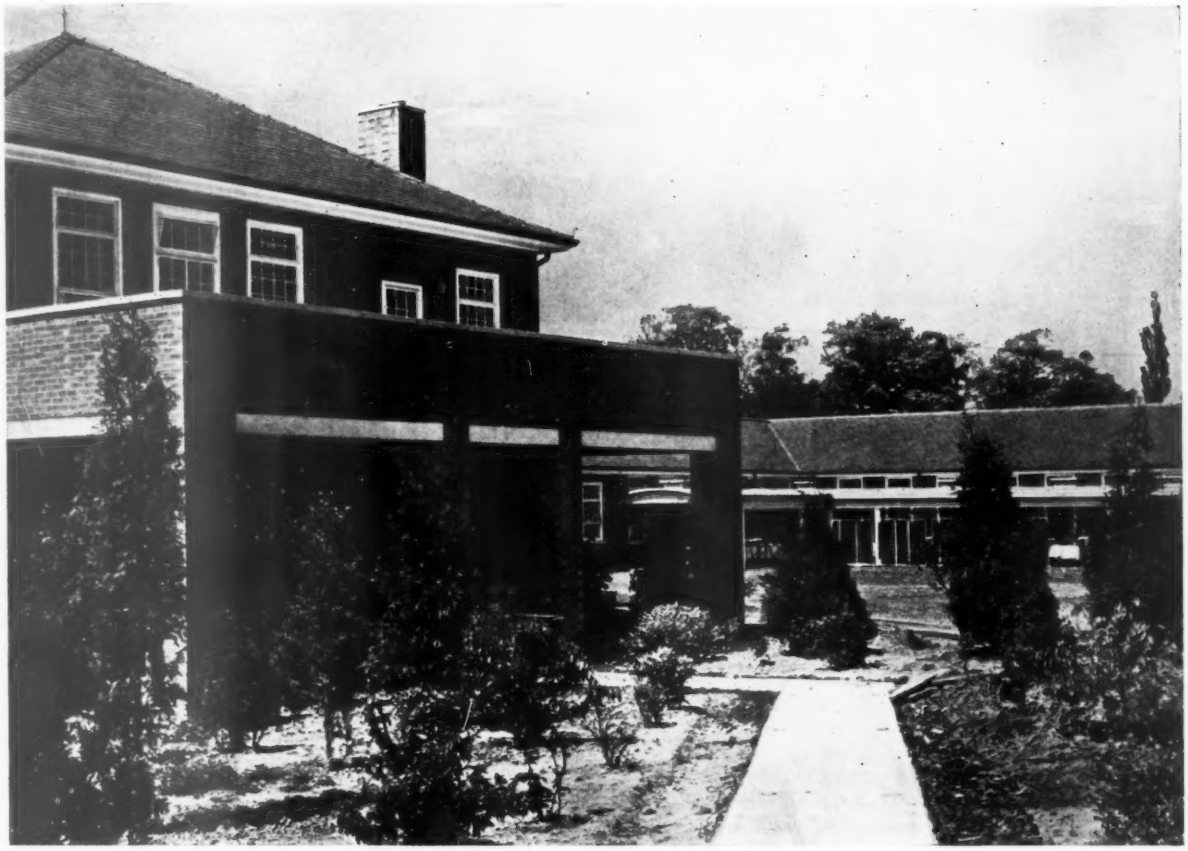

Brookwood Hospital, Knaphill, Woking, Surrey. Architects: F. J. Hodgson, L.R.I.B.A., A. I. Struct.E. Contractors: Crosby & Co., Ltd. Farnham.

THE ARCHITECTS' JOURNAL

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The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, AUGUST 24, 1939. NUMBER 2327 : VOLUME 90

PRINCIPAL CONTENTS

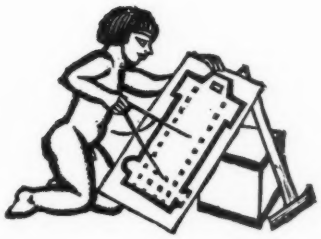
OLYMPIC GAMES 1940

The Olympic Games will be held at Helsingfors, Finland, next year. Top is the principal stand in the stadium which is already nearing completion. Bottom, left, the new Post Office ; right, the Railway Station, by Eli Saarinen.

Photo: H. Courtney Bryson]

IN THE SAHARA

A street in Touggourt in the Sahara. Touggourt used to be the centre of the caravan trade of the eastern Sahara, as Marrakesh was of the western and Timbuctoo of the southern. Most of the streets in Touggourt consist of tunnels such as that seen in the background. These tunnels are lined with stone or dried clay benches similar to that on which the sunburnt gentleman in the photograph is taking his leisure. The entrances to the houses open out from each side of the tunnels.



PREFABRICATION AND CAMPS

WE have already suggested that the factory-made wall unit may give a considerable reduction in building costs, but the process must go further than this if the full advantages of the system are to be realized. The ideal is, as we have already stated, a house which can be bought in units and assembled by unskilled labour. With the garage or the simple garden shed this can easily be done, but in public buildings great attention must be paid to the services as well. It will not be enough to label a sufficiency of lighting and power points and arrange the plumbing so that the pipe runs come reasonably near together. To build a structural shell in a few hours is of no use unless the time usually occupied with finishings is reduced as well. Take, for example, the average office block. The shop-fabricated steel frame rushes up at an astonishing speed, followed much more slowly by the walls ; even when the roof is on the building is not more than half completed, and elaborate progress schedules are needed so that the different trades shall be able to do their jobs at the right stage in the proceedings and without interfering with the rest of the work. The process of building is slow, not because it is complicated, but because buildings are built one at a time on the site instead of in fifties or hundreds in the factory.

At present we have gone a little way towards shop fabrication. Doors and windows arrive on the site complete, while a number of internal finishes and fittings are available in large units, so that their installation is easy provided that the design has been worked out to suit standard dimensions. The process must now go further; the services must be designed as carefully as the structure, and site work, after the preliminary excavations and foundation work, must be limited to the fixing together of large panels and the connecting up of the various services. With this approach to design it is inevitable that the newer materials will be used in considerable quantities. Probably not even their manufacturers would claim perfection for all the products at present available, but we have, already, such things as waterproof plywood, asbestos cement, light gauge steel sheet, light vibrated concrete panels, foils, cork, glass silk and a host of other insulating materials, while linings are marketed in lengths of from eight to sixteen feet and pipe joints may be made with a spanner instead of a blowlamp. This list could be easily extended, but we have enough for our purpose, and when design has become more crystallized it will no doubt be possible for chemists and metallurgists to produce materials with the characteristics which have been found desirable in practice.

If, in the future, any considerable volume of building is to be done in the factory, there is bound to be a certain amount of opposition, not only from the building contractors but from the operatives themselves. At the moment, however, a large proportion of the industry is engaged on Government work, and, in spite of the fact that private building has shown a considerable decrease in the most recent returns, unemployment, at any rate in the skilled trades, is not serious. We suggest, therefore, that the Government's camps programme offers an admirable opportunity for testing out various methods of shop fabrication, since plenty of unskilled labour is available for the site work and it would be unnecessary to provide housing accommodation for a large number of workers in the comparatively remote areas which will presumably be chosen for the camps. Shop fabrication will reduce the amount of skilled labour necessary, for there is plenty of machinery in existence which is capable of carrying out the work. Existing building bye-laws need not apply to Government work, so that no revision should be needed at the moment, though changes will doubtless have to be made in the future if shop fabrication becomes usual.

In choosing camps for the subject of our experiment we have an almost perfect test case. A number of them are to be built in all parts of the country ; they will, if used for relays of school children and workers, be submitted to extremely hard wear, and at the same time there will not be a great deal of money available for upkeep. In order to allow for climatic variations, different materials and systems could be tried out in the same camp, and it should be possible to find not only the best and simplest system on which to build, but the best materials to use for different conditions of exposure.

Here, then, is a great opportunity which the profession should not overlook. There are signs that the building industry itself would welcome such an experiment, for at least one group of manufacturers has organized a display of camp building technique, nearly all the schemes involving a large percentage of shop fabrication. The Building Centre Competition demanded considerable attention to constructional details, and a number of well thought out ideas were submitted. Here again shop fabrication was widely used. At the moment it seems that all camps are to be built of the same standardized units and *in the same materials*. While we have no quarrel whatever with the particular materials chosen, there is much to be said for the comparisons between different materials which we have outlined above. Mr. Tait, as his work at the Glasgow Exhibition showed, fully appreciates the advantages of light construction, and, since these camps are presumably not intended to have a life of more than twenty years or so, future designs might well be made the subject of experiment.

Many of the slum dwellings which we now rightly condemn are still satisfactory structures, but have failed because they are unsuitable for present standards of living. A form of light construction with a comparatively short life might therefore be the answer to the housing problem, at least in the country areas and satellite towns. At a time when private enterprise is being discouraged by the international situation, large-scale research on these lines should pay a handsome dividend in the future.

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NOTES & TOPICS

WAR RISK INSURANCE

IT certainly seems that a war insurance scheme for property should be put in hand without any delay. It is equally certain that no such scheme can be of any use without Government backing, although last week there appeared an enterprising advertisement of a private company offering advantageous terms to property owners. As things stand there is to be a meeting of interested organizations next month to consider a scheme put forward by the Association of British Chambers of Commerce, and it is intended that the scheme should be compulsory, finance being supplied by an annual premium and a levy. To borrow from Mr. Wodehouse, speed would seem to be of the essence, unless we can expect that any such scheme will be retrospective and an owner can contribute his first share of the levy out of compensation received for his already razed property.

LIVERPOOL SMUTS . . .

A deputation to the L.M.S., headed by the Lord Mayor of Liverpool, has resulted in a decision to use only Welsh smokeless fuel on local services around Liverpool. A "scientific approach" to the problem by Liverpool University, using the evidence of automatic air filters, has finally convinced the railway authorities.

*

Liverpool's central rehousing scheme, for 5,000, as well as the University buildings, collect a record deposit from the mile-long cutting that leads to Lime Street station. It is said that in the good old days one of the Liverpool Rome scholars rendered his final drawings by filtering the smuts which fell upon his desk.

. . . AND WATCHDOGS OF MERSEYSIDE

But now Liverpool has its Civic Society ("lawyers, clergymen and business men of every variety") which not only does its best to abolish the smuts, but sees to it that pavements are not fouled nor parks left unkempt, that historic features are not destroyed nor open spaces cluttered by housing trash. Just now it is holding a competition for better-designed lamp standards and public seats. It's champion, is that. But don't let's have Liverpool losing its wistful, murky atmosphere all of a sudden like.

LIVERPOOL ON THE THAMES

While we're on Liverpool and smuts, the Liverpool School of Architecture Society chartered a boat from Westminster pier on Saturday and chugged down river forty strong. The sun shone brightly on Greenwich Hospital, the red-sailed barges . . . and on the embryo bargees bathing from the wharves.

FOR OLDE TYME'S SAKE

My thanks to a correspondent in York whose initials seem to be F.D. He sends me a cartoon from the *Yorkshire Evening Post*, reproduced below. The explanation is that the ratepayers of Pinner have petitioned London Transport to give the new station a "mediæval" look in keeping with the surrounding property.

What will Mr. Frank Pick do about it? Or Mr. Heaps, or Mr. Barman? L.P.T.B. architecture is not universally approved (see last week's quotation from the *Bowes Park Weekly News*), but Pinner residents are not very likely to get the Jacobethan effort they seem to want. Or, if they do, the D.I.A. ought to have something to say about it.

ANCIENT AND MODERN

The layman's fatal predilection for half-timbering, preferably mock, is such a bewhiskered subject that one feels a somewhat natural hesitation about referring to it again. But, if hoary, it is also ever with us. Last week the Dursley Parish Council described its eighteenth-century town hall as an "eyesore" with "little claim to be considered as an architectural gem," neither of which phrases would have been employed, one is sure, had the

The Führer explains a plan detail to his architect, Professor Albert Speer.

building been TUDOR. The *Daily Express* (Manchester edition), on the other hand, has awarded the palm to its own all-glass-fronted home as the most striking building in Manchester, describing it as " a poem—modern style," like " a ship, with a curly sort of prow " ; and adds that while " the owner of the latest dreary sham-Gothic horror would probably dismiss such modernistic ideas scornfully as visionary and not practical," thanks should be given to Lord Beaverbrook for his amusing gift to their city. We might ourselves give thanks to the *Express* for giving its support to the modern movement—if only it had mentioned the name of the architect.

" NOBLE PRACTICAL PURPOSES "

After saying, last week, what regrettable lack of interest in architecture was to be found among school teachers, I must exempt the enlightened words of Bristol Grammar School's former head (Mr. J. E. Barton), when he opened an exhibition of work by the Wessex Society of Architects the other day.

★

Mr. Barton thinks a remarkable change has taken place in the attitude of the educated public to architecture in the last fifty years. In his days architecture was no more than a hobby. " We felt very little of a connection between architecture as a vital art and the social and material purposes for which buildings existed. We divided all life into two compartments : the vulgarly practical and the decorative and scholarly. . . . Many of us now believe that beauty will come if it is living all the time in the winds and aims of men while they pursue noble practices."

★

Very fine (a pity the compositor set it as " winds "). Still, Mr. Barton believes that if young architects today preserve their ideals in spite of all material discouragements, they will be playing a great part in the social movement of our time. And you must admit that this kind of keen understanding and encouragement is rare—especially among those who teach the citizens of the future.

PROGRESS AT NUREMBERG

Professor Albert Speer's buildings at Nuremberg seem to get larger and more numerous every month. The great arena for the *Parteitag* celebrations may not be ready for this year, but it has been rushed up at an astonishing speed, while the Führer himself (see photograph) takes a more than academic interest in the plans. Not everybody likes Professor Speer's architecture, but anyone who has ever tried to justify anything to some government departments would prefer to deal with somebody who can read a plan, and who won't just confine his remarks to wondering why opposite sides of the building look different.

MOVING COMMENTARY

I have had a letter from the man who met the man who made the loud-speakers give different stories to the moving armchairs from which the General Motors exhibit at the Fair, a " futurama " of America in 1960, is viewed. His name is H. R. Lewis (student R.I.B.A.), and I am very grateful to him for clearing up the mystery.

★

" I had the pleasure," he writes, " of meeting the man who built the moving armchairs, and supervised the synchronization of the loudspeakers." He says :

" The sound is recorded on the sound film and there are seven zones, each of which has its own sound strip. The same commentary is confined to three armchairs, and by an ingenious device, is transferred to each unit of three cars as they enter a zone. In the zone itself the commentary is changed seven times. Thus, through the whole view there are forty-nine different commentaries."

Though the exhibit is free, the loud-speaker apparatus cost $450,000 to build.

COMPETITIONS

Three thousand, three hundred pounds are waiting to be collected by architects. Don't all rush. I've just added up the premiums for the various competitions now open. This sum is divided between six competitions and subjects range from an exhibition hall to a school. What about it ?

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

ON THE AIR

The B.B.C. announces that the following broadcasts will be included in the programmes :–

Blenheim Palace : Regional and Midland : September 9 : Blenheim Palace will be the subject of a feature programme on September 9. Igor Vinogradoff, who wrote the script for the story of this great house, had previously written for broadcasting a programme about Compton Wynyates.

Famous Fusses : Regional : September 3 : What did "P.R.B." mean? This was a question to which artistic London eagerly sought an answer in 1848 when it was noticed that on recent paintings by Millais, Holman Hunt and Rossetti the artists had not only signed their names, but added these cryptic initials. In 1850 the mystery was solved : it was discovered that seven young artists, calling themselves the Pre-Raphaelite Brotherhood, had banded themselves together to practise a new style of painting. The programme which has been compiled by Hartley Kemball Cook is described as "A Warning to Critics."

How to Look at Antiquities : Regional and West : August 31 : On August 31 Stuart Piggott will give a talk on "How to Look at Antiquities," which will be broadcast in the West and Regional programmes.

BUILDING INDUSTRIES NATIONAL COUNCIL

The position of the building industry showed a further improvement during July, states the current issue of the "Building Industries Survey," published by the Building Industries National Council, activity being at the same level as in the previous month, whereas there is usually a decline owing to seasonal influences.

The rate of unemployment among insured building operatives in Great Britain was 11·0 per cent. in mid-July, as against 13·1 per cent. a year ago, and the number unemployed was reduced by 11,500 on the year.

This continued improvement is due entirely to Government-inspired activity, and largely to direct Government contracts which are not recorded in the statistics of building plan approvals. Normal civil activity and investment in building continue to decline, but are outweighed by the urgent short-term programme in connection with defence. Some work of a normal kind may be released by a clarification of the position relating to war risks insurance of private property if the decisions of the Government conference are favourable, but the international political position will continue to be a major factor in assessing prospects.

The position of public works contracting showed little change during the month apart from seasonal movements of normal dimensions. The rate of unemployment in Great Britain, at 31·0 per cent. of the insured workers, compared with 38·1 per cent. a year ago, is the lowest for the time of year since the depression.

The position of the materials industries showed little alteration except for the operation of the usual seasonal influences, which have in some cases been mitigated or enhanced by the exceptional factors at work. It would appear essential in present circumstances for particular regard to be had to the need for the preservation of a proper balance between the industrial resources called upon in connection with defence work. Maximum progress can only be made with a minimum of disturbance by a balanced effort utilizing all the available resources of the building industries in due proportion. Such an outcome would be materially assisted by more adequate advance information of demands likely to be made over a reasonable period.

THE ARCHITECTS' DIARY

Friday, August 25
LONDON SOCIETY *Visit to some modern churches in South London. Depart Lancaster House at 2 p.m.*

Friday, September 1
TOWN AND COUNTRY PLANNING SUMMER SCHOOL. *At Bede College, Durham. Until September 8.*

Tuesday, September 12
BUILDING TRADES EXHIBITION, *Liverpool. Until September 23.*

Thursday, September 21
INSTITUTE OF HOUSING. *Annual Conference, Brighton. Until September 23.*
NATIONAL SMOKE ABATEMENT SOCIETY. *Eleventh Annual Conference, Blackpool. Until September 23.*

Sunday, September 24
INTERNATIONAL CONGRESS OF ARCHITECTS. *Fifteenth Congress. At Washington. Until October 2.*

Friday, September 29
FACULTY OF ARCHITECTS AND SURVEYORS. *Annual Conference, Brighton. Until October 2.*

Friday, October 6
TOWN PLANNING INSTITUTE. *21st Country Meeting. At Taunton. Until October 8.*

Wednesday, October 18
BUILDING TRADES EXHIBITION, *Birmingham. Until October 28.*

Thursday, October 19
COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND. *Twelfth National Conference, Tunbridge Wells.*

REPAIRS TO HOUSES DAMAGED IN WAR

In a circular to housing authorities in England and Wales the Minister of Health, Mr. Walter Elliot, has outlined the arrangements which the Government has in view for dealing with actual repairs to house property damaged by war action.

Under these arrangements the responsibilities already resting on local authorities in regard to working class housing would be extended by emergency legislation to include houses and other buildings which, though not working class dwellings, are used or required to be used for the accommodation of the general population. It will be the duty of local authorities to see that an adequate supply of housing accommodation is kept up in their areas. For this purpose they will be empowered to execute temporary repairs to damaged houses and other buildings, and repairs of a more permanent nature when circumstances justify them, if the person having control of the building is unable or unwilling to execute the repairs himself. The carrying out of the more permanent repairs will be subject to due notice having been given of the local authority's intention and to the consent of the Minister of Health, which will normally be given through his local Officers.

Loans to cover the cost of repairs will be made to local authorities by the Minister and no demand for repayment or interest either from the local authority or the owner of a house which has been repaired will be made during the emergency.

Steps have been taken by the Government to ensure an adequate supply of material required for works of repair.

A similar circular will be issued by the Secretary of State for Scotland.

INDUSTRIES AT TREFOREST

An analysis of industries now located at the Treforest Trading Estate, in the Special Area of South Wales, shows that the tenants include 19 leather or leather goods manufacturers and 18 manufacturers of fancy goods or toys.

Other industries well represented are :—

Light engineering and metal products	13
Chemicals	11
Paper, stationery, printing	9
Electrical goods	8
Building materials	8
Clothing and textiles	7

The tenants now number 100, half of whom are in production. Many of the factories are working night and day.

The employment figure continues to rise steadily. One thousand men and 280 boys are now employed in the factories and 650 men are still at work on development and construction, which was begun in December, 1936. The women employees in factories number 540 and the girls 600, making a total of over 3,000 wage-earners on the Estate.

HALF-YEARLY HOUSING RETURN

The Minister of Health, Mr. Walter Elliot, has just published a return* showing the progress of housing and slum clearance during the six months ending March 31, 1939, and the position at that date.

The return shows that during the half year ending March 31, 1939, 173,376 houses were built in England and Wales, bringing the total number built since the Armistice up to 3,998,366.

The number of houses provided by private enterprise without State assistance in the half year was 116,125, which was 5,841 more than the number in the preceding half year. During the year ending March, 1939, private enterprise without State assistance provided 226,409 houses, compared with 257,081 for the year ending March, 1938. On the other hand, during the same year local authorities provided 101,744 houses, compared with 77,970 in the year ending March, 1938, so that although unassisted private enterprise produced 30,672 houses less than the year before, local authorities produced 23,774 houses more than the year before.

The total number of houses produced by all agencies during the year ending March, 1939, was 332,360, compared with 337,602 in the preceding year.

The proportion of new houses provided by private enterprise for letting continues to grow slowly. In the half year ending March 31, 1939, of the houses built by private enterprise with rateable value not exceeding £13 (£20 in Greater London), 46·4 per cent. were built for letting as compared with 45·2 per cent. in the preceding half year.

The effective progress being made in slum clearance is shown by the number of houses demolished and the number of new replacement houses built. Up to March 31, 1939, 273,390 houses had been erected for rehousing persons displaced from unfit houses, and of these 42,085 were completed during the half year

* Housing—House Production, Slum Clearance, etc., England and Wales. Published by H.M. Stationery Office. Price 4d.

ending March 31, 1939. During the half year 38,064 houses were either demolished or debarred from human habitation, bringing the total of such houses at March 31, 1939, up to 272,836.

SLUM CLEARANCE AND REHOUSING

The most recent figures showing the position of slum clearance and rehousing are summarized below.

Clearance Areas and Orders.—During July local authorities declared areas comprising 1,928 houses representing the displacement of 6,095 persons, as compared with 3,039 houses and a displacement of 10,421 persons in June. The Orders submitted during July covered 2,392 houses and the displacement of 8,959 persons, as compared with 2,155 houses and the displacement of 6,262 persons in June. The Orders confirmed during July covered 1,179 houses and 4,668 persons, as compared with 4,757 houses and 19,672 persons in May. The total number of houses in confirmed Orders since April 1, 1933, is now 246,967, involving the displacement of 1,027,423 persons. The figures in the preceding paragraphs do not include houses which are the subject of individual demolition orders.

Rehousing Progress.—The latest available figures are those for June. At the end of that month there were 48,112 houses under construction, as compared with 49,023 at the end of May, and 75,010 at the end of June, 1938. 6,102 houses were completed during June, as compared with 6,215 during May, and 7,569 during June, 1938. The majority of these houses are being provided for rehousing persons displaced in connection with slum clearance schemes. New houses approved during July numbered 3,341, as compared with 5,981 in June, and 7,712 in July of last year.

OBITUARY

Mr. John Ferguson, of Mayfield, Haxby, whose death occurred last week, started his career as an architect with the late Mr. Peachey, at Darlington. Later he joined the staff of the London and North Eastern Railway in York. Mr. Ferguson was largely responsible for many important buildings erected by the L.N.E.R. Company.

NEWS IN BRIEF

♦ Mr. M. Pearlman has changed his address to 28 St. Stephen's Close, Avenue Road, N.W.8. Telephone : Primrose 7400.

♦ Work on the making of the sixty-four 110-ton shoes to support the columns of the large hall of the Palace of Soviets under construction in Moscow will be commenced on the site of the building in the next few days.

♦ Work has already begun on the first stage of the new civic centre to be built for Kensington Borough Council on sites adjacent to the present town hall. Mr. Percy Thomas is the architect.

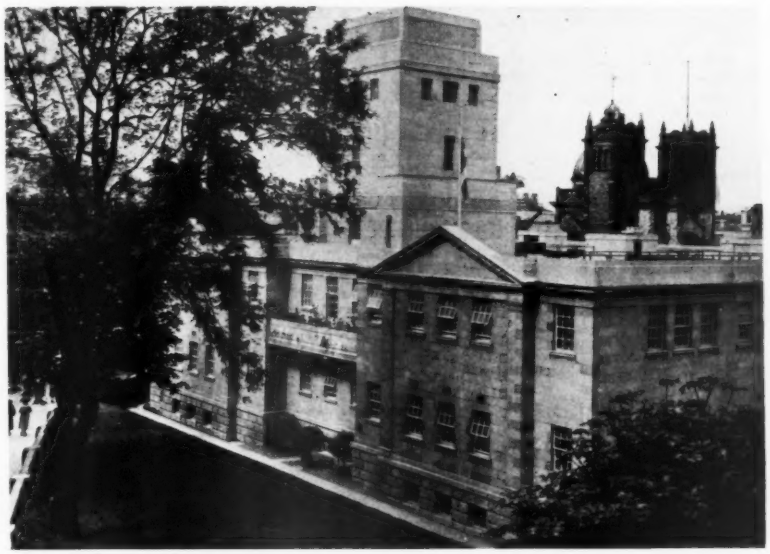
♦ St. Jude's Church House, Belfast, designed by Mr. R. H. Gibson, has been awarded the R.I.B.A. medal for the best public building erected in Northern Ireland during the past three years.

♦ Mr. Philip Massey, B.SC. (ECON.), F.R.ECON.S., has been appointed Editor of Research, and will undertake the supervision of the research activities of the School of Planning and Research. Mr. Massey will continue his practice as an economist and statistician from his office address.

COMPETITIONS OPEN

DUDLEY : SCHOOL

New Mixed Senior School to be built on a site in Halesowen Road, Netherton (limited to architects with offices in Warwickshire, Worcestershire, Herefordshire, Shropshire and Staffordshire. Assessor : Mr. S. N. Cooke, F.R.I.B.A. Premiums : £150, £100 and £50. Sending-in day, August 31. Last day for questions was June 30. Conditions are obtainable from the Director of Education, Education Offices, St. James' Road, Dudley. Deposit £1 1s.



The new treatment building at the Harrogate Royal Baths which was recently opened by the Lord Mayor of London. The building was designed by L. H. Clarke.

EDINBURGH : EXHIBITION HALL

Exhibition Hall to be built on the site of the present Waverley Market, Princes Street. Assessor : Mr. T. S. Tait, F.R.I.B.A. Premiums : 500, 300 and 200 guineas. Sending-in day : August 31, 1939. Conditions obtainable from the Town Clerk, City Chambers, Edinburgh, 1. Deposit £2 2s.

WATFORD : FIRE STATION

New Fire Station to be built on a site in Nascot Road, Watford. (Open to architects of British nationality who are members of the R.I.B.A. or its allied societies.) Assessor : Mr. E. Maxwell Fry, F.R.I.B.A. Premiums : £150 and £75. Sending-in day : August 31. Last day for questions was July 14. Conditions obtainable from the Town Clerk, Municipal Offices, Watford. Deposit £1 1s.

MARGATE : CIVIC CENTRE

Civic Centre for the Corporation. Assessor : Mr. A. F. B. Anderson, F.R.I.B.A., S.A.D.G. Premiums : £500, £300 and £200. Conditions obtainable from the Town Clerk, Borough of Margate, 40 Grosvenor Place, Margate. Sending-in day, August 31. Last day for questions was March 31. Deposit £1 1s.

LONDON : SHOP-FRONT

Shop-front for the Building Centre, in aluminium. (Open to architects and architectural students of British nationality.) Assessors : Messrs. Robert Atkinson, F.R.I.B.A., Maurice E. Webb, F.R.I.B.A., R. S. Lavers, A.R.I.B.A., and F. R. Yerbury, HON.A.R.I.B.A. Premiums : £100 and £50. Sending-in day : September 18, 1939. Conditions obtainable from Mr. F. R. Yerbury, Director of the Building Centre, 158 New Bond Street, London, W.1.

OLDHAM : OFFICES

New Offices and Departmental Buildings for the Electricity Department, Union Street, Oldham. (Open to registered architects.) Assessor : Mr. R. A. Cordingley, M.A., F.R.I.B.A. Premiums : £400, £250, £100. Sending-in day : October 4, 1939. Last day for questions was June 1, 1939. Conditions obtainable from Mr. F. L. Ogden, Borough Electrical Engineer, Greenhill Offices, Oldham. Deposit £2 2s.

ELSON : SCHOOL

Senior School for 480 boys at Elson, Gosport, for the Gosport Education Committee. (Open to architects of British nationality.) Assessor : Mr. Julian Leathart, F.R.I.B.A. Premiums : £100, £50 and £25. Sending-in day, November 11. Last day for questions was August 19. Conditions obtainable from Mr. Geo. R. Walker, Secretary to the Education Committee, Education Offices, Stoke Road, Gosport, Hants. Deposit £1 1s., made payable to the Gosport B.C.

Notes from the Building Research Station on*

THE MOISTURE RESISTANT PROPERTIES OF SOME COATINGS APPLIED TO WOOD†

THE cause of the deterioration of panelling which has been installed in new buildings is a frequent matter of inquiry at the Forest Products Research Laboratory. Sometimes the difficulty is swelling or warping of the panelling, or in the cases where plywood is used, it may be separation of the plies or staining of the surface veneer. In fewer cases, decay has occurred.

In every instance there is the same general cause of trouble, namely, absorption of dampness from the walls by the wood, and this being so, a moisture resistant coating applied to the back of the panelling obviously affords a palliative, if not a cure; but the success of the treatment will depend entirely on the effectiveness of the paint in preventing the passage of water vapour.

The experiments described below aimed at determining the effectiveness of certain treatments in this direction, and the results were of such interest that they appeared worthy of publication, although it is admitted that the problem has received very limited examination.

Ideally, tests of this nature should be conducted with paints whose composition and history are fully known, and the work can profitably be extended only on these lines. From a practical aspect, however, information of immediate value can be obtained from commercially-available products typical of the various classes of commonly used materials.

It would be invidious to give the trade names of the paints, etc., used for the trials, but each

† Contributed by R. A. G. Knight and A. R. Dean, of the Forest Products Research Laboratory.

was purchased " over the counter " as being a typically good quality product available to all classes of user.

The only property taken into account is that of moisture resistance ; the standing quality or durability of the paint is another aspect entirely. No attempt was made to improve the moisture proofing qualities of any paint or to evolve a mixture specifically for that purpose.

EXPERIMENTAL METHOD

The tests were made entirely on home-grown beech. Planed slats of this timber, 26 in. long, 5 in. wide, and ¼ in. thick, were stored in an atmosphere of 25 deg. C. and 60 per cent. humidity until they were steady in moisture content. The figure attained, 12 per cent., is that commonly found to exist in dwelling-houses, public buildings, etc., where normal heating is in operation.

After conditioning, the slats were divided into three pieces each 8 in. long, and all corners and edges were carefully rounded. The centre piece of the three was retained as the unpainted " control " or comparison sample, and the two outer parts were painted. For each paint, two slats were allocated thus giving two controls and four treated pieces.

After being painted, the samples were again stored in the atmosphere of 25 deg. C. and 60 per cent. humidity until constant in weight, i.e. until the paint itself as well as the underlying wood ceased to exhibit any change.

At this stage, the six panels in the set were transferred to a damp atmosphere (25 deg. C. and 90 per cent. humidity), which in moisture content corresponded with the conditions that obtain in a new building prior to its drying out.

After 7, 14 and 28 days in the damp room, all the samples were weighed. From these weights and those obtaining initially, the efficiency of the paint as a moisture excluder was estimated from the expression :—

$$\frac{A-B}{A} \times 100 \text{ per cent.}$$

where

A = weight of moisture absorbed by unpainted panel ;

B = weight of moisture absorbed by painted panel.

It will be seen that the efficiency figure indicates the proportion of the possible moisture absorption that is prevented.

Paint	No. of coats	7 day efficiency	Variation	14 day efficiency	Variation	28 day efficiency	Variation
Limed-rosin medium ..	2	96	±½	94	±½	89	±½
Bituminous paint	2	90	±½	82	±1	69	±1
Enamel	3*	85	±½	73	±1½	58	±2½
Oil paint (1)	3*	83	±¾	72	±1½	56	±1½
Lead paint	3*	76	±2	61	±2½	45	±3
Oil paint (2)	3*	75	±1	59	±3	44	±2½
Aluminium in bronzing liquid	2	70	±¾	55	±1	35	±1
Shellac	2	68	±4	49	±6	31	±6
Copal varnish	2	58	±1½	35	±1	20	±½
Spar varnish	2	51	±1½	30	±1	17	±1½
Aluminium in boiled oil ..	2	47	±7	25	±5	12	±2
Pink primer	1	38	±5	22	±4½	14	±3
Bronzing liquid	2	20	±4	11	±2	6	±1½
Wax polish	2	10	±2	4	±1	3	±1
Boiled oil and turps ..	2	2		—		—	
Raw linseed oil	1	0		—		—	

* *See* text for method of applying the paint.

The efficiencies are recorded in the Table for three periods, 7, 14 and 28 days, and each figure is the mean of the four painted panels in each set. In addition, the variations are given, e.g. average, 75 per cent. ± 3 per cent., meaning that the highest individual efficiency in the set was 78 per cent. and the lowest 72 per cent. This affords a measure of the uniformity of results obtainable with a particular paint.

DESCRIPTION OF THE MATERIALS TESTED

Limed-rosin medium (known in America as " Gloss Oil ").—The formula for this material is given in the appendix ; the paint was developed at the Forest Products Laboratory, Madison, U.S.A., as an end coating for preventing the drying of logs. In this experiment two brush coats were applied to the panels.

Bituminous paint.—A thick black grade, two brush coats applied.

Enamel.—Two applications of a commercial undercoat followed by a top coat of enamel. This method of application was recommended by the makers.

Lead paint.—First coat of pink primer, a second of a half-and-half mixture of the primer and the finishing, and a third coat of a genuine lead paint (exterior quality).

Oil paint.—Three coats, applied as in the case of lead paint. (Two different makes were tested ; the results are given separately.)

Aluminium paints.—The media employed were bronzing liquid and boiled oil. In all cases one part by weight of aluminium paste was mixed with three parts of the medium. Two coats applied in each case.

Shellac.—A solution in methylated spirit. Two coats applied by brush.

Copal and Spar varnishes } Commercially supplied.
Bronzing liquid } Two coats given.

Pink primer.—One coat only, applied thinly.

Wax polish.—Beeswax and turps (two applications) over a cellulose grain sealer.

Boiled oil and turps.—One to two mixture. Two brush coats.

Raw linseed oil.—One rubbed coat.

DISCUSSION

The tests were made on ¼ in. thick pieces of wood only, and the efficiencies cannot be directly applied where other sizes are in use. Similarly, the work was confined to beech, and it does not follow that the effect of the paint on another species would be the same.

In spite of these limitations, the table gives a sound idea of the relative efficacy of different materials in excluding moisture from wood.

The common belief that linseed oil is an efficient protector is shown to be fallacious, and it will readily be appreciated that a single coat of pink primer on timberwork such as window frames, etc., will not prevent the absorption of a large quantity of moisture.

It will be seen that none of the paints included in the test is really moisture-proof over a long period. Where sealed panelling is placed against a damp wall the interspace is likely to remain at a very high humidity for a considerable time ; it follows that in addition to a protective coat, ventilation of the cavity is desirable to ensure the safety of the panelling.

Perspective of a new office building shortly to be erected on a site in Great Russell Street adjoining the Y.W.C.A. Messrs. Howard Leicester & Partners are the architects and Messrs. Walter Lawrence & Sons are the Builders. The building provides accommodation on the ground and first floor for a film company, the basement contains a trade show cinema and a large foyer for the film company, and a garage. An A.R.P. Shelter for 750 people will be provided.

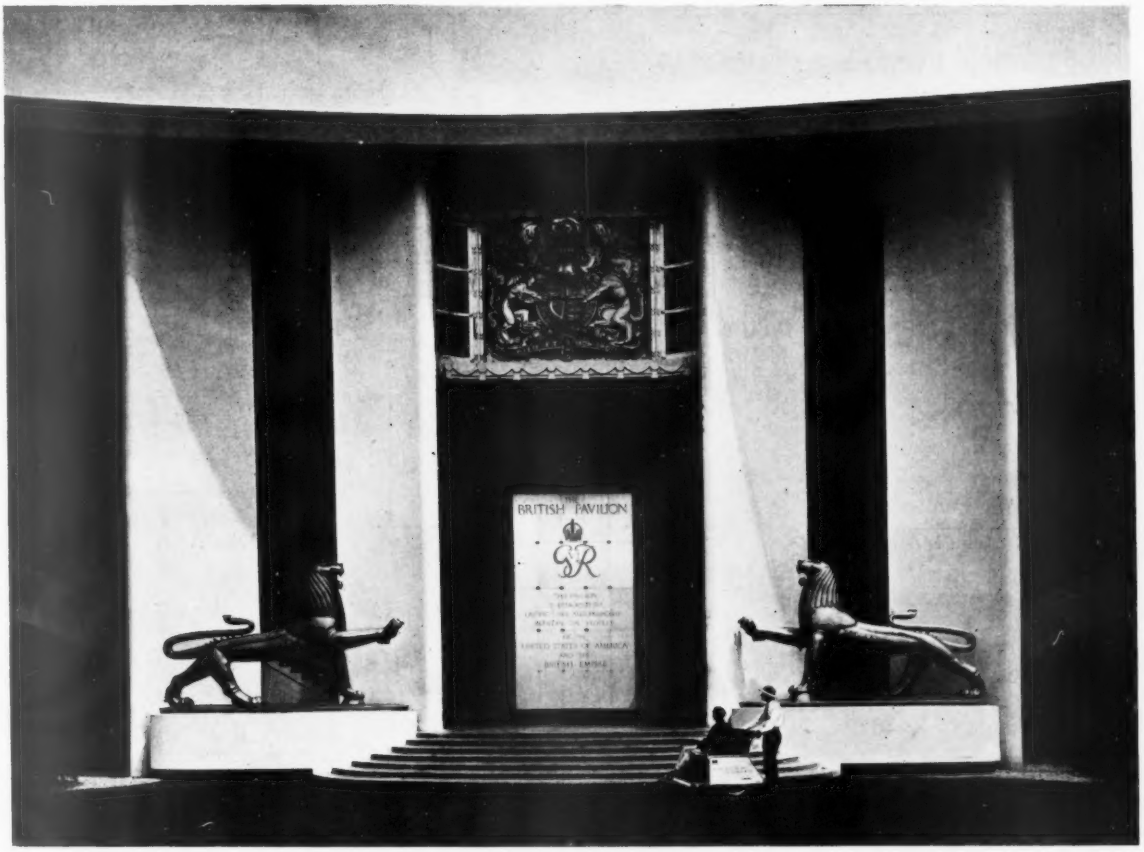
APPENDIX

LIMED-ROSIN MEDIUM
(also known as " Gloss Oil ")

The medium should be of a thick grade, made up (by the paint manufacturer) of about 8 parts quicklime, 100 parts rosin and 57·5 parts spirit (naphtha). To 100 parts of the medium add 25 parts barytes and 25 parts of asbestine (fibrous talc). One or two parts of lampblack may also be added if a black coating is desired. The asbestine helps to prevent the settling out of the pigment. Any paint manufacturer can make up this coating. It can also be mixed by the user as needed, if the proper grade of limed-rosin medium is obtained.

WORKING DETAILS : 773

MAIN ENTRANCE • BRITISH PAVILION, NEW YORK WORLD'S FAIR • STANLEY HALL & EASTON & ROBERTSON

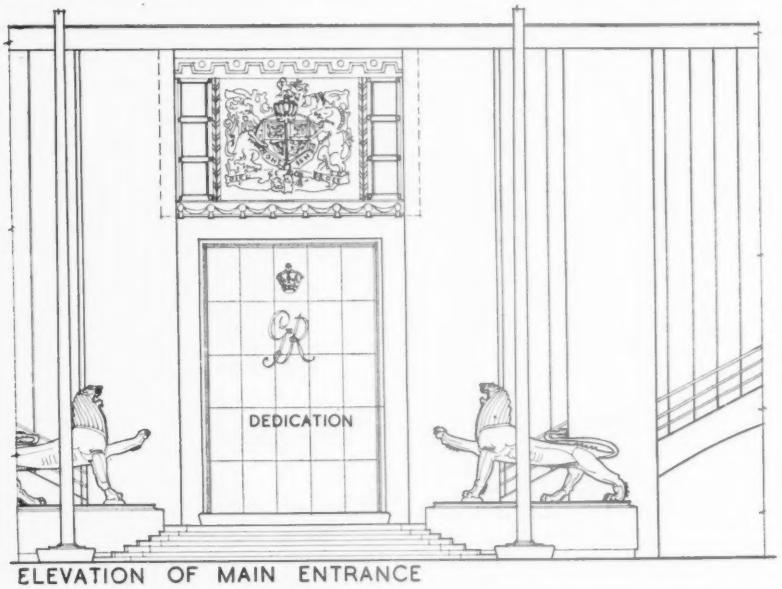


The main entrance to the British Pavilion consists of a double flight of stairs leading to both ends of the Court of Honour on the first floor of the south building.
There is a dedication panel in Hopton wood stone in the centre of the two flights of stairs, flanked by Alfred Hardiman's "Norwich" lions. The two sets of entrance doors are in gilt metal, with quilted plaster heads designed by Eric Aumonier.
Details are shown overleaf.

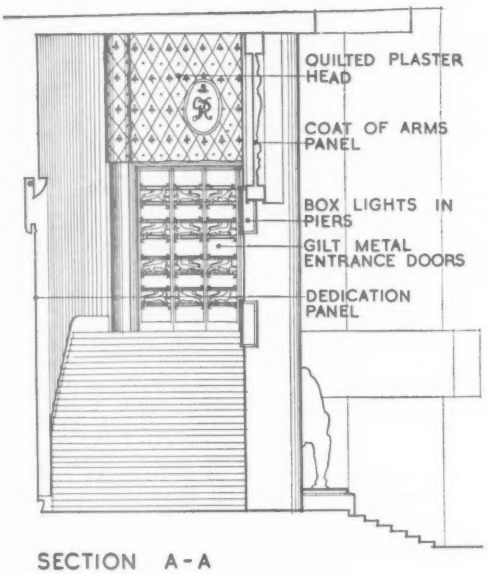
FILING REFERENCE:

WORKING DETAILS : 774

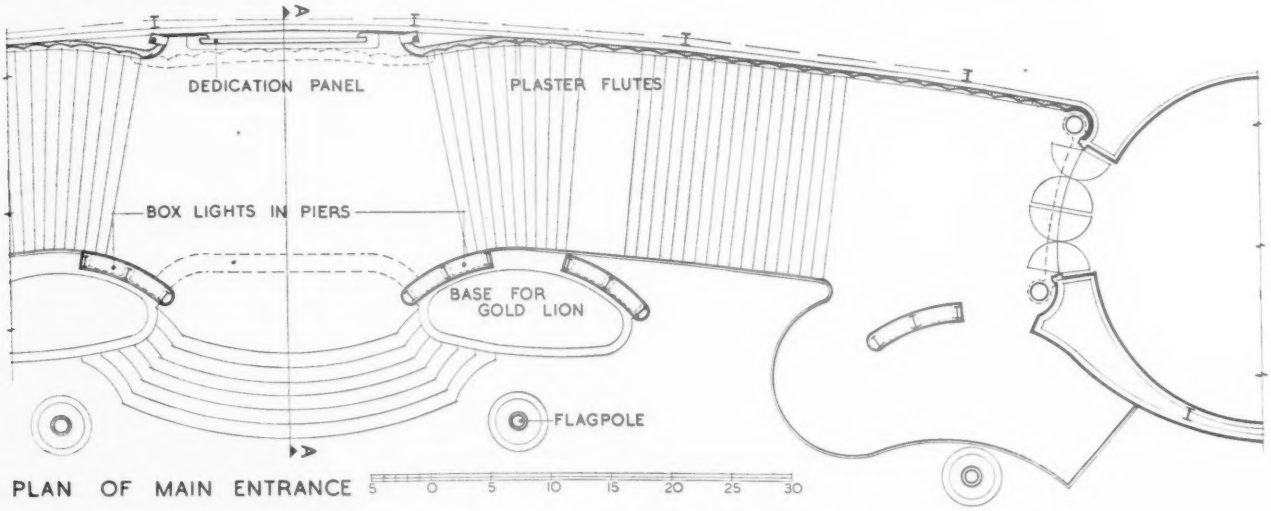
MAIN ENTRANCE • BRITISH PAVILION, NEW YORK WORLD'S FAIR • STANLEY HALL & EASTON & ROBERTSON



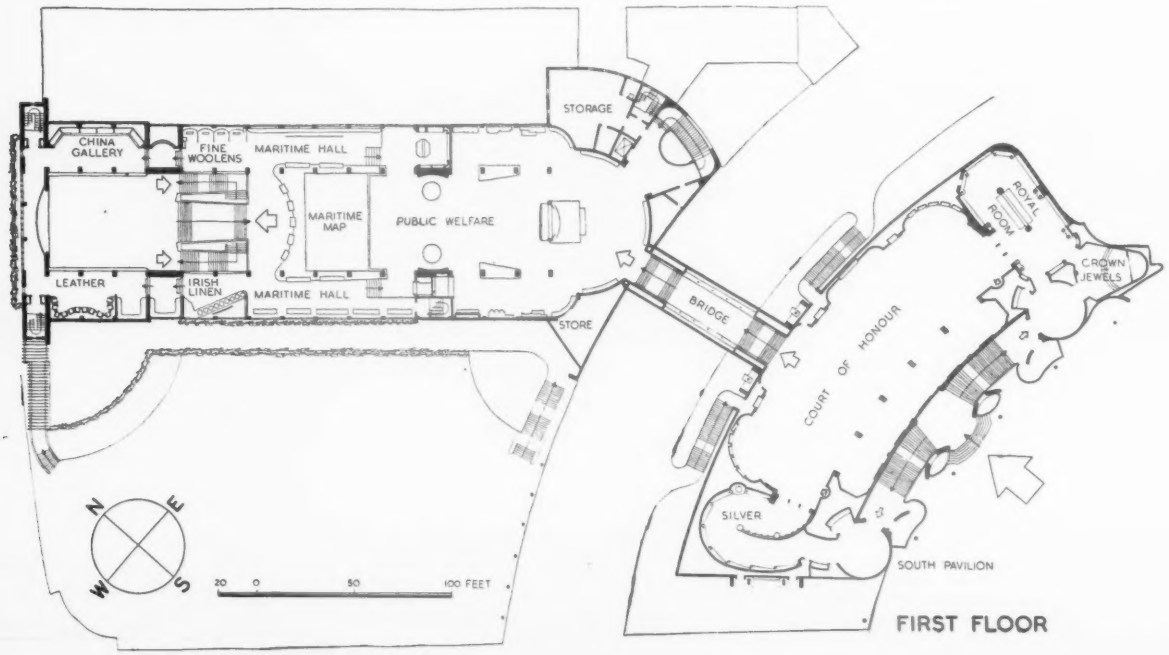
ELEVATION OF MAIN ENTRANCE



SECTION A-A



PLAN OF MAIN ENTRANCE



KEY PLAN OF PAVILION

FIRST FLOOR

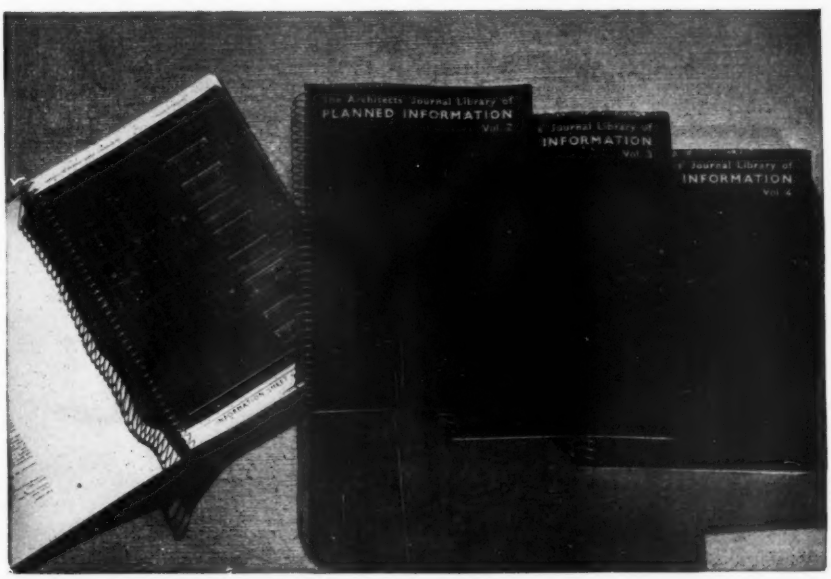
Details of the main entrance illustrated overleaf.

The Architects' Journal Library of Planned Information

INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE



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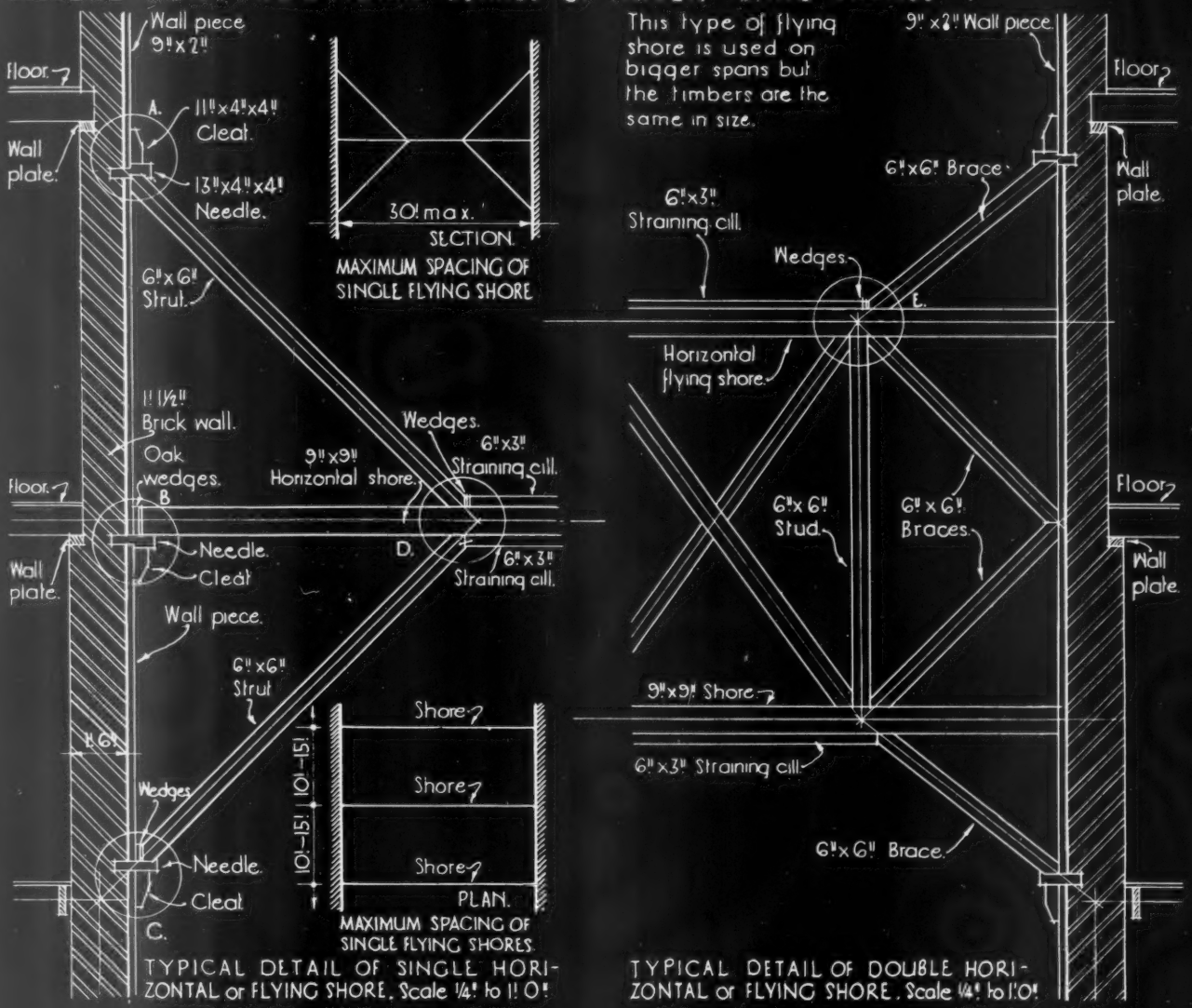
701 : Tile Hanging
702 (420 revised) : Fixing Insulating Board
703 : Sheet Metals
704 : Plan Elements
705 : Metal Work
706 : Plan Elements
707 : Furniture Layout
708 : Plan Elements
709 : Flue Construction
710 : Natural Lighting
711 : Glass and Glazing
712 (109 revised) : Quarry Tiles
713 : Glass and Glazing
714 : Metalwork
715 (106 revised) : Hot Water Radiators (Pressed Steel)
716 : Furniture Layout
717 : Metalwork
718 : Flooring Materials
719 : Plumbing
720 : Water Heating
721 : Wall Facing Materials and Wallboards
722 : Roofing
723 : Metalwork
724 : Timber Construction
725 : Sanitary Fittings
726 : Metalwork
727 : Waterproof Jointing and Bedding
728 : Timber Construction
729 : Steelwork
730 : Wall Facing Materials and Wallboards
731 : Metalwork
732 : Concrete Construction
733 : Structural Steelwork
734 : Metalwork
735 : Plumbing
736 : Structural Steelwork
737 : Structural Steelwork
738 : Metalwork
739 : Plan Elements
740 : Timber Construction
741 : Structural Steelwork
742 : Metalwork
743 : Wall Finishes
744 : Waterproofing and Damp-proofing
745 : Structural Steelwork
746 : Metalwork
747 : A. R. P.
748 : Waterproofing and Damp-proofing
749 : Metalwork
750 : Wall Facing Materials and Wallboards
751 : Structural Steelwork
752 : A.R.P.
753 : Hardware and Ironmongery
754 : Carpentry and Joinery
755 : Structural Steelwork
756 : Metalwork

6.

6. THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

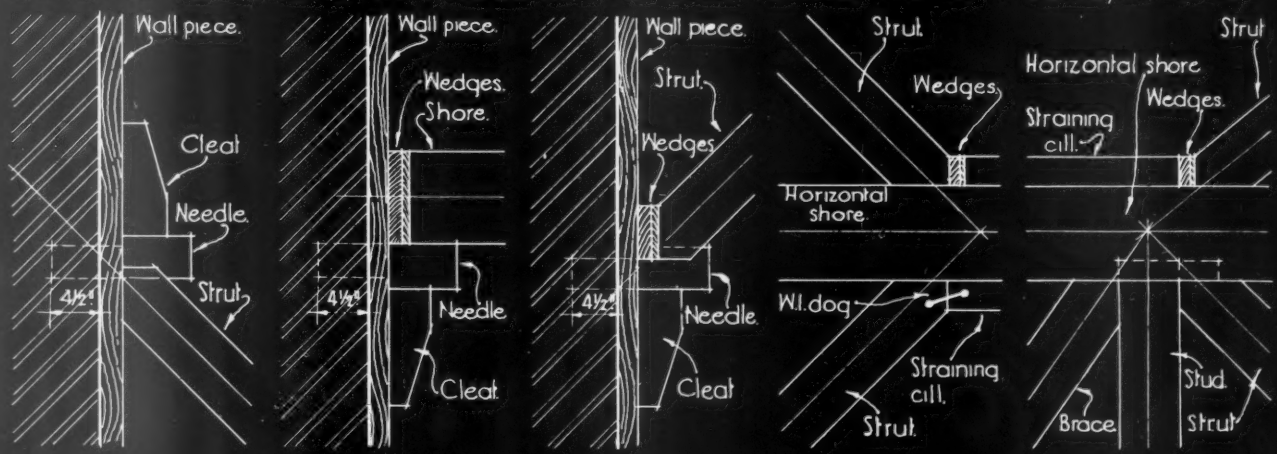
TYPICAL CONSTRUCTIONAL DETAILS OF TIMBER FLYING SHORES :



TYPICAL DETAIL OF SINGLE HORIZONTAL or FLYING SHORE. Scale ¼" to 1' 0"

TYPICAL DETAIL OF DOUBLE HORIZONTAL or FLYING SHORE. Scale ¼" to 1'0"

DETAILS OF JUNCTIONS IN SINGLE AND DOUBLE FLYING SHORES : SCALE, ¾" to 1' 0"



DETAIL AT A. DETAIL AT B. DETAIL AT C. DETAIL AT D. DETAIL AT E.

INFORMATION SHEET : SHORING, Nº 2 : HORIZONTAL OR FLYING SHORES.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1.

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 757 •

CARPENTRY AND JOINERY

Subject : Shoring—II

General :

This is the second of a series of Sheets dealing with timber shoring to multi-storey structures, the first being No. 754.

Where extensive reconstruction or alterations are to be carried out on a building, it may often be necessary to use temporary supports for the walls and floors. These supports, known as shores, are of three kinds, viz. dead shores, flying shores and raking shores. This Sheet deals with flying shores.

Flying or Horizontal Shores :

Where the space provided by the entire demolition of a building on an enclosed site is required for further building operations, and the distance between the party walls is suitable (see below), the party walls of the adjoining property will have to be supported by shores framed between the buildings. These are known as flying or horizontal shores because they have no ground support and their main members are horizontal. The application of such shores leaves the roadway clear and does not interfere with building operations in connection with the building which is to replace the structure already removed.

Theoretical Application :

Flying shores are designed so that the stability of the horizontal member depends upon the triangular support afforded by the struts. If these struts are disturbed by wracking the shore will fail. Since a triangle cannot change in shape if its three sides remain unaltered in length, it is necessary to provide for absolute rigidity. The needle in the upper triangle formed by the strut and the horizontal member prevents the point of the strut from moving upwards, while the straining cill will keep the horizontal member in position so that the distance between the needle and the end of the horizontal member beneath it remains unaltered.

Position of Shores :

Flying shores provide three points of support to each building. A horizontal member is placed at the intermediate level opposite a floor, and pairs of struts are put in position inclining upwards and downwards towards the centre of pressure from the floors above and below. The struts are placed at a flatter angle and made to thrust more directly than an ordinary raking shore. Hence, it is possible to use lighter timbers, as the struts exert less direct force to produce the same horizontal resistance against overturning.

Spacing :

Generally, the maximum span for any type of multiple flying shore is 40 ft. The single flying shore should never be fixed on spans greater than 30 ft. The average vertical spacing of flying shores is 10-15 ft., but additional shores may be required in special positions, e.g. opposite division walls to prevent disturbance of the party wall at the junction.

Construction :

The needles, wall-pieces and cleats are prepared and fixed as for raking shores.

The 9 in. by 9 in. horizontal member is placed in position with the two 6 in. by 3 in. straining cills nailed on the upper and lower surfaces. The shore is carefully wedged into position between the wall pieces while resting on the needles or cross bearers. The 6 in. by 6 in. lower struts are then notched over the top of the needles and secured by W.I. dogs at the upper end, where they should fit closely. The upper struts are next fitted with folding wedges intervening between their lower ends and the straining cill ; these wedges are carefully driven until the whole system is rigid, the lower struts becoming tight through the tendency of the horizontal member to deflect as the pressure is applied to the upper struts.

The lower struts may also be wedged. This lifts the horizontal member and removes the natural sag due to its own weight. The wedges are best placed at the foot of the strut against the wallpiece because, in this position, they are easier to manipulate and less liable to fall out, although they are not so effective as when they are placed at the opposite end of the strut.

Wedging :

The wedging of shores has to be done very carefully. Any sudden or undue vibration caused by violently knocking in the wedges may damage the structure by increasing the disturbance which the shore is trying to arrest. Since the function of the shore is to check the development of movement in a building, wedging should be carefully prepared and driven so that neither the shore nor the structure is disturbed.

Timber :

The timber used for shoring is chiefly northern pine or pitch pine, the latter being particularly suited for large and heavy shores because it is obtainable in large sizes and great lengths.

Previous Sheet :

The first Sheet in this series dealing with timber shoring is No. 754.

TABLE 1.
CLASSIFICATION OF ROOFING FELTS IN COMMON USE:

B.S.S. CLASS.	BASE (Fibre).	IMPREGNATING COMPOUND.	COATING COMPOUND.	MINERAL SURFACING.	USES.
1. BITUMEN FELT.					
A. Impregnated.	Animal and Vegetable.	Asphaltic Bitumen.	None.	None.	Underlayers in built-up roofs, also beneath tiled roofs.
B. Sanded.	ditto.	ditto.	None.	Sand.	Single layer temporary roofing, or lower layers of built-up roofs.
C. Self Finished.	ditto.	ditto.	Asphaltic Bitumen.	Talc, mica, etc.	External layers. Commonly known as "bitumen roofing". Used for *all general* purposes.
D. Mineralized.	ditto.	ditto.	ditto.	Granite, slate or other chippings on upper surface, talc beneath.	External layer or single layer. Also sold cut to slate sizes.
E. Reinforced.	ditto. (with hessian backing)	ditto.	ditto.	Talc.	Untearable, used for insulation, understating.
2. FLAX AND HAIR FELTS.					
A. Flax (Black).	Flax, and/or jute.	Fluxed coal tar pitch.	None.	None.	Sarking or understating.
B. Flax (Brown). (so called "inodorous" felt).	Flax, and/or jute.	Wood tars or pitches.			ditto.
C. Black hair felt.	Cow hair and flax or jute or mixtures of these.	Fluxed coal tar pitch.			ditto.
D. Brown hair felt.	Hair only.	Wood tars or pitches.			ditto.
3. TAR FELTS.					
A. Impregnated Tar Felt.	Animal and vegetable fibres of various qualities.	Fluxed coal tar pitch.	None.	None.	Now used chiefly for temporary sheds, etc. Can be maintained by periodic tarring and sanding.
B. Sanded Tar Felt.		ditto.	ditto.	Sanded.	

TABLE 2: GIVING WEIGHTS AND SIZE OF ROLLS OF THE ABOVE FELTS:

TYPE.	STANDARD WEIGHT.	PACKAGES.
1 A.	"Impregnated Bitumen felt" 10–50 lb. per 12 sq. yds. (1 square).	36" by 12 & 24 yds., etc.
1 B.	"Sanded Bitumen felt" 35–65 lb. per 12 sq. yds. (1 square).	
1 C.	"Self-finished Bitumen felt" Extra Light (½-ply), 40 lb. per 24 yds. (2 squares). Light (1-ply), 60 lb. per 24 sq. yds. (2 squares). Medium (2-ply), 80 lb. per 24 sq. yds. (2 squares). Heavy (3-ply), 100 lb. per 24 sq. yds. (2 squares). (also 120 and 140 lbs. per 24 sq. yds).	
1 D.	"Mineralized Bitumen felt" 40–90 lb. per 12 sq. yds. (1 square).	36" by 24 yds. only.
1 E.	"Reinforced Bitumen felt" 50 & 60 lb. per 12 sq. yds. (1 square).	
2 A.	"Roofing felt" 80 lb. per roll.	32" by 25 yds. (2 squares)
	"Sarking felt" 56 lb. per roll.	
	"Black Sheathing" 34-35 lb. per roll.	
2 B.	"Special Inodorous" 60 lb. per roll.	
	"N°. 1 Inodorous" 50 lb. per roll.	
	"N°. 2 Inodorous" 40 lb. per roll.	
	"Brown Sheathing" 34-35 lb. per roll.	
2 C.	"Black Hair Sheathing felt" 80 lb. per roll.	
2 D.	"Bitumous Hair felt, Brown" 80 lb. per roll	
3 A.	"Impregnated Tar felt"	36" by 15yds. (135 sq. ft. net.)
3 B.	"Sanded Tar felt" Multiples of 5 lb. per 15 sq. yds.	

"The weights of roofing felts were formerly designated as "one ply", "two ply", "three ply" and so on, but it is considered that these terms should be replaced by statements of actual weight per roll or by the terms "light", "medium", "heavy", respectively."

Extracted, by permission, from "Notes from the Information Bureau of the Building Research Station" (4th Series, N°. 11).

INFORMATION SHEET: BITUMINOUS ROOFING FELTS
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 758 •

ROOFING

Subject : Bituminous roofing felts.

General :

This Sheet sets out in tabulated form for rapid reference details regarding the various types of roofing felt in common use, and weights and sizes of rolls.

Qualities :

Bituminous roofing felts are used for a variety of purposes, and are made in various qualities. No simple test for durability exists, but British Standard Specification 747 affords a valuable guide in this respect since it classifies felts according to their uses and defines the materials which should be used.

Components :

Bituminous roofing felts consist essentially of a sheet of felted material, saturated with a bituminous waterproofing composition, which has the effect of making it impermeable to water (or relatively so) and which binds the fibres together and protects them from rotting. In addition, the felt is often coated with a layer of a harder bituminous material to afford further protection against the weather.

The felt may be made of animal (wool, cow hair), vegetable (cotton, jute, flax, etc.) or mineral (asbestos) fibre and the physical characteristics of the fibre, e.g. length, thickness, stiffness, etc., determine the texture of the felt and the absorption capacity for the saturating compound.

Various classes of bitumen are used for saturating and coating felts : by far the greater proportion of these is residual bitumen derived from petroleum.

Manufacture :

The constituent raw materials are pulped, filtered, and pressed between heated rollers to give weights varying from 6 oz. per sq. yd. upwards.

A roofing felt can then be built up according to one or other of the following methods depending on the requirements. The felt may be :

(1) merely saturated, the surface being sometimes sanded while still hot ;

(2) saturated and coated and treated with talc ; or

(3) saturated and coated and finished with a sand or coloured granular material.

Table 1 on this Sheet classifies the roofing felts in common use, whilst Table 2 gives the weights and sizes of rolls.

Uses :

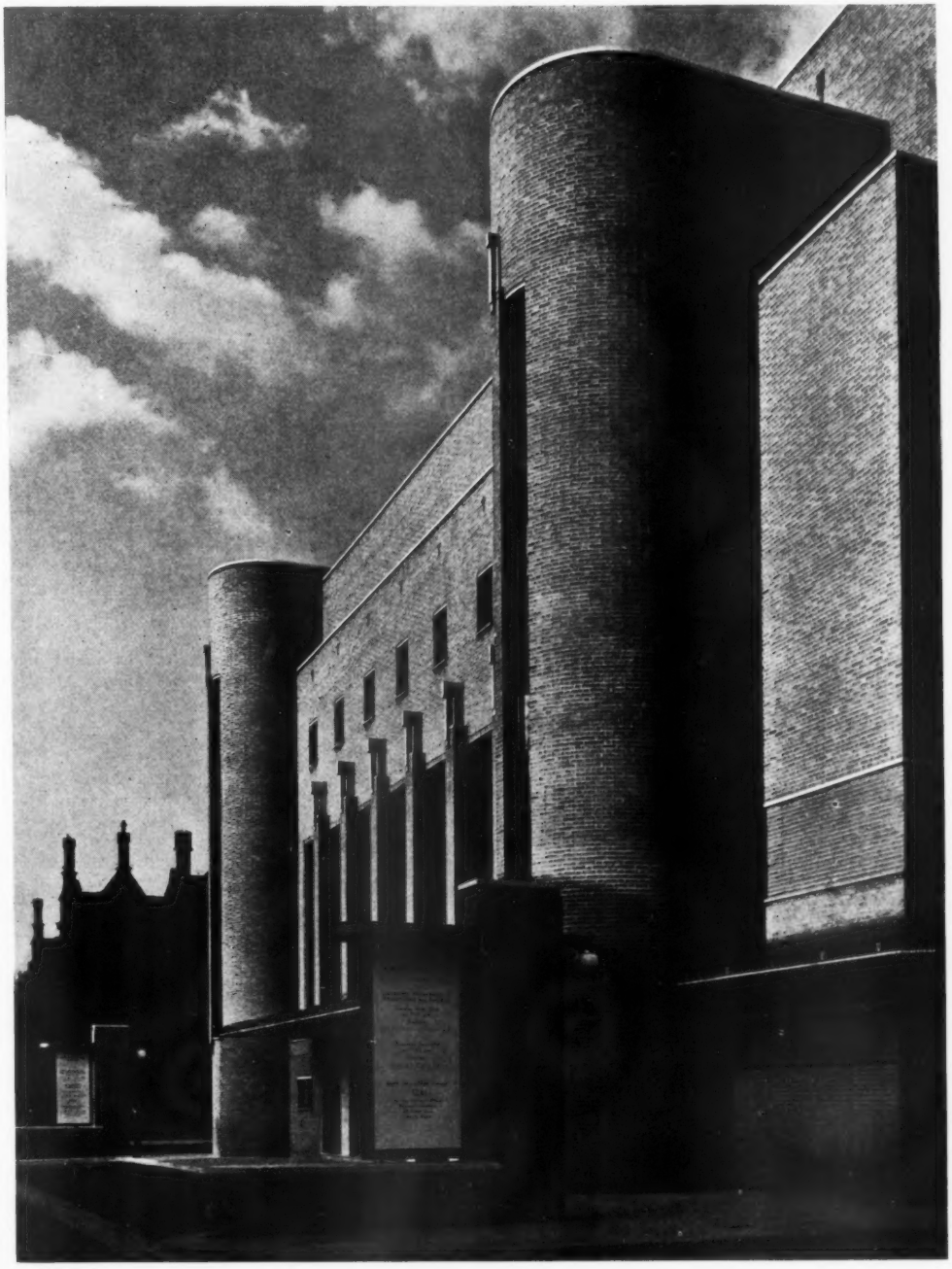
The uses of roofing felts will depend largely upon the finish and service required, and the choice of any particular type may be ascertained from the appendix to British Standard Specification 747 in which recommendations are included.

Life :

The life of bitumen felt roofs depends upon the quality of the materials initially fixed and the maintenance given subsequently, and this is equally true of sloping and flat roofs, in single as well as multiple layers. This is a useful feature of felt roofing, for the architect has the choice of employing either a heavy expensive finish when the nature of the building demands it or a thinner finish which may be preferable, on account of first cost for, say, a factory building. In the selection of materials the British Standard Specification affords guidance as to type, and will ensure that the constituent materials used in the felts are suitable. This specification does not at present provide an absolute assurance of quality for it does not include any tests for the finished products. For the present, therefore, the safeguards provided by the specification must be reinforced by consideration of price and the reputation of the maker.

PHILHARMONIC HALL, LIVERPOOL

DESIGNED BY HERBERT J. ROWSE



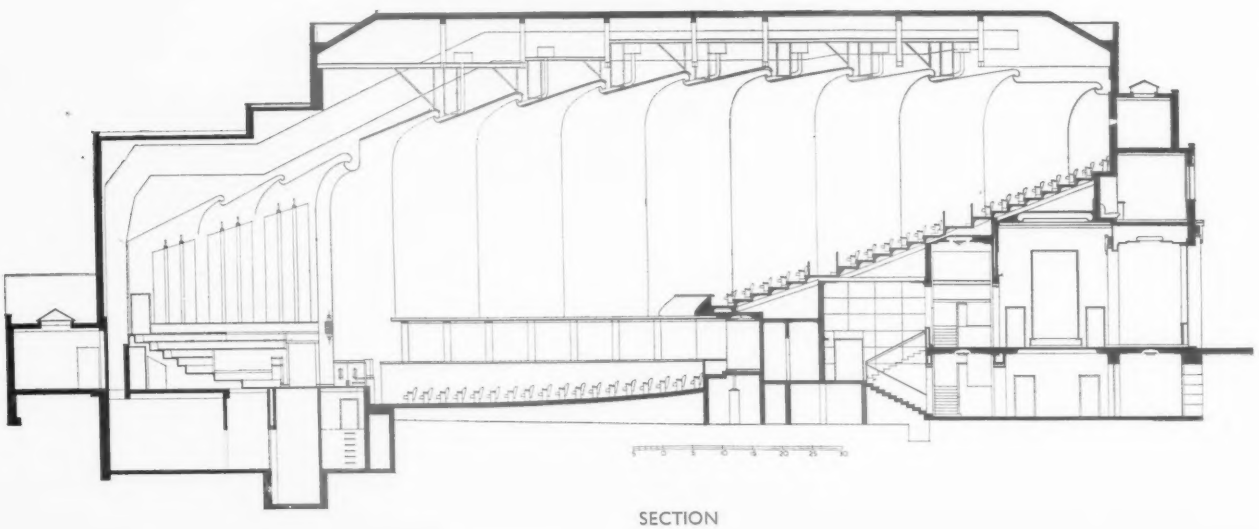
RIGHT, MAIN FRONT; BELOW, REAR ELEVATION

PROBLEM—*Auditorium seating 1,771 people, a platform to accommodate a choir of 185 and an orchestra of 100. It is to be used primarily as a concert hall, but is adaptable for use as a cinema and place of public address. The platform can also be converted into a public seating space for 360 persons, and the grand foyer is used occasionally for small banquets and for dancing.*

SITE—*An elevated rectangular one, bordering on the residential area towards the outskirts of the city. The building stands on the site of the old Philharmonic Hall which was destroyed by fire in 1933; bounded on three sides by roads, and is entered from the main front in Hope Street.*

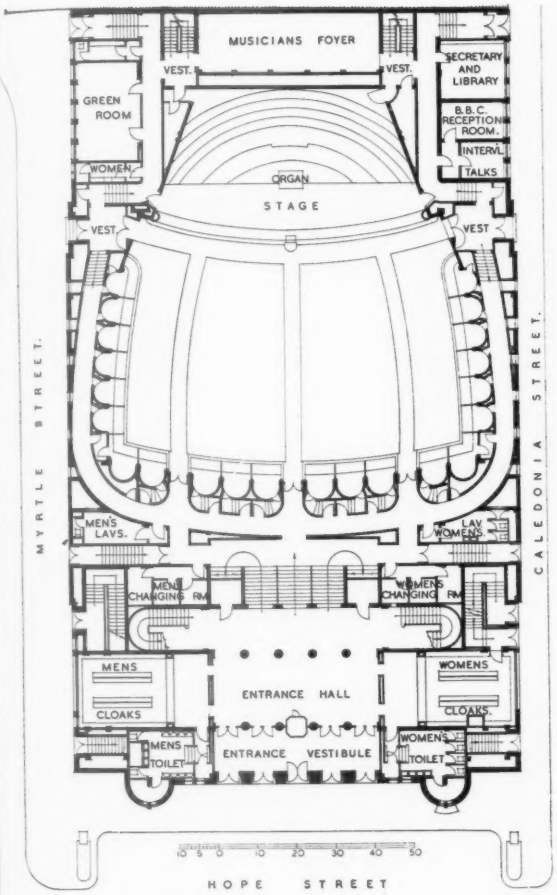
CONSTRUCTION AND EXTERNAL FINISHES—*The concrete foundations are built on solid sandstone rock. External walls are of solid brickwork, and internal partitions are supported on steel framing. The floors are either of precast slabs reinforced with expanded metal, or reinforced concrete over large spans. The roof consists of a 3-inch R.C. slab covered with asphalt. Walls are faced externally with light sand-coloured bricks, and window heads and copings are dressed with artificial stone. Dark bricks were selected for sills, window piers and plinths. Steel windows were used throughout, the cappings to the tall window piers being of Portland stone. The main entrance door piers and soffits are faced with Malta stone.*

WHEN THE HALL IS USED AS A CINEMA, A SCREEN SET, COMPLETE WITH PROSCENIUM, CURTAIN AND "TALKIE" APPARATUS, IS RAISED THROUGH THE FLOOR OF THE PLATFORM FROM A CHAMBER BELOW.



SECTION

PHILHARMONIC HALL, LIVERPOOL • DESIGNED B



GROUND FLOOR PLAN

ABOVE, THE AUDITORIUM : BELOW, THE GRAND FOYER, THE LOWER PORTIONS OF WHICH ARE GLAZED WITH ETCHED GLASS BY HECTOR WHISTLER

INTERNAL FINISHES—*Walls and ceilings generally are plastered, whilst the grand stair hall, including the rectangular columns adjoining, are faced with Roman stone. The auditorium walls and ceilings, formed in a series of lighting facets, are of solid and fibrous plaster. The prow-shaped front of the balcony is also of fibrous plaster. Walls to the balcony staircase and basements are left in fair-faced brickwork and painted. The entrance vestibule and all public toilet rooms have terrazzo floors, subsidiary public stairs are finished in artificial stone, and the grand staircases leading to the upper stalls are carpet-covered with black marble margins. The basement floors generally are granolithic finished, except for the kitchen, cloaks, and lavatories, which are paved with quarry tiles. All organ pipes are concealed by painted wooden grilles on each side of the platform, and the ventilation and loudspeaker grilles in the proscenium arch are in pierced fibrous plaster. Doors to the auditorium are lined with hide in rectangular panels and maple fixing strips, glazed doors to the main entrance hall are of teak, whilst the remainder, of flush type, are painted in ash.*

SERVICES—*Heating is by low-pressure hot water through pipes and radiators, windows providing the necessary lighting and ventilation to the outer accommodation.*

The general contractors were Morrison & Sons, Ltd.; for a list of sub-contractors, see page 281.

HERBERT J. ROWSE

EXHIBITIONS

MANY of the galleries have now closed down for August; a few are holding their summer exhibitions, which will continue in most cases until the end of September. Only too often these summer exhibitions are dull and overcrowded with mediocre work—stop-gaps in a dead season. But this year there are several unusually good collections. That at Tooth's is one of the best.

The first room is devoted to paintings by old masters, and of these the half-dozen small English landscapes are particularly notable; the early Gainsborough of the Ipswich period, "Landscape with Man Ploughing," painted between 1748 and 1750; Bonington's "Les Peniches"; Crome's very lovely "View near Higham, Norfolk"; Constable's "House Among the Cornfields"; the two Richard Wilsons and, particularly, his "Landscape with Cottage and Peasants"; and David Cox's "In the Hayfield." There are many more ambitious works in the room, but these small paintings in the vernacular are exceptionally charming and any one of them is a good reason for visiting this exhibition.

The French section is the largest and most

impressive with its two magnificent Monets —"Argenteuil" and "Effet de Printemps à Givernay." Of the three Renoirs, his "Le Chapeau Noir" is, perhaps, one of the finest things in the gallery. There are also a lovely Sisley "Paysage d'Eté," several Boudins, Camille Pissarro's "Le Port du Havre"—one of his last paintings, and a good Corot.

Upstairs the moderns are completely dominated by Paul Nash's "Rye Marshes," a very interesting painting in which something of his recent feeling for the personality of inanimate things is combined with his old use of highly simplified forms. The result is a remarkably fine and sensitive landscape. This contemporary room is certainly a contrast in methods—Paul Nash's simplification, Stanley Spencer's detail, Richard Wyndham's broad treatment (incidentally, a very good painting), and Matthew Smith's dynamic colour compositions—all translate landscape through widely differing vision. But Nash, though he speaks quietly, would seem to have the most to say. Out of his surreal venture is evolving our finest contemporary English landscape painter.

●

The French Gallery has a collection which is more miscellaneous and far less stimulating, but in which are to be found two rather unusual Boudins—his "Village Fête in Brittany" and "The Shepherdess," a rather charming Corot of much the same date as that at Tooth's, Jongkind's "Château de Vagnouville" and the Forain. A small but pleasantly consistent exhibition.

●

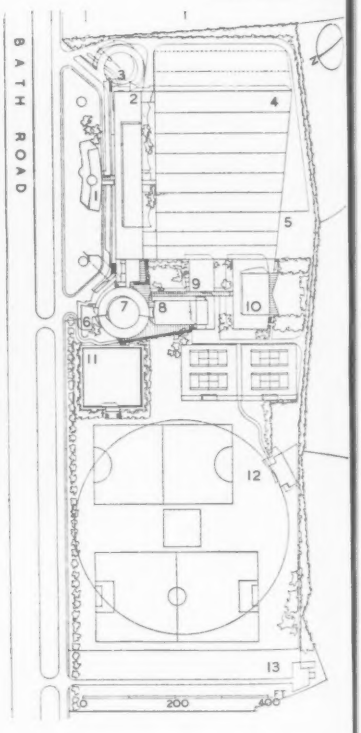
Another pleasant exhibition is that at the Beaux Arts, where there are a number of interesting paintings. Some may find this collection rather discursive, but the level of achievement is, on the whole, well above the average, and in so mixed a show there is certainly something for all tastes. The outstanding work is that of David Jones, Thérèse Lessore and Antoine Vollon, none of whom are as well known as they deserve to be, or often enough exhibited.

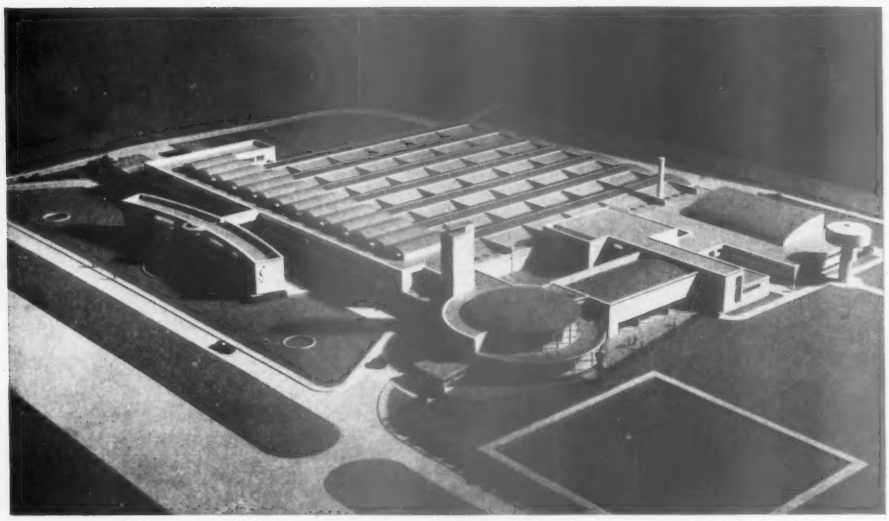
FACTORY ON M

PRELIMINARY MODEL

SITE PLAN SHOWING FINAL LAY-OUT

1 : Directors' block
2 : Office block
3 : Garages
4 : Works
5 : Yard
6 : Caretaker and canteen stores
7 : Canteens
8 : Concert hall
9 : Gymnasium and squash courts
10 : Swimming pool
11 : Bowling green
12 : Playing fields
13 : Kitchen garden





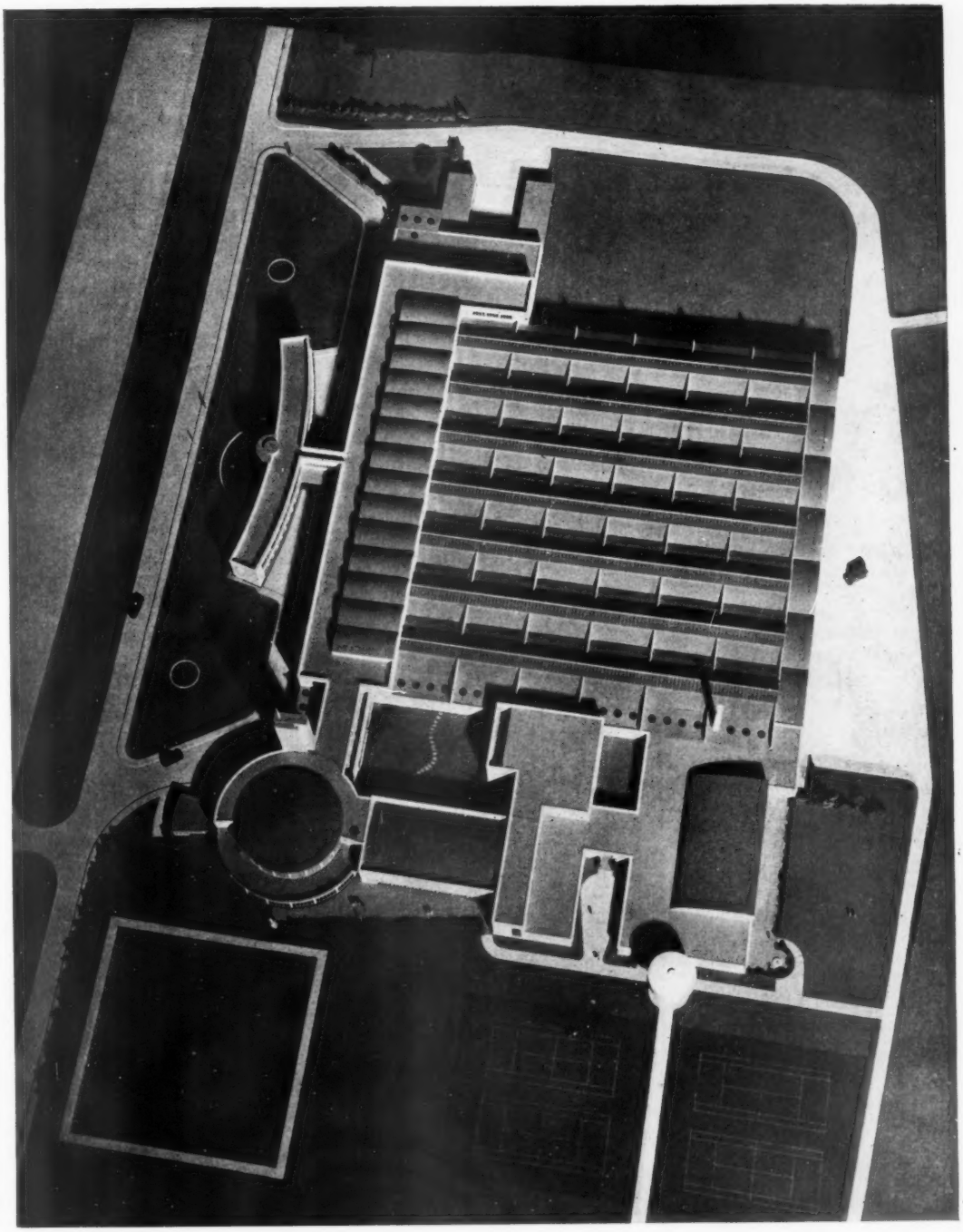
AIR VIEW OF PRELIMINARY MODEL

GENERAL—*The drawings and photographs of the model for this new factory for a firm of manufacturing chemists illustrate the great advance which is now taking place in the industrial architecture of this country. The planning of a complete manufacturing unit offers particular scope for the expression of what is best in contemporary architecture, and this factory, when completed, should set a high standard for other industrial buildings of a similar character. The scheme is the result of over a year's collaboration between the architect, the engineers and the Company. The plans were approved by the Local Authorities last June.*

CONSTRUCTION—*Reinforced-concrete frame construction. Floors and roofs, including those of the works, are also in reinforced-concrete. All roofs are insulated against heat loss. The main façades have a pre-cast*

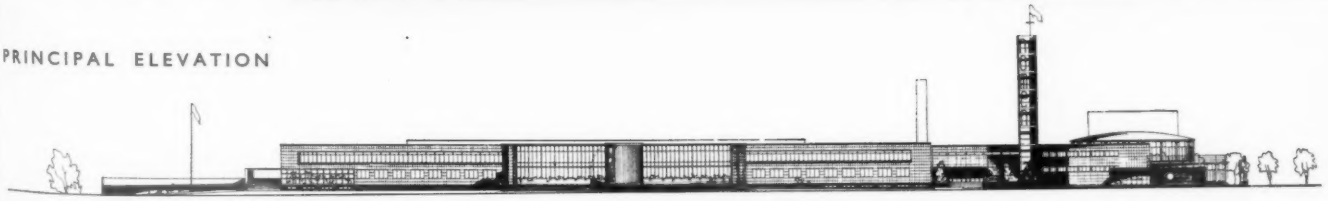
MAIN BATH ROAD, BUCKS

DESIGNED BY RAYMOND McGRATH



AIR VIEW OF PRELIMINARY MODEL. THE DEVELOPMENTS OF THE SCHEME ARE SHOWN IN THE FINAL LAY-OUT PLAN ON FACING PAGE.

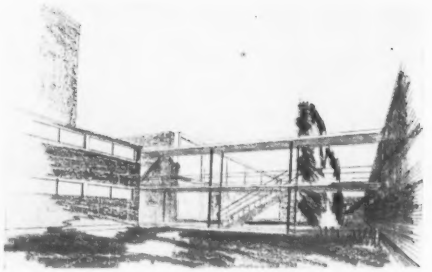
PRINCIPAL ELEVATION



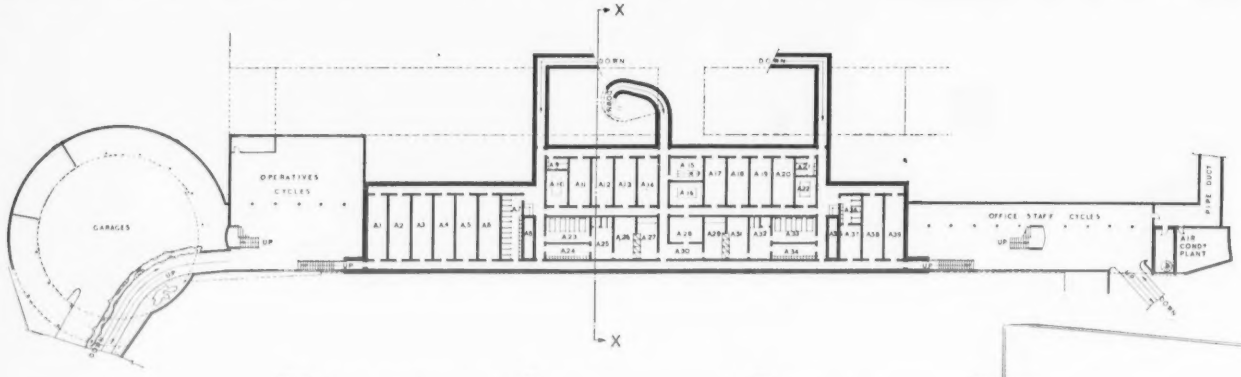
slab facing, and side elevations are brick-faced to match the pre-cast units. A special system of concrete construction has been adopted for the works' roof, which has roof-lights running from north to south instead of north-facing lights. These roofs have special diffusing and insulating glazing.

SERVICES—*The technical services were laid out when the structural details were first considered, with the result that proper access ducts have been provided for all pipe runs. The invisible panel type of heating, oil-fired, has been employed everywhere except in the packing and dispatch sections of the works, where convection heaters are installed. The canteens, hall and swimming pool are artificially ventilated, and the process section of the works is air-conditioned, a constant low humidity being required for the manufacture of the company's product.*

FACTORY ON MAIN BATH ROAD, BUCKS.



BRIDGE BETWEEN HALL AND SWIMMING POOL



BASEMENT PLAN

KEY TO PLANS

WORKS

F.1, Timber store ; F.2, Sawing yard ; F.3, Carpenters' shop ; F.4, Paint shop ; F.5, Welding shop ; F.6, Tool store ; F.7, Male lavatories ; F.8, Engineers' shop ; F.9, Kitchen ; F.10, Night staff ; F.11, Vacuum plant ; F.12 to F.22, Process rooms ; F.23, Air conditioning plant ; F.24, Factory supervision and time clerks at high level ; F.25, First aid room ; F.26, Rest room ; F.27, Casualty entrance to air raid shelter.

AIR RAID SHELTERS

A.1 to A.6, Female shelters ; A.7, Female lavatories ; A.8, Water storage tank ; A.9, Male lavatories ; A.10, Air conditioning plant ; A.11 to A.14, Mixed shelters ; A.15, Diesel and drainage plant ; A.16, Air conditioning plant ; A.17 to A.20, Mixed shelters ; A.21, Female lavatories ; A.22, Air conditioning plant ; A.23 and A.33, Casualty ward ; A.24 and A.34, Dressing room ; A.25 and A.32, Medical inspection ; A.26, A.27, A.29 and A.31, Showers ; A.28, Medical officer ; A.30, Lobby.

WEST GROUP OF THE GROUND FLOOR

W.1, Entrance to offices of west group ; W.2, Entrance hall ; W.3, Operatives' lounge ; W.4, Operatives' canteen ; W.5, Canteen kiosk ; W.6, Spiral stair to tower ; W.7, kitchen ; W.8, Service counter ; W.9, Chef's office ; W.10, Cold stores ; W.11 to 15, Stores ; W.16, Service entrance ; W.17, Caretaker's entrance ; W.18, Concert hall ; W.19 to 21, Male lavatories ; W.22 to 24, Female lavatories ; W.25, Orchestra pit ; W.26, Stage ; W.27, Chorus room ; W.28, Chorus lavatories ; W.29 to 30, Squash court ; W.31, Gymnasium ; W.32, Gymnasium store ; W.33, Staircase to swimming pool ; W.34, Workshops ; W.35 to 36, Water softeners ; W.37, Calorifiers ; W.38, Switch room ; W.39, Diesel room ; W.40, Swimming pool filtration plant ; W.41, Swimming pool ventilation plant ; W.42, swimming pool ; W.43, Boiler room ; W.44, Engineers' room ; W.45, Oil storage tank ; W.46, Area. C.1 to 6, Caretaker's flat.

DIRECTORS' BLOCK OF GROUND FLOOR

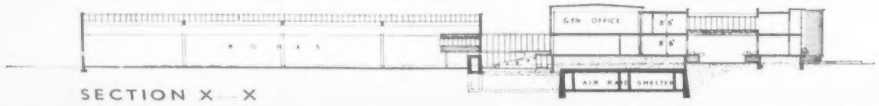
D.1, Directors' entrance ; D.2, Directors' lavatories ; D.3, Lobby ; D.4, Board room ; D.5, Ante-room ; D.6, Entrance hall ; D.7, Porter ; D.8, Travellers ; D.9, Secretaries ; D.10, Secretaries' lavatories.

DIRECTORS' BLOCK OF FIRST FLOOR

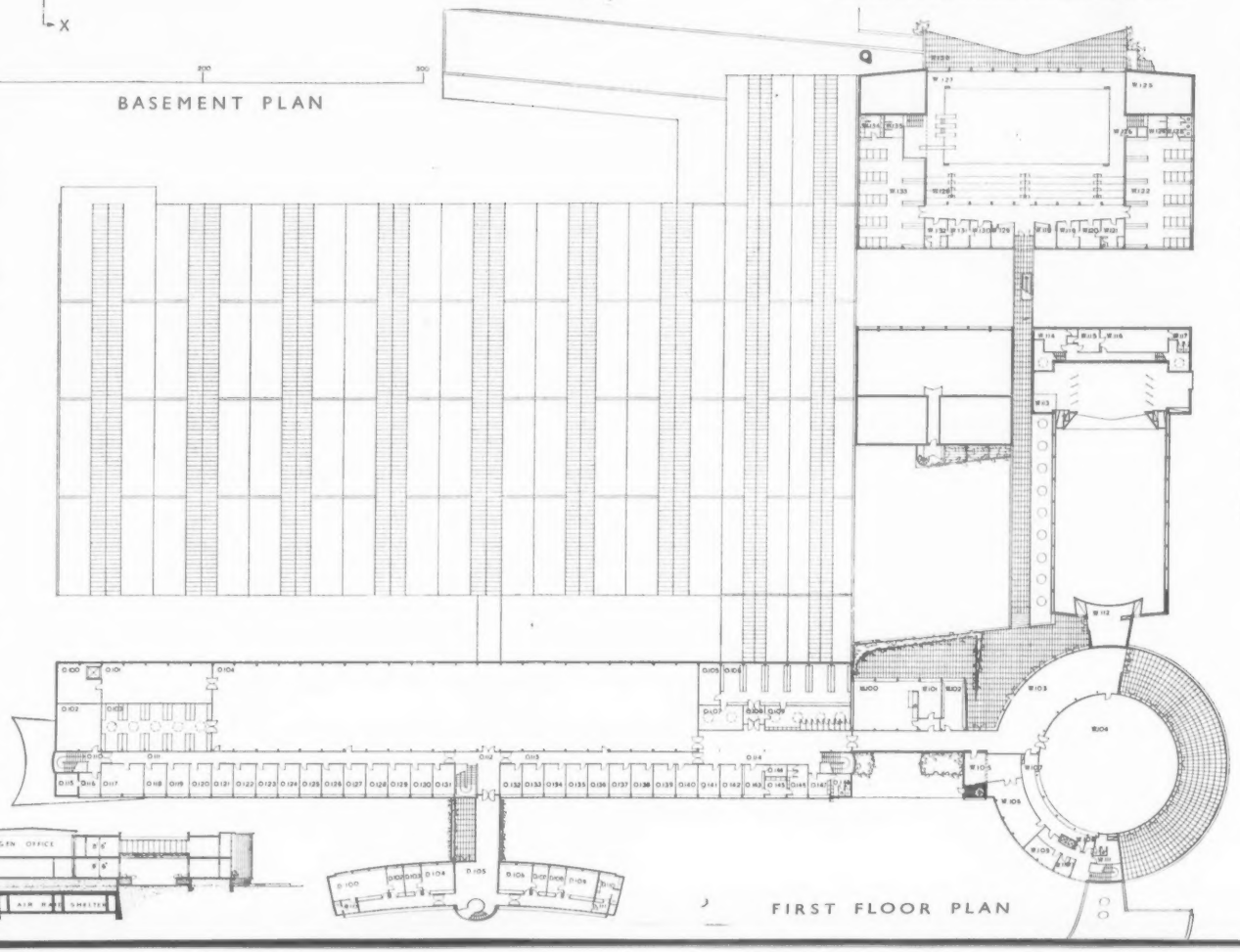
D.100, Managing director ; D.101, Managing director's cloak room ; D.102, Managing director's secretary ; D.103, Director's secretary ; D.104, Director ; D.105, Staircase hall ; D.106, Director ; D.107, Director's secretary ; D.108, Director's secretary ; D.109, Director ; D.110, Directors' lavatories and cloak rooms ; D.111, Directors' lavatories and cloak rooms.

OFFICE BLOCK OF GROUND FLOOR

O.1, Ramp to cycle store ; O.2, Male operatives' entrance ; O.3, Female operatives' entrance ; O.4, entrance hall ; O.5, Lift to stationery store ; O.6, Female operatives' drying room ; O.7, Female operatives' cloak rooms ; O.8, Female operatives' lavatories ; O.9, Male staffs' cloak room ; O.10, Male staffs' drying room ; O.11, Male staffs' lavatories ; O.12, Store ; O.13, Cleaner ; O.14, Cleaner ; O.15, Factory supervisers' lavatories ; O.16, Ramp to factory superviser and time clerks ; O.17, Subsidiary entrance ; O.18, Travellers' room ; O.19, Works manager ; O.20, Works managers' assistant ; O.21, Works manager's store ; O.22, Chief engineer ; O.23 Files ; O.24, Seamstress ; O.25, Male lavatories ; O.26, Night watchman ; O.27, Office staff entrance ; O.28, Doctor's lavatory ; O.29, Surgery ; O.30, Chemist ; O.31, Library ; O.32, Chemist ; O.33, Laboratory ; O.34, Laboratory ; O.35, Store ; O.36, Dark room ; O.37, Store ; O.38, Sterilizing room ; O.39, Balance room ; O.40, Air conditioning plant.



SECTION X—X



FIRST FLOOR PLAN

SECTION X—X

FIRST FLOOR PLAN

O.29, Surgery; O.30, Chemist; O.31, Library; O.32, Chemist; O.33, Laboratory; O.34, Laboratory; O.35, Store; O.36, Dark room; O.37, Store; O.38, Sterilizing room; O.39, Balance room; O.40, Air conditioning plant.

OFFICE BLOCK FIRST FLOOR

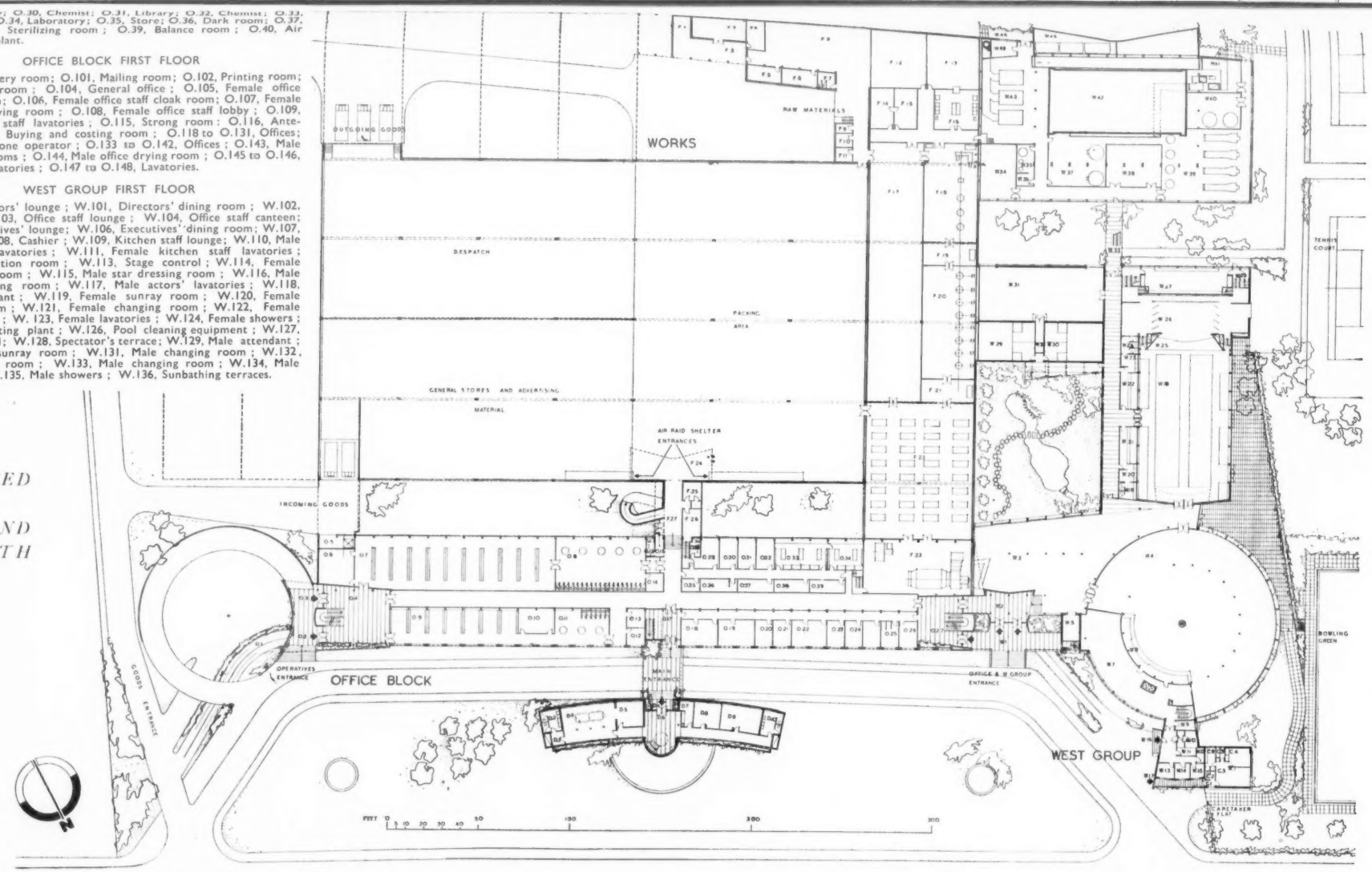
O.100, Stationery room; O.101, Mailing room; O.102, Printing room; O.103, Filing room; O.104, General office; O.105, Female office staff rest room; O.106, Female office staff cloak room; O.107, Female office staff drying room; O.108, Female office staff lobby; O.109, Female office staff lavatories; O.115, Strong room: O.116, Anteroom; O.117, Buying and costing room; O.118 to O.131, Offices; O.132, Telephone operator; O.133 to O.142, Offices; O.143, Male office cloak rooms; O.144, Male office drying room; O.145 to O.146, Male Office lavatories; O.147 to O.148, Lavatories.

WEST GROUP FIRST FLOOR

W.100, Directors' lounge; W.101, Directors' dining room; W.102, Library; W.103, Office staff lounge; W.104, Office staff canteen; W.105, Executives' lounge; W.106, Executives' dining room; W.107, Service; W.108, Cashier; W.109, Kitchen staff lounge; W.110, Male kitchen staff lavatories; W.111, Female kitchen staff lavatories; W.112, Projection room; W.113, Stage control; W.114, Female star dressing room; W.115, Male star dressing room; W.116, Male Actors' dressing room; W.117, Male actors' lavatories; W.118, Female attendant; W.119, Female sunray room; W.120, Female changing room; W.121, Female changing room; W.122, Female changing room; W. 123, Female lavatories; W.124, Female showers; W.125, ventilating plant; W.126, Pool cleaning equipment; W.127, Swimming pool; W.128, Spectator's terrace; W.129, Male attendant; W.130, Male sunray room; W.131, Male changing room; W.132, Male changing room; W.133, Male changing room; W.134, Male lavatories; W.135, Male showers; W.136, Sunbathing terraces.

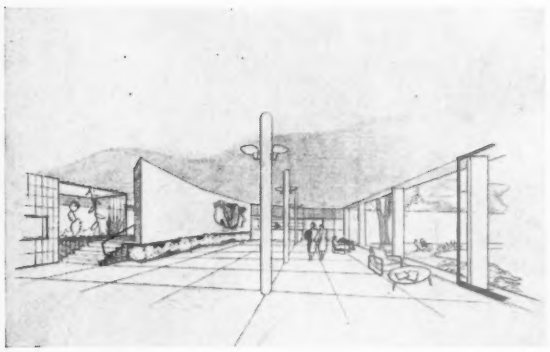
DESIGNED BY RAYMOND McGRATH

GROUND FLOOR PLAN



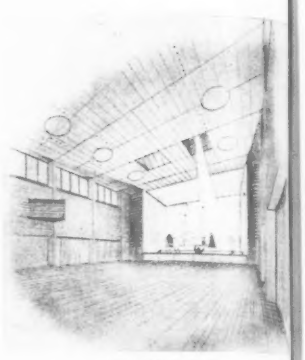
PLAN—*The scheme incorporates the following: Works (process, packing, dispatch and stores section) with a floor area of 80,000 sq. ft.; general office, 9,000 sq. ft. and 25 executive offices; laboratories; directors' offices, board room, etc.; canteens for office and for works' staffs, with kitchen, service and stores; office and works' staff lounges adjoining canteens; concert and assembly hall with stage facilities, dressing-rooms, etc.; gymnasium and squash courts (2); swimming pool with dressing-rooms and showers; boiler house and plant rooms in connection with technical services; air raid shelters, equipped with gas-filtration plant, planned for 600 employees; garages and cycle stores; playing-fields and kitchen garden. These various elements are grouped, as the site plan and air views indicate, on one-half of a long site, the other half being devoted to playfields. The buildings have a total frontage of 625 ft. to the main road and are set well back with an approach of lawns and landscape planting. There are separate entrances to the site for operatives and office staffs and the circulation of male and female employees inside the building has been carefully considered and was the* raison d'être *of the plan.*

The works, with its various adjuncts, cloak rooms, etc., is on one floor—the ground floor; the offices are also on one floor—the first floor. The air raid shelters are planned as a basement under the main office block which affords the maximum superstructure protection. The west group contains the canteens, hall, gymnasium and pool. The circular canteens look over the playing fields and their adjoining lounges have a south aspect giving on to an internal garden courtyard. The swimming pool likewise has a south aspect with sliding doors giving access to a sheltered sun terrace. The hall has full stage facilities and is also intended for dances for which it is provided with a terrace along its west side.

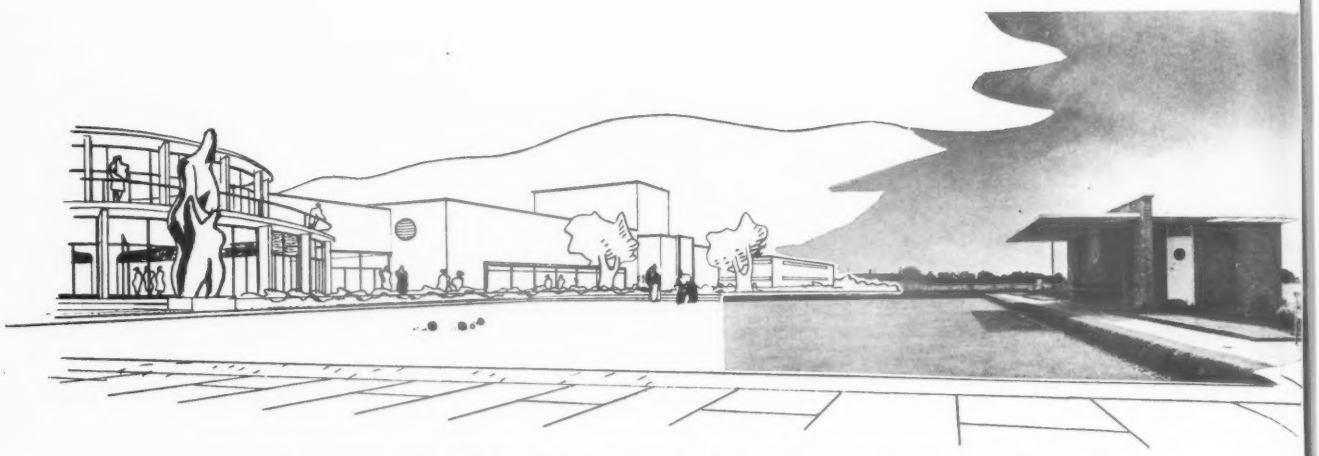


OPERATIVES' LOUNGE

SWIMMING POOL



CONCERT HALL



THE BOWLING GREEN WITH PAVILION (RECENTLY COMPLETED) AND, ON THE LEFT, THE CANTEENS, HALL, ETC.

FACTORY, MAIN BATH ROAD • DESIGNED BY RAYMOND McGRATH

TRADE NOTES

[*By PHILIP SCHOLBERG*]

Doors for A.R.P.

A LEAFLET from Henry Hope and Sons describes this firm's latest A.R.P. doors, which may be gas-proof, splinter-resisting, or both. The sketch on the facing page shows the heavier (Type G.S.2) gas-proof and splinter-resisting door, made of $\frac{5}{8}$ in. mild steel plate. The fact that the doors are splinter-*resisting* should be noted, for the official figures specify a thickness of $1\frac{1}{2}$ in. if the doors are to be splinter-*proof*, and these doors of Hopes do not therefore give complete protection nor do they make any claim to do so. They are, however, perfectly suitable for use in relatively protected positions where direct splinter hits are unlikely. Four lift-off hinges are provided, and an angle is welded on the inside face of the door so that a crowbar can be used to lift the door bodily off its hinges if fallen debris outside should prevent the normal swing.

A size of 6 ft. 3 in. by 2 ft. 6 in. has been standardized, but other sizes can be made to order. Delivery of the standard sizes can at the moment be made from stock. Hopes also make gas-proof windows and splinter-resisting shutters for windows and roof lights.—(*Henry Hope and Sons, Ltd., Smethwick, Birmingham.*)

Coloured and Bent Wallboard

Beaver board was, I believe, the first wallboard to appear on the market in this country, and had the field virtually to itself for some years, so much so that quite a number of people call all wallboards Beaver board from force of habit, even though they may, in fact, be specifying something else. On the same principle presumably as the architect who once remarked that "the Esavian windows are by Crittalls." Thus do trade names become common (or is it proper?) nouns.*

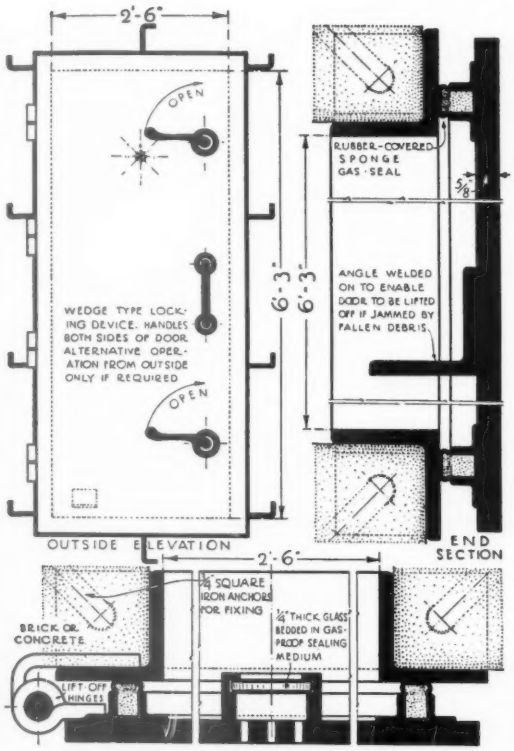
At the moment the Merchant Trading Company have gone one ahead again, for Beaver board is now available in colour (Colo board), in curves (Bent board), or with a pebbled aluminium foil surface on one side (Peb. Met. board). Colour in wallboards should be quite a help, for the painting of large areas can be fairly expensive, and the colours in these boards go right through. Eight colours, blue, orange, brown, yellow, green, grey, ivory and white have been standardized; sizes are 4 ft. by 8 ft., and the thickness is $\frac{1}{4}$ in. Bent board is supplied in half rounds bent to diameters of 6, 12, 18 and 24 in. and in 8-ft. lengths; surface is either pebbled or in colours on both sides, blue-orange, ivory-white, brown-yellow or green-grey. The pebbled metallic board should be useful for insulation or as a decorative finish in itself, for the surface is a good reflector and requires no painting. This board is made in 4 ft. by 8 ft. flat sheets, or to the standard curves.

All these materials should be suitable for a variety of different jobs, and the other wallboard manufacturers will doubtless follow suit or go one better in due course. In America, Masonite is already sold in colours, but it is not yet available over here. Or is it? If so, nobody has told me about it yet.—(*The Merchant Trading Company, Ltd., Columbia House, 69 Aldwych, London, W.C.2.*)

Bronze Alloy Weatherstripping

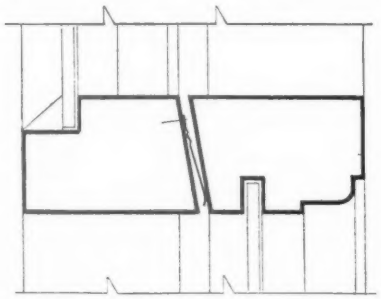
Recent developments in zinc weather-strips remind me that Mollex Metals have for some time been selling a bronze alloy

* *c.f.* Seccotine, Petrol, Cellophane, Rexine, *et al.*



Sketch showing Hopes' heavier (Type G.S.2) gas-proof and splinter-resisting door made of 5/8-in. mild steel plate, described on the facing page.

weatherstrip which is claimed to retain its spring almost indefinitely. The section reproduced below shows its application



to the meeting rails of a double-hung sash window, and it will be seen that it depends for its weathertightness on the spring in the metal keeping the tongue pressed against the opposing member. The zinc strips do the same job by interlocking with each other, a method which would seem, on the face of it, to give a longer life, but I have seen some Mollex strips which have been installed for a little over four years and they still appear to be doing their job perfectly well. The firm also makes a point of doing its own installation work, and will then give a five-year guarantee, which includes an annual inspection. This seems a sensible method, for the firm is then certain that their material has been properly used, and there can be no possibility of quarrels between the supplier and fixer.—(*Mollex Metal, Ltd., St. Stephen's House, Westminster, London, S.W.1.*)

Fireproof Linings

A new catalogue from J. H. Sankey and Son gives details of *all* the refractory materials made by this firm, including firebricks and other fireclay goods, including Pyruma fireproof cement. A considerable amount of useful technical data is also included, and the whole production is a good example of just how a relatively specialized but extremely important section of engineering practice should be presented. —(*J. H. Sankey and Son, Ltd., Refractories Dept., Ilford, Essex.*)

Woodworking Machinery

Any large woodworking shop is such a fascinating place that it is well worth looking at Robinsons' "abridged" (250 page) catalogue of machinery in order to get some idea of how it all works. Competition nowadays is so keen that machines are becoming very elaborate and can be made to perform the most complicated tasks in far less time than it takes to describe them. Robinsons make all types of machinery from a 56-ton record breaker for working greenheart framework members for canal lock gates to small subsidiaries for sharpening saws and cutters. All the machines are illustrated and clearly described and there are frequently drawings to show the type of work which each machine can do. This catalogue cannot, of course, be a primer of design, but it gives a very good idea of the types of joint which can be produced by machine, and it seems better to know what can be done rather than to design hopefully and trust that it will be possible to make the result at a reasonable price.

LAW REPORT

"RUINOUS AND DANGEROUS BUILDING."
VALIDITY OF ORDER

The King v. *The Recorder of Bolton—ex parte McVittie. King's Bench Divisional Court.—Before the Lord Chief Justice and Justices Macnaghten and Singleton*

THIS matter came before the court on a *rule nisi* obtained by Mr. M. J. McVittie, calling upon the Recorder of Bolton to show cause why an order he had made at Quarter Sessions, confirming an order of the Petty Sessional Court, should not be quashed.

It appeared that a picture house at Bolton was burned down in 1930, and as the remains were left standing, the Corporation of Bolton, under the Public Health Act, 1936, section 58, called upon Mr. McVittie, as the owner of a "ruinous and dangerous building," to take steps to carry out such work as was necessary to remedy the cause of complaint. An order to this effect was obtained from the Petty Sessional Court, and on an appeal to the Recorder, he confirmed it.

Mr. McVittie then obtained the present rule, and Mr. Montgomery, K.C., on his behalf, argued that the order was bad in law as it did not tell him what work he was expected to do. In fact, the order was far too obscure to have any legal significance.

Mr. Gorman, K.C., upheld the order and contended that the section left it to Mr. McVittie to use his judgment as to what he thought was best to do in the circumstances.

The court discharged the rule, with costs against Mr. McVittie, and affirmed the decision of the Recorder, holding that the rule was misconceived, that the section clearly showed that the Corporation could get the order they had, and that no burden was placed upon them to detail how the work should be carried out.

THE BUILDINGS ILLUSTRATED

LIVERPOOL PHILHARMONIC HALL (pages 273-275). Architect: H. J. Rowse. General contractors, Morrison and Sons, Ltd., who were also responsible for the demolition, excavation, foundations, stone and stonework. Sub-contractors and suppliers included: G. M. Callender & Co., Ltd., Callender's "Ledkore" and lead dampcourses; Trinidad Lake Asphalte Co., Ltd., asphalt; Trussed Concrete Steel Co., and Expanded Metal Co., reinforced concrete; R. Y. Ames, bricks; Liverpool Artificial Stone Co., artificial stone; Redpath Brown & Co., structural steel; Williams and Watson, glass; H. H. Martyn & Co., cast lead and metalwork; Korkoid Decorative Floors, Ltd., patent flooring; Sika Francois, Ltd., "Sika" waterproofing compound; Richard Crittall & Co., central heating, boilers and ventilation; Liverpool Gas Company, stoves; R. W. Haughton, Ltd., gasfitting and plumbing; Higgins and Cattle, Ltd., electric wiring, electric light fixtures, electric heating and bells; Rowe Bros., Ltd., sanitary fittings; Quiggin Bros., Ltd., door furniture and cloakroom fittings; Henry Hope and Sons, Ltd., casements and window furniture; Automatic Telephone Co., and G.P.O., telephones; Waygood-Otis, Ltd., rolling shutters and lifts; Mather and Platt, Ltd., fireproof doors; Geo. Lowe and Sons, Ltd., iron staircases; Hampton and Sons, Ltd., plaster, decorative plaster, joinery, textiles and furniture; John Stubbs and Sons, Ltd., marble and tiling; Conways, Ltd., tiling; Walturdaw Cinema Supply Co., Ltd., seating; Bath Cabinet Makers Co., Ltd., furniture; Frederick Tibbenham, Ltd., furniture; Roneo, Ltd., office fittings; Pilkington Bros., Ltd., clocks; Daymonds, Ltd., plastic letters, office fittings; Bull Motors (Branch of E. E. & F. Turner, Ltd.), Bull super silent motors

Professional Announcements

Messrs. Burt and Ballard, FF.S.I., Chartered Quantity Surveyors, of Leicester and Derby, have removed their Leicester office from No. 5 Grey Friars to Alliance Chambers, Horsefair Street. The telephone number remains 60544.

Mr. John Bland, A.R.I.B.A., has been appointed Lecturer in Town Planning and Architecture at the McGill University, Toronto.

PRICES

On the following pages appear *(a)* Prices for Measured Work, Part II; *(b)* Prices for Approximate Estimates.

★ IMPORTANT NOTE

The prices given below are for work executed complete and are for an average job in the London Area; all prices include overhead charges and profit for the General Contractor.

The prices given in italics are for "Materials Only" and represent the cost of the materials included in the measured rates. They are based on the prices given in "Current Market Prices of Materials" with the addition of 10 per cent. for overhead charges and profit.

The cost of labour (including its proportion of overhead charges and profit) can be ascertained by subtracting the prices in italics from the prices in heavier type.

The complete series of prices consists of four sections, one section being published each week in the following order:—

1. Current Market Prices of Materials, Part I.
2. Current Market Prices of Materials, Part II.
3. Current Prices for Measured Work, Part I.
4. A.—Current Prices for Measured Work, Part II.
   B.—Prices for Approximate Estimates.

PART 4

CURRENT PRICES FOR MEASURED WORK—II

BY DAVIS AND BELFIELD

JOINER

Deal Flooring

		1″	1¼″
Plain edge flooring in batten widths	per square	38 7 *28 7*	47 5 *36 5*
Ditto tongued and grooved ditto ..	per square	42 3 *31 2*	51 6 *39 6*
T. & G. B.C. Pine rift flooring in narrow widths	per square	57 8 *44 4*	—

Wood Block Flooring, laid herringbone, 100 yards and up

D.G. and T.G. kiln dried, 2 block border, laid in hot mastic composition on cement screed, including 2 feet run of straight cutting per yard super, and wax polishing at time of laying.

		1″ nominal	1¼″ nominal
Burma teak	per yard super	12 7	16 10
Canadian maple	per yard super	10 8	12 4
25–30 per cent. quart Austrian Oak	per yard super	11 10	15 –
Plain American Oak (no selection made for sap) ..	per yard super	11 –	—
Gurjun	per yard super	11 3	14 –

JOINER—(*continued*)

		1″ nominal	1¼″ nominal
Pitch Pine (50% rift sawn)..	per yard super	11 7	13 8
Ditto (100% ditto)	per yard super	13 8	16 –
British Columbian Pine ..	per yard super	8 8	8 11
Deal, 100 per cent. rift sawn..	per yard super	12 1	12 3
Jarrah	per yard super	11 3	—
Additional straight cutting	5½d. per foot run		

Secret Nailed Tongued and Grooved Strip Flooring, fully Desiccated, including Polishing

		1″ nominal £ s. d.	1¼″ nominal £ s. d.
Austrian Wainscot Oak ..	per square	8 18 6	10 12 7
Plain Japanese Oak ..	per square	7 10 8	9 2 2
Plain American Oak ..	per square	7 7 0	9 3 9
Pitch Pine..	per square	7 0 6	8 15 7
British Columbian Pine ..	per square	4 14 6	5 7 7
Canadian Maple	per square	6 19 1	8 10 7
Burma Teak	per square	8 18 6	10 17 4
English Oak	per square	10 4 9	12 15 11
Gurjun	per square	6 19 1	8 10 7
Jarrah	per square	6 13 10	8 6 5

CURRENT PRICES

BY DAVIS AND BELFIELD

JOINER

Wall Linings

$\frac{5}{8}$″ Deal tongued and grooved V-jointed Matching in narrow widths .. .. per square	**30 11**	*19/10*
$\frac{1}{4}$″ (6 mm.) Birch (B) Plywood and fixing to walls per square	**35/7**	*25/8*
$\frac{3}{16}$″ Asbestos cement sheets butt jointed per foot super	**-/4**	*-/2¼*
$\frac{1}{2}$″ Fibre board and fixing to walls per yard super	**2/11**	*2/4*
Deal battens as grounds plugged to brickwork per foot super	**-/1½**	*-/0½*
2″×$\frac{3}{4}$″ wrot and chamfered fillets .. per foot run	**-/1¾**	*-/0¾*
2″×$\frac{1}{2}$″ wrot and moulded ditto .. per foot run	**-/1¾**	*-/0¾*

Skirtings

	Deal	Austrian Oak
1″ stock chamfered or moulded 4″ high, fixed to and including grounds and backings planted on per foot run	**-/3½**	**-/10½**
	-/2	*-/7½*
Add for plugging to brickwork .. per foot run	**-/0½**	**-/0¾**

Fitted ends on hardwood price as 4″ of skirtings, mitres as 6″.

Fitted ends, etc., on deal skirting included in price per foot run.

Casements and Fanlights

	1½″	2″
Deal stock moulded sashes divided into squares with glazing bars per foot super	**1/4½** *-/4¼*	**1/5½** *-/5*
Add for hanging casements (butts measured separately) .. .. each	**1/9**	**2/-**

Cased Frames and Sashes

Deal cased sashed frame, including 2″ double hung stock sashes, with 6″×3″ Oak cill and brass axle pulleys, sash line and weights, average 15 feet super per foot super	**3/9** *1/7*

Doors in Deal

	¾″	1″
Matchboarded, ledged and braced door per foot super	**1/-** *-/4¾*	**1/2** *-/5¾*

	1½″	1¾″	2″
Framed, ledged and braced door, filled in with matchboarding .. per foot super	**1/7½** *-/6*	**1/10** *-/6½*	**2/1** *-/8½*
Ditto garage doors in pairs per foot super			**1/10** *-/5½*

Labour rebated and beaded meeting styles, per foot run -/1

	4-panel
1½″ square framed, both sides per foot super	**1/8** *-/7¾*
2″ ditto .. .. .. per foot super	**2/-** *-/9¾*
1½″ bead butt panels one side, but square the other .. .. .. per foot super	**1/9** *-/7¾*
2″ ditto .. .. .. per foot super	**2/2** *-/10½*
1½″ moulded both sides .. per foot super	**2/-** *-/9¼*
2″ ditto .. .. .. per foot super	**2/4** *-/11¼*
For fixing only, stock or p.c. doors, allow per foot super	-/2½

Doors in Hardwood

Austrian quartered oak:
Labour, 2 × as much as deal.
Materials, 3½ × ditto.
Labour and materials, 2½ × ditto.

Cuban mahogany:
Labour, 3 × as much as deal.
Materials, 4½ × ditto
Labour and materials, 3½ × ditto

Teak:
Labour, 3 × as much as deal
Material, 3½ × ditto
Labour and material, 3½ × ditto

Deal stock glazing beads, mitred and bradded per foot run	-/1 *-/0½*
Ditto and fixed with brass cups and screws per foot run	-/3 *-/1*

Window and Door Linings

	1″	1¼″	1½″
Deal linings, 6″ wide, tongued at angles and planted on including backings per foot run	**-/6½** *-/2⅝*	**-/7¼** *-/3¼*	**-/8½** *-/4*
Add for plugging to wall .. per foot run	**-/0½**	**-/0½**	**-/0½**
Add for rebating .. .. .. per foot run	**-/0½**	**-/0½**	**-/0½**
Add for ¾″×1½″ stock Deal stop planted on per foot run	**-/1¾** *-/0¾*	**-/1¾** *-/0¾*	**-/1¾** *-/0¾*
Deal window board 9″ wide, with rounded nosing, tongued at back and on and including bearers plugged to brickwork per foot run	**-/9½** *-/4¼*	**-/10¾** *-/5¼*	**1/0½** *-/6¼*
1″ Deal scotia mould .. .. per foot run		**-/1¾** *-/0¾*	

JOINER—(*continued*)

	1″	1¼″	1½″
Austrian quartered oak linings 6″ wide tongued at angles and planted on including backings per foot run	**1/2½** *-/8¼*	**1/5½** *-/10¼*	**1/8¾** *1/0½*
Add for plugging to brickwork .. per foot run	**-/1**	**-/1**	**-/1**
Add for rebating .. .. .. per foot run	**-/1**	**-/1**	**-/1**
Add for ½″×2″ Austrian quartered oak stop planted on .. .. .. per foot run	**-/3½** *-/1¼*	**-/3½** *-/1¼*	**-/3½** *-/1¼*
Austrian quartered oak window board 9″ wide, with rounded nosing tongued at back and on and including bearers plugged to brickwork per foot run	**1/9** *1/0¾*	**1/11½** *1/3¾*	
1″ Austrian quartered oak scotia mould per foot run		**-/3¼** *-/1¼*	

Window and Door Frames

	Deal	Austrian Quartered Oak
4″×3″ door frames .. .. .. per foot run	**-/9½** *-/4½*	**2/2** *1/4¼*
4″×3″ window frames .. .. per foot run	**-/11½** *-/4½*	**2/6** *1/4¼*
4″×3″ transomes and mullions .. per foot run	**1/3½** *-/4½*	**3/2** *1/4¼*
6″×3″ door cill, sunk weathered twice throated and grooved for water bar (measured separately) per foot run	—	**3/5½** *2/0½*
6″×3″ window ditto .. .. per foot run	—	**2/9½** *2/0½*
Add or deduct for variation in sectional area per square inch .. .. .. per foot run	**-/0⅜**	**-/1⅜**
Add for each labour, for chamfer, bead or rebate, etc. .. .. per foot run	**-/0½**	**-/1**
Add for each moulding .. .. per foot run	**-/0¾**	**-/1½**

Architraves

	Deal	Japanese Oak
1″×3″ stock chamfered or moulded architraves, including mitres on softwood, planted on per foot run	**-/3** *-/1¼*	**-/7½** *-/4½*
Mitred angles on oak price as 6″ of architrave.		
Add for plugging to brickwork .. per foot run	**-/0½**	**-/0¾**
Add for narrow splayed grounds .. per foot run	**-/1½** *-/0¼*	**-/1½** *-/0¼*

Shelving

	Deal	Austrian Quartered Oak
Slat shelving of 1″ × 2″ spaced ¾″ apart per foot super	**-/9** *-/3¾*	—
1″ shelving .. .. .. per foot super	**-/10** *-/5*	**2/2½** *1/4¼*
1¼″ ditto .. .. .. per foot super	**1/0½** *-/6¼*	**2/8¾** *1/8¼*
1″ cross-tongued shelving .. per foot super	**1/-** *-/5½*	**2/6¼** *1/5¼*
1¼″ ditto .. .. .. per foot super	**1/2½** *-/6¾*	**3/0¾** *1/9¼*
1″×2″ chamfered bearers planted on per foot run	**-/2¼** *-/0⅜*	**-/5¾** *-/2⅜*
Add if bearers plugged to brickwork per foot run	**-/0½**	**-/0¾**

Teak Draining Boards and Twice Oiling

1¼″ Moulmein cross-tongued fluted draining board fixed to slight falls .. per foot super	**3/9**	*1/11½*
½″×2″ rounded rim bedded in white lead and screwed to edge of draining board per foot run	**-/6½**	**-/2¼**
½″×4″ rounded skirting fillet ditto per foot run	**-/8½**	**-/3¾**

Staircases

	Deal	Austrian quartered Oak
1¼″ treads and 1″ risers .. per foot super	**2/-** *-/9*	**4/6** *2/-*
2″ strings, fixed .. .. per foot run	**1/9½** *-/7½*	**4/6½** *2/8½*
Housing treads and risers to strings .. each	**-/9**	**1/6**
3″×2½″ Moulded handrail .. per foot run	—	**1/6½** *-/10½*
1¼″×1¼″ square balusters 2′ 6″ long .. each	**-/10** *-/2*	**1/9** *-/5½*
4″×4″ Newels with chamfered edges and fixing per foot run	**1/4½** *-/8½*	**3/2** *1/11*

CURRENT PRICES

BY DAVIS AND BELFIELD

Ironmonger, Steel and Ironworker, Plasterer and External Plumber

IRONMONGER

Fixing only

4″ Butt hinges to softwood	per pair	1/–
4″ ditto to hardwood	per pair	1/4
16″ T. hinges to softwood	per pair	1/6
48″ Collinges patent gate hinges to softwood	per pair	7/6

		Softwood	Hardwood
6″ Cabin hooks	each	–/7½	–/10
Hat and coat hooks	each	–/3	–/4
Cupboard knobs	each	–/3	–/4
Night latches	each	1/6	2/–
Thumb latches	each	1/6	2/–
Letter plate and knocker, including perforation in door	each	2/6	3/4
Barrel or tower bolts	each	–/10	1/1
Flush bolts	each	1/6	2/–
Rim locks and furniture	each	2/–	2/8
Mortice ditto	each	3/–	4/–
Rebated ditto	each	3/6	4/8
Grip handles	each	–/6	–/8
Cupboard locks	each	1/–	1/4
Spring catches	each	–/10½	1/1½
Casement fastener	each	1/–	1/4
Ditto stays	each	–/10	1/1
Sash fastener	each	–/8	–/11

STEEL AND IRONWORKER

(For Rainwater Goods—*see* "Plumber.")

Steelwork

		£	s.	d.
Basis for plain rolled steel joists	per ton	16	17	0
		14	*2*	*0*

Fabricated Steelwork

		£	s.	d.
Joists cut and fitted	per ton	20	0	6
Stanchions, ordinary sections with riveted caps and bases	per ton	23	10	6
Stanchions, compound	per ton	25	11	6
Plate girders	per ton	27	19	6
Framed roof trusses, 25′ 0″ span	per ton	30	4	6
Ditto ditto 60′ 0″ span	per ton	28	5	0

Wrot Iron Work

Simple balusters and handrail fixed (excluding mortices, etc.)	per cwt.	56/–
Bolts and nuts fitted	per cwt.	45/– *38/6*

Galvanized Corrugated Sheeting

		20 B.G.	22 B.G.
Sheeting in 3″ corrugations and fixing on wood framing with screws and galvanized embossed curved washers including laps	per square	52/3 *42/3*	46/1 *36/8*
Ditto fixed to steel framing	per square	60/1 *47/7*	54/7 *42/1*

PLASTERER

Lime and Sirapite Plastering

	Per yard super	In narrow widths per foot super
Expanded metal lathing	1/8 *1/1½*	–/3
1″ × $\frac{3}{16}$″ sawn laths	–/9½ *–/5*	–/1½
Render and set in lime and hair	1/8 *–/6½*	–/3¼
Render, float and set in lime and hair	2/– *–/8¾*	–/3¾
Plaster, float and set ditto on lathing (measured separately)	2/1½ *–/9½*	–/4
Render and set with Sirapite	1/9½ *–/8*	–/3½
Plaster, float and set ditto on lathing (measured separately)	2/3 *–/10¾*	–/4
Skimming coat Sirapite	1/5½ *–/4½*	
⅜″ thick plaster board fixed including covering joints with scrim cloth	2/– *1/2½*	

PLASTERER—(*continued*)

Keenes

	Per yard super	In narrow widths per foot super
Cement plain face on and including a backing of Portland cement and sand	2/6 *–/8½*	–/5 —

Mouldings and Labours

		Lime and Sirapite	Keenes
Plain cornices and mouldings 6″ girth	per foot run	–/9½ *–/1½*	–/11 *–/2*
Labour arris, quirk or throat	per foot run	–/1½	–/1½
Ditto rounded angle	per foot run	–/2	–/2
Ditto staff bead	per foot run	—	–/7½

Mitres price as 12″ of moulding, stopped ends as 6″, and rounded angles as 18″.

Portland Cement and Sand (1 : 3)

		½″	¾″
Screeds to floors for wood or tiles	per yard super	1/2½ *–/4¼*	1/4 *–/6¼*
Screeds for tiling, etc., on walls	per yard super	1/4 *–/4½*	1/6 *–/6¾*
Renderings to walls—one coat float finish	per yard super	1/6 *–/4½*	1/8 *–/6¾*
Plainface	per yard super		2/– *–/6¾*

Coloured Cement Plainface

Cullamix No. 2 or 3 cream, on and including water repellent cement and sand backing	per yard super	3/10 *1/9*
Snowcrete mixture on and including ditto	per yard super	3/10 *1/8½*
Snowcrete and white silica sand on and including ditto	per yard super	3/4½ *1/3½*

For keyed bricks or hacking face of concrete, to form key for plastering, see "Bricklayer."

Wall Tiles, Commercial Quality

6″ × 6″ × ⅜″ ivory or white	per yard super	16/– *11/3*
Extra for rounded edge tiles	per yard run	1/1½ *1/0¾*
6″ × 6″ × ⅜″ coloured enamel bright glazed	per yard super	21/3 *16/6*
Extra for rounded edge tiles	per yard run	–/4 *–/3*
6″ × 6″ × ⅜″ eggshell gloss enamelled	per yard super	22/1 *17/4*
Extra for rounded edge tiles	per yard run	–/4 *–/3*

EXTERNAL PLUMBER

Lead

	Flats	Gutters, Flashings, etc.	Stepped Flashings	Soakers cut to size
● Milled sheet lead and labour per cwt.	39/6 *26/–*	40/7 *26/–*	41/9 *26/–*	34/4 *26/–*

Bedding edges in white lead	per foot run	–/2
Lead wedgings to flashings	per foot run	–/1½
Ditto to stepped flashings	per foot run	–/2
Dressing 6-lb. lead over glass and glazing bars	per foot run	–/3½
Copper nailing	per foot run	–/1½
Close ditto	per foot run	–/2
Bossed ends to rolls	each	–/7½
Extra labour dressing through shoots and into rainwater heads	each	3/–
Ditto to cesspools, including extra solder	each	5/3

● **Items marked thus have risen since July 27.**

CURRENT PRICES

BY DAVIS AND BELFIELD

EXTERNAL AND INTERNAL PLUMBER

EXTERNAL PLUMBER—(*continued*)

Cast Iron Rainwater Goods

Rainwater Pipes fixed to brickwork.

		3″	4″
Round pipes	per foot run	1/6¼	3/4
		1/1¾	*1/5¼*
Extra for bends	each	2/4	2/11
		1/6	*2/1*
Ditto 6″ offset	each	2/4	2/11
		1/4	*1/11*
Ditto single branches	each	2/10	3/8
		1/10	*2/8*
Ditto shoes	each	2/4	3/–
		1/7	*2/–*
		3½″ × 3½″	4″ × 3″
Square and rectangular pipes ..	per foot run	3/1	2/10
		2/6¼	*2/3*
Extra for elbows (fitted)	each	6/6	5/11
		5/3	*4/8*
Ditto single branches	each	6/7	6/3
		5/1	*4/9*
Ditto shoes	each	7/2	6/6
		6/1	*5/5*

Gutters fixed to fascia.

		4″	5″	6″
Half-round gutters ..	per foot run	1/1	1/2½	1/7½
		–/9	*–/10*	*1/2½*
Extra for angles	each	1/9	2/–	2/6
		1/–	*1/2½*	*1/8*
Ditto nozzles	each	1/7	1/10½	2/3
		1/–	*1/3*	*1/7*
Ditto stop ends	each	1/0½	1/3	1/4½
		–/8¼	*1/–*	*–/10¾*
Ogee gutters	per foot run	1/2	1/4	1/8¼
		–/10	*–/11½*	*1/3¼*
Extra for angles	each	1/9	2/1½	2/3
		1/–	*1/4*	*1/5*
Ditto nozzles	each	1/8½	2/2¼	2/5
		1/1½	*1/7*	*1/9*
Ditto stop ends	each	1/1¾	1/4½	1/7¼
		–/9½	*1/–*	*1/2½*

INTERNAL PLUMBER

Lead Pipes

Service.

		½″	¾″	1″	1¼″
• Pipes laid in trenches ..	per foot run	–/10¾	1/2¾	1/9¼	2/4½
		–/6¾	*–/10¾*	*1/3¾*	*1/8½*
Add if fixed on walls ..	per foot run	–/1½	–/2	–/2½	–/3¾
Ditto if in short lengths ..	per foot run	–/1	–/1	–/1½	–/2
		1½″	2″	2½″	3″
• Pipes laid in trenches ..	per foot run	3/0½	4/0¾	—	—
		2/2¼	*3/0¾*	—	—
Add if fixed on walls ..	per foot run	–/5	–/6	—	—
Ditto if in short lengths ..	per foot run	–/3	–/4	—	—

Distributing.

		½″	¾″	1″	1¼″
• Cold water pipes fixed to walls	per foot run	–/11	1/–	1/7	2/1¾
		–/5½	*–/8¼*	*–/11¼*	*1/2¼*
Add if in short lengths ..	per foot run	–/1	–/1	–/1½	–/2
		1½″	2″	2½″	3″
• Cold water pipes fixed to walls	per foot run	2/5½	3/5¾	—	—
		1/3	*2/0½*	—	—
Add if in short lengths ..	per foot run	–/3	–/4	—	—

Waste and Warning.

		½″	¾″	1″	1¼″
• Waste and overflow pipes fixed to walls	per foot run	–/8	–/10¼	1/2¼	1/8½
		–/3½	*–/5½*	*–/7½*	*–/9¾*
		1½″	2″	2½″	3″
• Waste and overflow pipes fixed in short lengths	per foot run	2/2¾	2/9¾	—	—
		1/1¼	*1/5¼*	—	—

Soil and Ventilating

		3½″	4″	4½″
• Pipes fixed, including lead tacks	per foot run	4/3½	5/4½	6/5½
		2/7½	*3/5½*	*4/3½*

		1½″	2″	2½″	3″	3½″	4″	4½″
Bends ..	each	1/6	2/–	2/9	3/9	4/3	4/6	5/6
Soldered joints to fittings		½″	¾″	1″	1¼″	1½″	2″	
	each	1/9	2/–	2/3½	2/7	2/10½	3/5	
		–/6	*–/9*	*1/–*	*1/3*	*1/6*	*2/–*	
Soldered branch joints (price as largest branch) ..	each	½″	¾″	1″	1¼″	1½″		
		1/11	2/2	2/5½	2/9	3/0½		
		–/6	*–/9*	*1/–*	*1/3*	*1/6*		
Soldered branch joints (price as largest branch) ..	each	2″	2½″	3″	4″	4½″		
		3/7	4/–	4/7	5/7	6/1		
		1/6	*2/4*	*2/10*	*3/9*	*4/2*		
Wrap small pipes with hair felt ..	per foot run	–/6	–/3½					

INTERNAL PLUMBER—(*continued*)

Drawn Lead Traps

		1″	1¼″ 3″ deep seal	1½″	1½″ 3″ deep seal	2″	2″ 3″ deep seal
P. Traps 6 lb. with cleaning eye and two soldered joints	each	7/3	7/9½	8/4	8/11	10/5	11/–
		4/–	*4/6½*	*4/10*	*5/5*	*6/8*	*7/3*
S. ditto	each	7/7	8/2	8/10	9/4	11/1	11/8
		4/4	*4/11*	*5/4*	*5/10*	*7/4*	*7/11*

Brasswork (Best Quality)

		½″	¾″	1″
Brass screwdown stop cocks including two soldered joints	each	7/5½	9/10	13/7
		4/11½	*7/4*	*11/–*
Ditto, including two red lead joints for iron	each	5/6	6/6½	9/6
		4/–	*4/10½*	*7/8*
Ditto, including one soldered and red lead joint	each	6/4	7/5½	11/10
		4/4	*5/4½*	*9/7*
High pressure Portsmouth pattern ball valve with flynut and union and one soldered joint	each	8/3	11/–	18/10
		5/6	*8/4*	*15/11*
Ditto, including red lead joint for iron	each	6/9	9/–	15/9
		4/10	*6/9*	*13/4*

		2″	4″
Brass thimble and soldered and cement joints	each	5/1	9/–
		2/11	*6/–*
Ditto, with solder and caulked lead joints	each	5/8	10/1
		3/5	*6/4*

Fixing Only (Connections to Pipes measured separately)

24″ × 18″ × 6″ sinks including taps, etc., and pair of brackets cut and pinned to brickwork	each 6/–
24″ × 18″ lavatory basins ditto	each 6/6
W.C. suite comprising pan and trap, seat, W.W.P. and brackets..	each 10/6
Baths, including taps, etc., and setting in position ..	each 10/6

Screwed and Socketed Galvanized Steam Quality Steel Tubes and Fittings

Pipes up to and including 1½″ include short running lengths, sockets, connectors, elbows, bends, fire bends; Tees and Diminishing Pieces enumerated.

Distributing.

	½″	¾″	1″	1¼″	1½″	2″
Pipes fixed to walls per foot run	–/10½	–/11½	1/3¾	1/10½	2/4½	3/–
	–/5	*–/6*	*–/8*	*–/11*	*1/2¼*	*1/6¾*
Ditto in short lengths, fittings, etc., measured separately per foot run	–/10¾	–/11½	1/4	1/10¾	2/5½	3/1¼
	–/4¼	*–/5*	*–/6¾*	*–/9¼*	*1/0¼*	*1/3¾*

Extra for

		½″	¾″	1″	1¼″	1½″	2″
Firebends	each	–/4	–/6	–/9	1/3	1/6	2/–
Bends	each	1/2	1/5	1/9	2/6	3/1	4/9
		–/7½	*–/10*	*1/1½*	*1/10*	*2/3*	*3/7*
Round elbows ..	each	1/4½	1/7	1/9½	2/3½	2/9½	4/5
		–/10	*1/–*	*1/2*	*1/7½*	*1/11½*	*3/3*
Square ditto ..	each	1/3½	1/5½	1/8	2/2	2/7½	4/1½
		–/9	*–/10½*	*1/0½*	*1/6*	*1/9½*	*2/11½*
Tees	each	1/6	1/9½	2/–	2/6	3/0½	4/9
		–/10½	*1/1½*	*1/3½*	*1/9*	*2/1½*	*3/6*
Crosses	each	2/9	3/2	3/10	5/–	6/–	9/1
		1/11	*2/3*	*2/10*	*3/9½*	*4/6½*	*7/3*
Diminishing pieces	each	–/10	–/11	1/2	1/6	1/11	2/8
		–/4½	*–/5*	*–/6½*	*–/8½*	*–/11*	*1/4½*
Caps	each	–/7	–/8½	–/10	1/1½	1/5	2/1
		–/3½	*–/4½*	*–/5½*	*–/8½*	*–/10½*	*1/4½*
Plugs	each	–/6	–/7	–/8½	–/10	1/1	1/6½
		–/3	*–/3½*	*–/4½*	*–/5½*	*–/7*	*–/10½*

Cast Iron Waste, Soil and Vent Pipes

		2″	3″	4″	5″	6″
L.C.C. pipes in 6′ 0″ lengths fixed to brickwork ..	per foot run	1/9	2/0½	2/6½	4/5	5/4
		1/3	*1/5*	*1/10½*	*3/8*	*4/4*
Extra for bends	each	3/11	4/10	6/7	9/4	12/8
		2/3	*2/10*	*4/2*	*6/5*	*9/–*
Ditto single branches ..	each	5/9	6/7	7/9	8/7	10/7
		2/11	*3/2*	*3/7*	*3/6*	*4/3*
Ditto swannecks 6″ projection	each	4/5	6/5	8/5	12/5	16/11
		2/3	*3/10*	*5/4*	*8/9*	*12/3*
Extra for access door or any fitting	each	6/9	6/9	7/3	8/6	8/6

• **Items marked thus have risen since July 27.**

CURRENT PRICES

BY DAVIS AND BELFIELD

INTERNAL PLUMBER, GLAZIER AND PAINTER

INTERNAL PLUMBER—(*continued*)

Zincworker

	13 G.	14 G.	15 G.	16 G.
Rolled sheet zinc on flats per foot super	–/7¾	–/8½	–/9½	–/10
Ditto in gutters, cover flashings, etc. per foot super	–/8½	–/9	–/10	–/10½
Ditto in stepped flashings per foot super	–/10½	–/11	1/–	1/0½
Labour and risk dressing over glass per foot run	–/4¼	–/4¼	–/4¼	–/4¼
Capped ends to rolls .. .. each	–/2¼	–/2¼	–/2¼	–/2¼
Extra labour to cesspools .. each	2/7½	2/7½	3/2	3/2

Copperworker

Distributing.

	½″	¾″	1″	1¼″	1½″	2″
Solid drawn copper tube fixed to walls per foot run	–/9	–/11	1/4½	1/9½	2/4	3/1½
	–/5¼	*–/7*	*–/10¾*	*1/1*	*1/3½*	*1/11¼*
Add if in short lengths per foot run	–/0¾	–/0¾	–/1	–/1½	–/2	–/2¼

Fittings for copper tubes

		½″	¾″	1″	1¼″	1½″	2″
Compression type							
Straight couplings	each	1/9½	2/4	2/11½	3/8	5/–	7/–
		1/2½	*1/8*	*2/2½*	*2/10*	*4/1*	*6/–*
Obtuse elbows ..	each	2/8	3/1	4/4	5/4	8/7	11/4
		2/–	*2/4*	*3/6*	*4/5*	*7/7*	*10/3*
Tees	each	3/–	3/5½	5/1	7/2	10/10	15/1
		2/3	*2/7½*	*4/2*	*6/2*	*9/9*	*13/11*
Crosses	each	4/–	4/6½	6/4½	7/10	12/9	17/5½
		3/2	*3/7½*	*5/4½*	*6/9*	*11/7*	*16/2½*
Reducing couplings	each	—	2/2	2/11½	3/8	4/11½	7/–
		—	*1/6*	*2/2½*	*2/10*	*4/0½*	*6/–*
Bends	each	2/4½	2/10	3/11½	4/11	8/–	11/7
		1/8½	*2/1*	*3/1½*	*4/–*	*7/–*	*10/6*
Brass stopcocks ..	each	5/2½	7/4½	10/4	18/–	24/6	40/4
		4/0½	*6/0½*	*8/10*	*16/4*	*22/8*	*38/4*
Capillary type							
Straight couplings	each	1/7	2/–	2/9½	3/5	4/4	5/9½
		–/9	*1/–*	*1/7½*	*2/1*	*2/10*	*4/1½*
45° Elbows ..	each	2/6½	3/2½	4/2	5/3½	7/4¾	10/5½
		1/7½	*2/1½*	*2/11*	*3/10½*	*5/9¾*	*8/8½*
Tees	each	2/9¼	3/2	4/7½	6/4	8/6	12/–
		1/9¼	*2/–*	*3/3½*	*4/10*	*6/10*	*10/2*
Crosses	each	3/4	3/9	5/6½	7/7	10/6½	14/9
		2/3	*2/6*	*4/1½*	*6/–*	*8/9½*	*12/10*
Reducing couplings	each	—	1/7½	2/0½	2/7½	3/5½	5/0½
		—	*–/7½*	*–/10½*	*1/3½*	*1/11¼*	*3/4½*
Bends	each	2/10½	3/5	4/7½	6/–	8/10	11/11
		1/11¼	*2/4*	*3/4½*	*4/7*	*7/3*	*10/2*
Pillar tap connections	each	2/0½	2/9½				
		1/2½	*1/9¼*				

	24 G.	23 G.
Rolled sheet copper on flats .. per foot super	1/5	1/7
Ditto in gutters, cover flashings, etc. per foot super	1/6	1/8
Ditto in stepped flashings .. per foot super	2/1½	2/4½
Labour and risk dressing over glass .. per foot run	–/4½	–/4½
Capped ends to rolls .. .. each	–/3½	–/3½
Extra labour to cesspools .. .. .. each	3/8	3/8

GLAZIER

Sheet Glass (Ordinary Glazing Quality)

18 oz. clear sheet and glazing to wood, sprigged and with back and front putties, to all normal sizes not exceeding 60″ in length or 40″ wide .. .. per foot super	–/6½
24 oz. ditto .. .. per foot super	–/7¾
32 oz. ditto .. .. per foot super	–/11½
Obscured ground sheet glass, net extra to above prices per foot super	–/1¾
⅛″ figured rolled white glass and glazing to wood with beads (measured separately) .. .. per foot super	–/10½
Ditto, normal tints, ditto .. .. per foot super	1/2¾
Hammered double rolled cathedral white ditto per foot super	–/10
Ditto, normal tints, ditto .. .. per foot super	1/1¾
Add for glazing into metal frames (ordinary rebates) per foot super	–/1⅛
Ditto, metal sashes with ferroput .. per foot super	–/2¼
Ditto, solid metal casements and screw beads per foot super	–/2¼
Wash leather strip or similar material and bedding edge of glass .. .. per foot run	–/3¼

Glazing only, thick drawn sheet glass, polished plate or wire polished plate for all normal sizes. (For prices of glass see materials section and add profit, say 10 per cent.) per foot super –/6¼

PAINTER

Whitening, Distempering and Painting (on new Plastered Walls)

Twice distempering white .. per yard super	–/4½ –/1
Ditto, in common colours .. per yard super	–/7 –/3½
Add for stippling .. .. per yard super	–/2 —
Preparing and painting two coats of undercoating and one coat of enamel .. .. per yard super	1/9 –/8

Preparing and Painting Two Coats of Oil Colour on Ironwork after fixing

General surfaces .. .. .. per yard super	1/– –/4
Perforated landings and staircases both sides (one side measured) .. .. .. per yard super	2/6 –/8
Pipes, bars, balusters, etc., not exceeding 3″ girth per yard run	–/1¾
Metal window frames .. .. .. per yard run	–/2¾
Eaves gutters .. .. .. per yard run	–/7½
2″ Rainwater pipes .. .. .. per yard run	–/3
4″ ditto .. .. per yard run	–/6
Squares one side .. .. per dozen	1/9
Large ditto .. .. per dozen	2/3
Extra large ditto .. .. .. per dozen	3/–
Edges of casements .. .. each	–/3

Painting on New Woodwork

		Knot, prime, stop and paint three coats oil colour		Add or deduct for each coat more or less	
General surfaces ..	per yard super	2/–	–/8	–/6	–/2
Fascias and soffites	per yard super	2/6	–/8	–/7½	–/2
Fillets, skirtings, etc., not exceeding 3″ girth	per yard run	–/3	—	–/0¾	—
Ditto, not exceeding 6″ ..	per yard run	–/5½	—	–/1¼	—
Ditto, not exceeding 9″ ..	per yard run	–/7	—	–/1¾	—
Ditto, not exceeding 12″..	per yard run	–/9	—	–/2	—
Squares one side	per dozen	3/6	—	–/9	—
Large ditto	per dozen	4/6	—	1/–	—
Extra large ditto ..	per dozen	6/–	—	1/4	—
Edges of casements	each	–/6	—	–/1½	—

Sundries

Twice creosoting woodwork .. per yard super	–/6 –/2
Twice limewhiting brickwork .. per yard super	–/4½ –/0½

		Sizing	Staining	Once Varnish
General surfaces ..	per yard super	–/2	–/4½	–/6
		–/¾	–/1½	–/2½
Wax polishing	per foot super	–/4½		
Body in and French polish on hardwood surfaces	per foot super	1/–		

Writing

Plain letters or figures, two coats, 2″ to 12″ letters per dozen inches in height	1/10½
Ditto, shaded .. per dozen inches in height	2/6
Plain gold, 2″ to 12″ letters per dozen inches in height	2/6
Ditto, 12″ to 24″ .. per dozen inches in height	3/9

Gilding

	Single Gold	Double Gold
Preparing and gilding in best oil gold per foot super	5/3	8/4
Ditto in matt or burnished gold per foot super	7/4	11/6

Paperhanging

	On walls		On ceilings	
Preparing new plastered walls for papering per piece (60 feet super)	1/4	–/5¼	1/5½	–/5¼
Pasting and hanging only.				
Plain lining paper per piece (60 feet super)	1/4	–/1½	1/8	–/1½
Common printed papers per piece (60 feet super)	2/–	–/1½	2/6	–/1½

APPROXIMATE ESTIMATES

ON this and the three following pages the JOURNAL's section of Approximate Estimates is published for the nineteenth time.

There is nothing revolutionary about the idea—its usefulness lies in its efficiency as a time-saver in calculating the approximate price of work to which the cubing system cannot be applied.

In brief, an Approximate Estimate in considering a roof, converts the several units of pricing involved into a common unit of price per square yard, and then adjusts the price to cover sundry labours. By this means several stages of calculation are saved by the estimator in a hurry.

• ***The following composite prices are for work executed complete and should be used for the preparation of Approximate Estimates only.***

FOUNDATIONS

		Thickness of walls 9″	11″ *Hollow*	13½″
• Excavation in clay soil for foundations 2′ 6″ deep to walls, including stock brickwork in second stocks cement mortar 1 : 3 up to 6″ above ground and horizontal double slate damp-proof course with external facings p.c. 100/– and pointing	*per yard run*	25/1	28/3	35/4
• Ditto, in ordinary soil ditto	*per yard run*	23/10	27/1	33/9

EXTERNAL WALLS

• External walls in Fletton brickwork in cement mortar 1 : 3 including three coat lime plaster and twice distempering one side and facings p.c. 100/– in Flemish bond, joints raked out and pointed with a neat struck weathered joint, the other	*per yard super*	19/4	19/1	24/9
• Ditto, including Keenes cement plain-face and three coats oil colour one side and ditto	*per yard super*	21/–	20/9	26/5
• Ditto, including internal fair face, flush jointed one side and ditto	*per yard super*	17/7½	17/4½	23/0½
• For variation of 10/– per m. in p.c. of facings in Flemish bond (stretcher in cavity work)	*per yard super*	–/9	–/6½	–/9

APPROXIMATE ESTIMATES—(*continued*)

INTERNAL WALLS AND PARTITIONS

		2″	3″	4½″	9″
• Breeze partitions set in cement mortar or Fletton brick walls and including three coat lime plaster and twice distempering both sides	*...per yard super*	9/11	11/1	11/1	16/7
• Ditto, built fair and flush jointed both sides	*...per yard super*	—	—	7/8½	13/2
• Ditto, including Keenes cement plain-face and three coats oil colour both sides	*...per yard super*	13/3	14/5	14/6	19/11

GROUND FLOORS

• Solid ground floor construction including 9″ excavation, 4″ bed of hardcore, 6″ concrete 6 : 1 surface bed, finished with 1½″ granolithic paving trowelled smooth	*per yard super*	9/10
• Ditto, finished with ¾″ cement and sand 1 : 3 screed and wood block flooring or paving p.c. 10/– yard	*per yard super*	18/2
• Ditto, finished with 2″ × 2″ sawn floor fillets and floor clips and 1″ deal tongued and grooved flooring, batten widths	*per yard super*	12/11½
• Ditto, finished with floor fillets as before and 1″ (nominal) oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	25/2½
• Sleeper wall ground floor construction, including 15″ excavation, 4″ bed of hardcore, 6″ concrete 6 : 1 surface bed, sleeper walls 12″ high, built honeycomb, 4½″ slate damp-proof course, 4½″ × 3″ fir plate, and 4″ × 2″ sleeper joists and 1″ deal tongued and grooved flooring in batten widths	*per yard super*	15/3
• Ditto, with 1″ nominal oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	27/6

UPPER FLOORS

		With 7″ Joists	*With 9″ Joists*	*With 11″ Joists*
• Wood construction including 2″ fir joists on 4″ × 3″ fir plates and herring-bone strutting with three coat lime plaster and twice distempering white to soffite and 1″ deal tongued and grooved flooring in batten widths	*per yard super*	12/–	13/2	14/3
• Ditto, with 1″ nominal oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	24/3	25/5	26/6
• 5″ thick concrete 4 : 2 : 1 reinforced with fabric suitable at 13′ 0″ spans for carrying ¾ cwt. per ft. super, with two coat lime plaster and twice distempering white to soffite and 1″ Kara Sea deal 100 per cent. rift sawn block flooring wax polished at time of laying ...	*per yard super*			25/7
• Ditto, with 1″ nominal 25/30 per cent. quartered Austrian oak block flooring polished at time of laying	*per yard super*			28/8

APPROXIMATE ESTIMATES—(*continued*)

FLAT ROOFS

		Using 7″ Joists	Using 9″ Joists	Using 11″ Joists
● Wood construction including 2″ fir joists on 4″ × 3″ fir plates and herring-bone strutting with three coat lime plaster and twice distempering white to soffite and best natural rock asphalt roof finish ...	*per yard super*	18/5	19/5	20/6
● 5″ Thick concrete 4 : 2 : 1 reinforced with fabric (suitable at 13′ 0″ span for carrying 40 lbs. per ft. super) with two coat lime plaster and twice distempering white ditto	*per yard super*			22/7

PITCHED ROOFS

● Bangor Countess 20″ × 10″ slating, laid to 3″ lap fixed with zinc nails, including 2″ × 1″ battens, ¾″ roof boarding and 4″ × 2″ rafters (measured on slope)	*per yard super*	13/1
● Westmorland Random green slates No. 1 best 24″ to 12″ long proportionate widths ditto	*per yard super*	17/2
● Machine-made tiles 10½″ × 6½″ laid to a 4″ gauge, fourth course nailed with galvanized nails ditto	*per yard super*	11/6
● Hand-made sand-faced tiles ditto ditto	*per yard super*	12/3
● Slate ridges, including cuttings and 1½″ × 9″ deal ridge	*per yard run*	9/10½
● Half-round ridge tile ditto	*per yard run*	7/7
● Slate hips, including cuttings, lead soakers, and 1½″ × 11″ deal hips	*per yard run*	12/5½
● Hip tiles, including cuttings and 1½″ × 11″ deal hips	*per yard run*	14/-
● Lead valley gutter to slated roof, including cuttings and 1½″ × 11″ deal hips	*per yard run*	18/5
● Purpose-made valley tiles, including cuttings and 1½″ × 11″ deal hips	*per yard run*	13/7

DOORS

		Partitions or Walls				
		2″	3″	4½″	9″	13½″
● 2″ flush door p.c. 29/- 2′ 6″ × 6′ 6″, including deal frames or linings, ironmongery p.c. 15/- and simple architraves both sides, all painted	each	100/-	101/5	96/3	100/10½	106/10½

WINDOWS

Prices are for normal size, including suitable ironmongery, glazing with clear sheet glass and painting.

● Standard metal casements with fixed lights	*per foot super*	2/5
● Ditto, with average proportion of opening lights	*per foot super*	3/10
● Standard metal casements in wood frames with fixed lights	*per foot super*	4/-
● Ditto, with average proportion of opening lights	*per foot super*	4/11
● Standard industrial type sashes with fixed lights	*per foot super*	2/2
● Ditto, with average proportion of opening lights	*per foot super*	3/6
● Solid deal frames and 2″ casements	*per foot super*	5/0½
● Deal cased frames and double hung sashes	*per foot super*	4/10½

NOTE.—Standard wood surrounds to metal windows can be obtained at a cheaper price than that given for wood frames above.

APPROXIMATE ESTIMATES—*(continued)*

STAIRCASES

• Deal 9′ 0″ high, including half space landing, newels, balusters and handrail	each	£23	10 0
• Austrian oak ditto	each	£44	5 0
• Precast concrete ditto	each	£32	15 0

DRAINS

		Ordinary Soil	Clay Soil
• Manhole, 2′ 3″ × 1′ 6″ × 2′ 0″ deep, including excavation, 6″ (6 : 1) concrete bottom, one brick sides 3rd stocks in cement mortar with brown glazed half-round straight main channel and one brown glazed branch channel, including benching, sides rendered in cement and sand (1 : 3) and a 24″ × 18″ black single seal cast iron manhole cover and frame, weight 0 cwts. 3 qrs. 0 lbs.	each	£3 12 6	£3 15 6
• Manhole, 2′ 3″ × 3′ 9″ × 4′ 0″ deep, ditto including six branches	each	£7 2 0	£7 6 6

		Clay Soil		Ordinary Soil	
		4″	6″	4″	6″
• British standard quality stoneware drain pipes laid on and including 6″ thick concrete bed flaunched up both sides of pipe and excavating average 2′ 6″ deep	per foot run	2/5	3/0½	2/3	2/10½
• Ditto, but excavating 4′ 0″ deep	per foot run	4/1½	4/9	3/7½	4/3
• Cast iron drain pipes in 9′ lengths and laying in trench including 6″ concrete bed and excavating average 2′ 6″ deep	per foot run	4/8	6/6½	4/6	6/4½
• Ditto, average 4′ 0″ deep	per foot run	6/4½	8/3	5/10½	7/9

PATHS AND DRIVES

• 2″ finished gravel paths, including 6″ excavation, and 4″ bed of hardcore and edging boards	per yard super	5/3
• 7½″ finished gravel drive, including 6″ excavation, 6″ bed of hardcore and edging boards	per yard super	6/9
• 2½″ Tarmacadam drive including ditto	per yard super	7/10

FENCES

• Cleft chestnut pale fence 4′ 0″ high	per foot run	–/10
• Deal weather boards, including posts, arris rails and gravel boards creosoted, 5′ 0″ high	per foot run	2/9½
• Ditto, in English oak throughout	per foot run	3/10½

The four sections on PRICES published in the issues of August 3, 10, 17 and this week together complete the PRICES SUPPLEMENT. Next week the FIRST SECTION—PRICES OF MATERIALS, PART 1—will be repeated with items revised according to market quotations