THE ARCHITECTS' JOURNAL

THE ARCHITECTS' JOURNAL
WITH WHICH IS INCORPORATED THE BUILDERS' JOURNAL AND THE ARCHITECTURAL ENGINEER, IS PUBLISHED EVERY THURSDAY BY THE ARCHITECTURAL PRESS (PUBLISHERS OF THE ARCHITECTS' JOURNAL, THE ARCHITECTURAL REVIEW, SPECIFICATION, AND WHO'S WHO IN ARCHITECTURE) FROM 9 QUEEN ANNE'S GATE, WESTMINSTER, S.W.1

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THE ANNUAL SUBSCRIPTION RATES ARE AS FOLLOWS :
BY POST IN THE UNITED KINGDOM.... £1 3 10
BY POST TO CANADA £1 3 10
BY POST ELSEWHERE ABROAD..... £1 8 6
SPECIAL COMBINED RATE FOR SUBSCRIBERS TAKING BOTH THE ARCHITECTURAL REVIEW AND THE ARCHITECTS' JOURNAL : INLAND £2 6s. ; ABROAD £2 10s.
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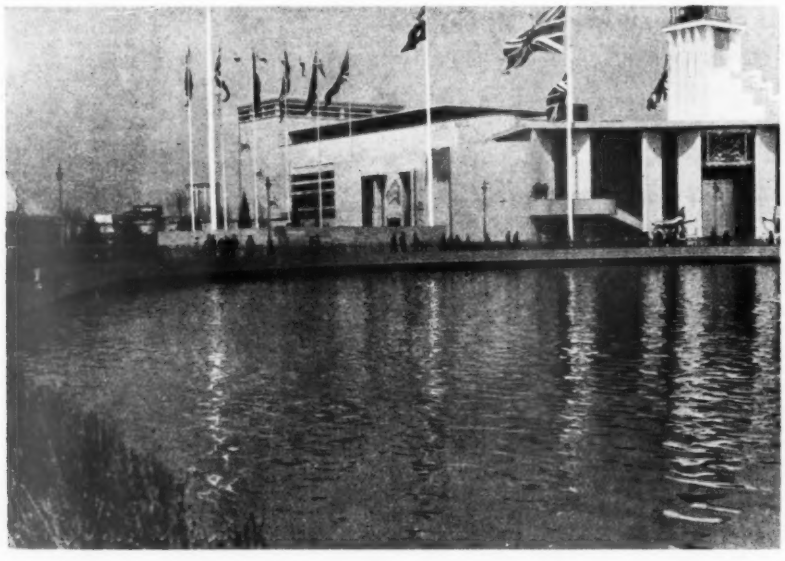
9-11 *Queen Anne's Gate, Westminster, London, S.W.1.*
TELEPHONE : WHITEHALL 9212-7 (OWN EXCHANGE)
TELEGRAPHIC ADDRESS : BUILDABLE, PARL., LONDON

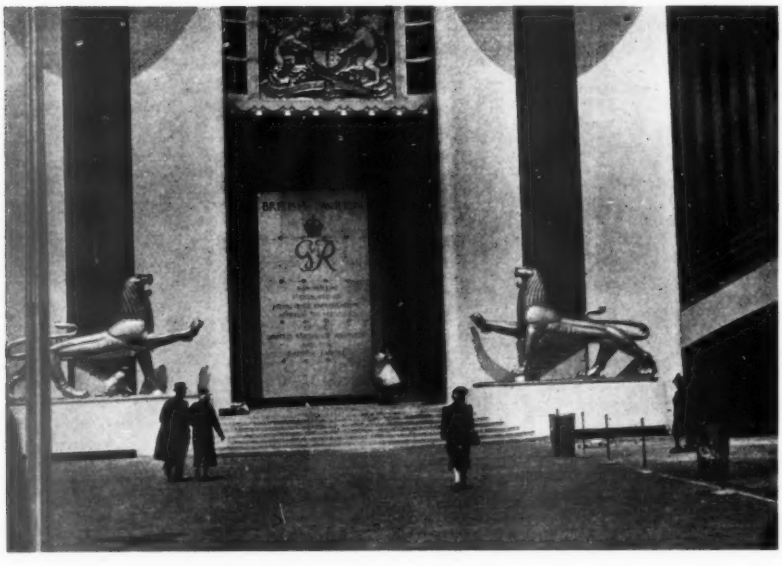
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, MAY 25, 1939 NUMBER 2314 : VOLUME 89

PRINCIPAL CONTENTS

NEW YORK WORLD FAIR

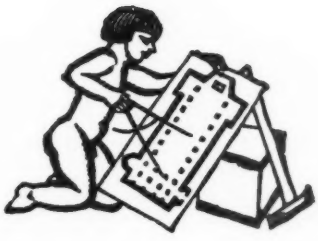




A general view and the entrance to the British Pavilion at the New York World Fair. The architects are Messrs. Stanley Hall and Easton and Robertson.

NEW YORK WORLD FAIR

Two views of the British Pavilion at the New York World Fair. Top, a general view ; bottom, copy of a painting, by Frank Salisbury, in the Magna Carta Hall. The exhibition will be reviewed by Mr. John Gloag, who gave a broadcast on the Fair from New York last Friday, in our issue for June 15.



STILL BETTER PRICES

THERE is no good pretending that architects like intimate dealings with prices and pricing. They don't. But this in most cases does not help them.

A few fortunate men may not price even a bath without written instructions from their quantity surveyors, a slightly greater number may have a man in the office who seems almost to take pleasure in the dreary business, the rest have to work out their own salvation between tenders too high and extras too many.

It is particularly for this majority who obtain a certain aptitude in dealing with prices through necessity and practice more than goodwill, that the JOURNAL began a new prices section on January 27 last year. In this section a new development takes place this week. But sixteen months is a long time ; and it is therefore worth while to explain shortly how the PRICES are arranged in the JOURNAL and how they can be used.

The PRICES are published in four weekly parts. This is a drawback ; but in the thorough discussions which took place before this section started it was decided that fullness and simple arrangement were the first essentials of PRICES. What is more, it is almost impossible to obtain fresh quotations for each price each week and make the consequent alterations in measured rates and approximate estimate. Once a month it is possible to do so ; the JOURNAL does it.

In the first two issues each month are the fullest and clearest list of market prices of materials which is in any weekly paper. They are called Current Prices, Part 1 and Part 2. These are the basis of all building pricing. They are useful to architects in many ways (for instance, in checking daywork sheets), but are perhaps most continually useful to builders and quantity surveyors.

In the next two weeks appear Measured Rates (Parts 1 and 2), which contain all the items normally measured in a bill of quantities. The prices are averaged and include for labour, materials and 10 per cent. overhead charges and profit—prices being based on the quotations given in the JOURNAL during the previous fortnight.

But as well as Measured Rates, Part 2, the *fourth* and last issue of the cycle also contains Approximate Estimates—which has been particularly planned to help architects in awkward situations.

Where an estimate for an alteration or small extension is needed the cubing system is unreliable and the work involved in converting measured rates into a lump sum total is quite considerable—at least for architects. Approximate Estimates get over this difficulty for 40 or so of the commonest building units : walls, partitions and so on. Each cost is expressed as a price per square yard or in some other easily applied way and has its proportions of sundry labours included in it. These Approximate Estimates will allow hurried estimates for alterations to be prepared as quickly as by cubing and the result will be much more reliable.

Until this week that was the scope of the JOURNAL's PRICES*—a dignified procession of Current Prices, Part I (first week) ; Current Prices, Part 2 (second week) ; Measured Rates, Part 1, based on the current prices (third week) ; and Measured Rates, Part 2 *and* Approximate Estimates (fourth week). The following week new current prices based on fresh quotations for each item begin to be published. The matter is really simplicity itself ; and what point you have got to in any week is shown on the cover of the JOURNAL.

Now we come to the new development. Prices for Measured Rates as published so far have included labour, materials and overhead charges and profit. These inclusive prices will continue to be given, but they will be printed in heavier type. But *as well as* combined prices, prices for " Materials only " are shown this week in italicized type. These " Materials only " prices are calculated from the current prices, with an addition of 10 per cent. for overheads and profit.

The JOURNAL hopes that architects as well as builders and quantity surveyors will find this development useful. For any item in future what is allowed for labour-plus-profit and for materials-plus-profit can be seen at once or calculated by simple subtraction. The estimator can thus see without reference to other sections how the particular price should be varied to meet the conditions of a particular job. It is extremely difficult not to add that it is all a part of THE ARCHITECTS' JOURNAL service.

More seriously, the JOURNAL knows that prices are very important to all architects, it has taken pains to make its own PRICES as good as they can be made and believes that if architects use them a dry part of their job will be simplified. Suggestions for further improvements will always be carefully examined.

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* Leaving out Labour Rates which change only rarely and can be obtained from the JOURNAL, price 1d. post free.

The Architects' Journal
Westminster, S.W.1
Telephones: Whitehall
9212-7
Telegrams
Buildable
Parl
London

NOTES & TOPICS

VIGILANCE COMMITTEE : RESULTS

THE results of the Vigilance Committee's voting on recent buildings are shown on pages 851–862. I do not think any architect can fail to be impressed by them—and surprised.

BEST BUILDING

At the head of the list of buildings (fifteen votes) stands Peter Jones (Crabtree and Slater and Moberley ; Professor C. H. Reilly, consultant). I believe this to be a right decision, which would be endorsed by architects. Peter Jones is fortunate in its site ; it can be seen from many aspects and is passed by most people quite often. But I do not think these things had much effect on the voting.

*

Internally and externally, in my view, its design has struck a specially good balance between being a neutral background for goods and impressive on its own account. Above all, its elevations are never boring in any weather or lighting ; a remarkable quality when one considers the simplicity of the external pattern, which could hardly be more functional in design for resistance to London's soot.

BEST ARCHITECTS

At the head of the list of architects (26 votes in all for six buildings) are Messrs. Tecton. This, I think, is the most surprising result of the whole enquiry. I add in haste that I do not question its justice ; but that two out of three of the men and women who replied (well-known, *representative* members of the general public) should have included a building by Tecton, quite changes my views of what the public thinks about architecture.

*

Other points of note in the results are, 1: The inclusion of Chelsea Bridge (L.C.C. architects and engineers), which I think the best bridge since Waterloo, in the list of Mr. Marriott (*The Times* architectural critic).

*

2 : The list of Lord Esher, Chairman of the Society for the Preservation of Ancient Buildings.* The outlook for the preservation of the right old buildings is for me much brighter when the S.P.A.B. chairman shows such discrimination in modern buildings.

*

3 : The change the voting ought to make in architects' opinions of the public's judgment of architecture. If you had asked any architect six months ago what would happen if you asked 70 representative laymen (however hand-picked in unarchitectural ways) to name the six buildings they liked most, he would certainly have replied : (*a*) that 40 wouldn't answer ; (*b*) that ten of the remainder (higher incomes) would have plumped for Georgian or classic reproduction and the other ten for Tudor or baronial ditto. Well, he would have been wrong.

LORD DERWENT'S PART

Like most great British achievements this straw ballot of public opinion on architecture largely happened by accident. But the original suggestion of a vote (though not this kind) came from Lord Derwent, chairman of the Georgian Group, and to him we must all give our thanks.†

*

I now intend to ask Lord Derwent which ten people from those nominated for our vigilance committee he would choose to form a *real* vigilance committee. After that I may give my own choice.

WINGS OVER ZÜRICH

"Fasten your belts, please." We did so, and a few seconds later the Croydon-Zürich plane took off with a cargo of one good architect and twenty bad journalists. The passenger in the next seat, a much-travelled foreign newsman, opened the conversation thus : "What a story if we crashed, *what* a story ! Would your paper give you a decent obituary ?"

*

I gave a non-committal reply : *the Editor's decision is final.* Emerging from the clouds, we saw below the valley of Zürich, the lake, the city, and the Swiss National Exhibition.

*

Hans Hoffman, the chief architect, has done a good job of work. He has laid out the Exhibition on both sides of the lake ; communication between each shore is by an aerial cable railway and a fleet of small boats.

*

Hoffman has had the assistance of 30 architects, each of whom was responsible for one building. He told me that it was originally intended to place the exhibition on a site on the outskirts of Zürich. He planned several schemes stressing the advantage of the lake, and finally the authorities agreed. The exhibition took two years to build, and was finished to schedule. One of the reasons was that the Trade Unions decided *not* to have a strike until the Exhibition was completed.

*

The most comfortable way to tour the Exhibition is by

---

* London University (Charles Holden); R.I.B.A. Building (G. Grey Wornum); Guinness Brewery (Sir G. G. Scott and Sir Alexander Gibb & Partners); Flats in Ladbroke Grove (Maxwell Fry); Finsbury Health Centre and High Point (Messrs. Tecton).

† Lord Derwent's own selections were : Radio City, New York; Broadcasting House; Battersea Power Station; R.A.F. Aerodromes; Scarborough Hospital; Underground Building; Imperial Airways.

The waterway in which visitors are pushed round the Zurich Exhibition in small boats. The photograph shows the rollers over which the boats slide down slopes while the water runs down at a lower level.

the elevated concrete waterway by which small boats travel round and through the buildings—the boats being propelled by the moving water. This charming device should in future be standard for all large exhibitions, displacing the dreary trolley-car and the piercing model railway.

CURE GUARANTEED

CURE FOR SMOKY FIREPLACES

SIR,—As the result of a recent completely successful cure of an apparently incurably smoky fireplace, I have been urged by architect friends to send to the *Architects' Journal* an account of the method of the cure : and I do so with some shyness, but with confidence in the result. The cure is as follows. The fireplace should be made in a triangular shape as shown in the sketch. The angle should be about a right angle. The triangular construction should be continued as far up the chimney as the bricklayer can conveniently reach. If the fire is lit in the angle, as shown, it will not smoke again. This plan has been adopted to my personal knowledge in some twenty or thirty cases ; and it has *never* been known to fail. And accordingly, it may be said, cure guaranteed.

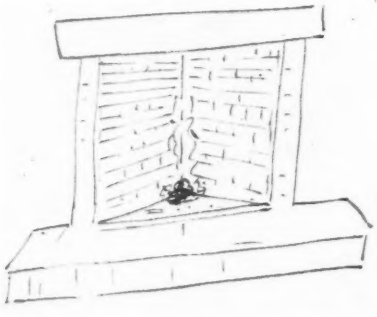
ALISON RUSSELL

*

Here is a challenge which we cannot let pass. I have examined Sir Alison Russell's sketch very carefully (below). The triangular shape may tend to increase the draught—apart from that, I can see nothing specially persuasive about the idea.

*

But Sir Alison does not make a modest claim—he says that his cure has never been known to fail in this country or elsewhere.*



* Sir Alison Russell has served in Uganda, Cyprus, Malta, Tanganyika and Northern Rhodesia.

In the temporary absence of a smoking chimney in a practice which consists of little else, I appeal for outside help in preventing a distinguished judge taking the bread out of our mouths. Particularly, I ask for the help of the Building Research Station, which (after several notes and suggestions on the subject) will look very small if they allow Sir Alison Russell to settle the matter for ever in such a high-handed way.

ARCHITECT CONDEMNS GRANDFATHER

Sir Giles Gilbert Scott made headlines the other day by condemning as unsafe the reredos of marble and alabaster designed by Sir Gilbert Scott for Exeter Cathedral during its restoration in 1874.

*

Sir Giles suggested a " longer and lower " altar which would reveal the beauty of the famous Exeter Pillar, at present hidden by Sir Gilbert's reredos. The Dean and Chapter agreed that the reredos " committed a fault against artistic propriety and common sense."

EUSTON AND THE GROUP

The first annual report of the Georgian Group describes the efforts to preserve the mammoth Doric Portico of Euston Station. Though the new scheme will certainly not allow it to remain in its present position, there seems to be a good chance that it will not be destroyed. If the Georgian Group succeed in saving it, it will be the next best thing to Abingdon Street.

WHERE THE RAINBOW ENDS

Three weeks back Alistair Cooke, in a compact and brilliantly contrived quarter-hour, gave us the biological angle on the N.Y.W. Fair as a " blue-print of twentieth-century life."

*

Last week John Gloag, in his own excitable way, gave us the architectural angle. He got himself all worked up about shapes, and to very good effect. From the top of one of the up-town skyscrapers he viewed the City of Tomorrow within the city of today, and he told us how, from there, its much-publicized gleaming shapes made even the skyscrapers seem oldie-worldie.

PRICES MOVE ON

The prices section of this JOURNAL is used by most of us only when we are trying to persuade ourselves that we can get fifteen hundred pounds' worth for £1,000, and when, a year later, we are trying to reduce the margin between the real and the hoped-for.

*

Both of these are important moments, and PRICES are designed to help by giving architects each month a full and accurate list of what things cost.

*

From this week, Measured Rates (Materials, Labour and Profit for all common operations) will show in italics the cost of *Materials only* (plus profit). So anyone who knows that for a particular job materials—or labour or profit—will be more or less than usual, can see at once where he stands. This useful invention is, I am told, described fully elsewhere in this issue.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

EXHIBITION

An exhibition of the collection of architectural drawings and watercolours by John Sell Cotman, bequeathed to the R.I.B.A. by Mr. Sydney Kitson, F.S.A., F.R.I.B.A., will be held in the Henry Florence hall at the R.I.B.A. from June 7 to June 28, 1939. The exhibition will remain open each day from 10 a.m. to 8 p.m. (Saturdays 10 to 5.)

INTERNATIONAL CONGRESS

The XVth International Congress of the History of Art will be held at University College, London, from July 24 to 29, 1939. These congresses are held at intervals of three years, the 1936 meeting being in Switzerland, and the 1933 meeting at Stockholm. This is the first occasion the congress has met in England.

REIMANN SCHOOL

As announced at a public discussion meeting at the Reimann School on April 19, the syllabus of the new Reimann Interior Design Department will include a supplementary series of lectures by well-known experts. Although these lectures are primarily intended for Reimann students, they are open to the public, including students of other schools, since they are of general interest though primarily co-related to interior design. The first lecture, by Mr. Wells Coates, will take place on Wednesday, June 14, at 8 p.m., under the title of "The Planning of Flats."

EDINBURGH'S PLANNING PROJECTS

"Princes Street needs no flags to make it more beautiful. It is unique, complete and uplifting." This tribute was paid on May 23 by Mr. W. Ross Young, F.S.I., M.T.P.I., of the Department of Health for Scotland, in the course of an address on "Town and Country Planning," delivered at the Edinburgh City Business Club.

"Our forefathers in this city were great planners, and it is refreshing to know that, after the lapse of many years when no comprehensive planning was carried out, the Town Council is engaged in planning the whole of the undeveloped fringe of the city."

Mr. Ross Young went on to commend two of the Town Council's projects. The first, he said, was the laying down and preserving the route of a great ring road encircling the city so that it would link up those dozen or more main radiating roads leaving the city, and at the same time enable not only the by-passing of through traffic, but also give a quick means of linking up suburb to suburb. This ring road he understood was likely to be at least 120 ft. wide, and might be fringed for a considerable distance with green open spaces.

It would ultimately collect traffic on the London Road near Wallyford, pass it across a new bridge over the Esk, skirt Gilmerton, pass near Lothianburn, Dreghorn, Colinton and Turnhouse, until it finally reached the Queensferry Road at Barnton, and so on to the projected Forth Bridge.

"The other project I should like to mention and commend highly," Mr. Ross Young continued, "is that great scheme dealing with the sea front between Cramond and Granton."

This scheme, which was now in course of execution, would, when completed, provide not only a great lido, but a veritable playground for the city of Edinburgh, set amidst beautiful scenery, and the new golf course, which was now being constructed, would rival many of the famous East Lothian courses.

THE ARCHITECTS' DIARY

Thursday, May 25

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Exhibition :* "*The International Federation for Housing and Town Planning : Its Scope and Objects.*" *Until May 27. Also, at the Victoria Palace, S.W.1. Gala Performance of* "*Me and My Girl*" *in aid of Westminster Homes.* 9.30 *p.m.*

INSTITUTION OF STRUCTURAL ENGINEERS, 11 *Upper Belgrave Street, S.W.1. Annual General Meeting.* 6.30 *p.m.*

C.P.R.E. At the Mansion House, E.C. Special Meeting : Speakers : the Earl of Crawford and Balcarres, Norman Birkett and others. 3.30 *p.m.*

Friday, May 26

TOWN PLANNING INSTITUTE. *At Carton Hall, S.W.1.* "*The Location and Design of Parks and Playing Fields.*" *By E. Prentice Mawson.* 6 *p.m.*

GARDEN CITIES AND TOWN PLANNING ASSOCIATION. *Town Planning Conference At Cardiff. Until May* 29.

A.A.S.T.A. Tour in Belgium. Until May 30.

Tuesday, May 30

HOUSING CENTRE. *Luncheon :* "*An Educational Experiment.*" *By A. Lush.* 1 *p.m.*

Wednesday, May 31

BUILDING CENTRE, 158 *New Bond Street, W.1.* "*Building Materials and Equipment : Electrical Installation and Equipment.*" *By P. Honey.* 5.30 *p.m.*

ANNOUNCEMENT

Messrs. H. Edmund Mathews, F.R.I.B.A., E. D. Jefferiss Mathews, A.R.I.B.A., P.A.S.I., and Oswald D. Pearce, F.R.I.B.A., have removed their offices to No. 3 Ebury Street, Victoria, S.W.1 (Victoria 6223), and the name of their firm will in future be known as Messrs. J. Douglass Mathews and Partners.

R.I.B.A.

Notes from the Minutes of the Council :—

The R.I.B.A. Statutory Examination for District Surveyors, May 1939.—The Board of Architectural Education reported that at the examination held in May the following candidate sat and was successful : Lenton, R. T.

The R.I.B.A. Examination for Building Surveyors, May 1939.—The Board reported that six candidates sat for this examination and that the following were successful :—Dufton, J., Forster, A. K., Perkins, P. H., Sidwell, N. C., Whitham, L.

Appointments.—Joint Committee of Representatives of the Constructional Industry to advise on Civil Defence : Mr. Thos. E. Scott (F.).

Home Office A.R.P. Department : Professional Advisory Committee (Shelters) : Mr. W. H. Ansell (F.).

Building Divisional Council of the British Standards Institution : Mr. A. H. Barnes (F.) in place of the late Mr. C. J. Morreau (A.).

Twenty-fifth Annual Conference of the National Association for the Prevention of Tuberculosis, Belfast : Mr. T. R. Eagar (F.).

Hon. Auditors for 1939-40 : Mr. J. D. Hossack (F.) and Mr. J. Maclaren Ross (A.) were nominated as Hon. Auditors for the session 1939-1940.

Reinstatements : The following ex-members were reinstated :—As Associates : Messrs. A. M. Bisiker (ret. A.), E. G. Page, and H. A. H. Walker.

Transfer to the Retired Members Class.—The following members were transferred to the Retired Members Class : As Retired Licentiates : Messrs. C. R. R. Clark and C. H. Kempthorne.

Resignations.—The following resignations were accepted with regret : Messrs. S. K. Greenslade (F.), H. J. C. Marshall (F.), H. S. Day (L.), F. H. Langley (L.), and F. M. Rake (L.).

R.A.S.

Mr. Winston Walker, A.R.I.B.A., of the Air Ministry camouflage section has been elected an Associate of the Royal Aeronautical Society. Mr. Graham Dawbarn is the only other architect to be a member of this Society.

LETTERS

R.I.B.A. ANNUAL MEETING

SIR,—The prominence you have been good enough to give in your current issue for May 18 to my remarks at the R.I.B.A. Annual General Meeting has had a most embarrassing effect.

Several of my good friends have apparently perused your report and are under the impression that I have been brawling in church. Indeed it may be that in crying "Bravo" they are anxious to attract additional publicity to my oratory by inciting me to pull a policeman's nose or go out to bathe at Seaside-by-the-Sea this summer without wearing an appropriate costume.

May I therefore ask you to allot me a small corner of your correspondence column (where I feel I shall be operating on a friendly and familiar ground) in order to correct any erroneous impression that may exist in the minds of any of the 8,000 odd members of the R.I.B.A. who were not present at the Annual General Meeting but happen to have read the published reports ?

My amendment was not seconded for the simple reason that the President did not ask whether anybody would second it. I can only give your readers my assurance that it would have been seconded if the President had decided to put it to the meeting.

The figures I quoted are not fantastic figments of my own imagination. They were taken from the annual report and were not challenged. Mr. Sullivan replied to my criticism by stating that the publications of the R.I.B.A. have always been run at a loss and Mr. Braddell is reported to have administered a terrific rebuke to me by

stating that dancing at the Institute premises on Armistice Day " celebrates the world's return from the lunacy of war to peace and sanity. (Applause)."

The remainder of the evening was spent in discussing the world's return from the lunacy of war to peace and sanity. Various members gave their impressions of the comparative effect of high explosive bombs dropping on the Cotswolds, or in Mayfair or elsewhere. Several speakers told us about A.R.P. and a young member who had filled in an official card about National Service and ventured to ask a perfectly sane and intelligible question about his obligations was recommended to run away and come again next June. The apparent discomfiture of the young member caused loud laughter and the meeting ended on such a high note of hilarity that members of the Amusement Section of the Social Committee must feel extremely envious.

F. R. JELLEY

London.

[*Below are Mr. Jelley's remarks at the Annual General Meeting to which he refers in his letter. —Ed., A.J.*]

" I am not very good at reading accounts printed in such small type as are these in the current issue of the JOURNAL, but as far as I can make out there is a mortgage on these premises of £95,000, and in addition to that there is a bank overdraft of something like £30,000. In addition to that, there is a yearly payment for bank interest alone of about half the total amount of the subscriptions of all the Associates in the Institute.

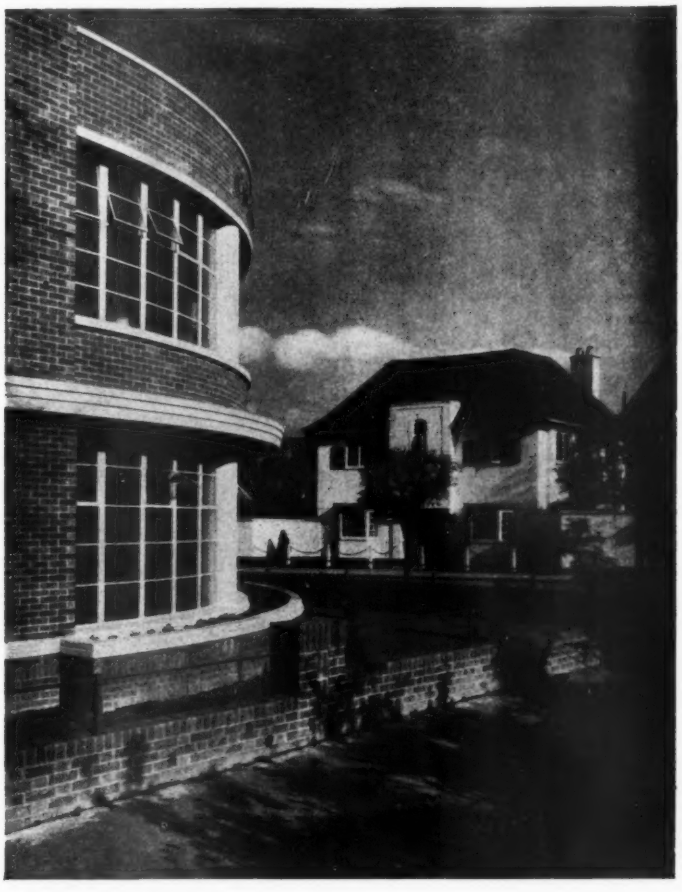
" Those are rather large figures, but I will now come to something rather smaller. As I understand these accounts, the net disbursements for the publications of the Institute for the past year were in the vicinity of £3,000, but the net sales were only £210. It is not possible to go on like this. It is necessary to cut something, and my amendment is moved with the intention of drawing attention to the fact that we ought to know something more than merely that a figure of about £3,000 has been expended during the past year on publications, which are presumably to be sold, and yet the receipts are only £210.

" My other main point is that there is in this Institute a society—I do not know whether it is an allied society or whether it is an associated society—which is called, I understand, the Dance Club. It sends me a comic postcard occasionally, inciting me to come and play games here and dance. I do not mind that kind of thing at all, but I have already protested in the strongest possible manner by letter to you, Sir, against the holding in this building of dances on Armistice Day.

" I feel that I should be lacking in my duty to the memory of those men whose names are on our War Memorial did not I draw attention to this fact publicly here, and I appeal to all of you here, whether you are my seniors, or my contemporaries of the war generation, or my juniors who may be in another war generation, to stop this thing."

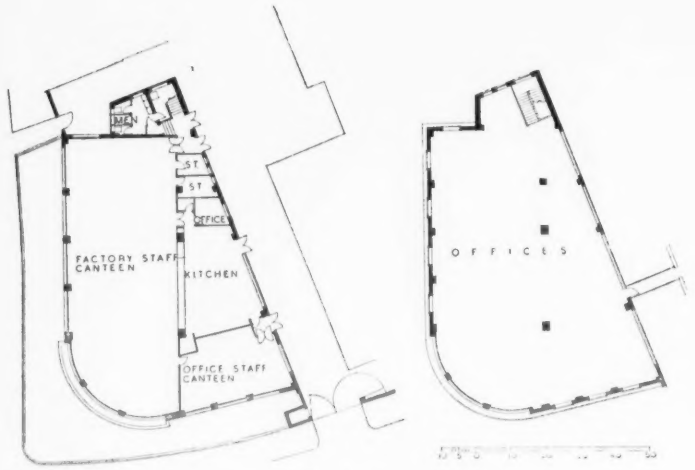
FACTORY, CROYDON

BY HUGH MACKINTOSH AND PARTNERS



PROBLEM—*The clients, Messrs. Creeds (manufacturers of telegraphic instruments), required two extensions to their existing factory to provide complete circulation. The scheme is arranged so that the old buildings can be pulled down and a new one erected to form a complete design. A staff canteen is also provided on a corner of the site, and this as well as the other new extensions have provision for an extra floor in the future.*

Above and below, two views of the office block.



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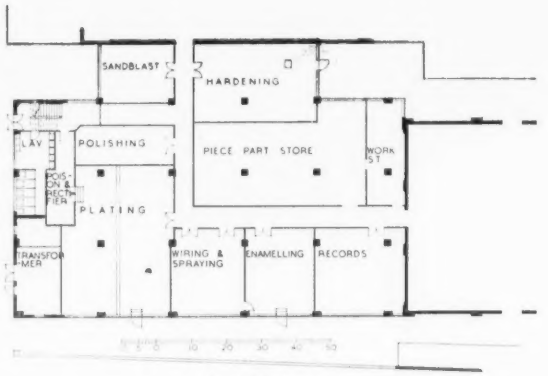

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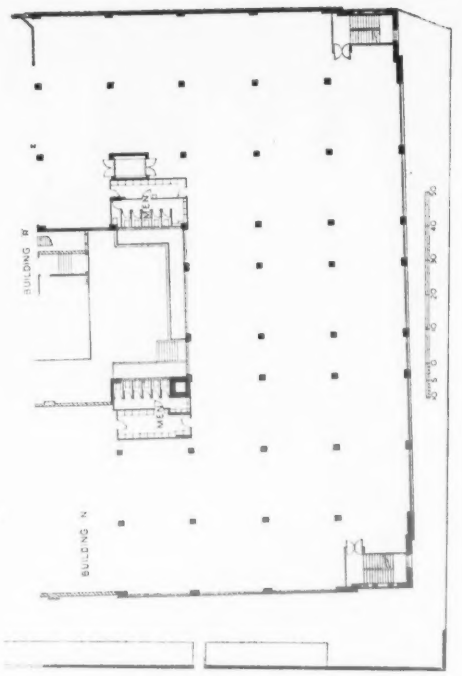


BLOCK 1

SITE—*Situated on an island site, the buildings cover the maximum areas permitted under the town planning scheme. The sloping ground enabled a semi-basement to be built at the north end to be used as a receiving and despatch department.*

CONSTRUCTION AND EXTERNAL FINISHES—*Reinforced concrete framed with R.C. floors and upstanding wall beams to windows, etc. The external walls are faced with bricks, while the internal partitions are of blocks and stud partitions faced with wallboard. The canteen building has 11-in. cavity brick external walls, and the top of the parapet in all cases will be the window cill in the future floor extension.*

All external concrete surfaces are treated with cream stone paint.

INTERNAL FINISHES—*The factory walls are distempered throughout, the floors, except for the acid-resisting tiles in the plating shop, are granolithic, and the staircase is finished with carborundum.*

The plastered walls and the hard-board partitions in the canteen are distempered, the kitchen walls are painted and floor is tiled. Elsewhere the floors are maple, the staircase being granolithic finished and the offices on the first floor with rubber linoleum.

SERVICES—*General heating is by high-pressure hot water, and hot water is by means of independent gas boilers. An electric lift is installed in the factory block.*

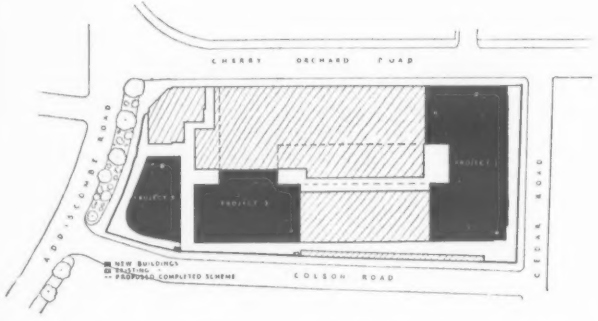
COST—*Contract price: Factory, 1st section, £17,923; 2nd section, £6,936; canteen, £7,432; total, £32,291.*

Price per ft. cub., 11¼d. for the factory, 1s. 3d. for the canteen.

Right, two views of block No. 2 on site plan.

The general contractors were Messrs. Grace and Marsh, Ltd.

For a list of sub-contractors see page 880.



SITE PLAN

EXTENSIONS, FACTORY AT CROYDON • BY HUGH MACKINTOSH AND PARTNERS

SCOREBOARD

★ *In January this year, at the suggestion of Lord Derwent, the* JOURNAL *asked readers to suggest the names of well-known people in whose judgment of architecture they would have confidence. It then asked each of those thus nominated to list the six recent British buildings which they considered of the greatest merit. The results of the voting are set out below.*

NOMINEES AND CHOICES

JACK BEDDINGTON
(Assistant General Manager, Shell-Mex and B.P.)

Peter Jones, Sloane Square ; Avenue Close ; Royal Bank of Canada, Lothbury.

CLIVE BELL
(Author)

Bishop Andrew's Church, Modern ; Flats, Marsham Street, Westminster and on Kennington Estate; Highpoint 1, Highgate.

PROFESSOR J. D. BERNAL
(Professor of Physics, Birbeck College, University of London)

Highpoint 1, Highgate ; Leeds Housing Estate ; I.C.I. Laboratories, Blackley ; Osterley Underground Station ; Battersea Power Station ; The Comet Inn, Hatfield.

LORD BERNERS
(Composer, Artist, Author and Connoisseur)

De La Warr Pavilion, Bexhill ; Peter Jones, Sloane Square ; Penguin Pond, Zoo ; Giraffe House, Whipsnade ; Avenue Close ; Restoration, West Dean Church, Sussex ; St. Philips, Cosham, Portsmouth.

ANTHONY BERTRAM
(Author)

De La Warr Pavilion, Bexhill ; Infectious Diseases Hospital, Paisley ; Kensal House, Ladbroke Grove ; Boots Factory, Nottingham ; Polkemmet, Lanarkshire, Pithead Bath ; House in Church Street, Chelsea.

JOHN BETJEMAN
(Critic and Author)

Peter Jones, Sloane Square ; Kensal House, Ladbroke Grove ; Penguin Pond, Zoo ; St. Philips, Cosham, Portsmouth ; Foreshore Development, Folkestone.

JAMES BONE
(London Editor, "Manchester Guardian")

London University ; Battersea Power Station ; Royal Institute of British Architects Headquarters ; Metropolitan Water Board's New Offices ; Church at Wembley ; Comet Inn, Hatfield.

KENNETH CLARK
(Director of the National Gallery)

Battersea Power Station.

BUILDINGS AND VOTES

Peter Jones, Sloane Square
(Crabtree and Slater and Moberly : Prof. Reilly, consultant)

Jack Beddington ; Lord Berners ; John Betjeman ; Mrs. Hugh Dalton ; Sir Hector Hetherington ; William Hickey ; Osbert Lancaster ; James Lees-Milne ; Charles Marriott ; Henry Moore ; John Piper ; Herbert Read ; Dr. Vevers ; Rebecca West ; Richard Wyndham .. **15**

Battersea Power Station
(Sir Giles Gilbert Scott, Dr. S. Pearse, J. T. Halliday and C. A. Allott and Son)

Professor J. D. Bernal ; James Bone ; Kenneth Clark ; Earl of Harewood ; Sir Hector Hetherington ; Charles Laughton ; James Lees-Milne ; D. Talbot-Rice ; Henry Strauss ; Joseph Peter Thorp ; Rebecca West .. **11**

St. James's Underground Station
(Adams, Holden and Pearson)

Cecil Cronshaw ; Sir Hector Hetherington ; Dr. Julian Huxley ; Alexander Korda ; James Lees-Milne ; Charles Marriott ; Frank Pick ; D. Talbot-Rice ; Joseph Peter Thorp **9**

De la Warr Pavilion, Bexhill
(Mendelsohn and Chermayeff)

Lord Berners ; Anthony Bertram ; Sir Hector Hetherington ; Dr. Julian Huxley ; John Piper ; Dr. Vevers ; Rebecca West ; Richard Wyndham **8**

Penguin Pond
(Messrs. Tecton)

Lord Berners ; John Betjeman ; Sir Hector Hetherington ; Charles Laughton ; Henry Morris ; Frank Pick **6**

Arnos Grove Underground Station
(S. A. Heaps. Consulting Architects : Adams, Holden and Pearson)

Osbert Lancaster ; James Lees-Milne ; Henry Moore ; Raymond Mortimer ; John Piper **5**

ARCHITECTS AND TOTAL VOTES

Tecton	**26**
Adams, Holden and Pearson	**17**
Serge Chermayeff	**16**
Crabtree and Slater and Moberly, Consultant Professor C. H. Reilly ...	**15**
Sir Giles Gilbert Scott and Dr. S. Pearse	**10**
Mendelsohn and Chermayeff	**9**
E. Maxwell Fry ; Sir Owen Williams ...	**5**
Sir John Brown and A. E. Henson in association with W. David Hartley ; Stanley Hall and Easton and Robertson ; Charles Holden ; G. Grey Wornum...	**4**
Frederick Etchells ; Denys Lasdun ; Sir Edwin Lutyens ; E. B. Musman ...	**3**
J. N. Comper; Joseph Emberton; Gropius and Fry ; E. Maxwell Fry (with Robert Atkinson, C. H. James, G. Grey Wornum and Elizabeth Denby) ; Architects, Miners' Welfare Committee ; Scott, Chesterton and Shepherd	**2**

NOMINEES AND CHOICES

CECIL CRONSHAW
(Managing Director, I.C.I.)

I.C.I. Dyestuffs Group, Research Laboratories, Manchester ; Royal Institute of British Architects Headquarters ; St. James's Park Tube Station ; Simpson's Shop, Piccadilly.

MRS. HUGH DALTON
(Chairman, L.C.C. Parks Committee)

Peter Jones, Sloane Square ; Southgate Underground Station ; Burlington Secondary School, Hammersmith ; Swimming Bath, Parliament Hill Lido, Highgate ; Flats, Loughborough Park, Brixton ; House in Frognal, Hampstead.

LORD ESHER *(Chairman, S.P.A.B.)*

London University ; Royal Institute of British Architects Headquarters ; Guinness Brewery, Great West Road ; 65 Ladbroke Grove ; Finsbury Health Centre ; Highpoint 1, Highgate.

PETER FLEETWOOD-HESKETH *(Artist)*

Elephant House, Whipsnade ; Bandstand, Kensington Gardens ; Fire Station, Epsom ; New Entrance and Additions to Royal Enclosure Stand, Ascot ; Newlands Park, Chalfont St. Giles ; Flats, Lowndes Square.

EARL OF HAREWOOD

Botanical Institute, near Cambridge ; New Bridge, Peterborough ; Battersea Power Station ; Curzon Cinema ; Restoration, Jockey Club Rooms, Newmarket ; Freemasons' Hospital, Ravenscourt Park.

SIR HECTOR HETHERINGTON
(Principal, University of Glasgow)

London Passenger Transport Headquarters ; De La Warr Pavilion, Bexhill ; Peter Jones, Sloane Square ; Peckham Health Centre ; Battersea Power Station ; Penguin Pond, Zoo.

WILLIAM HICKEY (" *Daily Express* " *Columnist*)

British Government Pavilion, Glasgow Exhibition ; Elephant House, Whipsnade ; Simpson's Shop, Piccadilly ; Peter Jones, Sloane Square ; Empire Pool, Wembley ; House at Halland.

DR. JULIAN HUXLEY
(Secretary, Zoological Society of London)

St. James's Park Station ; London University ; Pithead Baths ; De La Warr Pavilion, Bexhill ; Berlei Factory ; Laboratory of the A.S.C., Bath Road ; The Comet, Hatfield ; Highpoint 2, Highgate.

REBECCA WEST
(Authoress)

Battersea Power Station ; Finsbury Health Centre ; Peter Jones, Sloane Square ; De La Warr Pavilion, Bexhill.

RICHARD WYNDHAM
(Author and Artist)

Peter Jones, Sloane Square ; Houses at Paddington and at Halland ; Wembley Swimming Pool ; Daily Express Office ; Palace Gate Flats.

BUILDINGS AND VOTES

Finsbury Health Centre *(Messrs. Tecton)*
Lord Esher ; Alexander Korda ; Henry Morris ; Dr. Vevers ; Miss Rebecca West **5**

House at Halland *(Serge Chermayeff)*
William Hickey ; Henry Moore ; Henry Morris ; Dr. Vevers ; Richard Wyndham **5**

Curzon Cinema *(Sir John Burnet, Tait and Lorne)*
Earl of Harewood ; Alexander Korda ; Herbert Read ; Henry Strauss **4**

Highpoint 1, Highgate *(Tecton)*
Clive Bell ; Professor J. D. Bernal ; Henry Moore ; Dr. Vevers **4**

The Giraffe House, Whipsnade *(Tecton)*
Lord Berners ; Alexander Korda ; Henry Moore ; Frank Pick **4**

London University *(Charles Holden)*
Lord Esher ; Dr. Julian Huxley ; J. M. Keynes ; Charles Laughton **4**

Avenue Close *(Stanley Hall and Easton and Robertson)*
Jack Beddington ; Lord Berners ; Alexander Korda .. **3**

Highpoint 2 *(Messrs. Tecton)*
Dr. Julian Huxley ; Henry Moore ; Dr. Vevers **3**

Campion Hall, Oxford *(Sir Edwin Lutyens)*
Alexanda Korda ; Peter Joseph Thorp **2**

Elephant House, Whipsnade *(Messrs. Tecton)*
Peter Fleetwood-Hesketh ; William Hickey **2**

Empire Pool, Wembley *(Sir Owen Williams)*
William Hickey ; Richard Wyndham **2**

I.C.I. Laboratory, Blackley *(Serge Chermayeff)*
Prof. J. D. Bernal ; Cecil Cronshaw **2**

Pioneer Health Centre, Peckham *(Sir Owen Williams)*
Sir Hector Hetherington ; Joseph Peter Thorp **2**

ARCHITECTS AND TOTAL VOTES

Since all architects names are given under the buildings voted for, those who received one vote only are not listed separately.

BUILDINGS AND VOTES

House at Paddington *(Denys Lasdun)*
Henry Morris ; Herbert Read ; Richard Wyndham .. **3**

The Comet, Hatfield *(E. B. Musman)*
Professor J. D. Bernal ; Dr. Julian Huxley ; James Bone **3**

Kensal House, Ladbroke Grove *(E. Maxwell Fry, with Robert Atkinson, C. H. James, G. Grey Wornum and Elizabeth Denby)*
Anthony Bertram ; John Betjeman **2**

R.I.B.A. *(G. Grey Wornum)*
Cecil Cronshaw ; Lord Esher **2**

Royal Masonic Hospital, Ravenscourt Park *(Sir John Burnet, Tait and Lorne)*
Earl of Harewood ; Charles Marriott **2**

Guinness Factory *(Sir G. G. Scott and Alexander Gibb and Partners)*
Lord Esher ; Charles Laughton **2**

St. Philips, Cosham, Portsmouth *(J. N. Comper)*
Lord Berners ; John Betjeman **2**

Halland ; Wembley Swimming Pool ; Daily Express Office ; Palace Gate Flats.

Sir Hector Hetherington ; Joseph Peter Thorp 2

Lord Berners ; John Betjeman 2

GEORGE SCOTT-MONCRIEFF
(Author)

Catholic Church of St. Peter, Edinburgh ; Catholic Chapel, Invergarry ; Catholic Church, Greenock ; House at Liberton, Lanarkshire ; House at Kippen ; House at Spean Bridge.

J. M. KEYNES *(Economist)*
(Fellow and Bursar of King's College, Cambridge)

London University.

ALEXANDER KORDA
(Film Producer and Managing Director, London Film Productions)

London Passenger Transport Board ; Finsbury Health Centre ; Campion Hall, Oxford ; Giraffe House, Whipsnade ; Avenue Close, Avenue Road ; Curzon Cinema.

OSBERT LANCASTER
(Author)

Peter Jones, Sloane Square ; Ministry of Pensions, Acton ; Arnos Grove Underground Station ; Crawfords' Advertising Building, Holborn ; Gunter's Shopfront, Curzon Street ; New Blocks at Sandhurst.

CHARLES LAUGHTON
(Actor)

Battersea Power Station ; London University ; Penguin Pond, Zoo ; Shakespeare Memorial Theatre ; Scarborough Hospital ; Guinness Factory, Western Avenue.

JAMES LEES-MILNE *(National Trust)*

Imperial Airways Terminus, Victoria ; Battersea Power Station ; Bus Shelters, London Passenger Transport Board ; Swansea Civic Centre ; St. James's Underground Station ; Peter Jones, Sloane Square ; Arnos Grove Underground Station.

DAVID LOW
(Cartoonist and Caricaturist, "Evening Standard")

Royal Institute of British Architects Headquarters ; University of London Senate House ; Friends' Meeting House ; Shell-Mex Building (with reservations) ; Carreras Factory ; Berlei Factory ; Bush House.

CHARLES MARRIOTT
(Architectural Critic of "The Times")

London Transport Board Headquarters ; De La Warr Pavilion, Bexhill ; Freemasons' Hospital ; Ravenscourt Park ; Chelsea Bridge ; Peter Jones, Sloane Square ; Finsbury Health Centre.

HENRY MOORE
(Sculptor)

Peter Jones, Sloane Square ; Highpoint 1 and 2, Highgate ; Giraffe House, Whipsnade ; Arnos Grove Underground Station ; House, Church Street, Chelsea ; Village College, Impington, Cambridge ; House near Halland.

Shakespeare Memorial Theatre
(Scott, Chesterton and Shepherd)

Charles Laughton ; Henry Strauss 2

Shell-Mex House
(Messrs. Joseph)

David Low ; D. Talbot-Rice 2

Simpson's Shop, Piccadilly
(Joseph Emberton)

Cecil Cronshaw ; William Hickey 2

Royal Bank of Canada, Lothbury
(Stanley Hall and Easton and Robertson)

Jack Beddington 1

Flats, Marsham Street, Westminster
(T. P. Bennett and Son)

Clive Bell 1

Flats, Kennington Estate
(Louis de Soissons)

Clive Bell 1

Leeds Housing Estate
(R. A. H. Livett)

Prof. J. D. Bernal 1

Osterley Underground Station
(S. A. Heaps. Consulting Architects : Adams, Holden and Pearson)

Prof. J. D. Bernal 1

Infectious Diseases Hospital, Paisley
(Sir John Burnet, Tait and Lorne)

Anthony Bertram 1

Boots Factory, Nottingham
(Sir Owen Williams)

Anthony Bertram 1

House in Church Street, Chelsea
(Gropius and Fry)

Anthony Bertram 1

Burlington Secondary School, Hammersmith
(Sir John Burnet, Tait and Lorne)

Mrs. Hugh Dalton 1

Flats, Loughborough Park, Brixton
(Edward Armstrong)

Mrs. Hugh Dalton 1

Fire Station, Epsom
(Pite, Son and Fairweather)

Peter Fleetwood-Hesketh 1

Village College, Impington
(Walter Gropius and E. Maxwell Fry)

Henry Moore ; Henry Morris 2

Restoration of West Dean Church, Sussex
(Frederick Etchells)

Lord Berners ; John Piper 2

Zoo Buildings, Regent's Park and Whipsnade
(Messrs. Tecton)

Raymond Mortimer ; John Piper 2

Newlands Park, Chalfont St. Giles
(Mendelsohn and Chermayeff)

Peter Fleetwood-Hesketh 1

Botanical Institute near Cambridge
(P. Morley Horder)

Earl of Harewood 1

Berlei Factory, Great West Road
(Sir John Brown and A. E. Henson in collaboration with W. David Hartley)

Dr. Julian Huxley 1

Scarborough Hospital
(Wallace Marchment)

Charles Laughton 1

Imperial Airways Terminus, Victoria
(A. Lakeman)

James Lees-Milne 1

Bishop Andrew's Church, Morden
(Geddes Hyslop)

Clive Bell 1

Polkemmet, Lanarkshire, Pithead Bath
(Miners' Welfare Committee)

Anthony Bertram 1

Foreshore Development, Folkestone
(W. Pleydell-Bouverie)

John Betjeman 1

Southgate Underground Station
(S. A. Heaps. Associates : Adams, Holden and Pearson)

Mrs. Hugh Dalton 1

Swimming Bath, Parliament Hill Lido
(H. A. Rowbotham)

Mrs. Hugh Dalton 1

NOMINEES AND CHOICES

HENRY MORRIS
(Education Officer, Cambridge)

Penguin Pond, Zoo ; Village College, Impington, Cambridge ; House near Halland ; Finsbury Health Centre ; 65 Ladbroke Grove ; House at Paddington.

RAYMOND MORTIMER
(Author and Critic)

Zoo Buildings, Regent's Park and Whipsnade ; Guinness Factory ; Arnos Grove Underground Station ; House in Surrey by Gibb and Low ; The Y.W.C.A., Great Russell Street.

FRANK PICK
(Vice-Chairman, London Underground Transport)

Headquarters ; Turnpike Lane Underground ; Giraffe House, Whipsnade ; Penguin Pond, Zoo.

JOHN PIPER
(Artist)

Peter Jones, Sloane Square ; Flats, Ladbroke Grove ; New Zoological Gardens Buildings ; De La Warr Pavilion, Bexhill ; Restoration, West Dean Church, Sussex ; Arnos Grove Underground Station.

HERBERT READ
(Author and Critic)

Peter Jones, Sloane Square ; Curzon Cinema ; House in Newton Road ; London Gliding Club, Dunstable ; Timber House, Shipbourne, Kent ; Ruislip Car Depot.

D. TALBOT-RICE
(Professor of History of Fine Art, University of Edinburgh)

Fairacres, Rochampton ; Shell-Mex House ; Battersea Power Station ; St. James's Park Station.

HENRY STRAUSS, M.P.

London University ; Shakespeare Memorial Theatre ; Battersea Power Station ; Curzon Cinema.

JOSEPH PETER THORP
(Journalist)

St. James's Park Station ; Peckham Health Centre ; Campion Hall, Oxford ; Battersea Power Station ; Yaffle Hill, Poole ; Completed part of London University.

DR. VEVERS
(Superintendent to Zoological Society, London)

Finsbury Health Centre ; Penguin Pond, Zoo ; De La Warr Pavilion, Bexhill ; Chermayeff's House in Surrey ; Highpoint 1 and 2, Highgate ; Peter Jones, Sloane Square.

BUILDINGS AND VOTES

Houses in Frognal, Hampstead
(E. Freud)
Mrs. Hugh Dalton **1**

Bandstand, Kensington Gardens
(H. M. O. W. Architects)
Peter Fleetwood-Hesketh **1**

Flats, Lowndes Square
(Sir John Burnet, Tait and Lorne)
Peter Fleetwood-Hesketh **1**

New Bridge, Peterborough
(Gotch and Saurdas and E. Stirling)
Earl of Harewood **1**

British Government Pavilion, Glasgow Exhibition
(H. J. Rowse)
William Hickey **1**

Laboratory A.S.C., Bath Road
Dr. Julian Huxley **1**

London Passenger Transport Board New Bus Shelters
(S. A. Heaps and various architects)
James Lees-Milne **1**

Swansea Civic Building
(Ivor Jones and Percy Thomas)
James Lees-Milne **1**

House in Surrey
(Gibb and Low)
Raymond Mortimer **1**

Turnpike Lane Underground
(S. A. Heaps. Consulting Architects : Adams, Holden and Pearson)
Frank Pick **1**

Timber House, Shipbourne
(Gropius and Fry)
Herbert Read **1**

Fairacres, Roehampton
(Minoprio and Spencely)
D. Talbot-Rice **1**

Daily Express Office
(Ellis and Clarke)
Richard Wyndham **1**

Restoration, Jockey Clubroom, Newmarket
(Richardson and Gill)
Earl of Harewood **1**

Y.W.C.A., Great Russell Street
(Sir Edwin Lutyens)
Raymond Mortimer **1**

London Gliding Club, Dunstable
(Christopher Nicholson)
Herbert Read **1**

Ruislip Car Depot
(Charles Holden)
Herbert Read **1**

Yaffle Hill, Poole
(Edward Maufe)
Joseph Peter Thorp **1**

Palace Gate Flats
(Wells Coates)
Richard Wyndham **1**

Ministry of Pensions, Acton
(J. G. West and H.M.O.W. architects)
Osbert Lancaster **1**

Crawfords Advertising Building, Holborn
(Etchells and Welch)
Osbert Lancaster **1**

Gunter's Shopfront, Curzon Street
(W. Wylton Todd)
Osbert Lancaster **1**

New Blocks at Sandhurst
(Architects' Department, War Office)
Osbert Lancaster **1**

Carreras Factory, Camden Town
(M. E. and O. H. Collins)
David Low **1**

Chelsea Bridge
(G. Topham Forest and E . Wheeler)
Charles Marriott **1**

15 VOTES **11 VOTES** **9 VOTES**

Pavilion, Bexhill ; Chermayeff's House in Surrey ; Highpoint 1 and 2, Highgate ; Peter Jones, Sloane Square.

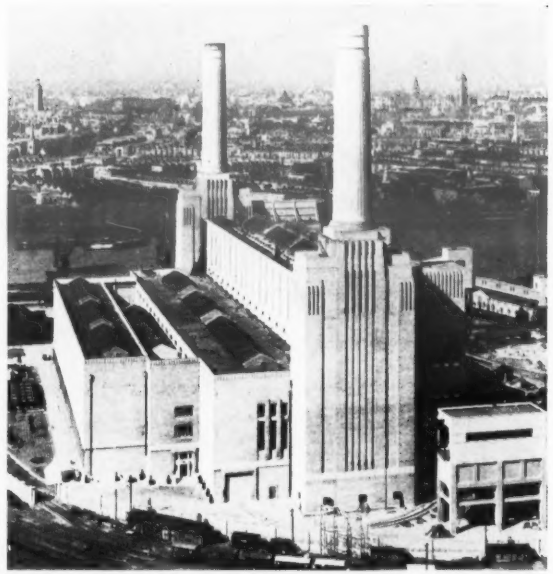
D. Talbot-Rice 1

Charles Marriott 1

15 VOTES

Peter Jones, Sloane Square, S.W. By Crabtree and Slater and Moberly. Professor Reilly, Consultant

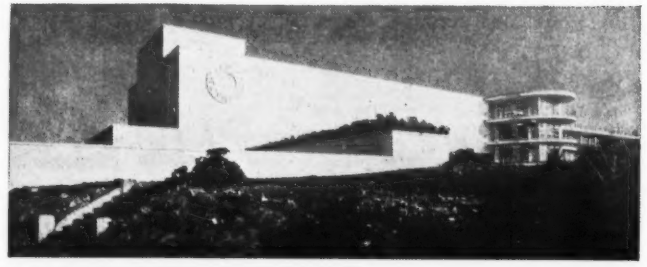
11 VOTES



Battersea Power Station. By Sir Giles Gilbert Scott, Dr. S. Pearse, J. T. Halliday and C. A. Allott and Son

9 VOTES

St. James's Underground Station. By Adams, Holden and Pearson



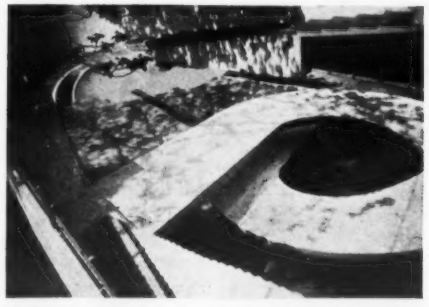
8 VOTES

De La Warr Pavilion, Bexhill. By Mendelsohn and Chermayeff

Below :

Arnos Grove Underground Station. By S. A. Heaps. Consulting Architects: Adams, Holden and Pearson

6 VOTES



Penguin Pond, Regent's Park. By Messrs. Tecton

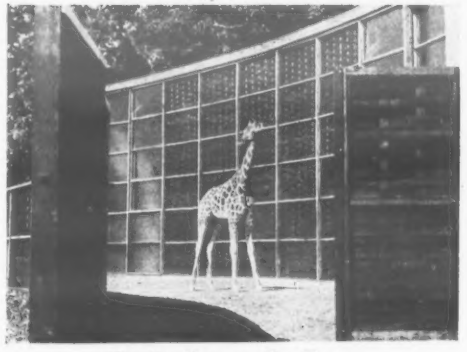
5 VOTES

FinsburyHealth Centre. By Tecton

VIGILANCE COMMITTEE

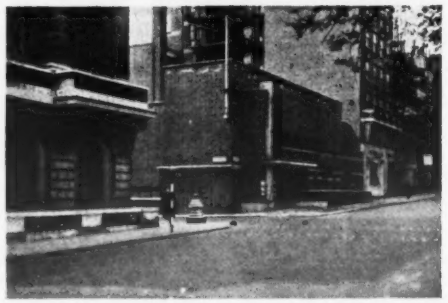
4 VOTES

London University. By Charles Holden (Adams, Holden and Pearson)

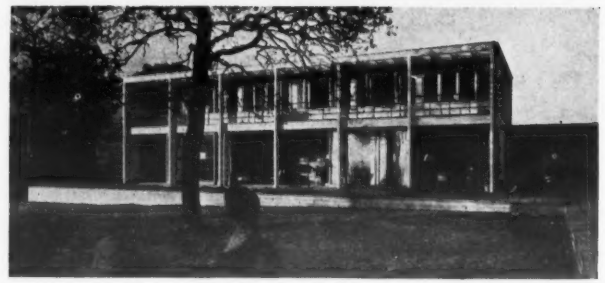


Giraffe House. By Tecton.

5 VOTES



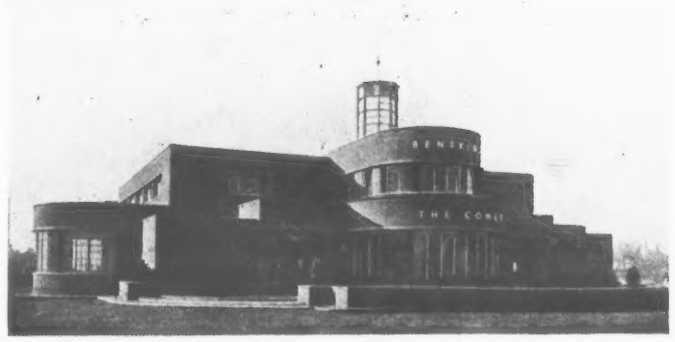
Curzon Cinema. By Sir John Burnet, Tait and Lorne



House at Halland. By Serge Chermayeff

3 VOTES

Avenue Close. By Stanley Hall and Easton and Robertson

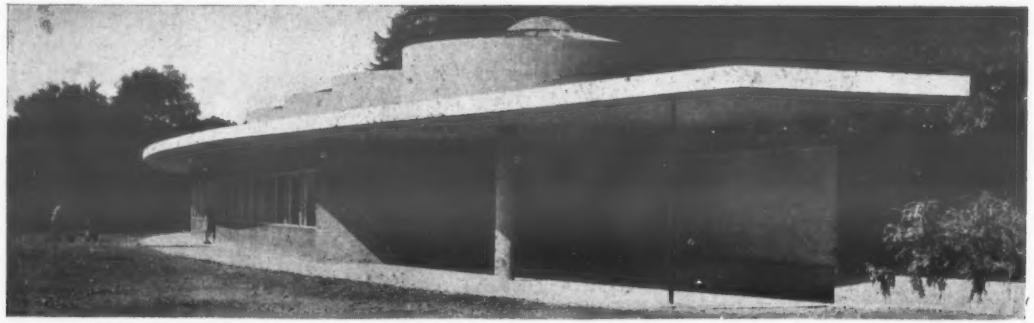


Comet Inn, Hatfield. By E. B. Musman

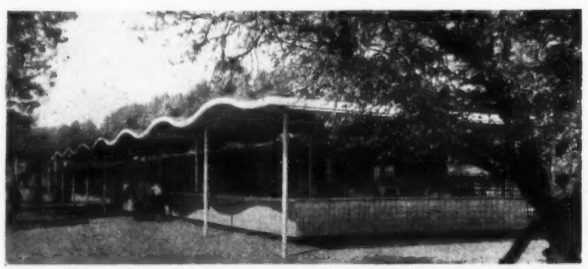
House at Paddington. By Denys Lasdun

Giraffe House. By Tecton. *Comet Inn, Hatfield. By E. B. Musman*

2 VOTES



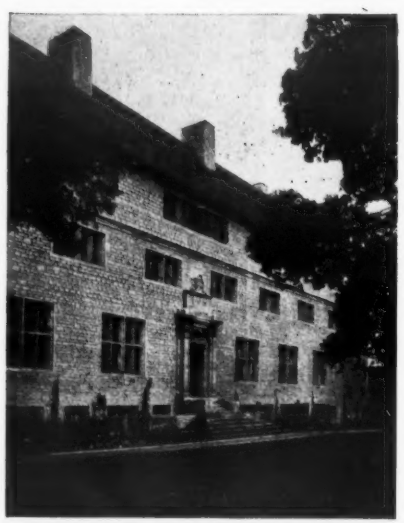
Elephant House, Whipsnade. By Tecton



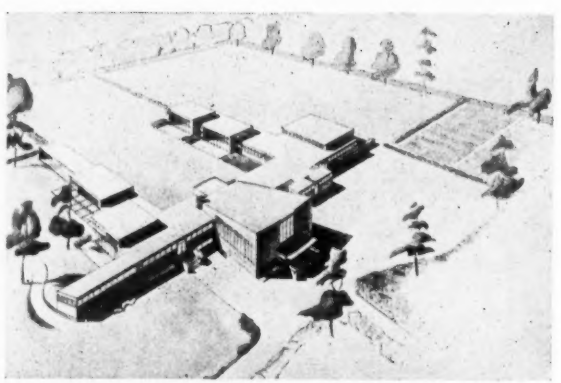
Refreshment House, London Zoo. By Tecton

Royal Masonic Hospital. By Burnet, Tait and Lorne

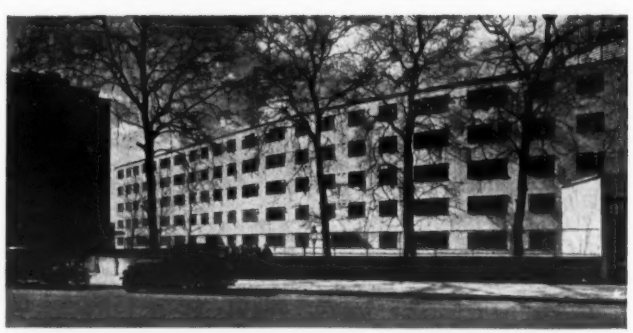
R.I.B.A. By G. Grey Wornum



Campion Hall, Oxford. By Sir Edwin Lutyens



Village College, Impington. By Gropius and Fry.

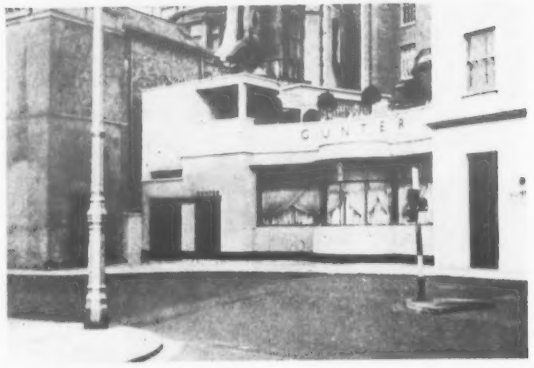


Kensal House. By Maxwell Fry in association with other architects

VIGILANCE COMMITTEE: 1 VOTE

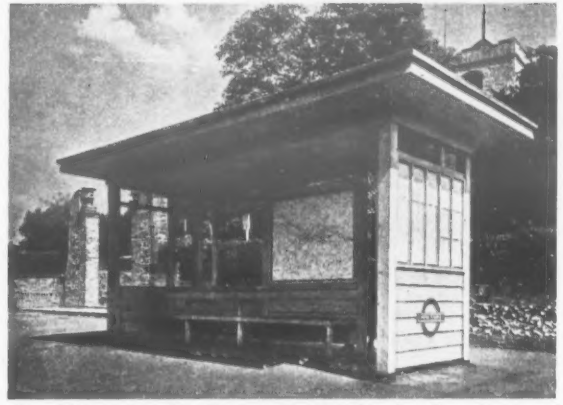
Crawford's Building, High Holborn. By Etchells and Welch

St. Patrick's, Greenock. By Coia



Gunter's Shop, Curzon Street, W. By W. Todd

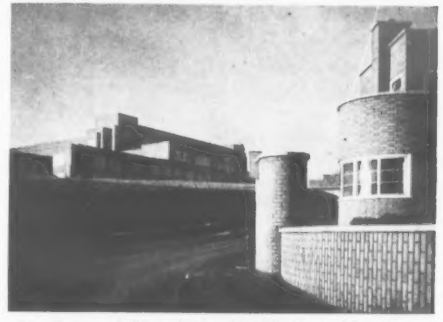
Leeds Housing Scheme. By R. A. H. Livett



Bus Shelter, London Transport. By London Transport and other architects

London Gliding Club. By Christopher Nicholson

Turnpike Lane Underground Station. By Adams, Holden and Pearson (consultants)



Scarborough Hospital. By Wallace Marchment

Flats, Palace Gate. By Wells Coates

Flats, Westminster Gardens. By T. P. Bennett and Son

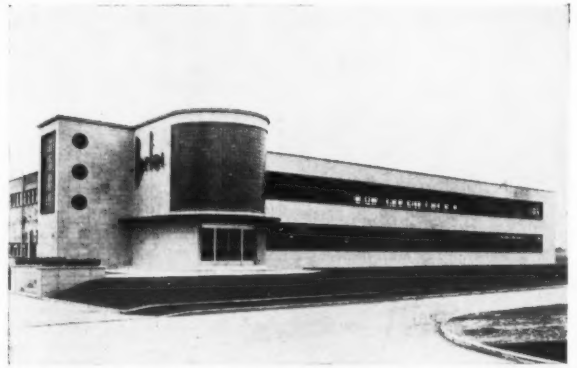
Carreras Factory, Camden Town, N.W. By M. E. and O. E. Collins

"Daily Express" Building, E.C. By Ellis and Clarke and Sir E Owen Williams

Boots' Factory, Beeston. By Sir E. Owen Williams

House in Frognal, Hampstead. By E. Maxwell Fry

Southgate Underground Station. By Adams, Holden and Pearson



Berlei Factory, Slough. By Sir John Brown and A. E. Henson and W. David Hartley

House in Chelsea. By Gropius and Fry

Chelsea Bridge. By E. Topham Forest and E. P. Wheeler

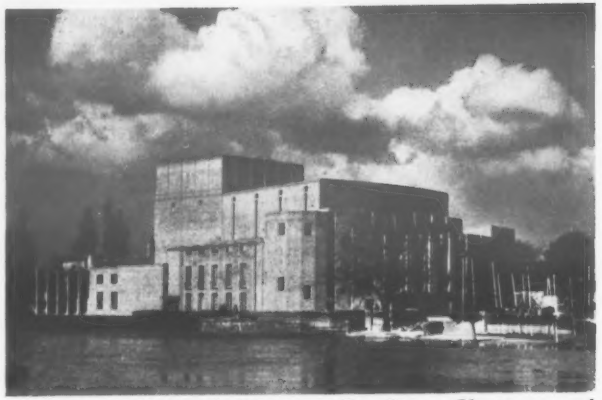
Friends' Meeting House, Euston Road. By Hubert Lidbetter

VIGILANCE COMMITTEE: 1 VOTE

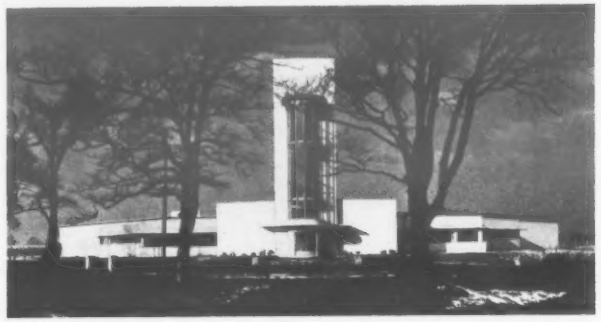
Extensions to Jockey Club, Newmarket. By Richardson and Gill

Botanical Institute, near Cambridge. By P. Morley Horder

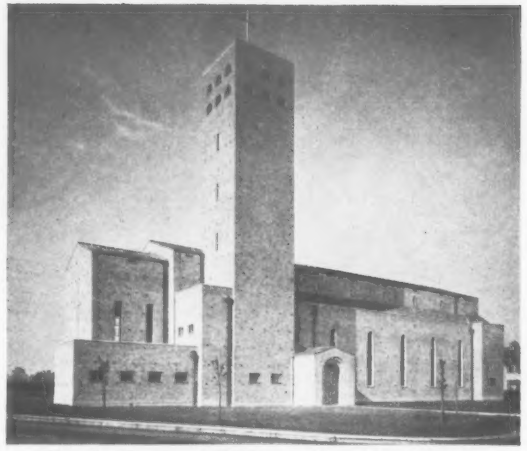
Bridge at Peterborough. By Gotch and Saunders; engineer, E. Stirling



Shakespeare Memorial Theatre. By Scott, Chesterton and Shepherd



Pithead Baths, Polkemmet. By the Architects to the Miners' Welfare Committee



Church, Harrow, Middlesex. By A. W. Kenyon

House near Nettlebed. By Gibb and Lowe

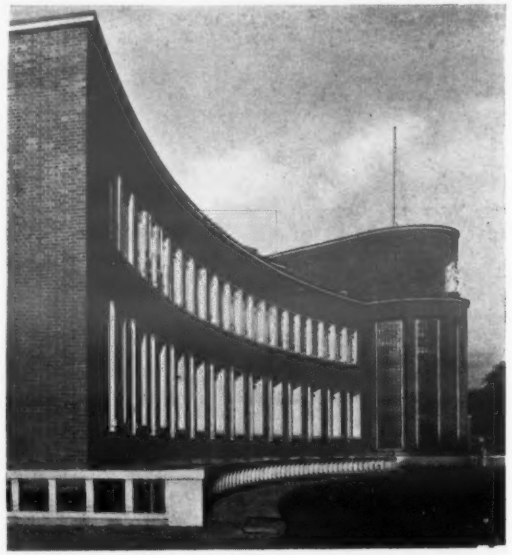
Osterley Underground Station. By S. A. Heaps (Consulting Architects: Adams, Holden and Pearson)

Y.W.C.A., Gt. Russell St., W.C. By Sir E. Lutyens

House near Nettlebed. By Gibb and Lowe

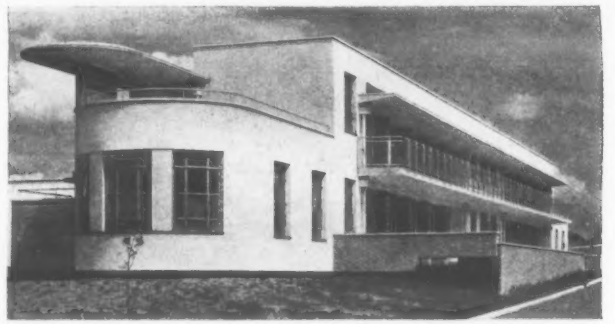
Architects: Adams, Holden and Pearson)

Y.W.C.A., Gt. Russell St., W.C. By Sir E. Lutyens



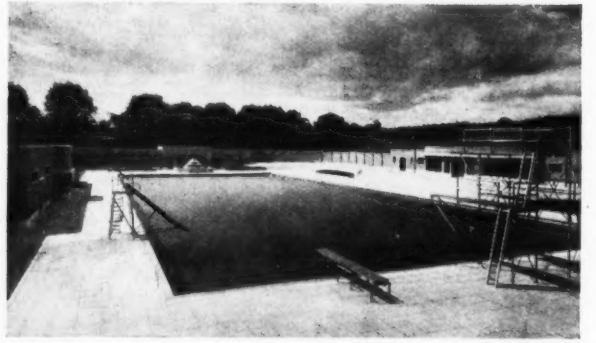
Metropolitan Water Board Offices, Rosebery Avenue, E.C. By Stanley Hall and Easton and Robertson

Burlington School for Girls, Hammersmith. By T. S. Tait (Sir John Burnet, Tait and Lorne)

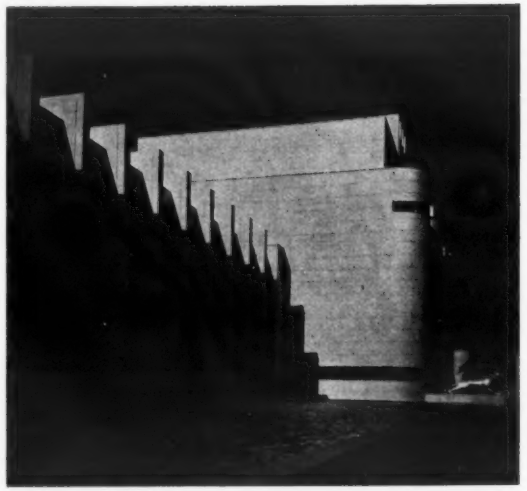


Paisley Hospital. By Sir John Burnet, Tait and Lorne

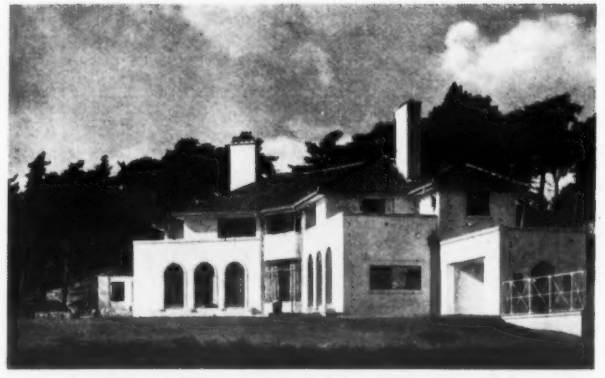
Fairacres, Roehampton. By Minoprio and Spenceley



Swimming bath at Parliament Hill, Highgate. By H. A. Rowbotham



British Pavilion, Glasgow Exhibition. By Herbert J. Rowse



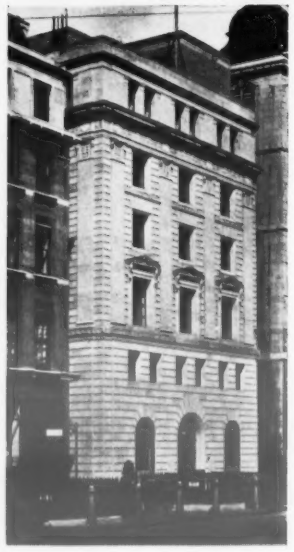
" Yaffle Hill," Dorset. By Edward Maufe

Folkestone Swimming Pool. By D. Pleydell-Bouverie

VIGILANCE COMMITTEE: 1 VOTE

Loughborough Estate. By Edward Armstrong

Imperial Airways' Headquarters, Victoria. By A. Lakeman



Royal Bank of Canada, Lothbury, E.C. By Stanley Hall and Easton and Robertson

Lowndes Square Flats. By Burnet, Tait and Lorne

Epsom Fire Station. By Pite, Son and Fairweather

Flats, Kennington Estate. By Louis De Soissons

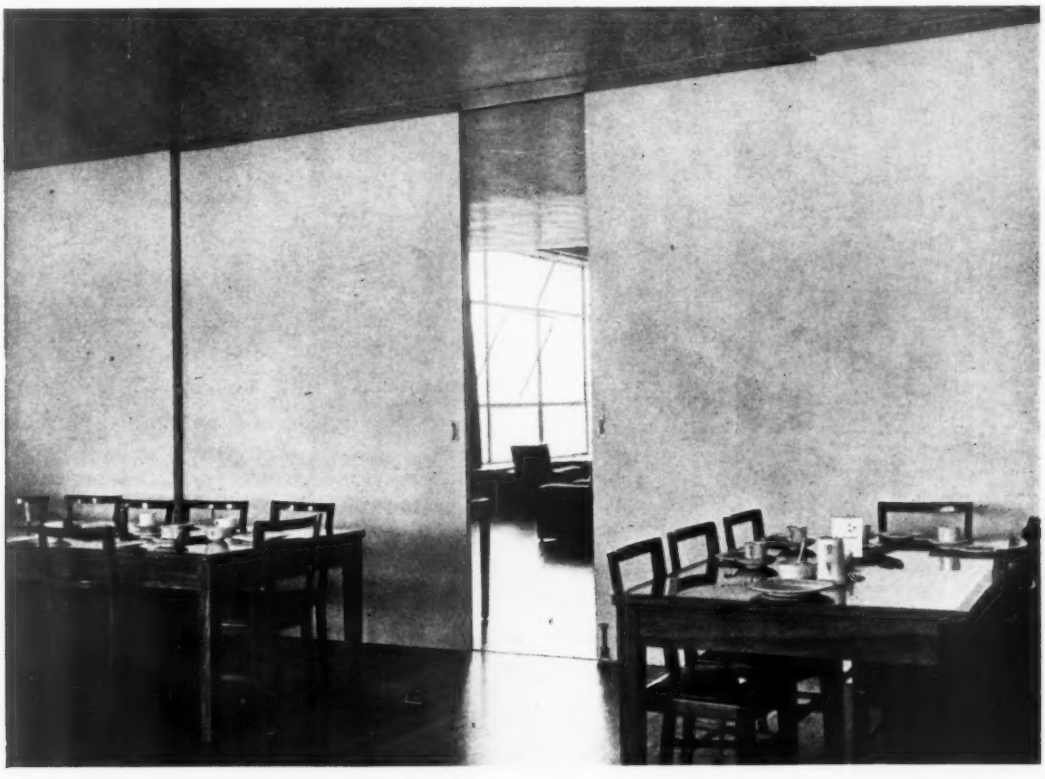
Timber House, Shipbourne. By Gropius and Fry

House at Chalfont St. Giles. By Mendelsohn and Chermayeff

Bandstand, Kensington Gardens. By H.M. Office of Works

WORKING DETAILS : 753

SLIDING DOORS • ST. DUNSTAN'S HOME, BRIGHTON • FRANCIS LORNE OF SIR JOHN BURNET, TAIT & LORNE



The sliding doors illustrated form a partition between the main lounge and the dining room. They are divided into six sections. For normal inter-communication between the two rooms the two centre sections can be opened, but for special occasions the dining room and lounge can be converted into one large unit of about 135 feet by 30 feet. All six sections of the sliding doors can be concealed in a recess with cover board flush with the surrounding wall surface. Removable cover boards flush with the wood block flooring can also be fixed over all floor tracks except the centre one. The doors have a painted finish with recessed pull handles. Details are shown overleaf.

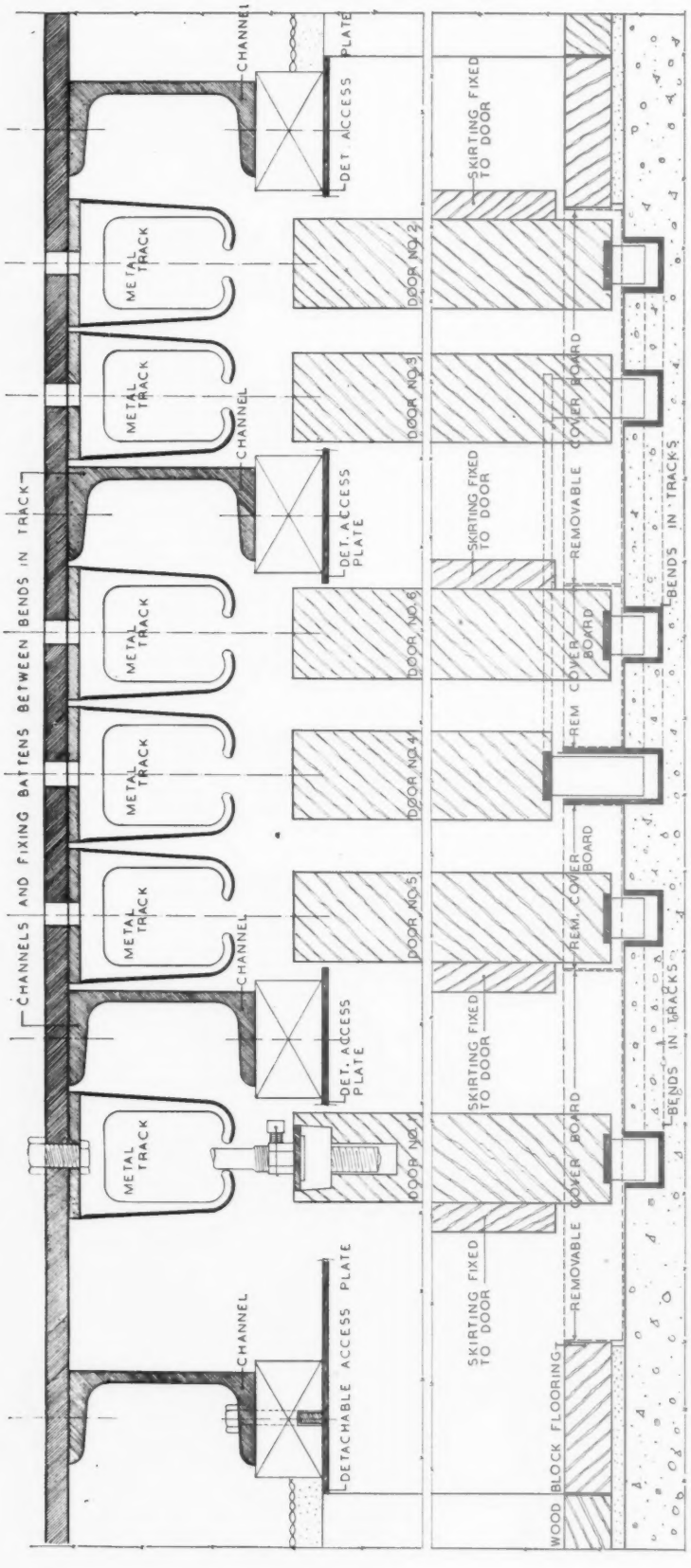
Bandstand, Kensington Gardens. By H.M. Office of Works

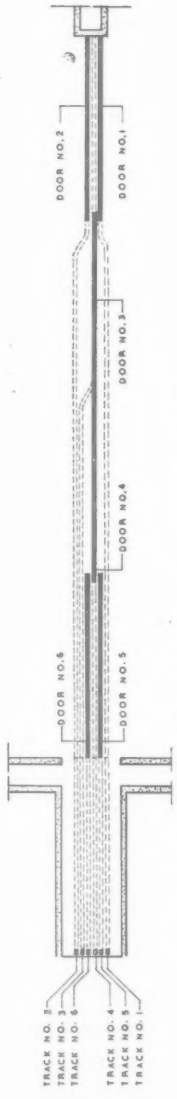
House at Chalfont St. Giles. By Mendelsohn and Chermayeff

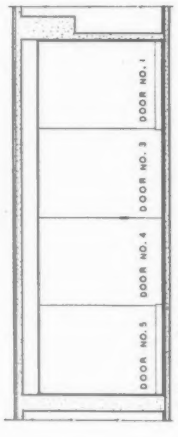
FILING REFERENCE:

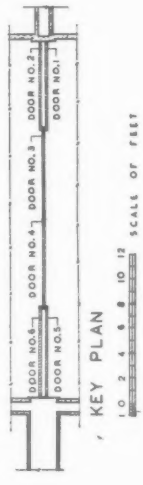
WORKING DETAILS : 754

SLIDING DOORS • ST. DUNSTAN'S HOME, BRIGHTON • FRANCIS LORNE OF SIR JOHN BURNET, TAIT & LORNE









Details of the sliding doors illustrated overleaf.

The Architects' Journal Library of Planned Information

INFORMATION SHEET
SUPPLEMENT

SHEETS IN THIS ISSUE

733 Structural Steelwork

734 Metalwork

All the Information Sheets published in The Architects' Journal Library of Planned Information since the inception of the series to the end of 1938 have been reprinted and are available in five volumes. Price 21s. each.

Sheets issued since index:

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

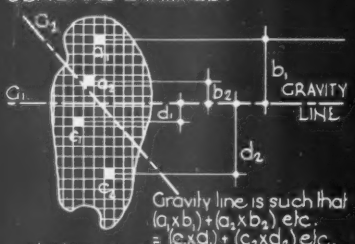
THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

MECHANICS OF SECTIONS N°1.

(A) GRAVITY LINE AND NEUTRAL AXIS OF ANY SECTION:

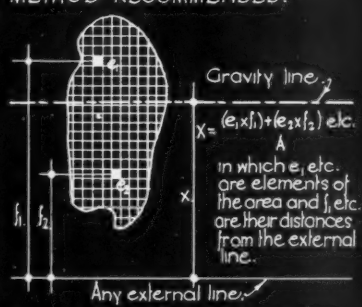
NOTE: for a section under bending loads only, the neutral axis coincides with the gravity line.

GENERAL EXAMPLE:



Gravity line is such that $(a_1 \times b_1) + (a_2 \times b_2)$ etc. $= (c_1 \times d_1) + (c_2 \times d_2)$ etc. in which a_1 etc. & c_1 etc. are elements of the area and b_1 etc. & d_1 etc. are their distances from the gravity line.

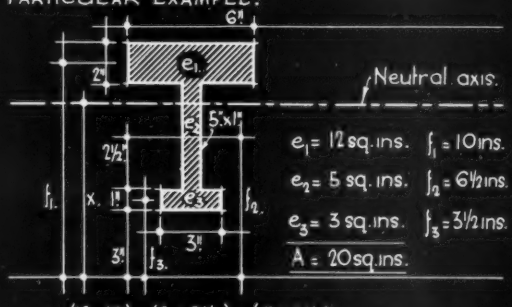
METHOD RECOMMENDED:



$$X = \frac{(e_1 \times f_1) + (e_2 \times f_2) \text{ etc.}}{A}$$

in which e_1 etc. are elements of the area and f_1 etc. are their distances from the external line.

PARTICULAR EXAMPLE:



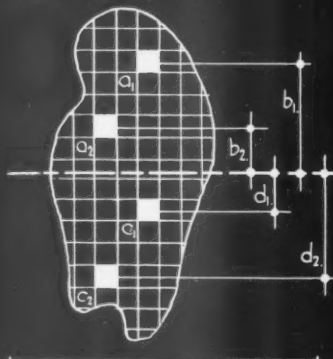
e_1 = 12 sq. ins. f_1 = 10 ins.
e_2 = 5 sq. ins. f_2 = 6½ ins.
e_3 = 3 sq. ins. f_3 = 3½ ins.
A = 20 sq. ins.

$$X = \frac{(12 \times 10) + (5 \times 6\tfrac{1}{2}) + (3 \times 3\tfrac{1}{2})}{20} = 8{\cdot}15 \text{ inches.}$$

A section has an infinite number of gravity lines, e.g. C_1; C_2, etc. The intersection of any two defines the centre of gravity through which all other gravity lines pass.

(B) MOMENT OF INERTIA:

GENERAL EXAMPLE:



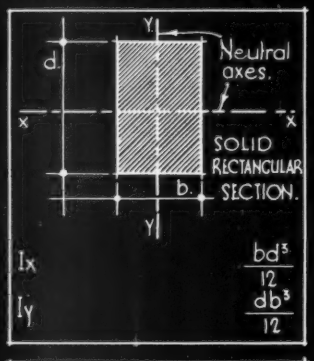
Moment of inertia I is such that

$I = (a_1 \times b_1^2) + (a_2 \times b_2^2)$ etc. $+ (c_1 \times d_1^2) + (c_2 \times d_2^2)$ etc.

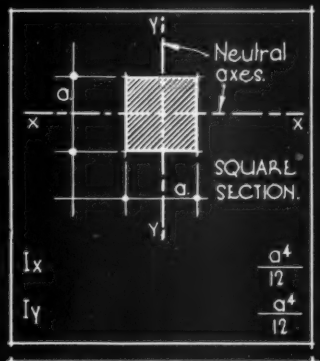
Neutral axis.

NOTE: for irregular sections such as rectangular and joist sections (but not for square or circular sections etc.) the moment of inertia is different about different axes.

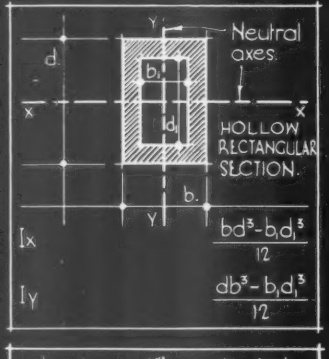
PARTICULAR EXAMPLES:



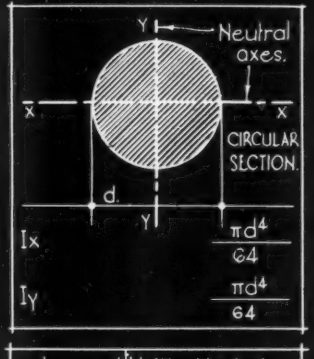
$I_x = \frac{bd^3}{12}$ $I_y = \frac{db^3}{12}$



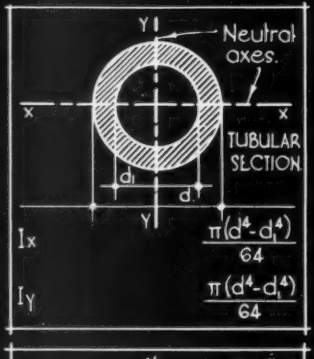
$I_x = \frac{a^4}{12}$ $I_y = \frac{a^4}{12}$



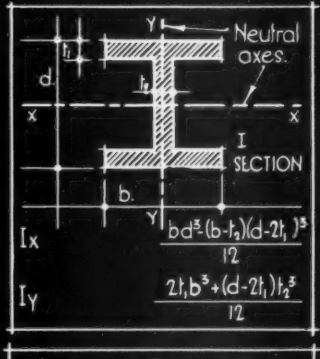
$I_x = \frac{bd^3 - b_1d_1^3}{12}$ $I_y = \frac{db^3 - b_1d_1^3}{12}$



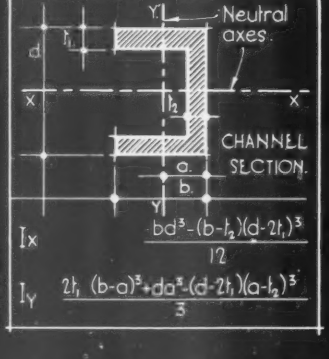
$I_x = \frac{\pi d^4}{64}$ $I_y = \frac{\pi d^4}{64}$



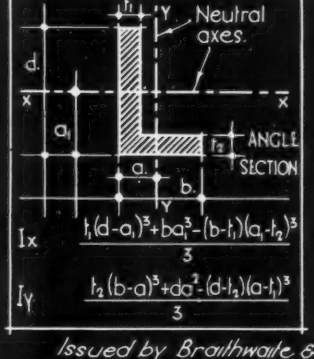
$I_x = \frac{\pi(d^4 - d_1^4)}{64}$ $I_y = \frac{\pi(d^4 - d_1^4)}{64}$



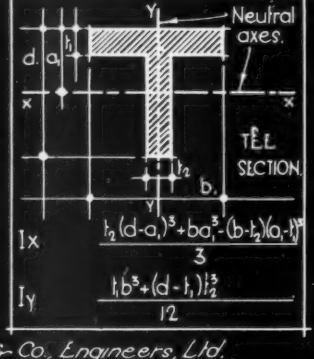
$I_x = \frac{bd^3 - (b - t_2)(d - 2t_1)^3}{12}$ $I_y = \frac{2t_1b^3 + (d - 2t_1)t_2^3}{12}$



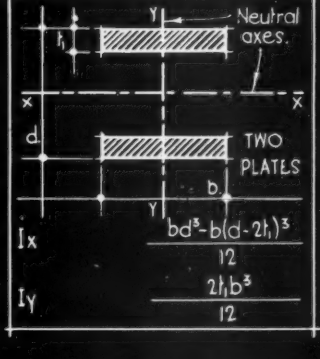
$I_x = \frac{bd^3 - (b - t_2)(d - 2t_1)^3}{12}$ $I_y = \frac{2t_1(b-a)^3 + da^3 - (d - 2t_1)(a - t_2)^3}{3}$



$I_x = \frac{t_1(d-a_1)^3 + ba_1^3 - (b - t_1)(a_1 - t_2)^3}{3}$ $I_y = \frac{t_2(b-a)^3 + da^2 - (d - t_2)(a - t_1)^3}{3}$



$I_x = \frac{t_2(d-a_1)^3 + ba_1^3 - (b - t_2)(a_1 - t_1)^3}{3}$ $I_y = \frac{t_1b^3 + (d - t_1)t_2^3}{12}$



$I_x = \frac{bd^3 - b(d - 2t_1)^3}{12}$ $I_y = \frac{2t_1b^3}{12}$

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Compiled by C.W. Hamann, Consulting Engineer.

INFORMATION SHEET: STEEL FRAME CONSTRUCTION: N° 2.

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THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 733 •

STRUCTURAL STEELWORK

Subject : Mechanics of Sections

General :

The series of Sheets on steel construction, of which this is the second, is not intended to cover the field of engineering design in steel, but to deal with those general principles governing economical design which affect or are affected by the general planning of the building. It also deals with a number of details of steel construction which have an important effect upon the design of the steelwork.

Both principles and details are considered in relation to the adjoining masonry or concrete construction, and are intended to serve as a guide in the preliminary design of a building so that maximum economy may be obtained in the design of the steel framing.

The common British structural steel sections together with information on their deliveries have been given on the first Sheet of this series.

In this and the next Sheet are set out short explanations of the technical expressions and conventions adopted in the design of steelwork.

Gravity Line and Neutral Axis :

In order to consider the geometrical properties of a section, it is essential that the gravity line or neutral axis be known. The method of finding this is shown on the front of this Sheet.

The Use of the Moment of Inertia :

It will be shown on the third Sheet of this series that the Moment of Inertia is of importance in computing the section modulus and the radius of gyration, from which beams and columns respectively may conveniently be designed. It is used also in calculations of deflection. For example, the deflection at the centre of a simply supported beam carrying a load uniformly distributed over the whole span is given by the formula :

$$d = \frac{5WL^3}{384EI}$$

in which W is the total (dead and live) load, L is the span, E is the Modulus of Elasticity, and I the Moment of Inertia.

Previous Sheet :

The first Sheet in this series is No. 729, and deals with basic steel sections.

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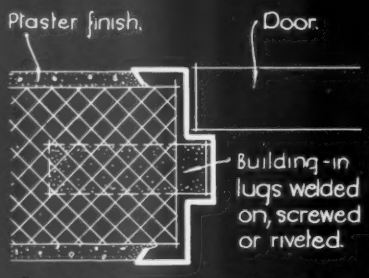
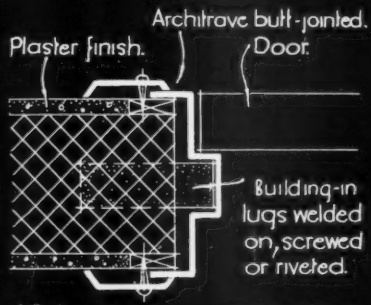
CONSTRUCTION & ASSEMBLY OF VARIOUS TYPES OF ALUMINIUM DOORFRAMES & THRESHOLDS

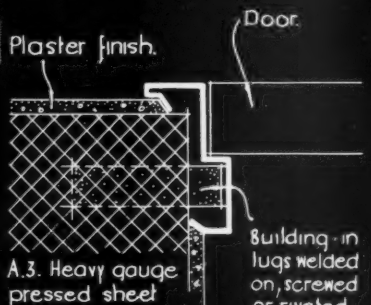
(A.) TYPES OF DOORFRAMES :



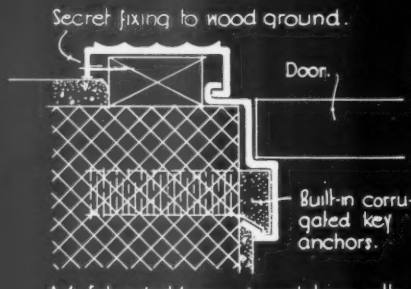
A.1. Extruded frame without architrave. Frame mitred and welded.



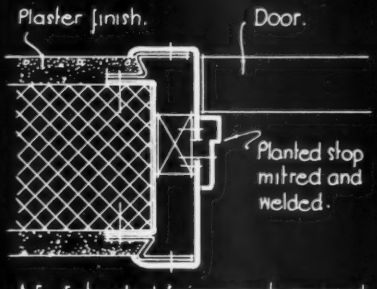
A.2. Extruded frame with face-fixed architrave. Frame butt-jointed or welded.



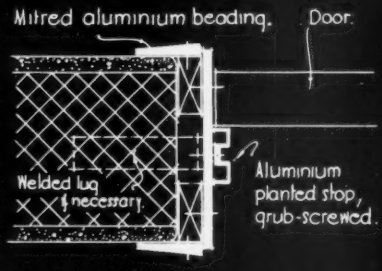
A.3. Heavy gauge pressed sheet frame, joints mitred and welded.



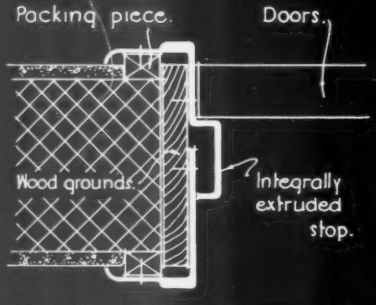
A.4. Extruded frame & architrave with concealed fixing. Frame butt-jointed or welded, architrave butt-jointed only.



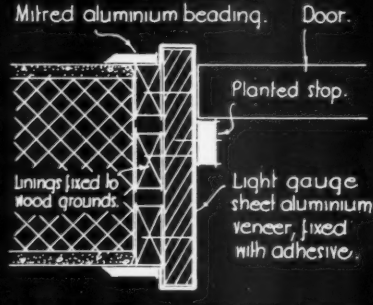
A.5. Extruded frames grub-screwed to plugged metal jamb linings. Extruded stop planted & face screwed.



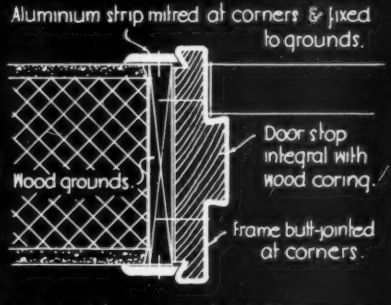
A.6. Simple built-up door linings of heavy gauge sheet, butt-jointed and face screwed throughout.



A.7. Extruded two-piece adjustable frame with combined architraves.



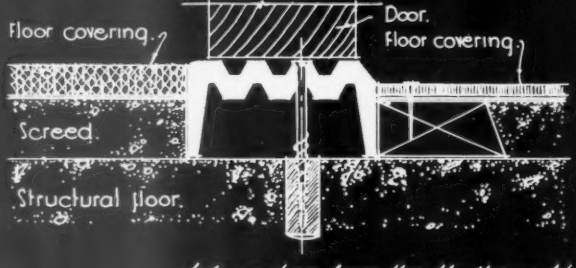
A.8. Aluminium-faced plywood linings butt-jointed at corners.



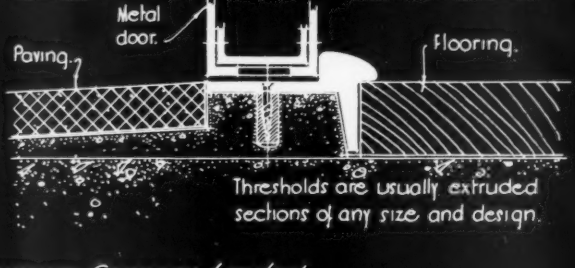
A.9. Light gauge sheet aluminium drawn over wood core.

(B.) TYPICAL EXAMPLES OF ALUMINIUM THRESHOLDS :

B.1. Extruded aluminium threshold to an internal doorway, used to prevent draught by taking up the thickness of the floor finish or covering, particularly where the coverings vary from room to room.



B.2. Extruded aluminium threshold to an external doorway, used to prevent draught & form a junction between interior and exterior finishing materials.



Information from the Northern Aluminium Company Limited.

INFORMATION SHEET : ALUMINIUM : No. 16, DOORFRAMES & THRESHOLDS.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1.

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INFORMATION SHEET

• 734 •

METALWORK

Subject : Aluminium Door Frames and Linings

General :

The design of aluminium door frames and linings varies not only with the site conditions but also with the method of fabrication adopted.

The various typical details shown on this sheet include :

A 1.—A simple type without architraves, intended for building in before plastering.

A 2.—A simple type for interior partitions, with face screwed architraves. Intended for building in before plastering.

A 3.—A frame intended for building in.

A 4.—A built-in frame with interlocking architrave with secret fixing.

A 5.—A two-piece jamb lining which may be fitted after plastering is complete.

A 6.—A jamb lining with architraves, the whole may be fitted after plastering is complete.

A 7.—A jamb lining formed from aluminium-faced plywood, or from aluminium facing drawn over a wood core. Lining and solid aluminium stops and architraves may be fitted after plastering is complete.

A 8.—A jamb lining also formed with aluminium drawn over a wood core may be fitted after plastering.

Fabrication :

Thick aluminium sections such as those obtained by extrusion or casting probably form the best type of door frame or jamb lining.

The other methods of fabrication if used are adopted mainly to reduce the amount of metal required.

Thin aluminium in light extrusions or sheet material usually requires a solid backing—no absolute rule can be given for the minimum thickness of unbacked aluminium, but as a general guide it may be assumed that material thicker than $\frac{1}{8}$ in. requires no backing ; material from $\frac{1}{16}$-in. to $\frac{1}{8}$-in. should be stiffened or backed at least intermittently ; and thinner material should be solidly backed throughout.

Fixing :

Aluminium is not more liable to damage than most other materials used for door frames, it is, however, an advantage to design frames and linings so that they may be fitted after the heavy trades have completed their work, rather than to build them in.

Provided adequate tolerance is allowed between the aluminium frame (or lining) and the rough jambs of the opening, the frames may be made up complete at the works and slipped into position. Alternatively the aluminium sections may be delivered to the job and all fitting, cutting, mitring, etc., carried out in situ. Butt jointed work is then essential.

Any welding should preferably be carried out at the works rather than on the site.

If welding is used on metal work which is to be anodized, care must be exercised to ensure that the variation in the colour of the anodized finish over the area of the weld is reduced to a minimum.

Ordering :

When ordering aluminium door frames, the size should be designated by the nominal size of the door to be fitted. Thus, a 6 ft. 8 in. by 2 ft. 8 in. frame would measure 6 ft. 8 in. from the finished floor level into the rebate at the head, and 2 ft. 8 in. between the jamb rebates.

The following information should also be supplied : hand and thickness of door ; particulars of hinges, locks, striking plates, etc. ; and a detailed description of the partition or wall.

Protection of Contact Surfaces :

All aluminium surfaces which are likely to be in contact with other metals in the presence of moisture or materials containing lime or cement should be protected with either a coat of bituminous paint or an insulation of bituminous building paper. These precautions are essential over all contact areas, but providing they are observed, frames may be grouted up or fixed close to any other material.

Door Thresholds :

Door thresholds are perhaps less used in this country than elsewhere ; they do, however, serve a particularly useful purpose in providing a stop against which floor materials and coverings may be butted.

They are particularly necessary where floorings or coverings differ on each side of the opening. Where carpets are to be used and the doors kept above normal floor finish to allow clearance above the carpet, thresholds may be set up to prevent draughts when the door is closed. Aluminium thresholds may be cast, but are usually extruded.

Previous Sheets :

Previous Sheets of this series dealing with the architectural uses of aluminium are : 492, 501, 504, 505, 510, 661, 669, 673, 680, 686, 714, 717, 723, 726 and 731.

Issued by : The Northern Aluminium Company, Limited

Address : Bush House, Aldwych, London, W.C.2

Telephone : Temple Bar 8844

CIVIC CENTRE, TUNBRIDGE WELLS

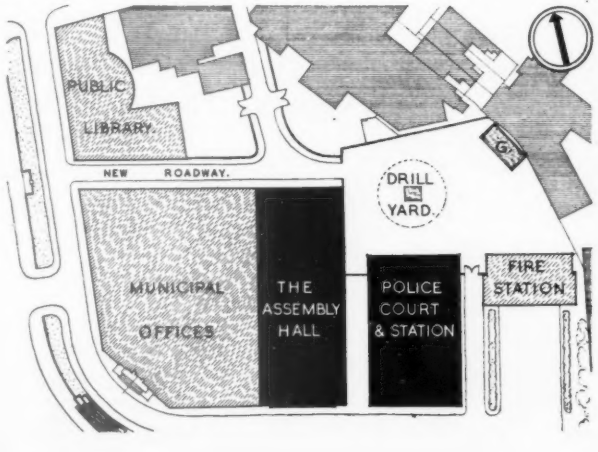
DESIGNED BY PERCY THOMAS AND ERNEST PRESTWICH

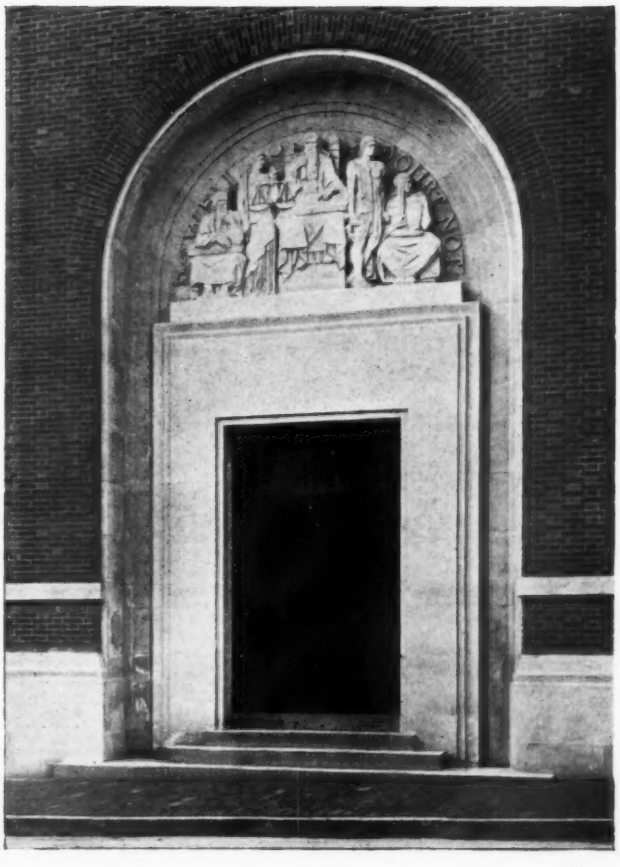
GENERAL—*The outcome of an open competition, this civic centre will eventually include municipal buildings, a library and museum, and a fire station. The assembly hall, police court and station are the first sections completed, the remaining portions will be erected after necessary demolition work on the site.*

SITE—*On a rather restricted site, the levels of which did not correspond with those of the adjoining roads, and thus necessitated an inner approach road.*

Above, general view showing the assembly hall (left) and the police court and station.

Right, main entrance to police court.





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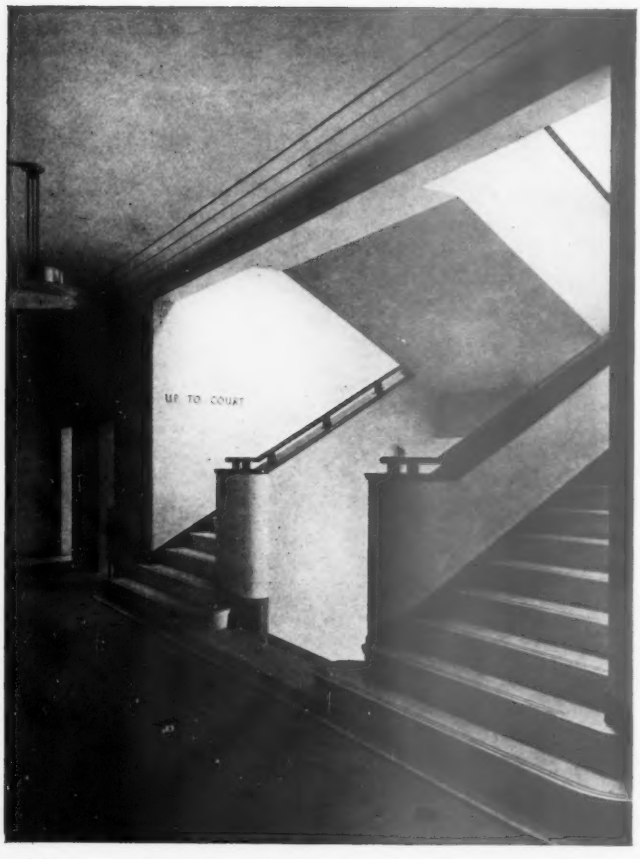
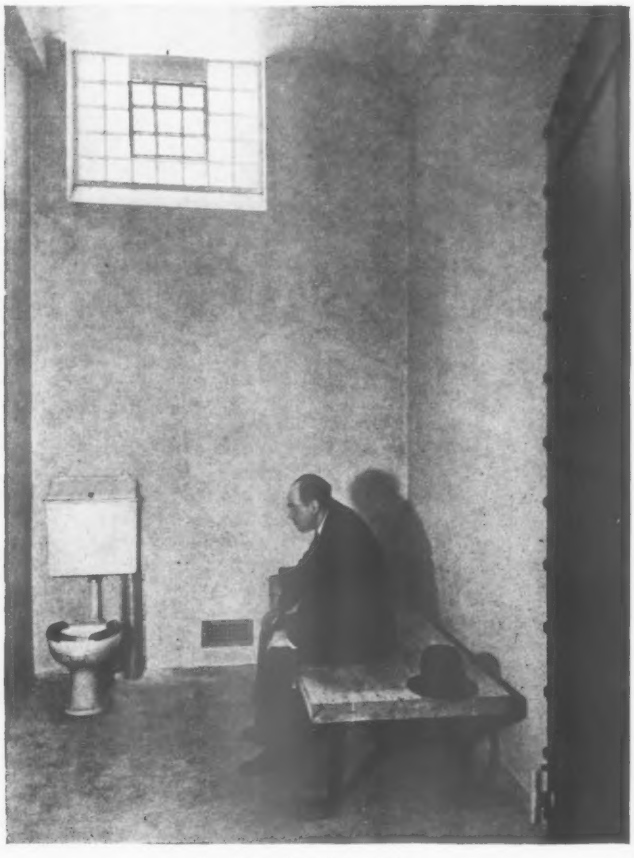
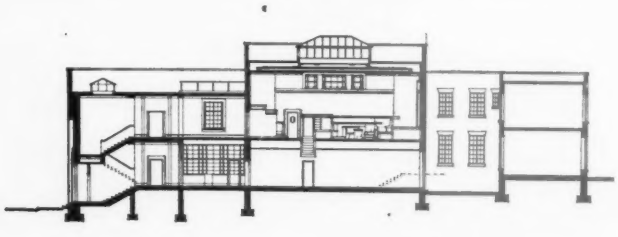


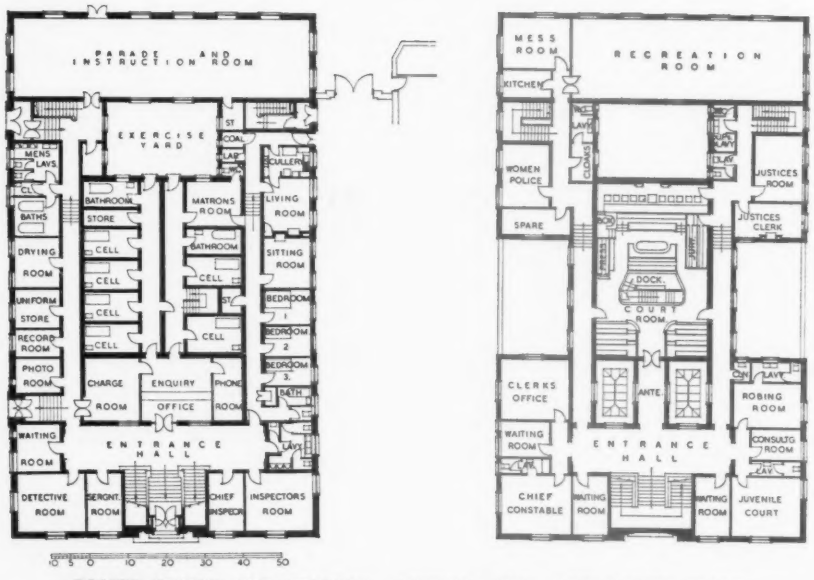
Police court : the staircase leading from the entrance hall to the court.



A cell in the police station.



SECTION



POLICE COURT AND STATION. GROUND AND FIRST FLOOR PLANS

CONSTRUCTION AND EXTERNAL FINISHES—*External walls and internal partitions are of solid brickwork; the floors of concrete, and the flat concrete roofs are covered with asphalt. The roof over the assembly hall consists of steel trusses covered with concrete on a patent mesh and finished with asphalt. The stage has specially designed steel-framed flaps, covered with insulating board. These are pivot operated from the fly-gallery to allow for the dropping of scenes, wings, etc., and are easily adjusted completely to enclose the stage when the hall is used for other purposes. All walls are faced externally with local brickwork treated in a simple Georgian manner, the police courts having wooden sash windows. A carved panel is placed over the main entrances of the two buildings.*

CIVIC CENTRE, TUNBRIDGE WELLS • BY PERCY THOMAS AND ERNEST PRESTWICH

INTERNAL FINISHES—*The assembly hall has an oak sprung floor, the walls have a parallel dado of Australian walnut with ebonized bands, the remaining wall surfaces being finished with acoustic plaster sprayed with distemper. The ceiling and proscenium opening are of fibrous plaster picked out in emerald green and silver on a buff ground. The entrance hall walls and floor are of travertine and the ticket-boxes are faced with dull black tiles.*

The police court fittings and panelling are of English oak, the walls are of acoustic plaster, and the ceiling of fibrous plaster. All seats are upholstered in red hide.

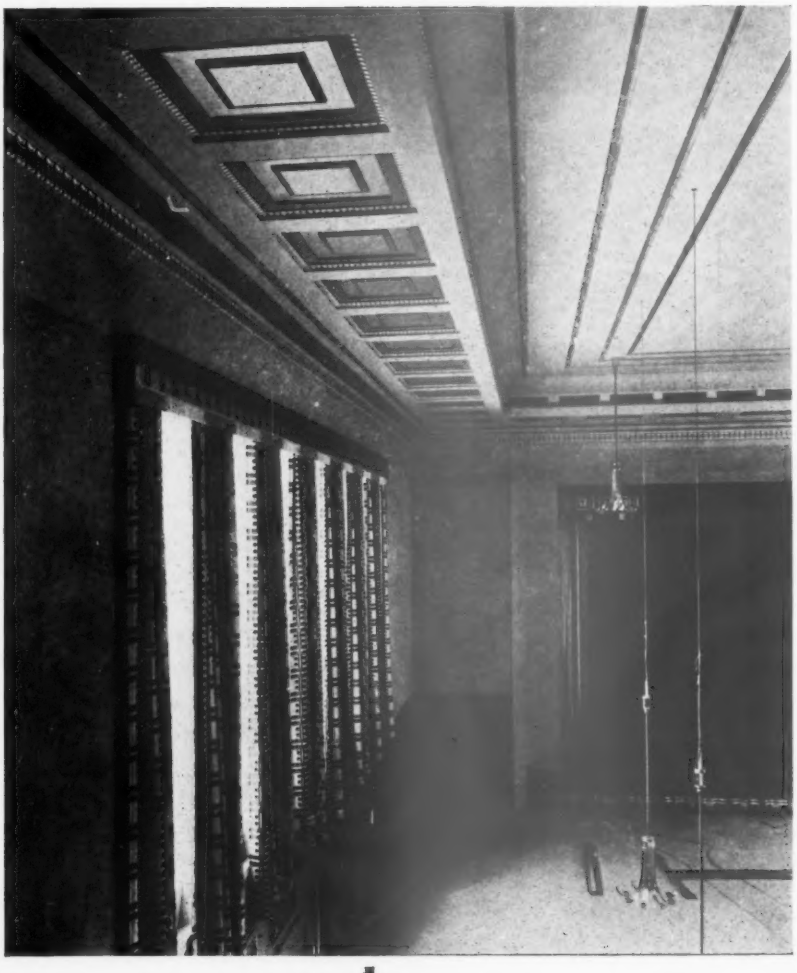
SERVICES—*A central heating chamber to serve the whole civic centre is placed under the rear of the assembly hall, and is fed by automatic stokers. The assembly hall has a balanced plenum system, and the entrance halls, vestibules, have panel heating.*

The general contractors were R. Corben and Son, Ltd.

A list of sub-contractors appears on page 880.

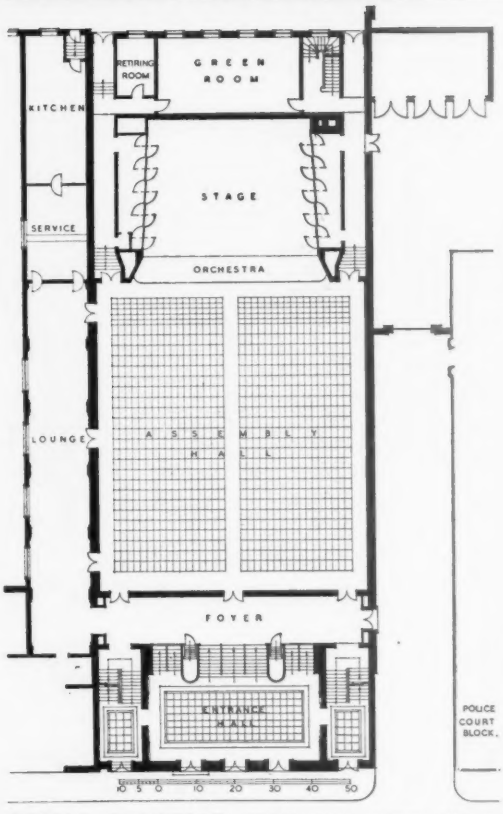
Top, the police court taken from the magistrates' bench; right, looking up the main front of the assembly hall.

CIVIC CENTRE, TUNBRIDGE WELLS • BY PERCY THOMAS AND ERNEST PRESTWICH

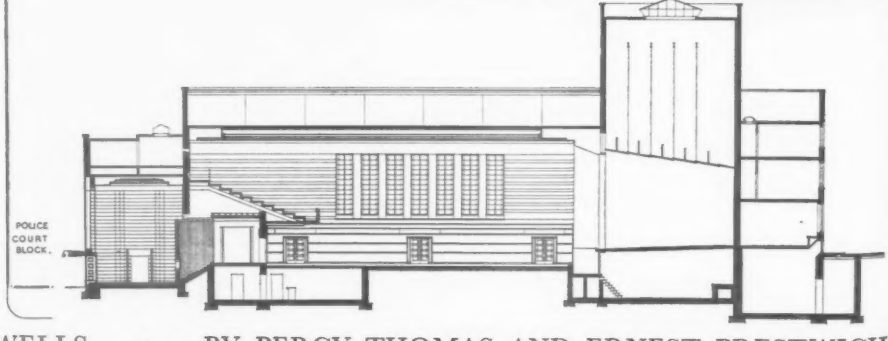


Left, assembly hall : a view from the balcony. The lighting fittings are lowered by winding gear for cleaning and replacement.

Below, assembly hall : a staircase leading to the balcony.



ASSEMBLY HALL: GROUND FLOOR PLAN AND SECTION



CIVIC CENTRE, TUNBRIDGE WELLS • BY PERCY THOMAS AND ERNEST PRESTWICH

Assembly hall; part of the proscenium.

CIVIC CENTRE, TUNBRIDGE WELLS • BY PERCY THOMAS AND ERNEST PRESTWICH

Notes from the Building Research Station on*

BITUMINOUS ROOFING FELTS

THE bituminous roofing felts constitute a group of materials suited to the most varied applications. Grades are available which provide, at very low cost, temporary protection for the cheapest classes of structures —chicken houses, cycle sheds and the like— and others of high quality are capable when applied in several layers, suitably bonded together, of providing a permanent roofing for buildings of importance. Other grades are extensively used for under-felting.

There is a superficial resemblance between the different qualities of felts as regards such features as pliability and colour, but this general similarity groups together materials varying widely in the important property of durability and raises the question of how to specify felts correctly according to the purpose for which they are to be used. Unfortunately, no test has yet been developed which enables the different qualities of felts to be distinguished rapidly; useful information can be obtained by exposing felts to artificial weathering, but this occupies a longer time than is convenient in testing work, and requires special apparatus. Nevertheless, valuable guidance is afforded by the British Standard Specification 747, which though it includes no tests for finished products, classifies the felts according to their uses and defines the materials which should be used. The wider use of this specification in building work would promote the best interests of the industry and might prepare the way for a specification based on quality tests.

COMPONENTS OF ROOFING FELTS

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. Today by far the greater proportion is residual bitumen derived from petroleum: formerly Trinidad Lake asphalt was more extensively used in the manufacture of the better grades of felt. These two materials are covered by the general term "asphaltic bitumen." Tars and pitches derived from coal or wood are used in some of the standard grades of sarking felt, and also in the cheaper grades of roofing felt used externally. Often various kinds of bitumen are blended with one another and mixed with fine mineral powders such as slate dust, limestone, etc., in order to obtain suitable physical properties so that they shall neither become too soft in hot weather nor too hard and brittle in cold.

Roofing felt is subject to considerable distortion in packing and laying, and its good behaviour in all conditions of weather depends upon a proper adjustment of the properties of the bitumens used. Usually, to secure a thorough impregnation of the felt, a relatively soft grade is used, which in the Ball and Ring test familiar to petroleum technologists, has a softening point of 105–135° F. For coating, a harder bitumen can be used, say, 120–250° F. softening point, while for the bitumen used in cementing sheets together in built-up roofing the range is approximately 130–200° F.

MANUFACTURE OF ROOFING FELTS

The first stage in the manufacture of roofing felts is the production of the felt itself. The process used may be illustrated by reference to methods used in the case of felts composed chiefly of wool or cotton rags, which briefly described is as follows:—The raw materials are sorted and then mechanically cleaned and beaten to pulp. The pulp is screened and filtered on to a wire cloth cylinder, and the felt is then finally formed by passing it between heated rollers. The weight of the felt varies from 6 oz. per square yard 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.

The saturation of the felt is effected by passing it slowly into a bath of molten bitumen in order to obtain thorough impregnation, excess being removed by passing it between heated rollers. At this stage the felt has a "dry" appearance, surface fibres being visible to the eye. By this process the weight of the felt is usually more than doubled. Where no coating is to be applied the surface is sometimes sanded while hot, before the felt is rolled.

The coating bitumen, which, as already stated, is usually harder than that used for saturation, is applied in a similar manner, the thickness of the coating and ultimate weight of the felt being prearranged. In the case of coated felts, the surface is finished with a dusting of fine mineral matter, such as talc or mica, which gives a smooth appearance and greyish colour. The surfacing with mineral particles prevents sticking in the roll, but this is by no means its only function. As will be explained later, it has an important influence on durability. A heavier material is obtained if one of the surfaces, while still hot, is coated with slate, granite or similar granules, thus affording added protection and giving a more decorative appearance.

The above describes the preparation of the bituminous felts generally used in ordinary roofing, but the process may be modified in details in the case of other types as used for internal work or very temporary structures. The latter may be saturated and coated in one operation.

A brief statement of the types of felt in common use is given in Table I.

Felts are also manufactured having an asbestos felt base, for which special merit is claimed on account of its freedom from risk of decay and its incombustibility.

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TABLE I.—CLASSIFICATION OF ROOFING FELTS

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	Animal and vegetable	Asphaltic bitumen	None	Sand	Single layer temporary roofing or lower layers of "built-up" roofs.
C. Self-finished	Animal and vegetable	Asphaltic bitumen	Asphaltic bitumen	Talc, mica, etc.	External layers. Commonly known as "bitumen roofing." Used for *all general* purposes.
D. Mineralised	Animal and vegetable	Asphaltic bitumen	Asphaltic bitumen	Granite, slate or other chippings on upper surface, talc beneath.	External layer or single layer. Also sold cut to slate sizes.
E. Reinforced	Animal and vegetable (with hessian backing).	Asphaltic bitumen	Asphaltic bitumen	Talc	Untearable, used for insulation, underslating.
2. *Flax and Hair Felts.*					
A. Flax (black)	Flax, and/or jute	Fluxed coal tar pitch	None	None	Sarking or underslating.
B. Flax (brown) (so-called "inodorous" felt).	Flax, and/or jute	Wood tars or pitches			
C. Black hair felt	Cow hair and flax or jute or mixtures of these.	Fluxed coal tar pitch			
D. Brown hair felt	Hair only	Wood tars or pitches			
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	Animal and vegetable fibres of various qualities.	Fluxed coal tar pitch	None	Sanded	Now used chiefly for temporary sheds, etc. Can be maintained by periodic tarring and sanding.

TABLE II

Type	Standard Weight	Packages
1A	"Impregnated bitumen felt" 10-50 lb. per 12 sq. yd. (1 square)	36 in. by 12, 24 yd., etc.
1B	"Sanded bitumen felt," 35-65 lb. per 12 sq. yd. (1 square) ..	
1C	"Self-finished bitumen felt," extra light (½-ply), 40 lb. per 24 yd. (2 squares)	
	Light (1-ply), 60 lb. per 24 sq. yd. (2 squares)	
	Medium (2-ply), 80 lb. per 24 sq. yd. (2 squares)	
	Heavy (3-ply), 100 lb. per 24 sq. yd. (2 squares)	
	(also 120 and 140 lb. per 24 sq. yd.)	
1D	"Mineralised bitumen felt," 40-90 lb. per 12 sq. yd. (1 square)	
1E	"Reinforced bitumen felt," 50 and 60 lb. per 12 sq. yd. (1 square)	36 in. by 24 yd. only.
2A	"Roofing felt," 80 lb. per roll	32 in. by 25 yd. (2 squares).
	"Sarking felt," 56 lb. per roll	
	"Black sheeting," 34-35 lb. per roll	
2B	"Special inodorous," 60 lb. per roll	
	"No. 1 inodorous," 50 lb. per roll	
	"No. 2 inodorous," 40 lb. per roll	
	"Brown sheathing," 34-35 lb. per roll	
2C	"Black hair sheathing felt," 80 lb. per roll	
2D	"Bituminous hair felt, brown," 80 lb. per roll	
3A	"Impregnated tar felt," multiples of 5 lb. per 15 sq. yd. ..	36 in. by 15 yd. (135 sq. ft. net).
3B	"Sanded tar felt," multiples of 5 lb., per 15 sq. yd.	36 in. by 15 yd. (135 sq. ft. net).

(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.)

The felts are supplied in standard packages, and in the higher qualities the necessary accessories such as "lap" cement are often included. The weights and size of rolls are indicated in Table II.

GENERAL USES

It will be seen from the foregoing account of the composition and manufacture of roofing felts that the process is one requiring considerable technical knowledge and skill, and that many grades varying widely in properties and suited for different uses can be made from the constituent materials available. Some are intended for temporary, some for permanent buildings During the last generation there has been a marked increase in the use of felts on flat roofs of permanent buildings. In such work it is customary to employ a number of layers, generally up to three, bonded together with a hot bitumen similar in physical properties to that used for coating. The waterproof membrane so made can be finished in a variety of ways according to the service required :

(*a*) By sanding or gritting.
(*b*) With a layer of macadam.
(*c*) With asphalt.
(*d*) With screeding or tiles.
(*e*) With special heat-reflecting screeding, tiles or slabs.

In order to aid in the choice of particular types, recommendations have been included in an Appendix to British Standard Specification 747.

The success of any roofing system depends, not only upon the materials used, but upon proper constructional details and workmanship in fixing.

The following points are particularly important :

(i) The felts should, where possible, be laid out on a horizontal surface for sufficient time to allow the curl resulting from storage in the roll to relieve itself naturally.

(ii) *Boarded Roofs.*

(*a*) Boards should be well seasoned and firmly fixed. Due regard should be paid to the provision of flashing, drips, etc., to ensure that rain-water will be carried away to gutters and outlets. The opinion is growing that plain edged boarding is preferable to tongued and grooved, since the latter tends to impede ventilation and the drying-out of any water which may find its way between the felt and the board and promote decay of timber. Ventilation under the roof is also of importance.

(*b*) The felt should be firmly fixed with non-corrodible clouts and the laps and joints efficiently sealed. Care is necessary in cementing successive layers to one another. If patches of poor adhesion occur, these may in time result in blisters or bulging.

(iii) *Concrete Roofs.*

On concrete roofs the first layer of felt is usually fixed down with a layer of hot bitumen. Drainage, flashings, etc., for multiple layer roofs on concrete should conform with the methods adopted with asphalt.

(iv) The thoroughness with which the final surface bitumen is applied and properly blinded with the sand or gravel will contribute largely to the life of the roof and extend the period before renovation is required.

Some indication of the actual weights of built-up roofings comprising three layers of felt may be of interest. A series of nine brands laid by well-known firms showed a range in total weight of felt used per square yard of roof of from 70–136 oz. except one which weighed no less than 207 oz. per square yard. To these figures must be added about 40 oz. per square yard for each layer of bitumen used to cement the sheets together. (On concrete there will be three, and on boards two such layers.) These weights are increased by the grit used, according to type. It will be seen that the best forms of multilayer roofing provide a very substantial waterproof membrane.

Sarking felts are used to prevent the cooling of a roof space by air currents and to prevent the latter from forcing rain, snow and soot between the tiles or slates. The thicker and softer felts also provide a suitable bedding for slates when they are laid without battens, on boarded roofs.

British Standard Specification 747, previously referred to, covers sarking felts (Classes 2A, B, C and D), in addition to roofing felts.

Unless laid on boarding, all types of felt tend to sag between the rafters or purlins, and for this reason they are usually supported by wire mesh. Alternatively, felt reinforced by hessian may be used. This material may be stretched sufficiently tight to prevent excessive sagging.

Sarking felts should be lapped horizontally in such a way that any moisture which collects behind the tiles as a result of penetration or condensation will be conducted to the eaves and the lower edge of the felt should preferably discharge over the rain-water gutter.

Reference should be made to the "Code of Practice for Roof Tiling with Plain Tiles," a "Building Industries National Council" publication, for recommended constructions which include sarking felts.

LIFE OF BUILT-UP ROOFING

The life of bituminous roofing felts depends upon the quality of the material laid and the maintenance it receives. Even the cheapest felts have a long—almost an indefinite—life, if the surface is periodically coated with bitumen and gritted, but with the higher qualities and more costly and heavier grades far less is required in the way of periodic attention.

The chief enemy of the felts is summer sunshine. Ultra-violet radiation causes a chemical change in the surface bitumen coating, whereby it becomes hard and brittle, cracks and crazes, and finally powders and exposes the felt to decay. The chemical change produced in bitumen films by the action of light was the principle of one of the earliest photographic processes, the Daguerreotype. Observation shows that the action of sunlight can be markedly reduced by surfacing with sand, mica or mineral granules, which function simply by shielding the underlying bitumen. Much depends, therefore, upon the surfacing used and the degree of adhesion of the grains.

It is not possible to state what life may reasonably be expected from a roofing felt under normal conditions, but an investigation made some years ago in which a number of brands were subjected to careful periodic inspection can be summarized as follows :

Single layer felts laid without any surface treatment may begin to blister within a year, and in two or three years the blisters may break and expose the felt fibres. The most durable brands may not show any significant change in five or even seven years. The less durable felt is, of course, not destroyed by the development of the defects described, but quickly needs resurfacing with bitumen and re-gritting.

In built-up roofs the period of maintenance is determined by the behaviour of the outermost layer of felt. Records which have been kept of a series of 15 such roofs up to 20 years old laid by reputable firms show that surface treatment had to be given to four within the first five years and to nine within the first 10 years. It was found advisable in certain cases to repeat the treatment every three or four years.

The usual and simplest treatment in these cases consists in the application of some form of bitumen surfacing, preferably applied hot, and followed by a further layer of sand or gravel.

To sum up : 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.

LAW REPORT

BUILDING ESTATE : CLAIM FOR WORK DONE

E. J. & H. Bridgwater (trading as Bridgwater Bros.) v. Taper.—Official Referee's Court. Before His Honour C. M. Pitman, K.C.

THIS was an action by Messrs. E. J. & H. Bridgwater (trading as Bridgwater Bros.), public works contractors, against Mr. S. M. Taper, of George Lane, Lewisham, to recover £483 for work done in connection with the laying out of a brick yard at

Brockley, known as the Marquis Estate, as a building estate.

The defendant disputed the claim.

Mr. Cloutman appeared for the plaintiffs, and Mr. Reginald White for the defendants.

His honour, in giving judgment, said the defendant was the owner of a building estate at Brockley. In 1934 plaintiff entered into a contract to do all the necessary work of road making, drains, etc., for £4,149, according to specifications and drawings. They also undertook any levelling etc., of the ground, and had been paid all their charges except £438, which they now claimed. Defendant contests the plaintiffs' claim to a number of items. A point had been raised that the architect having given a decision in the matter in dispute, which was binding on the parties, the action before his honour was not maintainable. In his honour's opinion there had been no binding decision which precluded his going into the matter. As the work was being done it was approved.

Dealing with the items claimed by the plaintiffs, his honour came to the conclusion that the plaintiffs could not maintain their claim for £30 in connection with the removal of brickwork and an old boiler and engine works on the estate, which had been a brickfield.

The plaintiffs were entitled to charge in respect of the removal of pipes found on the land and some excavating work for the foundation wall and he awarded plaintiffs the sum of £10 4s. in respect of this work.

Plaintiffs claimed for extra expense incurred in the removal of certain obstacles found in the progress of the work. But his honour thought that the removal of such obstacles were risks they took when they entered into the contract, and they could not recover in respect of that work. In respect of some other work, however, they were entitled to £20, the architect being satisfied that this charge was reasonable.

The last item related to the disposal of surplus material found on the land. He accepted the evidence of the plaintiffs, that it was impossible to carry out the levelling of the estate without carting away the surplus material and disposing of it. The circumstances in respect of this were such as to make the terms of the contract unapplicable to it. The plaintiffs were entitled to be paid on a quantum meruit in respect of this claim. After giving careful consideration to the matter, he came to the conclusion that the plaintiffs were entitled to recover £370 in respect of this part of the claim. The amounts he had mentioned came to a total of £400 4s., and he gave judgment for plaintiffs for this amount with costs.

On the application of defendant, his honour granted a stay of execution for seven days, and upon the £400 4s. being paid into Court there would be a stay pending an appeal.

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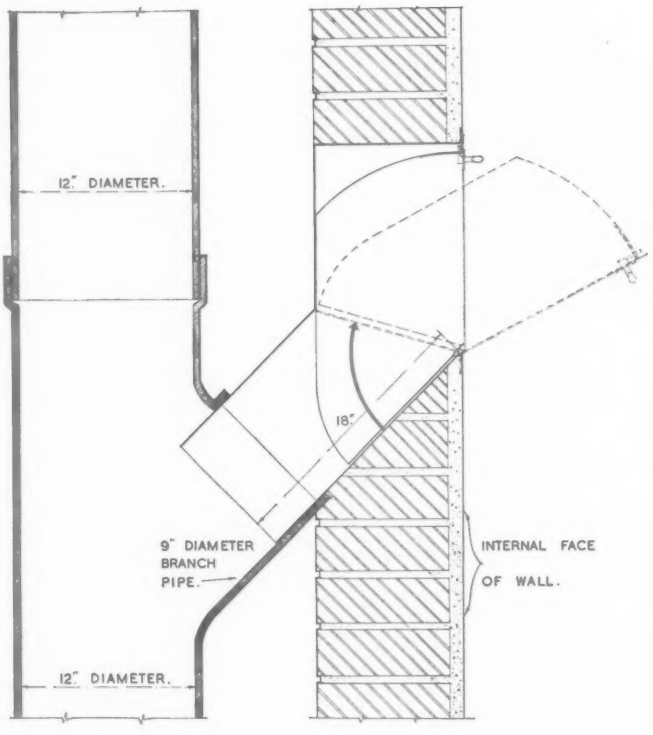
RURAL WORKERS' HOUSES

An increase in the number of applications made for financial assistance for the reconstruction of rural houses in Scotland is shown in the returns received by the Department of Health for Scotland from Scottish local authorities. In the quarter ended March 31, the number was 595 dwellings as compared with 541 in the same period last year.



TRADE NOTES

[*By PHILIP SCHOLBERG*]

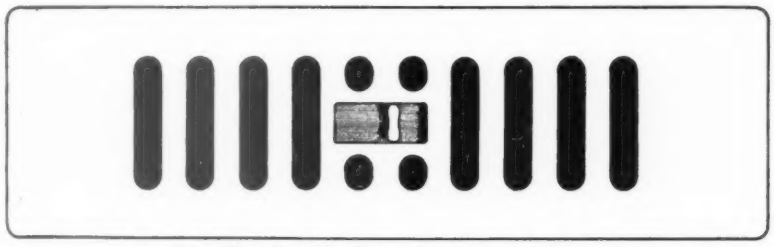
Refuse Disposal

IT may be fairly safely assumed that the Garchey system of refuse disposal, in which all rubbish is put straight down the sink, is the best arrangement which has so far been devised. Its capital cost, however, is very high, and in practice it can only be installed in flat schemes which are so big that they are virtually small towns on their own, like Drancy and Mr. Livett's Leeds jobs. In the meantime we go on with dustbins in clever little cupboards arranged so that porters can do the emptying from outside. But this is at best noisy, and everyone fills dustbins too full and the whole system is none too sanitary at the best of times. Chutes are an obvious improvement, but their use seems to be confined for some reason to the lower rental flats, and of course to working-class blocks. In the more expensive flats there will presumably be a service lift and it is not too complicated for servants to send down full bins for emptying. The design of chutes looks simple, but a lot of snags are liable to crop up in practice. Is there, for example, a letter chute which will *really* make certain that all letters posted in it will arrive at the bottom? I know quite a number of office blocks in which the staffs are definitely forbidden to use the letter chutes, and there was one celebrated occasion on which a test armful of a hundred or so letters produced such a mighty flush that more letters arrived at the bottom than had been put in at the top. And if comparatively simple things like letters can stick, rubbish is obviously ten times more difficult.

The drawing at the head of these notes shows the Ashanco rubbish chute. Quite a lot of thought seems to have gone into this design, and although it is possible to criticise the small restriction where the square section hopper runs into the circular branch pipe, the fact remains that the system works in practice. Asbestos cement pipe is recommended for the main stack, and the hoppers are in cast iron or galvanized sheet with a rubber seal on all internal edges. The hinged part of the hopper has a tongue which normally lies flush with the inside of the chute, but which rises when the hopper is opened and seals off the main chute so that no smells can come out when the hopper is opened. Two hoppers are standardized, the galvanized sheet one being intended for the more expensive flats, the cast-iron for the working-class blocks where treatment will possibly be rather tougher; this latter type is designed to conform to L.C.C. requirements and the complete hopper unit is arranged so that it can be bodily removed for cleaning. The main reception bin at the bottom of the chute is perfectly straightforward, and the stack has an extract ventilator at the top, while it is also quite easy to put a water lead just below the ventilator so that the whole chute can be flushed with water for cleaning. It is not, of course, possible to give definite prices, but the manufacturers tell me that a figure of £10 per floor is about right, though on a two- or three-storey block the cost of the main reception bin and refuse chamber might make this figure a little optimistic.—(*Thomas Ash & Co., Ltd., 12/14 Berkley Street, Birmingham.*)

Asbestos Cement Flue Pipes

The mention of asbestos cement in the stack pipe referred to above reminds me



The Kleanline Ventilator described on this page

that there is a new British Standard Specification (No. 835) covering "Dimensions and workmanship of asbestos cement spigot and socket flue pipes and fittings (heavy quality) for domestic heating stoves." Five years ago the Institution issued a specification (No. 567) for flue pipes for use with gas-fired appliances. It has subsequently been found necessary to provide a somewhat heavier pipe for use with coal and coke-burning stoves, and the new standard follows the previous one fairly closely and covers pipes and fittings in sizes from 3 in. to 12 in.

In using these pipes it is necessary to make certain that they are not directly exposed to a flame, and it is therefore recommended that a short length of cast-iron pipe should always be used next to the stove. In order that the asbestos cement pipe can be connected up to this easily there is an appendix to the specification showing a suitable form of adaptor.—(*The British Standards Institution, 28 Victoria Street, London, S.W.1.*)

Hollow Concrete Floors

In both the United States and Germany some use is made of inflatable air bags for the manufacture of hollow precast concrete units, and even for floors cast *in situ*. It is interesting, therefore, to find that an English firm, Concrete, Ltd., has been using the same process for the last five years, and is now sufficiently satisfied with it to feel justified in offering it to building contractors on a royalty basis.

The use of air bags is perfectly reasonable, for when you come to think about it the tiles in the ordinary hollow tile floor are not doing any structural job but are merely there as a comparatively simple and cheap way of leaving regular holes in the concrete. Some years ago I remember that somebody marketed boxes made of a stiffish cardboard, the idea of these being that they could be placed at regular intervals on top of the shuttering, that they were strong enough to be walked on and to stand the ramming of the concrete, and that they were left in position in the finished floor. They were, in fact, little more than hollow tiles made of something cheaper. The idea seemed a good one, but not very much more has been heard of it and I do not know anyone who has experience of it on the job. The air bag has the same basic idea at the back of it, but it goes one better in that the air bag is deflated after the floor is poured and can thus be used time after time.

These air bags, or pneumatic cores, have been evolved by two engineers, Messrs. Ambrose and Mathews, and are made of canvas-covered rubber. In the making of precast floors the cores are inflated to a pressure of about 5 lb. per square inch, and then wrapped in Kraft paper to protect them and to make them easier to withdraw after the concrete has set. The cores are then placed in the moulds and carried to the vibrating table, when the core is folded back to allow the concrete for the soffit to be poured in and vibrated; the unit is then completed in a quite straightforward way, the cores being held in position by timbers and holding down bars. After three or four hours, when the initial set has taken place, the cores can be withdrawn for further use. The whole process can be carried out by unskilled labour, and it takes about 20 minutes to produce a complete beam. The same process can, of course, be adapted to produce other units.

If a precast floor is unsuitable the cavities in an *in situ* floor can still be formed by the pneumatic cores, but these cores have an independent canvas cover so that they can be more easily withdrawn. The first operation is to lay the ceiling concrete on the centering, and then the pneumatic cores are laid on top of it. Reinforcement is then placed in position and the concrete is poured and rammed in the ordinary way. After about four hours the cores are deflated and withdrawn from their outside cover; this is done from one end by a tape which turns the core inside out and allows it to peel away easily from the face of the concrete. It is then only necessary to fill in the holes through which the cores have been withdrawn, this forming the solid ends of the slabs.

It should be realized that these cores do not involve any new theory of design, for they are nothing more than a new way of putting a hollow space where you want it. They are therefore perhaps of more interest to the contractor than to the architect, but their use at least means that the resultant floor will probably be lighter, for hollow tiles, light as they are, still weigh something. The cores themselves will not last for ever, but they should be comparatively cheap in first cost. Two or three weeks ago I referred in these notes to an Italian system for casting large bore concrete pipes *in situ*. As far as I can make out, the same sort of core was used here, and it was not then suggested that there was any trouble from undue wear of the cores.—(*Pneumatic Cores, Ltd., 632 Grand Buildings, Trafalgar Square, London, W.C.2.*)

Ventilators

The sketch on this page shows a nice simple hit-and-miss ventilator which is well made of Everite plastic hardware and is called the Kleanline. It is made in two sizes for use with 9 by 3 and 9 by 6 air bricks, though there is naturally no reason why it should not be used anywhere else if controllable ventilation is necessary. Prices run from 3s. to 8s. 3d., according to size and finish, my personal prejudice being in favour of the white. Fixing may either be direct to the wall round the air brick cavity or to a wooden frame recessed in it. If we must have air bricks, and most people know what building regulations are, this seems a very neat method of finishing them off.—(*Everite, Ltd.*)

Manufacturers' Items

Messrs. Pharaohs (Distributors), Ltd., of 9–13 King William Street, E.C.4, have just issued an illustrated brochure devoted to the use of Insulite Hardboard in the building and allied trades. Insulite Hardboard may be regarded as reconstituted wood, and it is claimed to possess most of the advantages and few of the disadvantages of timber, combined with properties which the natural product is unable to supply. Possibly the outstanding features of the boards are their large sizes (up to 4 ft. by 14 ft.) and attractive and durable surfaces, combined with freedom from grain, knots and laminations. The brochure states that "the large sheets enable any given area to be covered with a minimum number of joints and, in this respect, it will be seen that Insulite Hardboard has considerable advantages over natural timber. A variety of sizes is available from stock and, by a judicious selection from these, waste can be reduced to a minimum, and frequently eliminated entirely. Two thicknesses, $\frac{1}{8}$ in. and $\frac{3}{16}$ in., are manufactured, the former being, naturally, lighter and more flexible than the latter which, however, is more robust and better fitted for heavy duty work."

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Bakelite, Ltd., of 40 Grosvenor Place, S.W.1, have sent us a copy of the latest booklet entitled *Bakelite Veneers and Wall Panels*. This booklet describes the properties and applications of the firm's decorative materials, and recent examples of their use. Some of the colours and patterns available are illustrated.

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The British Aluminium Co., Ltd., have opened a branch office and warehouse at Abbey Buildings, Middle Abbey Street, Dublin (Telephone No.: Dublin 22966), under the management of Mr. D. E. Cottrell.

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The following orders were received by the Helical Bar and Engineering Co., Ltd., during April last: Nurses' hall, Royal Infirmary, Hull: Floors, etc. (Gelder and Kitchen, F/F.R.I.B.A.); flats, Bramley Road, Kensington: floors, roofs, stairs, etc. (E. J. Messent, A.M.I.C.E., Borough Engineer and Surveyor); hospital and home, Crown Lane, Streatham: floors, roofs, etc. (R. T. James and Partners); alterations to Goods Station, Hockley: floors, etc. (J. F. Bickerton, Resident Engineer, G.W.R.); extensions to Town Hall, Bethnal Green: floors, etc. (E. C. P. Monson, F.R.I.B.A.); extensions to St. David's Station, Exeter: floors, roofs, etc. (P. Emerson Culverhouse, F.R.I.B.A.); cinema and offices, Banbury, Oxon: floors, stairs, etc. (A. P. Starkey and P. W. Adkins).

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A tribute to British companies who are devoting much effort to research, particularly concerning air defence, was made by Sir Kingsley Wood, Secretary of State for Air, last week, when he visited the Northern Aluminium Co.'s Works at Banbury.

"It is sometimes alleged," he said, "that other countries are devoting more money and effort in relation to research, particularly concerning air defence, than Great Britain. I am glad that this company, and many others that I have recently visited, show that this charge is inaccurate, and certainly our organizations up and down the country are more and more realizing the vital importance of this work.

"Speed and promptitude in delivery in connection with defence is of the utmost importance, and I am glad to know that this company has been distinguished by speed and promptitude in its deliveries."

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Philips Lamps, Ltd., have moved to a new eight-storey building at the northern end of

Shaftesbury Avenue. The new address : Philips Lamps, Ltd., Century House, Shaftesbury Avenue, London, W.C.2 Telephone No. (as before) : Gerrard 7777.

THE BUILDINGS ILLUSTRATED

MESSRS. CREED'S FACTORY, CROYDON (pages 849-851). Architects : Hugh Macintosh and Partners. The general contractors were Grace and Marsh, Ltd., who were also responsible for the excavation. Sub-contractors and suppliers included : Permanite, Ltd., asphalt ; Trussed Concrete Steel Co., Ltd., reinforced concrete ; London Brick Co., Ltd., rustic flettons, sand-faced flettons and partitions ; Venesta, Ltd., lavatory partitions ; Attoc Blocks, Ltd., partitions ; Stuart's Granolithic Co., Ltd., and A. Vigers, Sons & Co., Ltd., patent flooring ; Korkoid Decorative Floors, ruboleum flooring ; Prodorite, Ltd., acid-resisting floors ; R.I.W. Protective Products, Ltd., "Toximent" concrete waterproofing ; Heywood and Bryett, central heating ; Croydon Gas Co., gasfitting ; Ideal Boilers and Radiators, Ltd., boilers ; Holliday Hall and Stinson, Ltd., electric wiring ; Benjamin Electric, Ltd., electric light fixtures ; James Farquharson and Sons, kitchen ventilation and equipment ; John Bolding and Sons, sanitary fittings ; W. and R. Leggott, Ltd., and Walker and Wood, Ltd., door furniture ; Crittall Manufacturing Co., Ltd., casements ; Fireproof Shutter and Door Co., Ltd., rolling shutters ; Fredk. Braby & Co., factory railings ; F. A. Norris & Co., canteen railings ; Tile Decorations, Ltd., canteen kitchen tiling and external column tiling ; Bennie Lifts, Ltd., lifts. Bull Motors (Branch of E. R. & F. Turner, Ltd.) Bull super silent motors.

TUNBRIDGE WELLS CIVIC CENTRE, ASSEMBLY HALL AND POLICE COURTS (pages 871-875). Architects : Percy Thomas and Ernest Prestwich. The general contractors were R. Corben and Son, Ltd., who were also responsible for the panelling to the assembly hall. Consulting engineers for heating : Albert T. Snell and Partners. Sub-contractors and suppliers included : J. H. Nicholson & Co., Ltd., heating and ventilation ; Troughton and Young, Ltd., electrical installation and stage electrical work ; Trussed Concrete Steel Co., reinforced concrete stairs, floors and roof ; Connies and Meaden, Ltd., constructional steelwork ; John Stubbs (Marble and Quarzite), Ltd., marble floor wall linings ; Korkoid Decorative Floors, flooring ; Hollis Bros. & Co., Ltd., wood block floors ; Art Pavements and Decorations, Ltd., terrazzo wall linings and staircases ; Gilbert Seale and Son, Ltd., fibrous plaster ; Crittall Manufacturing Co., Ltd., metal windows ; Henry Hope and Sons, Ltd., lantern lights and haystack light ; H. H. Martyn & Co., Ltd., decorative metalwork, special windows and canopy ; Shanks & Co., Ltd., sanitary fittings ; Merchant Adventurers of London, Ltd., electric fittings ; Limmer and Trinidad Lake Asphalt Co., Ltd., asphalt tanking and roofs ; Shapland and Petter, Ltd., flush doors and wooden furniture ; W. A. Baker & Co. (1910), Ltd., wrot iron balustrades ; Hall and Dixon, Ltd., stage equipment, curtains and safety curtain ; Strand Electric and Engineering Co., Ltd., footlights ; W. G. Harris & Co., carpets and blinds ; W. Lusty and Sons, Ltd., balcony chairs ; Cox & Co., Ltd., auditorium chairs and lounge chairs and tables ; Carter & Co., Ltd., tiling to payboxes and floors ; Francis Morton Junior & Co., spring floor ; Sumerling & Co., Ltd., kitchen equipment ; The British Plaster Board, Ltd., acoustic plaster ; Pilkington Bros., Ltd., etched glass ; James Gibbons, Ltd., locks, furniture and cell doors ; Kleine Co., Ltd., reinforced concrete stage floor ; Bath and Portland Stone Firms, Ltd., Portland stone ; British Reinforced Concrete Engineering Co., Ltd., foundation fabric ; R.I.W. Protective Products Co., Ltd., waterproofing to stonework ; Mander Bros., paint ; Walpamur Co., Ltd., acoustic paint ; Electrical Installations, Ltd., electrical installation ; G. T. Rackstraw, Ltd., panelling in court ; The Thermolux Glass Co., Ltd., court-room laylight ; Roneo, Ltd., steel furniture ; Bromsgrove Guild, Ltd., wrot iron balustrades ; Haskins, rolling shutters ; S. F. Bowser & Co. (London), Ltd., petrol pump ; Gent & Co., Ltd., electric clocks. Bull Motors (Branch of E. R. & F. Turner, Ltd.) Bull super silent motors.

BUILDING NEWS

LONDON

BERMONDSEY. *Extension.* The L.C.C. is to enlarge Bacon's school, Bermondsey, at a cost of £19,328.

CITY OF LONDON. *Buildings.* Plans passed by the Corporation : Building, 1 St. Swithin's Lane, and 1 & 2 George Street ; alterations, 8/14 King Street and 37/38 Hosier Lane, Smithfield ; building, 161/166 Fleet Street ; alterations, 19 Queen Victoria Street ; additional storey and alterations, 5th floor, 8 Lloyd's Avenue ; alterations, 3 & 4 Queen Street ; additional storey and alterations, Walbrook Wharf, Cousin Lane ; alterations, 112 Cheapside, and 6 Honey Lane Market.

DULWICH. *Community Centre.* The L.C.C. is to erect a community centre at Dog Kennel Hill, Dulwich.

STOKE NEWINGTON. *Extension.* The L.C.C. is to enlarge the Stoke Newington central school, at a cost of £16,100.

PROVINCES

CHELMSFORD. *Rebuilding.* Plans passed by the Corporation : Re-building "White Horse" public house, Ind Coope and Allsopp ; 28 bungalows, Nalla Gardens, Mr. W. L. Allan ; two houses, Burns Crescent, R. H. Currie, Ltd. ; two houses, Longstomps Avenue, Mr. W. J. Aldred ; two houses, Pines Road, Highfields Estate, Tyler and Dobie ; extensions, and A.R.P. shelter, Broomfield Road Works, Christy Bros. and Co., Ltd.

CHELTENHAM. *Factory.* The Integral Auxiliary Equipment, Ltd., is to erect a factory for light engineering work in Tewkesbury Road, Cheltenham.

CHELTENHAM. *Factory Buildings.* Messrs. T. P. Bennett and Sons, architects, of London, are to erect a factory and administrative buildings to be operated by Messrs. Smiths, of London, for the manufacture of aircraft instruments and sparking plugs in Evesham Road, Cheltenham.

DUDLEY. *Extensions, etc.* Plans passed by the Corporation : Extensions, Atlas Works, Netherton, Clydesdale Stamping Co. ; rebuilding "Loving Lamb," Northfield Road, Netherton, Wolverhampton and Dudley Breweries ; extensions, Walker Street, Netherton, J. S. Talbot and Sons ; bungalow, Marriott Road, Netherton, Mr. H. Smart ; shop with flat over and bakehouse, Watsons Green Road, Mr. H. Vanes ; 37 houses off Bunns Lane, A. and J. Mucklow ; greyhound track, Dudley Wood Road, Cradley Heath, Mr. J. Sidaway ; store and workshop, Waterloo Place, Fleetwood Bros.

EASTBOURNE. *Houses.* Messrs. B. and T. A. Groves are to erect 60 houses on the Highfield Estate, Eastbourne.

ESTON. *Houses, etc.* Plans passed by Eston U.D.C. : Four houses, Ravensworth Avenue, Normanby, Mr. G. W. Miles ; relief office, Essex Avenue, Grangetown, North Riding C.C. ; Roman Catholic Senior Elementary School, Normanby Road, South Bank ; alteration, Eston and Normanby Social Club, Eston and Normanby Social Club, Ltd. ; club, Redcar Road, South Bank, South Bank British Legion Club, Ltd. ; seven houses, High Street, Mr. G. W. Wade ; two shops, Normanby Road, Lady Hewley Trust.

GUILDFORD. *Houses, etc.* Plans passed by the Corporation : Two houses, Wilderness Road, Onslow Village, Mr. S. D. Pendry ; alterations and additions, The Friary Brewery, Commercial Road, Friary, Holroyd and Healys Breweries, Ltd. ; four houses, 144-147 Saffron Platt, Tilehouse Farm Estate, C. C. Yeates & Co. ; house, 31 Waltham Road, Mr. J. B. Waltham ; alterations, Barclays Bank, 18 High Street, Barclays Bank, Ltd. ; house, New Cross Road, Mr. G. A. Hart ; two bungalows, 26 and 27 Saffron Platt, Tilehouse Farm Estate, Hammillard & Co., Ltd. ; additions, Methodist Church, Chertsey Street, The Trustees ; reconstruction of mortuary, Isolation Hospital, Hospital Road, Guildford and Godalming Joint Hospital Board.

HITCHIN. *Infirmary Block.* The Herts C.C. is to erect an infirmary block and mortuary and extend the nurses' home at Chalkdell House, Hitchin, at a cost of £31,947.

MANSFIELD. *Houses, etc.* Plans passed by the Corporation : Four houses, Harvey Road, Mr. S. R. Crichton ; house, Hillsway Crescent, Mr. W. Tansley ; additions to hosiery factory, Sheepbridge Lane, Mr. R. H. Turner ; house, West Bank Avenue, Miss E. G. P. Godden ; four houses, Skegby Lane, Mr. A. Cox ; alterations, Palais-de-Danse, Leeming Street, Mansfield Brewery Co., Ltd. ; house, Millersdale Avenue, G. Edwards & Co. ; store, Harrington Street, The Mansfield Hosiery Mills, Ltd. ; six houses, Villiers Road, Mr. F. C. Uphill ; house, Sheepbridge Lane, Mr. G. S. Thurman ; two houses, Sheepbridge Lane, Construction Co. ; two houses, Clifton Grove, Mr. L. Shaw ; bungalow, Raleigh Road, Mr. J. C. Clarke.

NORWICH. *Technical College.* The Norwich Education Committee is to erect a technical college and art school at a cost of £176,500.

NOTTS. *Extension.* The Notts C.C. is to enlarge the Ranson mental colony at a cost of £19,000.

ORPINGTON. *Sanatorium.* The Kent C.C. has purchased the Norsted Manor Estate, Orpington, as a site for the proposed new tuberculosis sanatorium.

RAWTENSTALL. *Extensions.* The Corporation has approved plans for extensions at the King's Cinema, Booth Street, Waterfoot, for the Bacup and Rossendale Land and Building Co., Ltd.

SHIPLEY. *Houses.* Plans passed by the U.D.C. : Two houses, North Bank Road, Mr. R. Hudson ; two houses, Bingley Road, Mr. H. Chippendale ; seven houses, Staveley Road, Staveley Grange Estate, Mr. A. Suttel ; 22 houses, Thornacre Road, Mr. A. Greenwood.

WORTHING. *Alterations, etc.* Plans passed by the Corporation : Alterations, 18 and 20 Bath Place, Potter and Trower ; two houses, Copthorne Hill, F. W. Payne and Linfield ; two houses, Canterbury Road, Mr. A. C. Draycott ; six houses, Nutley Crescent, Duncan B. Gray and Partners ; nine houses, Pentland Road, A. M. Lyne, Ltd. ; 14 houses, A'Becket Gardens, Mr. E. J. Love ; six houses, adj. The Boulevard, Field Place Estate Co., Ltd. ; church, Salvington Road, Mr. E. Brian Tyler for Durrington Free Church ; hotel, West Parade and Grand Avenue, Mr. J. E. Adamson ; rebuilding 30 and 32 Montague Street, Prices Tailors, Ltd. ; headquarters for 70th Sussex Searchlight Regiment R.A., Upper Brighton Road, Clayton and Black ; offices, Park Road, Brighton, Hove and Worthing Gas Co., Ltd. ; block of flats, Brighton Road, Mr. F. J. Clements ; two blocks of flats, Haynes Road, Graham Son and Scott ; alterations and additions, 4 Warwick Place, Robinson Trust, Ltd. ; six houses, Nutley Crescent, Nutley Estates, Ltd. ; house, Bury Drive, West Sussex Coast Development Co. Ltd. ; four houses, Downside Avenue, Monks Farm Estates, Ltd. ; six houses, Offington Avenue, Hasler Estates ; two houses, Church Walk, Mr. H. E. Snewin.

PRICES

A NEW DEVELOPMENT

By O. A. DAVIS

A NEW development is incorporated in the "Current Prices for Measured Work" published this week. This consists of giving prices for "Materials Only" as well as the usual prices for Work Executed Complete—in other words, the Architect or Estimator not only has a price for most ordinary measurable items, but he can also see at a glance what has been allowed *in that price* for materials, and, by a simple subtraction, he can see what has been allowed for labour. Although these new prices are called "Materials Only," for convenience, it should be made clear that they include a proportion of the total overhead charges and profit.

It now becomes much easier for estimators to calculate how prices will be affected by different labour rates, by the use of different materials and by materials bought in a less or more expensive market. It should be emphasized that all three sections—Market Prices, Measured Rates and App. Est.—can be used in conjunction with one another, and that the "Materials Only" prices are based on the prices given in the "Market Prices" section with the addition of 10 per cent. for overhead charges and profit.

Some architects may feel that this feature merely adds confusion to a matter which is already complicated enough; in which case they would be advised to disregard the "Materials Only" prices altogether—that is, all prices given in italics.

Other architects, it is hoped, want to make the best possible use of the PRICES Section, so perhaps it would be as well to state briefly the ways in which it *can* be used.

One of the first things required in connection with any job is an approximate estimate, and this is usually done by means of a cube. It is only fair to say that nothing can compare with cubing for simplicity, and it is only when greater accuracy is required that approximate quantities should be taken off and the App. Est. prices used. There are many cases, however, where cubing is impracticable (such as in alterations to existing buildings), and these are the cases where App. Est. prices are most valuable.

In order to keep the App. Est. section as simple as possible, the range of finishes is not very large, but there is no reason why an architect should not look up prices in the "Measured Rates" section and adapt the prices

to his own requirements—provided, of course, that this is done intelligently —it cannot be left to the office boy.

Tenders have a habit of being high, and if there is no Bill of Quantities the architect will probably call for the builder's priced estimate. If the main items in each trade are compared with the published " Measured Rates " and due allowance is made for the particular conditions of the job —Labour Rates, etc.—it should be possible to see whether the prices are unreasonable or whether the design and specification are merely too extravagant.

In due course variations nearly always occur and either estimates given during the course of the job or the builder's final account have to be checked. Normally " Measured Rates " and " App. Est." prices can be used for checking these Estimates and Accounts, and " Market Prices " can be used for checking Daywork Accounts. Labour Rates in Daywork Accounts can also be checked by use of the Schedule of Labour Rates published by The Architectural Press (price 2d.).

One of the first difficulties will probably be that some item cannot be found in " Measured Rates " at all. This is inevitable, but it should be remembered that this section is intended to be used in conjunction with the " Market Prices " section. For instance, there is only sufficient space to give one quality stoneware drainpipe in " Measured Rates," but there are several qualities of pipe in " Market Prices," and it is only necessary to look up the difference between the two qualities, add 10 per cent. for overhead charges and profit, and then add the difference to or deduct it from the measured rate price. Quite obviously the labour charge is not affected.

In other cases it may not be possible to find exactly the right item either in " Measured Rates " or in " Market Prices," in which case the position is still not necessarily hopeless. It should be remembered that materials cost the same for whatever purpose they are used, and labour is the only variable factor. The materials for 4 : 2 : 1 concrete, for instance, cost the same whether they are spread and levelled as surface concrete or filled into shuttering as staircases, beams, etc. If a rather unusual item of 4 : 2 : 1 concrete has to be priced, it is only necessary to turn to the nearest equivalent item in " Measured Rates." From this the cost of the " Materials Only " can definitely be established (to the extent that any published prices can be considered definite) and the cost of labour for a reasonably similar item can also be seen. Thus it is only left to the architect to judge to what extent the labour factor must be varied, i.e. whether it would take 10 per cent. or 20 per cent. longer to deposit the materials than it would in an ordinary beam.

Returning to the question of Daywork Accounts, it may sometimes be felt that the charges are excessive although the individual prices of materials compare favourably with those given in " Market Prices." It may be that the actual *quantity* of materials charged is excessive, and in such cases it may not be very difficult to check. If the work can be measured at all, it is only necessary to do so and to price it at the " Materials Only " prices given in " Measured Rates." This should give an accurate cost of the actual materials required for the job, including 10 per cent. for overhead charges and profit.

The latter should, of course, be adjusted to suit the proper percentage allowable. Labour charges are naturally more difficult to check, as work is often charged daywork because of the difficulties of fixing or placing the materials in position. However, if the materials charged are found to be excessive in quantity, there are some grounds for believing that labour charges are excessive also.

In conclusion, it might be as well to say that no published prices can take the place of all the detailed knowledge which a good estimator must necessarily acquire. But the prices published in the JOURNAL should be of real use to all architects who are prepared to use them intelligently.

O. A. DAVIS, F.S.I.

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% 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.

PART 3

CURRENT PRICES FOR MEASURED WORK—I

BY DAVIS AND BELFIELD

PRELIMINARIES

Water for the works		1½%
Third party and other insurances to persons and property, employer's liability, unemployment and Public Health insurances, and fire insurances (based on value of contract) ..		
Single scaffolding	per yard super	2/–
Independent scaffolding ..	per yard super	2/8

EXCAVATOR

		Ordinary Ground	Clay
Surface digging average 9″ deep and wheeling and depositing on spoil heap, not exceeding two runs	per yard super	–/9	1/1
Excavating not exceeding 5′ 0″ deep to form basement and getting out	per yard cube	1/11	2/10½
Ditto, exceeding 5′ 0″ deep and not exceeding 10′ 0″ deep	per yard cube	2/5	3/6
Excavating not exceeding 5′ 0″ deep to form surface trenches and getting out	per yard cube	2/7	3/10
Ditto, exceeding 5′ 0″ deep and not exceeding 10′ 0″ deep	per yard cube	3/7	5/0
Ditto, not exceeding 5′ 0″ deep to form basement trench excavation commencing 10′ 0″ deep, and getting out	per yard cube	3/4½	4/6
Returning, filling in and ramming around foundations	per yard cube	1/1	1/5

EXCAVATOR—(*continued*)

		Ordinary Ground	Clay
Filling barrows and wheeling and depositing excavated soil not exceeding two runs	per yard cube	1/1	1/5
Spreading and levelling from excavated heaps in layers not exceeding 12″	per yard cube	–/9	1/–
Filling into carts or lorries and carting away	per yard cube	4/6	4/10
Planking and strutting to sides of basement, excavation, including strutting	per foot super	1/–	–/9
Planking and strutting to surface trenches (both sides measured)	per foot super	–/4½	–/3
Hardcore, broken brick, filled in under floors and well rammed and consolidated	per yard cube	6/6	*4/6*
Hardcore, broken brick, deposited, spread and levelled, and rammed to a true surface 6″ thick	per yard super	1/4	*–/9*

CONCRETOR

Foundations and Mass Concrete

Portland cement concrete 1 : 6 with unscreened ballast, in foundations and masses exceeding 12″ thick	per yard cube	20/2	*16/8*
Ditto, 1 : 3 : 6, with one part of cement and three parts of sand and six parts of clean gravel	per yard cube	20/9	*17/3*
Ditto, 1 : 2 : 4 with one part of cement, two parts of sand and four parts of ¾″ crushed graded shingle	per yard cube	25/7	*22/1*

CURRENT PRICES

BY DAVIS AND BELFIELD

EXCAVATOR, CONCRETOR AND BRICKLAYER

CONCRETOR—(*continued*)

Add if mixed by hand labour ..	per yard cube	2 –	
Add if in foundations not exceeding 12″ thick	per yard cube	2 3	
Add for mechanical hoisting ..	per yard cube	1 6	
Add for hand hoisting per 10 feet	per yard cube	2 3	
Surface Beds			
Portland cement concrete 1 : 6, bed 6″ thick, spread and levelled	per yard super	3 10	*2 9¼*
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/5¾	
Add for surface finished with spade face	per yard super	–/3½	
Add if laid in two layers with fabric reinforcement (measured separately) ..	per yard super	–/3½	
Upper Floors and Flats			
Portland cement concrete 1 : 2 : 4 as before described, 6″ thick, packed around fabric reinforcement (measured separately) finished with spade face	per yard super	5 3	*3 8¼*
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/7½	
Casings			
Portland cement concrete 1 : 2 : 4 as before, in encasing to steel joists	per foot cube	1 3	–/9¾
Ditto, packed around rods (measured separately) in lintols, sectional area not exceeding 36 inches	per foot cube	1 5½	–/9¾
Ditto, ditto, over 36 inches and not exceeding 72 inches sectional area	per foot cube	1 4½	–/9¾
Ditto, ditto, over 72 inches and not exceeding 144 inches sectional area	per foot cube	1 3½	–/9¾
Ditto, ditto, over 144 inches sectional area	per foot cube	1 2½	–/9¾
Walls in Situ			
Portland cement concrete 1 : 6 with unscreened ballast in 9″ walls packed around rods (m/s)	per yard super	6 6	*4 2*
Ditto, in 12″ walls ditto	per yard super	7 11	*5 6½*
Reinforcement			
⅝″ diameter and upwards mild steel rod reinforcement, cut to lengths, including bends and hooked ends and embedding in concrete lintols ..	per cwt.	21 –	*15 –*
Under ⅝″ diameter, ditto	per cwt.	22 6	*16 6*
Formwork			
Close boarded formwork to soffites of floors and strutting up	per yard super	3 9	*1 6*
Vertical formwork to sides of concrete walls, including struts, etc. (both sides measured)	per yard super	3 –	*1 3*
Formwork to sides and soffites of concrete lintols and beams	per foot super	–/6	–/2½
Wrot ditto	per foot super	–/7	–/2½

BRICKLAYER

		Flettons £ s. d.	Second Stocks £ s. d.	Blue Staffordshire Wirecuts £ s. d.
Reduced brickwork in lime mortar 1 : 3 with ¼″ joints..	per rod	22 19 9 *13 19 6*	31 18 8 *22 18 5*	
Ditto, ⅜″ joints.. ..	per rod	22 12 7 *13 18 8*	30 17 2 *22 6 10*	
Reduced brickwork in cement mortar 1 : 3 with ¼″ joints	per rod	24 14 9 *14 16 0*	33 13 2 *23 14 8*	50 13 2 *37 3 9*
Ditto with ⅜″ joints	per rod	24 13 3 *15 1 4*	32 16 11 *23 8 10*	49 4 9 *36 5 2*
Add if lime mortar hand mixed	per rod	5 8	5 8	
Ditto cement mortar ..	per rod	12 9	12 9	9 –
Half brick walls in lime mortar 1 : 3 ¼″ joints	per yard super	5 1 *3 –*	7 – *5 –*	
Ditto in cement mortar 1 : 3	per yard super	5 5½ *3 2*	7 5 *5 1½*	11 1 *8 2*
Labour forming 2″ cavity to hollow walls including wall ties, etc.	per yard super			–/9

		£ s. d.
Add to the price of reduced brickwork for brickwork in underpinning	per rod	4 0 0
Ditto, for brickwork circular on plan to flat sweep	per rod	5 0 0
Ditto, ditto, to quick sweep	per rod	10 0 0
Extra for internal fairface and flush jointing	per yard super	1 1½
Extra for grooved bricks as key for plaster	per yard super	–/3
Raking out joints ditto	per yard super	–/4½
Hacking concrete ditto	per yard super	–/6

BRICKLAYER—(*continued*)

Horizontal double slate damp-proof course 4½″ wide bedded in cement mortar ..	per foot run	–/4	*–/1⅞*
Ditto exceeding 4½″ in width ..	per foot super	–/10	*–/5*
Vertical ditto	per foot super	1 –	*–/5*
" Ledkore " (Grade B) D.P.C. ..	per foot super	–/9	*–/7*
Plumbing angles	per foot run	–/1	
Rake out joints and point to lead flashings	per foot run	–/2	
Ditto stepped	per foot run	–/3	
Bedding door frames	per foot run	–/1	
Ditto and pointing one side	per foot run	–/2	
Ditto and pointing both sides	per foot run	–/3	
Parge and core flues	each	4 –	
Set and flaunch only chimney pots	each	5 –	
Hoisting and fixing metal windows size 3′ 6″ × 4′ including cutting and pinning lugs to brickwork and bedding frames in cement mortar and pointing in mastic on one side	each	5 –	
Ditto, including screwing to wood frame (measured separately)	each	3 –	

		9″×3″	9″×6″
Form opening for air brick including slate lintol and render around in cement and sand to 13½″ wall and build in Terra Cotta air brick	each	1 6 *–/10½*	2 6 *1/7*
Galvanized cast iron School Board pattern air bricks and building in	each	1 1½ *–/6*	1 10½ *1/–*
Fixing only fireplace simple interior and surround	each	27 6	

Partitions

	2″	2½″	3″	4″
Breeze set in cement mortar per yard super	2 11 *1/8*	3 5 *1/11*	4 1½ *2/2*	5 1½ *2/11*
Clay tile ditto .. per yard super	4 5 *2/9*	4 11 *3/1*	5 8 *3/5*	6 4½ *3/11*
Pumice ditto .. per yard super	4 6 *3/3*	5 2½ *3/10*	6 3 *4/4*	7 2 *5/–*
Plaster ditto .. per yard super	4 – *2/9*	4 11 *3/5*	6 – *4/–*	7 2 *5/–*
White glazed both sides best quality bricks, set in cement mortar and pointed in Parian cement per yard super		42 5	*33/–*	

Facings

Prices are extra over Fletton brickwork and are for raking out joints and pointing with a neat struck weathered ¼″ joint in cement mortar. For raking joints and pointing in white cement add an extra 11d. per yard super to the following prices.

		Flemish Bond	English Bond	Stretcher Bond
Stock facings p.c. 93/– ..	per yard super	4 11 *3/2*	5 4 *3/6½*	4 1 *2/4*
Rustic Flettons p.c. 70/6	per yard super	3 4 *1/6*	3 6 *1/8*	2 11 *1/3*
Blue pressed p.c. 180/– ..	per yard super	11 7 *8/6*	12 11 *9/7½*	9 1 *6/6*
Sand faced hand made reds p.c. 120/–	per yard super	8/– *5/2½*	8 7 *5/10*	6 4 *3/11*
White glazed headers p.c. 470/– and stretchers 480/– ..	per yard super	32/– *28/2½*	36/– *32/2*	24 8 *21/4*
For a variation of 10/– per M. in p.c. of facing bricks size 8¾″×2⅝″ on face with ¼″ joints add or deduct	per yard super	–/9	–/10	–/6¾

	Rustic Flettons	Stock Facings	Sand Faced Hand Made Reds
Half brick wall stretcher bond in cement mortar built fair and joints raked out and pointed in cement mortar on one side .. .. per yard super	8 7½ *4 4½*	9 9½ *5 6½*	12 – *7 1½*
Ditto and pointed both sides per yd. super	10 6 *4 5*	11 8 *5 6¾*	13 10 *7 1¾*
One brick wall in cement mortar built fair and joints raked out and pointed in cement mortar on one side per yard super	15 5 *8/9½*	17 8½ *11/1*	22 1 *14/3*
Ditto and pointed both sides per yd. super	17 3 *8/10*	19 6½ *11 1½*	23 10 *14 3½*
Half brick wall built in best quality white glazed one side bricks, stretcher bond, in cement mortar built fair and pointed in Parian cement per yard super		31 –	*24/2*
Ditto white glazed both sides and pointed both sides .. .. .. per yard super		41 9	*32/7*

CURRENT PRICES

BY DAVIS AND BELFIELD

BRICKLAYER, DRAINLAYER, ASPHALTER AND PAVIOR

BRICKLAYER—(*continued*)

Facings—(continued)

Labour and material in hand made sand faced red brick on end window head and pointing to face and 4½″ soffite ..	per foot run	1/3	–/7
Hand made, sand faced brick on edge coping including double course of tile creasing with two cement angle fillets to one brick wall	per foot run	2/3	*1/3*

DRAINLAYER

Excavate to form drain trenches for 4″ pipes and get out, including planking and strutting, filling in and ramming, and wheeling and spreading surplus.

Prices per 12″ average depth per foot run :	Ordinary ground	Clay
Trenches not exceeding 3′ 0″ deep	–/2¼	–/3
Ditto, exceeding 3′ 0″ and not exceeding 5′ 0″ ..	–/5½	–/7
Ditto, exceeding 5′ 0″ and not exceeding 10′ 0″ ..	–/8½	–/9½

		4″ pipes	6″ pipes
6″ thick Portland cement concrete bed 6 : 1, 12″ wider than diameter of pipe, and flaunched halfway up sides of pipe ..	per foot run	–/8½	–/10
		–/6	–/7½
6″ ditto, and completely encasing	per foot run	1/7	1/11
		1/2	*1/4¾*

Agricultural land drain pipes, laid complete with butted joints, exclusive of digging	per yard run	2″	3″	4″	6″
		–/4	–/6	–/8	1/1
		–/2¾	–/3¾	–/4¾	–/8¼

British Standard Quality Salt Glazed Socketed Stoneware Drainpipes and Fittings

	4″ pipes Over 2-ton lots	4″ pipes Under 2 tons, 100 pieces upwards	6″ pipes Over 2-ton lots	6″ pipes Under 2 tons, 100 pieces upwards	9″ pipes Over 2-ton lots	9″ pipes Under 2 tons, 100 pieces upwards
Pipes jointed in 1:1 cement and sand per foot run	1/1	1/3	1/7	1/10	2/8½	3/4
	–/8¾	–/10¾	*1/1½*	*1/4¼*	*2/–*	*2/5¼*
Extra for bends .. each	1/4	1/7	2/–	2/4	3/6	4/–
	–/11¾	*1/2¼*	*1/5½*	*1/9½*	*2/7½*	*3/2½*
Ditto, single junction each	1/10	2/2	2/9	3/3	4/9	5/8
	1/5½	*1/9½*	*2/2½*	*2/8¼*	*3/11¼*	*4/8*
Trapped yard gulleys with galvanized iron gratings, and setting in concrete and jointing to drain each	10/–	11/5	12/4	14/–	19/–	22/–
	8/3	*9/8*	*9/11*	*11/7*	*15/11*	*18/11*
Ditto, with horizontal back inlet .. .. each	11/5	13/–	13/9	15/7	20/5	23/7
	9/8	*11/3*	*11/4*	*13/2*	*17/4*	*20/6*
Ditto, with vertical back inlet .. .. each	12/–	13/9	14/4	16/4	21/–	24/4
	10/3	*12/–*	*11/11*	*13/11*	*17/11*	*21/3*
Intercepting trap with Stanford stopper and setting in manhole and making good .. each	20/5	23/10	25/4	29/8	—	—
	16/11	*20/4*	*21/6*	*25/10*	—	—

Coated Cast Iron Socketed Drain Pipes

		4″	6″	9″
Pipes in 9′ 0″ lengths and laying in trench, including caulked lead joints	per foot run	3/4½	5/1	8/11
		2/4½	*3/8*	*6/7*
Cutting and waste	each	1/9	3/6	—
Extra for bends, including extra joints and cutting and waste on pipe	each	10/8½	20/6	57/5
		7/7½	*17/3*	*52/–*
Ditto, junction ditto ..	each	17/2	32/6	97/11
		11/7	*25/8*	*82/6*
Intercepting trap	each	48/2	78/1	180/–
		41/6	*53/5*	*150/4*
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet		44/10	78/8	—
		26/8	*47/8*	—
H.M.O.W. gulley trap with 9″ inlet with high invert outlet for use with raising pieces		33/5	48/–	—
		22/–	*29/9*	—

DRAINLAYER—(*continued*)

4″ inspection chamber with one 4″ branch	each	65/2		*42/8*
4″ ditto with two 4″ branches one side ..	each	96/6		*62/10*
6″ ditto with one 4″ branch	each	94/2		*60/10½*
6″ ditto with two 6″ branches one side ..	each	136/6		*87/10*
9″ ditto with one 9″ branch	each	209/9		*142/2*
9″ ditto with two 9″ branches one side ..	each	321/5		*218/6*

		White glazed	Salt glazed
4″ half-round straight main channel 24″ long	each	4/10	2/1
		4/1½	*1/4½*
Ditto, channel bends (ordinary)	each	8/1	3/–
		7/5	*2/0½*
4″ Three-quarter round branch bends (short)	each	8/6	6/9
		7/2	*5/6*

Fixing only, manhole covers and frames, including bedding in grease and setting in cement mortar	each	4/–

ASPHALTER

Various qualities of asphalte are marketed by different firms. The term "Best" is intended to imply the best quality produced by a single representative firm, and not necessarily the best or most expensive asphalte obtainable.

		Natural Rock Asphalte Best Quality	Natural Rock Asphalte Second Quality
Basement (Tanking).			
1½″ horizontal d.p.c. in three layers on concrete	per yard super	8/5	6/10
¾″ vertical ditto in three coats on brickwork or concrete	per yard super	11/6½	10/–
Double angle fillet	per foot run	–/6½	–/5½
Hard Graded Paving.			
1″ thick	per yard super	7/4	6/3½
¾″ thick	per yard super	6/3½	5/3½
½″ dampcourse finish, with smooth surface to receive lino or other floor covering		5/3	4/8½
Roofing (Flat).			
¾″ thick in 2 layers	per yard super	6/3½	5/3
1″ ditto	per yard super	7/4	6/3½
Extras.			
Felt supplied and fixed ..	per yard super	–/6½	—
Expanded metal reinforcement ditto	per yard super	1/0½	—
6″ skirting and fillet on brickwork ..	per foot run	1/0½	–/11½
6″ ditto on wood (reinforced).. ..	per foot run	1/2½	1/1½
Nosing at eaves on lead apron (measured separately)	per foot run	–/3½	–/3½
Parapet outlets	each	4/2½	3/8

PAVIOR

		1″	1½″	2″
Granolithic paving ..	per yard super	2/7½	3/6	4/7
		1/5½	*2/2*	*2/10¾*
Add for dusting with carborundum powder	per yard super			–/9
Cement and sand paving (1 : 3)	per yard super	1/10	2/4½	—
		–/9	*1/1½*	—

½″ Jointless flooring, red, buff or brown, finished to a smooth trowelled surface, on concrete sub floors	per yard super	5/3
¾″ Ditto, in two coats on spade faced concrete or wood sub floors		6/7
½″ thick ditto, reinforced with laths and galvanised wire netting	per yard super	6/0½
Add for polishing	per yard super	–/6½
Terrazzo paving, white chips set in white cement, panelled into squares with 1¼″ × ¼″ deep ebonite strips, on and including cement and sand screed. Total thickness 1½″	per yard super	19/5
Ditto, but white chips set in grey Portland cement	per yard super	17/4
Terrazzo tiles, white chips set in white cement :— Size 9″ × 9″ × ¾″	per yard super	20/6
Size 12″ × 12″ × 1″	per yard super	18/8
Ditto, but white chips set in grey Portland cement :— Size 9″ × 9″ × ¾″	per yard super	18/11
Size 12″ × 12″ × 1″	per yard super	17/1

		¼″	½″	¾″
Sheet rubber	per yard super	11/7	14/8	17/10
Rubber tiles	per yard super	13/8	16/10	19/11
		½″	¾″	¼″
Cork tiles, polished ..	per yard super	12/10½	11/–	10/–

Hard red paving bricks laid flat (9″ × 4½″ × 2½″)	per yard super	9/–	*6/3*
Ditto, laid on edge	per yard super	11/9	*9/–*

H

CURRENT PRICES

BY DAVIS AND BELFIELD

MASON, SLATER, TILER AND ROOFER, AND CARPENTER

PAVIOR—(*continued*)

		⅝″ thick	⅞″ thick
6″×6″ best quality red quarry tiles	per yard super	9/8	11/2
		5/8	*6/10*
6″×6″ best quality buff quarry tiles	per yard super	10/5	11/9
		6/3	*7/5*
2″ Yorkshire stone paving, square joints and bedding	per yard super	22/–	*17/4½*
2″ Finished path of coarse gravel finished with good binding gravel to slight camber	per yard super	1/7½	*–/9¾*
3½″ Do. path of clean hard clinker and 1½″ gravel finished to slight camber	per yard super	2/3	*1/3*
7½″ Do. carriage drive of 3″ clinker, 3″ coarse gravel and 1½″ binding gravel finished to slight camber	per yard super	3/9	*2/2*
2½″ Do. tar paving in two layers, tar sprayed and blinded with sand	per yard super	4/9	*3/3*

MASON

		Bath	*Portland*
Stone and all labours of usual character, covering 7″ on bed, roughly squared at back, fixed and cleaned down complete ..	per foot cube	11/–	*8/9½* 16/3 *14/–*

Yorkstone

Templates tooled on exposed faces, sawn beds and joints, and set in cement mortar :

		Thickness 3″		4″		6″	
Size 9″×9″ ..	each	1/8	*1/4¾*	2/3	*1/10½*	3/4½	*2/9¾*
„ 14″×9″ ..	each	2/7½	*2/2½*	3/6	*2/11*	5/3	*4/4½*
„ 18″×14″ ..	each	5/3	*4/4½*	7/–	*5/10*	10/6	*8/9*
„ 22½″×14″ ..	each	6/6	*5/5½*	8/8	*7/3½*	13/–	*10/11*
„ 27″×14″ ..	each	7/10½	*6/6¾*	10/6	*8/9*	15/9	*13/1½*

Artificial Stone

In steps, copings, band courses, etc., per foot cube from	8/5	*7/5*

Reconstructed Stone

In steps, dressings, band courses, etc., per foot cube	13/–	*12/–*

Slate

		1″	1¼″	1½″
Slate slabs, sawn to size, not exceeding 10 ft. sup. and planed, with rubbed face and fixing as shelving, etc.	per foot super	4/6	5/–	6/–
		3/4¾	*3/8*	*4/3¾*
Ditto, not exceeding 20 ft. sup.	per foot super	5/4	5/10	7/–
		4/1½	*4/6*	*5/3¾*
Rubbed edges ..	per foot run	–/4½	–/4½	–/4½

SLATER, TILER AND ROOFER

Bangor and Portmadoc Slates

		20″ × 10″	16″ × 8″	24″ × 12″
Slates laid to a 3″ lap and fixed with zinc nails ..	per square	79/–	77/–	80/5

Old Delabole Slates

		20″ × 12″	16″ × 10″
Grey medium gradings ..	per square	86/–	84/6
Unselected greens (V.M.S.) (weathering greens and grey greens mixed) ..	per square	96/6	94/6

Randoms		No. 1 Gradings 24″/22″ to 12″/10″
Ordinary grey greens	per square	91/3
Weathering grey greens (V.M.S.) ..	per square	101/9
		No. 2 Gradings 24″/22″ to 12″/10″
Weathering greens (V.M.S.)	per square	107/–

Westmorland Green Slates

Randoms		Bests 24″ to 12″ long proportionate widths
No. 1 Buttermere, fine light green ..	per square	122/9
No. 2 Buttermere, light green (coarse grained)	per square	120/9
No. 5 Buttermere, olive green (coarse grained)	per square	117/6
Broughton Moor light sea green, olive green, silver grey green and mixed shades ..	per square	127/6

Tiles

Hand made sand faced 10½″ × 6½″ laid to 4″ gauge, fourth course nailed with galvanized nails	per square	65/–
Machine made ditto	per square	56/7

SLATER, TILER AND ROOFER—(*continued*)

Pantiles

Berkshire hand made surface red laid dry,	per square	65/–
Bridgewater hand made red laid dry	per square	65/–
Bridgewater double Roman laid dry	per square	48/3

Sundries

Stripping, slating down to and including, 18″ × 9″	per square	4/6
Ditto smaller sizes	per square	6/–
Add for carrying down and stacking	per square	1/8
Ditto stripping battens down to and including 18″ × 9″	per square	1/4½
Ditto, ditto, smaller sizes	per square	2/3

Cedarwood Tiles

Canadian Cedarwood shingles laid to 5″ gauge	per square	47/4 *36/–*

Asbestos

Russet brown asbestos cement roofing tiles 15¾″×15¾″ laid diagonally with 2¾″ lap,	per square	38/– *33/–*

CARPENTER

Centering

Turning piece to flat soffites 4½″ wide .. (For Formwork see "Concreter.")	per foot run	–/4

Fir Sawn and Fixed

Plates, dragon ties, sleeper joists and lintols, ground floor (4″×2″ and 4″×3″)	per foot cube	3/7	*2/9*
Floor joists (7″×2″) ..	per foot cube	4/1	*2/11*
Partitions (stud) (4″×2″ and 4″×3″)	per foot cube	4/10	*2/8½*
Rafters and ceiling joists (4″×2″ and 4″×3″)	per foot cube	4/7	*2/8½*
Purlins (6″×4″)	per foot cube	5/3	*3/4½*
Hand labour wrot face ..	per foot super	–/2	
Machine ditto	per foot super	–/1	
Rebates, grooves, beads, chamfers and splays	per foot run	–/1	
1½″×9″ ridge	per foot run	–/6¾	*–/4½*
1½″×11″ hips or valleys, including cutting ends of rafters against same ..	per foot run	–/8¼	*–/5¼*
Extra labour trimming 6″×2″ floor joists around fireplace, including notching ends of joists at 14″ centres to trimmer joist 7′ 0″ long and two tusk tenons	each	6/–	
Boring small hole per inch of depth	per doz.	–/6	
Ditto large	per doz.	1/–	

Deal Battening for Slates and Tiles

2″×1″ spaced for Countess (20″×10″) slates to 3″ lap	per square	10/3	*7/5*
2″×1″ ditto for Ladies (16″×8″) ..	per square	13/6	*9/9*
2″×1″ ditto for Duchess (24″×12″) ditto	per square	8/5	*5/11*
2″×1″ ditto for randoms 24″/22″ to 12″/10″	per square	11/6	*6/11*
1½″×¾″ ditto for plain tiles (10½″×6½″) to a 4″ gauge	per square	13/7	*8/7*
1½″×1″ ditto for pantiles to approximately 11¼″ gauge	per square	6/7	*3/2*

Roof Boarding

		¾″	1″
Deal roof boarding in batten widths close jointed	per square	27/8	33/2
		19/5	*24/5*
Ditto, prepared for patent flat roofing and including firrings to falls	per square	37/8	43/2
		24/5	*29/5*
Small tilting fillet	per foot run	–/2	*–/¾*
Large ditto	per foot run	–/4	*–/1½*

Felt

Sarking or slaters felt, fixed with 2″ side laps and 6″ end laps	per yard super	1/1¼	*–/8¾*
Roofing felt ditto	per yard super	1/3½	*–/10¾*
Bituminous hair felt ditto ..	per yard super	2/3½	*1/10¾*

Weather Boarding

Rough deal feather edge boarding in batten widths ⅝″ average with 1¼″ laps	per square	29/3	*19/3*
Western Red Cedar ditto ..	per square	30/11	*20/11*

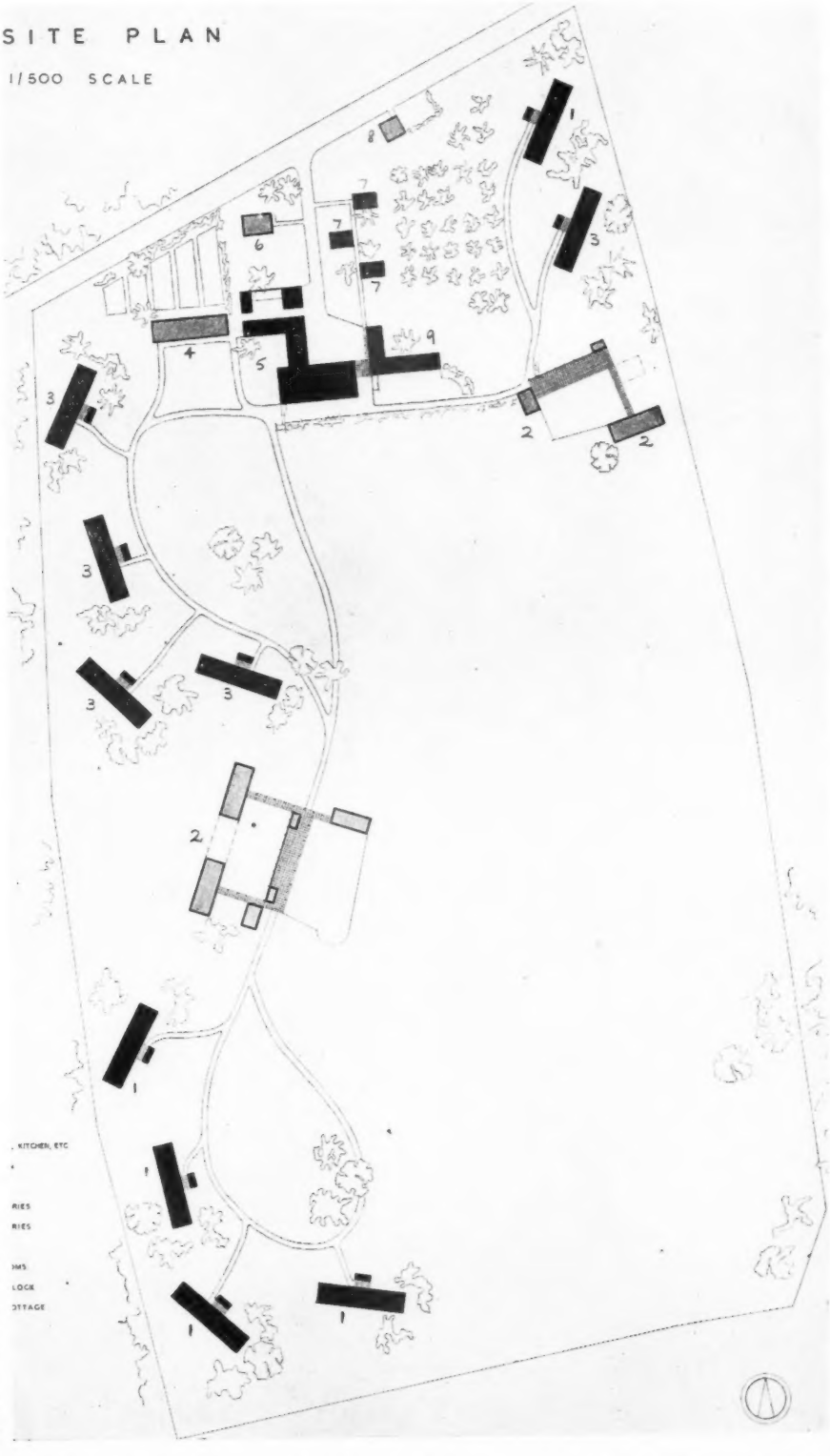
Fascia and Soffite Boards

1″×6″ wrot deal splayed fascia fixed to rafter feet	per foot run	–/4¼	*–/1½*
1″×9″ wrot deal soffite tongued both edges, including grooves	per foot run	–/8½	*–/2½*

(To be continued in next issue)

SCHOOL AND HOLIDAY CAMP COMPETITION

WINNING DESIGN: BY RICHARD SHEPPARD AND JEAN SHUFFLEBOTHAM

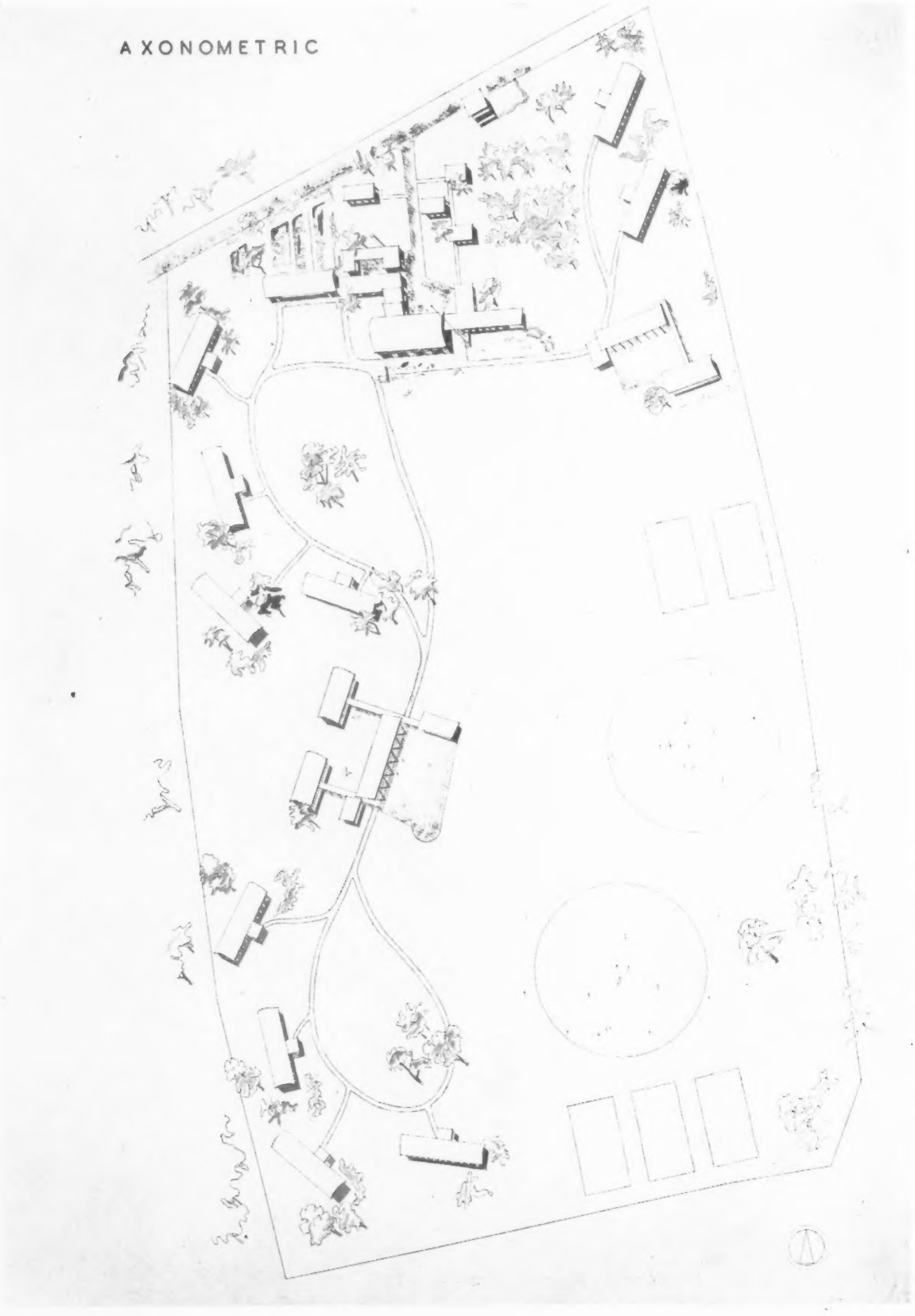


KEY.

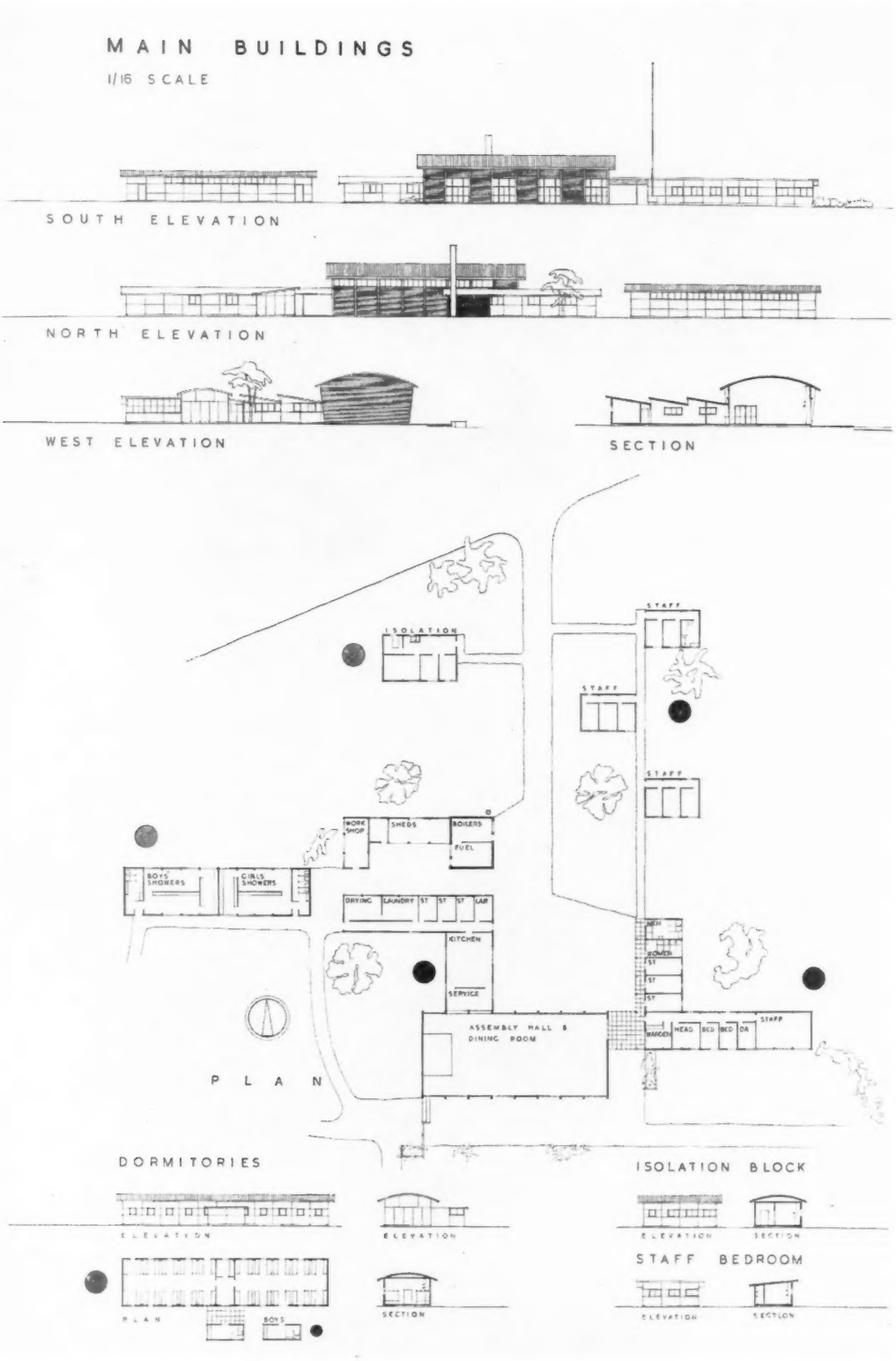
1. Boys' Dormitories.
2. Schools.
3. Girls' Dormitories.
4. Showers.
5. Assembly Hall, Kitchens, etc.
6. Isolation Block.
7. Staff Bedrooms.
8. Gardener's Cottage.
9. Administration.

The result of the Building Centre's School and Camp Competition was announced on Tuesday night as follows :— First premium (£200) : Richard Sheppard, A.R.I.B.A., and Jean Shufflebotham, A.R.I.B.A., of 45, Mecklenburgh Square, W.C.1.
Second premium (£50) : Mary Crowley, A.R.I.B.A., Erno Goldfinger, and Justin Blanco White, A.R.I.B.A., of 7, Bedford Square, W.C.1.
Third premiums (£25 each) : M. Godden, of 56, Borkwood Way, Orpington, Kent; Wells Coates, F.R.I.B.A., and Serge Chermayeff, F.R.I.B.A.
93 designs were submitted. The winning design is reproduced on this and the following three pages.

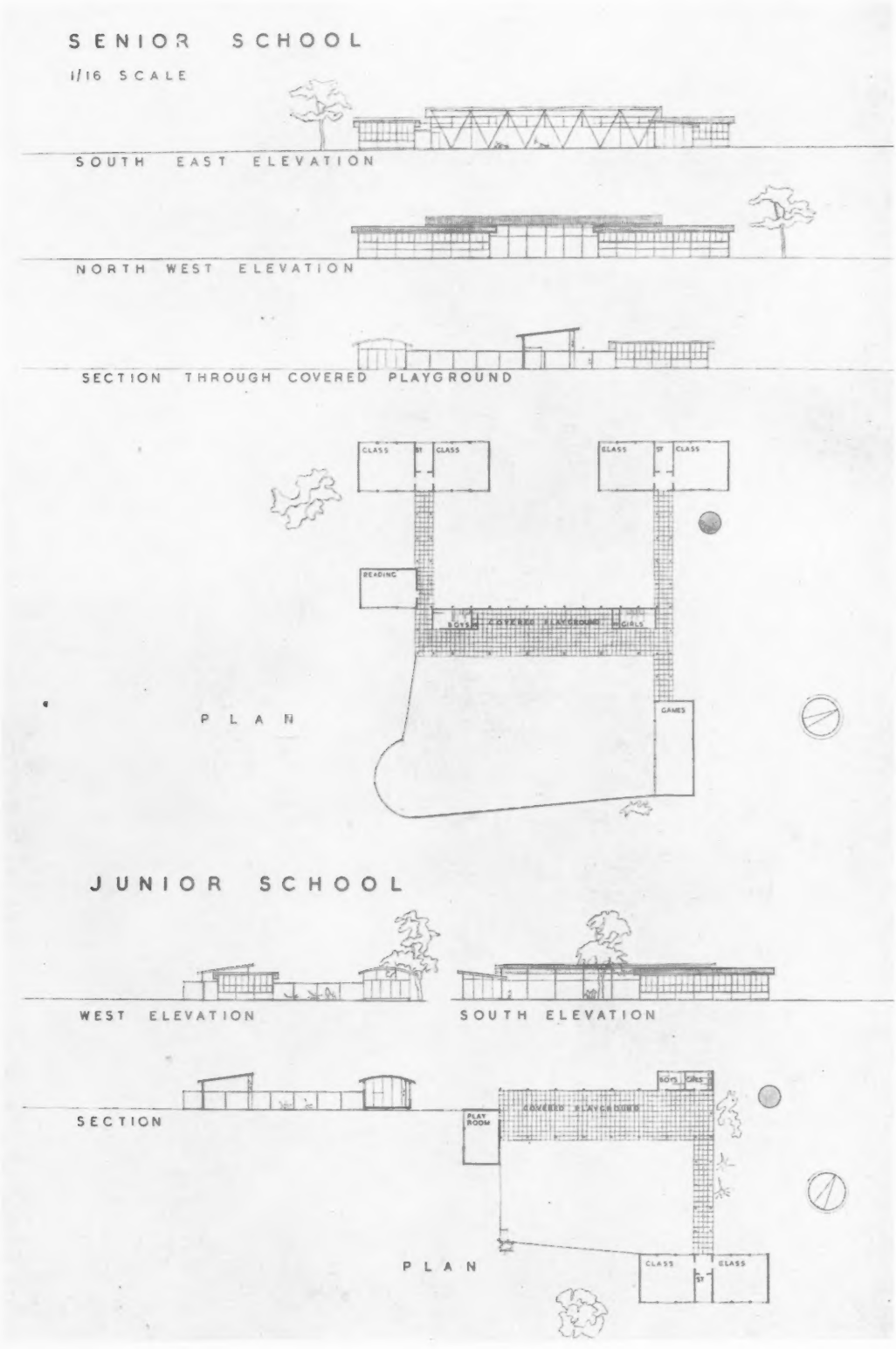
An exhibition of the premiated and other designs will be held at the Building Centre, and will be opened at 12 noon on Wednesday, May 31, by the Rt. Hon. Lord Portal, D.S.O., M.V.O., Chairman of the National Camps Corporation. The exhibition will remain open until June 24. (Daily, 10 a.m.–6 p.m. Saturdays, 5 p.m.)



SCHOOL AND HOLIDAY CAMP COMPETITION : WINNING DESIGN : BY R. SHEPPARD AND JEAN SHUFFLEBOTHAM



SCHOOL AND HOLIDAY CAMP COMPETITION: WINNING DESIGN: BY R. SHEPPARD AND JEAN SHUFFLEBOTHAM



SCHOOL AND HOLIDAY CAMP COMPETITION: WINNING DESIGN: BY R. SHEPPARD AND JEAN SHUFFLEBOTHAM