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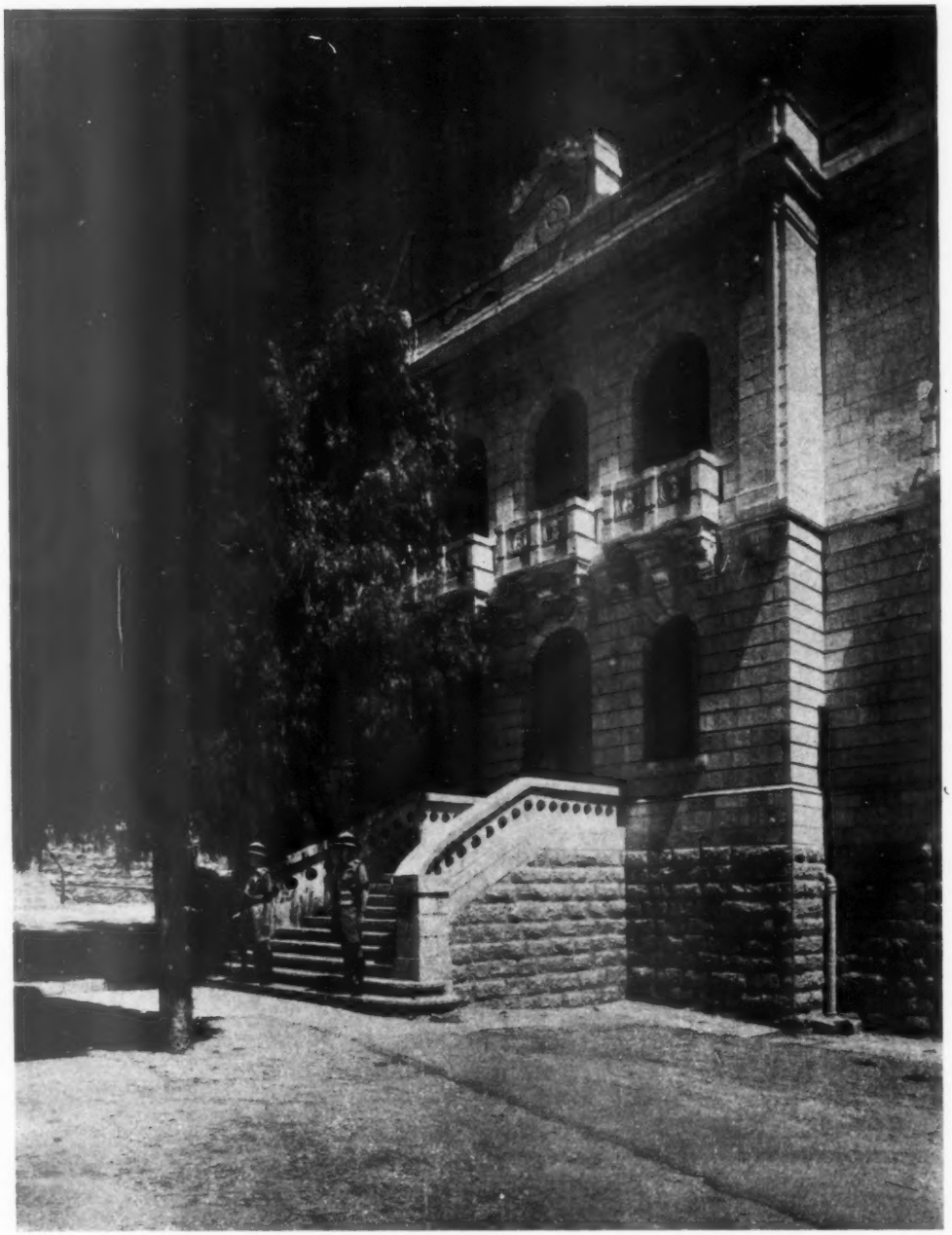
TELEGRAPHIC ADDRESS : BUILDABLE, PARL., LONDON

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.

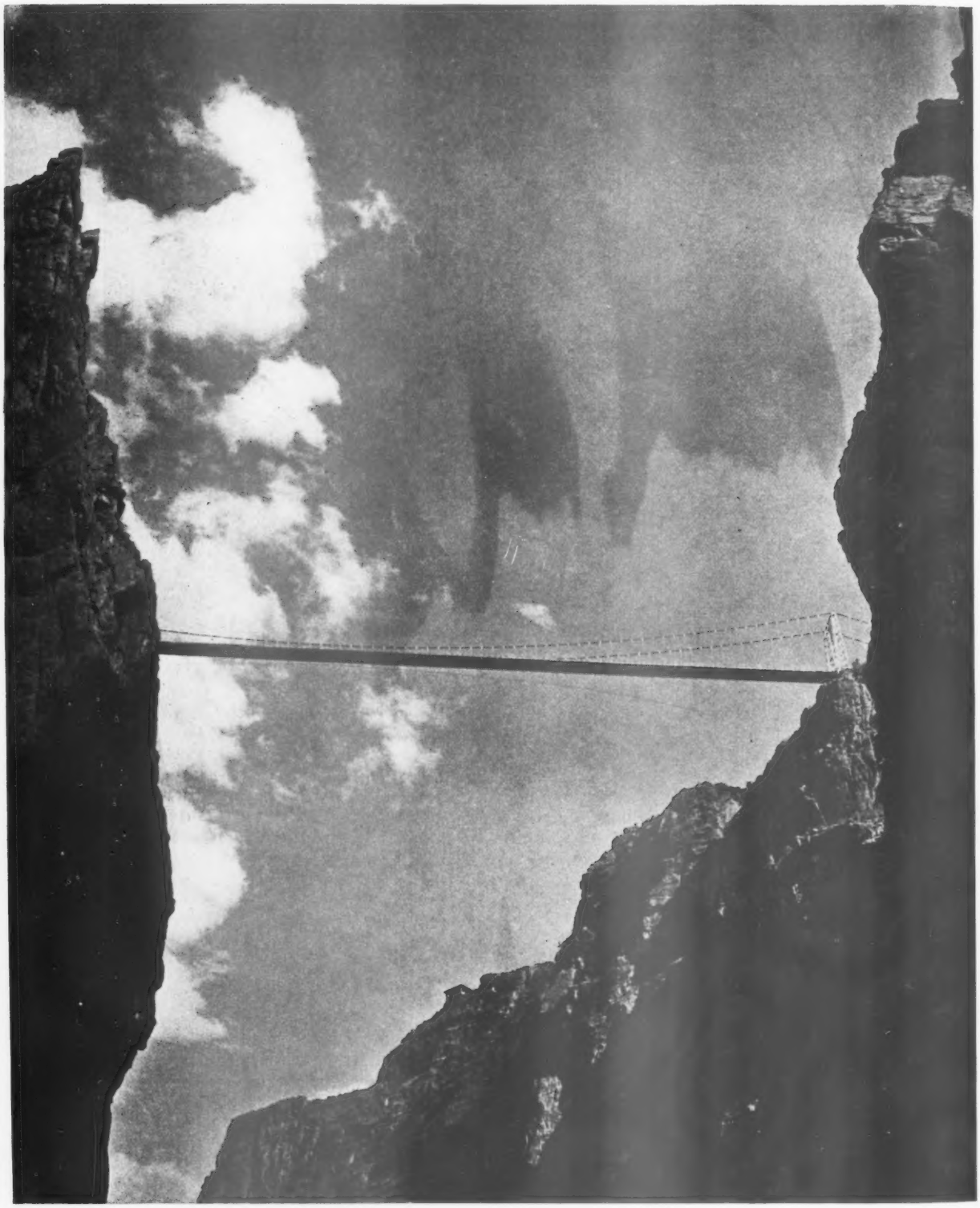
THURSDAY, AUGUST 31, 1939. NUMBER 2328 : VOLUME 90

PRINCIPAL CONTENTS

BROADCASTING HOUSE, JERUSALEM

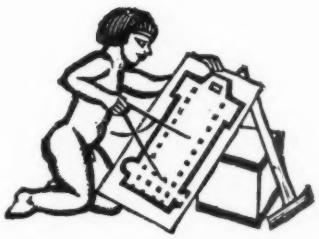


The Palestine Broadcasting Service has just moved its studios to a new building in St. Paul's Road. The new quarters will afford elbow-room for the large staff now engaged in this branch of the General Post Office. The new building has been specially designed for broadcasting. There are four large studios in addition to several cabins and announcing rooms.



HIGHEST BRIDGE IN THE WORLD

The Hanging Bridge, Royal Gorge, Colorado, which is claimed to be the highest bridge in the world. It is 1,053 feet above the Arkansas River.



THE NEXT SIX WEEKS

FOR the last week the war of nerves has been on. Increasing shocks have been generated by the Axis powers, not perhaps with quite the desired effect upon those at the other end. And it is probable that for days—or even weeks—this situation will continue.

The great issues of the present crisis lie outside the scope of the JOURNAL, but not the problems which it raises, once again, for architects.

To them, as to the rest of the public, the war of nerves is in itself no more than a destructive nuisance. But as each familiar button is pressed in turn by Berlin, architects are compelled to realize that it is wise to take precautions. Their situation is both good and bad.

At times like these architects realize how fundamentally civilized is their ordinary work. They have not the consolation of feeling that the work they like best is essential to the prosecution of a war ; a war of nerves stops all that is not actually building : an actual war stops that. This loss must be one of the worst effects of war to architects, and each must get accustomed to it as best he may. Once he has done so, he has at least the consolation of knowing that his professional knowledge will be of value in the event of war and that preparations to make use of it are more advanced than last year.

The average architect today has to face two possibilities : actual war, and a continuation of the war of nerves for several weeks.

In the first case it is probable that local authorities and other bodies will need a considerable increase of architectural services for the preparation of shelters. Those architects who are already engaged on such work, or who obtain private clients, may expect to be kept busy. But it is obvious that Government Departments and local authorities will be working under the greatest difficulties in the opening weeks of war, and it is unlikely that additional architects will be recruited for structural work by public authorities — whether through the Register or otherwise—for at least several weeks. The direct and indirect effects of bombing may compel an extensive movement of population and industry, or they may be comparatively small. Until the question is decided the need for architects for structural work must remain vague.

Therefore, whether the war of nerves continues a war of nerves—as the JOURNAL believes is probable—or degenerates into a European War, the architect faces a period of a month or six weeks during which he will be doing A.R.P. work or doing nothing.

Architects are by now used to such periods and the financial strain bound up with them. But the strain of having nothing much to do in the first weeks of war would be almost intolerable—and architects should remember that not only the National Register but most Civilian Services would be unable to accept offers of services in this period.

In this situation those architects who have not filled in their Index Cards for the Central Register of the R.I.B.A. should do so at once, and those who have volunteered for any services since completing their cards should send details of their new commitments to the Secretary of the Emergency Panel at 66 Portland Place.

This done, it would be wise for all architects who have not already done so to enrol in some form of National Service.

In some services, notably the Fire Services and the Rescue and Demolition squads, architectural knowledge will be of great use. In all of them architects will be making more certain that the war of nerves remains a war of nerves only.

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NOTES & TOPICS

1938 AND 1939

"THE next few days must be the blackest Europe has had for twenty years," were words which appeared in this column eleven months ago. Those words were written on a Tuesday, as these are,—and within twenty-four hours the worst had come and was past.

*

It is not impossible for the same thing to happen again, although now, as then, it does not seem probable. In the same note I wrote: "However much we hope that no similar emergency will ever happen again, it would be absurd not to be prepared for it. It will be simple in the next few months for architects' qualifications to be sorted and filed at the R.I.B.A., and for probable vacancies in emergency departments to be ascertained."

*

It is comforting today to think that the Register is substantially complete, even though it is impossible, until the effects of air-bombing are known, to decide the exact number and nature of jobs for which architects will be needed.

*

It is plain that the small proportion of architects who have not completed their Index Cards (obtainable from the Secretary, Architects' Emergency Panel, 66 Portland Place, W.1) should do so at once. In addition, all those who have undertaken any National Service since completing their cards or changed their address should notify the Secretary at once.

*

And since the next six weeks, war or no war, are going to be a quiet time for most of us as far as the practice of architecture is concerned, I recommend everyone to join some National Service.

OBSCURATION

There has been a good deal of uncertainty about the real requirements of the Civil Defence Act concerning the obscuration of light in factories during wartime, particularly as to Government allowances for carrying out this work. Section 43 of the Act provides that preparations must be made to secure that in the event of war, lights inside buildings are obscured, and lights outside buildings are extinguished; but no specific methods for securing this obscuration have been laid down, and no cash grant is provided towards its cost.

*

Under the general category of A.R.P., the cost of providing dark blinds, screens and paint to render windows and skylights opaque can be deducted from trade profits for income tax purposes, but so far nothing has been said about grants towards the more permanent forms of weather-proof shuttering, in steel or wood, which would be essential for factories doing work of national importance.

*

An unofficial press note from the Lord Privy Seal now makes it clear that this kind of shuttering is to be made obligatory only in the case of factories engaged in vital work, and only to these will really helpful financial assistance be given. The obscuration work is, in these cases, to be treated as if it were for the purposes of camouflage, and will obtain a grant not exceeding half of the cost involved.

*

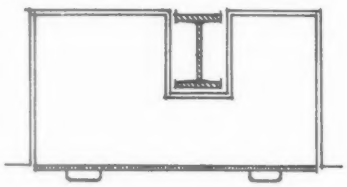
Adjustable factory shuttering for these purposes provides yet another chance for ingenious architects, but so far I have seen no convincing suggestions.

GOOD WISHES . . .

I print below a letter from a friend on one of those summer cruises who said goodbye in these words: "Well, I'll be back when it's all over . . . and I hope your side wins."

S.S. —— (en route to Capetown)
Crossing the Equator.

The Information Book has evidently not yet reached the offices of this ship's designers. My wife and I share a cabin the size of a telephone kiosk, ventilated by an air-brick size grating straight into an adjoining cabin. As we are in the tropics the atmosphere is unusual. The heat, as Mark Twain once remarked, would not *melt* a brass door-knob, but it would make it distinctly mushy. Our wardrobe is 14 ins. deep, too shallow for clothes on end, and not wide enough for clothes hung the other way. Through it runs an 8 in. by 4 in. stanchion, eccentrically placed, round which the bottom drawers are ingeniously cut like this:—



Clever, but I don't know what Oscar Bayne would say to it.

*

At our table is a dressmaker (or University lecturer—not sure yet), a missionary, wife (from Georgia) and small daughter. Yesterday the missionary asked if we knew why we need never be hungry in the desert. The answer is apparently because of the sand which is (sandwiches—see?) . . . *There.*

*

We are now half-way—after one week at sea, and our capacity for self-entertainment is wearing a bit thin. All day long one listens to the clatter of falling quoits and the apologetics of the tennis players—"Sorry, partner—my fault—now we're *really* going to start . . ."

*

In the glazed mahogany bookcase of the lounge gleam dully the spines of Francis Brett Young and Doreen Wallace—(Overheard this morning—"*What* luck! I've managed to get another

Warwick Deeping.") Occasionally we penetrate to the First Class and peer through the bottle glass panes into the Spanish Lounge. Behind me as I write is a cleverly reproduced stone wall, the joints broken only occasionally by rivet heads.

*

Fellow passengers are mostly undergrads. on the way out to join the Police, but there is one girl from Roedean ; and also a planter and wife who get drunk every morning by 10 a.m., sleep till 6 p.m., and get drunk again before night. They haven't missed their routine yet. I have just read a remark by Dr. Johnson that being at sea is like being in jail with the added disadvantage that at sea the company is worse and you are in constant danger.*

. . . AND OTHER ACTIVITIES

Not all one's friends are so detached from our present worries. Another architect told me this moving story.

*

The previous evening he had attended, as a member of the A.F.S., the trial erection of a 5,000-gallon sheet-steel dam —the first to arrive in his division. The dam consists of fifty or so parts which fit together *à la* Meccano. There were about forty men present and two officers. Each of the latter flourished an erection drawing.

*

But it soon appeared that the officers, though highly competent fire-fighters, were not at their best at reading a drawing ; and my friend's agony of mind was terrible as he watched each officer doing his best to interpret the esoteric symbols with a half-dozen willing helpers offering contradictory advice over his shoulder.

*

"And what," I asked, "happened to the dam?" "The dam?" . . . said my friend with a slight start. "Oh, one or two of the men must have been fitters or something. They got the dam built almost dead right before the conference ended—in about twenty minutes. . . . Instinct, I suppose."

MYSTERY TOUR

A rural week-end introduced me to a new practice that ingenious townsmen have devised, whereby they can disturb the countryman's solitude in still another way. This practice is the dispatch of charabanc loads of trippers from seaside resorts to rustic villages at late hours in the evening under the ægis of a "mystery tour."

*

When the inhabitants of a remote Sussex village are finishing their evening drink and preparing to go early to bed with a view to rising early to finish getting in the harvest, an unfamiliar disturbance indicates the arrival of one of these charabancs (sometimes half-a-dozen follow each other throughout the evening)—mostly filled with middle-aged ladies who have been beguiled into taking an evening tour by being told that no one but the driver knows where they are going. They fill the village inn with chatter, musical instruments and calls for white ports before leaving : presumably to repeat the performance in another village at a still later hour.

*

Of course, the correct reply to the peevish tone of these remarks is that this is a free country and anyone can go where he likes—even if he prefers not to know where he is going when he starts. But this practice is worth thinking about because it is symptomatic of many tendencies that are finishing off the countryside.

*

I do not suggest that trippers should be banned from villages or motorists from by-roads. I suggest that motorists should be provided with *good* motor roads where they can enjoy the art of motoring, that trippers should be provided with beautifully trippery places where their gregarious and ultra-sociable habits are not out of place and that housing estates should be designed so that people have no urge to suburbanize new tracts of country in search of an improved environment they never find.

*

And this experience reminds me of the perfect Mystery Tour—which took place in Ireland. A young woman living 40 miles from Dublin was unwise enough to decide to patronize one starting from Dublin (7s. 6d. with tea). She took her car up to Dublin, parked it and climbed on board ; only to be taken back to her own village and given tea at the inn next her house—an inn which, for excellent reasons, she had not previously entered.

BORDERS' CASE HANGOVER?

A five-line notice in the small advertisement columns of the *Evening Standard* last week stated that a list of builders who were prepared to give a two years' guarantee against structural defects in their houses could be obtained from the newspaper's property bureau.

*

The sweeping nature of this offer, the smallness of the notice, the impression it aroused that handling such information was a confidential business, are all calculated to arouse curiosity.

*

Architects know too much about builders to have a bad opinion of most of them. Yet this notice does look as if someone feared that a prominent announcement of a two-year guarantee would start a general demand for guarantees—which would be a bad thing for somebody else.

*

If public confidence has been undermined by the Borders case the right restorative seems not notices such as this, but a straight five-year guarantee by the big builders —advertised on double-page spreads.

JUSTICE ?

"*You don't know what justice means. I appeal against this case. This is supposed to be a free country, but this is not justice.*"

*

So up and spoke a Rainhill (Lancashire) builder when he pleaded not guilty on six counts of failing to comply with the bylaws of Whiston R.D.C. in the erection of several houses.

*

After producing plans, photos and other evidence of, he said, some shameful work by rival builders, one of them a member of said Council, he complained that the councillors "just pick on the builders that they don't like."

*

"Doant ee shout," said chairman, and fined him £8 2s.

ASTRAGAL

* To be exact :

"A ship is worse than a jail. There is, in a jail, better air, better company, better conveniency of every kind ; and a ship has the additional disadvantage of being in danger."

NEWS

POINTS FROM THIS ISSUE

THE CENTRAL REGISTER

Architects who are (a) members of the R.I.B.A., (b) members of an R.I.B.A. Allied Society, or (c) Registered Architects not attached to any body, who have filled up cards of enrolment in the Central Register, were asked to state if they were already members of Territorial, Reserve or Auxiliary Forces, or under any other obligation for National Service.

It is desired to keep the information on the register cards up to date, and architects who, since enrolling, have undertaken or in future undertake obligations involving full-time service in time of war with H.M. Forces (Regular, Territorial, Reserve or Auxiliary), or with the Civil Defence Services, are therefore requested to inform the Secretary of the R.I.B.A. Emergency Panel, 66 Portland Place, London, W.1, who will pass on the information to the Ministry of Labour.

It would be appreciated if architects would take similar action in notifying the Secretary of the R.I.B.A. Emergency Panel of: (*a*) Change of home address; (*b*) change of employer; (*c*) acquisition of additional professional qualification, or any other matters likely to affect the usefulness of the Register.

Mr. C. Lovett Gill, F.R.I.B.A., who has been appointed to a seat on the Board of the National Building Society.

THE ARCHITECTS' DIARY

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

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

Wednesday, September 20
DESIGN AND INDUSTRIES ASSOCIATION. *Visit to Odham's Press Ltd., Watford. Depart from 36 Bedford Square at 2.30 p.m.*

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

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

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

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

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

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

MINISTRY OF HEALTH

Notes on some Loans sanctioned by the Minister during the week ended August 19, 1939:

Ashton-in-Makerfield U.D.C.: £23,551 for the erection of 72 houses on the Rectory Road site.

Barrow-in-Furness C.B.C.: £45,300 for the erection of 98 houses and 24 flats on the Greengate Street North site.

Dewsbury C.B.C.: £56,969 for the erection of 160 houses and the construction of roads and sewers on the School Lane site.

Great Yarmouth C.B.C.: £115,297 for the erection of 198 flats on the site of Clearance Areas Nos. 1 and 2.

Guildford B.C.: £50,000 for the purposes of advances under the Small Dwellings Acquisition Acts, 1899–1923.

Litherland U.D.C.: £27,262 for the erection of 72 houses on the Moss Lane site.

Scunthorpe B.C.: £62,996 for the erection of municipal offices.

Sunderland R.D.C.: £33,565 for the erection of 90 houses and two houses with lock-up shops at Ryhope.

Wolverhampton C.B.C.: £63,780 for the erection of 194 houses on the Willenhall Road site.

BEAUMONT STREET, OXFORD

Reference to the new façade of the Playhouse in Oxford is made in the annual report of the Society for the Protection of Ancient Buildings, as follows:

"There have been so many cases in the past in which the Society has felt bound to protest against the destruction of the character of a whole street by the rebuilding of part of it, that it is a pleasure to illustrate the new façade of the Playhouse in Beaumont Street. The problem presented to the architect, Mr. Edward Maufe, A.R.A., was no simple one. A modern theatre, exhibiting by its very design a modern theatrical function, had to be incorporated in a long street, almost uniform in character of eighteenth-century stone houses, with their flat façades, almost entire lack of detail and regular fenestration. There can be no doubt about the function of this new building, set in the middle of this very beautiful street, but through the most skilful design and appreciation of the quality and proportion of the buildings opposite and flanking it, the problem has been solved. Specially selected Clipsham stone carrying certain of the blue veins was used so that it will harmonize in time with the surrounding buildings. It is obvious that great care and ingenuity have been taken to keep this new front in the same scale and proportion as the existing

The Playhouse in Beaumont Street, Oxford.

adjoining work; and although this is a modern building catering very successfully for modern needs in theatre accommodation, the street as a whole is by no means mutilated.

"This is perhaps the first modern building ever illustrated in this way in an annual report; but the committee feels that as an example of architectural good manners it is proper for the Society to call attention to it."

CLERKS OF WORKS

The Clerks of Works and Foremen's Association of Scotland, which was established in 1930, has already made considerable progress in its endeavours to advance and safeguard the interests of clerks of works and foremen in Scotland.

The advantages of a large and representative membership are readily realized, but the Association's policy is to increase the membership by enrolling as members only those who possess recognized qualifications.

From and after April 1, 1940, membership will only be open to those who have passed the Association's examinations or any examination which it is decided to recognize as exempting therefrom. The system of examinations will keep clearly in view the practical knowledge and experience which are essential qualifications of a clerk of works or foreman. The Royal Incorporation of Architects in Scotland has agreed to co-operate fully with the Association in the introduction and management of the examination system.

Full particulars may be had from the Secretary, The Clerks of Works and Foremen's Association of Scotland, 11 Castle Street, Edinburgh.

NEWS IN BRIEF

● A visit to the works of Odham's Press, Ltd. (designed by Sir E. Owen Williams) at Watford has been arranged by the Design and Industries Association to take place on Wednesday, September 20. The party will leave by motor-coach from No. 36 Bedford Square at 2.30 p.m., and will arrive back there about 6 p.m. Application should be made to the Organizing Secretary, D.I.A., 6 Queen Square, W.C.1, as early as possible, because it is necessary to limit the number of people to thirty. The D.I.A. also announces that it has arranged with Dr. Gustaf Munthe to deliver

a lecture on Thursday, October 12, at 8 p.m., in the Lecture Hall of the Royal Society of Arts, 18 John Street, Adelphi, W.C.2, on the administration of the Röhsska Museum of Arts and Crafts in Gothenburg, of which he is the Curator.

• The National Register of Industrial Designers has made arrangements for a visit to the Zürich Exhibition during the week-end of September 22–26. Full details are obtainable from the Secretary, 32 St. James's Street, S.W.1.

• Mr. Christopher Tunnard, A.I.L.A., has closed his London office and is now lecturing on landscape architecture at Harvard University.

• Work is shortly to begin on an important improvement to the Great North Road at Bridge of Allan, Stirlingshire, where the bridge over the River Allan is to be replaced by a new one with improved approaches. The estimated cost of the bridge is £63,000.

COMPETITION NEWS

The Housing Commission of Victoria, which was appointed under the provisions of the Slum Reclamation and Housing Act passed by Parliament last year, has announced the results of the housing competition promoted by the Commission in collaboration with the R.V.I.A., as follows :

Section 1

1st prize, £125 : E. Campbell Jackson, of Melbourne.

2nd prize, £75 : A. C. Leith and Bartlett, of Melbourne.

3rd prize, £50 : Eric W. Andrew, of Sydney.

4th prize, £50 : Frank Heath, of Melbourne.

Section 2

Equal 1st prize, £100 : J. F. W. Ballantyne and Roy Wilson, of Melbourne, and Saxil Tuxen, also of Melbourne.

The competition was in two sections, viz. : (1) Designs for three types of dwellings, the cost of each not to exceed £375, £475 and £550.

(2) A plan of subdivision and development of an area of land at Fishermen's Bend, Port Melbourne.

In section 1, the winning design (Scheme A) of which is reproduced on this page, competitors were free to adopt any style of design and method of construction.

Competitions Open

DUDLEY : SCHOOL

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

EDINBURGH : EXHIBITION HALL

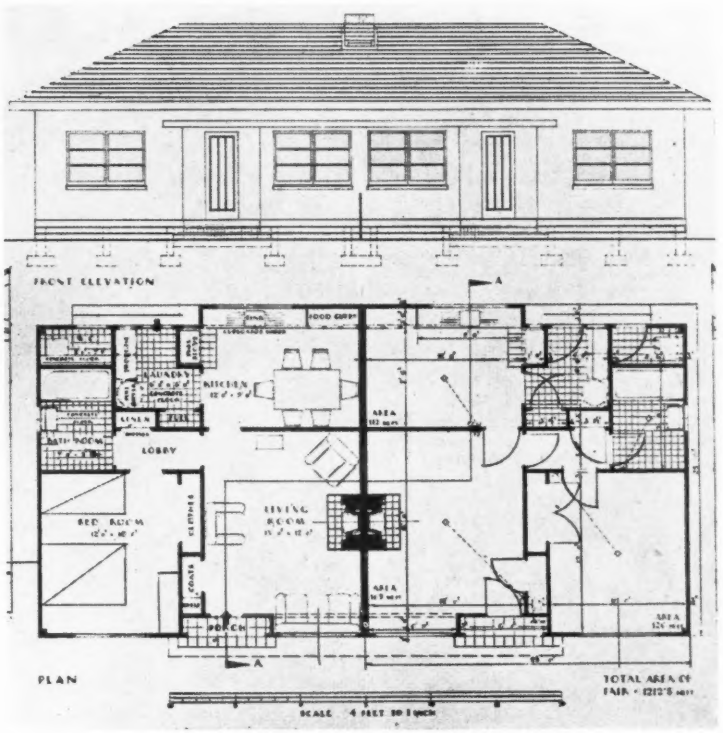
Exhibition Hall to be built on the site of the present Waverley Market, Princes Street. Assessor : Mr. T. S. Tait, F.R.I.B.A. Premiums : 500, 300 and 200 guineas. Sending-in day : August 31, 1939. Conditions obtainable from the Town Clerk, City Chambers, Edinburgh, 1. Deposit £2 2s.

WATFORD : FIRE STATION

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

MARGATE : CIVIC CENTRE

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



Scheme A (containing one bedroom) of the winning design, by E. Campbell Jackson, in the housing competition promoted by the Housing Commission of Victoria. See note on this page.

LONDON : SHOP-FRONT

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

OLDHAM : OFFICES

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

ELSON : SCHOOL

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

EXHIBITIONS

IT is perhaps always very much easier to look at a one-man show than at a mixed collection, and probably that peculiar museum–picture-gallery weariness which overtakes so many people is the result of the exhausting attempt to see too many points of view at once and do justice to the confusion of claims. Certainly, at a first glance, the collection of over two hundred paintings and drawings at the Leicester Galleries is rather overpowering, but a great deal of the sorting out has been done in the hanging, and nearly everything of outstanding merit is to be found in the Hogarth Room, most of it on one wall.

Here are two excellent recent paintings by John Piper, slighter perhaps than his more familiar work, but particularly interesting, for in them can be clearly detected the first stirring of the romantic revival that is already beginning to undermine the asceticism of the most austere abstractionists. Eileen Agar's very fine "Design" also shows some, perhaps almost unconscious, relenting from her habitual purely intellectual compositions. In such paintings as these can be felt the first breath of the coming gale that, sweeping Europe in another century, was called Baroque. Which is not to say that it is good or bad—simply that it is a reaction and the inevitable corollary to the final conclusions of abstract art. It has already made an almost simultaneous appearance in architecture.

There are other paintings of outstanding interest by Graham Sutherland and Ivon Hitchens, who are perhaps two of the most sensitive colourists working in this country ; and by Paul Nash, Robert Medley, Raymond Coxon and Duncan Grant, whose "Puppet Countess," painted some years ago, is one of his most convincing works. John Aldridge, who is always an extremely good direct landscape painter, is particularly successful with his "Essex Farmyard, Great Bardfield," a landscape which is tighter and more completely realized than much of his previous work. Mary Potter's "Chrysanthemums" are exceptional in colour and spatial design, and Sine Mackinnon, Colin MacInnes, Leila Faithfull, Winifred Nicholson,

Vanessa Bell and Frances Hodgkins are all showing good work. Thérèse Lessore's "Circus at Bath" should not be overlooked.

Elsewhere the standard is less high, but amongst the water-colours and drawings there are Sickert's magnificent line and wash drawing, "Hotel Royal, Dieppe," one of the finest things in this exhibition; Segonzac's "Nude," Henry Moore's "Compositions for Sculpture," Edward Bawden's "Country House in Essex," and pleasant work by Marc Chagall and Charles Ginner.

This is perhaps the most interesting of several very good summer exhibitions, for it comes nearer than any of the others to being a survey of recent work. Taking it as a general index to contemporary painting, there are many works that might well have been omitted, but in spite of them this exhibition does succeed in giving a remarkably good survey.

At the Redfern, the Lefevre, the Mayor and the Beaux Arts there are also well-chosen exhibitions which dovetail very well into the larger and more important ones at the Leicester and Tooth's. All these summer exhibitions are open until the end of September.

LETTERS

Building Terms

SIR,—With reference to the correspondence regarding Scottish and other trade terms, I may say that North Northumberland uses some of both and some of its own.

Country masons here still refer to offsets on foundation walling as scarcements. The roughly dressed quoins to inner walls are scunches. The common rafters are spars. Purlins are ribs, though this is dying out. Roof boarding is sarking—no doubt allied to sark for a shirt. Another correspondent has told you that studs are stoothings, but so also are the 2 in. by 1 in. strips on inside of outer walls to obtain a lath and plaster cavity which in parts of Scotland are compulsory. Rebates in stone for door and window frames are checks. Eaves gutters are not called rones till you reach Berwick, which, though an English town, has many Scots words and customs. Here they are spouting—quite an unknown word farther into Scotland. A Scot calls hips piends (not sure how he spells it). Official literature of the Berwickshire (a Scots county) Council calls eaves gutters in one document rhones, and in another rones. Wall plugs are dooks and joist strutting dwangs. Stop tap covers are tobies. On the Border, header quoins to openings are rybates, and across the Border cupboards are invariably presses, except a linen cupboard, which is (quite delightfully) a napery. Here a wall and not a ditch is a dyke, a gable coping is a watertable, and in Scotland a flue is a vent. An old Northumbrian name for an open gutter is a syer, dropping out of use now.

There are doubtless other words which would seem strange to a south countryman (we call anything south of Durham "away south"), but one cannot recall them all at short notice.

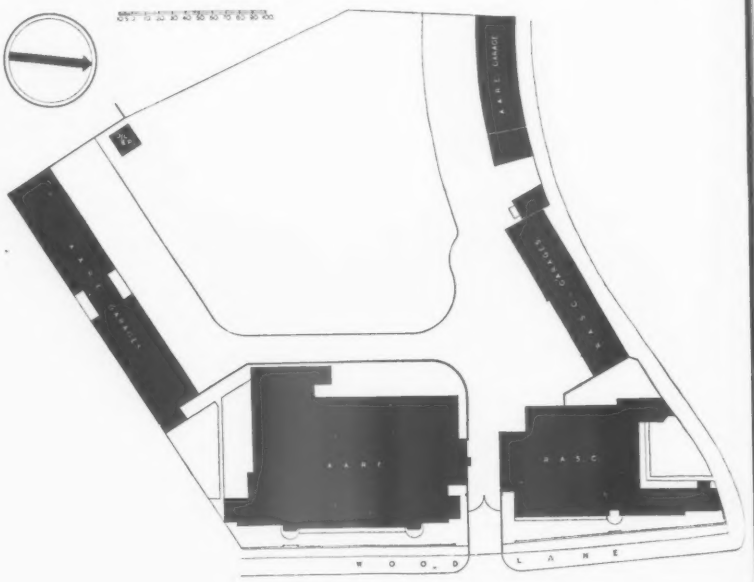
G. REAVELL

Alnwick.

TERRITORIAL ARMY HE

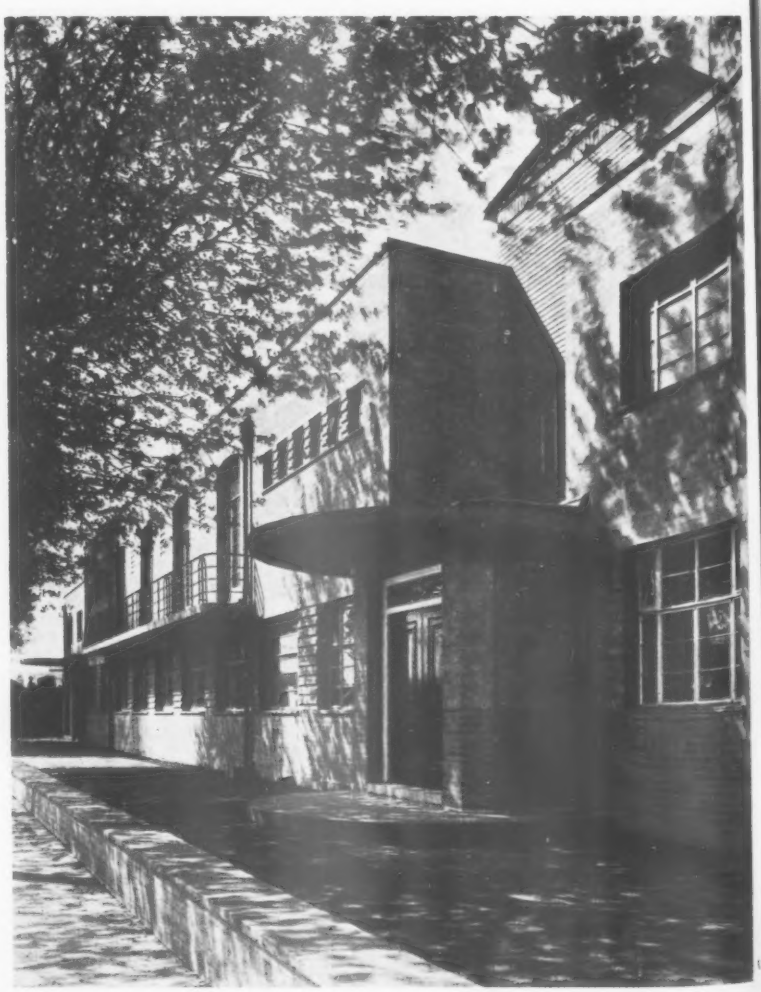
DESIGNED BY WILLIAM G. NEWTON AND PARTNERS

ANOTHER
OF THE MA
FRONT



BLOCK PLAN

BELOW: MAIN FRONT, A.A.R.E. BLOCK



A.A.F
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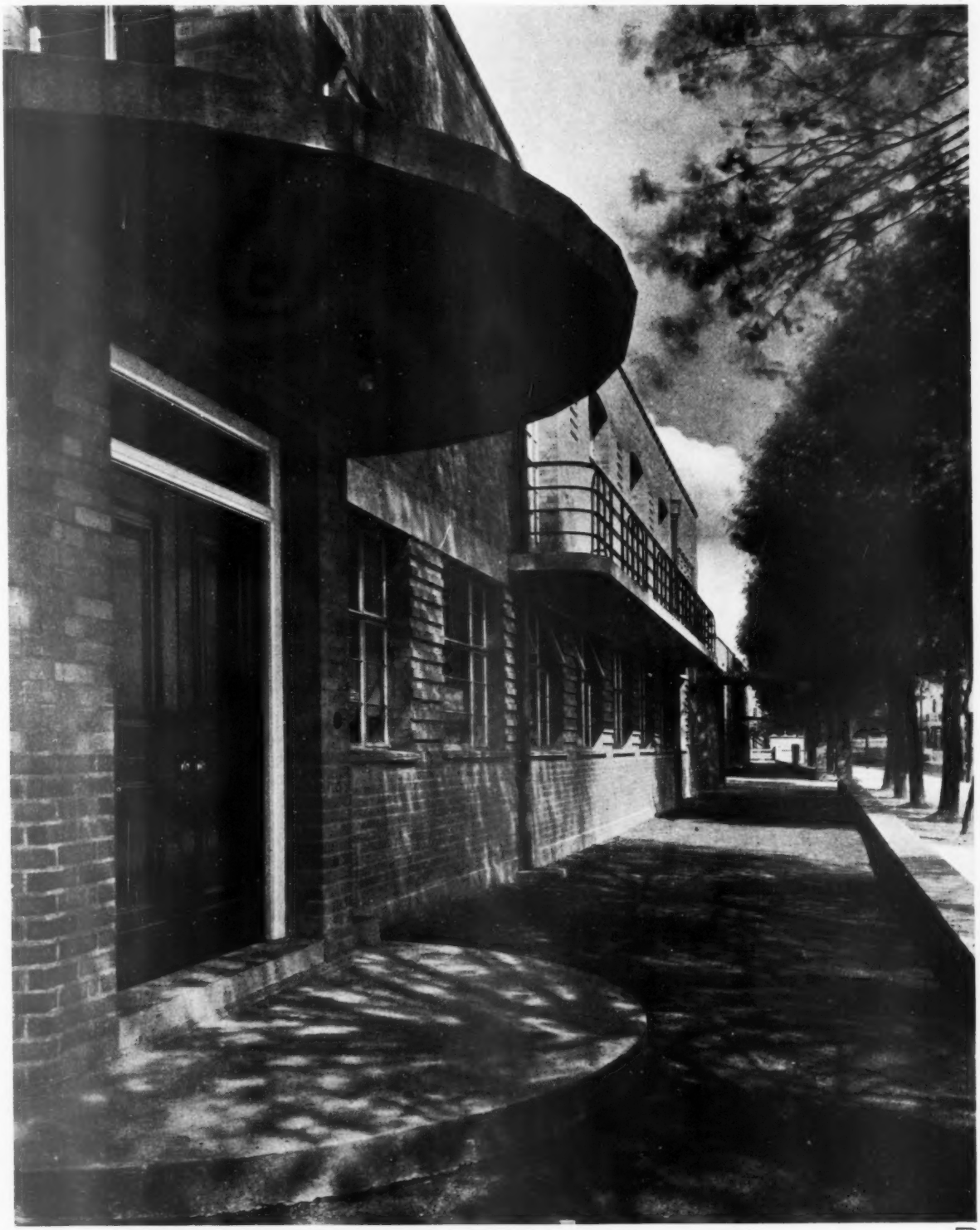
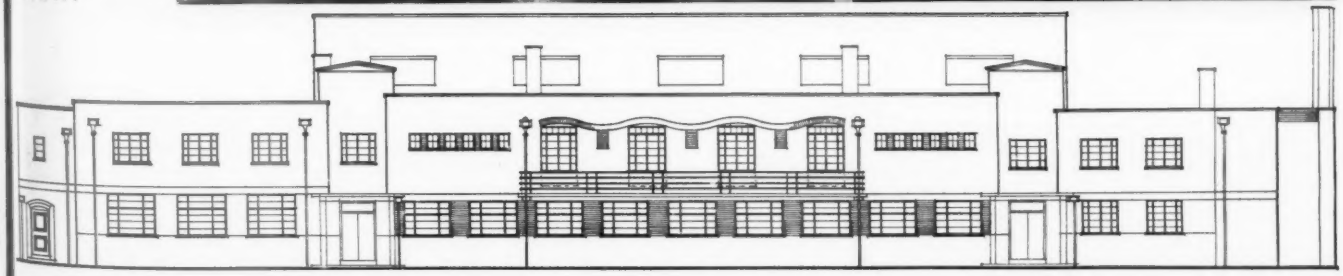
HEADQUARTERS, SHEPHERD'S BUSH

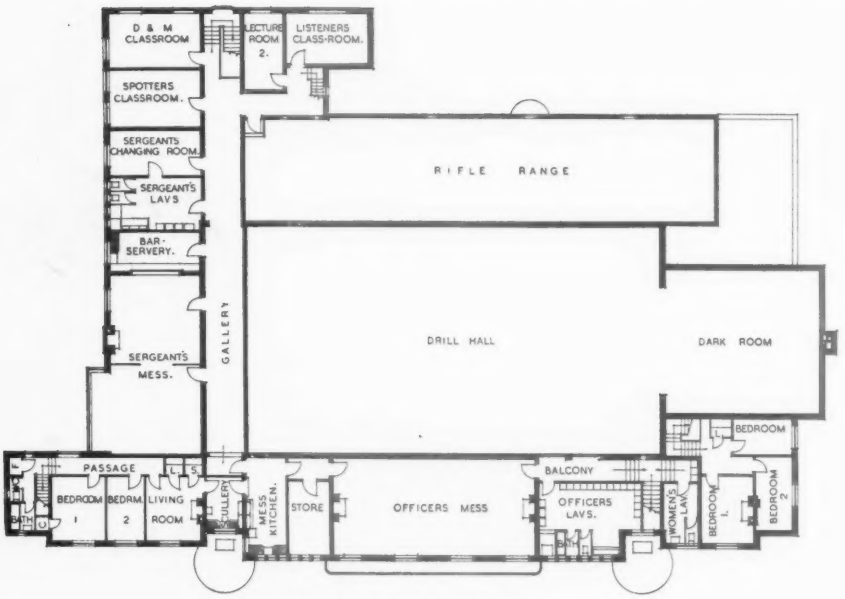
ANOTHER VIEW OF THE MAIN FRONT



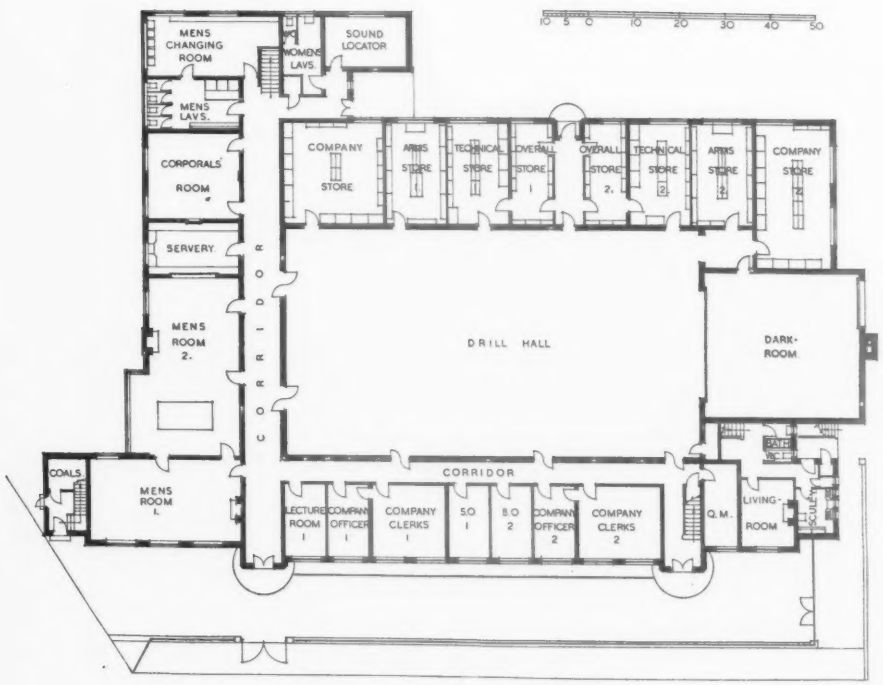
A.A.R.E. BLOCK

BELOW: ELEVATION OF MAIN FRONT





FIRST FLOOR PLAN



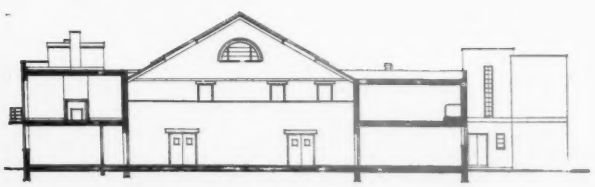
GROUND FLOOR PLAN

PROBLEM—*Accommodation for two units of the Territorial army—the A.A.R.E. and the R.A.S.C. Provision has also been made for a number of permanent staff instructors with their families.*

SITE—*A fairly large one has been planned to obtain ample lorry and garage space at the rear, and a wide driveway in from the road to the parade ground.*

CONSTRUCTION AND EXTERNAL FINISHES—*Built on 20 ft. of made-up ground, the whole of the buildings except for the one-storey garages are carried on piles. All walls are of brick, faced externally with light coloured grey bricks and resting on a darker plinth. The floors and roofs are of reinforced concrete, and the standard steel casements are painted silver.*

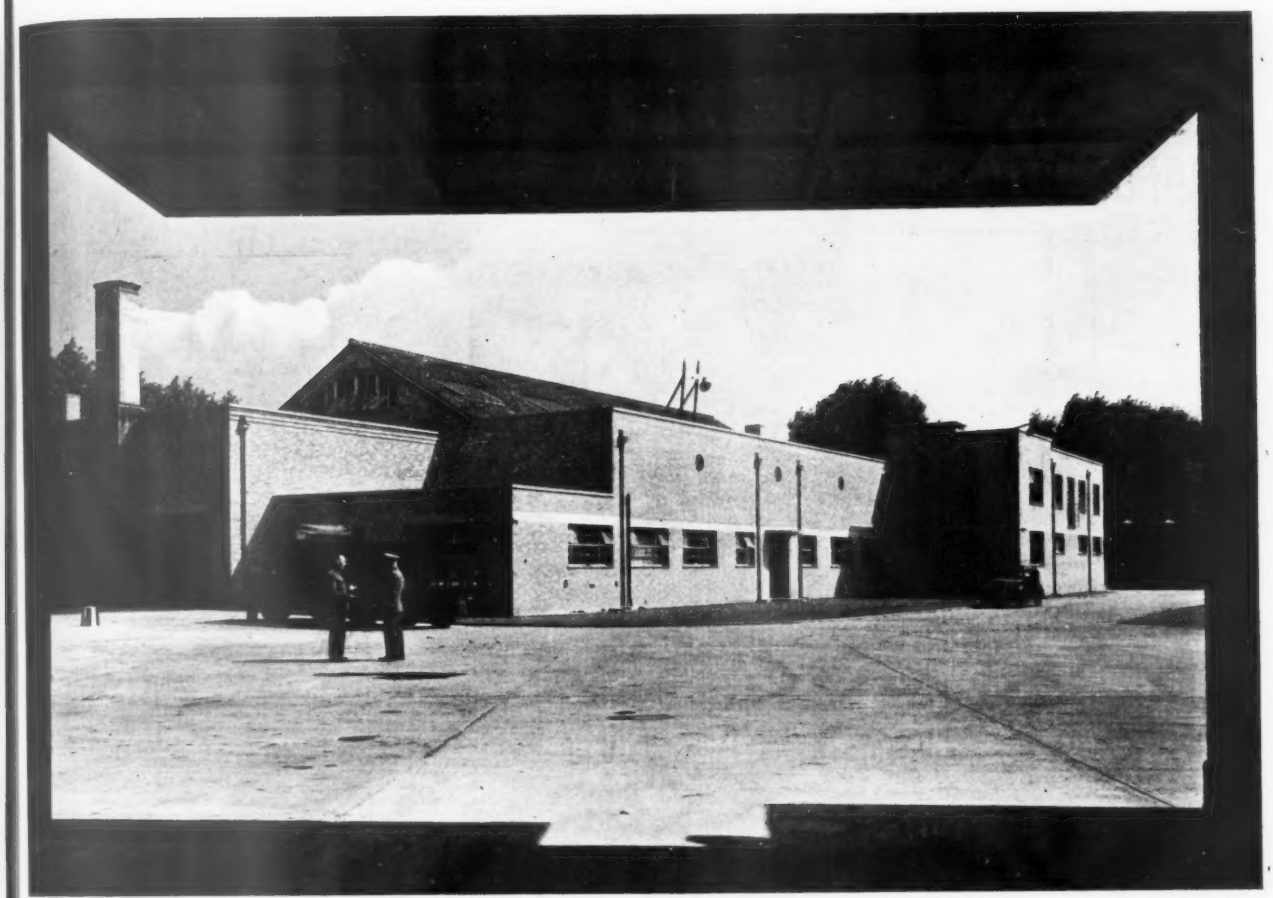
A. A. R. E. BLOCK



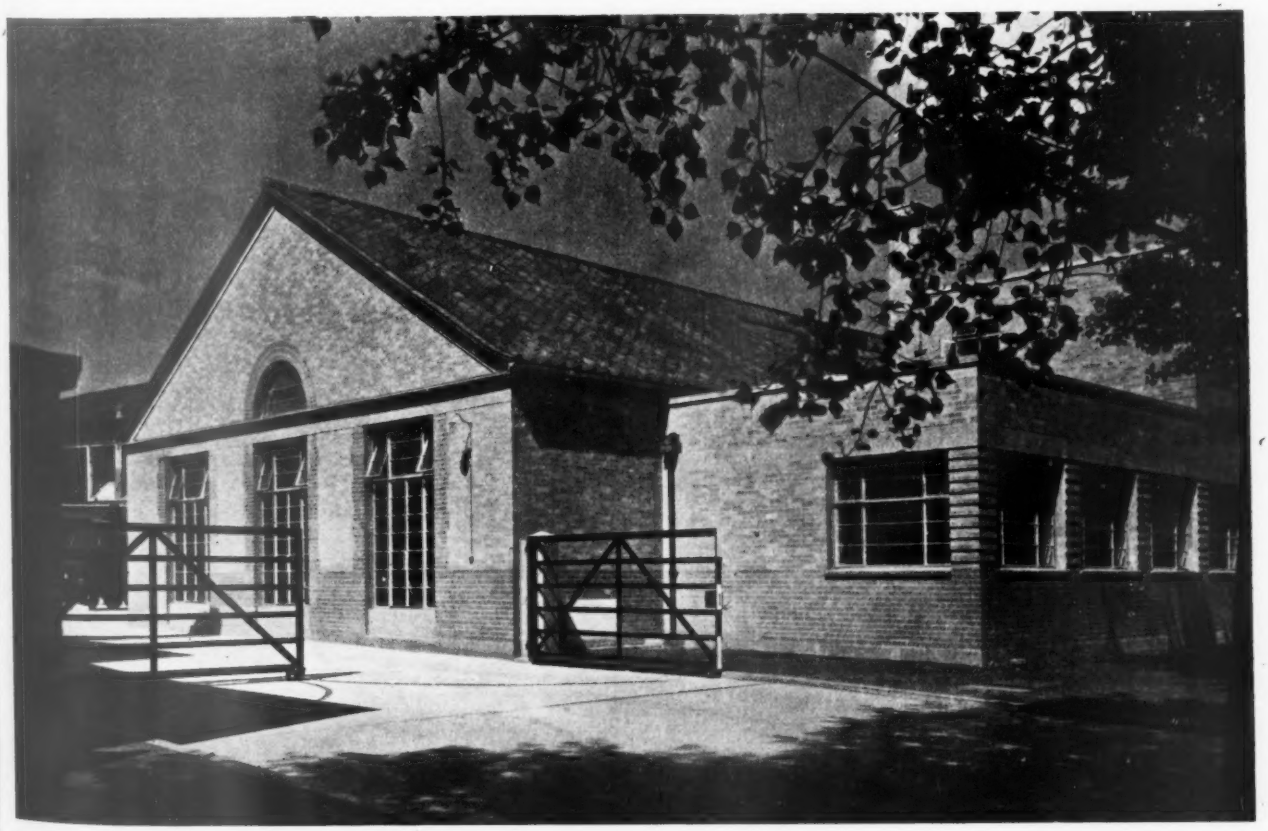
SECTION

ONE OF THE TWO ENTRANCES ON THE MAIN FRONT

TERRITORIAL ARMY HEADQUARTERS, SHEPHERD'S



ABOVE: LOOKING ACROSS THE PARADE GROUND FROM A GARAGE TOWARDS THE A.A.R.E. BLOCK. BELOW: MAIN ENTRANCE GATES FROM WOOD LANE.



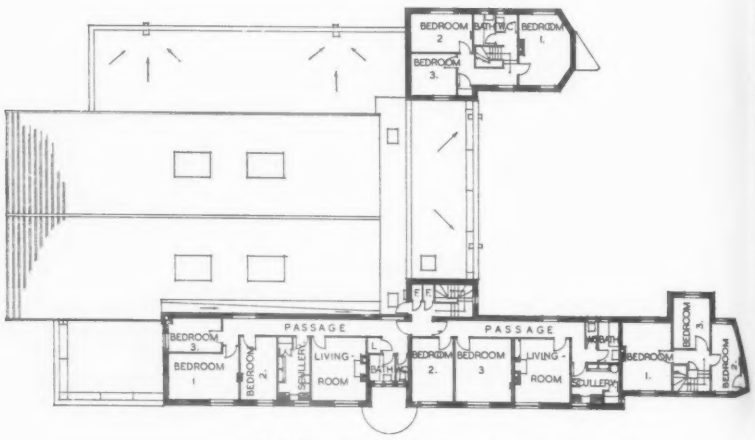
BUSH • BY WILLIAM G. NEWTON AND PARTNERS

ELEVATION TO WOOD LANE

INTERNAL FINISHES — *Walls generally are finished with sand-lime bricks, fair-faced. Dadoes of cement glaze are painted in various bright colours, except where of hard board in the messes, and of rustic Flettons in the drill halls.*

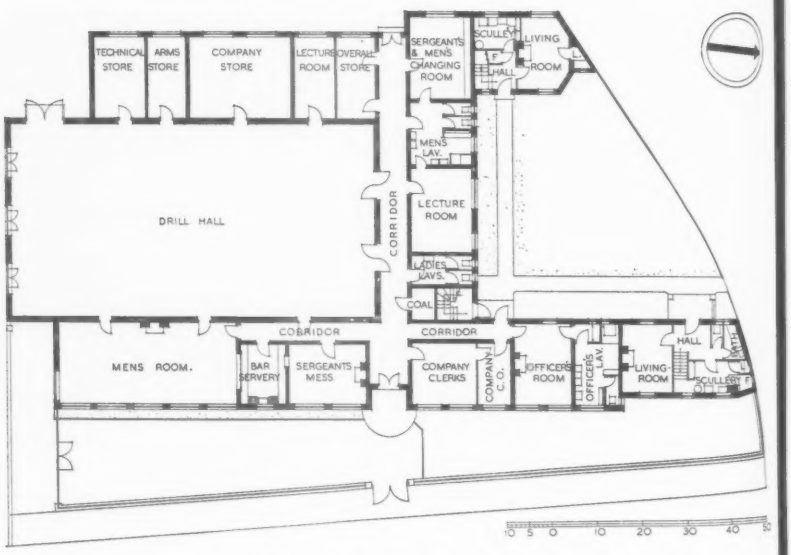
SERVICES — *Both blocks are equipped with low-pressure hot water heating and automatically stoked hot water systems.*

The general contractors were : L. and W. Whitehead, Ltd. ; for a list of sub-contractors *see page 317.*



FIRST FLOOR PLAN

WOOD LANE FRONT



GROUND FLOOR PLAN

R. A. S. C.
BLOCK

TERRITORIAL ARMY HEADQUARTERS, SHEPHERD'S BUSH

ENTRANCE TO A.A.R.E. BLOCK FROM THE PARADE GROUND

A WORKSHOP

THE A.A.R.E. DRILL HALL

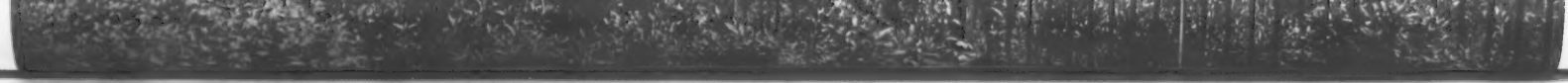
USH • BY WILLIAM G. NEWTON AND PARTNERS

ST. BARNABAS CHURCH, NOTTINGHAM

DESIGNED BY T. CECIL HOWITT

THE ARCHITECTS' JOURNAL for August 31, 1939

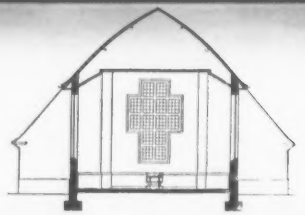
VIEW FROM SOUTH-WEST



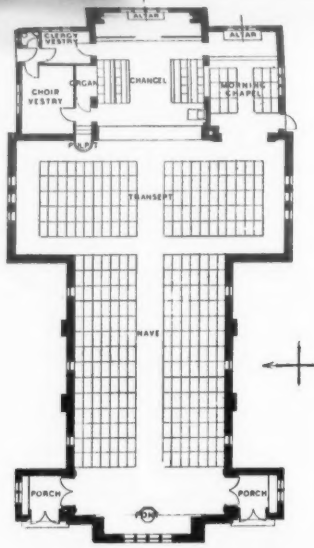
VIEW FROM SOUTH-WEST

ENTRANCE DOORS AND FONT

SECTION



PLAN



THE CHANCEL AND ALTAR

BELOW: ORGAN AND PULPIT

PROBLEM—*A church for 350 people, a church hall, and a curate's house. It was also desired that the group should harmonize with the newly-developed Lenton Abbey housing estate adjoining.*

SITE—*On a square-shaped, level site, the church has a main frontage to the Nottingham–Derby road which is flanked by fir plantations.*

CONSTRUCTION AND EXTERNAL FINISHES—*All walls are of solid brickwork faced externally with 2-in. thick sand-stock bricks of a light stone hue, and orange coloured dressings. The roofs are finished with hand-made, sand-faced, stone coloured tiles, supported by steel trusses, timber purlins, rafters and boarding.*

INTERNAL FINISHES—*The church walls are faced with light stone-coloured bricks, with orange brick dressings. The flat low ceiling with splayed sides is enriched by a continuous fibrous plaster modelled band decorated in appliqué colours. Buff-coloured quarry tiles are used for the floor, and natural oak for all woodwork and finishings. The east and west windows are designed on the lines of a large Latin cross, and consist of natural oak framing, leaded glazing and Roman slab glass.*

SERVICES—*Heating is by high pressure hot water tubes in panels under the tiled floor, bedded in a sand-filled chase to allow for expansion.*

COST—*Contract price, £5,798. Price per cubic foot, 10d. Outside works contract, £458.*

The general contractors were John Cawley, Ltd.; for a list of sub-contractors see page 317.

LAW REPORTS

COMPULSORY PURCHASE ORDER QUASHED.—LAND PART OF A PARK. HOUSING ACT, 1936.

Re the Housing Act, 1936, and re the Ripon (Highfield) Housing Confirmation Order, 1938. White and Collins v. Minister of Health. Court of Appeal. — Before Lords Justices MacKinnon and Luxmoore and Mr. Justice Humphreys.

IN this case the appellants, Messrs. White and Collins, as the owners of land and premises at Highfield, Ripon, appealed from the judgment of Mr. Justice Charles, sitting in the King's Bench Division, dismissing their appeal against an order made by the Ripon Council for the compulsory purchase of land belonging to the appellants for the purpose of the erection of houses.

On behalf of the appellants it was stated that the area of land in question was about 27 acres, and that the land formed part of a park or that it was required for the preservation of the amenities or convenience of Highfield. It was urged that there was no evidence on which the Minister of Health could come to the conclusion that the land in question was not land within the provisions of section 75 of the Housing Act, 1936, and the Court was asked to decide that the compulsory order should not, in the circumstances of the case, have been made by the Council and that the confirmatory order made by the Minister should have been quashed.

For the Minister, it was stated that the case raised a question of considerable importance. In cases where fields were in the same ownership as adjoining houses, and the Minister had decided as a question of fact that the fields were not a park or required for the amenity or convenience of the house, many housing schemes would be held up if this could be controverted. The question for the Court below was whether there was evidence on which the Minister could find as a fact that the land in question was not a park.

Mr. Justice Charles, in the Court below, in the course of his judgment, said he was asked to quash the order on the ground that the land to be compulsorily purchased by the Council was part of a park and was therefore exempt by reason of section 75 of the Housing Act, 1936. The Minister had appointed an inspector to hold a local inquiry, and after a complete examination of the evidence and the representations made, the Minister came to a conclusion, which was one of fact, and which, in his lordship's opinion, it was not open to the Court to disturb. He dismissed the appeal with costs.

It was from this decision that Messrs. White and Collins now again appealed. Mr. R. M. Montgomery, K.C., and Mr. W. E. P. Dane appeared for the appellants, and the Solicitor-General, Sir Terence O'Connor, K.C., and Mr. Valentine Holmes represented the Minister of Health.

After hearing the legal arguments the Court allowed the appeal and directed that the Minister's order should be quashed.

Lord Justice MacKinnon, in giving judgment, after giving the definition of park as stated in the Oxford English Dictionary, said it was true that 35 acres was not a large piece of ground, but he saw no reason why it should not be a park. On the evidence in the present case he was satisfied that the land in question was part of a park within the meaning of section 75 of the Housing Act, 1936, and that its compulsory purchase was therefore not within the powers of the Act. If the Minister had accepted the contention of the local authority that the land had ceased to be a park because it was let for grazing, that was manifestly an erroneous view, since it was notorious that hundreds of undoubted "parks" throughout the country were so let.

Mr. Holmes had impressed on the Court the importance of the duties of local authorities as to rehousing under the Act, and deprecated interference with them. His lordship appreciated that importance, but it must be subject to observance of the clear words of section 75. He pointed out that the section only referred to land which formed "part of any park." There was nothing to prevent the Council from acquiring compulsorily the whole of the property, including the house, and the owners would have no power to interfere with them.

In view of all the circumstances of the case he thought Mr. Justice Charles was wrong in dismissing the appeal before him.

Lord Justice Luxmoore agreed that the appeal should be allowed and expressed the view that all that was necessary to be done was to show that the land came within section 75 of the Act—that it was part of a park. It was, in his view, unnecessary for the owner also to prove that the land was required for the amenity or convenience of the house.

Mr. Justice Humphreys concurred.

ARCHITECT'S SUCCESSFUL CLAIM FOR FEES.

Official Referee's Court.—Before Justice C. M. Pitman.

IN the Official Referee's Court, High Court of Justice, his honour C. M. Pitman concluded the hearing of an involved action concerning the building of cinemas, and quantity surveyor's fees, and a claim by the architects for a large sum for fees for professional work executed by them.

The defendant was Mrs. Edith Devis, residing at Bournemouth, and she disputed the charges claimed by Mr. David Clarke, architect, of Messrs. Bradley and Clarke, of Birmingham, for work done in connection with cinema schemes at Leamington, Stratford-on-Avon and Warwick.

Mrs. Devis, director of the Bath Cinema Co. (Leamington), Ltd., together with her late husband, Mr. S. M. Devis, were directors of the Bath Hotel, a dance hall with cinemas at Leamington and at Nuneaton.

They also held cinema sites at Warwick and Stratford-on-Avon, but by a deal in October, 1936, these undertakings passed to Messrs. Clift and Leon Salberg.

It appeared that Messrs. Collins and Britton, quantity surveyors, of Birmingham, had claimed a sum from Mrs. Devis for fees, and this matter she settled by the payment of £700, together with a sum of £90 for costs.

In the present proceedings Mrs. Devis sought to recover this sum from her architects, Bradley and Clarke, as third parties, her case being that whereas Mr. Clarke charged 7 per cent., Mr. Bradley had only charged her 4½ per cent. on previous work.

Mr. Clarke now set up a counterclaim for £1,615 for fees.

Mrs. Devis, by her defence to this claim, pleaded that plans far too elaborate were prepared for some of the schemes. With regard to the Bath Cinema alterations, Mr. Clarke claimed £190, and Mrs. Devis replied that the scheme had to be abandoned as she stipulated for an expenditure of £3,000, but the lowest tender exceeded £6,000.

Mrs. Devis gave evidence in support of her case.

His honour reminded Mrs. Devis that in this last scheme she had added considerably to it. There were higher and thicker walls and really the substituting of a theatre for a cinema.

Mrs. Devis complained that Mr. Clarke put forward too large a building for the cinema she proposed to build at Warwick. The result was that the tender for the work was too much, having regard to the fact that they had a cinema a mile away and she did not want two £3,500 cinemas within that limit.

Mr. Clarke supported his claim and declared that the basis of his charges was reasonable. Dealing with the alterations for the Bath Cinema, he said Mrs. Devis added a theatre stage, to oblige the local operatic society, and he pointed out to her that that would add considerably to the cost, as there would have to be dressing-rooms, etc. Coming to the scheme for a new cinema at Warwick, he said Mrs. Devis made no limitation as to the cost, and his fees in that respect amounted to over £1,000.

Further evidence was called on behalf of Mr. Clarke that the basis of his charges were reasonable.

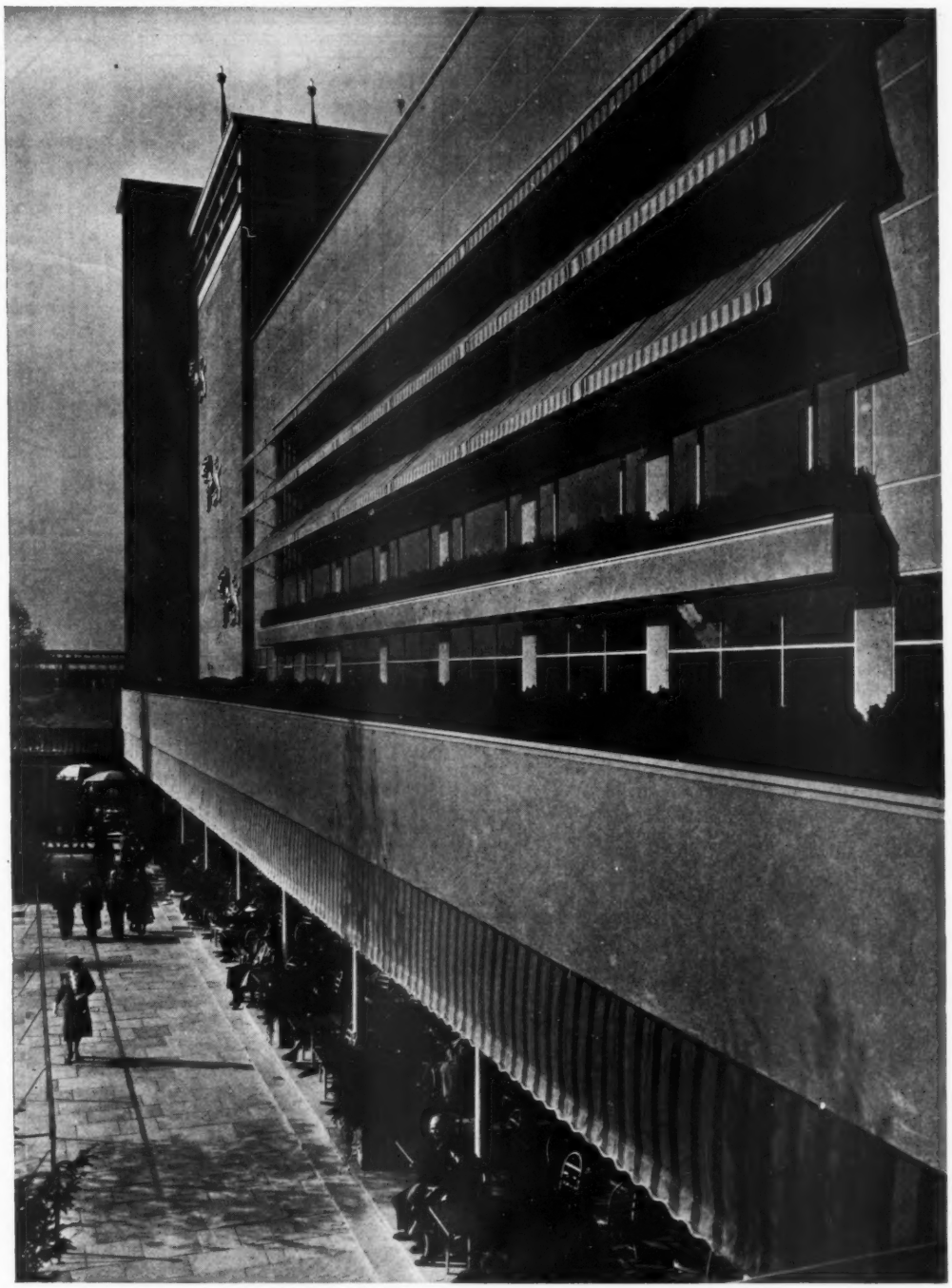
His honour, in finding in favour of Mr. Clarke on the principal parts of his claim, said to his mind it was plain that real as well as ostensible authority was given for all work, and the architect then proceeded to incur the charges of the quantity surveyors, and therefore it was not possible for Mrs. Devis to recover the £790 she had paid in respect of that claim and costs, from Mr. Clarke. Dealing with the fees claimed for the Bath Cinema, his honour came to the conclusion that a reasonable fee was claimed. The next claim by Mr. Clarke was in respect of the Warwick Cinema, and his honour said he should allow him £1,000 with interest at 4½ per cent. to the date of the reference of the matter. With regard to other work done by Mr. Clarke, his honour found in Mr. Clarke's favour and he should allow him a total of £1,620, but he slightly reduced a claim in respect of work done for a private house.

Finally, his honour observed that in his opinion Mr. Clarke's claim was generally reasonable. Mrs. Devis had added considerably to her original instructions for the Bath cinema, including provision for a theatre stage, and a lady of her experience in these matters must have known that those additions would add greatly to the cost of the scheme.

He gave judgment for Mr. Clarke for the sums he had indicated.

WORKING DETAILS : 775

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



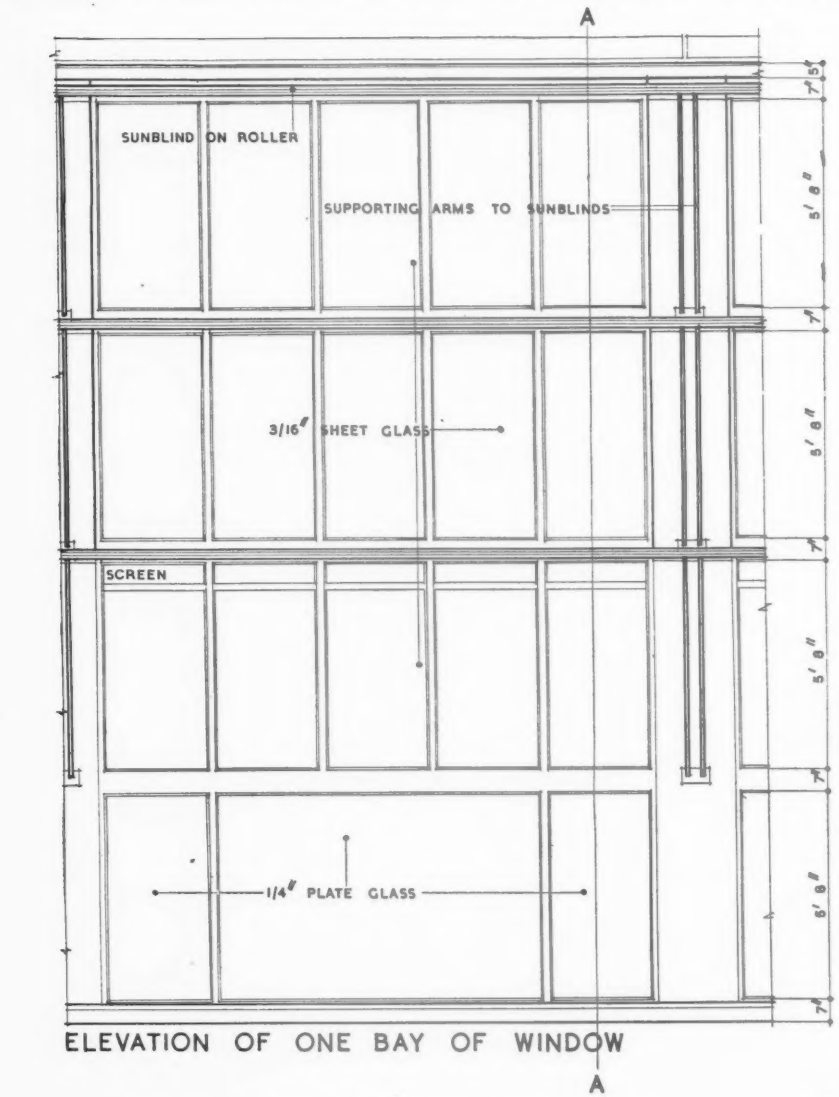
The windows illustrated provide the main lighting to the Maritime Hall on the first floor of the northern pavilion. They occupy almost the complete height and length of the two side walls of the Hall. They are divided horizontally into seven bays, and vertically into four tiers of windows, each tier with its own continuous sunblind.

The construction of the buildings is in a light steel frame covered with panels of building board. The long windows are framed in wood with a painted finish.

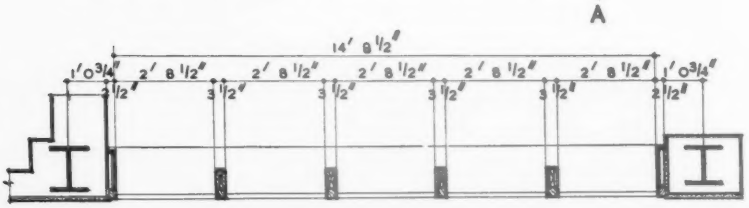
Details are shown overleaf.

WORKING DETAILS : 776

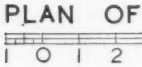
WINDOWS • BRITISH PAVILION, NEW YORK WORLD'S FAIR • STANLEY HALL & EASTON & ROBERTSON

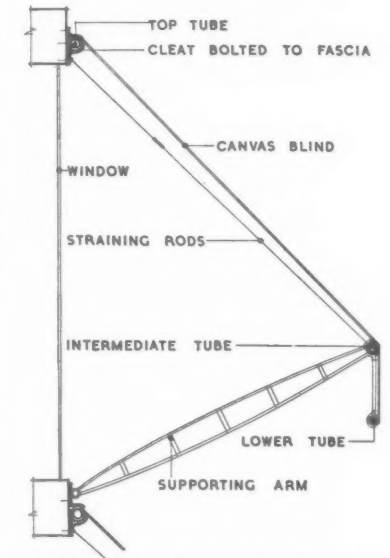


ELEVATION OF ONE BAY OF WINDOW

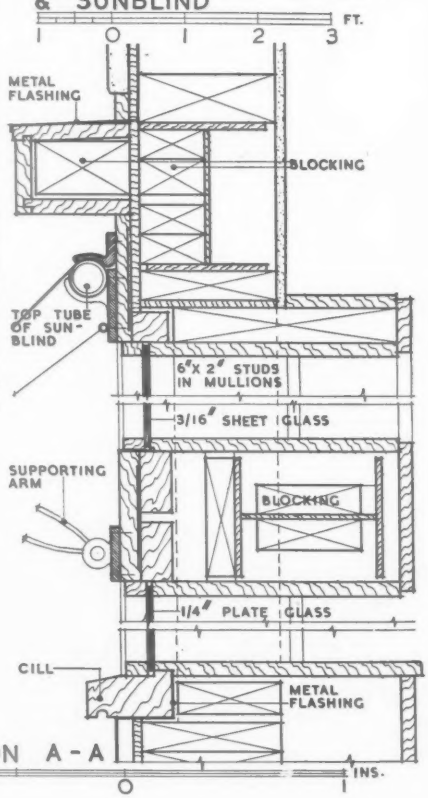


PLAN OF ONE BAY OF WINDOW





SECTION THRO' WINDOW & SUNBLIND



SECTION A-A

LONGITUDINAL SECTION

Details of the windows illustrated overleaf.

The Architects' Journal Library of Planned Information

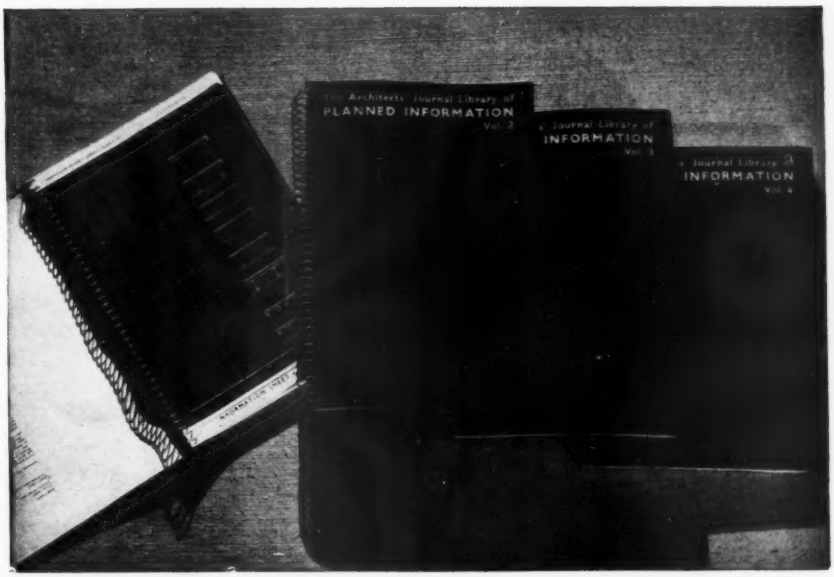
INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

759 Structural Steelwork

760 Carpentry and Joinery



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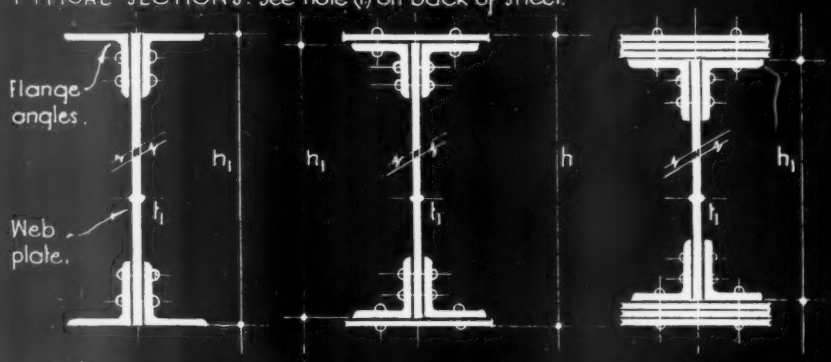
Sheets issued since index :

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
733 : Structural Steelwork
734 : Metalwork
735 : Plumbing
736 : Structural Steelwork
737 : Structural Steelwork
738 : Metalwork
739 : Plan Elements
740 : Timber Construction
741 : Structural Steelwork
742 : Metalwork
743 : Wall Finishes
744 : Waterproofing and Damp-proofing
745 : Structural Steelwork
746 : Metalwork
747 : A. R. P.
748 : Waterproofing and Damp-proofing
749 : Metalwork
750 : Wall Facing Materials and Wallboards
751 : Structural Steelwork
752 : A.R.P.
753 : Hardware and Ironmongery
754 : Carpentry and Joinery
755 : Structural Steelwork
756 : Metalwork
757 : Carpentry and Joinery
758 : Roofing

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

DIAGRAMS ILLUSTRATING TYPICAL DESIGN AND ASSEMBLY OF PLATE GIRDERS:

(A.) TYPICAL SECTIONS. See note (1) on back of Sheet.



Approx. net section modulus (See Sheet 736)

$$Zn = \left(\frac{h_1^2 t_1}{6h} + An\right) h_1$$

Approx. moment of inertia (See Sheet 733)

$$In = \left(\frac{h_1^2 t_1}{12} + An\,h\right) h_1$$

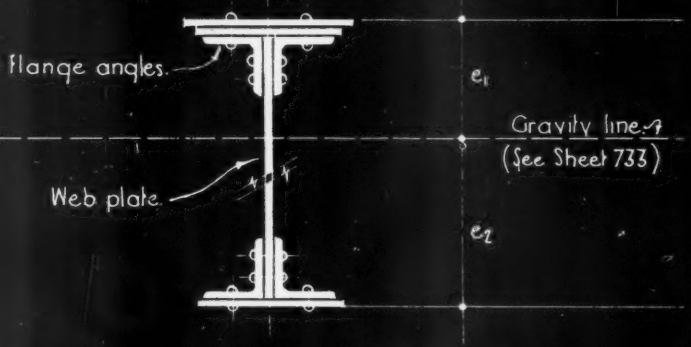
An = net area of one flange.

Cross sectional area (A) of web of thickness t_1:

$$A = \frac{S}{s} + \frac{h_1}{135} \quad \therefore \quad t_1 = \frac{S}{sh_1} + \frac{h_1}{135}$$

in which S = shear force (max.)
s = permitted shear stress.

(B.) ASYMMETRICAL SECTIONS. See note (2) on back of Sheet.



Net moment of inertia (In) is found from Sheet 733.

Then max. stress in top flange is:

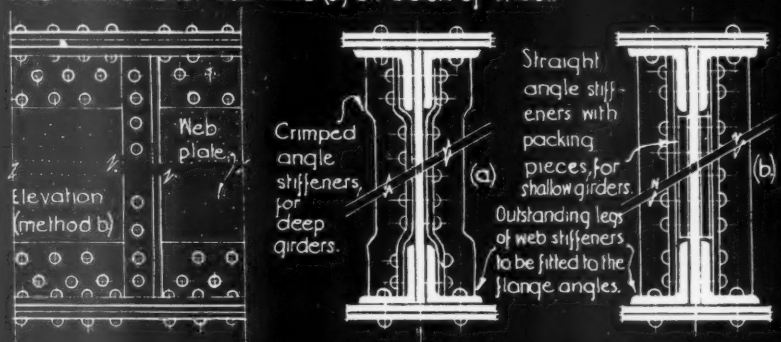
$$f_t = \frac{Me_1}{In}$$ and

maximum stress in bottom flange is:

$$f_b \quad \frac{Me_2}{In}$$

where e_1 and e_2 are the distances of extreme fibres from the gravity line and M is the bending moment.

(C.) WEB STIFFENERS. See note (3) on back of Sheet.



SPACING OF STIFFENERS.

d should not be greater than h.

Deep girders should have crimped stiffeners (as in (a)) and shallow girders should have straight stiffeners (as in (b)).

(D.) SPLICES. See note (4) on back of Sheet.

Splice plate for joint in single flange plate.

Single splice plate for joints in several flange plates.

t_2 must not be less than t_3
t_2 ditto ditto t_4
t_2 ditto ditto t_5
} whichever is the greatest.

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Compiled by C.W. Hamann, Consulting Engineer.

INFORMATION SHEET : STEEL FRAME CONSTRUCTION : No 9
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 759 •

STRUCTURAL STEELWORK

Subject : Riveted Plate Girders

General :

This series of Sheets on steel construction 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.

This is the ninth Sheet of the series, and illustrates the design and assembly of plate girders.

(1) Typical Sections :

Riveted plate girders consist generally of a web plate, 4 angles, and one or several plates top and bottom to form the flanges.

The advantages of plate girders may be enumerated as follows :—

(*a*) They can be dimensioned to suit any bending moment.

(*b*) By curtailing the flange plates, the section can be adapted readily to the bending moment distribution.

(*c*) The web plate can be chosen to suit the shear forces.

A disadvantage is the increase in labour costs, and for this reason this type of girder is not usually employed where ordinary joists or plated joists are sufficient.

The section modulus of a plate girder is to be taken net, i.e. allowance for rivet holes is to be made.

Flange rivets are staggered in relation to those connecting the angles to the web and, therefore, normally only 2 holes are to be deducted from each flange.

Where no flange plates obtain, the rivet holes connecting the angles to the web are to be deducted.

If the total depth is h, the depth of the web plate h_1, and its thickness t_1, and further if A_n is the net area of one flange (consisting of two angles and the plates with deduction for rivet holes), an approximate formula for the section modulus (see Sheet 736) is

$$Z_n = \left(\frac{h_1^2 t_1}{6h} + A_n\right) h_1$$

and for the Moment of Inertia is

$$I_n = \left(\frac{h_1^2 t_1}{12} + A_n h\right) h_1$$

These formulæ are useful in the choosing of appropriate sections ; but sections must be checked by a more exact formula afterwards.

The choice of the web plate depends mainly on considerations of shear. The cross sectional area of the web should not be less than—

$$A = \frac{S}{s} + \frac{h_1^2}{135} \text{ and the thickness } t_1 = \frac{S}{sh_1} + \frac{h_1}{135}$$

where S = shear force
h_1 = height of web plate
t_1 = thickness of web plate
s = permitted shear stress (usually s = 5 ton/sq. in.)
A = section of web plate
t_1 should not be less than $\frac{5}{16}$"

The choice of a section depends on the vertical and horizontal (lateral) space available, on the size of plates available, etc., apart from the consideration of the weight of steel.

(2) Asymmetrical Sections :

Asymmetrical plate girders are of particular value where, for reasons of buckling, the width of the top flange must be greater than that of the bottom flange. In this case rivet holes need not be deducted from the compression flange. They need not in fact be deducted in the preceding case, but where flange sizes are identical it is simpler to take the net areas as equal.

For an asymmetrical section the gravity line must first be found, then the net Moment of Inertia about this line. See Sheet 733.

The maximum stress at the top for a bending moment (M) is

$$f_t = \frac{Me_1}{I_n}$$

and at the bottom

$$f_b = \frac{Me_2}{I_n}$$

where e_1 and e_2 are the distances of extreme fibres from the gravity line.

(3) Web Stiffeners :

Web plates of plate girders should be braced by stiffeners consisting usually of an angle and packing plate on either side of the web.

An angle is generally chosen with an outstanding leg 1 in. or so less than the width of the main flange angles. The packing plates are merely to maintain the distance of the angle stiffeners from the web plates. They must be of the same thickness as the main flange angles.

Where a particularly heavy load bears on the top flange, the stiffening angles must be fitted accurately to the top flange angles. At supports, stiffening angles must be fitted at the lower flange angles.

The spacing of stiffeners depends on the loading. Where the load is equally distributed and the shear is well within the permitted limits, the spacing may be taken as 6 ft.

Where concentrated loads obtain, stiffeners must be spaced so that a pair of angles occurs immediately under every point load.

In special cases the size of web plate may be reduced by arranging stiffeners at a spacing less than the depth of the web plate. In such cases the preceding formula for the section of the web plate may be modified to

$$A = \frac{S}{s} + \frac{d^2}{135}$$

in which d is the actual spacing of the stiffeners.

(4) Splices :

Plate girders may be spliced entirely at the one plane. For instance, for transport purposes they might be delivered in halves and joined afterwards.

Alternatively, the single parts may be spliced individually and independently of each other. That is to say, splices in the component pieces would be staggered. Such splices would best be made in the workshops. Flange plates are spliced by the addition of a plate equivalent in section to that spliced.

The number of rivets must be sufficient to transfer the load from one plate to the other. Where two or more flange plates exist, the splice is to be staggered ; but the splice plate need not have a greater area than that of the largest individual plate spliced. It must oversail the joints in all the single plates in the longitudinal direction.

Web plates are best spliced by a pair of plates overlapping the flange angles and separated from the web by distance plates.

Previous Sheets :

No. 729—Basic Steel Sections.
No. 733—Mechanics of Sections, 1.
No. 736—Mechanics of Sections, 2.
No. 737—Economical Framing, 1.
No. 741—Economical Framing, 2.
No. 745—Economical Beam Sections, 1.
No. 751—Economical Beam Sections, 2.
No. 755—Economical Beam Sections, 3.

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934.

934

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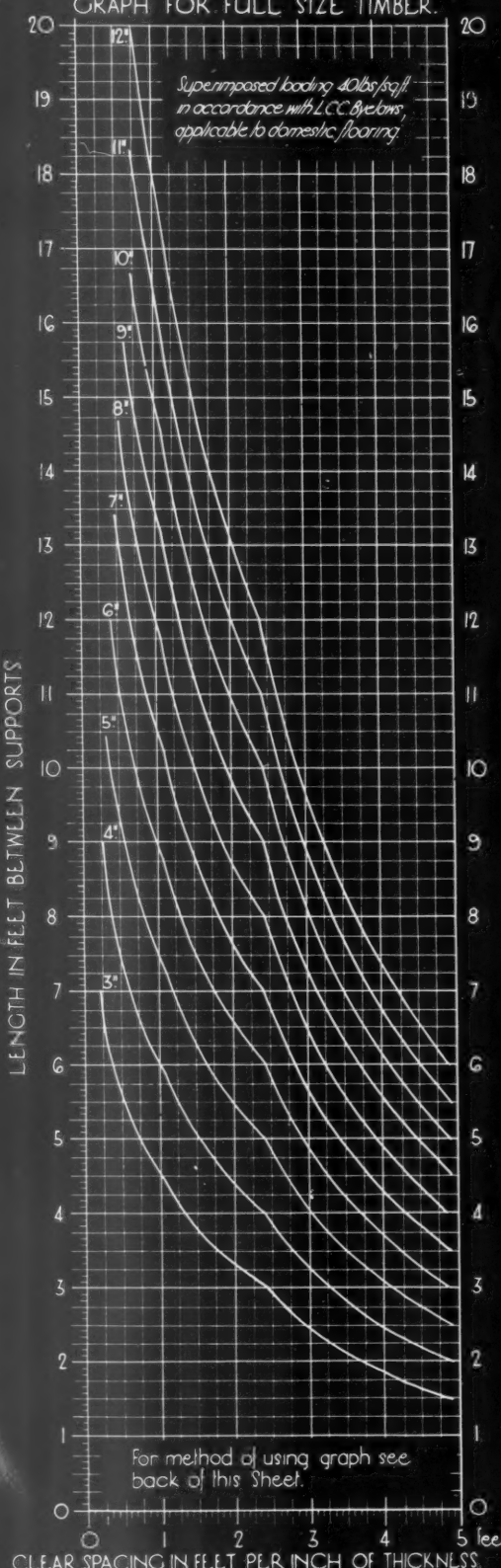
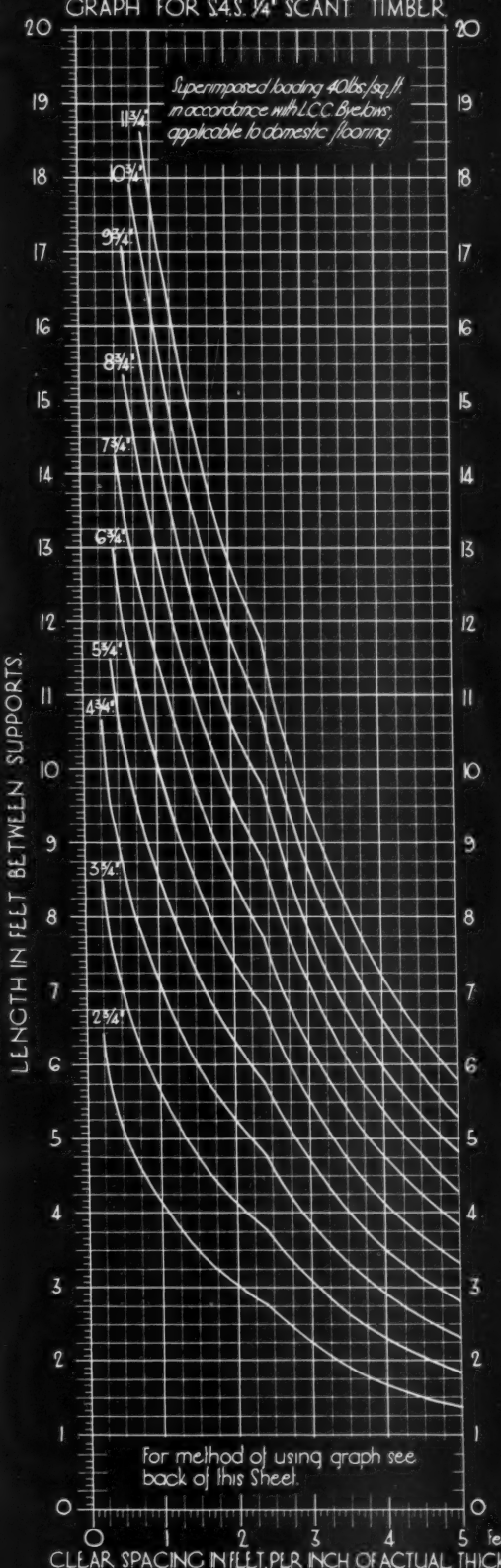
GRAPHS SHOWING LENGTHS AND SPACING OF MERCHANTABLE DOUGLAS FIR (1200 LB. f TIMBER):

GRAPH FOR FULL SIZE TIMBER.



GRAPH FOR S4.S. ¼" SCANT TIMBER.



Information from The British Columbia Timber Commissioner.
Compiled by Alfred H. Barnes, F.R.I.B.A., M.I. Struct. E.

INFORMATION SHEET : TIMBER 1 : THE CALCULATION OF GRADED TIMBERS FOR DOMESTIC FLOORS.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1.

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INFORMATION SHEET

• 760 •

CARPENTRY AND JOINERY

Subject :

The calculation of graded timbers for domestic floors.

General :

This is the first of a series of Sheets dealing with the graphical calculation of timber sizes and spacing for various types of construction.

This Sheet deals with timbers for domestic floor construction, the graphs being calculated on a basis of 40 lb. per sq. ft. superimposed loading.

The size of timbers depends upon four factors, any one of which can be found, given the other three.

These factors are :—

(*a*) Length.
(*b*) Thickness (or breadth).
(*c*) Depth.
(*d*) Spacing.

Grade of Timber :

The following Schedule and Grading Rules for "grade 1,200 lb. f."* timber are quoted from the *by-laws made by the London County Council in pursuance of the London Building Act (Amendment) Act, 1935, for the use of timber in the construction and conversion of buildings*, which came into force in 1938 and to which reference should be made for the full text.

SCHEDULE

The number of annual rings per inch shall be ascertained in the following manner :—

The measurement shall be made at each end of the piece on a measuring line 3 ins. long in the direction of the radius of the rings.

In the case of a boxed-heart piece, the measuring line shall extend over grain which is representative of a fair average of the section. When in such a piece the least dimension is 6 ins. or less, the line shall begin at and extend from a point at a distance of 1 in. from the pith. Where in such a piece the least dimension exceeds 6 ins., the measuring line shall begin at, and extend outwards from, a point at a distance from the pith equal to one-quarter the least dimension of the piece.

In the case of a piece without pith, the centre of the measuring line shall be at the centre of the end of the piece.

The width of a knot shall be ascertained in the following manner :—

The knot shall be measured on that face of the piece in which the area of the knot is greater.

The width shall be taken as the average of its greatest diameter and its least diameter, except that where a knot occurs on the angle of a piece, the width of such knot shall be taken as the distance of such angle (measured on the adjacent face or faces) from the most remote part of such knot.

GRADING RULES FOR "GRADE 1,200 LB. F." TIMBER

Every piece shall be sound and free from defects except as specified in this schedule and shall be of such grain as not to have less than four annual rings to the inch and shall be free from spiral or diagonal grain having an inclination to the direction of the length exceeding one-in-ten except when such spiral or diagonal grain is so disposed as not to impair the strength of the piece.

Knots shall be sound and free from rot.

A tight knot shall not exceed in diameter one-fourth the greater transverse dimension of the piece unless so situated as not to impair the strength of the piece. In addition to the foregoing where such knot is enclosed within the thickness of the piece its width shall not exceed one-third the thickness of the piece.

A loose knot or knot-hole shall not exceed in width one-half the greatest width permitted in the case of a tight knot unless so situated as not to impair the strength of the piece.

A knot cluster or a knot-hole cluster shall be measured as a single unit.

Pitch pockets shall not exceed 8 ins. in length nor shall they exceed $\frac{1}{8}$ in. in width.

Sapwood shall be not more than slightly discoloured.

The depth of torn grain shall not exceed $\frac{1}{16}$ in.

The length of an end split shall not exceed the width of the piece. If there be more than one split in the same end then the sum of their lengths shall not exceed the width of the piece.

Checks shall not be such as to impair materially the strength of the piece.

Wane, if on one angle of a piece not exceeding 4 ins. in thickness, shall not exceed $\frac{1}{3}$ in. in width by one-third the length of the piece, and if on more than one angle the total width and the total area shall not exceed that amount.

Wane, if on one angle of a piece exceeding 4 ins. in thickness, shall not exceed in width one-eighth of the thickness of the piece nor in length one-third of the length of the piece, and if on more than one angle, the total width shall not exceed one-eighth of the thickness of the piece and the total area shall not exceed that of one-eighth of the thickness by one-third of the length of the piece.

Examples (Bridging joists supported on binders) :—

(a) *To find the length—given thickness, depth and spacing.* Assuming the bridging joists are $6\frac{3}{4}$ ins. by $1\frac{3}{4}$ ins. (7 ins. by 2 ins. scant) spaced 14 inches apart in the clear, what is the maximum spacing of the binders, i.e. what is the permissible length of the joists ?

The spacing is 14 ins., i.e. $(14 \div 1\frac{3}{4}) = 8$ ins. per inch of thickness. Taking the 8-in. mark on the scale at the bottom of the graph for scant sizes, and following this dimension up till it reaches the $6\frac{3}{4}$-in. curve, the corresponding length between supports will be 11 ft. 6 ins. The clear length of the joists (and consequently the spacing of the binders) is therefore, 11 ft. 6 ins.

(b) *To find the thickness—given length, depth and spacing.*— Assuming the length of the binder to be 10 ft. and the depth 9 ins. net, what would be the width of the binder ?

The 9-in. curve (in the graph for full-size timbers) crosses the 10 ft. length line at the spacing of 23 ins. per inch of thickness.

The spacing of the binders has been fixed at 11 ft. 6 ins. = 138 ins. The thickness required will therefore be $138 \div 23 = 6$ ins. Assuming that for some reason it is desired to employ binders only 5 ins. wide, this could be done either by increasing the depth of the binders or reducing the span between them.

(c) *To find the depth—given length, thickness and spacing.*— The thickness of the binder being 5 ins. and the spacing 138 ins. or $27\frac{3}{8}$ ins. per inch of thickness, $27\frac{3}{8}$ ins. on the graph at the 10-ft. length comes out nearly on the 10-in. curve. The required depth would, therefore, be 10 ins.

(d) *To find the spacing—given length, thickness and depth.*— If it is decided to use 9-in. by 5-in. binders by reducing the spacings, what would the spacing be for that section over a 10-ft. span ? The 9-in. curve crosses the 10-ft. length line at a spacing of 23 ins. per inch of thickness.

The spacing will, therefore, be limited to $5 \times 23 = 115$ ins. $= 9$ ft. 7 ins. Incidentally the bridging joists will be reduced to this length also, and the spacing between them can be correspondingly increased.

Referring to the graph for scant sizes, the $6\frac{3}{4}$-in. curve at the 9-ft. 7-ins. length gives a spacing of 1 ft. $1\frac{1}{2}$ ins. per inch o thickness $(13\frac{1}{2} \times 1\frac{3}{4}) = 23\frac{5}{8}$ ins.

The spacing of the joists might, therefore, be increased to anything up to nearly 2 ft. according to the thickness of the boarding employed.

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* *DOUGLAS FIR*

Merchantable grade Douglas Fir complies with the above specification. The graph for S.4.S. timber applies to material surfaced on four sides to a size $\frac{1}{4}$ in. in each dimension less than the nominal size.

HOUSE, KNOTTY GREEN, BEACONSFIELD

DESIGNED BY CRICKMAY AND SONS

ABOVE, VIEW FROM WEST; RIGHT, MAIN ENTRANCE

SITE—*Sloping from north-west to south-east. The house was placed to obtain a maximum of sunlight in the principal rooms, and a view towards a belt of trees in the south-west.*

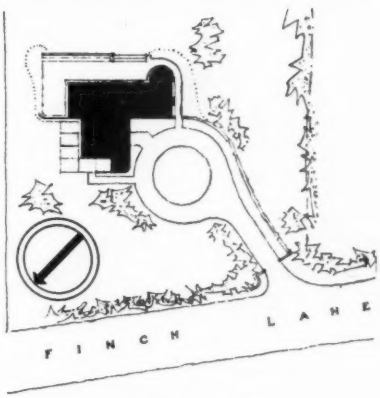
CONSTRUCTION AND EXTERNAL FINISHES—*External walls of 11-in. cavity brickwork with red facings, internal partitions of 3-in. blocks, and a timber pitched roof covered with plain tiles were required by the local estate authorities. The floors are of timber, and the standard metal windows are painted cream and have brick cills externally. All concrete dressings are treated with concrete paint, and the terrace is paved with precast concrete slabs.*

INTERNAL FINISHES—*Walls and ceilings are plastered and distempered, except for tiling round the bath, sink and cooker. The staircase, hall, and living-room floors are of Columbian pine—wax polished. The kitchen, lobby and closets are floored with quarry tiles, whilst the remainder are deal. The flush birch doors, built-in fitments, dressers, cupboards, bookshelves and wardrobes are all wax polished.*

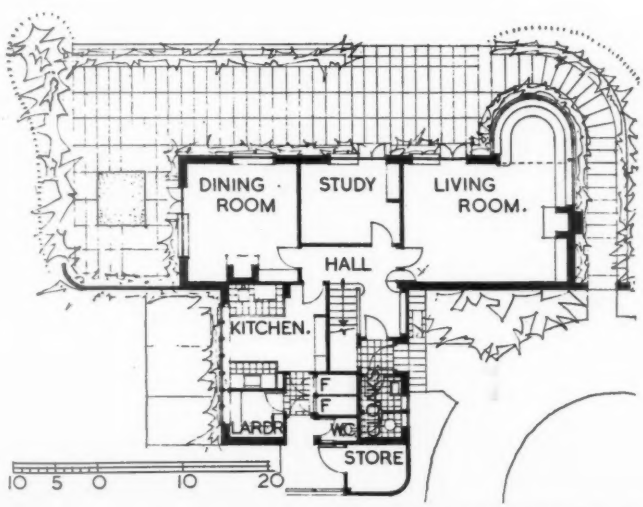
SERVICES—*Heating is by means of coal fires, and by radiators in the hall, landing, day nursery, principal bedroom and dining-room worked from an independent boiler in the kitchen and calorifier in the linen cupboard. Cooking is by electricity.*

COST—*£1,873. Price per cubic foot 1s. 4d.*

The general contractor was G. H. Buckland; for list of sub-contractors, see page 317.



SITE PLAN



GROUND AND FIRST FLOOR PLANS

VIEW FROM SOUTH

HOUSE, KNOTTY GREEN, BEACONSFIELD • BY CRICKMAY AND SONS

TRADE NOTES

[*By PHILIP SCHOLBERG*]

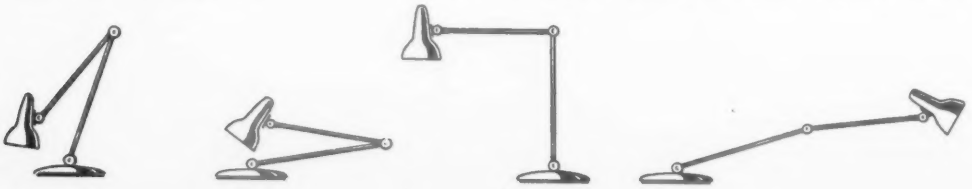
Desk Lighting

THE drawings reproduced below show the various positions of a desk and drawing office lamp which has been introduced during the past few months by E. N. Mason and Sons, Ltd. It is known as the Arclight, and prices vary from 45s. to 50s., according to finish and swinging area, the smaller model having an extended radius of just under 5 ft., while the larger is just over 6 ft. The weight of the reflector is very largely counterbalanced by springs concealed in the arms, but a certain amount of frictional control is provided at the hinges, which can be adjusted quite easily to compensate for any wear. The reflector is a pleasant shape, and does not seem to become noticeably hot even if the lamp is on for a considerable time. Altogether a sensible design which is good enough to go into the top class.—(*E. N. Mason and Sons, Ltd., Arclight Works, Colchester.*)

Leipzig Fair

Writing during the doubts of the week-end, it does not seem likely that very many of us will be at the Leipzig Fair, which opened on Sunday and ends today. Preliminary propaganda from the London office of the Fair, however, refers to one or two developments in materials which seem worth mentioning. As we all know, the use of metals of all kinds is considerably restricted under the four-year plan, and a number of the more common or less martial materials are being used instead. The notes which I have before me read as though they had been rather too literally translated from their German originals by someone who is not very familiar with the terms used by the building industry in this country. Thus, "Waste pipes made of hard porcelain" one may assume to be soil pipes of salt-glazed ware? Or ordinary agricultural pipes? Or does it all refer to rainwater goods? The general idea, however, seems worth pursuing, for where we insist on cast iron or lead it would no doubt be possible to use lighter and cheaper materials, but we must not forget that in Germany there has also been produced "a new cutting appliance which can be used wherever these pipes are being fixed, and its use enables a quick and workmanlike job to be made." It is only too easy to specify a new material and then wonder how the fitters are going to work it on the job.

A further note on "A concrete roof construction without any timber castings" sounds interesting, but is unfortunately quite unintelligible, lacking even the pidgin charm of the Dutch bulb growers' lists. On the other hand, "flushing cisterns made of



pressed glass, porcelain and other materials" is intelligible enough, though "concrete cement" might be almost anything. In this country a certain number of firms are experimenting with materials other than cast iron and sheet steel for cisterns, though none of them, so far as I know, have tried glass. Pilkingtons or Chances might think it worth while to introduce a material which should survive the most querulous of water boards. The German use of a glass ball for the valve is a refinement which we could well adopt at once. If anyone is further interested in any of the developments so far referred to, the names of the manufacturers concerned can be obtained from the London office of the Leipzig Fair, whose address is *First Avenue House, 45 High Holborn, London, W.C.1.*

Filtered Air

In any large town the only really sound way to ventilate a building is to provide it with a full air-conditioning plant so that windows can be kept shut against noise and dust. Costs, however, are comparatively high, and on the small job there is thus something to be said in favour of independent devices which, although they do not give all the advantages of full air-conditioning, none the less help to keep incoming dirt at bay, not to mention the pollens which spoil so many people's summers. One or two devices of this kind have already been referred to in these notes, and another one is the Protectovent, a product of Vokes, Ltd., who may be remembered as the first firm in this country to develop the suction-operated windscreen wiper for cars and the air intake filters which are now so usual. The illustration below shows a typical installation at

the cill of a sash window, though there is no reason why the unit should not be built into the brickwork if there is enough money for the increased installation costs. The unit is of quite simple construction, with an electrically driven fan and a large area cotton filter. It is suggested that the filter units can be cleaned two or three times a year with a vacuum cleaner, while current consumption is less than 40 watts, and the motor, like nearly all electrical apparatus nowadays, is wound so that it does not interfere with the wireless. On the inner face of the wall there is a plate which can be adjusted to deflect the incoming air stream upwards towards the ceiling, or it may be closed altogether if the fitting is out of use during the winter. This latter idea comes from the manufacturers, but it seems to me that this fitting would be every bit as useful during the winter when smoke pollution is at a maximum. After all, one must have *some* sort of ventilation, and though the dust of summer is unpleasant it is probably better than the greasy smuts of winter, not to mention fogs.

Various models are made to suit different window widths, the smallest, which occupies a height of 8 in. and is 24 in. wide, costing £8 10s., while larger units may cost up to £14 or £15.—(*Vokes, Ltd., 95-105 Lower Richmond Road, Putney, London, S.W.15.*)

Washable Wall Coverings

In these days nearly all building owners find that it is worth while spending a little more on finishes and equipment if they can be sure that upkeep costs will be reduced. Wall finishes are nearly always liable to heavy wear and possibly damage, hence the various hard-glazed finishes and the washable coverings. Lancaster Cloth, for example, has for some years been looked upon as an essentially *imitative* finish, whereas it is really a good and reasonably cheap washable material which should have a comparatively long life. Messrs. Williamson produce over a hundred different patterns, and, of the dozen or so in front of me, several deserve no marks at all. Imitative marblings and grainings and pictorial horrors are *not* what the architect needs, and this is very largely why wall cloths are associated in the architect's mind with the scrubbier types of boarding-house and the flash *modèrne* of the provincial bar. All of which is a pity, for the material has many virtues, not the least of which are that it is quite easy to fix to almost any surface, and that there is a good range of plain colours available if you can summon up a blind eye to the less fortunate efforts and only remember the more sympathetic parts of the range. It would be absurd to suggest that Messrs. Williamson should give up making the sort of patterns which architects do not like, for anyone who has kept his eyes even half open during a summer holiday must realize that many people will invariably choose the lowest when they see it. It seems reasonable, however, to suggest to Messrs. Williamson that they should exercise a certain amount of discretion when they are sending samples to architects and stick to the plain colours and more subdued patterns. And in support of this theory I would draw attention to the fact that the two architects, Gordon Cullen and Myerscough Walker, whose designs are included in the catalogue, have both used quite pale and plain shades, whereas the infant school at Edgware (designer not mentioned) would be definitely improved by the ink and pencil marks which the cloth will resist so well. All of which is perhaps beside the point, but is intended to suggest that Lancaster Cloth is a perfectly good material if you will take the trouble to find out about it.

On the more practical side it is worth adding that cleaning can be done with a damp rag, warm water or any non-alkaline soap, any kind of abrasive being quite naturally barred. The material itself consists of a muslin backing impregnated with a linseed compound. Application is simple and quick, almost any paste being possible, though the manufacturers recommend the special M paste made by A.1 Adhesives. The paste is applied to the wall and not to the cloth, otherwise it is hung in exactly the same way as paper, with the additional advantage that it can be applied direct to matchboarding as the muslin backing acts as a scrim in itself. The cloth itself is known as Lion brand.—(*James Williamson and Son, Ltd., Lancaster.*)

Photo Printing

How many firms of architects make their own blue prints? Not very many, one would imagine; but those who do will find it worth while to read a small booklet which has recently been produced by Charles Campion & Co., who manufacture the strip carbons used in the arc lamps and who are anxious that their products should be used in the right way. The booklet clearly explains, in some thirty odd pages, how the small carbon arc lamp works and the troubles from which it may suffer. A sensible little production which should be hung up in the printing room if you have one.—(*Charles H. Campion & Co., Ltd., National House, 60-66 Wardour Street, London, W.1.*)

THE BUILDINGS ILLUSTRATED

TERRITORIAL ARMY HEADQUARTERS FOR A.A.R.E. AND R.A.S.C., SHEPHERD'S BUSH, W.12 (pages 298–303). Architect: William G. Newton and Partners. General contractors, L. and W. Whitehead, Ltd. The sub-contractors and suppliers included: George Cohen, Sons and Co., Ltd., demolition; Wests Rotinoff Piling and Construction Co., Ltd., foundations; Trussed Concrete Steel Co., Ltd., reinforced concrete; Finnis and Ruault, bricks and tiles; Diagrid Structures, Ltd., structural steel; D. Anderson and Son, Ltd., special roofings; J. H. Nicholson & Co., Ltd., central heating; Conway & Co. and Matthews, grates; Gas Light & Coke Co., gas fixtures; Buchanan and Curwen, Ltd., electric wiring; Joseph Chater and Sons, Ltd., sanitary fittings; Walter Cassey, Ltd., door furniture; Dennison, Kett & Co., Ltd., rolling shutters; Modern Surfaces, Ltd., Muroglaze for dadoes; T. J. Jones & Co., steelwork to the roof; Bridgwater & Co., metalwork.

ST. BARNABAS CHURCH, NOTTINGHAM (pages 304–305). Architect: T. Cecil Howitt. General contractors, John Cawley, Ltd., who were also responsible for the excavation, foundations, dampcourses, reinforced concrete and joinery. The sub-contractors and suppliers included: Williamson Cliff, Ltd., bricks, tiles and floor tiles; Trent Concrete Co., artificial stone; Moreland Hayne & Co., structural steel; Hincks and Burnell, glass; Fitchett and Woollacott, Ltd., woodblock flooring; J. Jeffreys & Co., Ltd., central heating; Beeston Boiler Co., boilers; Attenborough and Turpin, electric wiring and electric light fixtures; Wm. Knight, Ltd., plumbing; Woodhouse & Co., Ltd., sanitary fittings; Lewis and Grundy, door furniture; Crittall Manufacturing Co., casements and window furniture; H. Smart, plaster; A. A. Lazzerini, decorative plaster; Smart and Brown, Ltd., textiles and furniture and church fittings.

HOUSE AT BEACONSFIELD (pages 315–316). Architects: Crickmay and Sons. General contractor: G. H. Buckland. Sub-contractors and suppliers included: George M. Callender & Co., Ltd., dampcourses; Maidenhead Brick and Tile Co., bricks; G. Lake, central heating; Candy & Co., Devon Firegrates; Ideal Boilers Radiator Co., Ltd., Ideal boilers; Buckledee and Tayler, electric wiring; George Jennings (Lambeth), Ltd., sanitary fittings; J. D. Beardmore, door furniture; Crittall Manufacturing Co., casements; Central Perivale, joinery.

Copies of the loose supplement containing the labour rates for the principal towns and districts throughout the country can be obtained from the JOURNAL, price 2d. to cover postage.

PRICES

ON the following pages appears Prices of Materials —Part I, with the prices, last published on August 3, brought up to date.

★ *ANSWERS TO QUESTIONS*

While the JOURNAL, *naturally, cannot presume to undertake the responsibilities of a quantity surveyor, it has arranged with the authors of this Supplement to answer readers' questions regarding any matter that arises over their use of the Prices Supplement in regard to their work, without any fee. Questions should be addressed to the Editor of the* JOURNAL, *and will be answered personally by Messrs. Davis and Belfield. As is the normal custom, publication in the* JOURNAL *will omit the name and address of the enquirer so that it is unnecessary to write under a pseudonym.*

• *Items marked thus have risen in price since last quotation on August 3.*

* *Items marked thus have fallen in price since last quotation on August 3.*

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

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

★ *The previous complete Supplement is contained in the issues of the JOURNAL for August 3, August 10, August 17 and August 24.*

Prices vary according to quality and the quantity ordered.

Those given below are average market prices and include delivery in the London area, except where otherwise stated, but do not include overhead charges and profit.

PART 1

CURRENT MARKET PRICES OF MATERIALS—I

BY DAVIS AND BELFIELD

CONCRETOR

Cements

All delivered in paper bags (20 to the ton) free and non-returnable.

		4 Tons and over	In 80-ton freights F.A.S. Safe Wharf in River Thames, London Area.
Portland	per ton	41/–	38/6
Rapid hardening	per ton	47/–	44/6
Water repellent	per ton	71/–	—
Atlas White (1 barrel 376 lbs.)			per barrel 44/–

	1 ton lots	10 tons upwards and over
Colorcrete rapid hardening, Buff and red	per ton 68/–	—
Colorcrete Rapid hardening khaki	per ton 89/–	69/–
Colorcrete Rapid hardening blue	per ton 112/–	102/–
Colorcrete non rapid hardening	per ton from 139/– to 309/–	
Snowcrete	per ton and upwards 175/–	

	1-10 cwts.	11–15 cwts.	16–20 cwts.	1 ton and upwards
Ciment Fondu, delivered Central London area	per cwt. 7/9	7/3	6/–	6/–

Aggregate and Sands (Full Loads)

2″ Unscreened ballast	per yard cube	5/9
¼″ (Down) Washed, crushed and graded shingle	per yard cube	6/–
¼″ (Down) Ditto	per yard cube	7/3
2″ Broken brick	per yard cube	10/6
¼″ Ditto	per yard cube	11/9
Washed pan breeze	per yard cube	5/3
Coke breeze 1″ to dust	per yard cube	12/6
⅛″ Sharp washed sand	per yard cube	8/–
White Silver Sand for white cement (one ton lots)	per ton	25/–

(For Sands for Bricklaying and Plastering see respective trades)

Pavings

Brick hardcore	per yard cube	2/9
Concrete ditto	per yard cube	3/9
Clean furnace clinker and boiler ashes	per yard cube	3/3
Coarse gravel for paths	per yard cube	6/9
Fine ditto	per yard cube	9/6
Clean granite chippings	per ton	18/6
Red quarry tiles, 6″ × 6″ × ¾″	per yard super	6/–
Ditto 6″ × 6″ × ⅝″	per yard super	5/–
Buff ditto, 6″ × 6″ × ¾″	per yard super	6/6
Ditto 6″ × 6″ × ⅝″	per yard super	5/6
Hard red paving bricks	per 1,000	150/–

Reinforcement

Basis price for mild steel rods, ¼″ diameter and upwards, from London stocks	per ton	£12 15 0
Extras for :—		
⅛″ and ⅙″ diameter	per ton	10/–
7/32″ diameter	per ton	15/–
⅛″ diameter	per ton	20/–
5/32″ diameter	per ton	30/–
⅙″ diameter	per ton	40/–

CONCRETOR—(*reinforcement continued*)

5/32″ diameter	per ton	60/–
Lengths of 40 ft. to 45 ft.	per ton	10/–
Lengths of 45 ft. to 50 ft.	per ton	15/–

Sundries

Retarding liquid, in 5-gallon drums (for exposing aggregate)	per gallon 20/–	Ex Warehouse, Southwark Bridge. Drums chargeable and credited, if returned.
Ditto. (for obtaining a bond)	per gallon 12/6	

BRICKLAYER

Common Bricks

Rough stocks	per 1,000	67/6
Third stocks	per 1,000	52/6
Mild stocks	per 1,000	69/6
Sand limes	per 1,000	50/–
* Phorpres pressed Flettons	per 1,000	46/3
* Phorpres keyed Flettons	per 1,000	48/3
Blue Staffordshire wirecuts	per 1,000	160/–
Lingfield engineering wirecuts	per 1,000	95/–
Breeze fixing bricks	per 1,000	57/6
Firebricks, best Stourbridge 2½″	per 1,000	155/–
Firebricks, best Stourbridge 3″	per 1,000	190/–

* At King's Cross. For delivery in W.C. district add 4/3 per 1,000.

Facing and Engineering Bricks

Sand Limes, No. 1	per 1,000	85/–
Sand Limes, No. 2	per 1,000	70/–
* Phorpres rustic Flettons	per 1,000	66/3
Midhurst Whites	per 1,000	75/–
Hard stocks, firsts	per 1,000	93/–
Hard stocks, seconds	per 1,000	86/–
Sand-faced, hand-made reds	per 1,000 from	115/–
Sand-faced, machine-made reds	per 1,000 from	110/–
Red rubbers (9½-in.)	per 1,000	300/–
Uxbridge Flints (white)	per 1,000	67/6
Uxbridge Flints (creams, light greys, etc.) per 1,000	from 85/– to	105/–
Dunbricks (concrete), multi reds, ex works	per 1,000	72/–
Dunbricks (concrete), multi lavender, ex works	per 1,000	75/–
Southwater engineering No. 1 (first quality red pressed)	per 1,000	145/–
Southwater engineering No. 2 (second quality red pressed)	per 1,000	125/–
Blue pressed	per 1,000	180/–

* At King's Cross. For delivery in W.C. district add 4/3 per 1,000.
Discount if accompanied by order for pressed 2/– per 1,000.

CURRENT PRICES

BY DAVIS AND BELFIELD

BRICKLAYER AND DRAINLAYER

BRICKLAYER—(*continued*)

White, Salt and Coloured Glazed Bricks (9″ × 4½″ × 2⅞″)

The following prices are subject to 2½ per cent. trade discount and 2½ per cent. cash discount, and include delivery to any railway station (minimum 4-ton loads). Add 10/– per 1,000 for delivery in London area.

Prices per 1,000	White, Ivory and Salt Glazed		Buff, Cream and Bronze	Other Colours	All Colours
	Best	Seconds	Best	Best	Seconds
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Stretcher, glazed one side ..	24 0 0	22 0 0	26 0 0	29 10 0	23 0 0
Header, glazed one end	23 10 0	21 10 0	25 10 0	29 0 0	22 10 0
Double stretcher, glazed two sides	32 10 0	30 10 0	34 10 0	38 0 0	31 10 0
Double header, glazed two ends	29 10 0	27 10 0	31 10 0	35 0 0	28 10 0
Quoin, glazed one side and one end	30 10 0	28 10 0	32 10 0	36 0 0	29 10 0

Limes and Sand

		1-ton lots	6-ton lots
Lime, greystone	per ton	42/–	37/6
Lime, chalk	per ton	42/–	37/6
Lime, blue Lias (including paper bags)	per ton	47/6	42/6
Lime, hydrated (including paper bags)	per ton	47/–	42/6
Washed pit sand	per yard cube		7/6

(For cements, *see* "Concretor.")

Hire of jute sacks charged at 1/6 and credited at 1/6. If left, charged at 1/9.

Sundries

Wall ties, self coloured	per cwt.	19/–
Wall ties, galvanized	per cwt.	24/6
Hoop iron, black	per cwt.	25/–
D.P.C. slates, size 18″ × 9″	per 1,000	150/–
D.P.C. slates, size 14″ × 9″	per 1,000	117/6
D.P.C. slates, size 14″ × 4½″	per 1,000	59/–
*Ledkore D.P.C. Grade A	per foot super	5d.
*Ledkore D.P.C. Grade B	per foot super	6½d.
*Ledkore D.P.C. Grade C	per foot super	8d.

* Trade discount 5 per cent. and cash discount 5 per cent. Prices include delivery on minimum of £4 orders.

		9″×3″	9″×6″	9″×9″	12″×9″	14″×9″
Earthenware airbricks: red, blue, vitrified and buff terra cotta	each	–/8	1/4	2/4	4/–	6/8
		9″×3″	9″×6″	9″×9″	12″×6″	12″×9″
Black cast iron, School Board pattern airbricks	per doz.	3/–	5/6	11/–	11/–	20/–
Galvanized ditto	per doz.	5/6	11/–	22/–	22/–	40/–
Black hit and miss cast iron ventilators	per doz.	12/–	15/–	21/–	21/–	36/–
Galvanized ditto	per doz.	24/–	30/–	42/–	42/–	72/–
		1′ 0″	1′ 6″	2′ 0″	2′ 6″	3′ 6″	5′ 0″
Buff terra cotta chimney pots	each	2/6	3/–	4/4	5/9	13/4	22/6
Fireclay ..	per ton	45/–					

Wall reinforcement supplied in standard rolls containing 25 yards lin.

2″ wide black japanned	per roll	2/1
2″ wide galvanized ..	per roll	3/2
2½″ wide black japanned	per roll	2/7½
2½″ wide galvanized ..	per roll	3/10½

Greater widths pro rata 2½″ price carriage paid on orders of £5. Discounts for quantities.

Partitions

			2″	2½″	3″	4″
Breeze ..	per yard super		1/3½	1/5½	1/8	2/3
Clay tiles ..	per yard super		2/3	2/6	2/9	3/1
Pumice ..	per yard super		2/8	3/–	3/6	4/–
Plaster ..	per yard super		2/3	2/9	3/3	4/–

BRICKLAYER—(*continued*)

Shepwood Partition Bricks size 9″ × 2⅞″ and 2½″ on bed. Terms, as for Glazed Bricks

Prices per 1,000 except where stated per brick	White, Ivory and Salt Glazed		Buff, Cream and Bronze	Other Colours	All Colours
	Best	Seconds	Best	Best	Seconds
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Double stretcher, glazed two sides	32 10 0	30 10 0	34 10 0	38 0 0	31 10 0
Single stretcher, glazed one side	24 0 0	22 0 0	26 0 0	29 10 0	23 0 0
	Each	Each	Each	Each	Each
Round end glazed two sides and one end ..	–/10½	–/10	1/0½	1/0½	–/10½

Gas Flue Blocks

		Single Flues	Double Flues
Straight blocks	each	1/1	1/11
Building in set	per set of 3	2/8	4/10
Cover blocks	each	1/5	3/–
Raking blocks 45°	each	2/9	3/11
Raking blocks 60°	each	1/11	2/10
Offset blocks	each	3/4	4/10
Closer blocks	each	1/1	1/11
Closer flashing blocks	each	1/–	1/8
Straight flashing blocks ..	each	1/–	1/8
Terminal and cap	per set	6/9	11/6
Middle terminal and cap ..	per set	6/3	10/9
End terminal and cap	per set	6/6	11/3
Corbel block	each	4/10	3/2
Gathering block	each	—	9/8

DRAINLAYER

Agricultural Pipes

		2″	3″	4″	6″
Pipes in 12″ lengths ..	per 1,000	67/6	92/6	120/–	210/–

(Delivered in full loads Central London Area.)

Salt Glazed Stoneware Pipes and Fittings

		4″	6″	9″
Pipes (2′ lengths)	each	1/8	2/6	4/6
Bends, ordinary	each	2/6	3/9	6/9
Single Junction, 2′ long	each	3/4	5/–	9/–
Yard Gulley, without grating ..	each	6/3	6/10½	11/3
Ordinary round or square Grating, painted	each	–/7½	1/3	2/6
Ordinary round or square Grating, galvanized	each	1/0½	2/1	4/4½
Extra for Inlets, horizontal	each	1/6	1/6	1/6
Extra for Inlets, vertical	each	2/3	2/3	2/3
Intercepting Trap with Stanford Stopper	each	17/6	22/6	37/6
Grease and mud interceptor with bucket for removing silt and grease for 6″, 9″ and 12″ drains, with iron grating, painted	each	20/–		
Ditto, with iron grating galvanized	each	21/10½		

The above prices to be varied by the following percentages for the different qualities given. All subject to 2½ per cent. cash discount.

	British Standard	British Standard Tested
Orders for 2 tons and over	Less 20%	Plus 5%
Orders under 2 tons, 100 pieces upwards	Less 2½%	Plus 22½%
Orders under 2 tons, less than 100 pieces	Plus 7½%	Plus 32½%

	Best	Seconds
Orders for 2 tons and over	Less 27½%	Subject to 15% off the price of best quality for all sizes
Orders under 2 tons, 100 pieces upwards	Less 10%	
Orders under 2 tons, less than 100 pieces	Nett	

CURRENT PRICES

BY DAVIS AND BELFIELD

DRAINLAYER AND MASON

DRAINLAYER—(*continued*)

Cast Iron Drain Pipes and Fittings

Socket and Spigot Pipes :—

Weight (per 9 ft.)	Size		9 fts.	6 fts.	4 fts.	3 fts.
					each	each
1 . 1 . 8	4″ per yard	..	6/2	6/11	11/–	8/4
1 . 1 . 20	4″ per yard	..	6/5	7/1	11/3	8/7
2 . 0 . 6	6″ per yard	..	9/6	11/4	18/3	14/7
4 . 0 . 2	9″ per yard	..	17/3	22/7	39/2	29/10

Socket and Spigot Pipes :—

Weight (per 9 ft.)	Size		2 fts.	18 ins.	12 ins.	9 ins.
1 . 1 . 8	4″ each	.. ..	6/11	6/2	5/5	4/11
1 . 1 . 20	4″ each	.. ..	7/–	—	—	—
2 . 0 . 6	6″ each	.. ..	10/11	—	—	—
4 . 0 . 2	9″ each	.. ..	—	—	—	—

Tonnage Allowances :—
Orders up to 2 tons nett.
Orders 2 to 4 tons less 2½%
Orders 4 tons or over less 5%

		4″	6″	9″
Bends	each	6/1	12/8	39/–
Single junctions	each	10/9	21/11	67/3
Intercepting traps	each	36/7	46/10	121/11
Gulleys ordinary trapped ..	each	14/2	—	—
Extra for inlet 4″	each	3/8	—	—
Grease Gulley trap	each	117/6	—	—
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet ..	each	18/7	44/10	—

Cast Iron Inspection Chambers

The larger figures below refer to the main pipes and the smaller figures to the branches

	4″×4″	6″×4″	6″×6″	9″×6″	9″×9″
	each	each	each	each	each
Straight chambers with one branch one side ..	36/1	46/10	51/8	109/8	124/4
Straight chambers with two branches one side ..	55/7	65/4	77/–	148/8	185/3
Straight chambers with three branches in all ..	65/4	75/1	89/2	162/10	—
Straight chambers with four branches in all ..	75/1	84/10	101/4	173/5	—
Straight chambers with three branches one side	69/3	84/10	98/6	—	—
Straight chambers with four branches in all ..	79/–	94/7	110/8	—	—
Straight chambers with five branches in all ..	88/9	104/4	122/10	—	—
Straight chambers with six branches in all ..	98/6	114/1	135/–	—	—
Straight chambers with four branches one side	92/8	108/9	131/2	—	—
Straight chambers with five branches in all ..	102/4	118/3	143/4	—	—
Straight chambers with six branches in all ..	112/2	128/–	155/6	—	—
Straight chambers with seven branches in all ..	121/10	137/9	167/8	—	—
Straight chambers with eight branches in all ..	131/8	147/6	179/10	—	—

The branches to the above are at 135°

		4″	6″
Extra for branches between 135° and 180°	each	7/4	7/4
Extra for branches between 90° and 135° other than standard angles	each	5/10½	5/10½

		4″×4″	6″×4″	6″×6″
Curved chambers, no branch 90°–112½°	each	26/10	—	37/1
Curved chambers, no branch 135°	each	26/10	—	37/1
Curved chambers, one branch 135°.	each	33/2	46/9	52/8
Curved chambers, two branches 135°	each	39/–	63/5	74/1

Channels in White Glazed Ware (Unselected Quality)

		4″	6″	9″
Half round straight channels, 6′ long ..	each	2/4	3/2	5/3
Half round straight channels, 12′ long ..	each	3/3	4/5	6/11
Half round straight channels, 18′ long ..	each	4/–	5/3	8/5
Half round straight channels, 24′ long ..	each	4/8	6/4	10/6
Half round straight channels, 30′ long ..	each	5/10	7/11	13/2
Half round straight channels, 36′ long ..	each	7/–	9/6	15/9
Half round ordinary or long channel bends	each	8/5	12/11	21/–
Half round ordinary or short channel bends	each	6/–	8/5	—
Three-quarter round ordinary branch bends	each	8/1	11/8	—
Three-quarter round ordinary branch bends, midgets	each	7/3	—	—

		6″×4″	9″×6″
Half round taper channels 24″ long ..	each	7/10	11/3
Half round taper channel bends	each	10/3	17/9

These prices are subject to 20% discount.

DRAINLAYER—(*continued*)

Channels in Brown Glazed Ware

		4″	6″	9″
Half round straight channels 24′ long ..	each	1/3	1/10½	3/4½
Half round straight channels 30′ long ..	each	—	—	4/2½
Ditto, short lengths	each	1/3	1/10½	—
Half round ordinary channel bends ..	each	1/10½	2/9½	5,0½
Ditto, short	each	1/10½	2/9½	—
Ditto, long	each	3/9	5/7½	10/1½
Three-quarter round branch bends ..	each	5/–	7/6	—

		6″×4″	9″×6″
Half round taper channels 24″ long ..	each	3/9	6/9
Half round taper channel bends ..	each	4/8½	8/5½

The above prices are subject to the same discounts as those given for "Best" quality salt glazed stoneware pipes.

Manhole Covers

		Black	Galvanised
24″ × 18″ single seal for foot traffic. (Weight 0.3.0 in lots of 24)	each	14/6	25/9
24″ × 18″ single seal for light car traffic. (Weight 2 cwt. in lots of 24)	each	38/9	65/3
24″ × 18″ Wood Block pattern. For road traffic. (Weight 3 cwts.)	each	Coated 63/–	

		Fine Cast	Galv.
Cast step irons, 13½″ long, 6″ wide, 9″ in wall, approximate weight 5½ lbs. each	per dozen	14/9	25/6

		4″	6″
Galvanized fresh air inlets with cast brass fronts (L.C.C. pattern)	each	5/6	20,3

MASON

Yorkstone

Building quality Robin Hood and Woodkirk Blue Stone.

Blocks scrappled, random sizes ..	per foot cube	4/6
Add for blocks to dimension sizes ..	per foot cube	6d. (each dimension)
Templates with sawn beds, edges rough (up to 4 ft. super and not over 2′ 6″ long)	per foot cube	5/–
Templates with sawn beds, sawn one edge	per foot cube	6/–
Templates with sawn beds, sawn two edges	per foot cube	7/–
Prices f.o.r. Yorkshire, railway rate to London Station per ton. (Minimum 6-ton loads.)		18/3

Ancaster Stone

Freestone, random blocks	per foot cube	3/6
Brown weather bed stone selected for polishing all brown blocks	per foot cube	8/–
Brown and blue weather bed stone selected for polishing	per foot cube	7/–

Prices f.o.r. Ancaster, railway rate to London Station approximately 11½d. per foot cube (minimum 6-ton loads).

White Mansfield Stone

Random blocks (yellow bed) for dressings	per foot cube	4/–
Random blocks (hard middle bed) for steps, pads, pavings and copings	per foot cube	3/6
Prices f.o.r. Mansfield, railway rate to London station, 6 ton lots	per foot cube	1/2

Bath Stone

Random blocks, delivered railway trucks, Paddington or South Lambeth	per foot cube	2/10½

Portland Stone

Whitbed, in random blocks of 20 feet cube average, delivered railway trucks Nine Elms, South Lambeth or Paddington	per foot cube	4/5
Basebed—add to the above	per foot cube	–/3
For every foot over 20 ft. cube average—add per foot cube		–/1
For every foot over 30 ft. cube average—add per foot cube		–/0½

¾″ Thick Plain Marble Wall Linings

Roman Travertine	per foot super	5/–
Golden Travertine	per foot super	6/3
Roman stone	per foot super	4/6
Hopton-wood stone	per foot super	5/–
Second statuary	per foot super	4/6
Sicilian	per foot super	4/–

Artificial Stone

6″ × 3″	Copings and sills	per foot run	1/6
6″ × 6″	Copings and sills	per foot run	2/4
9″ × 3″	Copings and sills	per foot run	2/–
9″ × 6″	Copings and sills	per foot run	3/4
12″ × 3″	Copings and sills	per foot run	2/4
12″ × 6″	Copings and sills	per foot run	3/9
Cornices according to detail, per foot cube (from)			6/9

CURRENT PRICES

BY DAVIS AND BELFIELD

MASON, SLATER, TILER AND ROOFER, AND CARPENTER

MASON—(*continued*)

Reconstructed Stone to match Natural Stone

Sills, lintols, coping, cornices, ashlar, etc., average size	per foot cube	11/–
Window sills, 9″ × 3″ section	per foot run	2/1
„ „ 7″ × 3″ section	per foot run	2/–

Slate Slabs, cut to size and Planed

		1″	1¼″	1½″
Not exceeding 4′ 6″ long or 2′ 3″ wide	per foot super	3/1	3/4	3/11
„ „ 6′ 6″ long or 3′ 3″ wide	per foot super	3/9	4/1	4/10
Exceeding 6′ 6″ long or 3′ 3″ wide	per foot super	4/1	4/6	5/2
Rubbed faces	per foot super	–/5	–/5	–/6
„ edges	per foot run	–/4	–/4	–/5

Combined Slate Cills and Window Boards for Metal Windows
Straight Cills

12″ wide for 9″ walls	per foot run	2/6
14″ wide for 11″ cavity walls	per foot run	2/11
16½″ wide for 13½″ walls	per foot run	3/6

SLATER, TILER AND ROOFER

Best Bangor Slates

		£ s. d.
24″ × 12″	per 1,000 actual	33 10 0
22″ × 12″	per 1,000 actual	27 19 0
22″ × 11″	per 1,000 actual	25 4 9
20″ × 12″	per 1,000 actual	24 14 6
20″ × 10″	per 1,000 actual	21 15 5
18″ × 12″	per 1,000 actual	20 19 3
18″ × 10″	per 1,000 actual	17 7 6
18″ × 9″	per 1,000 actual	15 11 9
16″ × 12″	per 1,000 actual	17 14 9
16″ × 10″	per 1,000 actual	15 11 9
16″ × 9″	per 1,000 actual	13 19 6
16″ × 8″	per 1,000 actual	12 1 11

Prices include for delivery to site in lots of 1,000 and upwards.

Old Delabole Slates (f.o.r.)

Standard sizes.
Prices and computed weights per 1,200.

		20″ × 10″	16″ × 10″
Grey medium gradings	per 1,200 cwts.	558/– 38	366/– 30
Unselected greens (V.M.S.)	per 1,200 cwts.	628/– 44	418/– 36

Random sizes.
Prices per ton and computed covering capacities in squares per ton.

		No. 1 Grading 24″/22″ to 12″/10″
Grey	per ton	128/–
Covering cap. :	per ton (3″ lap)	2·37 squares
	per ton (4″ lap)	2·19 squares

		No. 2 Grading 24″/22″ to 12″/10″
Weathering grey greens (V.M.S.)	per ton	139/–
Covering cap. :	per ton (3″ lap)	2·25 squares
	per ton (4″ lap)	2·08 squares

		No. 2 Grading 24″/22″ to 12″/10″
Weathering greens (V.M.S.)	per ton	149/–
Covering cap. :	per ton (3″ lap)	2·25 squares
	per ton (4″ lap)	2·08 squares

		No. 2 Grading 24″/22″ to 12″/10″
Rustic reds (25%) and weathering greens (V.M.S.)	per ton	174/–
Covering cap. :	per ton (3″ lap)	2·25 squares
	per ton (4″ lap)	2·08 squares

Railway rate to Nine Elms, London, minimum 4 tons, 21/9, minimum 6 tons per truck, 18/1 per ton.

Tiles

	£ s. d.
Hand-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	4 15 0
Machine-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	4 0 0
Berkshire rustic pantiles per 1,000	18 10 0

SLATER, TILER AND ROOFER—(*continued*)

Westmorland Green Slates

	Price per ton	Bests, 24″ to 12″ long. Proportionate widths Computed cover in sq. yds. per ton
Random sizes.		
No. 1 Buttermere fine light green	240/–	30
No. 2 „ light green (coarse grained)	215/–	27–28
No. 5 „ olive green (coarse grained)	197/–	25–27
No. 5 Medium green	197/–	25–26
No. 7 Elterwater fine light green	216/–	27–28
No. 15 Tilberthwaite fine light green	214/–	26–28
No. 16 „ light green (coarse grained)	202/–	25–27
Broughton Moor, light sea green, olive green, silver grey green, and mixed shades	237/–	27

Prices include for delivery to any station, minimum 6-ton truck loads.

Asbestos-cement

6″ corrugated sheets, grey	per yard super	3/0½
Standard 3″ corrugated sheets, grey	per yard super	2/9½

Slates :—

15½″ × 7½″ grey	per 1,000	£6 3 9
15½″ × 15½″ diagonal, grey	per 1,000	£11 15 0
15½″ × 15½″ diagonal, russet or brindled	per 1,000	£14 16 9

Pantiles.

Large russet brown	per 1,000	£19 8 6

Prices are for minimum two-ton loads, and are subject to 5% trade discount.

Cedar Wood Tiles

Canadian cedar wood shingles .. per square 32/– (normal quantity).

Prices include for delivery to nearest railway station in England but vary with quantity.

CARPENTER

Carcassing Timber

Prices are for Standards in one delivery; when less than a standard is required, or special lengths, add £1 per standard.

		Per standard £ s. d.	Per foot cube
4″ × 11″ Scantling		25 5 0	3/0¾
4″ × 9″	„	24 15 0	3/–
3″ × 11″	„	23 10 0	2/10½
● 2″ × 11″	„	25 0 0	3/0½
● 3″ × 9″	„	23 10 0	2/10½
● 2″ × 9″	„	24 0 0	2/11
● 3″ × 8″	„	23 0 0	2/9½
2″ × 8″	„	22 0 0	2/8
● 3″ × 7″	„	21 10 0	2/7½
● 2″ × 7″	„	21 10 0	2/7½
4″ × 6″	„	25 0 0	3/0½
● 3″ × 6″	„	22 10 0	2/8¾
● 2″ × 6″	„	21 10 0	2/7½
3″ × 5″	„	22 10 0	2/8¾
● 3″ × 4″	„	23 0 0	2/9½
● 2″ × 5″	„	21 0 0	2/6¾
● 2″ × 4″	„	21 0 0	2/6¾
1½″ × 11″	„ (20 ft. lengths and over)	per ft. run	–/4½
1½″ × 9″	„ (20 ft. lengths and over)	per ft. run	–/3¾
1½″ × 7″	„ (20 ft. lengths and over)	per ft. run	–/2¾

Yellow Deal Battens

● 1″ × 1″	per 100 feet run 1/6
1″ × 1½″	per 100 feet run 2/6
● 1″ × 2″	per 100 feet run 3/3
1″ × 2″	per 100 feet run 4/9
1½″ × 2″	per 100 feet run 6/–

Deal :— *Weather Boarding*

1″ × ¼″ × 6″ Feather edge	per square	12/–
● 1″ × ¼″ × 4″ Feather edge	per square	10/–

Western red cedar :—

1″ × 6″ Drop sidings	per square	38/–
11/16″ × 5/16″ × 6″ Feather edge	per square	13/–
5/8″ × ¼″ × 4″ Feather edge	per square	13/6

Deal :— *Roof Boarding*

● 1″ × 6″	per square	18/6
● 1″ × 6″	per square	23/6

● Items marked thus have risen since August 3

TO BE CONTINUED IN NEXT ISSUE