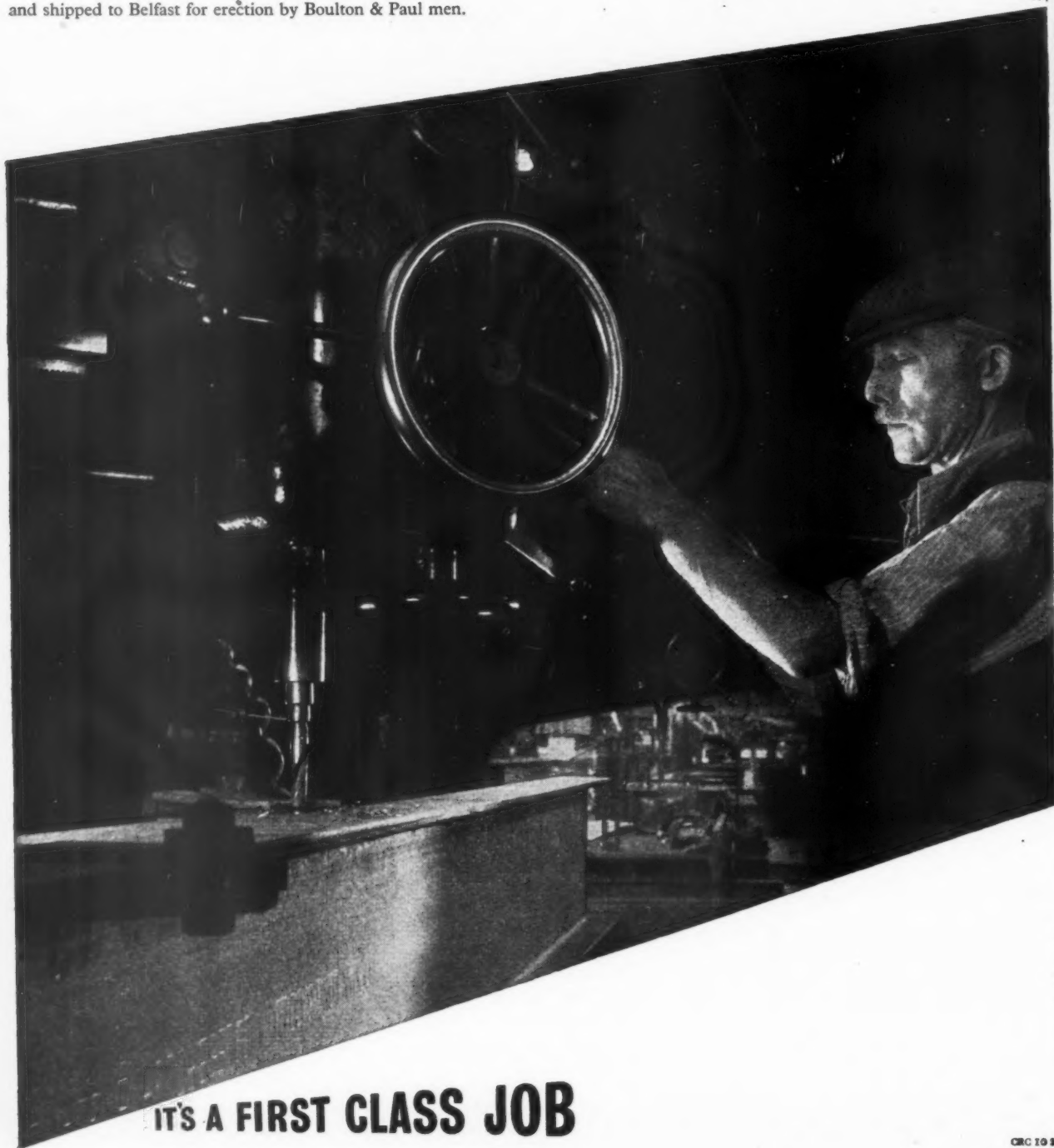
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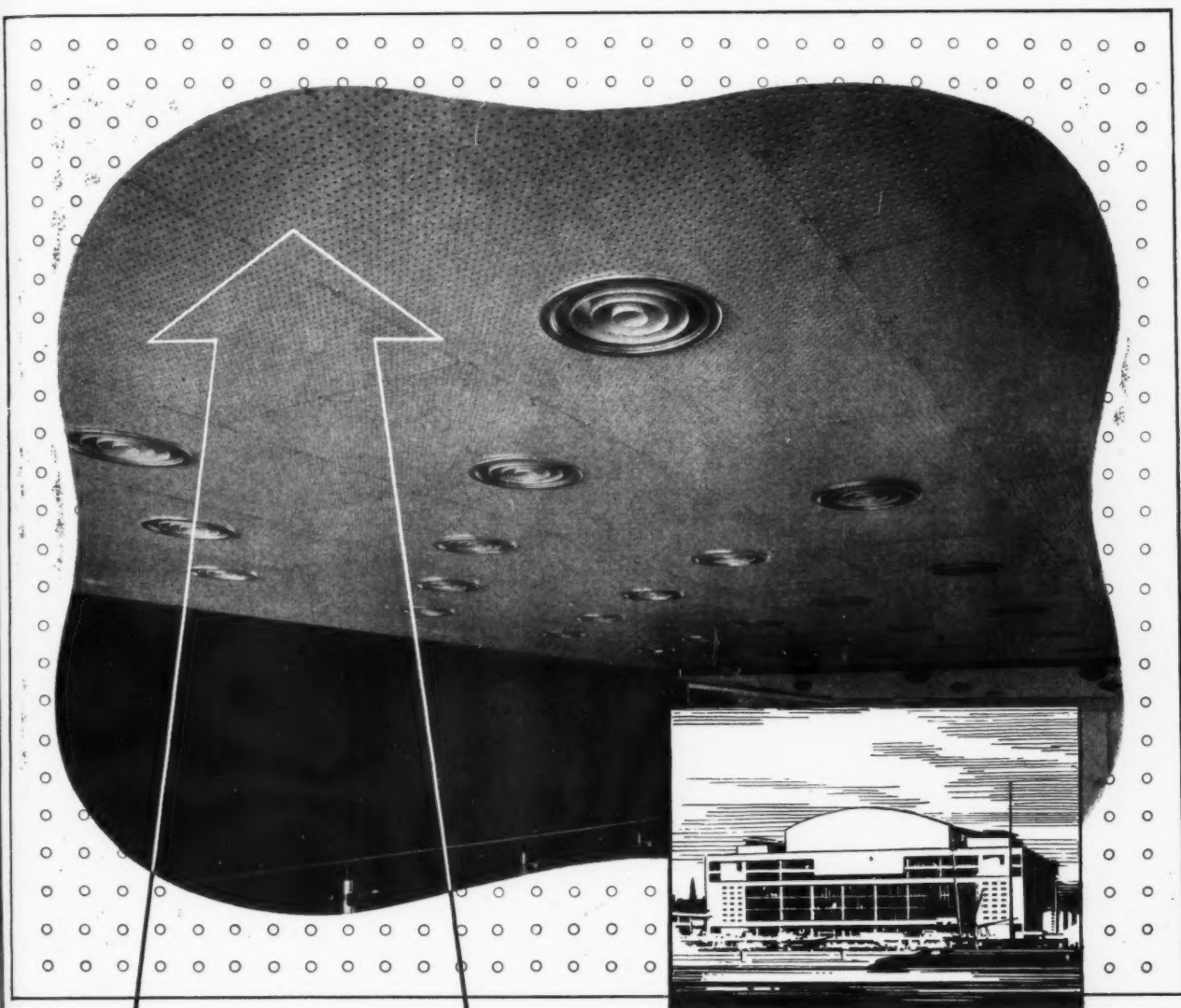
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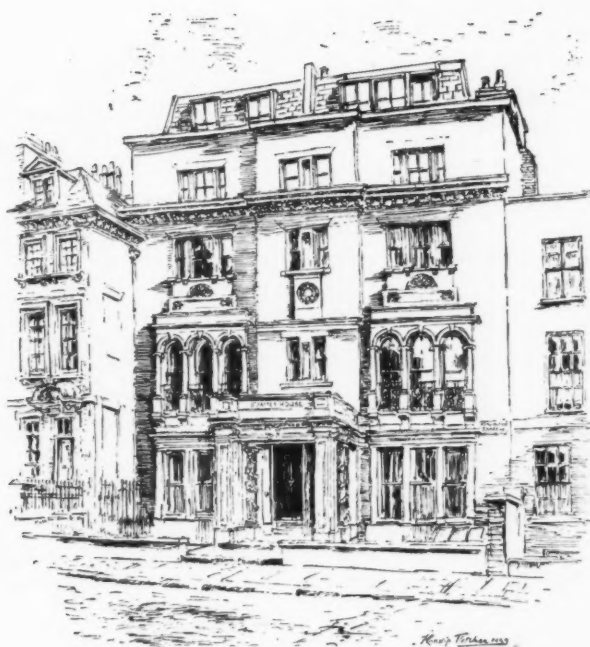






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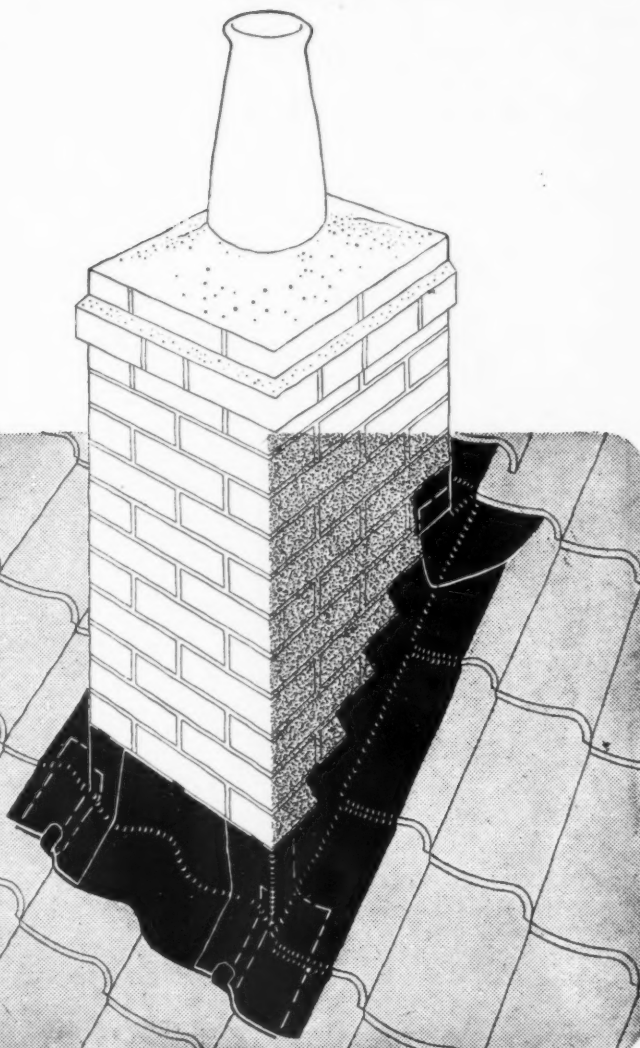
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Birmingham 3

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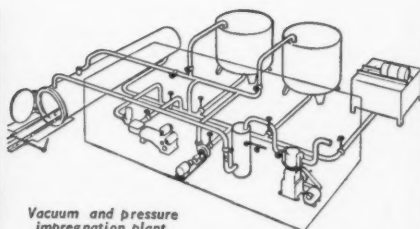
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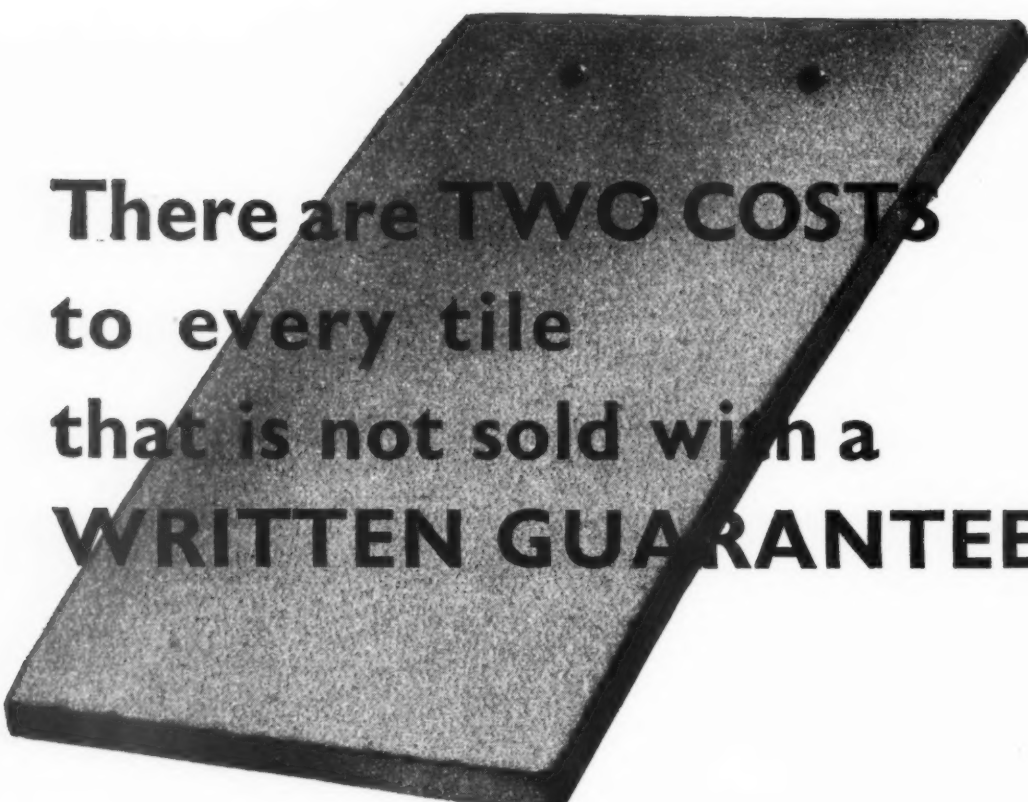


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*'Tanalised' Timber*

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**MARLEY**

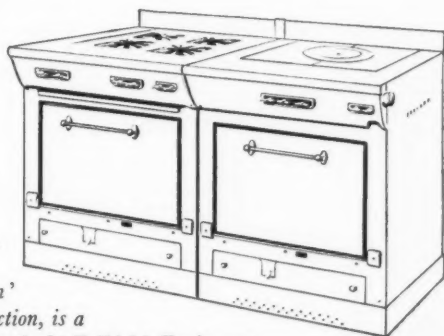
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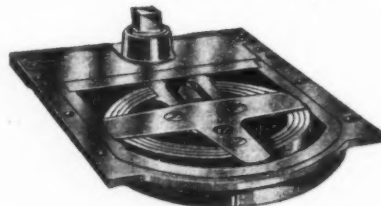


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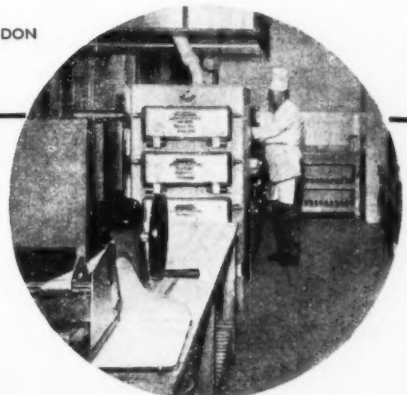
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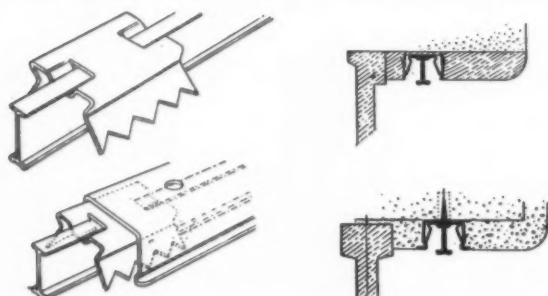
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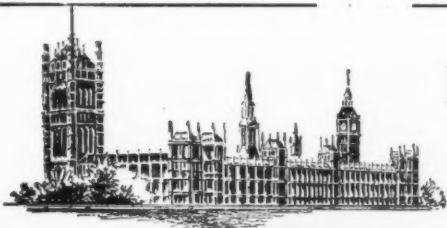


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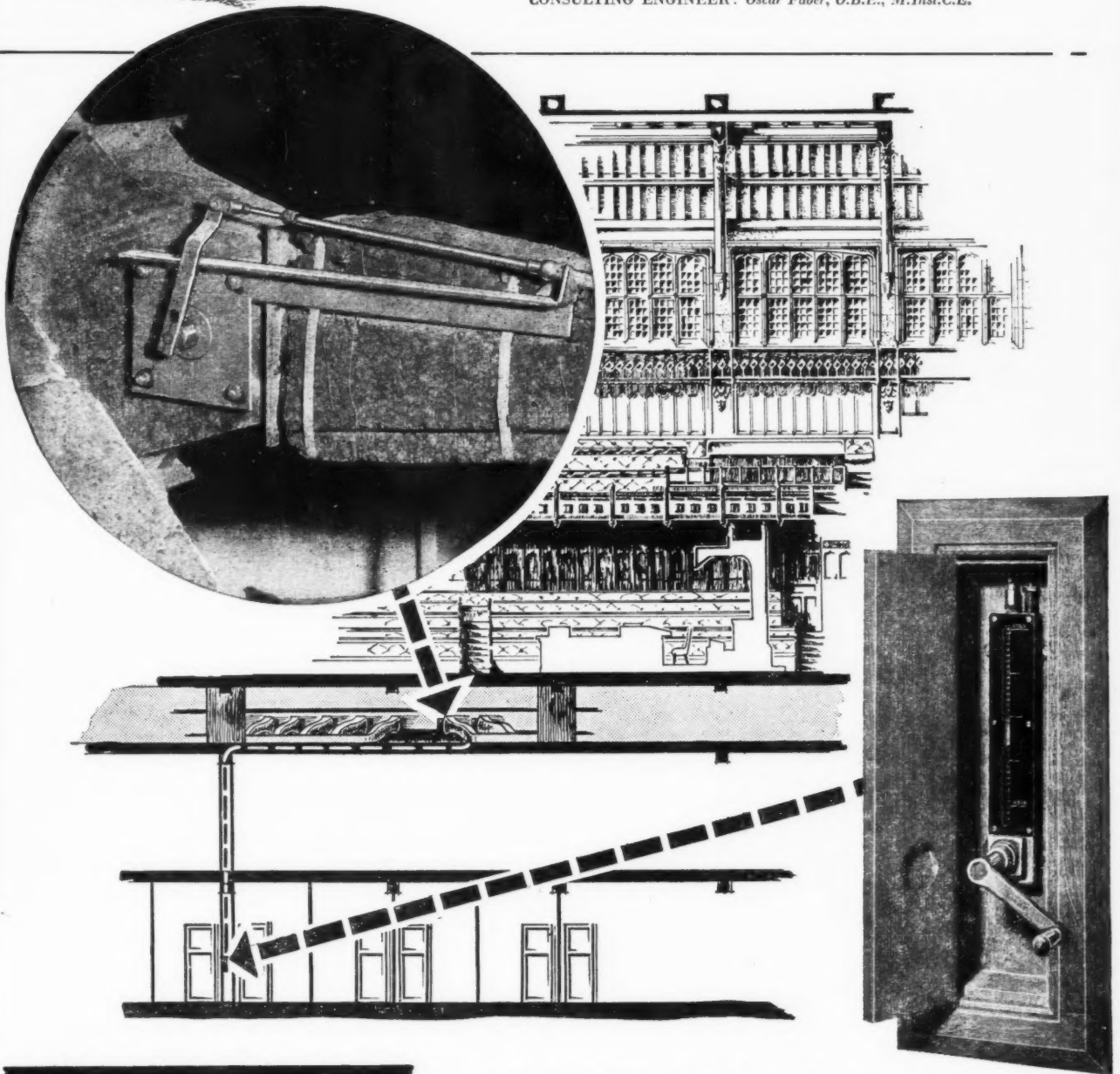
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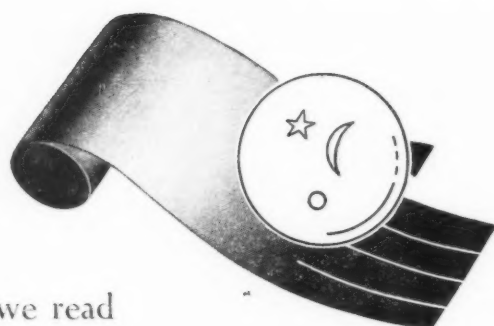
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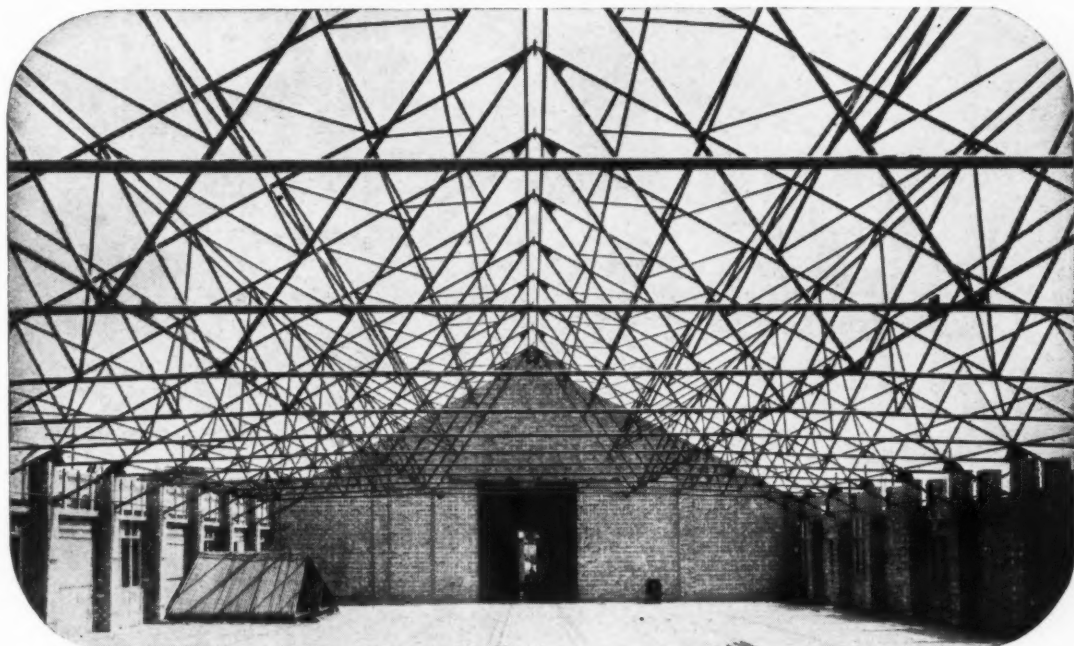
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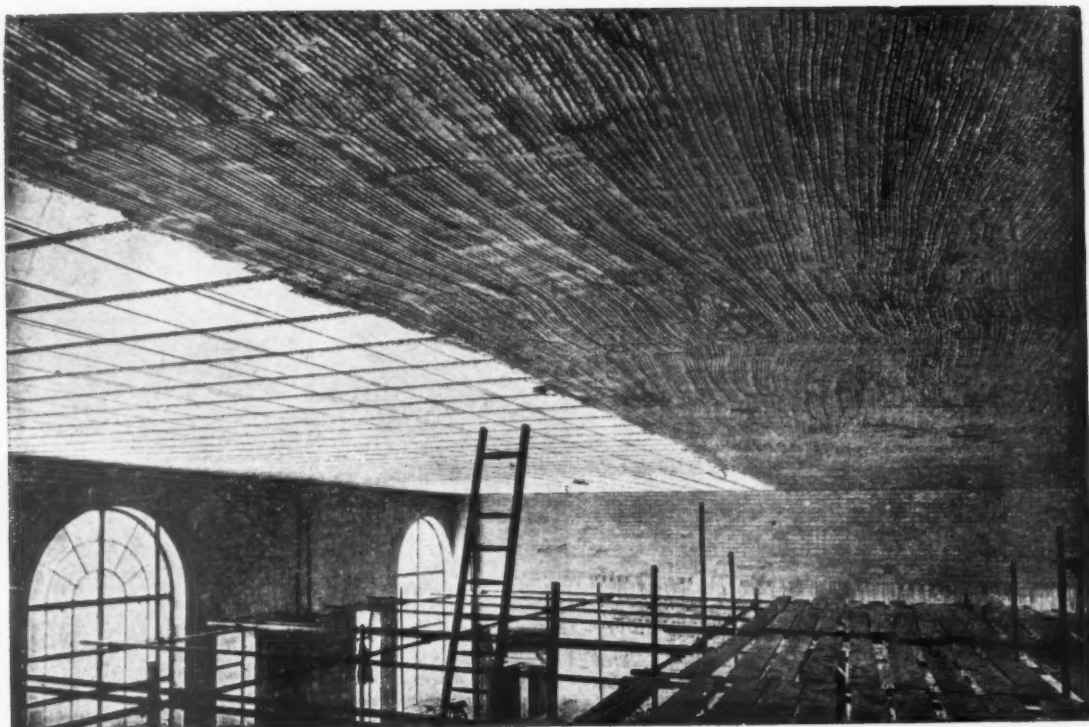
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*Constructed by S.G.B.*



## Part of a large area of **PLAXSTELE** ceiling

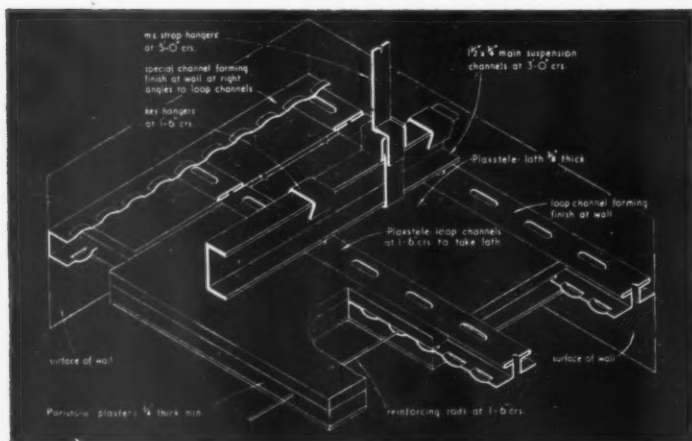
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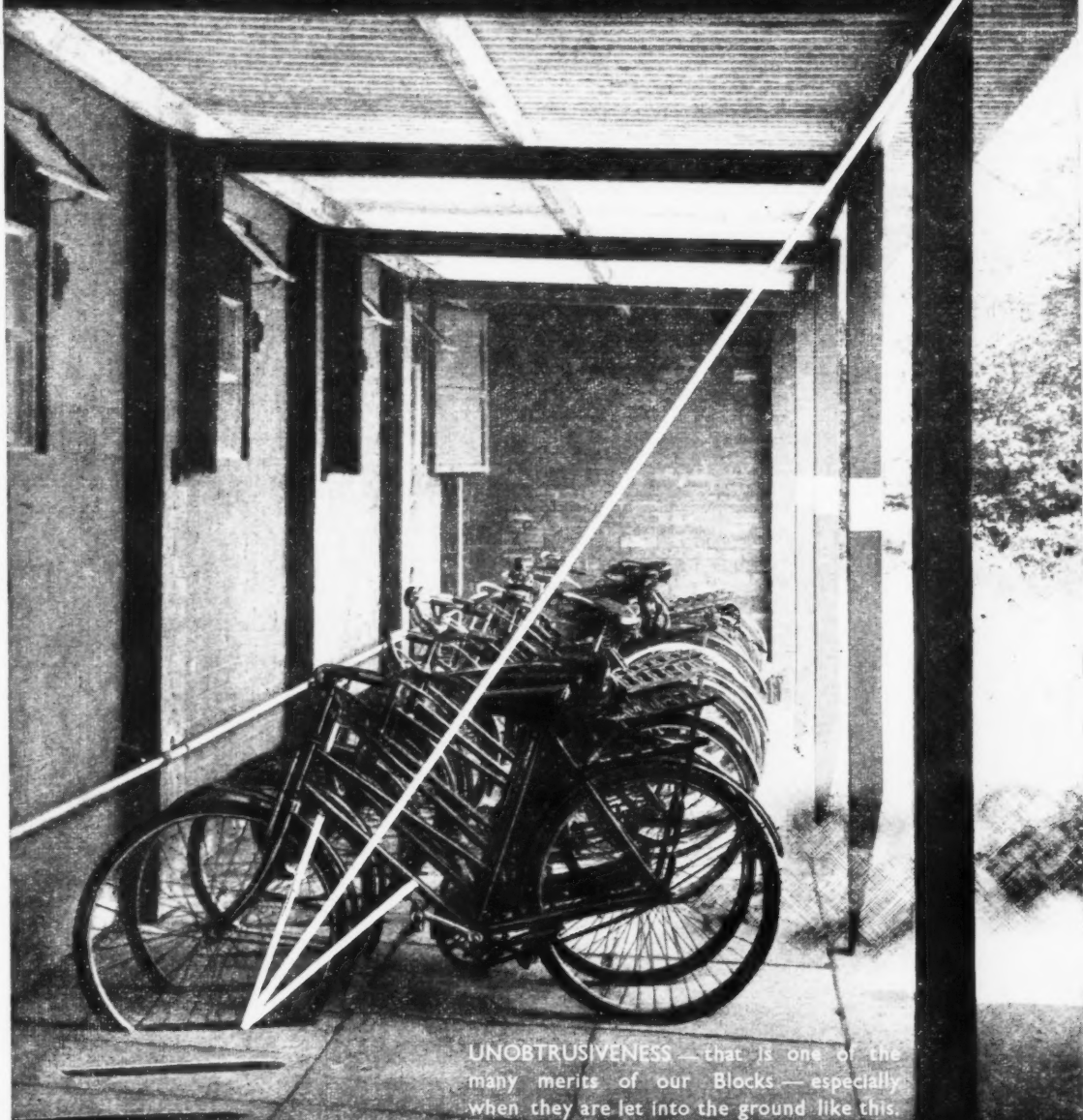




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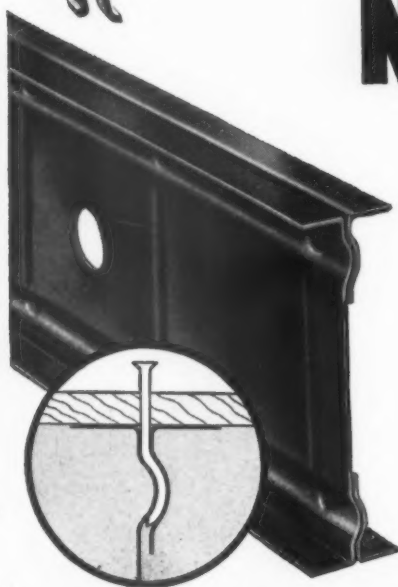


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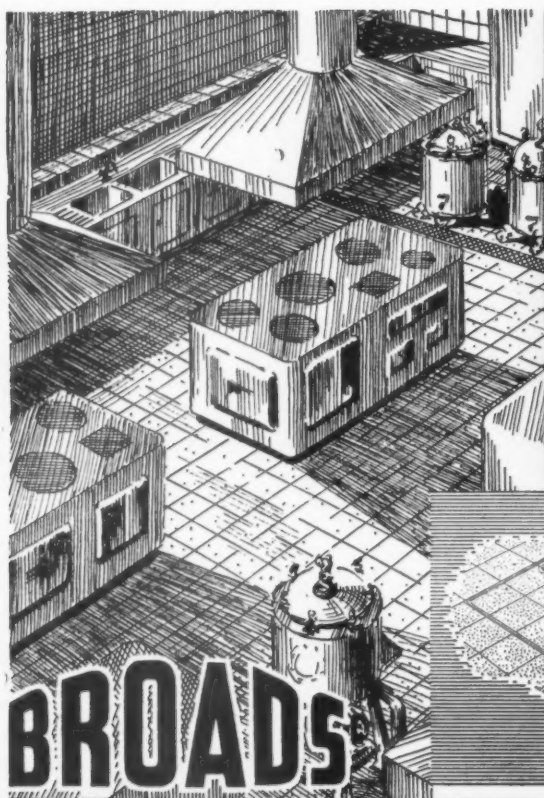
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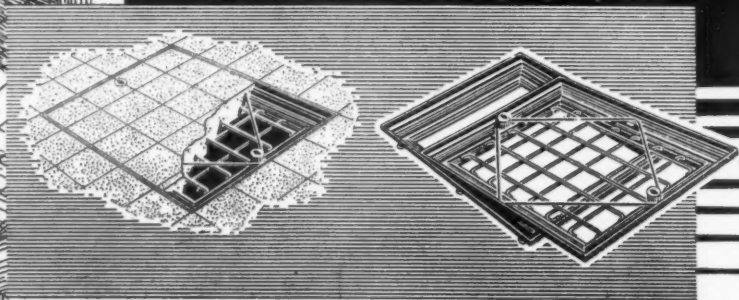
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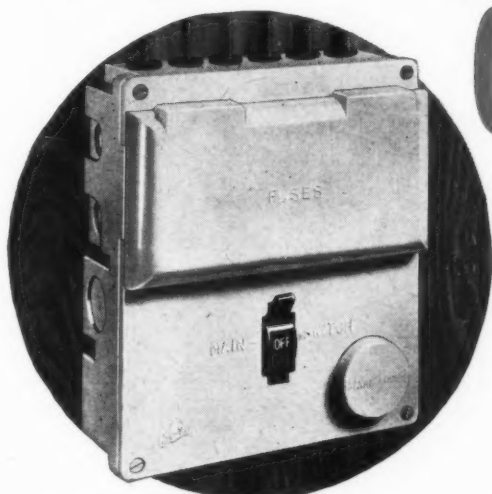
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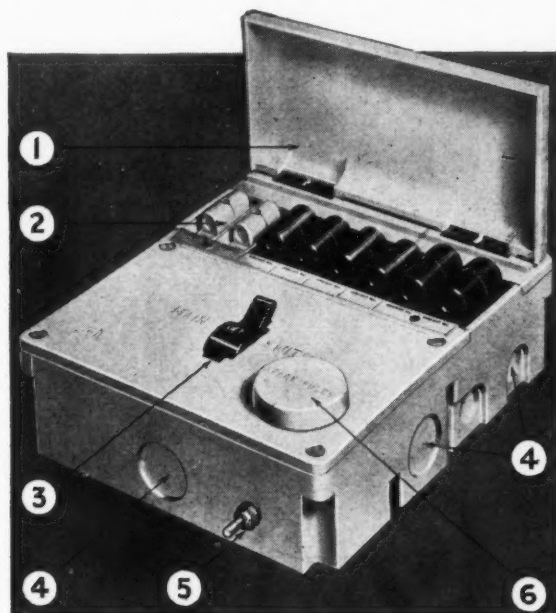
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# Triad for Concert Hall Roof



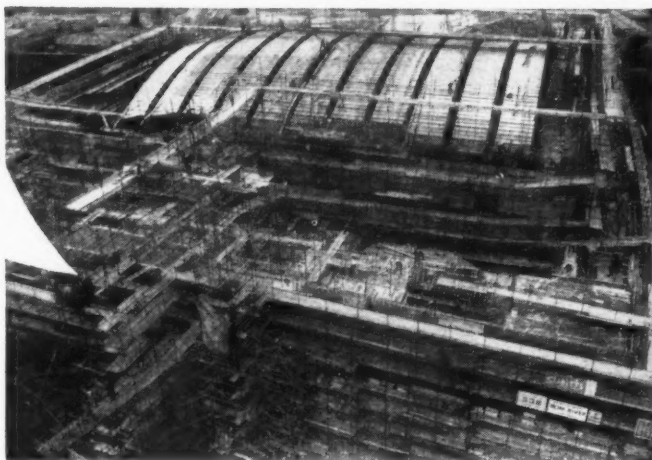
The Triad system of pre-cast concrete flooring units is being used in the roof construction of the Festival of Britain Concert Hall.

Triad pre-centred pre-cast beams, weighing only 145 lbs. each maximum, and infilling slabs, weighing 28 lbs. each, were hoisted 115 ft. to the roof-top by a normal builder's platform. The beams were placed by two men, one at each end. Even at this great height the light weight Triad units allowed remarkably easy handling.

**LOWER ROOF.** Between Triad beams—placed directly on the steel roof trusses—standard flat centering slabs were spaced.

The whole was then covered with 4" of in-situ concrete, reinforced to carry the dwarf walls that support the upper roof, making an 8" overall depth of reinforced concrete slab. **UPPER ROOF.** This is designed to take a superimposed load of 30 lbs. per sq. ft. and is constructed in five layers: glass wool insulation, 2" thick infilling slabs resting on specially adapted Triad beams, 2" of in-situ concrete, insulating board and copper sheeting. The protective covering was fixed to timber battens slotted into steel channels on the beams. The ease with which Triad units are adapted to meet special requirements was amply proved in this construction.

*Triads and Slabs dry-decked ready to receive in-situ concrete.*



*Dry-decking lower roof—Triads carried directly on steel roof trusses.*



*Triads being laid on dwarf walls (over glass wool) to form upper roof.*



Robert H. Matthew, Superintending Architect, L.C.C. Consulting Engineers, Messrs. Scott & Wilson—and Main Contractor, Messrs. Holland Hannen & Cubitts



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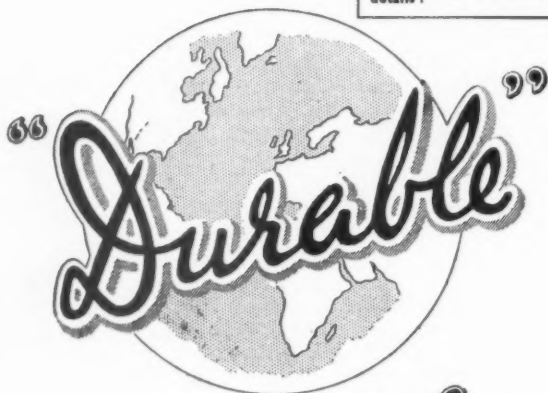
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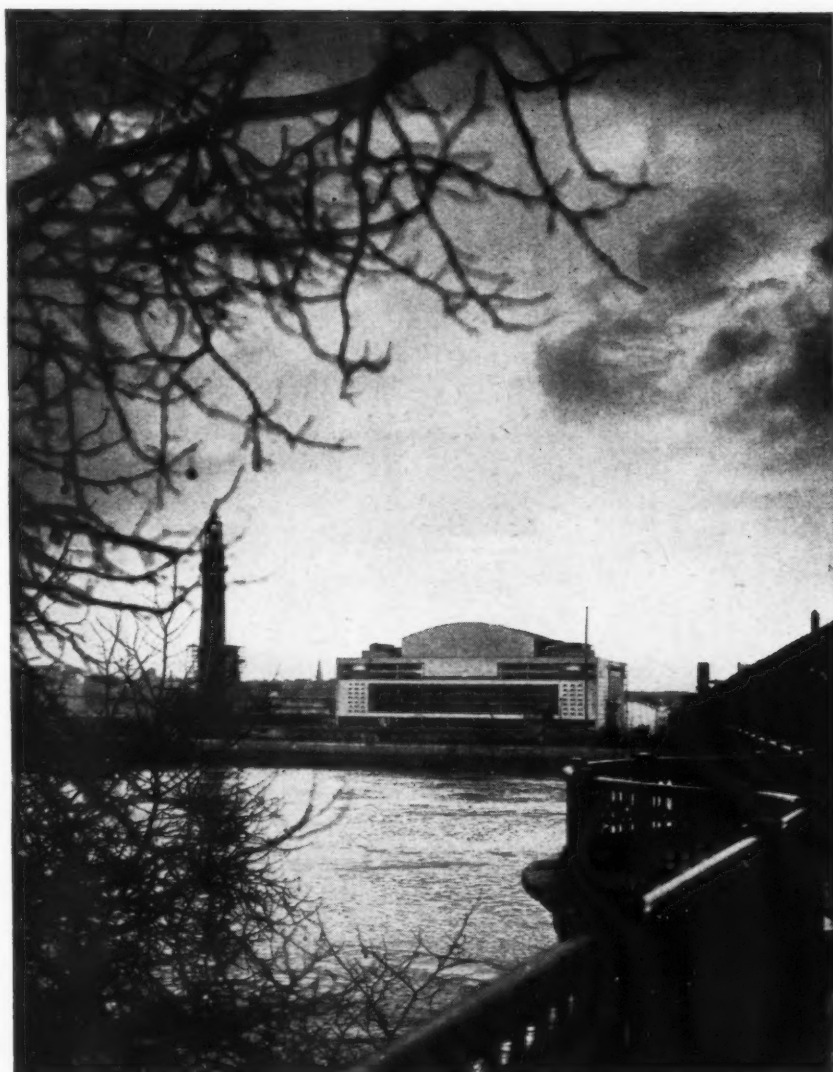
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" $\frac{3}{4}$ " in. "Plimberite" board, made from wood chips and synthetic resin, has been tested under vertical static and impact loads when nailed over timber joists at 16 in. centres.

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Fig. 1. - Rig and Gear for applying impact tests.

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Fig. 2. - Rig for static loading tests. (Floor section is inverted, with captive airbag beneath for loading.)

"PLIMBERITE" can be worked using normal woodworking tools and techniques and is available in sizes 8 ft. by 4 ft.

A copy of the full report on the special investigation by the Building Research Station may be obtained by Qualified Architects, Builders, etc., on request to



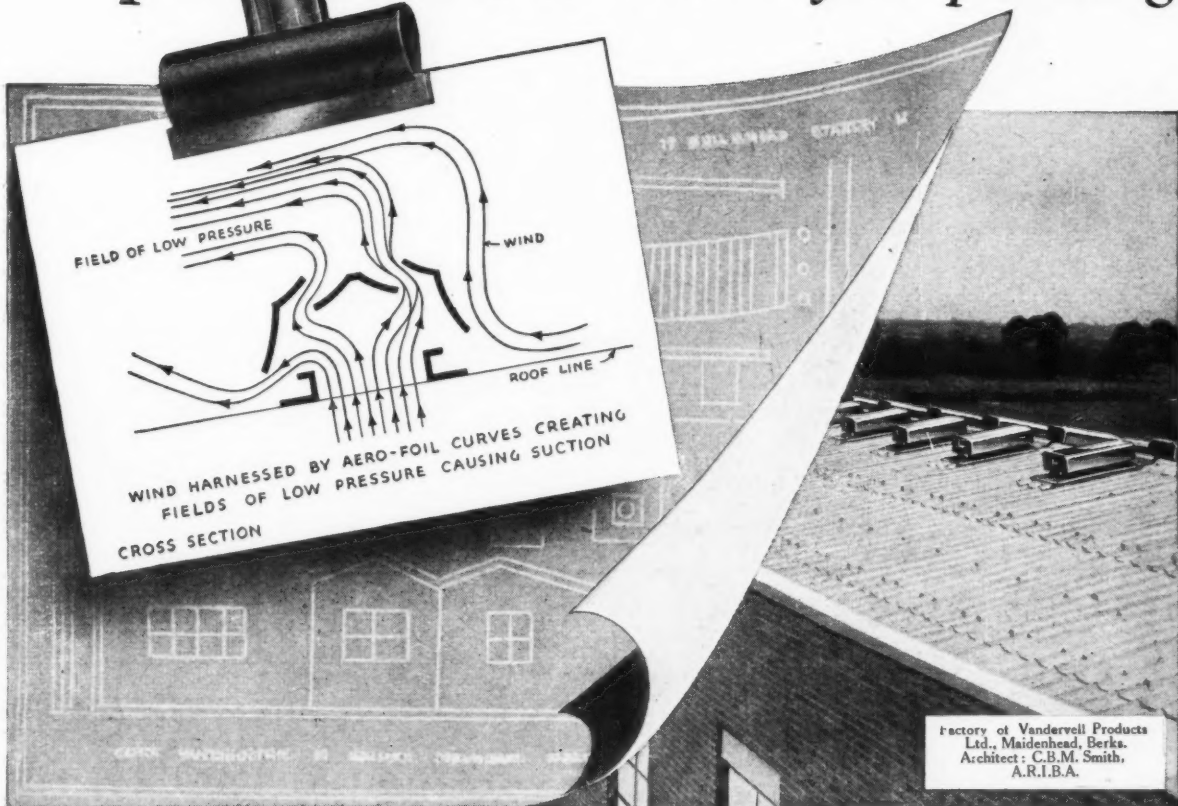
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*Furthermore, these aero-foil curves assist this natural process by harnessing the free power of the wind and roof eddies, no matter from which direction they come, creating a suction which can produce a power of extraction equal to that of mechanical means without the drawbacks of noise, wearing parts or operating and maintenance costs.*

*These aero-foil curves have been so designed as to give a flat curve of extraction to prevent extraction from becoming excessive with the high winds of winter.*

*Just one example of the many types of ventilation that Colt have planned or carried out for over 4,000 prominent firms throughout the country.*

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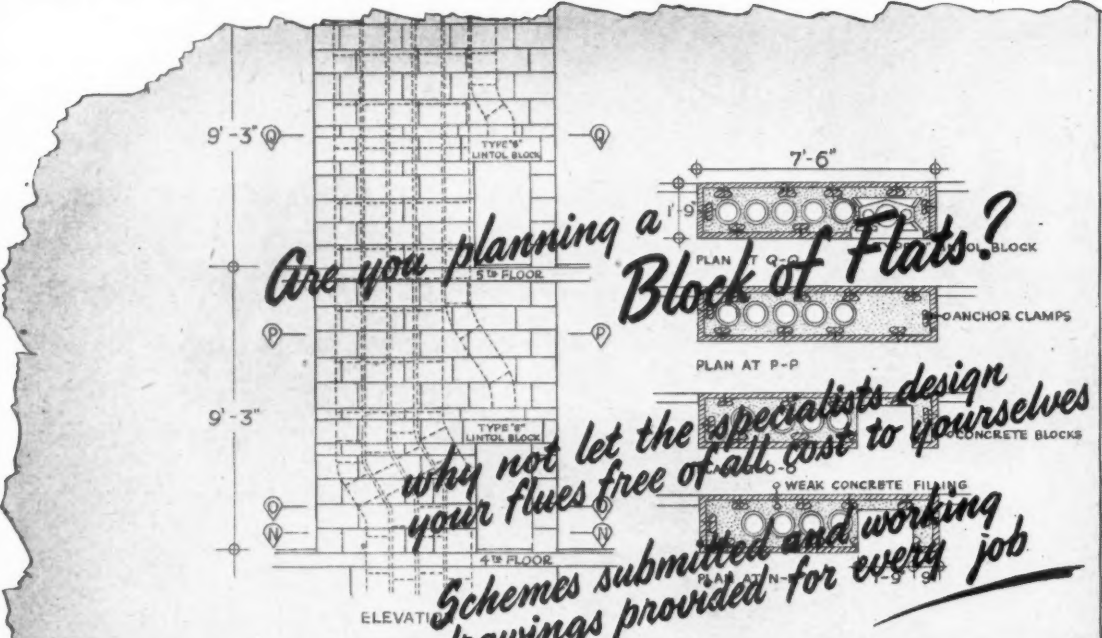
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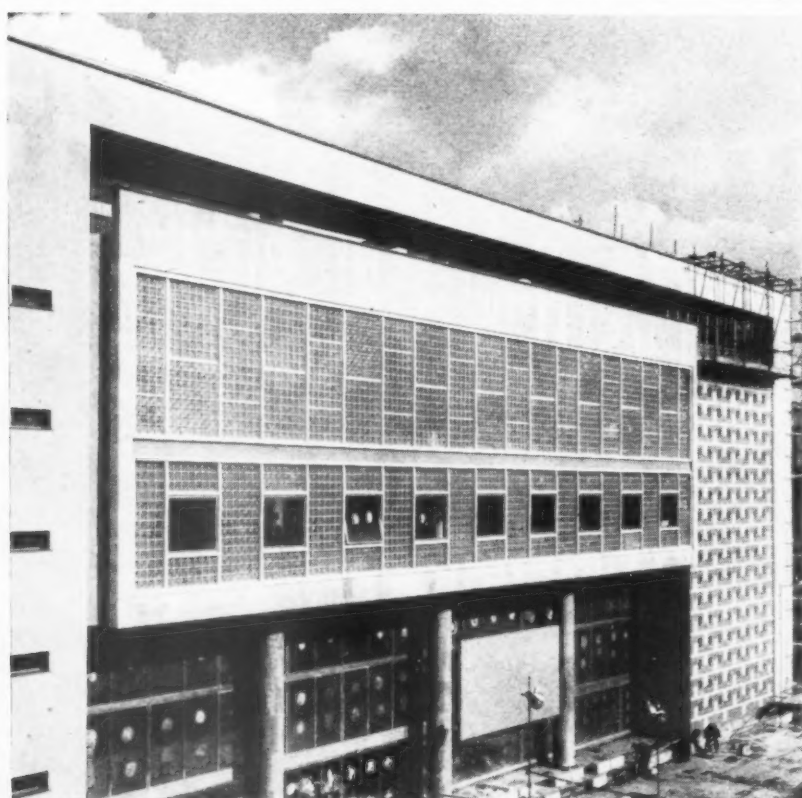
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THE ROYAL FESTIVAL HALL

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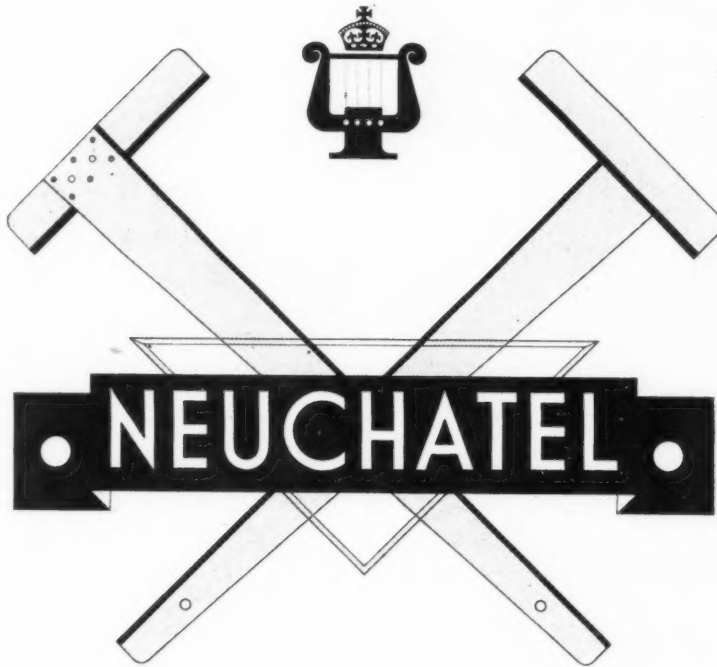
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# THE ROYAL FESTIVAL HALL



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The Neuchatel Asphalt Company Limited is proud to have been associated with the erection of this magnificent building, and has been responsible for the whole of the flat roofing. This consists of three layers of Nacofelt Built-up Bituminous Roofing with a grit finish. All areas subject to foot traffic are protected with Nacorecrete screed divided into 4 ft. by 2 ft. rectangles, the joints being filled with a bituminous composition. The gutters are lined with asphalt.

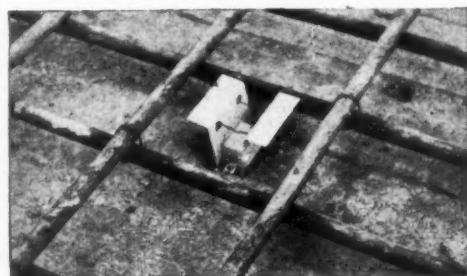
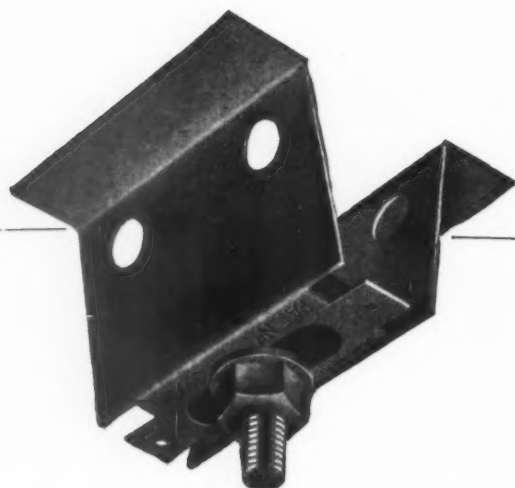
To end this display of trumpet virtuosity we should like to add that we have surfaced all the roads at the South Bank Site, approximately 45,000 yards of black, red and green asphalt laid under very difficult conditions.

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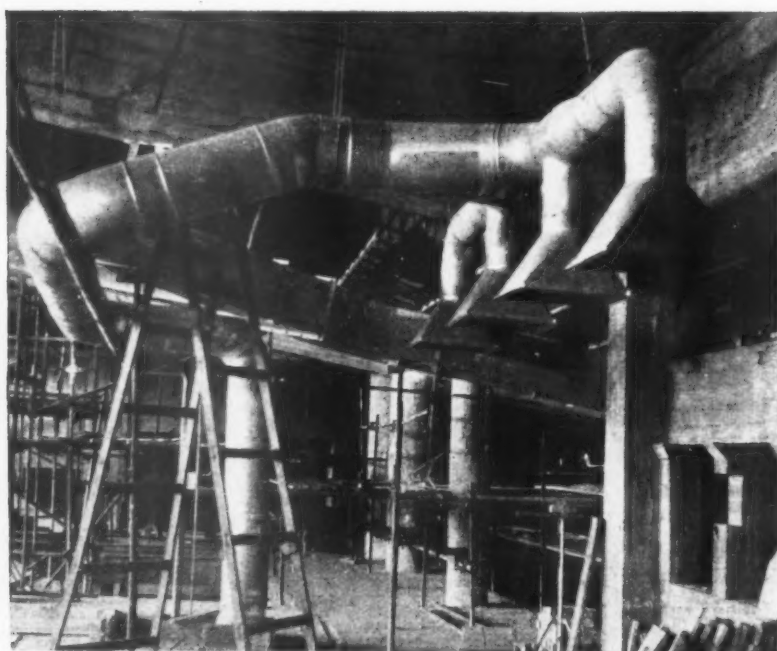
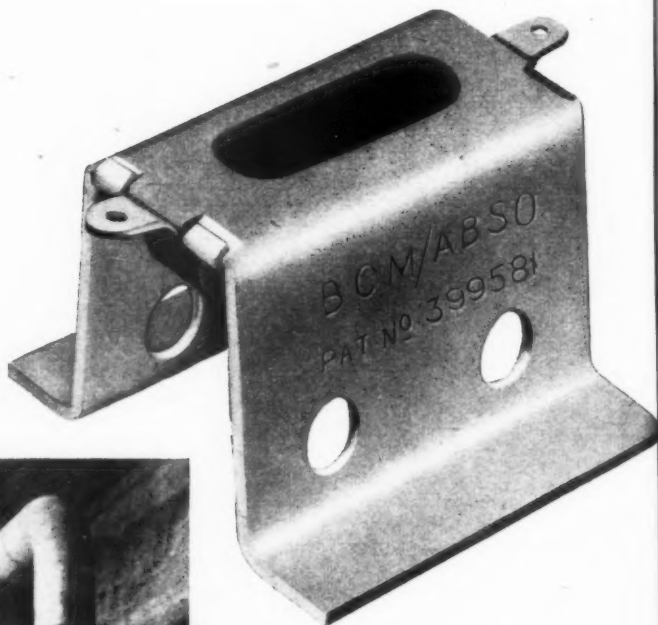
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*Light Type Ankortite Box Fitting in position before pouring. 11,800 were supplied for Festival Hall.*

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*Ventilating Ducts in Festival Hall kitchens, held by Heavy Type Ankortite Box Fittings.*

Photographs and drawings of anchorages in use are by John Eastwick-Field and John Stillman and first appeared in their article on the Royal Festival Hall published in this Journal.

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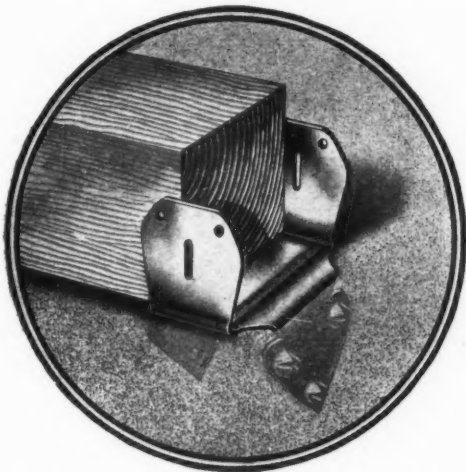


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## *Royal Festival Hall*

*Architect: Robert H. Matthew, A.R.I.B.A. Consulting Civil Engineers: Scott and Wilson.*

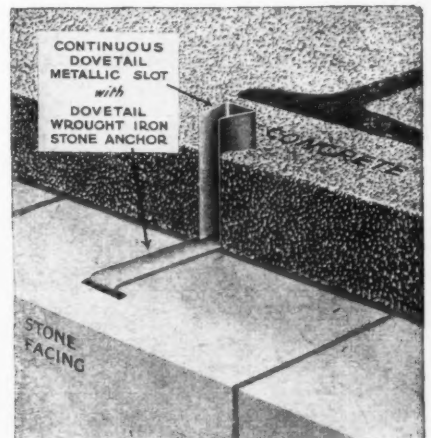
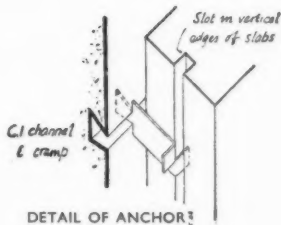


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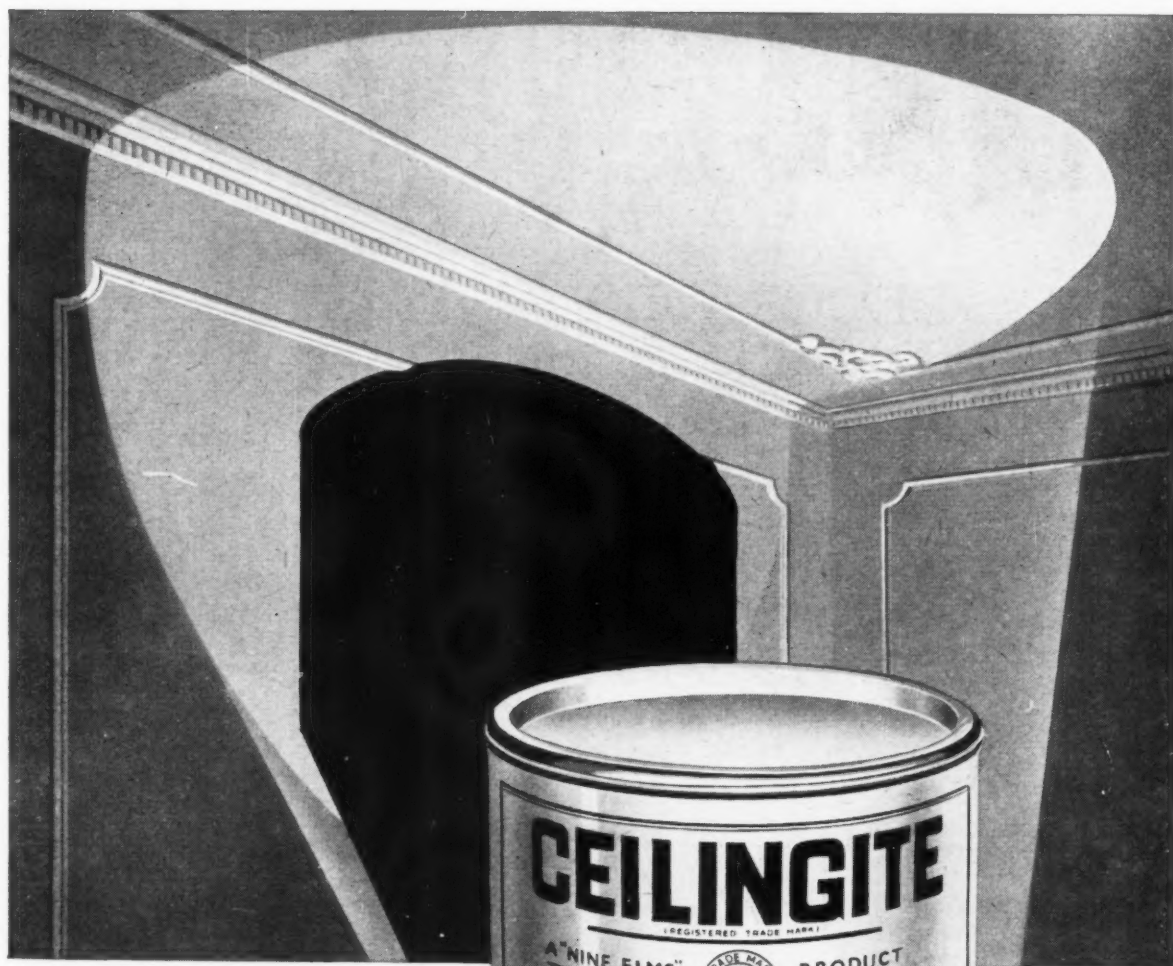


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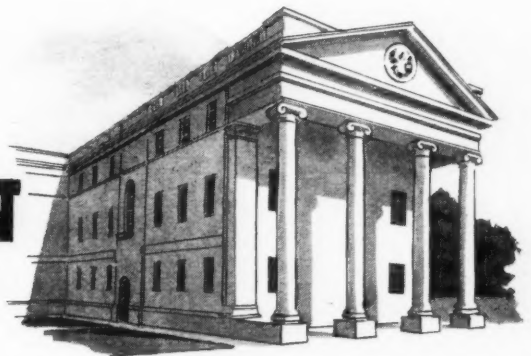
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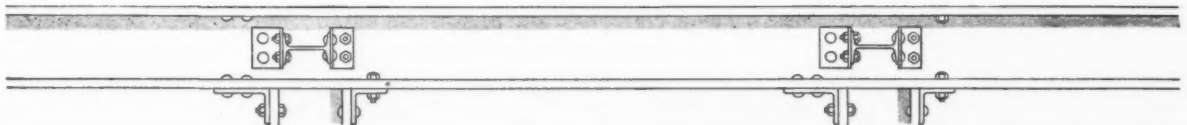


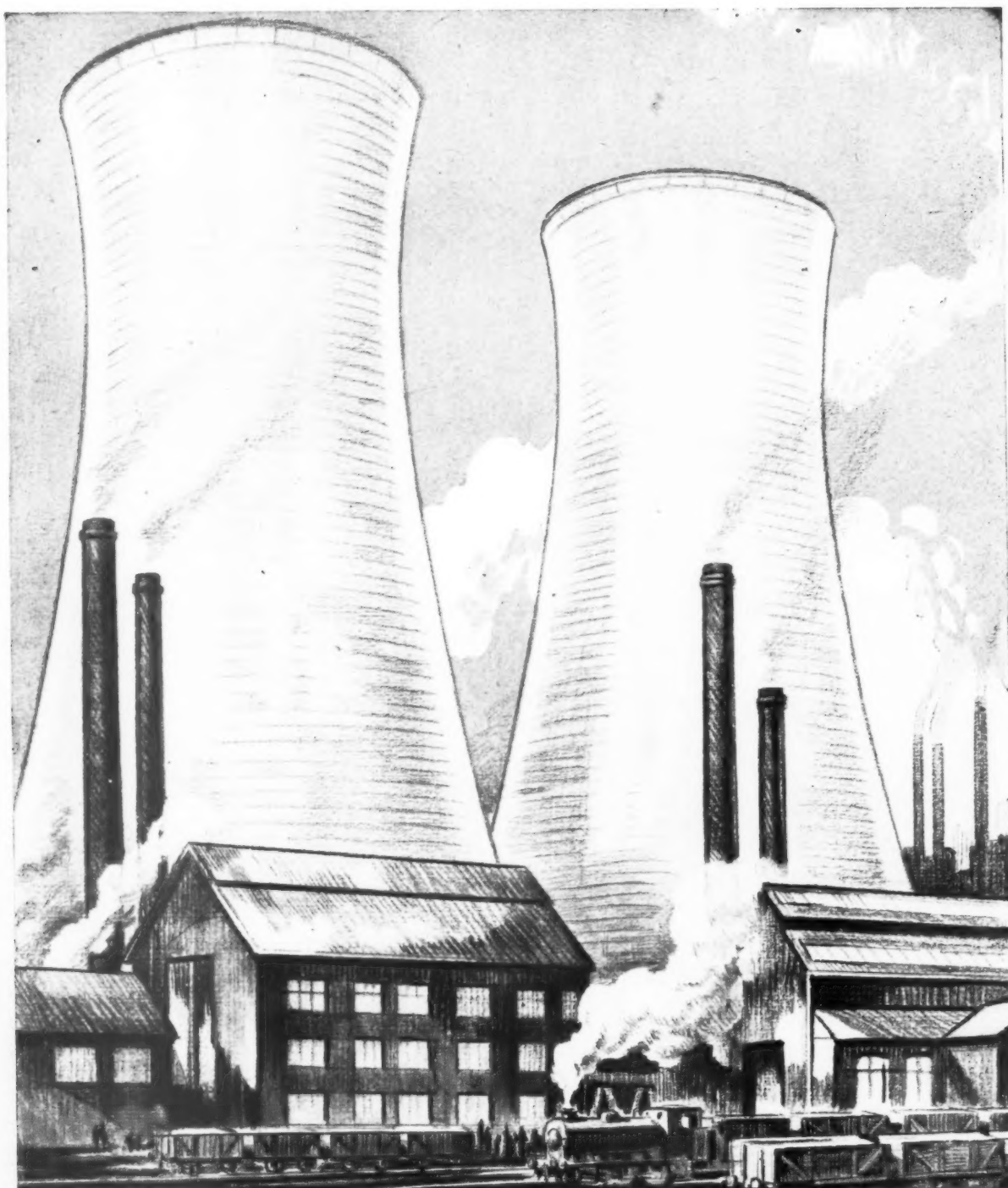
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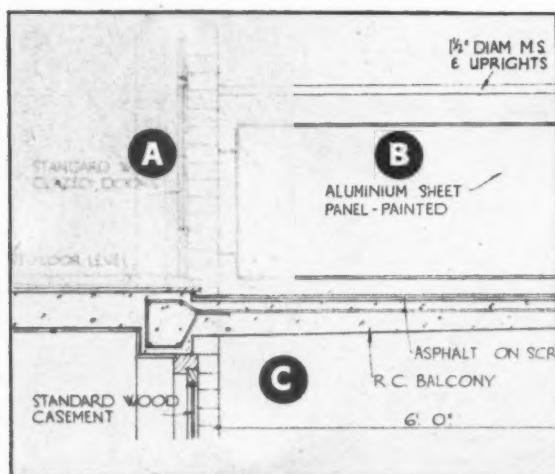


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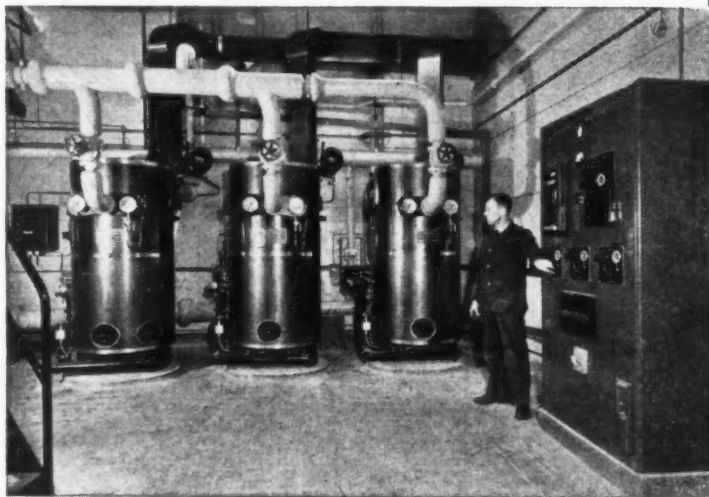
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# Royal Festival Hall

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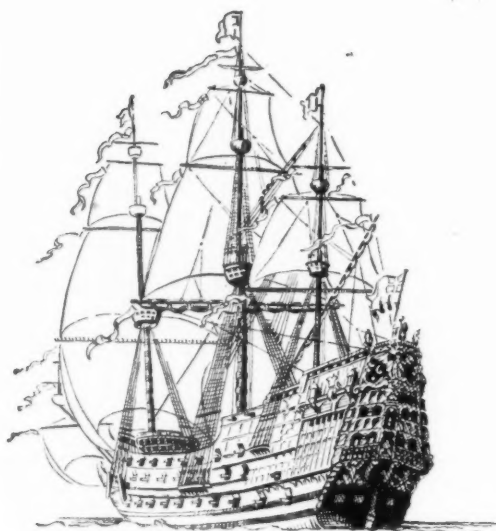
Samuel Pepys

THE supply of timber for building and repairing the King's ships was a problem that worried Pepys all through his thirty years service in naval administration, and there are constant references to it in his diary, letters and minute-books.

As a young clerk he set himself to learn all the intricacies of the trade and the method of measuring timber accurately with a 'sliding-rule'. In June 1662 he records in his diary, "Sir W. Warren discoursing of deals I did offer to go along with him among his deal ships, which we did to half a score, where he showed me the difference between Dram, Swinsound, Christiania and others and told me many pleasant notions concerning their manner of cutting and sawing them by watermills. From on board he took me to his yard, where vast and many places of deals, sparrs, balks, etc., the difference between which I never knew before".

A few weeks later Anthony Deane, the famous shipbuilder, took him into Waltham Forest "and there we saw many trees of the King's a-hewing and he showed me the whole mystery of off-square (half-square) wherein the King is abused in the

## These men knew timber



timber that he buys, which I shall with much pleasure be able to correct."

Twenty years afterwards when the fleet was being rebuilt, stocks of home-grown oak were insufficient, and the Baltic timber used instead gave trouble. "None of the King's Shipwrights at the beginning of our 30 new ships showed any apprehension they had of the bad effects we find of our East Country Plank when they contracted for it", Pepys reported to the 'solemn conference' (the 'departmental committee' of the day) summoned to investigate, and his initiative in seeking new sources of supply was approved by the King and the Privy Council.

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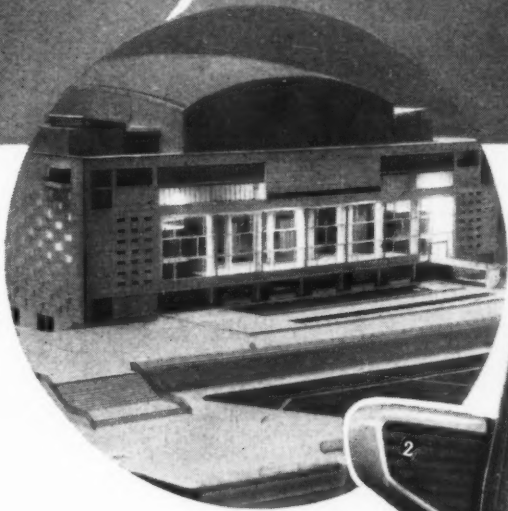
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# Royal Festival Hall



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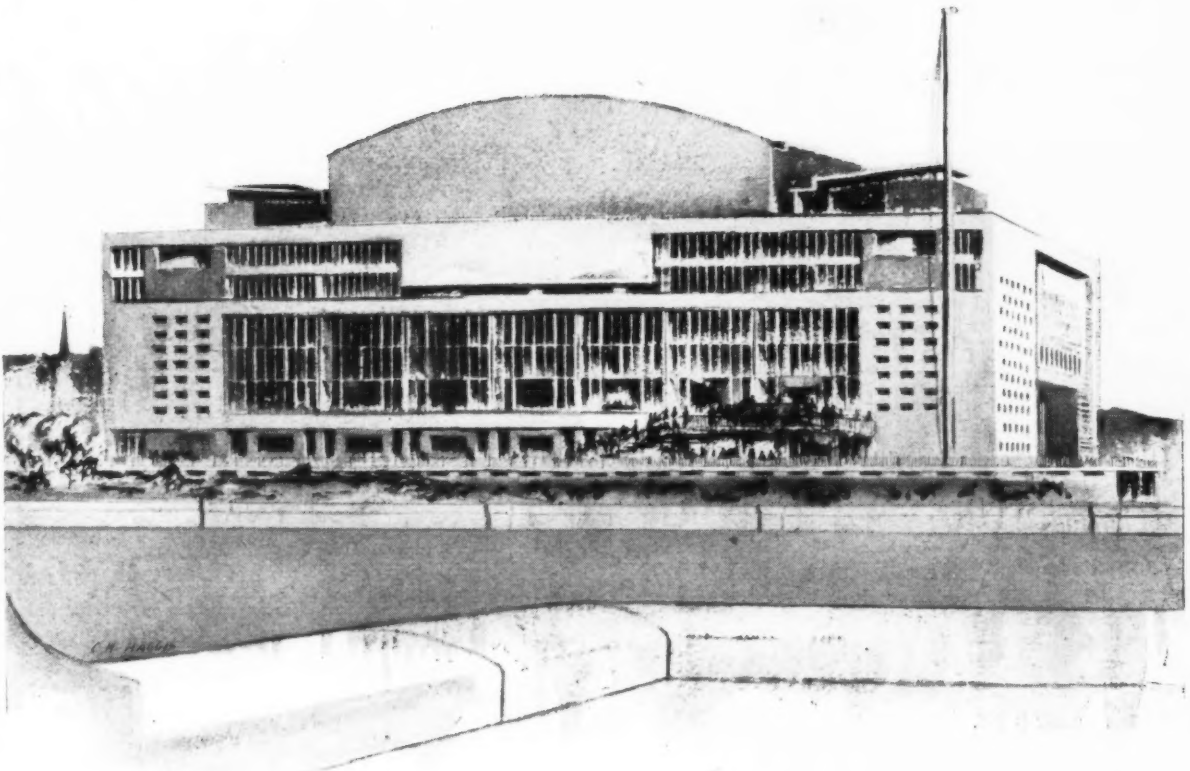
The use in the Concert Hall of Muhimbi blocks and strip is of particular interest as this is the first time this wood has been used in a floor of any size. Muhimbi is a newcomer to this country from Uganda, is extremely hard and, in appearance, is not unlike Walnut.

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## The Royal Festival Hall

Many generations of craftsmen have worked with Cubitts during the 136 years of the Company's existence and have set a standard which would be hard to equal. The Royal Festival Hall is proof indeed that the craftsmen of today have lost nothing of the traditional skill and care of their predecessors, and it is fitting that this building should take so proud a place in a Festival of British achievement.

*Cubitts wish to express their appreciation of the willing co-operation of all those associated with them in this undertaking, and to acknowledge the unstinting loyalty and enthusiasm of their own staff, craftsmen and labourers.*

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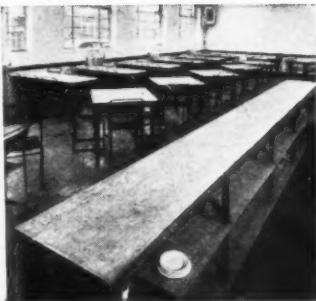
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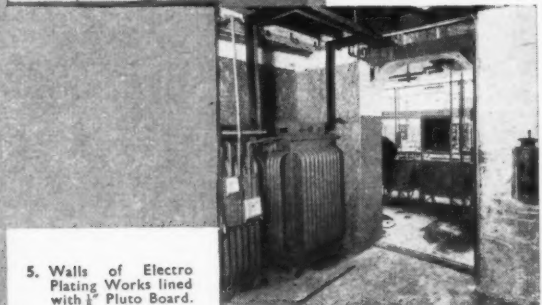
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No. 2932 10 MAY 1951 VOL 113

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

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## SOUTH BANK TRIUMPH

The time has come when we can stop saying how good the South Bank looks as though it's going to be and start saying what it's actually like. And I have no hesitation in announcing that it's very, very good indeed: a triumph for all concerned in it, that gives one renewed faith in the vitality of British architecture.

\*

It is particularly a triumph, I think, in the imaginative use made of the site, which has been transferred into what the *Review* has taught us to call modern townscape at its best. By never letting you see everything at once, but instead bringing new vistas into view every time you turn a corner, Hugh Casson and his colleagues have made the small site appear twice as big as it would have appeared with a formal, geometrical layout.

And they've made splendid use of the river: by a clever use of levels bringing the whole width of the river into the apparent area of the exhibition, contriving the most enchanting views upstream and downstream, using, as it seems, the whole of London's architecture as a backcloth, making newest and oldest London serve as foreground and background to the same exciting picture.

\*

Everyone will agree about the success of the layout in general and of all the incidentals that make so much difference to it: the landscaping, the planting, the colour, the fountains, the detailing of lamp posts, ice-cream kiosks, litter-baskets and railings, all of which struck me as consistently good in design, yet lively and full of ideas. People will no doubt disagree (which is a good thing) about which are the most successful and which the least successful buildings. I can only give a list of my own preferences—formed, I may say, after a quick tour and liable to modification later.

\*

My favourite bits: the cantilevered hood over the Chicheley Street entrance and the gaily coloured trellis along the York Road boundary (both by the Architects' Co-op); the white plaster tree in the flora and fauna section of O'Rourke's Countryside building; the view down-river, obtained at only just above water level, from the Fry-Drew Thames-side Restaurant; Eric Brown's viewing platforms that stick out over the river in front of the concert-hall; the intricate interior of Basil Spence's Sea and Ships building and Richard Huws's water-sculpture in front of it; the interior of Ward and Austin's Harbour Bar—and indeed the pleasantly casual introduction of little bars and cafés in odd corners of nearly

all the buildings—the provision, similarly, in nearly all the buildings of unexpected platforms from which one can view the exhibition grounds or watch the life up and down the river.

\*

Finally, my choice of the most distinguished building (taken all round—structure, detailing and contents); the Lion and Unicorn Pavilion, by R. D. Russell and R. Y. Goodden: my choice of the most elegant exterior; the Regatta Restaurant by Misha Black and Alexander Gibson: and full marks to Powell and Moya for the Skylon—a brave idea that has really come off.

## THE PAINTING ON THE WALL

Last week I was snowed under by Press invitations but I was able to spend a short time at the Royal Academy Exhibition which opened to the public on Saturday. There is, needless to say, nothing very startling to report: the only little bit of Festival year which has been allowed to intrude into the Architectural Room is a model of Basil Spence's Sea and Ships Pavilion. However, I visited this year with an extra degree of watchfulness because on these sober walls there are hung those innocent-appearing sketches which lead, two or three years after their appearance, when they have virtually been forgotten about, to the wildest controversy and furore (such as Louis de Soisson's proposals for Carlton House Terrace, which first appeared several years ago and provoked little comment at the time). Adopting the rôle of prophet I predict that this year's harbinger for controversy will be the new Government offices in Whitehall Place, designed by Clifford E. Mee, architect, MOW.

\*

Hanging not far away from this rather heavy piece of neo-classicism was a

*Designed*  
**FOR BETTER LIVING**

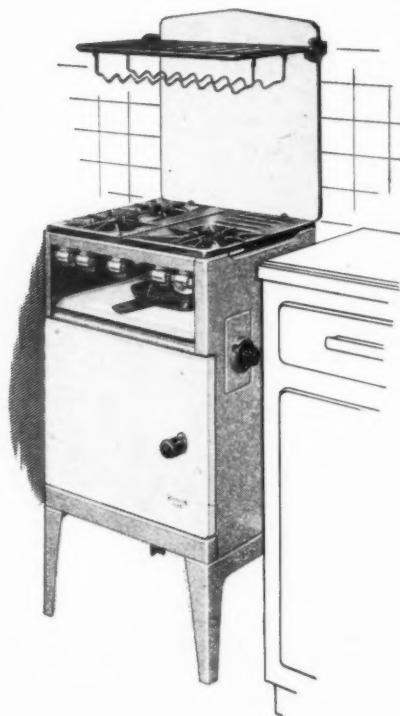


*A general view of the traditional brick houses  
on the new housing estate at Bradwell,  
Newcastle, Staffs.*

# **PARKINSON**

**MODERN  
GAS COOKERS  
AGAIN CHOSEN**

Further evidence of the growing preference for PARKINSON is provided by the Newcastle-under-Lyme Borough Council which specified PARKINSON Modern Gas Cookers for incorporation in the housing scheme at Bradwell new Housing Estate.



THE PARKINSON STOVE CO. LTD., BIRMINGHAM, 9



design which also stems from the MOW, the Tonbridge Crown building by Edward H. Banks. In this I was delighted to see an attempt, even though somewhat over-influenced by Scandinavian styles, to break clean away from the stolid ministerial manner with which we are too familiar. A selection of these designs, including one by that arbitrator of taste, H. S. Goodhart-Rendel, upon which I will not comment, appear, I am told, at the end of this week's JOURNAL.

\*

There are also other designs upon which it may be safer for me to pass no remarks, such as Sir Hubert Worthington's proposed new buildings for Pembroke College, Oxford, and Professor A. E. Richardson's Technical College at Bedford. As far as the craft of draughtsmanship is concerned, Messrs. Myerscough - Walker and Lawrence Wright, who appear, at first glance, to have shared most of the work between them, have gone to great pains to give the buildings the skies, trees and flowers they so often need. The work of another competent perspective artist also caught my eye, a painting by Ian Baker for a new extension to Manresa College, Roehampton, designed by David Stokes. Raymond Erith, whose painstaking designs of early nineteenth century derivation will be familiar to readers, has this year forgone the convention of architectural drawing entirely and presents his design for a new warden's lodgings for Merton College, Oxford, only by means of an artist's oil painting which not only has none of the hard, precise qualities one comes to expect in an architectural perspective but is also so composed and painted that it is well-nigh impossible to tell, of the several buildings shown, which is the new design. A masterly achievement.

\*

So much for work of architects within the fold, so to speak. Of those without, the only one I spotted, in a very quick survey of the galleries, was a pleasant water colour by architect Anthony Petty. No doubt there are more.

#### DID YOU SPOT IT?

The two young men illustrated on this page against a background which you may dimly discern as part of the South Bank site, are John Eastwick-



*The new interior of St. John's, Waterloo Road—the Festival Church. See note below.*

Field and John Stillman, the architects who have been responsible for the progress reports published in the JOURNAL on the construction of the Royal Festival Hall. You may remark on a certain melancholy of expression. This, I understand, is due to the fact that they had just been reminded before the photograph was taken of what I shall call (to ensure harmony with my editors) printers' errors, which occurred in their first and last articles. You may remember the phrases. In considering the essential requirements for the Concert Hall, there was to be, the article stated: a large hall, and a "small hole for chamber music." In their last article, the somewhat startling sentence appears: "It is not always easy to differentiate between what is handsome and what is machine made." I leave you to guess what was meant.

#### REFORMATION OR RESTORATION?

What should one aim at in restoring a bombed church interior? Two very

different answers have been given by T. Ford and H. S. Goodhart-Rendel, in St. John's, Waterloo Road, and All Souls', Langham Place (both recently re-opened) respectively.

\*

St. John's, the Festival Church, was a typical Greek Revival edifice built under the "Million Act" of 1818, its architect being F. O. Bedford—was, and outside still is. Before the war the interior was embellished with some things that were good of their kind by Sir Ninian Comper. Now there are paintings by Hans Feibusch over the altar, and the galleries have gone; the building is flooded with light. There must still be churchmen who would think the general effect "un-ecclesiastical looking," to borrow a Victorian term of disapprobation.

\*

Goodhart-Rendel's work at All Souls', Langham Place, on the other hand, is



*John Stillman (left) and John Eastwick-Field. See note on left.*



## *The Royal Festival Hall*

Last Thursday the King and Queen attended the service of dedication, conducted by the Archbishop of Canterbury, of the Royal Festival Hall—a service that was followed by the inaugural concert. This night view of the Hall, which will now take pride of place as the centre of London's musical life, shows how both the interior lighting and the floodlighting of the exterior are designed to emphasize the

unique feature of the building—the fact that the great bulk of the auditorium is suspended in an envelope of glass, steel and concrete. In this issue, which is devoted entirely to a description of the Festival Hall, the editors of the JOURNAL have had the benefit of the advice of John Stillman and John Eastwick-Field, the authors of our eleven progress reports on the building's construction.

quite strictly a restoration. The colour scheme—grey-green walls and gallery fronts, yellow marbled columns—is just right; there is plenty of light without a suspicion of glare. Next time you walk up to the RIBA from Oxford Circus, step into All Souls' to remind yourself what a dignified church interior Nash gave us. I only wish I could report that the spire had been rebuilt. But that will come.

AND BY THE WAY . . .

I see that the British Council has got together some notable people to lecture in its six-day Festival course on "Contemporary British Music" next month. I see also that the British Council has rounded up some distinguished experts to talk in its six-day Festival course entitled "The Contemporary Theatre." And I see that the British Council has arranged a six-day Festival course on "Characteristic Styles of British Architecture," to be held from June 24-30. The speakers will be "Mr. E. R. Jarrett, former principal lecturer of the Architectural Association; Mr. Ronald Duncan, Lecturer at the AA; Mr. Gontran Goulden, Director (surely Deputy?) of the Building Centre and the MARS Group (surely not?); Mr. Peter Shephard, architect and town planner; Mr. Paul Reilly, of the Council of Industrial Design; Mr. H. T. Cadbury-Brown; and Professor H. O. Corfiato, Head of the School of Architecture, University College, London."

No, I didn't say anything.

ASTRAGAL

## DIARY

**FOB South Bank Exhibition.** Daily 10.30 a.m. to 11.30 p.m. Sundays, 12.30 a.m. to 11 p.m. UNTIL SEPT. 30

**Exhibition of Exhibitions.** At Royal Society of Arts, John Adam Street, W.C.2. Mondays to Saturdays, 10 a.m. to 6 p.m. (Wednesdays, 10 a.m. to 8 p.m.) UNTIL SEPT. 30

**FOB Exhibition of Architecture.** At Lansbury, Poplar. Weekdays, 10.30 a.m. to 8 p.m. Sundays, 12.30 p.m. to 8 p.m. UNTIL SEPT. 30

**Exhibition of Science.** At the Science Museum, South Kensington. Weekdays (except Tuesdays and Saturdays), 12 noon to 10 p.m. Tuesdays and Saturdays, 10 a.m. to 6 p.m. Sundays, 2.30 p.m. to 6 p.m. UNTIL SEPT. 30

**1851 Centenary Exhibition.** At Victoria and Albert Museum, South Kensington. Weekdays, 10 a.m. to 6 p.m. Sundays, 2.30 p.m. to 6 p.m. UNTIL OCT. 11

## The Editors

### THE ROYAL FESTIVAL HALL

**N**OW that the first stage in the construction of the Royal Festival Hall is virtually complete and the hall has been opened to the public we are devoting nearly a whole issue of the JOURNAL to a description, with illustrations, of the building. London's only major concert hall will undoubtedly be a subject of discussion and controversy for some time to come. The concert-going public will inevitably appraise the hall by the quality of the reception of music played in it and, perhaps, by the provision of restaurants in which they may take refreshments in comfort—something that is sorely lacking in other London halls.

It is possible that many concert-goers who have been led to expect their music to be encased in a neo-classical shell will not immediately take kindly to the building's appearance. But what of the architect? What will his verdict be? Whatever criticisms he has to offer (and we, ourselves, are reserving any comments on the aesthetics of the building for a future date) he will be aware that at a time when the building industry in this country has been severely criticized for its inefficiency and its declining standards of craftsmanship, British craftsmen have shown that, given the opportunity, they can produce a complex and highly finished building in a short space of time and under very difficult conditions. Then again, it will be realized that the Festival Hall provides proof that an official department *can* do outstanding work under the proper leadership. It is to their credit that the architects, Robert Matthew, Dr. Martin, Edwin Williams, Peter Moro and their staff, who achieved a brilliant solution to difficult planning problems at the outset, carried through their design without compromise, in spite of the many obstacles they had to surmount. The result of their work is due to a great extent to the efficient way in which they carried out the architect's dual role of designer and co-ordinator, for problems associated with site preparation and structural work, compelled them to consult many specialist advisers.

In the following pages we have attempted to show something of the development of the design of concert halls over the past century and the effect on concert hall designs of the growing understanding of acoustics. The comments and criticisms of an acoustics expert are included in this issue, together with those of the people most intimately concerned with the concert hall—the conductor and musicians.

Finally, we have illustrated the architectural feature that makes the Festival Hall unique in the contemporary world of architecture; that is to say, the suspension of the main body of the auditorium as a separate entity within the surrounding envelope of the foyers. There are, we realize, many aspects of the design that will provoke comment and discussion among architects. But for the moment it is, perhaps, as well to spend a short time in appreciation of one of Britain's most significant architectural achievements of the century



## ROYAL FESTIVAL HALL

designed by ROBERT H. MATTHEW and J. L. MARTIN architect and deputy architect, LCC;  
EDWIN WILLIAMS senior architect-in-charge ; PETER MORO associated architect.

The following 20 pages, compiled with the co-operation of John Eastwick-Field and John Stillman, are devoted to a description of the design, details and acoustics of the Royal Festival Hall—London's only building designed exclusively as a concert hall—together with a comparison with 7 other famous concert halls. Besides the four architects mentioned above, the following were also concerned with the design and supervision of work on the concert hall: Messrs. Scott and Wilson (consulting civil engineers); Hope Bagenal and members of the staff of the BRS (acoustic consultants); J. Rawlinson, Chief Engineer to the LCC (boilers and electrical work) and R. Coe and the staff of the Heating and Ventilation Section of the LCC Architect's Dept. (heating and ventilation). A full list of the architectural staff working on the scheme, together with the names of specialist designers and craftsmen appears on pages 613 and 614.





## ROYAL FESTIVAL HALL : HISTORY

a comparison with EARLIER EXAMPLES

Concert halls—that is to say halls designed solely for listening to music—have been built in many architectural styles, according to fashion or to particular conditions. In every instance auditoriums have been designed to satisfy a certain number of common conditions, and it is interesting, therefore, to compare the plans of the notable concert halls of the world. It is also interesting to note how greater understanding of the principles of acoustics has influenced concert hall designers. The halls which we illustrate have all, either by their success or failure, influenced the design of the Royal Festival Hall. Its parallel walls owe much to the great success of the Leipzig Gewandhaus, whilst a precedent for the wall treatment can be found in the studio of the Radiohuset at Copenhagen.

Of course, all buildings, however revolutionary they may

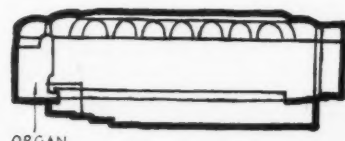
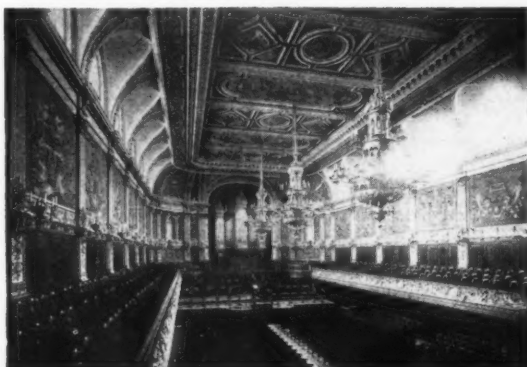
seem at the time, are indirectly influenced by architecture of the past, but in this instance, it is no accident that the hall's design is derivative. Investigations were made of the acoustic properties of many of the most notable halls of comparable size. In shape, at least, the auditorium is the direct result of the study of halls known to be good acoustically. It should be pointed out that the Royal Festival Hall, which accommodates nearly 3,500 people, is the largest concert hall in the British Isles, and among the largest in the world. (Incidentally, the larger the hall the greater are the planning difficulties.) Many people have come to think of the Albert Hall, which holds nearly 10,000, as a concert hall. But it was originally dedicated as a hall of "Arts and Sciences," and is still, in fact, used for many purposes.

### 1894 : THE GEWANDHAUS, LEIPZIG (now destroyed)

designed by GROPIUS and SCHMIEDEN

seating capacity : 1,500

"Derived partly from the halls of the Italian music academies and partly from the early coffee-house rooms." The most notable things about this hall were its flat ceiling and rectangular plan, giving equal distribution of sound and random reflections. It had a fine reputation among musicians and has been accepted as a standard for good acoustic design. Although its design was influenced by that of the theatre of the period, it had less total absorption per cu. ft. of volume, and reverberation was longer, so that the quality of tone was fuller.



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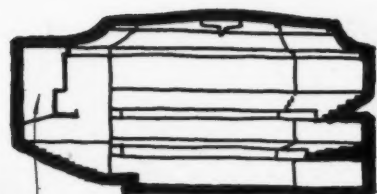
### 1893 : QUEEN'S HALL, LONDON (destroyed 1941 by bombing)

designed by C. J. PHIPPS and T. E. KNIGHTLEY

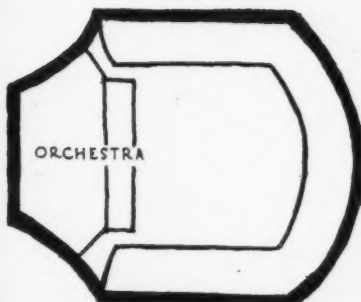
seating capacity : 2,000

measured reverberation time : 1.3 secs. at 500 c.p.s. (full)

An exceptional design in which at least two characteristics known to be useful acoustically, were introduced. The first was the convex splay which helped to mitigate concentrated reflection, despite the concave rear wall; and the second was the use of resonant panelling, absorbing the bass. The balance of tone was good for an orchestra, but reverberation time was on the short side and there were many who did not like the hall for choral work.



ORGAN



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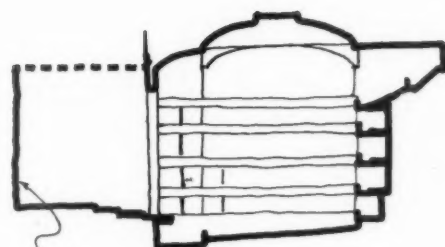
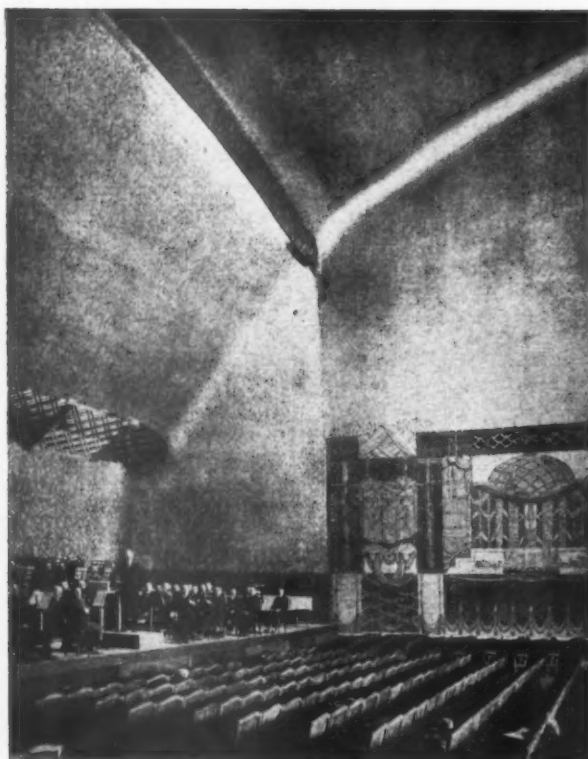
**1858 : ROYAL OPERA HOUSE, COVENT GARDEN**

designed by E. M. BARRY

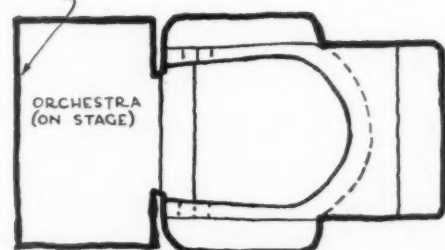
seating capacity : 2,000

measured reverberation time : 1.1 secs. at 500 c.p.s. (full)

Although built in the 19th century, this hall with its many tiers, drapes, pelmets, heavy mouldings and embellishments, which combine with the inevitable dust to provide absorbents over the full range of frequencies, is, in fact, similar in almost every respect to the 18th century baroque opera house. Many people may prefer the atmosphere created by the horseshoe plan with its many tiers and boxes to the modern arrangement exemplified at the Royal Festival Hall; indeed for the music for which they were designed—Mozartian opera—the opera houses were excellent, but the short reverberation time (one of their characteristics), which gave the clarity required, would be found too short for orchestral and choral work today.



BACKCLOTH



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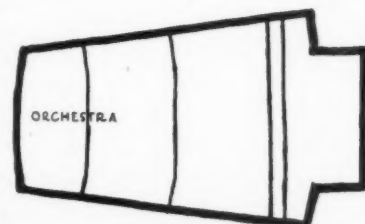
**1928 : SALLE PLEYEL, PARIS**

designed by AUBERTIN, GRANET and MATON

seating capacity : 3,000

The first large "modern" concert hall in which the design was based on a particular theory of acoustics. The idea of using a ceiling in near parabolic sections, together with a flat splayed reflector (both designed to reinforce the sound) was developed by M. Gustave Lyon. The surfaces of the ceiling and the splayed sides were plain, and corrective absorbents were not used. The result was that there were objectionable sound reflections from the back of the hall to the orchestra, and listening conditions were at first very poor. The later addition of absorbents to lessen the reflections thus reduced the reverberation time so much that listening conditions are still not thought to be particularly good.

The conclusion to be drawn from this design is that fan-shaped halls with plain flat reflective surfaces are unlikely to be acoustically satisfactory. However, one can understand that architects who were anxious to further the modern movement wished to rid their designs of the embellishments associated with earlier types of hall; embellishments which were, curiously enough, more functional than the plain surfaces.



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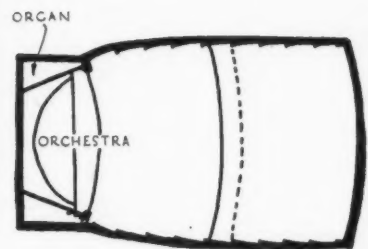
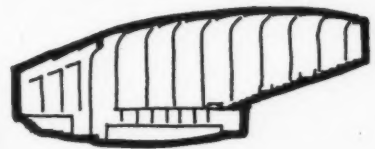
**1939 : LIVERPOOL NEW PHILHARMONIC HALL**

designed by H. J. ROWSE

seating capacity : 1,750

measured reverberation time : 1.55 secs.  
at 500 c.p.s. (full)

This hall is generally liked, despite the fact that it has a fairly short reverberation time. Although this is not a perfect hall, the results of a BRS inquiry showed that a hall of modified fan shape can be musically acceptable. The surfaces here, unlike those in the Salle Pleyel, are broken by a series of steppings in the ceiling which are coved at the junction with the walls and then continued to the floor. The orchestra is on a raised stage and there are definite indications of a proscenium arch. The whole atmosphere is somewhat grandiose and lacking in intimacy, despite the relatively small seating capacity.



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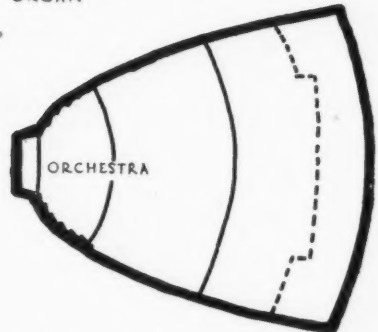
**1941 : KLEINHANS CONCERT HALL, BUFFALO**

designed by F. J. and W. A. KIDD and ELIEL SAARINEN

seating capacity : 3,000

As little absorbent as possible was used in the elliptically-planned auditorium, and the finishes are hard plaster and plywood, irregularly batted. The fan-shaped plan and curved walls makes a most interesting comparison, not only from an acoustic point of view, but also aesthetically, with the Festival Hall, especially since each hall seats about the same number of people. Speaking of the Kleinhans, W. J. Hudnut wrote in an article in the *American Magazine Forum*:—"the auditorium receives us into its cupped hand and lifts us like great music out of our accustomed world; the stage addresses us; and the walls listen. Thus each shape becomes an element in a language of shapes, whose meanings are understood and harmonious, being rooted in service. . ."

We look forward to the *Forum's* comment on the Royal Festival Hall.



0 50 100 Ft.

**1945 : CONCERT STUDIO, RADIOHUSET, COPENHAGEN**

designed by WILHELM LAURITZEN

seating capacity : 1,200

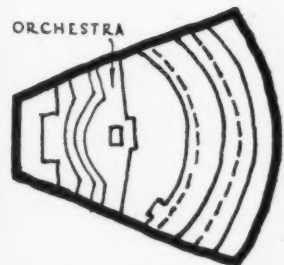
measured reverberation time : 1.6 secs.  
at 500 c.p.s. (full)

This large concert studio embodied for the first time a number of new ideas in the application of acoustic theory. These ideas included unfamiliar treatment of both the arrangement of the orchestra *vis a vis* the audience, and also of the internal finishes. The plan is markedly fan shaped, with curved rear wall and curved balcony fronts. It was found necessary to make the rear wall very absorbent to prevent reflections focusing on the orchestra, and this contributed to a lower reverberation time than the 2.1 seconds which had been desired. The orchestra is placed on a stepped platform and is contained within the main body of the hall without any form of proscenium; the audience is in 3 tiers and as many as possible of the seats are arranged to be at a higher level than the orchestra. Note that at the Festival Hall the balcony (officially known as the Grand Tier) is already reputed to be the best listening position.

It is noticeable that all the concert halls described are provided with organs. At Copenhagen the organ is very prominent, and it has obviously been considered an important element in the design of the auditorium.



ORGAN



0 50 100 Ft.



## ROYAL FESTIVAL HALL : DESIGN

The Royal Festival Hall has been built in just under two years. Following the approval of the plans and estimates, work commenced on the site on May 4, 1949, and the building was opened by the King on May 3, 1951.

**ACCOMMODATION.**—The auditorium has seating accommodation for 2,800, with 250 additional seats in the choir, and space for 300 persons standing; a total of 3,350. Whilst the auditorium has been designed exclusively for concerts, and there is no proscenium or stage, arrangements have been made for the occasional performance of ballet, and extra lighting has been installed for this purpose. A large organ is being made for the hall, and when it is ready it will replace an electronic organ which is being used temporarily.

In addition to the auditorium, the design includes a smaller theatre-type hall to accommodate about 750, to be used for plays, chamber music concerts, and cinema projection. It was decided at the outset to delay building this hall, together with certain other accommodation, including a picture gallery, until after the Festival. When it is built the small hall will be located on the South East side of the building, and this elevation has therefore been finished temporarily with asbestos wall cladding, and with a large temporary window.

The accommodation in the present building provides, in addition to the auditorium, very spacious foyers, promenades and cloak rooms, a large restaurant on two levels, with the necessary kitchens and serveries, several bars and a meeting room. In addition there are offices for the administration and technical staff and changing rooms for performers. The "back stage" accommodation will be much increased when the hall is completed, and will include several practice rooms, including one large enough for orchestral rehearsals, and a music library. A large terrace which has been provided outside the restaurant on the river front, forms the roof of an enclosed car park below.

**PLANNING.**—The main factors governing the arrangement of the plan were the restricted size of the site, the need to isolate the auditorium from external noise, the difficult circulation problem presented by the requirements of two halls with a large common reception and foyer space, and the available approaches. All the conditions have been met, and uninterrupted views of the river are available from the restaurant and foyers.



Above, the four architects; from left to right, Peter Moro, J. L. Martin, Robert H. Matthew and Edwin Williams.

**SITE WORKS AND FOUNDATIONS.**—The site presented exceptional problems. Ground water level was only about thirteen feet below ground level, and the foundations were required to be laid some twelve feet below this water level. Further there were the extensive foundations of many demolished buildings to be removed. It was decided to take the rather unusual course of reducing the ground water level over the whole site by draining it with a surrounding ring of "wells," and then to excavate the whole site to — 11 ft. 0 in., i.e. approximately 25 ft. of excavation. Individual column bases were laid on a concrete "mat" placed at the bottom of the excavation.

**CONSTRUCTION.**—The structure of the building is of reinforced concrete. This had the advantage of providing the mass necessary for sound insulation. Generally, the structure is that of beams and slabs supported on columns. However, structural walls enclose the auditorium and the escape staircases. The former are built in two 10-in. leaves with a 12-in. cavity between to provide the necessary sound insulation. There are no ties between the leaves and the inner leaf carries the roof, which is also of a double construction. The roof is not a "shell" but a reinforced concrete barrel, tied at the bottom by steel ties which form part of the steel "trusses." The other main function of these trusses was to act as permanent centering for the roof.

The construction of the grand tier is unusual. It consists of a hollow reinforced concrete box, of triangular cross section, spanning across the auditorium, and supported solely on the side walls.



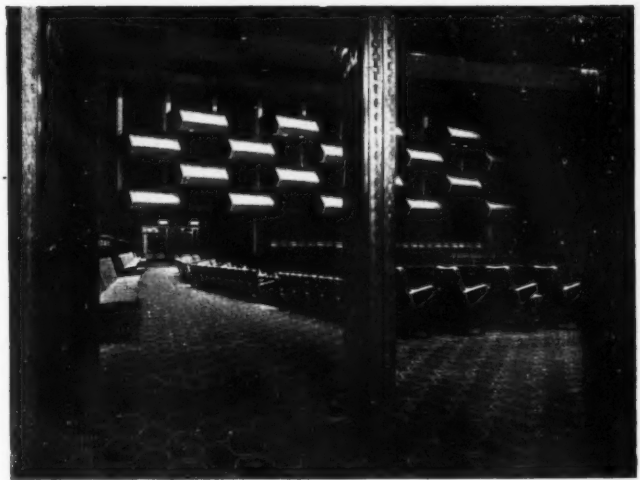
Above, the Clerk of the Works T. W. Turner. Below, the Contract Manager, S. L. Reynolds.



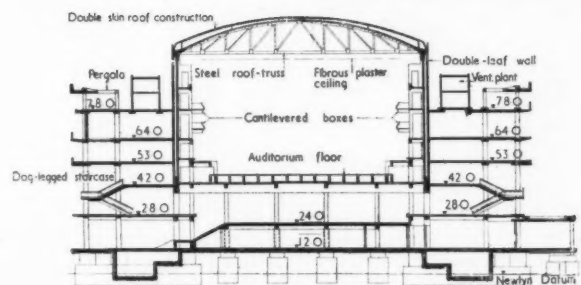


**FINISHES.**—Concrete was not considered a sufficiently decorative material to be left exposed, and therefore almost the whole of the structure, both internally and externally, has been clothed in protective and decorative materials applied as veneers. Where possible, contrast in colour and texture is obtained by the use of natural materials, and painted plaster surfaces have been used as little as possible. Portland stone and Hadene marble facing slabs are used extensively and the jointing is intentionally "non-structural" to emphasise its applied nature. Internally, use has been made of new combinations of materials, such as rockwool behind perforated plastic sheets, which is used for some foyer suspended ceilings, and of new ways of fixing materials, such as the elm ply panelling to the auditorium walls which is used to obtain particular acoustic effects.

Floors in the public parts of the building are principally of Hadene marble, hardwood strip, cork tiles,



*The entrance to the auditorium at 53 level.*



Transverse section [Scale: 1" = 80' 0"]

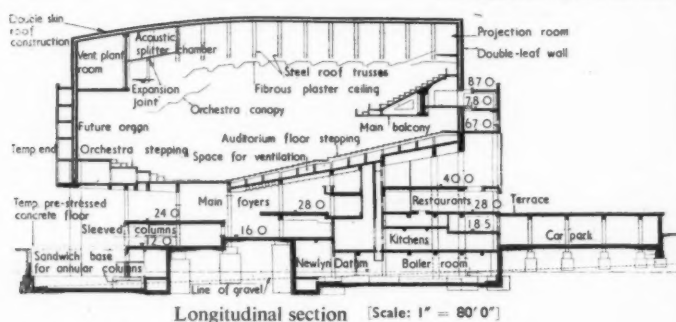
*The auditorium from the main balcony.*





*The auditorium from the choir.*

## ROYAL FESTIVAL HALL : DESIGN



*The auditorium from the gallery leading to the boxes.*

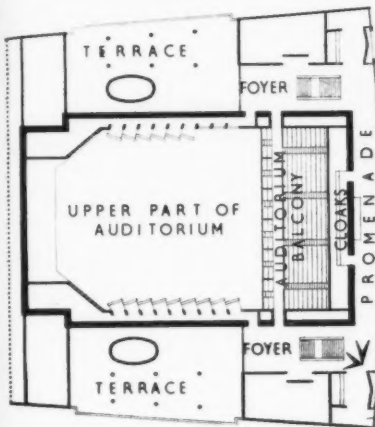


and carpet. Most of the ceilings are suspended, and in the main foyer and the auditorium, where lighting and ventilation grilles are incorporated in the shape of the ceiling, fibrous plaster has been used.

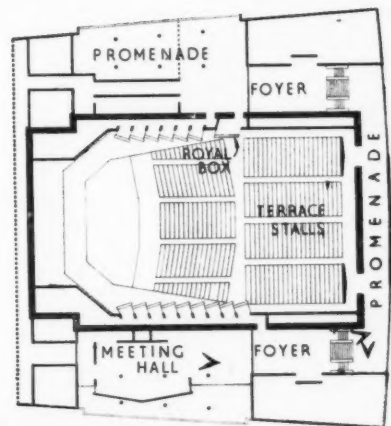
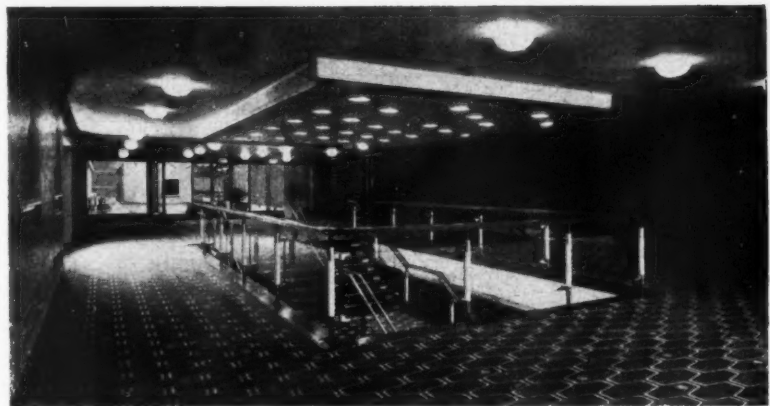
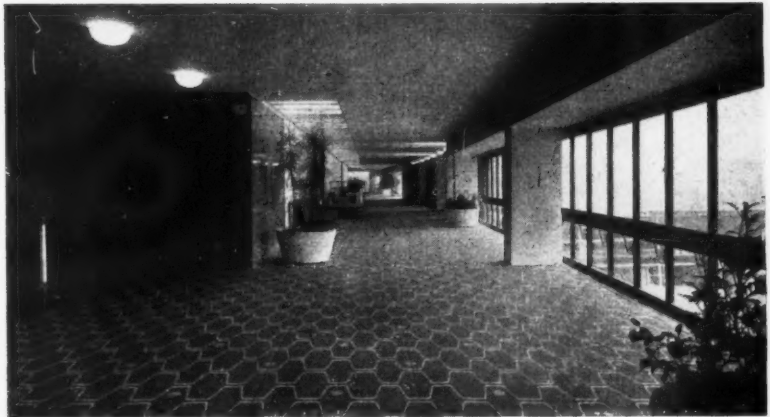
Externally, in addition to the stone and marble facing slabs already mentioned, one-fire tiles have been used on the escape staircase blocks, and in some other panels. The roof is covered with copper.

The windows contain very few opening lights and are glazed in extra heavy plate glass to minimise sound transmission. Generally, the glazing sections are of aluminium, which has been protected with a special

The illustrations on this and the next seven pages give the views which confront the concert-goer as he descends from the main balcony down to the lowest entry at 12 level. All the views which are revealed, first on one side and then on the other, have been photographed on the main staircase on the north east side, and the view point has been shown on the plans. Right, the promenade on 78 level overlooking the Thames. Below right, the same promenade looking along the flank wall of the auditorium towards the roof terrace. The doors into the auditorium can be seen above the stair well.



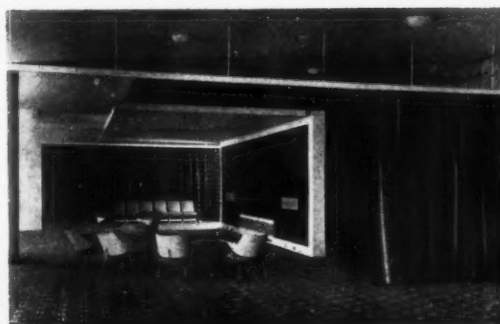
Plan at 78 level [Scale:  $\frac{1}{4}$ " = 1' 0"]



Plan at 64 and 67 levels [Scale:  $\frac{1}{4}$ " = 1' 0"]

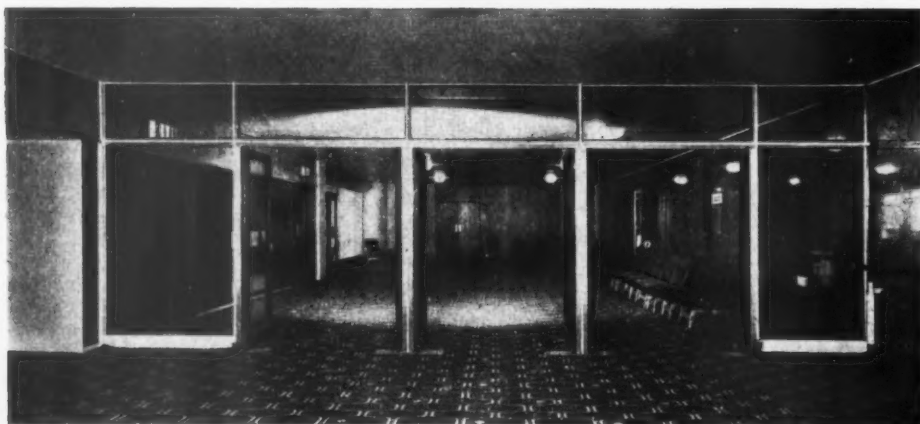


Left, the promenade at 67 level, looking towards the meeting room (illustrated below, right). Below, left, the same promenade on the river front with entrances in the left hand wall to the top of the stalls.





*The view from the half landing between 67 and 53 level overlooking the restaurant on the river front. In the bottom left corner is the corner of the auditorium itself where rear and side walls join the raked floor. Below left, the foyer at 53 level with, on the right, the doors leading into the middle transverse gangway. Opposite page, another view of the restaurant, from 53 level with the circular stairs leading to the low-level restaurant shown on the left.*

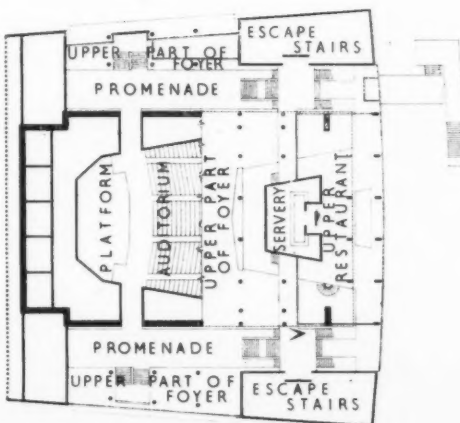




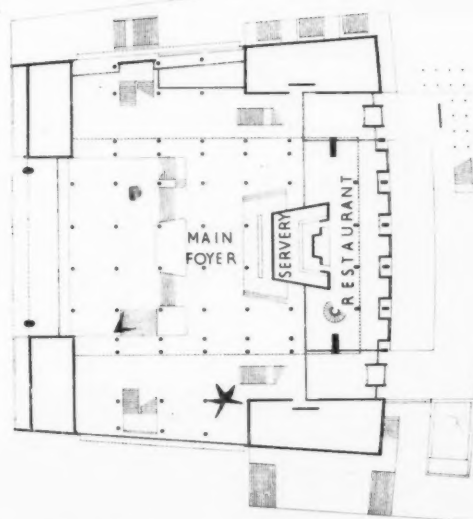
## ROYAL FESTIVAL HALL : DESIGN

lacquer, and these sections are contained in pressed aluminium and teak subframes. Structural members, where required in the mullions and transoms, are of steel.

SERVICES.—The engineering services at the Royal Festival Hall are of great complexity and importance. As the reinforced concrete structure made the cutting of extra holes and ducts very



Plan at 40 and 42 levels [Scale:  $\frac{1}{16}'' = 1' 0''$ ]



Plan at 28 level [Scale:  $\frac{1}{16}'' = 1' 0''$ ]



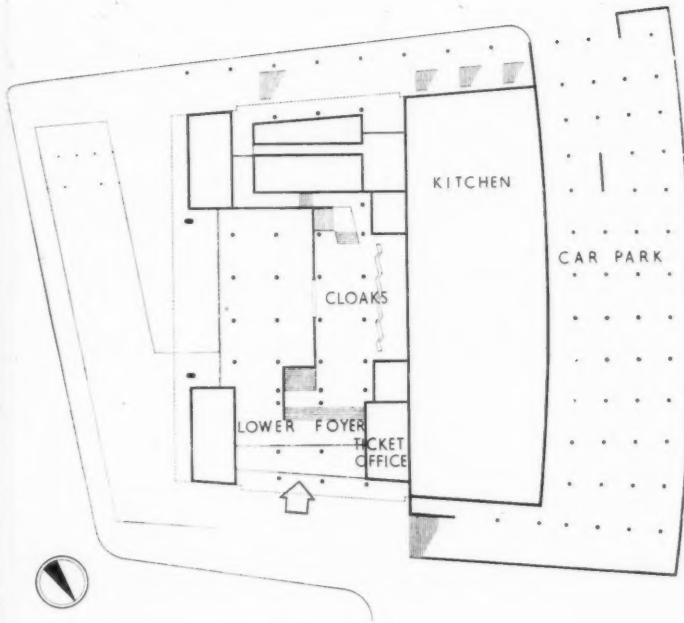
*Below, and on the opposite page: two views of the main foyer. This foyer, at 28 level, runs the full breadth of the building beneath the auditorium. The illustrations on these two pages and the following two facing pages show the effect of allowing the eye to traverse the foyer through an angle of about 270 degrees. As one turns, the eye is first led out of the building through the glazed wall, then checked by the blank wall at the east end of the foyer, then again (see opposite page) allowed to run out between the columns and under the white belly of the auditorium. The grey marble flank wall clearly shows the flattening out of the rake as it cuts through the plane of the outer foyer ceiling.*



## ROYAL FESTIVAL HALL : DESIGN

difficult, and as the designs were prepared in so short a space of time, it is remarkable how successfully and how neatly the services have been installed. The electrical installation, soil and surface water drainage, domestic water supply, vacuum cleaning, and fire appliances all presented exceptional problems, which have been successfully overcome.

**HEATING AND BOILER PLANT.**—Air conditioning is employed to ventilate and heat the auditorium. The air is introduced through grilles in the ceilings, and extracted through grilles in the floor steppings. Refrigeration is not at present included in the plant but it may be added later. Until then it is hoped that cooled water from the Ministry of Works experimental heat pump will provide part of the cooling required in summer. Other parts of the building are heated and ventilated by a number of separate plenum heating plants, and floor heating and convectors are used in addition, to offset fabric losses. Special precautions have been



Plan at 1st level [Scale:  $\frac{1}{4}$ " = 1' 0"]

*Opposite page, the view at 40 level. The stairs in the foreground lead to the lowest entrance into the auditorium at stalls level. The corner of the auditorium where the raked floor joins the flank wall can be seen in the centre. To the right are the louvres of the fluorescent lighting for the main foyer.*





*Looking under the auditorium towards the entrance from Hungerford Bridge. On the right is the main bar.*

taken against noise entering the building through the ventilating ducts.

The boilers for both heating and domestic hot water are highly efficient gas-fired boilers, fitted with a complete system of thermostatic controls. Thermostats are placed outside as well as inside the

building and these controls ensure that the boilers respond rapidly to changes in demand for heat caused by changes in outside temperatures.

General contractors, Messrs. Holland & Hannen & Cubitts. Sub-contractors—p. 613 and 614.



*Looking towards the main foyer at 28 level from the stairs which lead to 24 level. At the bottom can be seen part of the counter in the main cloakroom at 16 level.*





*The traverse, started on page 600, is completed. In the foreground is the staircase down which the imaginary concert-goer has descended. Beyond and above is the restaurant, beyond and below is the entrance from the river front.*

## ROYAL FESTIVAL HALL : DESIGN

*From the north.*



## ROYAL FESTIVAL HALL : ACOUSTICS

opinions on the auditorium by ACOUSTIC CONSULTANTS, CONDUCTORS, MUSICIANS.

The four acoustics tests which have been held as part of the "tuning" of the auditorium have provided an opportunity for some preliminary judgments to be made on the outcome of all the thought and care devoted to the concert hall.

Extensive adjustments were made as a result of the earlier

tests, and the present conditions are still not necessarily final. Instruments in the BRS mobile laboratory may, from time to time, be connected to permanent wiring installed for the purpose, and, if measurements and general opinion show that further adjustments are necessary they will be made.



P. H. PARKIN (of BRS)

"This is the first time that a concert hall has been 'tuned' before being opened. It is also the first time that professional musicians have been consulted in any systematic fashion. There is no doubt that both courses have been very well worth-while. The main question that musicians have been asked is whether they would prefer more 'fullness of tone' at the expense of 'definition,' or vice-versa. The general trend of opinion throughout the four acoustic tests has been that the fullness of tone should be increased, and by the time the last test had been held 75 per cent. of the musicians wanted the hall left as it was, while the remaining 25 per cent. wanted either more 'fullness of tone' or more definition. If we had not had this 'tuning period' the hall would have opened with an appreciable lack of 'fullness of tone.' It has been possible to ensure that no major acoustical defects developed while tuning was carried out. For example, there are still no echoes in the hall, in spite of the fact that large areas of absorbent have been removed during the tuning period.

"To a London concert-goer, who has for some years been accustomed to other concert halls, the acoustics of the Royal Festival Hall may be rather a surprise. The acoustics tests have shown that the more often people go to the hall the more they like it. For example, between two of the tests no changes to the hall's acoustics were made, yet most of the 240 people who were questioned said that the acoustics were better on the second occasion than on the first."



WILLIAM ALLEN (of BRS)

"As is now well known the train noises from Hungerford Bridge have been successfully excluded, and the insulation necessary for this purpose has led to a background noise level in the auditorium low enough for the quietest playing to be heard more easily than in most other halls.

"The exceptional clarity of the music is probably due to the view which the audience gets of all parts of the orchestra, a result of having both orchestra and audience on fairly steeply-ramped seating. With flat or shallow-sloped seating in the stalls of a hall direct sound is poor and opinions as to the acoustical quality of the hall often depend on whether the listener sits in the stalls or the balcony. The best liked position in the Festival Hall is the balcony. (This is true of many halls.) But opinions in favour of front and rear stalls have also been given and differences in the sound received by people in various positions are much less than in previous halls studied by the BRS.

"It is, of course, too early to make any final judgments on the acoustics: we have not yet heard any choral or organ music in the hall, but it can be said that the hall does not have any serious defects and has certain distinctive attributes which seem to please most people. If it favours one kind of music more than another, it would seem to be that of modern composers and those among the classic composers who benefit especially from good definition, such as Bach. It also seems to flatter a good performance and it is, perhaps, critical of poor playing—this might be a very good thing for orchestras to know."



HOPE BAGENAL (acoustic consultant)

Mr. Bagenall has expressed the view that a just opinion has been given by The Times music critic, who wrote on April 16 after the last trial concert:—

"There is no doubt that they have made an improvement, which was immediately noticeable in the front seats . . . Proper blend has now been secured without sacrifice of clarity . . . The sounds do not now evaporate quite so quickly in any part of the hall and there is very little difference in general audibility between any of the stalls . . . from a distant seat downstairs the piano sounded near and the tone was less brittle than at the former test. "Some slight doubt remained whether the strings would sound better with even more resonance, but the revolver shots showed that the margin of tolerance for reverberation is being approached. It may therefore be better to let well alone."

**SIR MALCOLM SARGENT** (musical consultant)

Sir Malcolm Sargent said that endless trouble had been taken in designing the auditorium, and that he was very satisfied with the result. He pointed out that architects and acoustic consultants were always afraid of echoes and had a tendency to design for definition and clarity rather than for resonance. On the other hand, he said that all those concerned with the hall were determined to get it right, and that adjustments could still be made, and, if necessary, would be made.

He had, he said, always been optimistic and had "no use for the 'blighters' who 'blighted' the building from the outset with their pessimism." He noticed that those who had forecast failure because of the noise from the Hungerford Bridge trains now kept very quiet.

**SIR ADRIAN BOULT**

Sir Adrian Boult said that this important hall would undoubtedly be the best in London. He thought that the reverberation time should be at least as long as it is at present and that, in order to give greater force to the strings, their position might be a little higher in relation to the audience.

He quoted the Leipzig Gewandhaus, where he had played piano accompaniments, as the most perfect hall that he knew, and said that by comparison, the Festival Hall was extremely sensitive and that players could not afford to make any mistakes. "In this hall you get back what you give." As a point of detail he mentioned that architects should not forget that players' scores had to be nearly upright on the stands and that vertical lighting from above might sometimes make reading difficult.

**BASIL CAMERON**

Mr. Cameron said that he had found the hall pleasant to conduct in, but that his impression was that there might with advantage be more depth to the orchestra platform so that the players might be more clearly grouped. He had also heard comments to the effect that the platform should be a little higher so as to bring the orchestra into greater prominence. This applied particularly to the position of soloists, who were at present rather close to the front seats of the stalls. He had found the lighting on the orchestra platform quite satisfactory.

**MEMBERS OF THE LONDON PHILHARMONIC ORCHESTRA**

Mr. Riddle said that the hall was a most comfortable one in which to play by oneself but that, when the whole orchestra played, there was rather less feeling of ensemble than in some other halls in which he had played. The arrangement of the platform in tiers meant that some of the instruments probably sounded loud to the audience but relatively soft to members of the orchestra. In general, he had been used to rounder orchestra platforms and thought that it would take a little time to get used to the present arrangement.

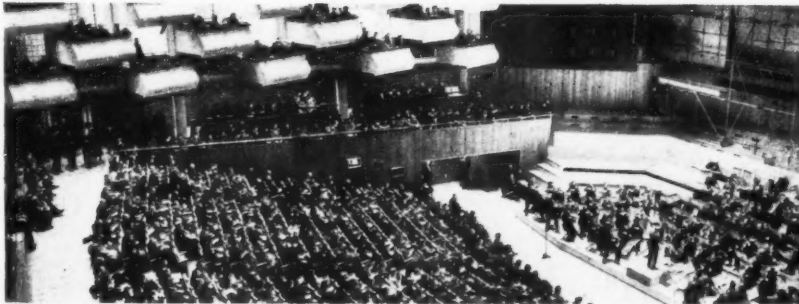
Mr. Alexandra agreed with these comments and said that, as a player, he got the impression that the sound tended to fly away.

Mr. Wilson felt that, at present, the orchestra was rather too near the front seats of the audience and that the hall would be improved if the tone of the strings could be made a little more resonant. He said that the actual arrangement of the players was probably still a matter of experiment and that new arrangements would probably be worked out to suit the hall.

All three agreed that the conditions for playing were excellent and that the stands and lighting were most satisfactory.



Above, the mobile laboratory used by BRS acousticians, William Allen and P. H. Parkin throughout the construction and "tuning" of the hall. Left, one of the trial concerts.





## ROYAL FESTIVAL HALL : DETAILS

a description of PAINTS, FINISHES and DOOR FURNITURE.

**PAINTS.**—One of the characteristics of the interior design of the Festival Hall is that most of the decoration and colour is obtained by the use of materials which are themselves decorative, needing no applied ornamentation: for example, the Hadene marble on the outside of the auditorium, and the elm panelling which lines much of the interior.

Where metals are used they are mostly non-ferrous, and as they have been polished and preserved with a coating of clear lacquer, their natural qualities are displayed. It is notable that so little applied colour has been used at a time when it is fashionable to emphasize form in buildings by contrasting areas of intense colour.

Two areas where paint has been applied extensively are the ceilings of the main foyer and of the auditorium. In both instances the choice of paints was governed by factors peculiar to this building. More often than not paint is chosen because of its reputation for durability or because the manufacturer can supply a particular colour range; but in deciding on suitable treatments for the two ceilings in question the architects were faced with other problems. The foyer ceiling consists of a large and practically unbroken surface of fibrous plaster. The architects wanted this ceiling to be white. But it was very liable to show any irregularities because of specular reflection of the light falling on it from the windows. In order to avoid such reflection a truly matt surface was required, and one which would have some degree of texture. Many combinations of paints were tried on the recommendation of the general contractors, who were consulted throughout in the specification of the paints used in the

building, and a final choice was made of a finely stippled stone paint finished with a flat oil paint. The finishing paint was carefully chosen for its even and particularly "matt" quality. The fibrous plaster ground presented the familiar difficulties of painting on new plaster, but to ensure an even effect a primer was used to adjust porosity.

The suspended auditorium ceiling is also white, and much the same requirements applied as to surface finish. The problem was further complicated, however, by the inclusion of the lime-bound vermiculite which lay on top of the fibrous plaster, and which might cause the usual defects due to the alkalinity of the lime. So that the suspended scaffold could be removed quickly, a paint which could be applied without waiting for lengthy drying out of the background had to be found: it had also to be a "permanent" finish. A synthetic emulsion flat paint was chosen and the ceiling was treated with a sealer, brushed on to obtain adhesion, and with subsequent coats sprayed on. As may be known generally, there were originally certain areas of ceiling lined with woodwool slabs. The possibility of dipping these in dye was investigated because of the difficulty of ensuring that by normal painting methods all the cavities be preserved for acoustic reasons whilst still retaining evenness of colour. It was, however, found unsatisfactory and the slabs were ultimately sprayed with a distemper.

Amongst other types of paint used in various places throughout the building, it is worth mentioning, perhaps, that chlorinated rubber paint was used on the structural concrete in the boiler house. This paint gave the

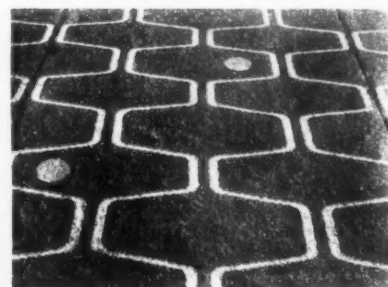
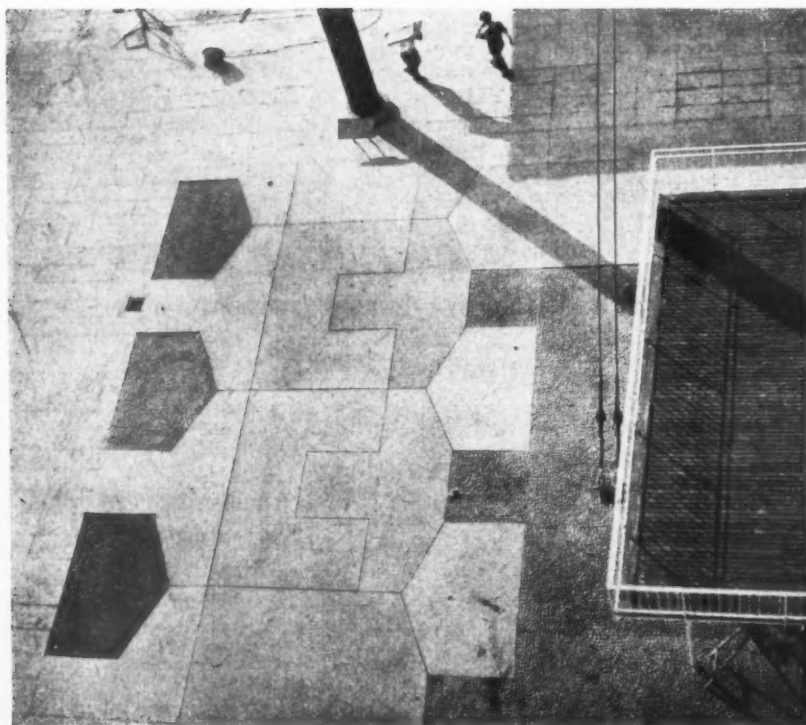
required degree of gloss and was also suitable for application to concrete, a background which is known to affect standard oil base paints adversely.

**DOOR FURNITURE.**—What is particularly noticeable about the door furniture is that the metal portions of it are for the most part polished. The difficulty of maintaining bronze in a polished state has prompted the trade to adopt the general application of artificial toning (accelerated oxidising, either by oven or acid processes) which produce what is loosely termed "BMA finish." A polish can, however, be maintained if the metal is protected with a shellac and if it is rubbed over occasionally with a waxy rag.

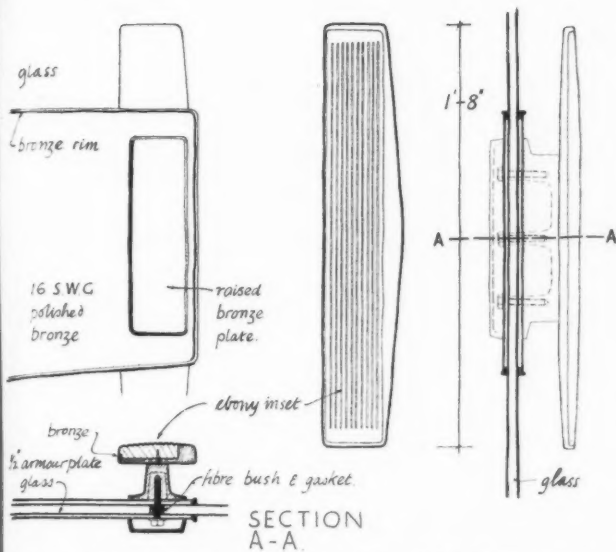
At the Festival Hall an alloy known as "silver bronze" has been much used. The alloy, which contains nickel and is known also as nickel silver, or German silver, is harder than the majority of bronzes used in door furniture and, besides having a pleasing colour, maintains its brightness, when polished, rather longer than other types of bronze. It is, however, unsuitable for certain methods of manufacture, and where varying techniques were necessary, such as drawing, casting and spinning in order to produce the required articles, a different alloy, containing a percentage of manganese was used. Because the bronze is polished, particular care was necessary to avoid the variations in colour which occur as, for instance, between drawn and cast metal.

The combination of wood and metal is a further notable feature of the door furniture, most of which has been specially designed by the architects.

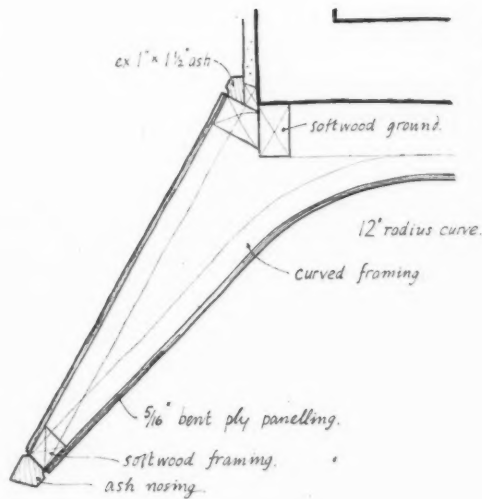
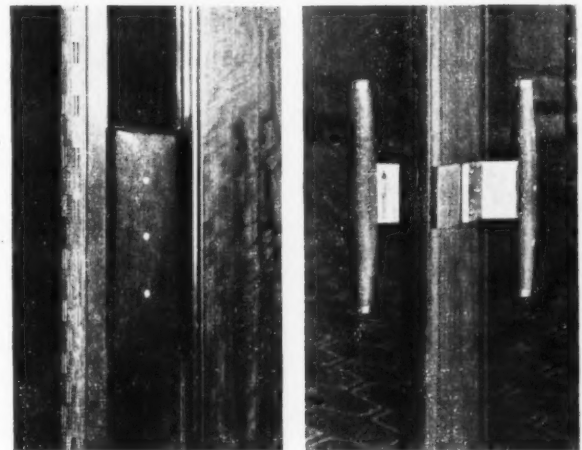
*Pattern and texture at the concert hall: Below left, part of the terrace on the river front, showing the pattern made with panels of paving stone, concrete and cobblestone. Below right, close-up view, showing the texture of the carpet designed by the architects in grey and white. Bottom right, woollen fabric behind the boxes designed by the architects in white and red.*





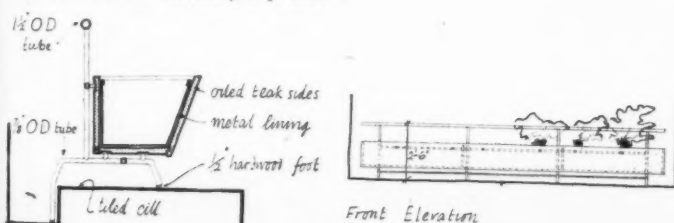


Door furniture. Much of the door furniture is in polished silver bronze, but in certain places, and especially where a variety of techniques were required to produce the particular shapes which were wanted, it was necessary to find an alloy which could be spun, drawn, cast, and used in sheet form, and which, at the same time, would not show too much variation in colour when polished. For this purpose an alloy using a percentage of manganese was used. Above and top right, detail of polished bronze door furniture on external armour plate glass entrance doors. Greater interest and variety of colour is given to the handles by the ebony insets. This combination of wood and polished bronze has been used with effect in a number of other door handles throughout the building. Right, auditorium door, showing glass panel, wooden push-plate and treatment at edge of metal frame to prevent the passage of sound. Far right, bronze and teak handles to foyer doors.

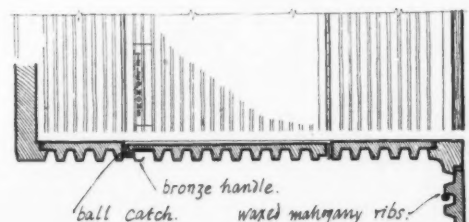


Left, photograph and detail of serving recess in main restaurant, showing curved plywood panelling.

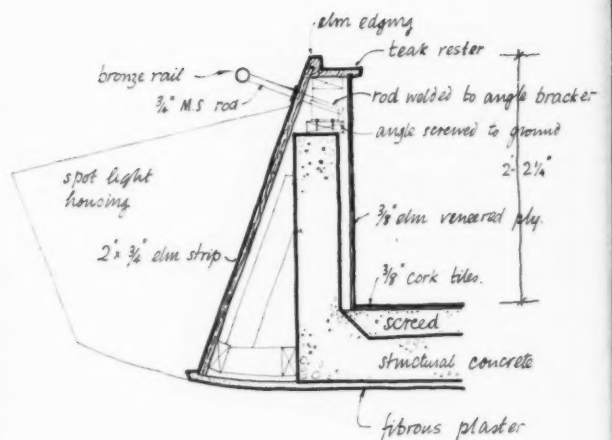
Flower box on the external balcony at 40 level.



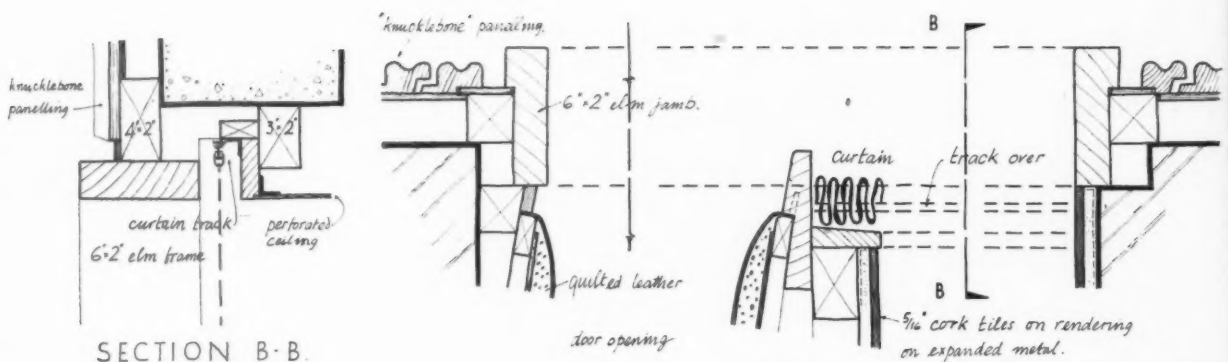
Secret door to telephone cabinet in the panelled lift enclosure.



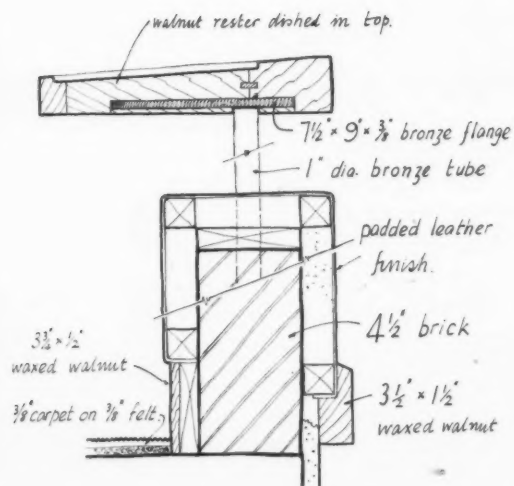
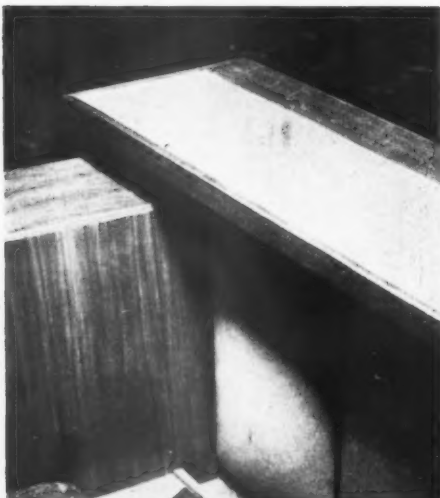
# ROYAL FESTIVAL HALL : DETAILS



Left, photograph, above, section through, front of Grand Tier.



Above, left and right, details of entrance to auditorium at 40 level.



Left, detail, far left, photograph, of front of Royal Box. The leather finish is padded and quilted to form a "V" pattern.

AILS

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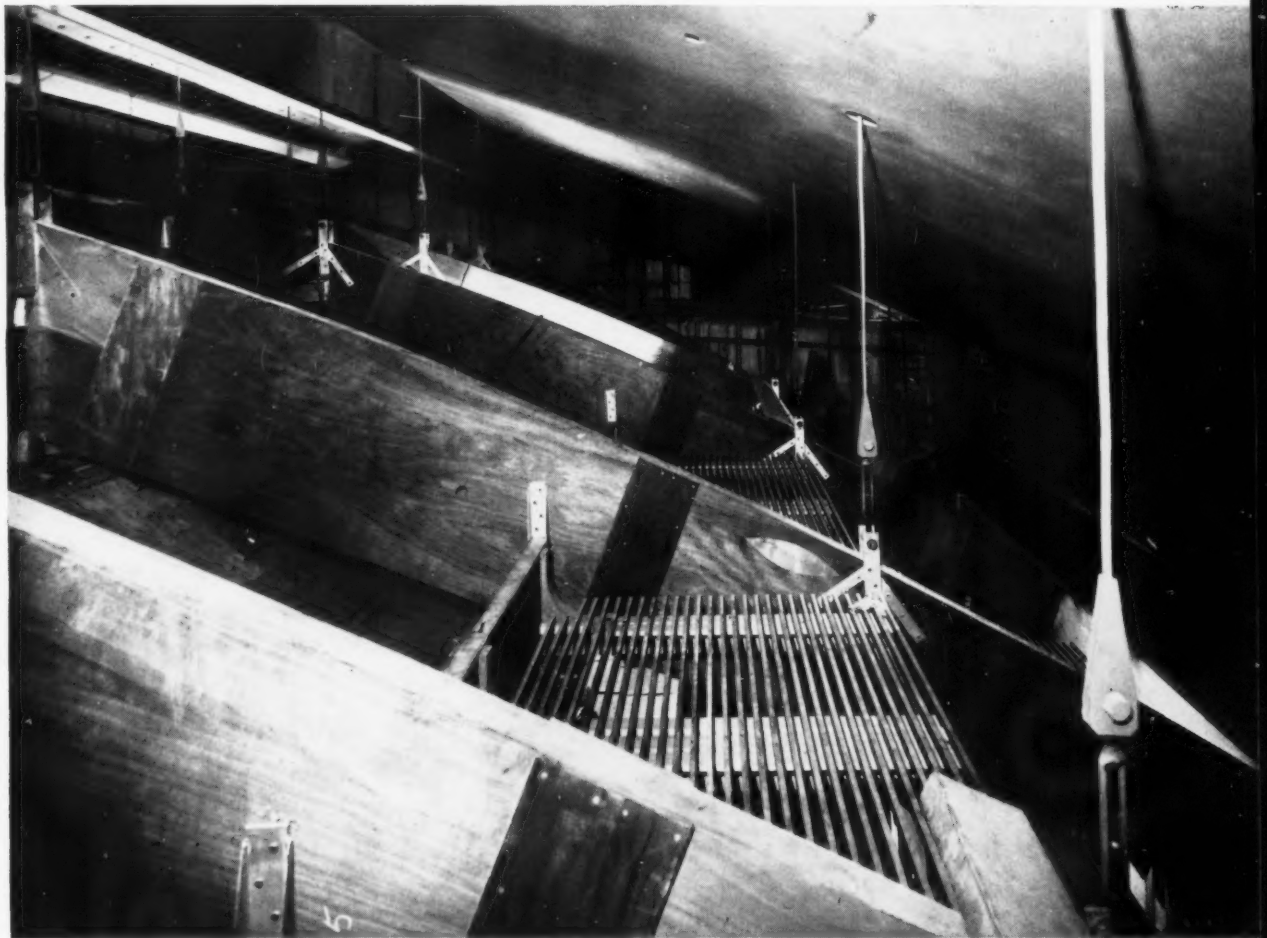


## WORKING DETAIL

## COVERED WAYS AND CANOPIES: 2

ORCHESTRA CANOPY: ROYAL FESTIVAL HALL

*Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C. : Edwin Williams, senior architect-in-charge : Peter Moro, associated architect.*

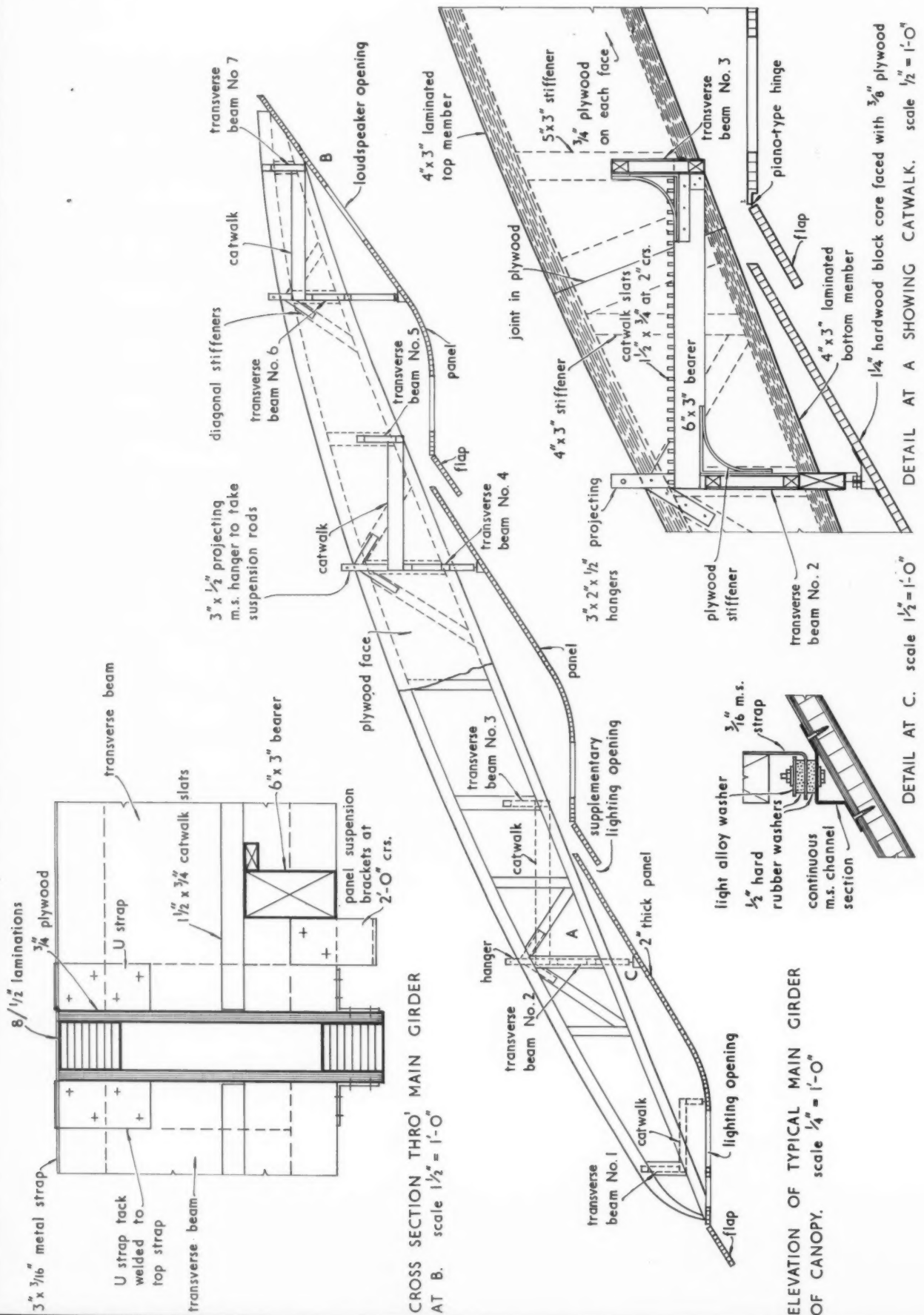


*The photograph shows the arrangement of plywood box girders and transverse beams, the access gangways and the method of suspension from the superstructure.*

**WORKING DETAIL**

ORCHESTRA CANOPY: ROYAL FESTIVAL HALL

Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, associated architect.

**COVERED WAYS AND CANOPIES: 2**

**WORKING DETAIL**

**TICKET STORAGE UNIT: ROYAL FESTIVAL HALL**

*Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, associated architect.*

**FURNITURE AND FITTINGS: 4**



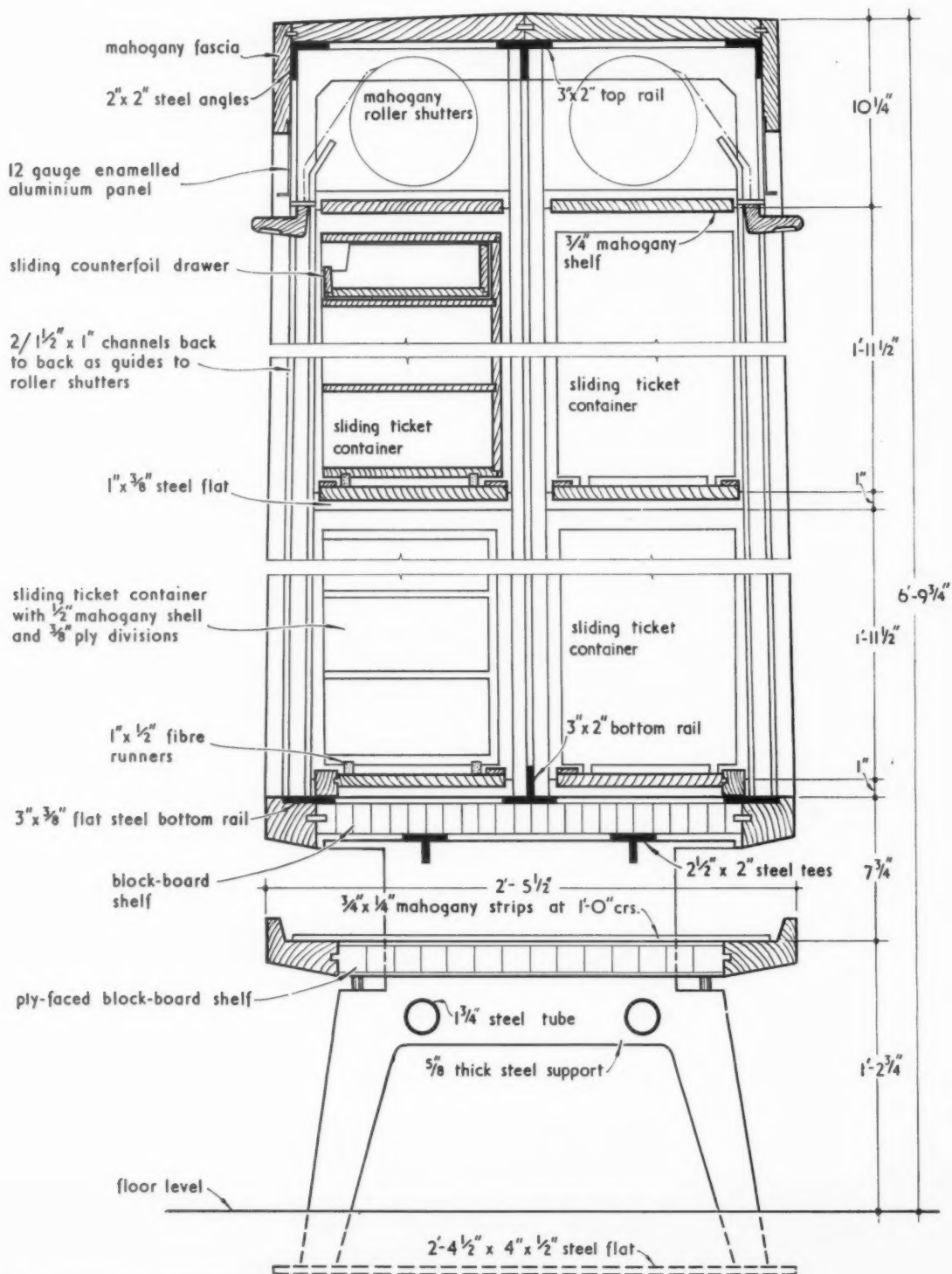
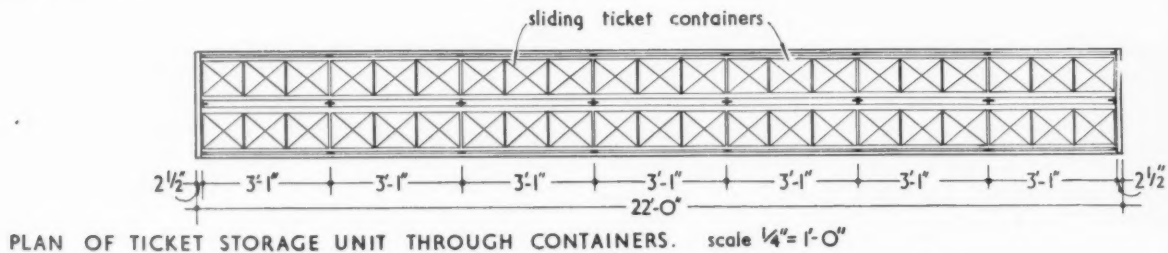
*The double-sided fitting has adjustable ticket containers which can slide laterally or be lifted out and re-inserted in another position.*

## WORKING DETAIL

## FURNITURE AND FITTINGS: 4

TICKET STORAGE UNIT: ROYAL FESTIVAL HALL

Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, associated architect.

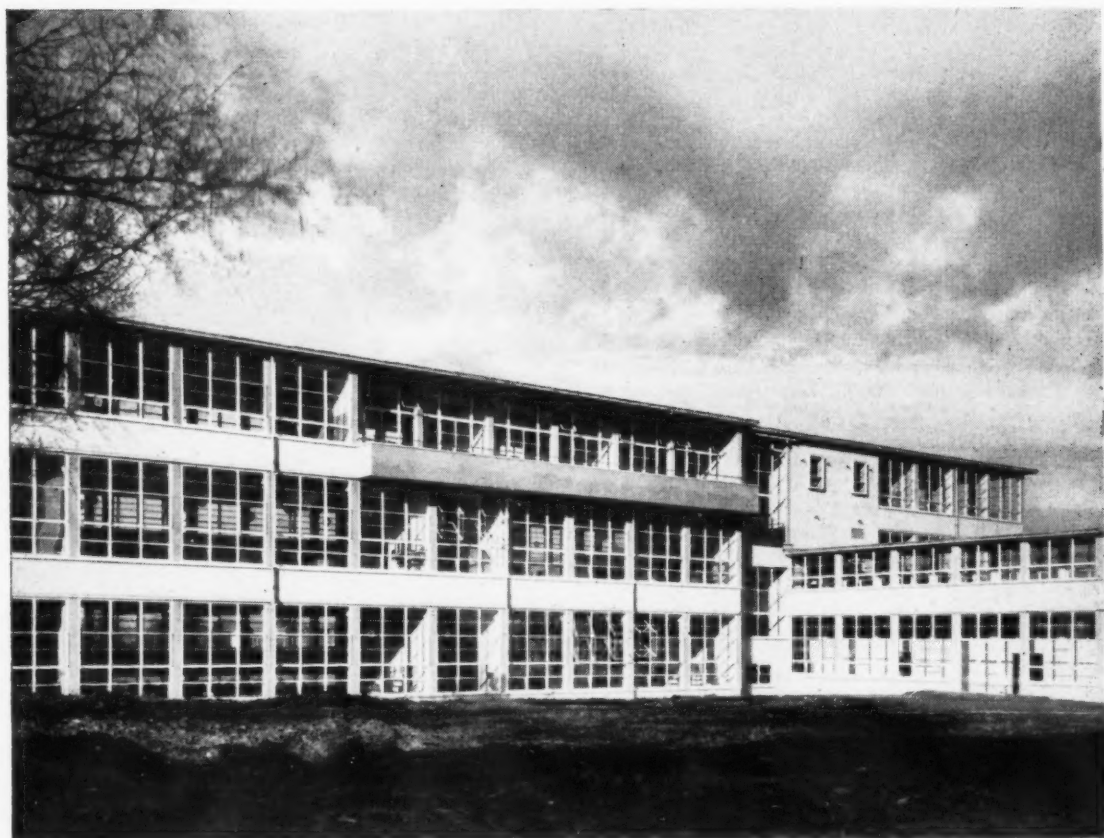


CROSS SECTION THROUGH TICKET STORAGE UNIT. scale 1/2" = 1'-0"









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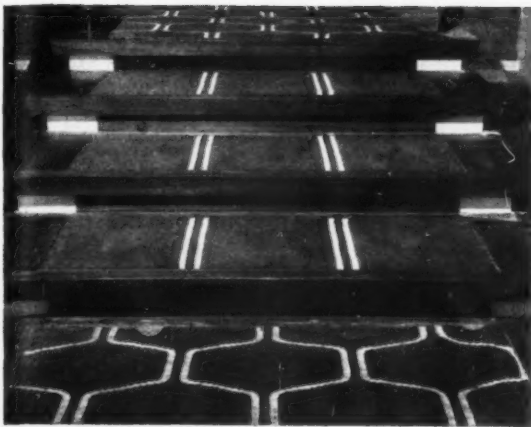
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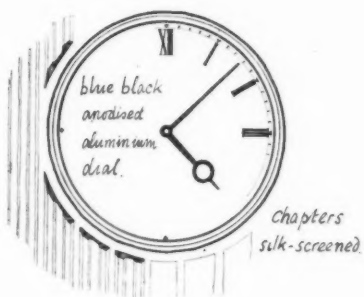
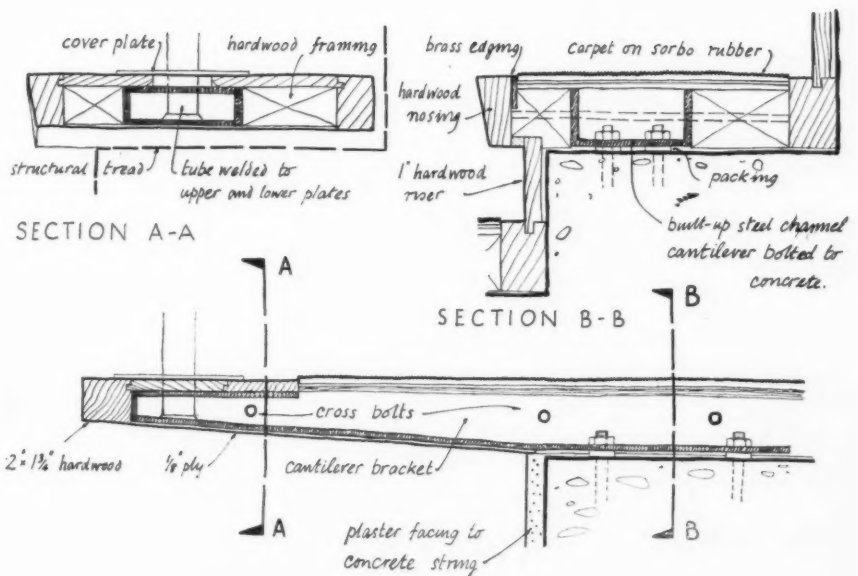
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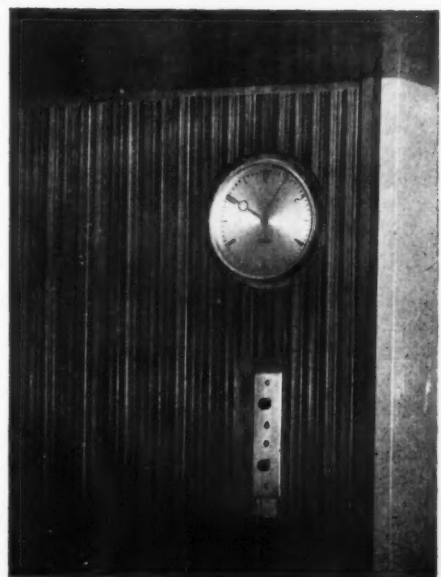
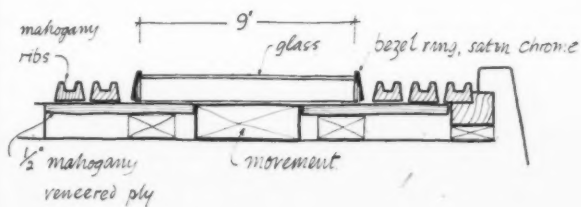




Staircases, balustrades and handrails. Right, staircase to upper foyer, showing construction of treads which project either side of the concrete structure. Above, left, treads with carpet inset and hardwood nosings. Centre, typical balustrade to foyers and stairs. Steel standards supported on steel core rail to which a wooden cap is screwed. The steel standards are sheathed with gun metal tubes on the top and bottom and with a plastic centre piece. Bright bronze brackets support armour plate glass. Right, wooden handrail to staircase balustrade.

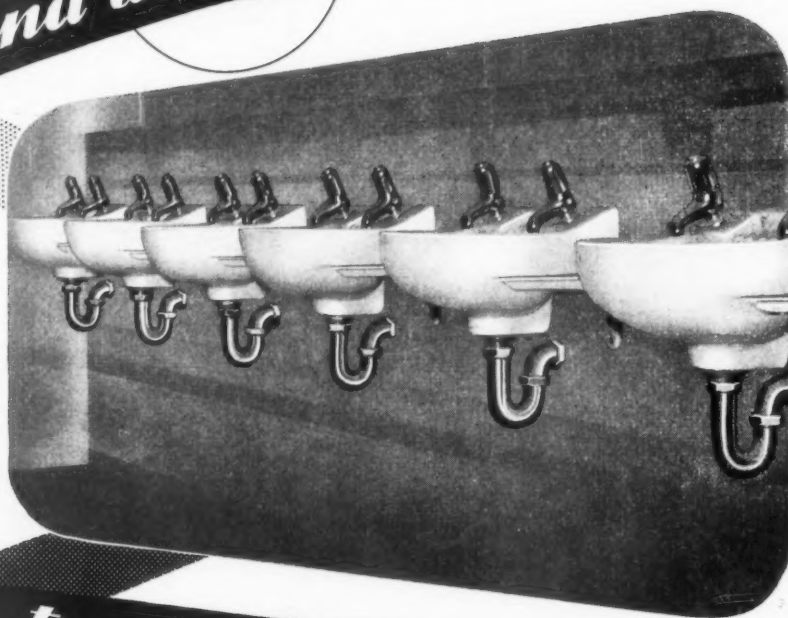


Left, details of electric impulse clocks fixed in the panelling in the lift recess. Right, photograph of clock, with lift push buttons below.



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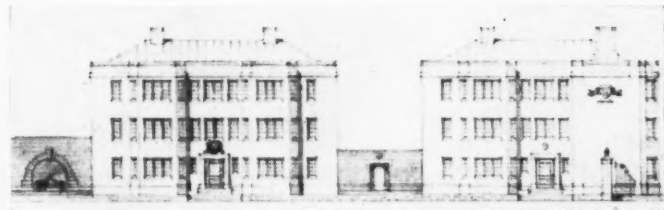
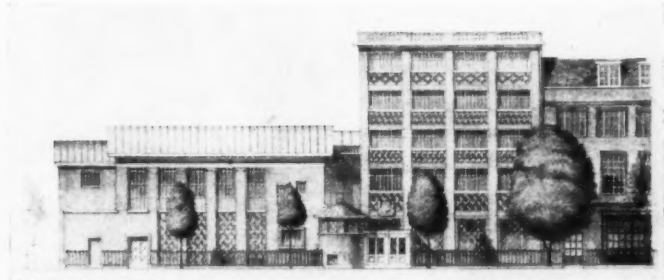
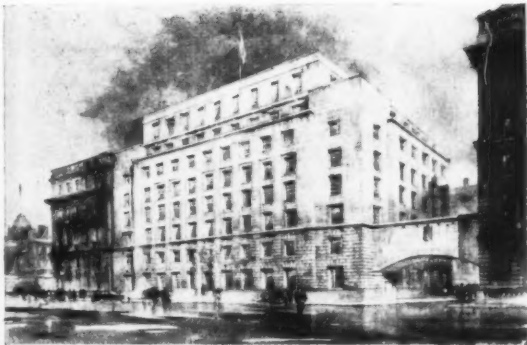
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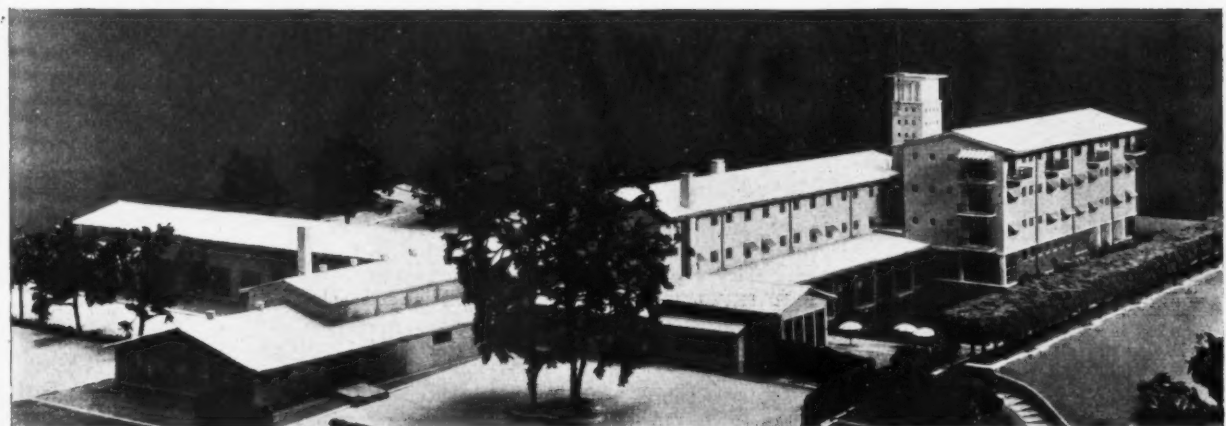
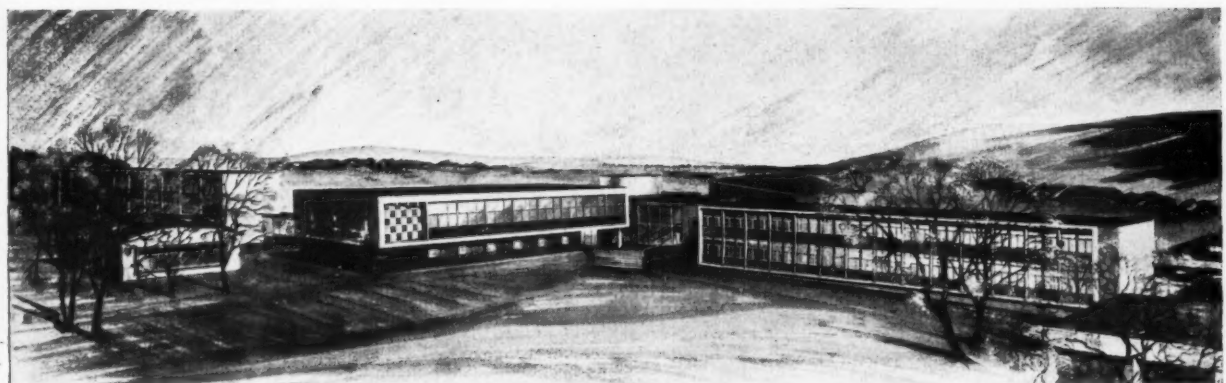
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SOME DESIGNS AT THE ROYAL ACADEMY EXHIBITION



Some of the designs on view at the Royal Academy Exhibition which opened to the public last Saturday. Top left, new government offices, Whitehall Place, by Clifford E. Mee. Left, Plashet Grove Secondary Modern School, for the County Borough of East Ham, by George Whitby. Below, College of Further Education, Aberdare, by Gollins Melvin and Partners. Bottom, model of The Ridgeway Hotel, Lusaka, by G. A. Jellicoe. Top, Westminster Technical College extension and assembly hall, by H. S. Goodhart-Rendel. Above, part of a design for four new buildings for Pembroke College, Oxford, by Sir Hubert Worthington.





# BISON

and the

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Bison Floors and Roofs were specified for many of the Festival Buildings, in which the advantages of using

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### BISON EXHIBITS

Bison is also *on show* at the Festival—at the Exhibition of Industrial Power. Here you may see a section of

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## THE INDUSTRY

By Brian Grant

### THE BRITISH INDUSTRIES FAIR

Every year the British Industries Fair occupies more and more floor space, and any attempt to look at it properly is something of a major operation. The layout of Castle Bromwich, fortunately, is the same as in previous years, the main section of interest to architects being Building and Heating (Group B), though it is still rather necessary to look at the Hardware and Electrical sections as well. Since the war there has been a very marked increase in the outdoor exhibits. Before 1939 there was little more to be seen than a tractor or two giving occasional ploughing demonstrations, but now there is an area of 3 acres or more, packed with contractors' plant, varying from portable drills to 15 yard scrapers and excavators. Most of this plant is designed and made in this country, a welcome change from the time when all heavy earth-moving equipment had to be imported from America. There are, for example, the new Vickers tractors, innumerable mobile cranes lifting up to 10 tons or so, and small tractors and hoists which help to make smaller housebuilding jobs less expensive. It is often thought that the building industry does not make as much use as it should of the many different mechanical aids now on the market, but I think a visit to almost any building site will show that many firms, even the small ones, make a point of using such things as power barrows and hoists; while a visit, for instance, to the South Bank site reveals that the use of power hand tools, such as saws, planes and drills, is also becoming fairly common.

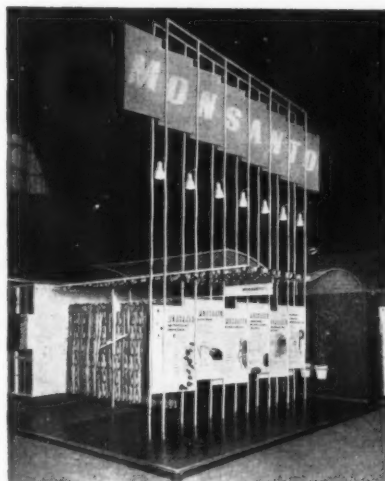
So far as architects are concerned, Castle Bromwich has a number of excellently designed stands, though rather more in the electrical and engineering sections than in the group devoted to building, were designed by architects.

For those who have time to visit the whole exhibition, the Furniture, Textiles and Plastics sections are at Earls Court, but a visit to Olympia seems to be unnecessary unless you want to buy a new radio set or vacuum cleaner.

Dealing with the exhibits themselves, there was comparatively little which has not already been seen at various building exhibitions or at the Ideal Home. A new stainless steel sink by W. H. Paul Ltd. has a tap in the cupboard below the sink and is intended for filling buckets—quite a useful idea, for with present day designs there is frequently not enough room for the lip of the bucket to go under the tap in the sink.



*One of the standard stands in the National Hall, Olympia, designed by Hulme Chadwick.*



*Stand for Monsanto Chemicals Ltd. at Olympia, designed by Jock Kinneir, of Design Research Unit: consultant Misha Black: curtains designed by Jacqueline Groag.*

Newton Chambers & Co., a firm which seems to make almost everything from disinfectants to excavators, have just produced a new alternative to the usual liquid soap

dispenser. The usual type, they say, suffers from the disadvantage that people use more soap than they need and, also, that the complete fitting is often stolen. They have evolved a new type of soap with about the same consistency as shaving cream and an "unstealable" dispenser for it, designed by our old friend Mr. Christian Barman, in collaboration with Newton Chambers technicians. The back part of the fitting is screwed to the wall and the main body slides into it and is spring locked in position. When the soap in the bottle is used up, a special key is used to remove the fitting and a new bottle can be inserted. Each bottle holds enough soap for 2,000 washes and the bottles sell at 40s. a dozen, including purchase tax, while the wall fitting costs 30s. This fitting is intended mainly for washrooms in factories and restaurants, but I see no reason why it should be out of place in your own bathroom if you happen to like that sort of thing. Assuming a family of four, each washing four times a day, my arithmetic suggests that you should use three bottles of soap a year, or about 10s. worth, which seems a good deal cheaper than buying soap in cakes.

The Radiation group stand this year is devoted entirely to solid fuel appliances, perhaps as a result of Mr. Gaitskill's pro-



*Stand for Distillers Co. Ltd. at Olympia, designed by Ian Bradbury, of City Display Ltd.*



*Stand for British Plastics Federation at Earls Court, designed by Richard Levin.*

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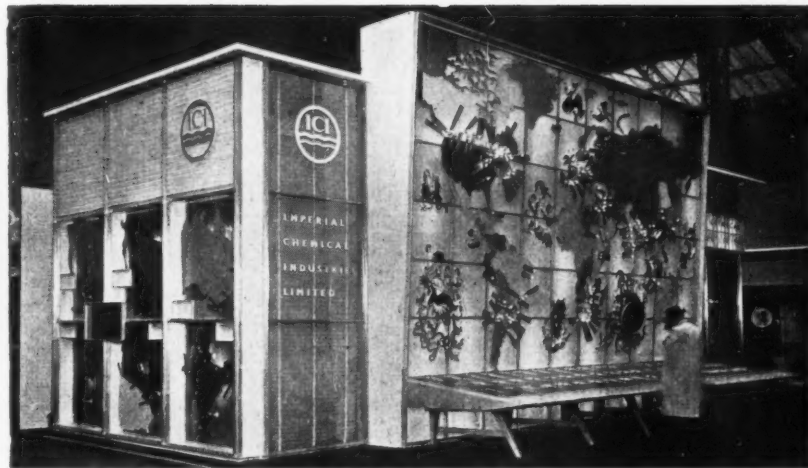


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Stand for ICI Ltd. at Olympia, designed by Albert Smith.

hibitive rate of purchase tax. The whole-house warming system installed by Radiation in the experimental houses at Stanmore has already received fairly wide publicity, and its warming equipment has been put into immediate production, in both the gas and solid fuel burning versions. The rated output of the unit is 50 gallons of water per day at 140° F. and space heating equivalent to 30,000 B.Th.U. per hour at an efficiency of 60 to 75 per cent., according to output. For a house of a thousand square feet of floor area, built to Egerton standards, this will maintain the whole house at 60° F. at all times, the living room and dining space at 67° F. for eight hours, and the bedrooms at 65° F. for four hours. All this on an annual consumption of four tons of fuel. The height of the unit itself is seven feet, and it will fit into a recess 48 in. wide by 26 in. deep. This includes the space taken up by a hot-water cylinder. Only a normal 9-in. by 9-in. flue is necessary.

Among other exhibits, I was amused by a "hearing hat for deaf ladies with secret pockets which house the aid, batteries and earphone." If policemen can have miniature radio sets in their helmets I suppose this idea is really quite sensible as it avoids the all too visible wires, boxes and microphones here and there. There is an alternative model for men "worn behind the tie." One minor discovery—Wolsley Sheep Shearing Machine Co., Ltd., have evolved a mobile canteen for cows. From this they have invented the deplorable name of "Cow-feteria."

## Announcements

A revised form of application for import licence ILB/3 (revised), for goods other than vehicles, machinery, plant, scientific instruments and parts, has been introduced by the Import Licensing Branch of the BOT. The form provides that the applicant, in effect, completes his own form of import licence with two copies, and, in approved cases, this will be validated as an import licence by the BOT. The date of the issue of the licence will be indicated by a perforated device. Whilst applications for licences on the old form of application will continue to be accepted by the BOT, it is hoped that importers will use the new form as soon as possible. Copies may be obtained from the BOT, Import Licensing Branch, Romney House, Tufton Street, London, S.W.1. (Telephone: ABBey 9080), or from all Regional Offices of the BOT.

The BOT, in consultation with the Central Price Regulation Committee have made the General Hollow-ware (Maximum Prices) (Amendment No. 4) Order, 1951. This Order, which has been made after a careful review, further amends the General Hollow-ware (Maximum Prices) Order, 1949, as amended, by omitting the First Schedule, which laid down manufacturers' cash maximum prices for specified descriptions of cast iron hollow-ware, and fixing as maximum prices those charged by manufacturers during the "basic period" (June-July, 1949) together with an increase of 22½ per cent. in the case of cast iron hollow-ware with tinned interior finish, and of 10 per cent. in the case of cast iron hollow-ware with black, barffed or enamelled interior finish. These increases, which are the first since the end of 1947, have been granted at the request of the manufacturers to take account of the increased cost of tin and other raw materials. The Order came into operation on April 23. Copies of the Order are now on sale.

Mr. Kenneth Morrison, until recently general manager of Messrs. Penman & Co. Ltd., Caledonian Boiler Works, Glasgow, has taken up the appointment of technical manager with Messrs. Shaw-Petrie Ltd., Pipework Contractors, of Hillington, Glasgow, and London. Mr. Morrison will be responsible for the design, drawing office and estimating work, and also for the technical supervision of the production.

Messrs. W. H. Watkins & Partners, F.R.I.B.A., have opened a branch office at 125, Harbour Street, Kingston, Jamaica, British West Indies, and will be pleased to receive trade catalogues.

## Corrections

In our issue for April 26 we omitted to mention that H. Gottfeldt is consulting engineer in conjunction with Felix J. Samuely for the Transport Pavilion on the South Bank exhibition site. We also omitted to mention that Hening and Chitty, F.R.I.B.A., are the co-ordinating architects for the festival, in addition to being the designers and architects for the Town Planning Pavilion, the Administration Block, the various lavatory blocks the layout of the Lansbury site, its general decorative treatment and details of its circulation route. The caption on page 511 was misleading as John Wright was responsible only for the decorative treatment of the crane (vertical feature) and not for the other features in the picture, all of which were the work of Hening and Chitty, F.R.I.B.A.

## Buildings Illustrated

*Royal Festival Hall* (pages 590-609). Architects: Robert H. Matthew, A.R.I.B.A. (Architect to the LCC), J. L. Martin, M.A., F.R.I.B.A., PH.D. (Deputy Architect to the LCC), Edwin Williams, M.B.E., M.A., B.A.R.C.H. (Liverpool), F.R.I.B.A., M.T.P.I. (Senior Architect-in-Charge), Peter Moro, F.R.I.B.A., DIP.ARCH. Consulting Civil Engineers: Messrs. Scott & Wilson. Acoustic Consultants: Hope Bagenal, D.C.M., F.R.I.B.A., and members of the staff of the BRS. Boilers and electrical work: J. Rawlinson, M.ENG., M.I.C.E. (Chief Engineer to the LCC). Heating and ventilation: R. Coe, M.I.H.V.E., and staff of the heating and ventilation section of the LCC Architect's Dept. Quantity Surveyors: Frank N. Falkner & Partners. Organ consultant: Ralph Downes. The architect's staff working on the scheme included A. Mackenzie, B.A., A.R.I.B.A., A.M.T.P.I., B. A. Le Mare, A.R.I.B.A., R. A. Laker, A.R.I.B.A., J. Ball, T. W. Bliss, A.R.I.B.A., J. S. Cousins, A.R.I.B.A., J. T. Dannatt, A.R.I.B.A., DIP.ARCH., G. W. Dunton, A.R.I.B.A., Miss M. M. Forster, A.R.I.B.A., W. E. Greaves, A.R.I.B.A., J. F. Hammond, A. J. Hepworth, A.R.I.B.A., Mrs. M. Hurst, M. H. Kenchington, A.R.I.B.A., M. Le Pelley, A.R.I.B.A., DIP.ARCH., A. J. Lyne, J. Mayo, A.R.I.B.A., P. K. Nicoll, F. L. Peatfield, A.R.I.B.A., C. F. Overy, L.R.I.B.A., P. J. C. Scott, J. W. G. Smith, G. Subiotto, A.R.I.B.A., DIP.ARCH., G. F. Turner, B.A.R.C.H., A.R.I.B.A. Clerk of Works in Charge, T. W. Turner. Administration, Miss K. L. Gumbley. Specialist designers and craftsmen: furniture, Robin Day, A.R.C.A.; fabrics, Misses Hilary Bourne and Barbara Allen; engraved glass, Milner Gray, R.D.I.; lettering, Peter Morton; door motifs, Jesse Collins. The indoor and outdoor planting was the responsibility of the Chief Officer, Parks Dept. General contractors, Messrs. Holland & Hannen and Cubitts. Contract manager, S. L. Reynolds; site agent, G. D. Herbert. Principal sub-contractors and suppliers as follows: Orchestra canopy, ballet stage and various joinery, Aircrow & Jicwood, Ltd.; sprinkler installation and hydrants, Automatic Sprinkler Co.; floor springs, Robert Adams; sanitary fittings, Adamsez; railings, ladders and screens, metal stairs to switchroom, boiler house gantry, kitchen plenum stairs, car park railings, terrace railings, ventilation grilles, Allen & Greaves; metal cramps, etc., Abbey Building Supplies; surrounds to Vectaire grilles, various railings, indicator panels, ventilation louvres, servery screens, orchestra track, ornamental louvres, A. Arden & Co., Ltd.; BBC window blinds, J. Avery & Co.; electrical power motors, Bull Motors, Ltd.; cloakroom fittings, Bath Cabinet & Artcraft; dewatering of site, Blaw Knox; D.P.C. and basement tanking, Wm. Briggs & Sons, Ltd.; kitchen equipment & cold storage, etc., Benham & Sons; starting equipment, Brookhirst Switchgear; Portland stone, Bath & Portland Stone Firms; non-return boiler valves, J. Blakeborough & Sons, Ltd.; electric wiring Berkeley Electrical Engineering; boiler house hangars, E. C. Blackmore; asbestos cladding, Belmont Building Supplies; manhole covers (heavy), Broads; granolithic, F. Bradford & Co.; cooker hoods, kitchen and serveries, G. F. E. Bartlett & Sons; steel shelving, Burling, Ltd.; external rendering, A. H. Butcher; metal lathing, B.C.L., Ltd.; seating for auditorium, Cox & Co. (Watford), Ltd.; boilers, Cochran & Co. (Annan), Ltd.; linoleum, Catesbys, Ltd.; external tiling, Carter & Co.; internal and external window fitting, bronze mat edging and curtain track, and A.P. doors, Crittall Manufacturing Co.; leatherwork, Connolly Bros.; bored piles, Cementation Co.; duct linings, H. W. Cullum & Co.; Metal Bracketing, Campbell, Denis,

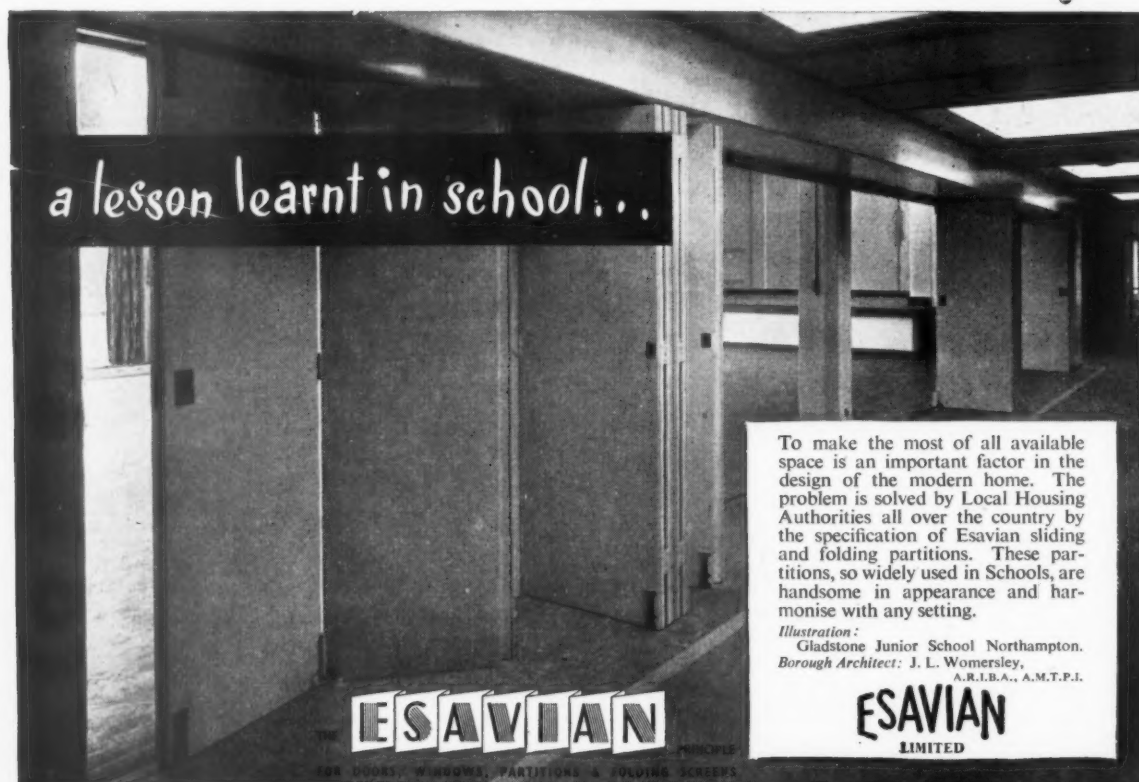


Ltd.; cement, Cement Marketing Co.; electrical items, Chloride Batteries, Ltd.; Dunlopillo seating, Dunlop Rubber Co., Ltd.; heating convectors, Dunham & Co., Ltd.; ventilating fan, Davidson & Co., Ltd.; terrazzo sanitary annexes and special stair-tread, Diespeker & Co., Ltd.; ductwork fittings, Drayton Regulator & Instrument Co.; electrical items, Dorman & Smith Co.; electric wiring and acoustic hut, temporary lighting, Engineering Services Installations; C.I. rollers and chairs, Edie, Henry, Ltd.; fibrous plaster and metal bracketing, sundry joinery and external staircase on terrace, and coats of arms, Esdaile, David & Co., Ltd.; lavatory basin traps, Econa Modern Products; box office fittings, A. Edmonds & Co.; builders' items, Eastwoods, Ltd.; metal lathing Expanded Metal Co., Ltd.; lightning conductors, W. J. Furse & Co.; general plate glazing and mirrors, Faulkner, Greene & Co.; coverings for seating, etc., Fothergill & Harvey; man-hole covers, Fraser Ellis; heating equipment, Fairitt Engineering Co.; cementone rendering, Jos. Freeman Sons & Co.; insulation material, Fibreglass, Ltd.; telephones, G.P.O. (London Telecommns. Region); insulation material, Gyproc Products; cast iron pipe, pumping units, Gwynnes Pumps, Ltd.; heating, etc., ductwork and various fittings, J. Gardner & Co., Ltd.; metal windows, Jas. Gibbons; Bostwick gate, Gardiner, Sons & Co.; bar fittings, etc., Gaskell & Chambers (London), Ltd.; central incinerator and light fittings, General Electric Co., Ltd.; flagpole erection, J. W. Gray & Sons; trial borings, Ground Explorations, Ltd.; organ, Harrison & Harrison; plumbing and C.W. storage cisterns, heating and ventilation, heat pump piping, erection boiler house piping, and pipe lagging, Hall Matthew & Co., Ltd.; handrail brackets and fixing, auditorium joinery and general decorative woodwork, H. H. and Cubitts (Joinery Dept.); electrical items, Hattersley, Ltd.; electrical items, Henleys Telegraph Works Co.; collapsible grilles,

Haskins; acoustic ceiling, Holoplast, Ltd.; fireproof doors, Haywards, Ltd.; copper roof, Holloway Metal Roofs, Ltd.; wire mesh screen, G. A. Harvey; special lighting fittings, Hume Atkins; laminated stairtreads, Hordern Richmond, Ltd.; heating technical equipment, Holden & Brooke; automatic towel cabinets, Hygiene Products (Gt. Britain), Ltd.; cork linings, etc., stucco marble columns, Jaconello, Ltd.; external stone walling (decorative), W. M. Knight; boiler house instrument panel, heat pump meter, Geo. Kent, Ltd.; boiler house pipe lagging, Kitsons Insulations, Ltd.; lettering in public areas, Lettering Centre; service lines for transformer and heat pump, London Electricity Board; spiral metal stairs, Lion Foundry, Ltd.; Lenscrete glazed panels and glass bricks, Lenscrete, Ltd.; reconstructed stone paving, Liverpool Artificial Stone Co.; ornamental panels, London Sand Blast & Decorative Glass Co.; foundation stone and commemorative tablet, Peter Morton; ironite laying, solid plastering, Wm. Miller (Plasterers), Ltd.; water supply, Metropolitan Water Board; access covers and frames, Meadow Foundry Co.; terrazzo to staircases, Marriott & Price, Ltd.; auditorium boxes and leatherwork, terrace expansion joints and special decorative joinery, H. H. Martyn; ventilation equipment, etc., Mather & Platt; ventilation equipment, etc., Matthews & Yates; louvres at temporary end, Moffat Engineering Co.; roof asphalt and Nacorete bituminous roofing, Neuchatel Asphalte Co., Ltd.; Paxfelt, Newalls Insulation Co., Ltd.; Derbydene, Nine Elms Stone Masonry Works; dial thermometers, Negretti & Zambra, Ltd.; shower fittings, Nicholls & Clarke; cycle racks, A. A. Odoni; armour plate glazing, Pilkingtons; water softening plant, Permutit, Ltd.; sanitary tiling, Parkinsons (Wall Tiling); window cleaning gear, Palmers Travelling Cradle & Scaffold Co., Ltd.; R.F.H. lettering (external), Pearce Signs, Ltd.; structural waterproofing in R.I.W.

marine cement liquid asphaltic composition, R.I.W. Protective Products Co., Ltd.; calorifiers, Royles, Ltd.; H.W. circulating pumps, Rhodes, Brydon & Youatt; steel supply bending and fixing, Rom River Co.; steel roof trusses, steel frame for temporary end, and bridge, Redpath Brown & Co.; hand-rail to stairs and doors, and various paneling, Rippers, Ltd.; heating equipment, Rheostatic Co.; insulation material, Stillite, Ltd.; steel headers, heating tubes, mild steel pipe (boiler house), Stewarts and Lloyds; boiler house equipment, Senior Economisers, Ltd.; steel scaffolding, entrance canopies and roof pergolas, Scaffolding (G.B.), Ltd.; vacuum plant, Sturtevant Engineering Co.; internal automatic telephones, Siemens Bros. & Co.; gas installations, South Eastern Gas Board; ornamental balustrades, edgings, light fittings, etc., Starkie Gardner, Ltd.; sound amplification, Standard Telephones & Cables; ironmongery, Adrian Stokes; suspended kitchen ceiling, Structural Insulations, Ltd.; orchestra lighting, Strand Electric & Engineering Co.; insulation material, Supalith, Ltd.; hydraulic jacks, Tanges, Ltd.; boiler house equipment, Thermo-control Installations, Ltd.; waterproof backing to external tiling, Tretol, Ltd.; wood strip floors, various staircase edgings, Vigers Bros., Ltd.; heating equipment, Vokes, Ltd.; site excavations, Willment Bros.; lifts, Waygood Otis, Ltd.; boiler valves and drain cocks, Chas. Winn & Co.; organ blower, Watkins & Watson; slate in special areas (window sills), Walton Gooddy (Construction), Ltd.; heating items, Frank Wigglesworth & Co.; heating items, Wellington Tube Works; builders' material, Wraybury Sand & Gravel Co.; veneers, John Wright (Veneers), Ltd. General manager of the Royal Festival Hall, John Shove.

The editors wish to acknowledge the help given by M. J. Peto in the preparation of the notes on and drawings of the historical survey on p. 591-593.



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Illustration:  
Gladstone Junior School Northampton.  
Borough Architect: J. L. Womersley,  
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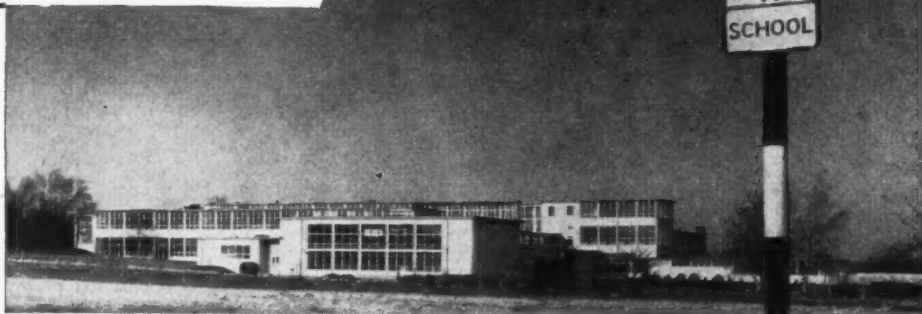


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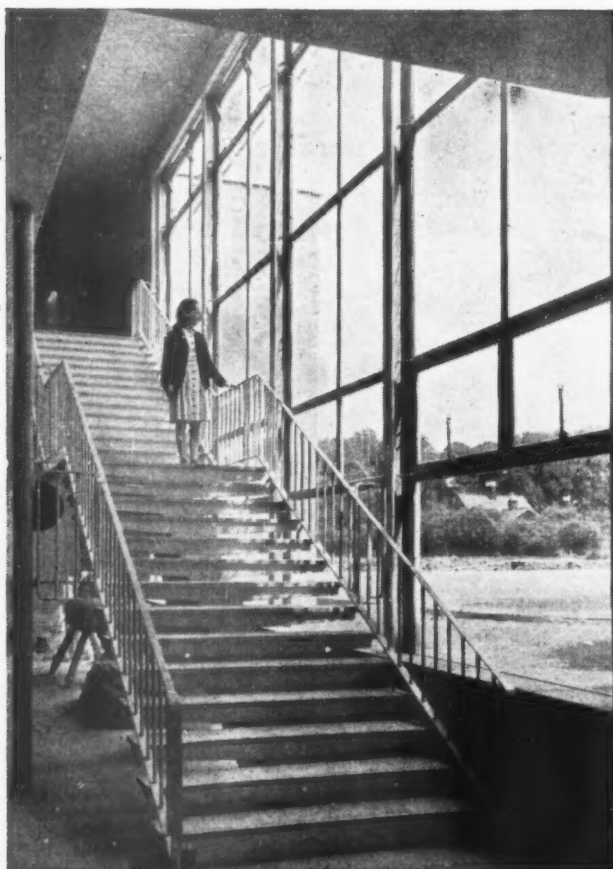
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## Windows to look at...

*Today, at the new Stevenage School, the windows and doors have become showpieces of skilled design and manufacture: a tribute both to the Architects, F. R. S. Yorke, F.R.I.B.A., E. Rosenberg and C. S. Mardall, A.R.I.B.A., and also to the window-makers they specified: Williams & Williams Ltd., of Chester.*

The new Stevenage school is a study in the intelligent use and manufacture of windows: they form, with their slender, graceful lines, an attractive and yet strictly economical cladding to the structural steel frame. Vast areas have been filled with glass and steel. Nevertheless on examination it will be seen that the amount of metal used is surprisingly small. The Architects planned an 8 ft. 3 ins. window module, and Williams & Williams engineers designed a series of standardised components which were assembled in different ways for each category of window in the building.

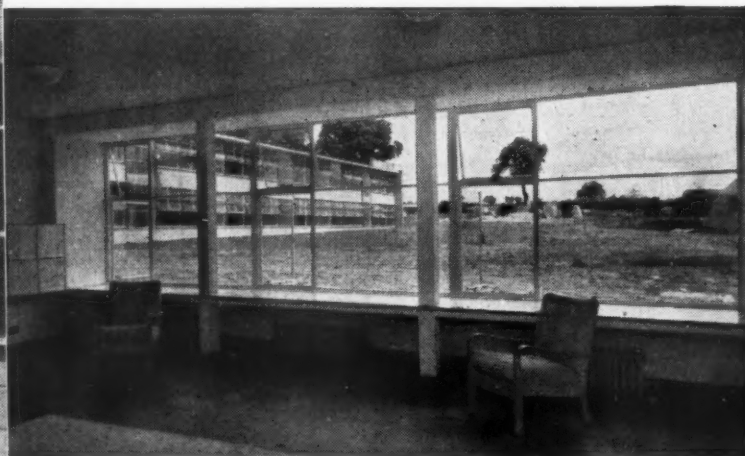
The window most generally used had a fixed light below transom and opening lights above. All the latter were interchangeable—a factor which greatly facilitated erecting and glazing. The stanchions were masked externally by uniform pressed metal cover plates and no screws or bolts were visible.

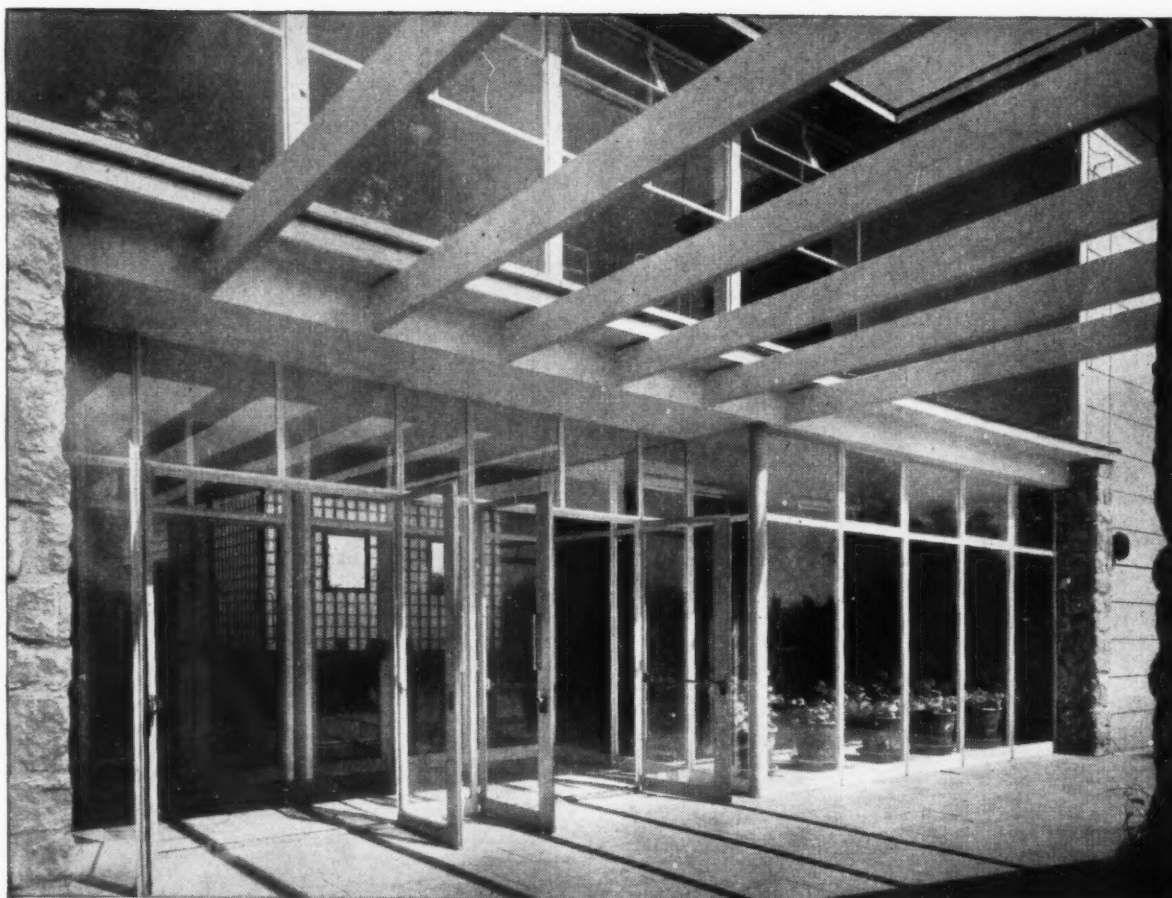
**Four in one** The main staircase window is composed of four 8 ft. 3 in. module units set in an opening 33 ft. x 20 ft. Williams & Williams made the transoms form the bracings for the stanchions, eliminating the need for heavy-looking structural steel members. The result is a simply-styled window perfectly in keeping with the character of the building.



**Windows with fins** Streamlined aluminium sunshields, deflectors and cills (left) specially designed for the building by Williams & Williams form part of the windows of the special subject classrooms in the main block. The vertical fins are 12 ft. high and project 1 ft. 9 ins. The horizontal deflectors which shield the ground floor windows from overhead sunshine are pivoted to raise and lower for ease of cleaning.

**Staffroom with a view** The light and pleasant staffroom (below) is an example of the use of Williams & Williams windows to fill wall space to advantage. The area is spanned by a range of alternating fixed and opening lights, the metalwork of which is neatly proportioned both for the sake of appearance and for economy in the use of steel. Through these windows the sunlit south elevation of the main classroom block is clearly visible.





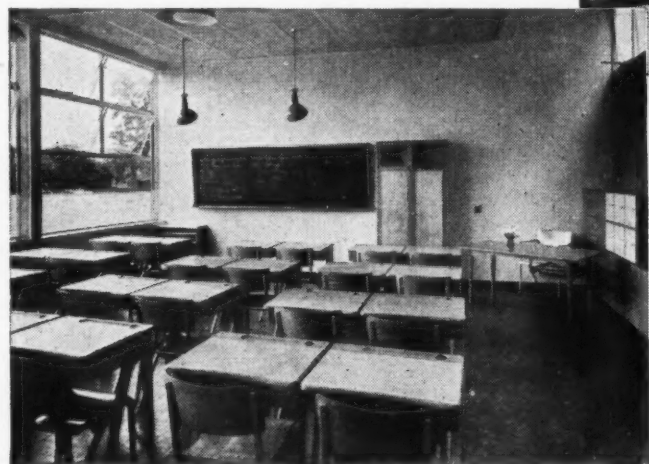
**Loggia entrance** The photograph above shows the main entrance to the new Stevenage School. It is a happy combination of good design and adroit use of standardised purpose-made units. The metal doors are well-proportioned and in keeping with the range of sidelights to the right and also with the sunlights above. It will be seen that Williams & Williams have incorporated the structural round columns of the building in the general window design and have given special emphasis to them, using them as the main mullions. Above the main entrance a series of the general windows accord naturally with the overall style of the entrance facade.



**A light hall** Doors and windows along the two longest sides of this hall offset the comparative lowness of the ceiling and contribute to a light and airy appearance.

**One of the class rooms** This classroom is typical of the new Stevenage school: the main windows on the left are of the general pattern, on the 8 ft. 3 in. module, and there are also smaller windows along the top of the right hand wall to increase the admission of daylight.

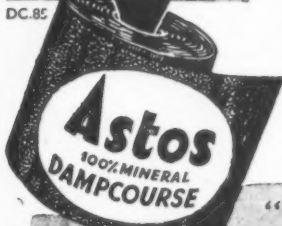
*The aluminium cills and pressed metal stanchion plates and sun deflector fins at Stevenage School were so well liked that these features are now being incorporated in other schools, together with windows and doors designed and made by Williams & Williams Ltd. at the Reliance Works, Chester.*







D.C. 85



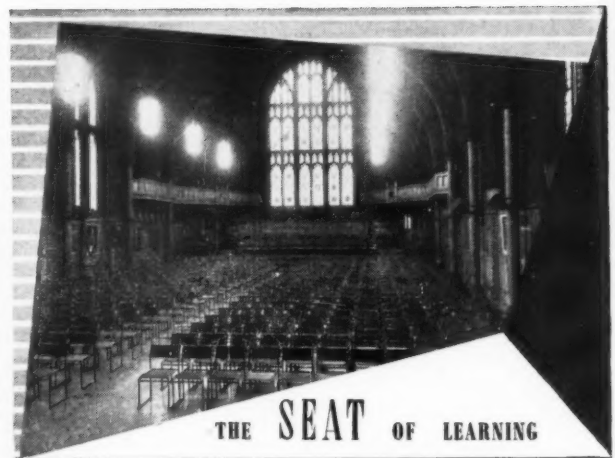
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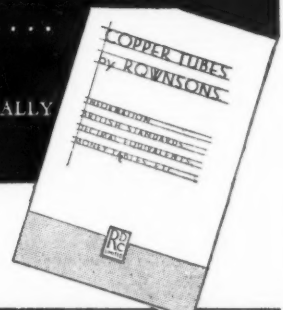
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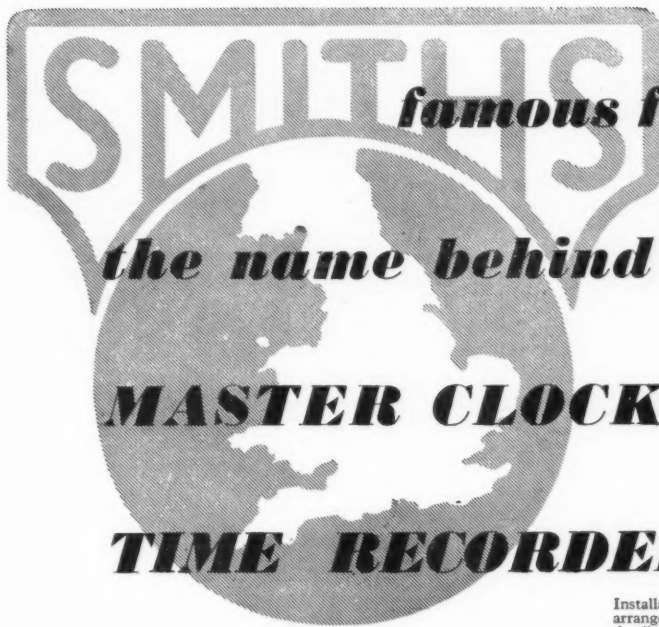
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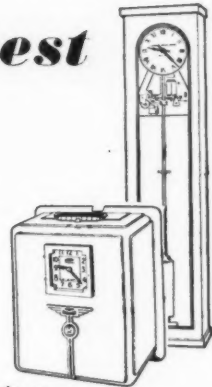


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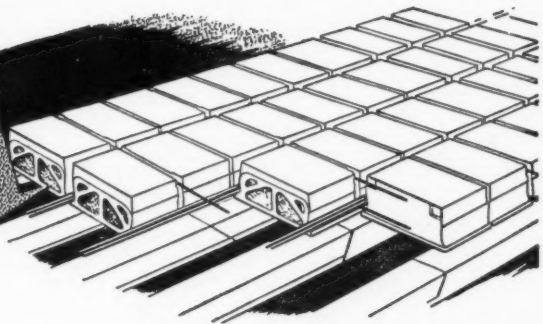
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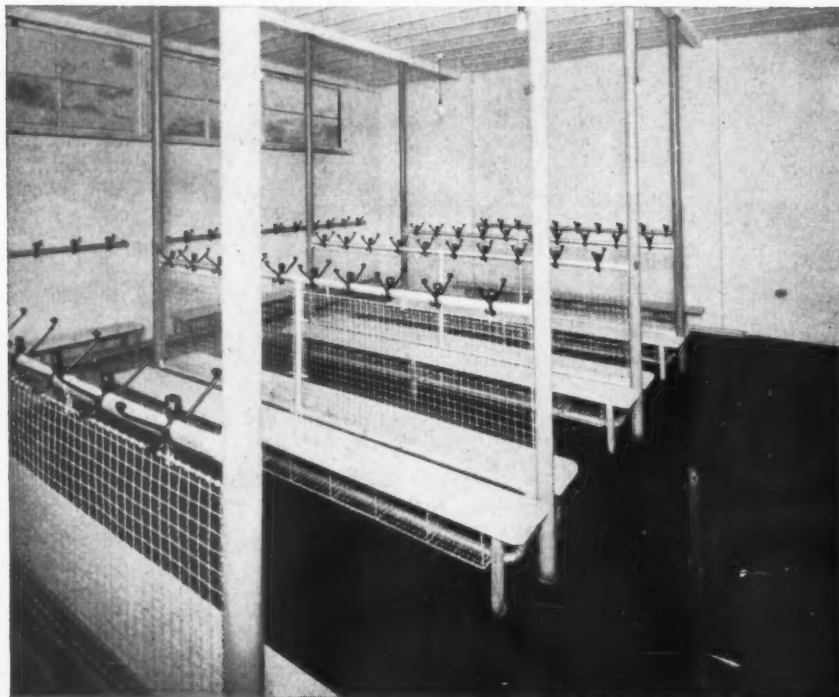


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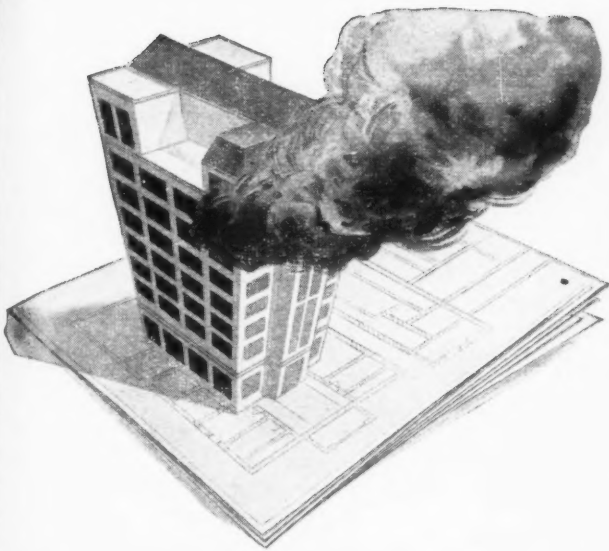
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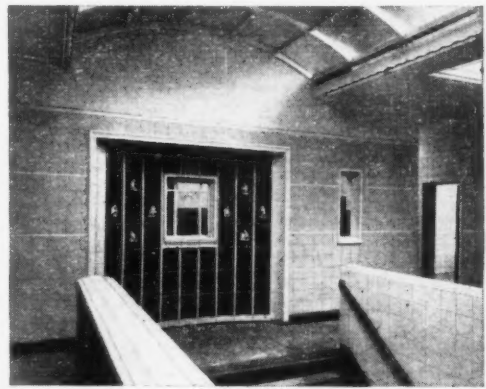
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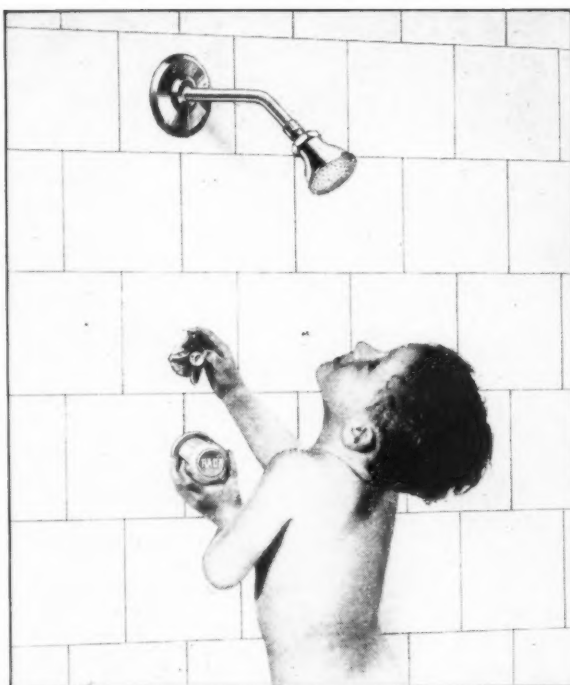
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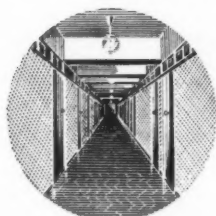
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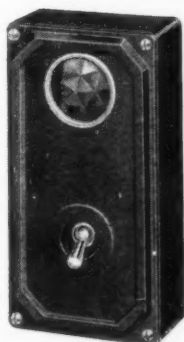


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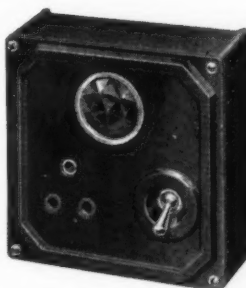
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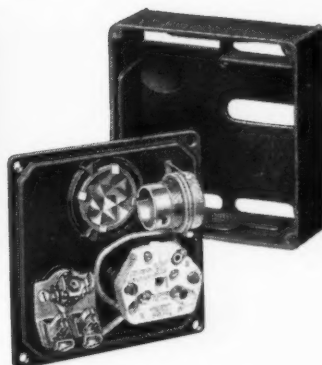


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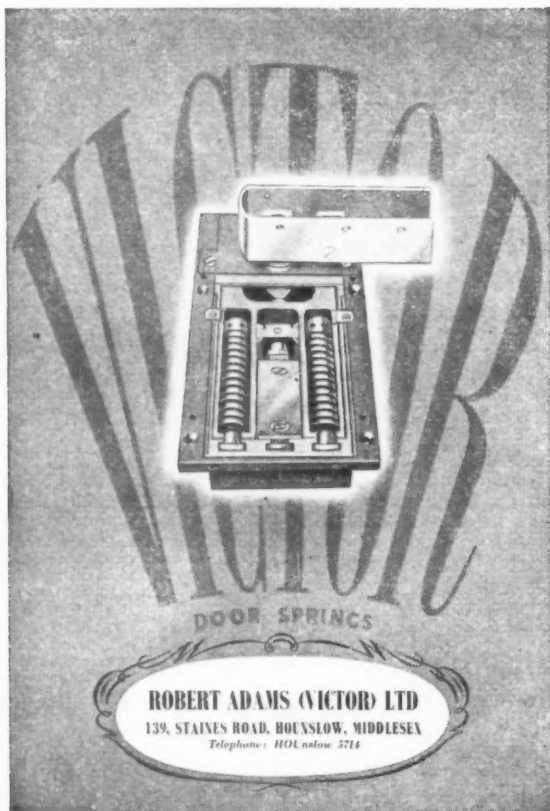
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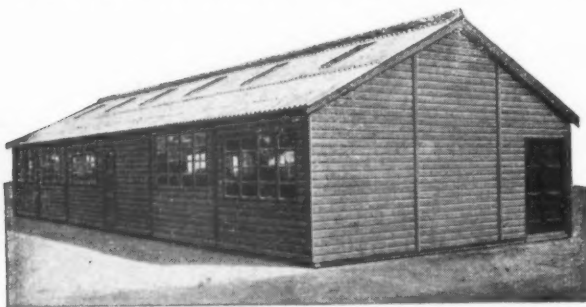




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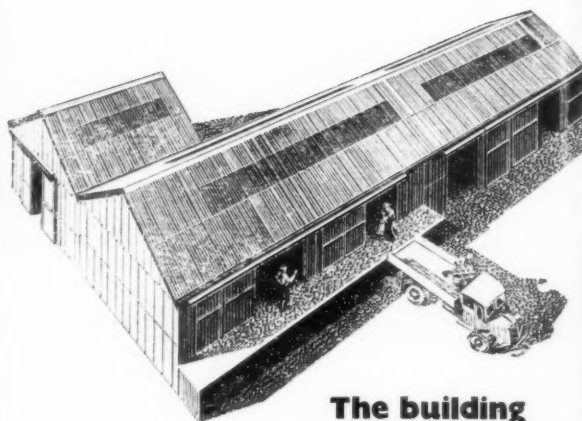
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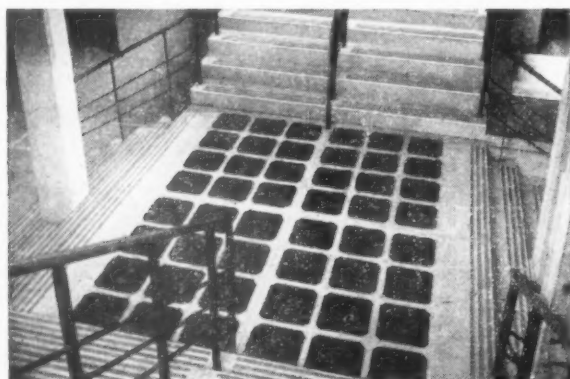


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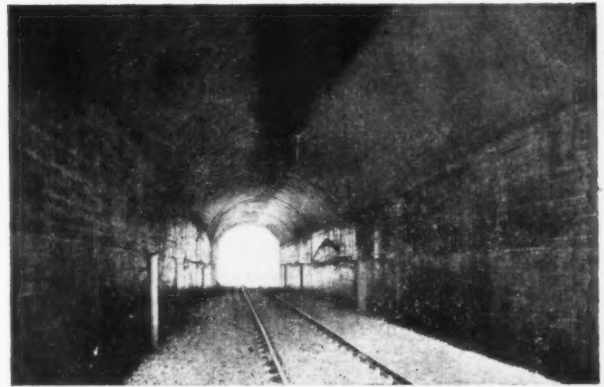
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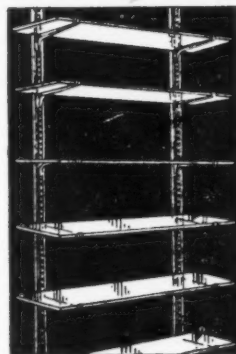
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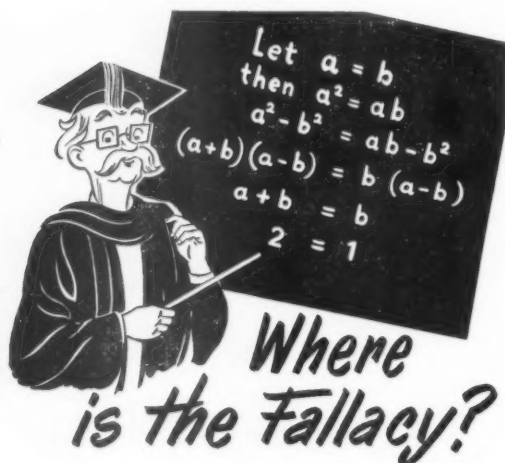
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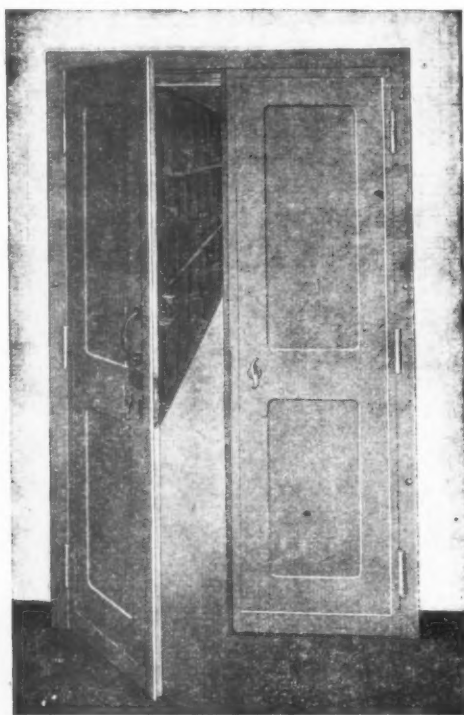
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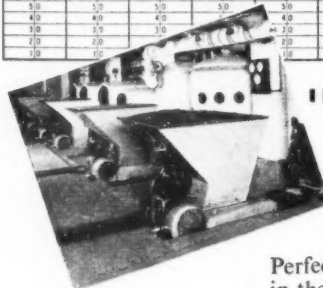
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
100	100	100	100	100	100	100
80	80	80	80	80	80	80
60	60	60	60	60	60	60
40	40	40	40	40	40	40
20	20	20	20	20	20	20
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OUTSIDE

#### HEATING AND VENTILATION

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
100	100	100	100	100	100	100
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20	20	20	20	20	20	20
0	0	0	0	0	0	0

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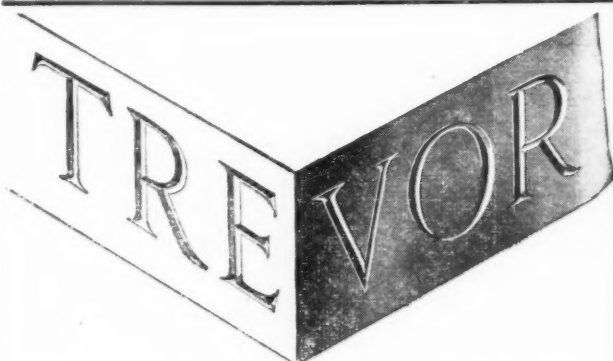
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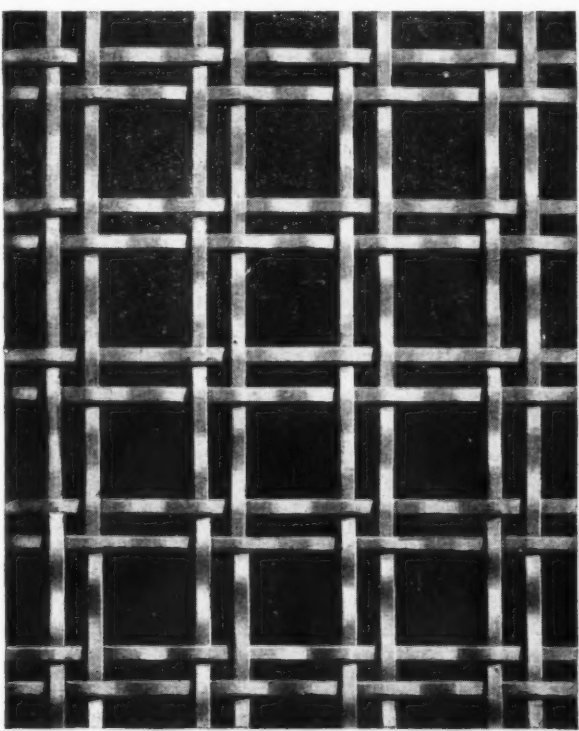
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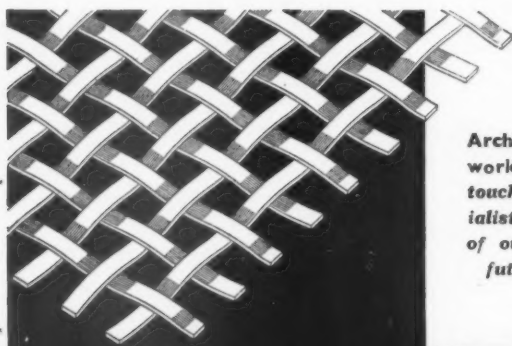


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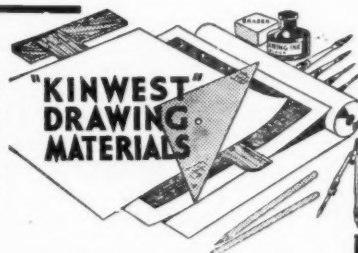
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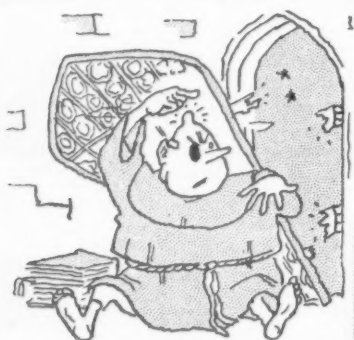
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## CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 5, 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.

## LONDON COUNTY COUNCIL

Applications are invited for positions of ARCHITECTURAL ASSISTANT salaries up to £650 a year in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (518) 4558

LONDON COUNTY COUNCIL  
ARCHITECT'S DEPARTMENT.  
BUILDING SURVEYORS.

Applications are invited for positions of TECHNICAL ASSISTANT (salaries up to £580, plus 10 per cent. addition), to deal with the technical administration of statutes relating to safety precautions in buildings licensed for public entertainment. Candidates should have a knowledge of building construction. Positions superannuable and carry eligibility on merit for permanent appointment and promotion. Application forms, to be returned by 19th May, 1951, obtainable from Architect to the Council, County Hall, S.E.1, enclosing stamped addressed foolscap envelope, and quoting AR/EK/TH. Canvassing disqualifies. (511) 2467

## CARDIGANSHIRE COUNTY PLANNING COMMITTEE.

APPOINTMENT OF PLANNING ASSISTANT. Applications are invited for the post of Planning Assistant, in the County Planning Department, at a salary in accordance with A.P.T., Grade V (£520-£570).

Applicants should have passed at least the Intermediate Examination of the T.P.I., R.I.B.A., R.I.C.S., or equivalent examination, should be experienced in the preparation of Development Plans and Planning Surveys, and experience in the supervision of staff is essential. The appointment will be subject to—

(i) National Joint Council Conditions of Service.  
(ii) The provisions of the Local Government Superannuation Act, 1937.  
(iii) The passing of a satisfactory medical examination.

(iv) One month's notice in writing on either side.

Applications should give particulars of age, education, technical training, qualifications, experience, present salary, present and previous appointments, which together with the names of two referees must reach the undersigned not later than noon on Saturday, 26th May, 1951.

J. F. R. CARSON,

Clerk of the County Council.

Cambrian Chambers, Aberystwyth. 2461

## METROPOLITAN BOROUGH OF CAMBERWELL.

## BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following permanent appointments:—

TWO ASSISTANT ARCHITECTS. Grades A.P.T., V/VI, at a commencing salary of £550 per annum, rising to a maximum of £690 per annum, inclusive of £30 London weighting.

Applicants should have sound general experience in architectural work, and be registered architects. Preference will be given to Associates of the Royal Institute of British Architects.

JUNIOR ASSISTANT ARCHITECT. Grades A.P.T., I/II, at a commencing salary of £420 per annum, rising to a maximum of £495 per annum, inclusive of £30 London weighting.

Applicants should have passed the R.I.B.A. Intermediate Examination or its equivalent, and be neat and expeditious draughtsmen.

The appointments are subject to the National Scheme of Conditions of Service, to the provisions of the Camberwell and Other Metropolitan Borough Councils' (Superannuation) Act, 1908, as amended, and to the passing of a medical examination by the Council's Medical Officer of Health.

Housing accommodation cannot be provided by the Council.

Applications from staff in the service of other Local Authorities will not be considered unless they have been in the service of their present employers for a period of not less than two years.

Applications on forms to be obtained from the undersigned must be returned not later than Monday, 28th May, 1951.

S. J. HARVEY,

Town Clerk.

Town Hall, Camberwell, S.E.5. 2510

SURREY COUNTY COUNCIL.  
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

(a) ASSISTANT QUANTITY SURVEYOR, Grade VIII, at a commencing salary of £685, rising by annual increments of £25 to a maximum of £760 per annum, plus London allowance of £30 per annum.

Applicants should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institution of Chartered Surveyors (Quantities Sub-Division). They should be capable of undertaking all stages of the work for the preparation of Bills of Quantities, including preliminary estimates, the preparation and settlement of final accounts, site measurement, and preparation of interim certificates.

(b) ASSISTANT QUANTITY SURVEYOR, Grade VI, at a commencing salary of £595 per annum, rising by annual increments of £20/£25 to a maximum of £660 per annum, plus London allowance of up to £30 per annum, according to age.

Preference will be given to applicants who are Members of the Royal Institution of Chartered Surveyors (Quantities Sub-Division), and who have adequate experience in the preparation of Bills of Quantities, site measuring, and in settlement of final accounts.

The appointments will be subject to the provisions of the Local Government Act, 1937, and the successful applicants will be required to pass a medical examination.

Applications, stating age, qualifications and experience, and accompanied by copies of three recent testimonials, should be sent to the County Architect, Surrey County Council, County Hall, Kingston-upon-Thames, not later than the 18th May, 1951.

Canvassing, either directly or indirectly, will disqualify a candidate from consideration.

The Council will be unable to provide any housing accommodation, and the successful applicants will be expected to make their own arrangements in this direction.

T. W. W. GOODERIDGE,

Clerk of the Council.

County Hall, Kingston-upon-Thames. 2496

## CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

## CITY ARCHITECT'S DEPARTMENT.

Applications are invited from suitably qualified persons for the undermentioned appointments in the Education Section of the Department:—

(a) ONE SENIOR ASSISTANT ARCHITECT. Salary £635 per annum, rising to £710 per annum (A.P.T., Grade VII).

(b) ONE ASSISTANT ARCHITECT. Salary £480 per annum, rising to £525 per annum (A.P.T., Grade IV).

Applicants for the post of Senior Assistant Architect, Grade VII, should be Associates of the Royal Institute of British Architects, having considerable aptitude in the design and construction of contemporary buildings. Previous experience of educational buildings is desirable, but not essential.

The work of the Section includes, in addition to the normal school programme, the design and erection of a large Grammar School and a new Central College of Technology. The successful applicants for both posts may be engaged wholly upon the new College of Technology.

The appointments will be subject to the National Conditions of Service as adopted by the City Council; to the provisions of the Local Government Superannuation Act, 1937, and to one month's notice on either side. The successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials and the names and addresses of two persons to whom reference may be made, should be addressed to the City Architect, 18, Cloth Market, Newcastle-upon-Tyne, 1, not later than 18th May, 1951.

JOHN ATKINSON,

Town Clerk.

Town Hall, Newcastle-upon-Tyne, 1. 2477

BOROUGH OF FINCHLEY.  
HOUSING AND TOWN PLANNING DEPARTMENT.

Applications are invited for the appointment of SENIOR ARCHITECTURAL ASSISTANT, in the above Department, at a salary in accordance with Grade VII, A.P. & T. Division (£685 + £25 × £25 × £25 = £760), plus £30 per annum London weighting.

Candidates must be Registered Architects, with practical experience in housing and general architectural work, and be used to control of staff and site supervision of Contracts.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and the National Scheme of Conditions of Service.

Applications, stating age and giving full particulars of qualifications and experience, and accompanied by copies of two testimonials (or the names of two referees), should be sent to the Borough Housing and Town Planning Officer, The Avenue, Finchley, N.3, by not later than first post on 25th May, 1951.

R. M. FRANKLIN,

Town Clerk.

Municipal Offices, Finchley, N.3. 2539

PEMBROKESHIRE COUNTY COUNCIL.  
COUNTY ARCHITECT'S DEPARTMENT.  
APPOINTMENT OF TEMPORARY CLERK OF WORKS.

Applications are invited for the temporary post of Clerk of Works, in connection with the New School Buildings at Milford Haven, Tenby, and Sengeston, at a salary in accordance with Grade IV, Miscellaneous Division of the National Conditions of Service, i.e., £360 × £15 to £420 p.a. The appointment will be subject to the above-mentioned conditions, to the Local Government Superannuation Act, 1937, and to the passing of a medical examination, and will be terminable by one month's notice on either side.

Applicants must have a thorough practical knowledge of all branches of the Building trade and be competent to supervise building work during course of erection.

Applications, on forms to be obtained from the County Architect, County Offices, Haverfordwest, stating age, qualifications and experience, and appointments held, and accompanied by copies of two recent testimonials, should reach the undersigned not later than 21st May, 1951. Canvassing, directly or indirectly, will be a disqualification.

H. LOUIS UNDERWOOD,

Clerk of the County Council.

County Offices, Haverfordwest. 2533

COUNTY BOROUGH OF WEST BROMWICH.  
APPOINTMENT OF ASSISTANT ARCHITECTS  
AND TOWN PLANNING ASSISTANTS.

Applications are invited for the following appointments on the permanent staff of the Borough Engineer and Surveyor:—

(a) ASSISTANT ARCHITECT. Salary in accordance with A.P.T., Grade VII.

(b) ASSISTANT ARCHITECT. Salary in accordance with A.P.T., Grade VI.

(c) TOWN PLANNING ASSISTANTS. Salary in accordance with A.P.T., Grade V.

The persons appointed should hold and continue to hold the appropriate qualifications set out in the Grading of Special Classes of Officers of the National Charter, M.I.

The appointments are subject to one month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

Applications, stating age, experience and qualifications, together with the names of two persons to whom reference may be made, should be delivered to the undersigned not later than Saturday, 19th May, 1951.

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

H. SCHOFIELD, B.Sc.(Eng.),

A.M.I.C.E., A.M.T.P.I.,

Borough Engineer and Surveyor.

Town Hall, West Bromwich. 2508

## 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, Telephone Exchanges, and Housing.

Salary: Architectural Assistants, £300-£525 per annum; Leading Architectural Assistants, £500-£625 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, W.G.10/BC, Ministry of Works, Abell House, London, S.W.1, quoting reference W.G. 10/BC. 4826

## SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

Applications are invited for the following appointments on the Board's Architectural Staff:—

ASSISTANT ARCHITECT, A.P.T., Grade VIII, £685 × £25 = £760 p.a., plus London weighting allowance. Applicants must be Fellows or Associates of the Royal Institute of British Architects, and have had good general experience, including hospital design and construction, the control of contracts and specification writing.

JUNIOR ARCHITECTURAL ASSISTANT, A.P.T., Grade IV, £480 × £15 = £525 p.a., plus London weighting allowance. Applicants should have attained the Intermediate standard required by the Royal Institute of British Architects, have had good architectural training and general experience, and be capable of preparing working and detail drawings.

The appointments are subject to the National Health Service (Superannuation) Regulations, 1950, and to satisfactorily passing a medical examination.

Applications, stating age, qualifications, present and past appointments, experience and training, together with the names and addresses of three referees, should be forwarded to the Secretary (S.2), South-West Metropolitan Regional Hospital Board, 11a, Portland Place, London, W.1, to be received by first post on Saturday, 26th May, 1951. 2535



**COUNTY BOROUGH OF GATESHEAD.  
APPOINTMENT OF TECHNICAL ASSISTANTS.**

Applications are invited for the following appointments in the Borough Surveyor's Department:—

(a) **CHIEF TOWN PLANNING ASSISTANT**, Grade VIII, who must be qualified by examination in Town Planning, with additional Engineering or Architectural qualifications. Applicants must have had considerable responsible experience covering preparation of Development Plans and the Control of Development, have a thorough knowledge of current relevant legislation, and be competent to undertake and be responsible for the administration and supervision of the Town Planning Section.

(b) **ONE SENIOR TOWN PLANNING ASSISTANT**, Grade VII, who must be qualified by examination in Town Planning, and preference will be given where a recognised qualification in Civil Engineering or Architecture is also held. Good experience in Town Planning and Redevelopment Work in built-up areas is necessary.

(c) **TWO TOWN PLANNING ASSISTANTS**, Grade VI, who must be qualified by examination in Town Planning, and preference will be given where a recognised qualification in Civil Engineering or Architecture is also held. Experience in Town Planning and Redevelopment Work in built-up areas is necessary.

(d) **ONE TOWN PLANNING BASIC SURVEY ASSISTANT**, Grade I, who should have some experience in Surveying and Town Planning.

The above appointments, which are terminable by one month's notice on either side, are subject to the Local Government Superannuation Acts, and the successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications, training, experience, present and past appointments, and accompanied by not more than three recent testimonials, must be sent to Mr. A. J. McGregor, Borough Surveyor, Municipal Buildings, Seaburne Street, Gateshead, 8, by 31st May, 1951. Candidates must declare their relationship, if any, with any member or senior official of the Council.

J. W. PORTER,  
Town Clerk.

Town Hall, Gateshead, 8,  
27th April, 1951. 2532

**BOROUGH OF CHATHAM.  
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.**

Applications are invited for the following appointments in connection with redevelopment proposals and other capital works schemes:—

(1) **CHIEF ASSISTANT ARCHITECT**, within Grade VII (£635-£710).

(2) **SENIOR ASSISTANT ARCHITECT**, within Grades V and Va (£520-£510).

(3) **ASSISTANT CIVIL ENGINEER**, within Grade V (£520-£570).

Housing accommodation will be made available if required.

Conditions of appointment and form of application may be obtained from Mr. H. D. Peake, M.Sc.(Eng.), Borough Engineer and Surveyor, Town Hall, Chatham, to whom completed application forms should be returned not later than 21st May, 1951.

2472  
**NEWCASTLE REGIONAL HOSPITAL BOARD.  
ARCHITECT'S DEPARTMENT.**

Applications are invited for the following appointments on the permanent headquarters staff of the Board's Architect in Newcastle. The appointments relate to the section of the staff which is concerned with practical architectural work throughout the Region.

To Architectural Assistants who wish to gain experience of hospital practice the appointments offer an excellent opportunity for doing good-class work full of interest and variety in a developing service.

The appointments are:—  
**ARCHITECTURAL ASSISTANT** (Grade A.P.T., IV, £480 to £525 p.a.).

Applicants should have passed the Intermediate Examination of the Royal Institute of British Architects and be studying for the Final Examination. Good general experience in design and construction are essential, and a knowledge of hospital work is desirable.

**TWO GENERAL ARCHITECTURAL ASSISTANTS** (Grade A.P.T., III, £450 to £495 p.a.).

Applicants must produce evidence of having had a sound architectural training, and should have passed or reached the standard of the Intermediate Examination of the Royal Institute of British Architects. Some practical experience in an architect's office is essential.

Evening study-facilities are available at the University of Durham King's College, Newcastle-upon-Tyne.

The appointments will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1947. Successful candidates will be required to pass a medical examination.

Applicants should state: (1) Name and full address; (2) age and whether married; (3) professional qualifications; (4) experience; (5) present appointment and salary; (6) war services; (7) date available if appointed; and (8) names and addresses of three referees.

Applications are to be received by the undersigned not later than the 18th May, 1951.

E. B. JENKINS.

"Dunira," Osborne Road,  
Newcastle-upon-Tyne.  
20th April, 1951. 2458

**CITY AND COUNTY OF BRISTOL.  
BRISTOL EDUCATION COMMITTEE.  
COLLEGE OF TECHNOLOGY.**

Principal: F. W. PARTINGTON, B.Sc.

Required full-time ASSISTANT LECTURER for Building Construction, Draughtsmanship and General Building and Architectural Subjects. Qualifications in Building, Architecture or Surveying, together with professional and/or teaching experience. Salary scale £450-£725, with graduate and training allowances if applicable. Professional experience, National Service, and previous teaching allowed for in fixing initial salary.

Application form (returnable as soon as possible), obtainable by sending stamped addressed envelope to the Registrar, College of Technology, Bristol, 1.

G. H. SYLVESTER,  
Chief Education Officer.

Council House, College Green, Bristol, 1. 2509

**CARSHALTON URBAN DISTRICT COUNCIL.  
ARCHITECTURAL ASSISTANT.**

Applications are invited for the appointment of an Architectural Assistant, in the Engineer and Surveyor's Department, at a salary within Grades A.P.T., III-IV, of the National Scales, plus London "weighting." The commencing salary will be fixed according to the experience and qualifications of the successful applicant.

Applicants must be engaged on a course of study leading to a recognised architectural qualification, and preference will be given to candidates holding the Intermediate Examination Certificate of the R.I.B.A. They must also be good draughtsmen and have had a sound training in architectural work.

The appointment will be subject to (1) the provisions of the National Scheme of Conditions of Service; (2) the passing of a medical examination for superannuation purposes; and (3) one month's notice on either side.

The Council cannot provide the successful applicant with housing accommodation.

Applications, on forms obtainable from the undersigned, must be returned, together with the names of three referees, not later than the 28th May, 1951. Canvassing in any form will be a disqualification.

J. W. WRIGHT,  
Clerk of the Council.

District Council Offices, The Grove,  
Carshalton, Surrey.  
April, 1951. 2514

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

Applications are invited from Registered Architects for the appointment of a SENIOR ASSISTANT ARCHITECT, Grade VI (£595-£660 per annum).

Applications are also invited for the appointment of an ASSISTANT ARCHITECT, Grade V (£520-£570).

The above salaries do not include the increases recently recommended by the National Joint Council, which have not yet been considered by the County Council.

Applications, stating age, qualifications, present appointment and salary, full details of experience, and giving the name of three persons to whom reference may be made, should be sent to the County Architect, 27, Thorpe Road, Norwich, by not later than Monday, 28th May, 1951.

The appointments are on the permanent staff and are subject to National Conditions of Service.

H. OSWALD BROWN,  
Clerk of the Council.

County Offices, Thorpe Road, Norwich. 2527

**THURROCK URBAN DISTRICT COUNCIL.  
ENGINEER & SURVEYOR'S DEPARTMENT.  
ARCHITECTURAL ASSISTANT, A.P.T., GRADE III.**

A vacancy occurs in the Council's Architectural Staff for an ASSISTANT, at a salary in accordance with Grade III of the A.P.T. Division of the National Scale of Salaries.

General Architectural experience is necessary, and previous success in some part or parts of the Examination leading to the qualification A.R.I.B.A. will be an advantage.

The Council may consider housing accommodation, if required by the successful candidate if he lives beyond 20 miles from Thurrock.

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, enclosed "Architectural Assistant, III," stating age, qualifications and experience, with copies of not more than three testimonials, should reach the undersigned not later than first post on Thursday 17th May, 1951.

Canvassing will disqualify, and applicants must disclose in writing any relationship to any member or senior official of the Council.

A. E. POOLE,  
Clerk of the Council.

Council Offices, Whitehall Lane,  
Grays, Essex. 2505

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

Applications are invited for the posts of ASSISTANT ARCHITECTS, Grades A.P.T., V and III. The successful candidates would be required to undergo a medical examination, and the posts are subject to the conditions of the Superannuation Act, 1937.

Application forms can be obtained from C. H. Elkins, F.R.I.B.A., A.R.I.C.S., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,  
Clerk of the Council.

Shire Hall, Warwick. 2519

**CITY OF NOTTINGHAM.  
CITY ENGINEER'S DEPARTMENT.  
SENIOR ARCHITECTURAL ASSISTANT  
(GRADE A.P.T., VID).**

Applications are invited for the above position from fully qualified and experienced men. School work will be an advantage.

Applications, on forms to be obtained from the City Engineer, Guildhall, Nottingham, are to be made to him not later than Monday, 21st May, 1951.

T. W. OWEN,  
Town Clerk.

Guildhall, Nottingham. 2536

**COUNTY BOROUGH OF SOUTH SHIELDS.  
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.**

Applications are invited for the above appointment on the permanent staff of the Borough Engineer's Architectural Section, from persons who have passed the Final Examination of the R.I.B.A.

The salary payable will be Grade VII of the N.J.C. Scales (£635-£710), according to qualifications and experience.

Housing accommodation can be made available to the successful applicant if necessary.

The selected applicant will be required to pass a medical examination, and the appointment will be subject to the provisions of the Local Government (Superannuation) Act, 1937.

Canvassing will be a disqualification, and candidates must disclose any relationship to members or senior officers of the Council.

Application forms, to be obtained from the Borough Engineer, Town Hall, South Shields, should be returned not later than Monday, 21st May, 1951.

HAROLD AYREY,  
Town Clerk.

Town Hall, South Shields.  
30th April, 1951. 2536

**BOROUGH OF SOUTHALL.  
ARCHITECTURAL STAFF.**

Applications are invited for the following appointments on the permanent staff of the Corporation:—

(a) **ARCHITECTURAL ASSISTANT**, Grade A.P.T., III (£500-£515-£545).

(b) **ARCHITECTURAL ASSISTANT**, Grade A.P.T., IV (£530-£515-£575).

(c) **ARCHITECTURAL ASSISTANT**, Grade A.P.T., V (£570-£515-£515-£620-£620).

Appropriate London weighting is payable in each case.

Candidates for appointments (a) and (b) should have passed the Intermediate Examination of the R.I.B.A., and for appointment (c) should have passed the Final Examination of the R.I.B.A., and all candidates should have had previous Local Government experience.

The appointments are subject to one month's notice on either side, to the provisions of the National Scheme of Conditions of Service and the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the Borough Engineer, Town Hall, Southall, must be returned to him appropriately endorsed not later than Wednesday, 23rd May, 1951.

J. S. SYRETT,  
Town Clerk.

Town Clerk's Offices,  
Southall, Middx. 2538

**HARROW URBAN DISTRICT COUNCIL.  
ENGINEER AND SURVEYOR'S DEPARTMENT.**

Applications are invited for the under-mentioned appointments in the Department of the Engineer and Surveyor (Mr. J. H. Melville Richards, A.M.C.E., M.I.Mun.E.):—

(1) **ARCHITECTURAL ASSISTANTS (TWO)**, A.P.T., Grade IV. Salary scale, £480 to £525 per annum, plus London weighting.

Applicants should have office experience, and preference will be given to those holding recognised professional qualifications. Duties will include the preparation of sketch designs, working drawings and specifications, and supervision of work under construction.

(2) **ARCHITECTURAL ASSISTANT**, A.P.T., Grades II/III. Salary scale, £420 to £495 per annum, plus London "weighting."

Applicants should be students of the Royal Institute of British Architects, with either full-time school training and one year's office experience, or three years if part-time school training only.

(3) **ARCHITECTURAL ASSISTANT**, A.P.T., Grades I/II. Salary scale, £390 to £465 per annum, plus London "weighting."

Applicants should be students of the Royal Institute of British Architects or equivalent draughtsmen, and must be neat and expeditious draughtsmen.

The Council is unable to offer any assistance in obtaining housing accommodation. The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, to the passing of a medical examination, and to the National Joint Council's Scheme of Conditions of Service.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Saturday, 19th May, 1951.

Canvassing will be a disqualification.

H. WELLS,  
Clerk of the Council.

Council Offices, Harrow Weald Lodge, Harrow. 2482



LONDON COUNTY COUNCIL.  
PARKS DEPARTMENT.

TECHNICAL ASSISTANT for surveys, preparation of sketch schemes, working drawings and specifications for various types of buildings at parks and open spaces, and new layouts of parks and open spaces. Preference will be given to candidates possessing recognised professional architectural and landscape qualifications. Salary from £550 to £700 basic, plus an addition of 10 per cent. on the first £600 and of 7½ per cent. on the amount by which any remuneration exceeds £600 a year. Commencing rate according to qualifications and experience.

Application forms from Chief Officer of Parks Department (PK/Al), Old County Hall, Spring Gardens, S.W.1. Canvassing disqualifieds. (544) 2530

METROPOLITAN BOROUGH OF POPLAR.  
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT (GRADE A.P.T. VIII).

Applications are invited from suitably qualified persons for the permanent appointment of Chief Architectural Assistant in the Architect's Section of the Borough Engineer and Surveyor's Department. The applicant appointed will be under the direction of the Principal Assistant Architect, who is responsible for the section. The salary payable will be in accordance with Grade A.P.T. VIII, of the National Salary Scales, i.e., £685-£760 per annum, plus London weighting.

Applicants should be experienced in the design of housing and multi-storey flats, and have a good knowledge of building construction, specification writing, and must be able to supervise a team of assistants.

Several schemes for the development of residential and neighbourhood units have been phased over a period of many years, in which will be involved interesting design and constructional problems. The applicant appointed will be engaged on the projects forming these areas.

Applicants should be Associates of the Royal Institute of British Architects. Full details of the appointment and forms on which application must be made may be obtained from the Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3, to whom completed applications must be delivered not later than first post on Tuesday, 22nd May, 1951.

Poplar Town Hall, Bow Road, London, E.3. 26th April, 1951. 2507

BRITISH ELECTRICITY AUTHORITY.  
SOUTH WALES DIVISION.

Applications are invited for the appointment of a WORKS INSPECTOR at the Uskmouth Generating Site near Newport, at a salary in accordance with Grade III (£450-£510 per annum) of the National Joint Council (Administrative and Clerical Grades) Agreement.

This appointment will be temporary for a period of approximately two years, and consideration will be given to the payment of a travelling or subsistence allowance.

Applicants should have been engaged on large civil engineering works, involving pile driving, bulk excavations, and heavy foundation and superstructure work.

Forms of application may be obtained from the Divisional Secretary at the address below, to whom completed applications should be returned not later than 17th May, 1951.

H. V. PUGH, Divisional Controller.

Cardiff (Pengam Moors) Airport, Cardiff. 27th April, 1951. 2513

BOROUGH OF HESTON AND ISLEWORTH.  
ENGINEER AND SURVEYOR'S DEPARTMENT.  
TECHNICAL STAFF.

Applications are invited for the under-mentioned posts in the Borough Engineer and Surveyor's Department.

(a) GENERAL ENGINEERING ASSISTANT, Grade A.P.T. II (£420-£465), plus London weighting.

Other things being equal, preference will be given to candidates who have passed the Intermediate Examination of the Institution of Municipal Engineers or other equivalent.

(b) GENERAL ENGINEERING ASSISTANT, Grade A.P.T. IV (£480-£525), plus London weighting.

Candidates should have good Civil or Municipal engineering experience, and, other things being equal, preference will be given to candidates who have passed the examination qualifying for A.M.I.C.E. or A.M.I.Mun.E.

(c) JUNIOR ARCHITECTURAL ASSISTANT, Grade A.P.T. II (£420-£465), plus London weighting.

Other things being equal, preference will be given to candidates who have passed the R.I.B.A. Intermediate Examination.

(d) GENERAL ARCHITECTURAL ASSISTANT, Grade A.P.T. III (£450-£495), plus London weighting.

Candidates should have good experience in an architectural office and, other things being equal, preference will be given to candidates who have passed the R.I.B.A. Intermediate Examination.

The Council is unable to assist the successful candidate with housing accommodation.

Applications, on forms to be obtained from the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow, must be returned to him not later than noon on 28th May appropriately endorsed.

HAROLD SWANN.

Town Clerk. 2522

NORTHERN IRELAND HOSPITALS  
AUTHORITY.  
NEW NORTH-WEST HOSPITAL,  
LONDONDERRY.

Applications are invited from suitably qualified persons for the temporary appointment of CLERK OF WORKS to supervise work in connection with the erection of a 300 bed general hospital at Londonderry.

The appointment is in the first instance for the duration of the Preliminary Site Works Contract, which is likely to take 12 months, and may lead to a further appointment for the main contract to follow.

The salary for the post is on the scale £600×£25-£800 per annum, and will be subject to deductions for superannuation in accordance with the regulations made under the Health Services Act (Northern Ireland), 1948. The selected candidate may be required to pass a medical examination.

Canvassing, either directly or indirectly, will be an absolute disqualification.

Forms of application may be obtained from the Secretary, Northern Ireland Hospitals Authority, 58, Howard Street, Belfast, Northern Ireland. Applications in envelopes, marked "Clerk of Works," should be returned to the Secretary not later than 5 p.m. on 1st June, 1951. 2547

BOROUGH OF CHESTERFIELD.  
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment on the permanent staff of an ARCHITECTURAL DRAUGHTSMAN, at a salary in accordance with Grade IV, Miscellaneous Division.

Applicants for the appointment must be expert draughtsmen and must have had a good experience in general work in the preparation of drawings required in an Architect's office. Every encouragement will be given for the successful candidate to study for the examinations of the Royal Institute of British Architects.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the successful applicant passing a medical examination. The appointment will be terminable by one month's notice on either side.

Applications, endorsed "Architectural Draughtsman," stating age, qualifications and experience, present and past appointments, and accompanied by copies of three testimonials, should be received by the Borough Engineer and Surveyor not later than Thursday, 31st May, 1951.

Candidates must disclose in writing whether to their knowledge they are related to any member or official of the Council. Canvassing, directly or indirectly, will disqualify.

RICHARD CLEGG, Town Clerk.

Town Hall, Chesterfield. 2546  
May, 1951.

COUNTY BOROUGH OF GREAT YARMOUTH.  
APPOINTMENT OF CLERK OF WORKS.

Applications are invited for the appointment of Clerk of Works, to act under the direction of the Borough Engineer in the supervision of the erection of six-storey flats.

Applicants should have a thorough knowledge of the building trade, the erection of multi-storey flats, of steel-frame building and pile foundations. Membership of the Incorporated Clerk of Works' Association of Great Britain would be an advantage. The salary will be £12 per week. Housing accommodation will be provided if required.

Applications, stating age, qualifications and previous experience, together with the names of three persons to whom reference may be made, should be enclosed in an envelope, endorsed "Clerk of Works," and must be received by me not later than Friday, 25th May, 1951.

Candidates must disclose in writing whether they are related to any member or official of the Council. Canvassing, either directly or indirectly, will disqualify.

FARRA CONWAY, Town Clerk.

Town Hall, Great Yarmouth. 2550  
3rd May, 1951.

NORTHERN IRELAND HOSPITALS  
AUTHORITY.

Applications are invited for the post of Architectural Assistant on the Headquarters Staff of the Authority.

Applicants must be Associate Members of the Royal Institute of British Architects.

Salary for the post will be on the scale £600×£25-£750 per annum, and will be subject to deduction for superannuation in accordance with regulations made under the Health Services Act (Northern Ireland), 1948.

It is the Authority's policy to give preference to candidates who served in His Majesty's Forces in wartime.

Canvassing, either directly or indirectly, will be an absolute disqualification. Any approach to a member of the Authority or a member of a Committee of the Authority, in writing or otherwise, by or at the request of any applicant, will be regarded as canvassing.

Applications, stating age, experience and qualifications, and giving names and addresses of three persons to whom the Authority may apply for a confidential report, should be sent in an envelope marked on the top left-hand corner "Architectural Assistant," so as to reach the Secretary, Northern Ireland Hospitals Authority, 58, Howard Street, Belfast, not later than 5 p.m. on 31st May, 1951. 2548

COUNTY BOROUGH OF GATESHEAD.  
APPOINTMENT OF TECHNICAL ASSISTANT.

Applications are invited for the following appointments in the Borough Surveyor's Department:—

(a) THREE ENGINEERING ASSISTANTS, Grade VI, who must be Associate Members of the Institution of Civil Engineers and/or the Institution of Municipal Engineers, and have had experience in the design and construction of Roads, Bridges and Sewerage Works, etc.

(b) TWO JUNIOR ENGINEERING ASSISTANTS, Grade I, who must possess a University Degree in Civil Engineering and have had experience on Public Works.

The above appointments, which are terminable by one month's notice on either side, are subject to the Local Government Superannuation Acts, and the successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications, training, experience, present and past appointments, and accompanied by not more than three recent testimonials, must be sent to Mr. A. J. McGregor, Borough Surveyor, Municipal Buildings, Swinburne Street, Gateshead, 8, by 1st May, 1951.

Candidates must declare their relationship, if any, with any member or senior official of the Council.

J. W. PORTER, Town Clerk.

Town Hall, Gateshead, 8. 2531  
27th April, 1951.

CITY OF PORTSMOUTH.  
CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ASSISTANT SENIOR ARCHITECT, Grade VII (revised), (£685-£760).

The applicants should be Associates of the R.I.B.A., with adequate experience of Education Buildings, and be capable of leading a Section dealing with an interesting school programme.

A special subsistence allowance may be paid to a married applicant for a period of six months after taking up the appointment if he is unable to secure housing accommodation immediately.

Applications, setting out in tabular form name, age, qualifications, present post and salary, previous posts with dates, details of experience, with names of three referees, must be delivered to the undersigned not later than 10 a.m. on Monday, 28th May, 1951.

Canvassing will disqualify.

V. BLANCHARD, Town Clerk.

City Council Chambers, 1, Clarence Parade, Portsmouth. 2545  
1st May, 1951.

BOROUGH OF BLYTH.  
BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of a JUNIOR ARCHITECTURAL ASSISTANT, in accordance with Grade I of the A.P.T. Division of the National Scale of Salaries, i.e., £390 per annum, rising to £435 per annum.

Candidates should have passed or be studying for the Intermediate Examination of the R.I.B.A. The appointment is subject to the Local Government Superannuation Act, 1937, one month's notice on either side, and the successful candidate passing a medical examination.

Applications, endorsed "Junior Architectural Assistant," stating age, qualifications and experience, must be delivered to the undersigned with copies of three recent testimonials, not later than 16th May, 1951. Canvassing will disqualify, and applicant must disclose relationship with any member or senior official of the Council.

EDWIN W. CARTER, Town Clerk.

"Dinsdale," 75, Marine Terrace, Blyth, Northumberland. 2521

BOROUGH OF WATFORD.  
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the appointment, at a salary within Grade A.P.T. V, Va or VI (£570-£710), according to qualifications and experience.

Application forms may be obtained from the undersigned, to whom they must be returned by Friday, 25th May, 1951.

The Corporation is unable to assist in the provision of housing accommodation.

F. C. SAGE,

Borough Engineer, Surveyor and Architect, Town Hall, Watford. 2537  
May, 1951.

## WESTERN REGIONAL HOSPITAL BOARD.

Applications are invited for the appointment of TWO ASSISTANT ARCHITECTS. Candidates must be Associate Members of the R.I.B.A. Hospital experience desirable, but not essential.

Salary scale £685×£25-£760, but this scale may be adjusted as the result of any recommendations made by the Whitley Council.

The appointments are superannuable, and will be terminable on two months' notice on either side. The successful candidates may be required to pass a medical examination.

Applications, stating age, qualifications, experience and present salary, together with the names of three referees, should be forwarded to the Chief Architect, 64, West Regent Street, Glasgow, C.2, not later than Thursday, 31st May, 1951. 2549

# BRITISH ELECTRICITY AUTHORITY.

MIDLANDS DIVISION.  
Applications are invited for positions as ARCHITECTURAL and BUILDING DRAUGHTSMEN in the Drawing Office of the Chief Generation Engineer (Construction) at Wolverhampton.

Candidates should have wide experience in the preparation of working drawings relating to power stations and other buildings. The possession of an architectural degree or recognised qualification will be considered an advantage. The salary range, which is provisional and subject to negotiation with the appropriate organisation, will be £500-£600 per annum.

Conditions of service and superannuation will be as approved by the British Electricity Authority.

Applications should be made on forms which may be obtained from the Establishments Officer, 53, Wake Green Road, Moseley, Birmingham, 15, and should be returned not later than 26th May, 1951.

F. W. LAWTON,

Divisional Controller. 2544

## Sale by Auction

5 lines or under, 10s.; each additional line, 1s. 6d.

### SALE OF BUILDERS' MATERIALS.

EX-GOVERNMENT STORES, ETC.  
A. GADIE & SON have received instructions from the owners to offer for Sale by Public Auction on the site opposite the Junction Hotel, Queensbury, near Bradford, on Wednesday, 6th June, 1951, at 11 a.m., the Builders' Materials, Ex-Government Stores, etc., including:—

New and second-hand timber, manufactured timber, nissen huts, plasterboard buildings, 3,000 asbestos and galvanized sheets, circular saw by Sutcliffe, paint sprayer, sundry vehicles, ammunition shelter, cement, electrical equipment, Ex-Govt. single beds, floor sections, scrap lead, quantity of glass, timber buildings, Romney Hut 96 x 35, etc., etc.

The above may be viewed on the site on Monday and Tuesday the 4th and 5th June, 1951, between the hours of 10 a.m. and 4 p.m.

For further particulars apply to the Auctioneers at their offices, Central Chambers, 2, Cheapside, Bradford. (Tel. 26885.) 2554

## Tenders for Contracts

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

### COUNTY BOROUGH OF READING.

TO BUILDERS AND CONTRACTORS.  
The Corporation of Reading invite tenders for the erection of 186 houses on the Bath Road Estate, Reading.

The General Conditions of Contract, and Drawings, may be inspected at the office of the Borough Architect, Town Hall, Reading, and Bills of Quantities, Form of Tender, with endorsed envelope, may be obtained on application to him on or after Friday, the 11th May, 1951, accompanied by a cheque (made payable to the Borough Treasurer, Reading) for two guineas, which will be refunded on receipt of a bona fide tender.

Tenders must be delivered to the undersigned not later than Tuesday, the 12th June, 1951. No tender will be considered unless enclosed in the endorsed envelope provided and sealed, but not bearing any name or mark indicating the sender.

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

G. F. DARLOW,

Town Clerk. 2520

Town Hall, Reading.  
11th May, 1951.

### ERECTION OF 46 HOUSES, WOODLANDS ESTATE.

Tenders are invited for the erection of 46 Houses—in 7 blocks of 4, and 9 pairs of semi-detached, houses (Contract "B"), Woodlands Estate, Dagenham.

Bills of Quantities and form of tender are obtainable from the Borough Engineer on payment of deposit of two guineas, which will be refunded on receipt of a bona fide tender.

Plans and Conditions of Contract may be inspected during normal office hours.

Sealed tenders, in the envelope provided, which must bear no indication of the identity of the sender, to be delivered to the undersigned by noon on Friday, 25th May, 1951.

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

KEITH LAUDER,

Town Clerk. 2534

Civic Centre, Dagenham.

## Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANT, with office experience, required for vacancy in North-West practice. The post is a permanent one, with site responsibility, varied experience, and has prospects for a suitable man. Applicants should state details of experience. Harry S. Fairhurst & Son, 55, Brown Street, Manchester, 2. 2483

ARCHITECTURAL ASSISTANT required for Victoria Street Office. Capable of preparing working details from sketch designs. Salary up to £350. Write, stating experience, Box 2405.

QUALIFIED Architect as MANAGING ASSISTANT in busy country practice. Salary from £700, according to experience, age, etc. The intention is that the appointment should develop eventually into a partnership. Experience in managing offices and controlling staff is desirable, and the opportunity is an excellent one for a man with the required qualifications. Applicants should give full particulars of training, age, experience, etc. Also vacancy for Senior Assistant. Salary £450 to £550, according to qualifications. Box 2487.

BIRMINGHAM.—Architects require keen ASSISTANT, qualified or approaching R.I.B.A. Final; commercial and industrial work. Watson, Johnson & Stokes, Victoria Square. 2465

ASSISTANT ARCHITECT required in London office for Schools project. High standard of draughtsmanship and sound knowledge of construction essential. Write, stating experience, qualifications and salary required. Box 2473.

ARCHITECTURAL ASSISTANT required for detailing. Age 35 or over. State experience, age, qualifications, and salary required to Box 2474.

CLIFFORD TEE & GALE require SENIOR ASSISTANT. Able to take full control of various industrial schemes ranging up to £20,000. Tel.: Central 5683. 2497

SENIOR ARCHITECTURAL ASSISTANT required immediately for small West End office. Varied and interesting work, with good prospects. Salary from £600 per annum, according to experience. Ruthven O. Hall, A.R.I.B.A., 55, Queen Anne Street, Cavendish Square, W.1. 2511

ARCHITECT'S ASSISTANT required, West Riding, Yorkshire. Must be good quick draughtsman and possess initiative. Good salary offered. Box 2512.

CHIEF and SENIOR ARCHITECTURAL ASSISTANTS required by London Firm of Architects. Please reply by letter, stating training, experience, qualifications and salary required, to Box 2516.

JUNIOR ARCHITECTURAL ASSISTANT required. Write, stating age, experience, and salary required, to Portess & Richardson, Lloyds Bank Chambers, Peterborough. 2518

FULLY qualified ARCHITECTURAL ASSISTANTS required. Apply Lucas, Roberts & Brown, Barnfield Hill, Exeter. 2523

ARCHITECT'S ASSISTANT required by busy provincial Architect, town and country practice, Reading area. Capable of preparing sketch plans, working drawings, specifications. Supervising. Checking accounts. Car expenses. Good salary and prospects. Write, stating experience and salary required to Box 2524.

ARCHITECT'S ASSISTANT, R.I.B.A., Intermediate standard, required for Architect's Department large Company Liverpool. Previous experience in Architect's office essential. Permanency to suitable candidate. Write, stating age and experience, to Box 2529.

LIONEL BRETT & KENNETH BOYD have vacancies at their Hatfield office for three ASSISTANTS, preferably Intermediate standard. Please apply in writing to New Town House, Hatfield, Herts., stating experience and salary required. 2541

NAIROBI.—Intermediate standard or above ASSISTANT, age about 30, required fly out early date. Passages repaid by employers over 3 years. Salary according experience. Write, quoting OSS.14/3, to Overseas Architects Service, 5, Welton Crescent, Harrow. 2540

SENIOR ASSISTANT required for general practice. Salary £400-£600 according to experience. Kennington Farms & Nield, Wel. 6543. 2556

ARCHITECTURAL ASSISTANT wanted for private office with varied practice. Reply in writing stating age, experience, and salary required to—Poince & Son, Architects & Surveyors, 30, St. Petersburg, Stockport. 2555

ASSISTANT for busy and varied practice, London, S.W., with sound knowledge of construction and reasonable office experience essential. Excellent prospects for one willing to work hard and having ambitions greater than required for Public Service. Box 2553.

DOMESTIC ELECTRIC APPLIANCE CO. have a vacancy in the Kitchen Planning Department for a young ARCHITECTURAL DRAUGHTSMAN. The successful applicant would be required to visit sites, prepare drawings, plans and estimates for the installation of modern kitchen equipment. Box 2552.

ARCHITECTURAL ASSISTANT required to deal with working drawings and specifications and some site supervision. Salary between £400 and £500 per year according to experience. Apply stating age, experience and salary to Box 2551.

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ARCHITECTURAL ASSISTANT required by London Architect to work in South Birmingham. Previous experience of industrial work an advantage. Salary £500 to £600, according to experience. Apply F. Leslie Hasker, A.I.A.A., 55, Queen Anne Street, W.1. 2559

## Architectural Appointments Wanted

CHIEF ASSISTANT, age 38, A.R.I.B.A., with varied experience, accustomed to taking charge of practice, desires change to established firm with work abroad, where there is a definite prospect of advancement, leading to partnership. Willing to reside abroad where necessary. Box 2413.

ARCHITECTURAL MODEL MAKER (21), with 4 years' experience in Architect's office, knowledge of building construction, and ability to read drawings and work with perspex, card, etc., requires position in London area. Box 139.

ASSOCIATE (39), with wide experience of heavy and industrial work, contracts and office organisation, seeks post in Southern England, including London, where responsibility and initiative essential. Box 2464.

JUNIOR ASSISTANT, studying for Inter., requires situation in progressive Architect's office in London or N.W. Kent area. Box 144.

ASSOCIATE (30) seeks progressive position in London area. Over 3½ years' office experience. Box 145.

SENIOR ASSISTANT (32), M.A.(Cantab), R.I.B.A. Finals, Pt. I passed, and 4/5 Pt. II, 5 years' office experience, requires appointment. Bournemouth or South Coast. Box 143.

SENIOR ASSISTANT (34) A.R.I.B.A., A.M.T.P.I., wide experience in office administration, works organization, design and construction; recently returned from completion of contract overseas, seeks position having reasonable prospects of permanency. Salary £800-£900. Box 146.

SWISS ARCHITECT, age 26, with National Certificate, very good knowledge of civil engineering and architecture, design and construction, surveying, estimating, blasting, tunnelling, experience as clerk of works and in every kind of work on building sites, wishes employment in England to obtain knowledge of English language and methods. Please communicate with: Walter Schwald, 11a, Holzstrasse, St. Gallen, Switzerland. 147

## Other Appointments Vacant

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

DRAUGHTSMAN (SENIOR) wanted for Architectural department of Newcastle Engineering Firm. Knowledge of industrial building work essential. Write, stating age and experience, to Box 2484.

YOUNG Qualified QUANTITY SURVEYOR required to take charge of Surveying Section in busy Architects' office. Excellent prospects, with possible future advancement. Help with housing accommodation if necessary. Apply, stating particulars, to Ruddle & Wilkinson, F.I./A.R.I.B.A., Long Causeway Chambers, Peterborough. Tel.: Peterborough 5248/9. 2455

DRAUGHTSMAN wanted for Architect's office. Good working conditions. Write fully, stating qualifications, experience, age, etc. Applications treated in strict confidence. Staff Office, Busbys' (Bradford), Ltd., Manningham Lane, Bradford. 2528

## For Sale or Wanted

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

AMERICAN "ARCHITECTURAL FORUM," 26 copies, December, 1946, to February, 1949. Excellent condition. £9 5s., or offers. Box 2525.

## Services Offered

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

OUTSTANDING ACADEMY DRAWINGS now being completed, further Commissions can be undertaken by Perspectivist, Winston Walker, F.R.I.B.A., A.A. Dipl., Dipl.T.P., A.R.A.E.S., 107, Sloane Street, S.W.1. Telephone SLOane 1410. 2175

SENIOR L.R.I.B.A., wide general and housing experience. London and provincial, offers temporary or part-time services to private architects, London or Home Counties. Sympathies: English tradition rather than cosmopolitan South Bank. Box 2557.



**QUALIFIED QUANTITY SURVEYORS** invite inquiries for all professional services in connection with land surveys, bills of quantities, site measuring, final accounts, claims, reports on property, maintenance repairs, etc., etc. London and Southern Counties preferred. Box 2404.

**A.R.I.B.A. (37)**, with own small office in West London can offer assistance in preparing Drawings or Specifications or in Supervision, or will undertake any kind of Survey. Box 2406.

**CONSULTANT** wishes contact Architects requiring Schemes for General Engineering Services, Industrial, Educational and Institutional Schemes. First-class work and attention. Moderate fees. Box 2489.

**REGISTERED ARCHITECT (R.I.B.A. Final Passed)**, University graduate (Poland), with all round experience and sound knowledge of construction, offers evening and week-end services, London area. Box 2466.

**ARCHITECTURAL MODELS and Dioramas.** Edward J. Ashenden, A.R.C.A., 15, Chenil Studios, 183, Kings Road, S.W.3. Tel.: Flax 6103. 2566

**FREE-LANCE Surveyor** offers Services to Architects requiring accurate surveys of land and buildings, levelling, contouring, etc.; own car and complete equipment. 2772

**Q.S. OFFERS Services.** Taking-off and Preparation of Quantities. Own office. Box 2543.

**SENIOR ASSISTANT** desires change. London area. Post-war Schools experience. Salary £575. Box 2542.

#### Miscellaneous

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

**J. BINNS, LTD.** Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works, 99-107, St. Paul's Road, N.1. Canonbury 2061.

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# Alphabetical Index to Advertisers

	PAGE		PAGE		PAGE
Abbey Building Supplies Co. ....	xlvi, xlvii	Exfoliators (Vermiculite), Ltd. ....	lxxxviii	Philipson & Son, Ltd. ....	lxxxviii
Adamite Co., Ltd., The ....	xcvii	Expanded Metal Co., Ltd., The ....	v	Pilchers, Ltd. ....	lxxxviii
Adams, Robert (Victor), Ltd. ....	lxxxvii	Falkirk Iron Co., Ltd. ....	xxiii	Pilkington Tiles, Ltd. ....	lxxxix
Adshend, Ratcliffe & Co., Ltd. ....	xlviii	Farnlow, T. & W., Ltd. ....	xlix	Plaster Products (Greenhithe), Ltd. ....	xi
Allied Guilds, ....	xcviii	Fibreglass, Ltd. ....	lxxxviii	Prodorite, Ltd. ....	lxxxix
Aren's Controls, Ltd. ....	xxix	Fitzpatrick & Son (Contractors), Ltd. ....	lxxxviii	Pyrene Co., Ltd., The ....	lxxxix
Aspinall (Paints), Ltd. ....	xcvii	Floor Quarry Association ....	ix	Redpath, Brown & Co., Ltd. ....	lxiv
Associated Metal Works (Glasgow), Ltd. ....	lxxxviii	Fothergill & Harvey, Ltd. ....	vii	Rely-A-Bell Burglar & Fire Alarm Co., Ltd. ....	lxxxiv
Baldwins, Son & Co., Ltd. ....	lxxxviii	Franki Compressed Pile Co., Ltd., The ....	xxviii	Rowson, Drew & Clydesdale, Ltd. ....	lxxxvi
Balmoral Private Hotel ....	xcviii	French, Thos., & Sons, Ltd. ....	lxii	Rubcorp Co., Ltd. ....	lxxxvi
Berklamsted Brick Co., Ltd. ....	lxxxiii	Gias Connell, The ....	iv	Rubery, Owen & Co., Ltd. ....	xlii
Birmingham & Blackburn Construction Blackburn, Thos., & Sons, Ltd. ....	lxxxiii	Gibson, Arthur J., & Co., Ltd. ....	xxxii	Sadd, John, & Sons, Ltd. ....	xcvii
Blundell, Spence & Co., Ltd. ....	lxvii	Glow-Worm Boilers, Ltd. ....	lxxxvii	Salter, T. E., Ltd. ....	lxxxvii
Booth, John, & Sons (Bolton), Ltd. ....	xiv	Gyproc Products, Ltd. ....	lxxxvii	Sankey-Sheldon, Ltd. ....	lxxxvii
Boulton & Paul, Ltd. ....	xcvii	Hall, Robert H., & Co., Ltd. ....	lxxxvii	Sealuro (St. Helen's), Ltd. ....	lxxxvii
Box, C. W. ....	lxxxvii	Harvey, G. A., & Co. (London), Ltd. ....	lxxxvii	Scaffolding (Great Britain), Ltd. ....	lxxxvii
Bradford, F., & Co., Ltd. ....	lxxxvii	Hickson's Timber Impregnation Co. (G.B.), Ltd. ....	lxxxvii	Seamastic, Ltd. ....	lxxxvii
British Insulated Cables ....	lxxxvii	Holland & Hannen and Cubitts, Ltd. ....	lxxxvii	Simplex Electric Co., Ltd. ....	lxxxvii
British Plumber, Ltd. ....	lxxxvii	Hollis Bros., Ltd. ....	lxxxvii	Small, F. L. & E., Ltd. ....	lxxxvii
Britmar Electrical Co., Ltd. ....	lxxxvii	Holoplast, Ltd. ....	lxxxvii	Smith, G. H., & Partners ....	lxxxvii
Broad & Co., Ltd. ....	lxxxvii	Hope, Henry, & Sons, Ltd. ....	lxxxvii	Smith, Samuel, & Sons, Ltd. ....	lxxxvii
Camion, W. G., & Sons, Ltd. ....	lxxxvii	Hygiene Products (Great Britain), Ltd. ....	lxxxvii	Smith's Fireproof Floors, Ltd. ....	lxxxvii
Cape Asbestos Co., Ltd. ....	lxxxvii	International Correspondence Schools ...	lxxxvii	Solignum, Ltd. ....	lxxxvii
Carter & Co., Ltd. ....	lxxxvii	Kerner-Greenwood & Co., Ltd. ....	lxxxvii	Standard Patent Glazing Co., Ltd., The	lxxxvii
Celeon, Ltd. ....	lxxxvii	Kilmear Shutters ....	lxxxvii	Stelcon (Industrial Floors), Ltd. ....	lxxxvii
Celotex, Ltd. ....	lxxxvii	Lahig, John, & Son, Ltd. ....	lxxxvii	Stranite Boards, Ltd. ....	lxxxvii
Cement Marketing Co., Ltd., The ....	lxxxvii	Lead Industries Development Council ...	lxxxvii	Sundela Board Co., Ltd. ....	lxxxvii
Church & Co. (Fittings), Ltd. ....	lxxxvii	Lenscrete, Ltd. ....	lxxxvii	Taylor, R., & Co. (Ironfounders), Ltd. ....	lxxxvii
Cloakroom Equipment, Ltd. ....	lxxxvii	Leslie & Co., Ltd. ....	lxxxvii	Thermocust, Ltd. ....	lxxxvii
Cochran & Co., Annan, Ltd. ....	lxxxvii	Limmer & Trinidad Lake Asphalt Co., Ltd., The ....	lxxxvii	Thermotank, Ltd. ....	lxxxvii
Colt Ventilation, Ltd. ....	lxxxvii	Linoleum Manufacturers' Association ...	lxxxvii	Thompson, John (Beacon Windows), Ltd. ....	lxxxvii
Compression Joints, Ltd. ....	lxxxvii	Lisle, Munday & Co., Ltd. ....	lxxxvii	Thorn, J., & Sons, Ltd. ....	lxxxvii
Concrete, Ltd. ....	lxxxvii	Lisle, Munday & Co., Ltd. ....	lxxxvii	Thornton, A. G., Ltd. ....	lxxxvii
Cox & Co. (Watford), Ltd. ....	lxxxvii	Lockhart Equipment Ltd. ....	lxxxvii	Thorp, John B. ....	lxxxvii
Crabtree, J. A., & Co., Ltd. ....	lxxxvii	Logan, Sons & Co., Ltd. (Vermiculite) ...	lxxxvii	Tectol, Ltd. ....	lxxxvii
Crittall Manufacturing Co., Ltd. ....	lxxxvii	London Brick Co., Ltd., The ....	lxxxvii	Triad Floor, Ltd. ....	lxxxvii
Davidson, C., & Sons, Ltd. ....	lxxxvii	Mallinson, Wm., & Sons, Ltd. ....	lxxxvii	True Flue, Ltd. ....	lxxxvii
Denny, Mott & Dixon, Ltd. ....	lxxxvii	Marbolith Flooring Co., Ltd., The ....	lxxxvii	Truett & Steel, Ltd. ....	lxxxvii
Dreadnought Fireproof Doors (1930), Ltd. ....	lxxxvii	Marley Tile Co., Ltd., The ....	lxxxvii	Tucker, J. H., & Co., Ltd. ....	lxxxvii
Dunbrik, Ltd. ....	lxxxvii	Martyn, H. H., & Co., Ltd. ....	lxxxvii	Turrier, Chas., & Son, Ltd. ....	lxxxvii
Dunlop Rubber Co., Ltd. ....	Front Cover	May & Baker, Ltd. ....	lxxxvii	Underwood, S. ....	lxxxvii
Durable Asphalt Co., Ltd. ....	xl	Metallic Seamless Tube Co., Ltd., The ...	lxxxvii	Val de Travers Asphalt Paving Co., Ltd., The ....	lxxxvii
Dureson Products, Ltd. ....	xxxv	Metal Sections, Ltd. ....	lxxxvii	Viger Bros., Ltd. ....	lxxxvii
Ebor Concrete, Ltd. ....	lxxxvii	Mills Scaffold Co., Ltd. ....	lxxxvii	Vulcan Products, Ltd. ....	lxxxvii
Econa Modern Products, Ltd. ....	lxxxvii	Neuchatel Asphalt Co., Ltd., The ....	lxxxvii	Walker, Crossweller & Co., Ltd. ....	lxxxvii
Ellison, George, Ltd. ....	lxxxvii	New Day Electrical Accessories, Ltd. ....	lxxxvii	Walpamur Co., Ltd. ....	lxxxvii
Ellis School of Architecture, The ....	lxxxvii	Newman, Wm., & Sons, Ltd. ....	lxxxvii	Ward, Thos. W., Ltd. ....	lxxxvii
English Clock Systems, Ltd. ....	lxxxvii	Norharc Organisation ....	lxxxvii	Wellington Tube Works, Ltd. ....	lxxxvii
Esavian, Ltd. ....	lxxxvii	Old Bleach Furnishings, Ltd. ....	lxxxvii	Whittle, R. W., Ltd. ....	lxxxvii
Estelle, David, & Co., Ltd. ....	lxxxvii	Ozafid Co., Ltd. ....	lxxxvii	Williams & Williams, Ltd. ....	lxxxvii
Evode, Ltd. ....	lxxxvii	Parkinson Stove Co., Ltd., The ....	lxxxvii	Zinc Alloy Rust Proofing Co., Ltd. ....	lxxxvii
		Penmaenmawr & Welsh Granite Co., Ltd. ....	lxxxvii		

For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tenders, etc., Educational, Legal Notices, Miscellaneous Property, Land and Sales, see lxxxix, xc, xci, xcii.

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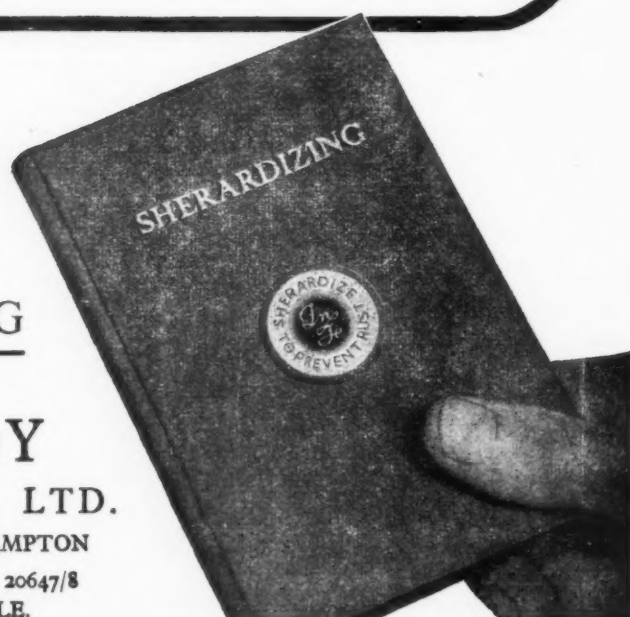
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age  
viii  
xxi  
xix  
xi

xix  
xiv

xiv  
xvi

li  
xiii

xcii  
xiv

xvi  
xxi

xciii  
x

viii  
viii

xxv  
xvii

xxx  
l

xciii  
lx

xcxii  
xiii

xxx  
xvi

xiv  
xli

xciii  
xi

xcix  
xlii

xlii  
xli

xcvi  
xciv



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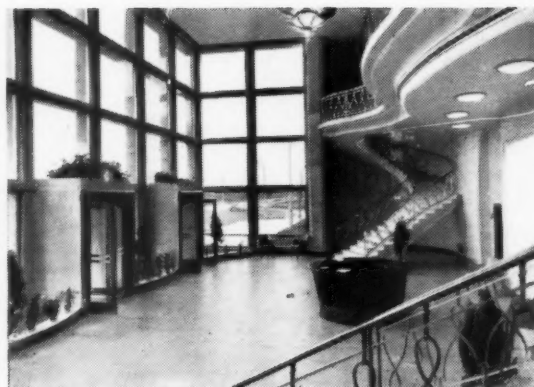
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