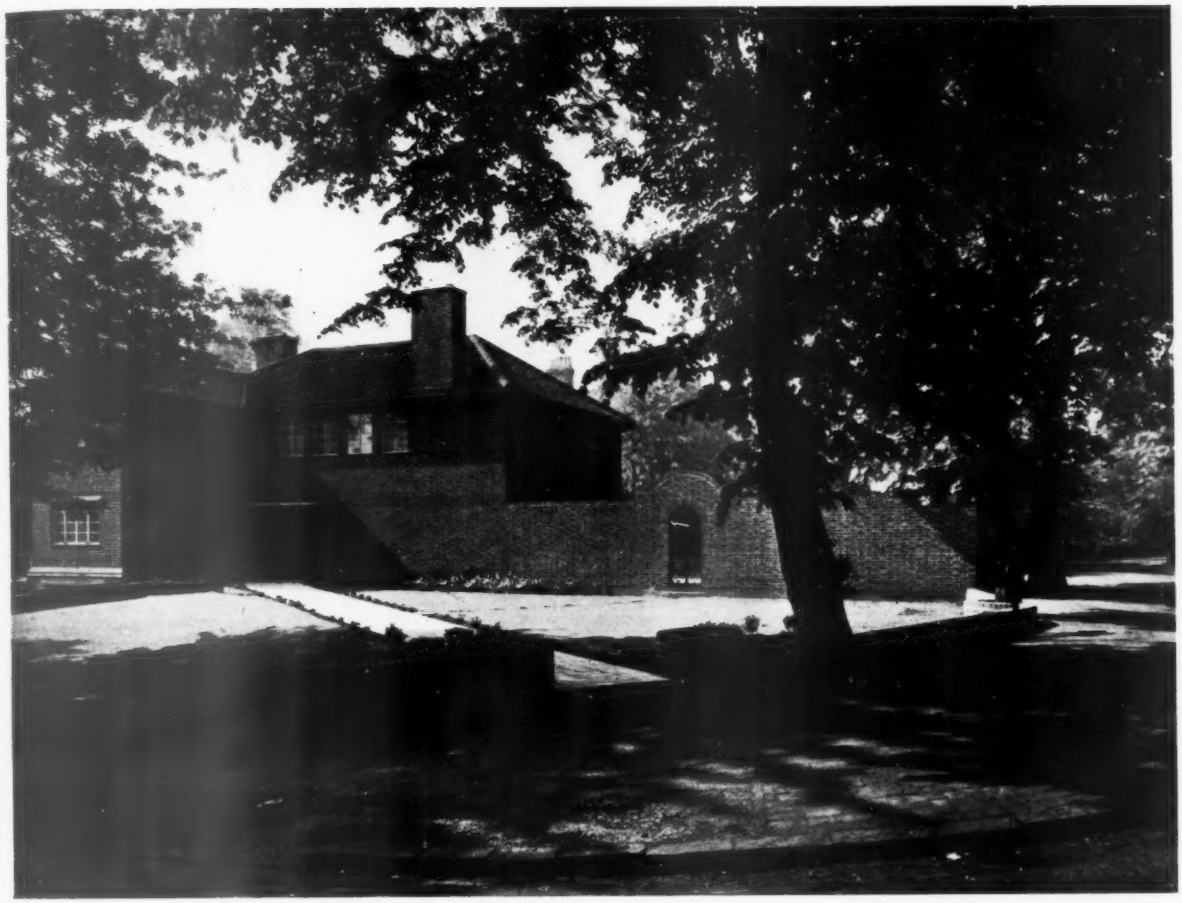


House near Birmingham. Architect : T. M. Ashford, A.R.I.B.A., A.A. Contractors : William Sapcote & Son, Birmingham.

THE ARCHITECTS' JOURNAL

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

*

THE ANNUAL SUBSCRIPTION RATES ARE AS FOLLOWS :
BY POST IN THE UNITED KINGDOM.... £1 3 10
BY POST TO CANADA £1 3 10
BY POST ELSEWHERE ABROAD..... £1 8 6
SPECIAL COMBINED RATE FOR SUBSCRIBERS TAKING BOTH THE ARCHITECTURAL REVIEW AND THE ARCHITECTS' JOURNAL : INLAND £2 6s. ; ABROAD £2 10s.
SUBSCRIPTIONS MAY BE BOOKED AT ALL NEWSAGENTS

*

SINGLE COPIES, SIXPENCE ; POST FREE, EIGHTPENCE. SPECIAL NUMBERS ARE INCLUDED IN SUBSCRIPTION ; SINGLE COPIES, ONE SHILLING ; POST FREE, 1S. 3D. BACK NUMBERS MORE THAN TWELVE MONTHS OLD (WHEN AVAILABLE), DOUBLE PRICE.

*

SUBSCRIBERS CAN HAVE THEIR VOLUMES BOUND COMPLETE WITH INDEX, IN CLOTH CASES, AT A COST OF 10S. EACH. CARRIAGE 1S. EXTRA

*

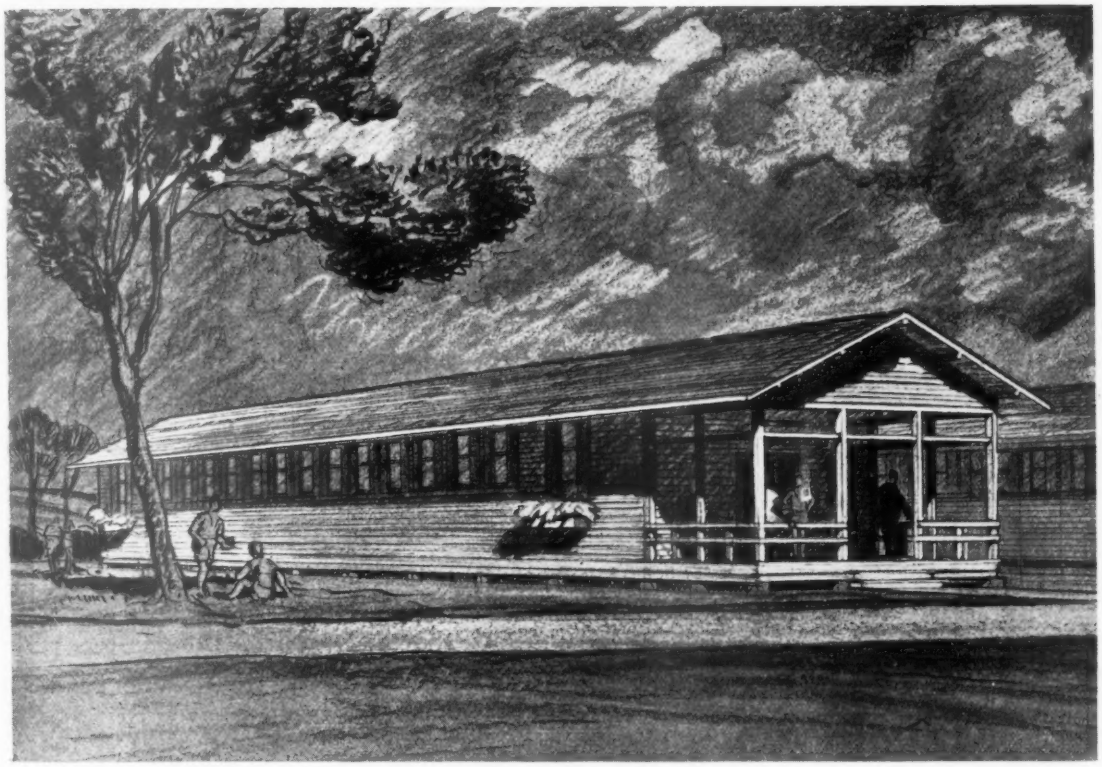
9-11 *Queen Anne's Gate, Westminster, London, S.W.1.*
TELEPHONE : WHITEHALL 9212-7 (OWN EXCHANGE)
TELEGRAPHIC ADDRESS : BUILDABLE, PARL., LONDON

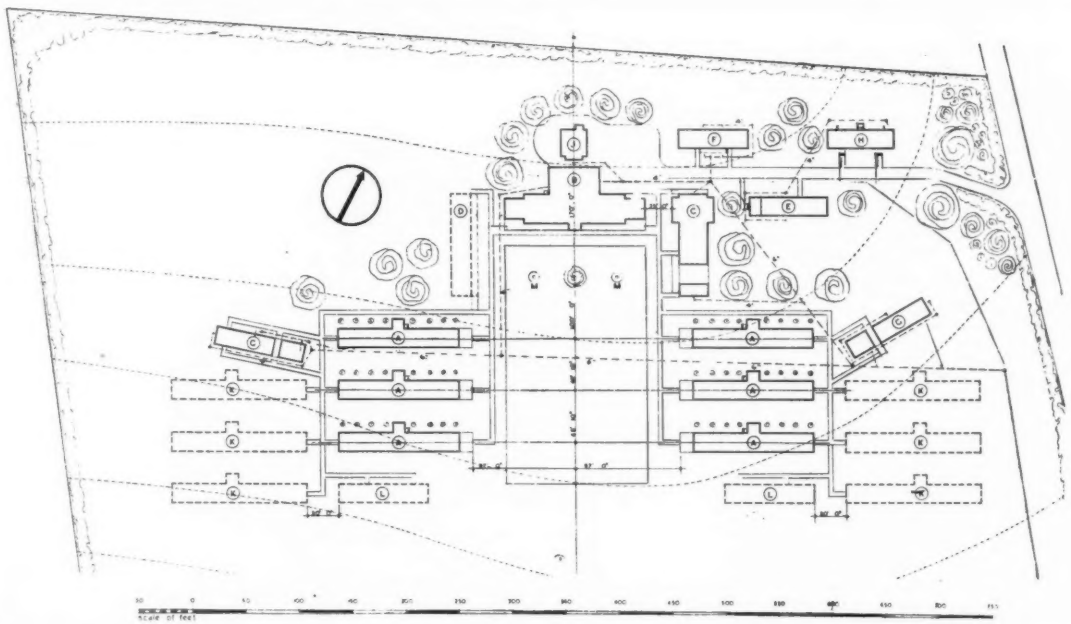
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, AUGUST 17, 1939. NUMBER 2326 : VOLUME 90

PRINCIPAL CONTENTS

NATIONAL CAMPS: APPROVED DESIGN



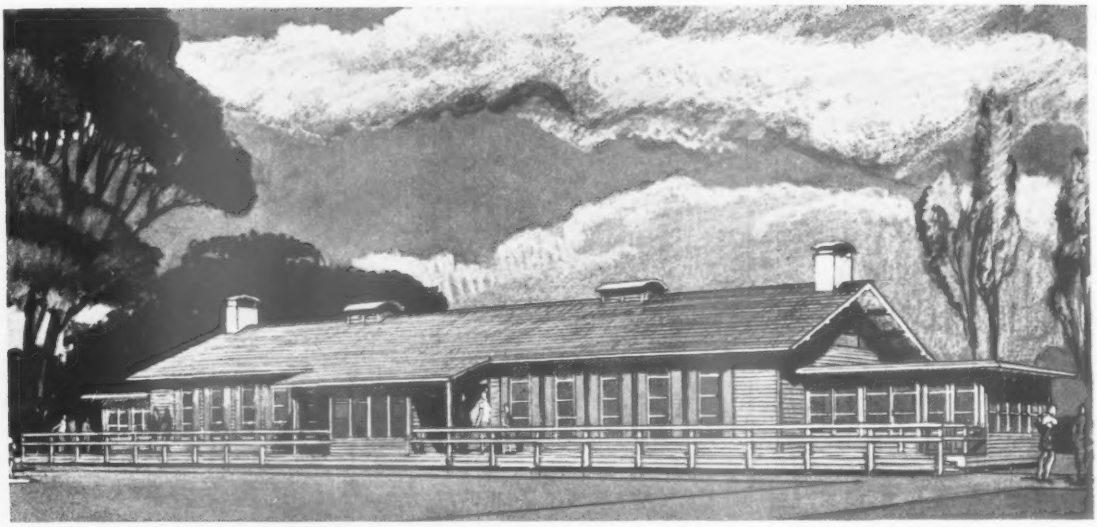


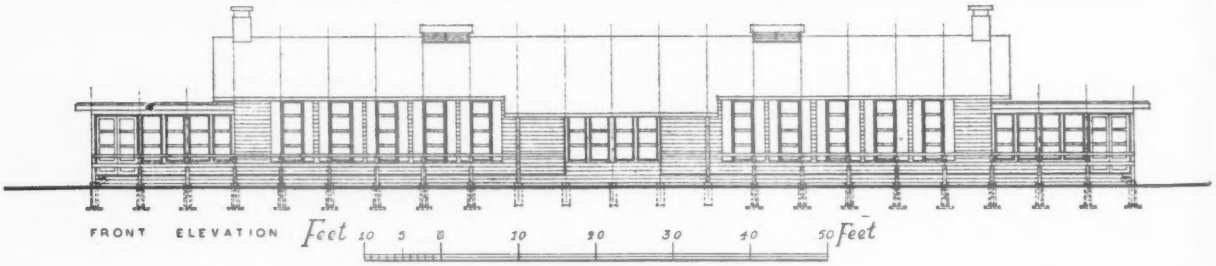
Thirty sites have been chosen by the National Camps Corporation, Ltd., for the construction of camps. At present 14 are being built, and during this month contracts will be let for 10 more and others will follow week by week. The time generally allowed for the construction of a camp from the date of letting the contract is 12 weeks; the first camp is due to be completed by the end of this month.

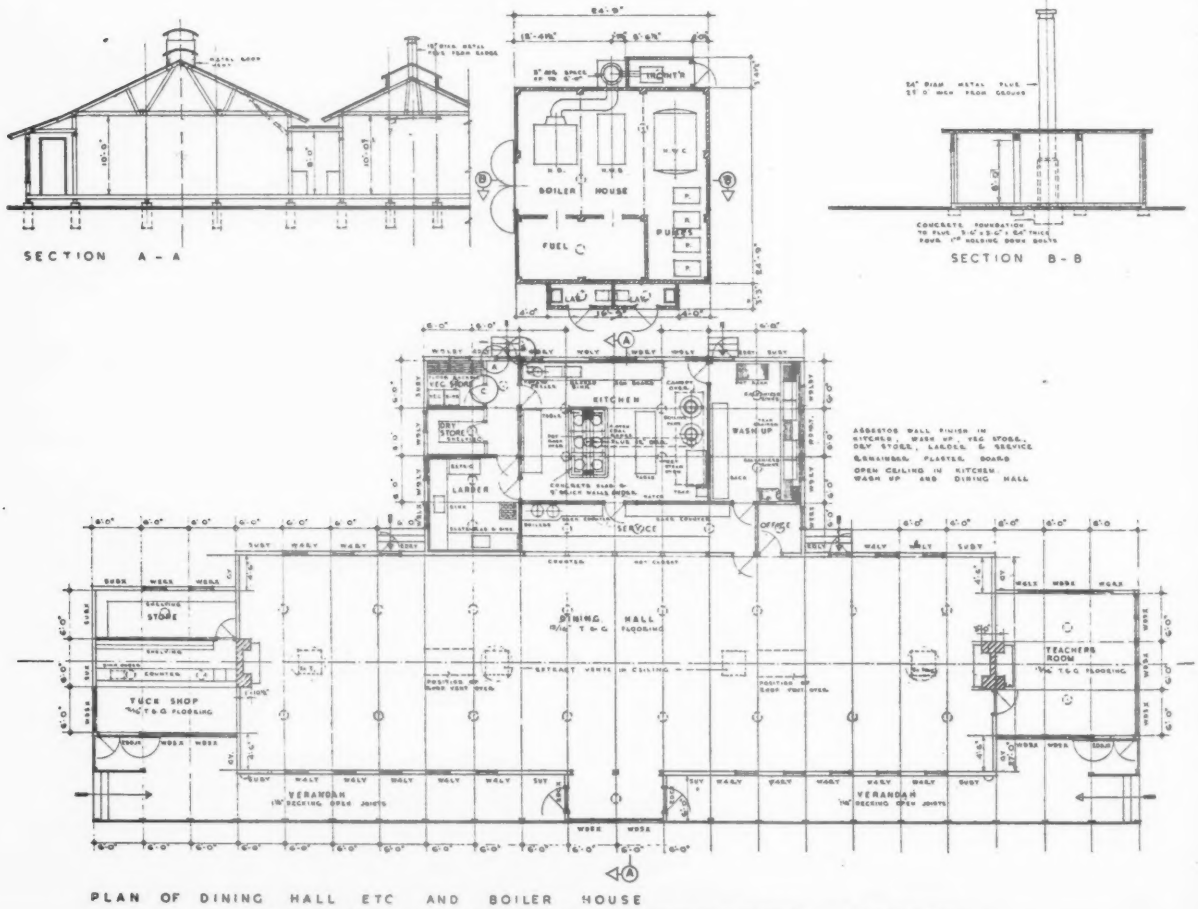
The Board of the National Camps Corporation, whose powers are derived from the Camps Act, 1939, met for the first time on April 4. The first action of the Board was to appoint Sir John Burnet, Tait and Lorne as its consulting architects, and subsequently to agree with Mr. Tait on a design which could be used for all the camps. A separate architect, drawn from a panel of architects recommended by the R.I.B.A., was appointed for each camp, his duties being to lay out the buildings on the site, and to supervise the whole of the work.

Above: Perspective (by J. D. M. Harvey), of the dormitory block at Laverstoke, near Overton, Hampshire, and lay-out plan of the same scheme.

Key:—A: dormitories; B: dining hall and kitchen; C: assembly hall; D: classroom—future; E: hospital; F: staff quarters; G: lavatories; H: house for camp manager; J: boiler house and fuel store; K: dormitories—future; L: lavatories—future; M: flagstaff.



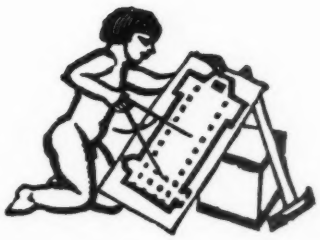




PLAN OF DINING HALL ETC AND BOILER HOUSE

NATIONAL CAMPS: APPROVED DESIGN

Perspective (by J. D. M. Harvey), elevation, sections and plan of a typical dining hall block.



PREFABRICATION

THE phenomenal increase in house ownership among the lower income groups and the vast number of houses which have been built by public or private enterprise since the war form a constant source of self-congratulatory propaganda used freely by the building societies, municipalities, Government departments, speculative builders, estate developers and the host of smaller fry who live by supplying shelter in one form or another to the general public. Architects, brought up in the tradition of the single house for the individual client, remain silent when they realize that only a small fraction of these houses are built with the benefit of professional advice. Yet there are signs that the younger generation of architects has realized that architecture does not mean the housing of one, but of tens of thousands of families. Go to the annual exhibitions of school-work, make inquiries about the subjects chosen for final theses, and you will find an intense preoccupation with housing on a large scale, on the only scale which is nowadays likely to provide a solution to the problem.

In most of the schemes which we have seen the authors have regretfully decided that it is impossible to build adequate accommodation at rents which the tenant can afford unless the land is available at about one-tenth of the value set upon it by a private owner. To plead, therefore, for the public ownership of all land is perfectly logical, but as an immediate practical measure there is no reason why the profession should not do what it can to reduce the cost of the building itself. Apart from the outstanding Mopin-Livett experiment at Leeds, practically nothing has been done in this country ; prefabrication merely remains a word which nobody has attempted to define. An economist attached to the General Motors Corporation of America has stated that " if automobiles were built by methods similar to those employed in building houses the present $600 car would probably be priced at $5,000." This statement should not be taken to mean that a Nuffield of housing could reduce the cost of the small house by anything up to 90 per cent., for the motor industry is working under very different conditions. Each unit to be handled is smaller and lighter, the completed car can be driven away by the purchaser and, most important of all, design is rigidly standardized. The motor industry is, in addition, very highly mechanized, the consequent reduction in labour costs being almost entirely responsible for the present low price of cars.

Turning to the small house, the cost of labour is somewhere between one-third and one-half of the whole, and this figure could be considerably reduced if building work were carried on in larger units. The suggestion of a completely standardized house is probably an impossible ideal, for the limitations which would have to be imposed upon it would prevent any variations or future additions. In the remote future it might be posssible to manufacture very cheap houses and persuade the public to buy a new one every ten or twenty years, but we are here more concerned with immediate possibilities.

Prefabrication is looked upon as a comparatively recent development from America, but it must not be forgotten that the sectional house, to be bolted together on the site by unskilled labour, has been in use for small buildings both in this country and Scandinavia since the beginning of the century. But these houses suffer from the limitations of standardization in that they remain incomplete, for most of the internal finishes and services have to be installed on the site. This type of half-way house has been abandoned by the Americans, who are now concentrating on a panel system of design which at its simplest need not involve more than four types, one for plain wall surfaces, one for doors, one for windows, and a flat slab for the roof. Plans can be varied to suit the site and the needs of the occupier, while it still remains possible to add to the building later on.

It is obvious that the larger wall and roof unit has many advantages from the point of view of speed of erection. The units may be easily produced in the factory with no possibility of delays due to wet time, and with adequate machinery the cost per square foot of wall area could be kept extremely low. At Fort Wayne, Indiana, for example, the American Federal Housing Administration has just completed fifty houses at the rate of one a day, the average time spent on erection being 1 hour 40 minutes, this figure not including the time taken to level the site and pour a concrete raft. Various other systems are also in use, but the principle underlying all of them is the larger wall unit. Wallboards and plaster boards have made this same idea familiar enough in this country for internal finishes and partitions, and there seems to be no reason why the same technique should not be applied to the external skin. For many years we have been taught that the simplest way to provide adequate heat and sound insulation is to rely on weight, and with the traditional small unit of the brick this teaching is probably still true. New materials can provide the same resistance properties in a different way. A light timber or steel frame supporting a skin of waterproof plywood or asbestos cement, and lined with one of the insulating materials may sound like needless complication, and with present methods of building may even be more expensive. With factory assembly they might well show a considerable reduction in total costs, for most of them are inherently suitable for design in comparatively large areas, and the lightness of the complete assembly should make it possible to keep transport costs within reasonable limits.

The acceptance of prefabrication involves something of a revolution in building technique, and much research and practical testing will have to be carried out before all the difficulties are overcome. A certain amount of opposition is inevitable, but we shall, during the camp construction of the next few years, have a magnificent opportunity for practical tests.

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

NOTES & TOPICS

RE-ARMAMENT WASTE

CANDIDUS, in the *Investors' Chronicle*, has been raising a mild fuss about the waste of public money on re-armament work. The figures which he quotes seem to show that a certain amount of luxury work (facing bricks at 140s. for an aerodrome) has got past the Treasury, but the building industry cannot even then compete with the Admiralty, who are said to have spent £31,000 on converting a trawler after an estimate of £7,000, and £472,000 instead of £150,000 on the *Majestic*. After figures like these no ordinary client should ever be able to quibble over 10 per cent. or so for extras.

*

But are manufacturers of building materials being properly co-ordinated? I heard some months ago of a really large aerodrome job which had produced a virtual brick famine for miles around, yet the week after there was gloom at the meeting of one of our biggest brick makers, and stories of restricted production. Government specifications are strict, but it is difficult to believe that some of the cheaper materials would not be good enough for the job.

TELL IT TO THE CHILDREN

You will have noticed in these notes (and elsewhere in this JOURNAL) constant pleas for the enlightened teaching of architecture and everyday design in secondary schools—for getting at the public while it is young. A leader on this subject in our faithful *Manchester Guardian* brought forth an interesting letter to the editor from Mr. Frank Chippendale, head of the Municipal School of Architecture.

*

His letter points out that the Manchester Society has a panel for spreading the gospel to the schools, but that one of its difficulties is the apathy of the school teachers, one of whom said coldly: "We are not interested in modern architecture."

One of the voluntary papers in the higher school certificate is "Arts in Daily Life," but apparently children are very seldom encouraged to take it. Yet, as Mr. Chippendale says, "as a part of the general education of the future citizen the preparation for this particular examination would be really beneficial." Architecture told to the children should be, let's say it again, one of the first essentials of an R.I.B.A. publicity campaign.

CENTRAL REGISTER FIGURES

Replying to a question in the House of Commons, the Minister of Labour has given the figures for the number of volunteers who have enrolled in the Central Register, and out of a total of 80,000 odd, "Architectural and Public Utilities" come second with 17,000 to the Engineers with 21,000. After getting over the first surprise it becomes interesting to speculate upon the precise meaning of "Public Utilities." The R.I.B.A. register was said to have received encouraging support, but it has always been assumed that there are only 15 to 16 thousand architects in the country. So what can one assume? Accountants, who must outnumber architects quite considerably, show only 14,000, so it looks as though Public Utilities probably make up quite a large percentage of the joint total.

CONFESSIONS OF THE NAZI LEY

Dr. Ley, head of the German labour front, admits that re-armament has prevented the German Government from making the progress it would have liked with the housing problem. Germany wants 3,000,000 new dwellings, and this would require the work of 4,500,000 workers. Even if the energy of the whole nation were devoted to housing, the present needs could not be satisfied, he says.

*

Nevertheless, Dr. Ley has laid the foundation-stone for a working-class scheme of 11,500 dwellings capable of housing 40,000 people. Just a spot of encouragement.

EVACUATION IDYLL

Toddington Manor, that gorgeous prickly thing built by Sir Charles Barry for the first Lord Sudeley one hundred years ago at a cost of £150,000, lacks an occupier. Described by the *Evening Standard* man as a "Gothic pile," it stands in 150 acres of parkland—a mere remnant of the 7,000 acres which were once part of the estate.

Umpire Basil Ward at the fifth annual match between architects and quantity surveyors held at the A.A.'s ground at Elstree last Saturday.

The new "Mauretania": top, third class lounge; bottom, restaurant in the cabin class.

The stained glass windows are worth £4,000, and the cloisters, beautifully groined, are said to be surpassed only by the cathedrals of Salisbury, Gloucester and Norwich.

*

Mr. Locke, estate manager, whose father and grandfather were estate managers of Toddington before him, "sits in his office near the gate, wondering how long it will be before someone comes along to buy the place." Says he: "It would be useful for evacuation in time of war, but what would happen to the oak panelling?"

*

Surely a chance here for the R.A.F.?

MAURETANIA

Judging from photographs, two of which you see on this page, the new "Mauretania" has tried its best to look shipshape inside as well as out. It hasn't the consistency, aptness or inspiration of Mr. Brian O'Rorke's work for the Orient Line, but it has at least tried to break away from the traditional hide-and-seek which so many ship architects still love to play.

As far as can be made out a great many different people were responsible for the designs, and one can't help feeling that the "Mauretania" would have more *positive* qualities if one distinguished master-mind had at least been in control.

CAPRICE

Mr. Claud Golding, writing last week on Portland Place, told how, when "this splendid thoroughfare" was laid out in 1778, Lord Foley, whose mansion then stood on the site of Langham Place, insisted that the road should be 100 ft. wide so that he would get an uninterrupted view from his house of Hampstead and Highgate.

*

Which reminds me that the north end of Queen's Square (where the D.I.A. lives) was originally left open in order to give the residents "a view of the Hampstead heights." The square was completed only three or four years ago, when, presumably, those pleasurable heights had been invisible for so long that the original conditions could be safely ignored.

*

That goes for Portland Place, too, but maybe there are other reasons for retaining its generously airy proportions.

WEST INDIAN SLUMS

Except that rents and wages are lower all round, the slum problem in the West Indies corresponds almost exactly to that of any large town here. "Two or three adults and several children" in rooms not more than 10 to 12 feet square, and the tenants unable to live in the new houses built under clearance schemes because the rents are 2s. 6d. to 4s. instead of 1s. to 2s. This is according to a report on West Indian labour conditions by Major Orde Browne.

*

Major Browne's solution—a return to independent peasant proprietorship—may work perfectly well over there, but here it is unfortunately impossible, admittedly so, even by the three acres and a cow school.

AUGUST CORNER

This week's two prize comments offer a difficult choice.

The ugly Tube stations seem to have set the fashion for municipal buildings and the new White Hart Lane School closely follows Tube station lines, as does the new Town Hall. In fact, all the new schools at Southgate, and the swimming bath as well, have Tube station features. Perhaps it is old-fashioned to sigh for the lost chance of "a pretty picture," for most residents have abolished pictures from their homes altogether. Prettiness, in fact, is the last thing wanted in homes to-day, because—a fatal bar—it is not modernistic.—"Cock Robin," in the *Bowes Park Weekly News*.

Flats, flats and still more flats. All around us in Islington they are springing up. Red and regimental, square and squat.

There are flats where the gardens used to be. This in a thousand cases in Islington.

Gone have a thousand houses, large and small, gone have the "castles" of a thousand Englishmen, gone a thousand edifices of individualism.

And with us we have the "regimental" flats, and home life flounders in a barrack-like environment.—*Islington and Holloway Press.*

Maybe the so cultured style of the second puts it at the top, but "a pretty picture" is hard to find in suburban weeklies, so maybe the first extract stays top. But choose for yourself.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

NATIONAL CAMPS

The camps of Great Britain have developed into yet another phase; their progress, from military tents through enthusiasts' caravans to "holiday homes," has now received official recognition as of national importance.

The Camps Act of 1939 gave powers for the creation by the National Camps Corporation of camps suitable for schooling in peace time and useful for evacuation in war.

The appointment of Sir John Burnet, Tait and Lorne as the architects for the design of the general buildings was a step taken by the Corporation soon after its formation. By this step it was ensured that in these camps adequate attention would be paid not only to the important aspect of cost, but also to the equally desirable provision of amenity.

As the camps are to be erected all over the country at short notice in impossibly isolated localities, it was evident that standardization was essential to the success of the scheme and that further the construction adopted had to be such that factory fabrication could be utilized while the site works were proceeding.

The decision to use red cedar drop siding and cedar shingled roofs was taken on the virtue of pleasant appearance, coupled with low maintenance. This external treatment is carried through all the buildings with the exception of the boiler-house, where brick walls and a concrete roof are used on account of the possible fire hazard. The buildings are each designed on the basis of the standard units of walling; these being prefabricated panels of framework either 8 ft. or 10 ft. high as required by the "cube" and 6 ft. wide. The dimensions were those found to be most convenient for handling and erection, and most adaptable to the layout of doors and windows.

The constructional material of the panel units is wood, mostly 4 in. by 2 in., as this satisfied the requirements of strength and lightness, ease of fixing and forming, and because there are all over the country joiners' shops equipped to do the work.

From the fabricating works the units and the other shop-made parts are dispatched to the sites by road.

The foundations prepared to receive the superstructure are formed of *in situ* concrete posts of heights to suit the varying contours and of spacing to suit the superstructure grids. To prevent children, rubbish and vermin getting under the buildings board and wire mesh guards are fixed from post to post.

Creosoted bearers rest on the damp-proof post cappings and in turn support the floor joists upon which stand the cills of the studwork wall units of which the heads form the roof plate.

The roof unit and ceiling members form, in the triple unit blocks of 18 ft. width, a simple couple close roof and in the 27-ft. blocks a knee-braced truss.

The windows, doors, and internal partitions—also of wood—are fixed to the wall units as required, and the units are lettered indicating their types.

Every camp is built up around a nucleus which comprises the essential buildings and consists of the following blocks: assembly hall, dining-hall, boiler house, dormitories, lavatories, class-rooms, hospital, staff quarters, and the houses of the camp manager and the headmaster.

The layouts of the camps at Laverstoke and Horsley's Green are by Sir John Burnet, Tait and Lorne, though for each of the many other sites a separate architect is appointed to deal with the layout and the problems of the site works.

The site works generally comprise roads and

THE ARCHITECTS' DIARY

Thursday, August 17
POLYTECHNIC SCHOOL OF ARCHITECTURE. *Exhibition of Students' Work at 158 New Bond Street, W.1. Until August 19.*

Saturday, August 19
ASSOCIATION OF ARCHITECTS, SURVEYORS AND TECHNICAL ASSISTANTS. *Visit to Russia. Until September 10.*

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

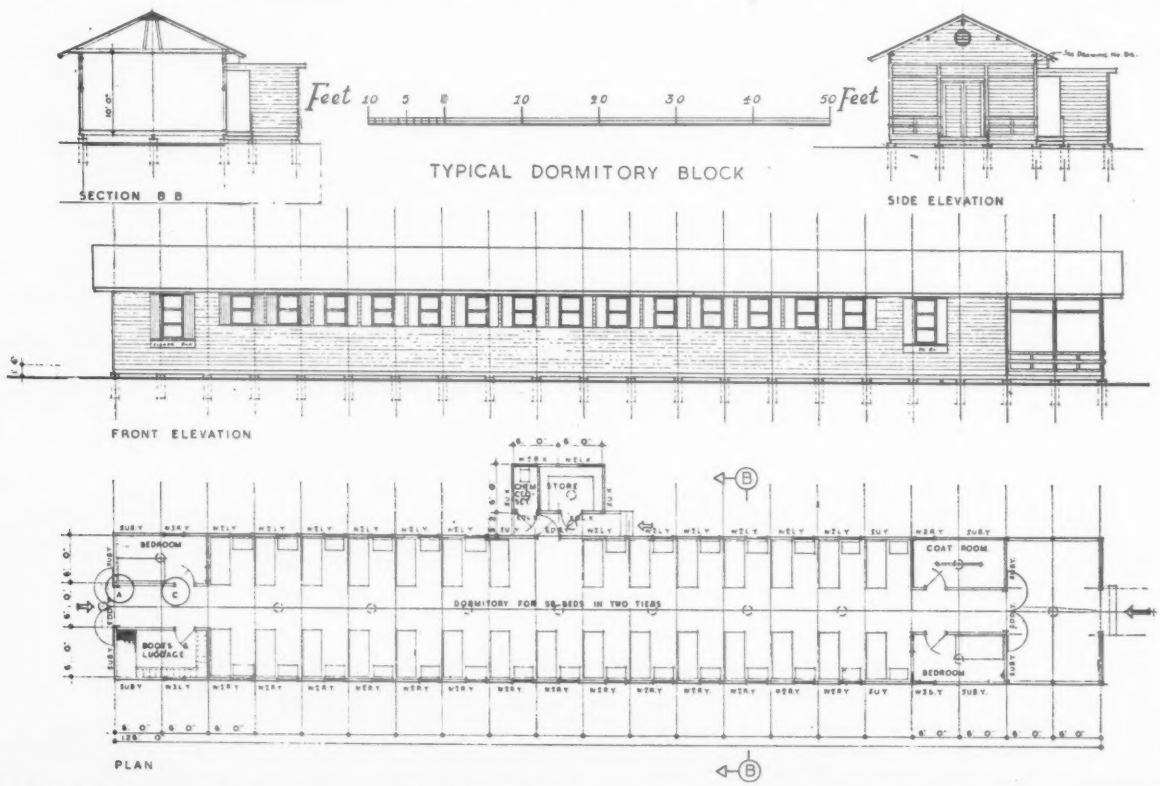
Friday, September 1
TOWN AND COUNTRY PLANNING SUMMER SCHOOL. *At Bede College, Durham. Until September 8.*

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

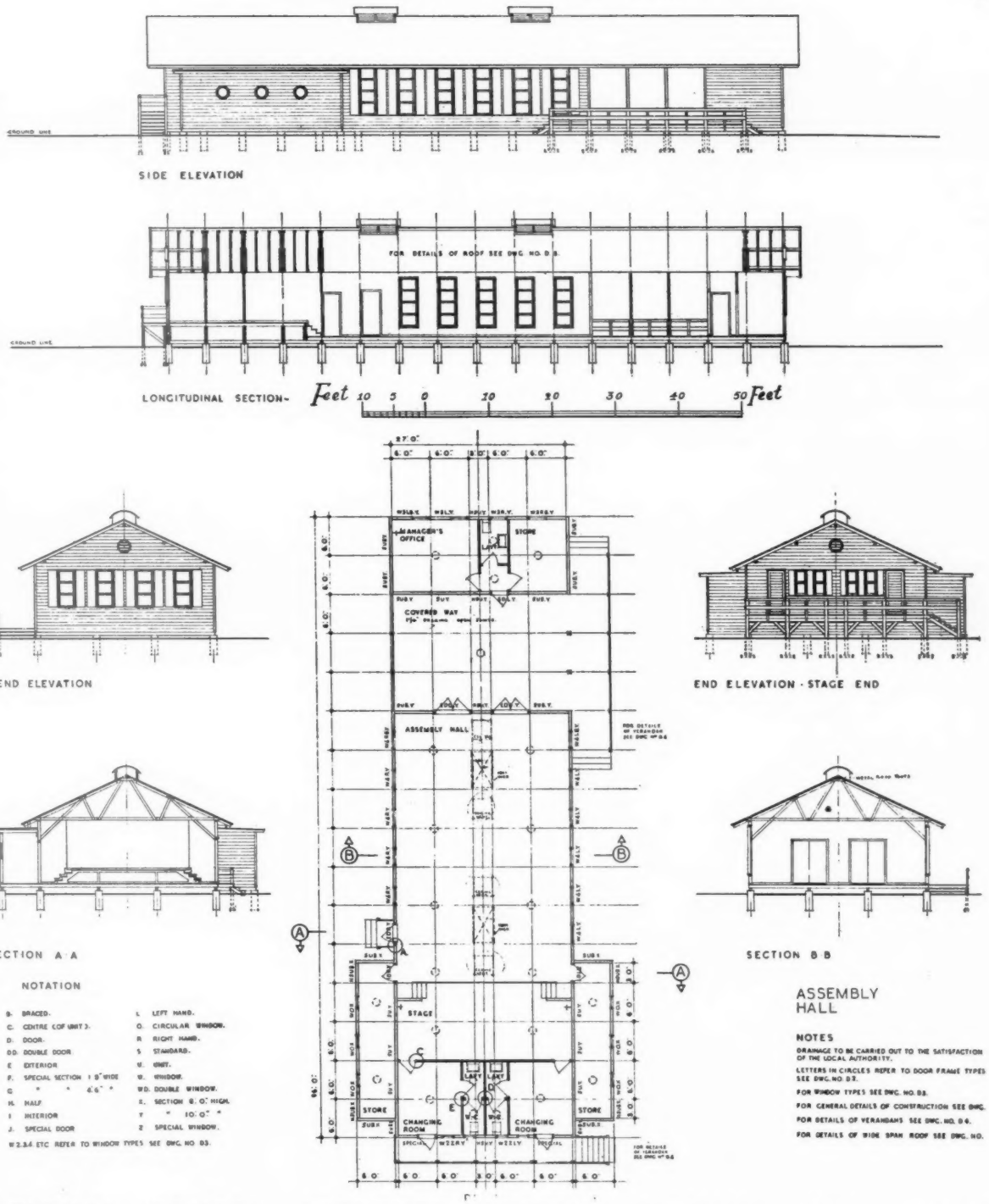
Friday, September 29
FACULTY OF ARCHITECTS AND SURVEYORS. *Annual Conference, Brighton. Until October 2.*

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.*



NATIONAL CAMPS: APPROVED DESIGN. DORMITORY BLOCK



NATIONAL CAMPS : APPROVED DESIGN. ASSEMBLY HALL BLOCK

sewage disposal, concrete foundations and site, surface tar and ashes, water, electrical and other services, and various items of erection and finishings. The sites are chosen only after careful inspection for their suitability for both their peace-time use and their war-time purpose, and that other considerations such as access, costs and contours are sufficiently covered.

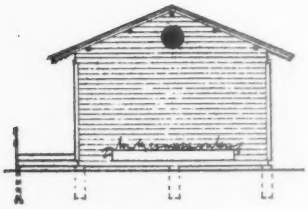
CENTRAL REGISTER

In the House of Commons Mr. Pickthorn asked the Minister of Labour if he would give the number of persons who had enrolled in each of the main categories of the central register of persons with scientific, technical, professional, and higher administrative qualifications; whether these numbers were regarded as adequate; and the extent to which the register was being used in peace time.

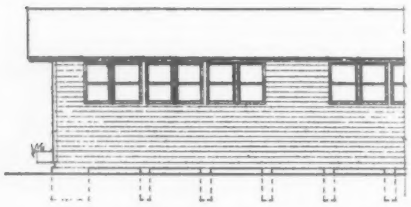
Mr. Ernest Brown replied: The numbers of volunteers enrolled in the main categories of the Central Register on July 22 were as follows:

Scientific Research	6,456
Industrial Chemistry	4,743
General Engineering	20,907
Mining and Metallurgy	1,972
Accountancy	14,341
Architectural and Public Utilities	17,075
Universities and Teaching ..	4,617
Administration and Management	6,297
Linguists	1,299
Others	2,619
Total	80,326

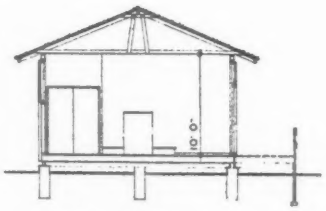
The response had, in the main, been satisfactory, but some employers in certain of the more important categories had been reluctant to allow qualified members of their staff to volunteer. It was thought that this may be due to a misconception of the use to which the Register would be put in war time. Machinery would then exist to determine priorities of national importance between different classes of work, and before volunteers already in employment were submitted for alternative posts, the observations of their employers would be carefully considered by expert committees appointed for the purpose. It was, therefore, hoped that in the national interest employers would encourage their qualified staffs to enrol on the Register so that it may be equal to the calls made upon it in the event of war. It was to be remembered also that the Register would



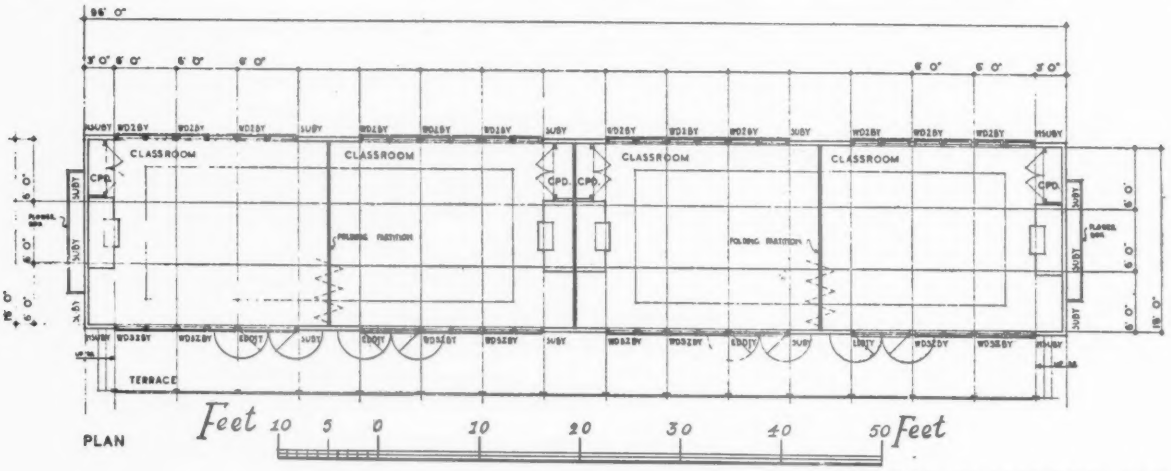
END ELEVATION



PART OF WEST ELEVATION



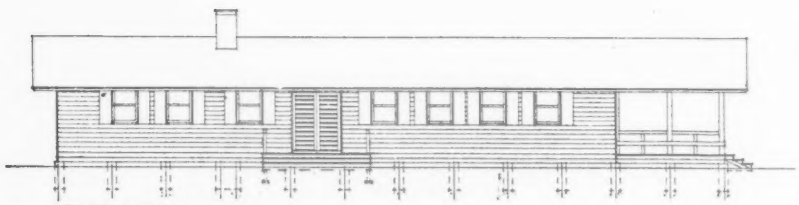
CROSS SECTION



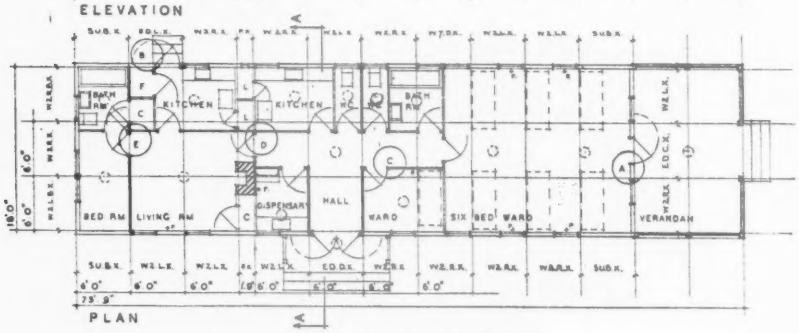
PLAN

TYPICAL CLASSROOM BLOCK

NATIONAL CAMPS: APPROVED DESIGN



ELEVATION



PLAN

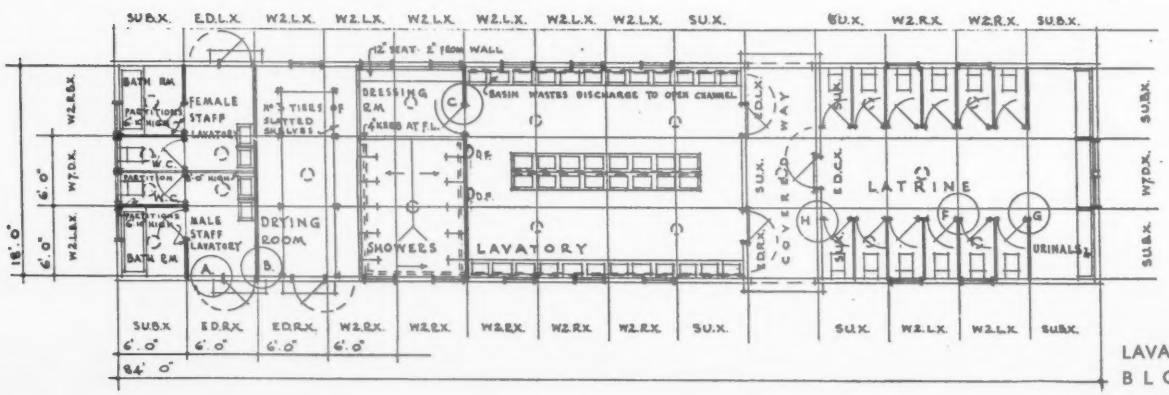
HOSPITAL BLOCK

be available in war time for the use of employers as well as of Government Departments and that in certain circumstances they might find it of great use for securing replacements of staff.

As the Register was intended as a pool from which to draw qualified persons in war time, volunteers should not expect to be allocated to specific posts in advance of an emergency, although it was proving possible to do this in a comparatively small number of cases.

CORRECTION

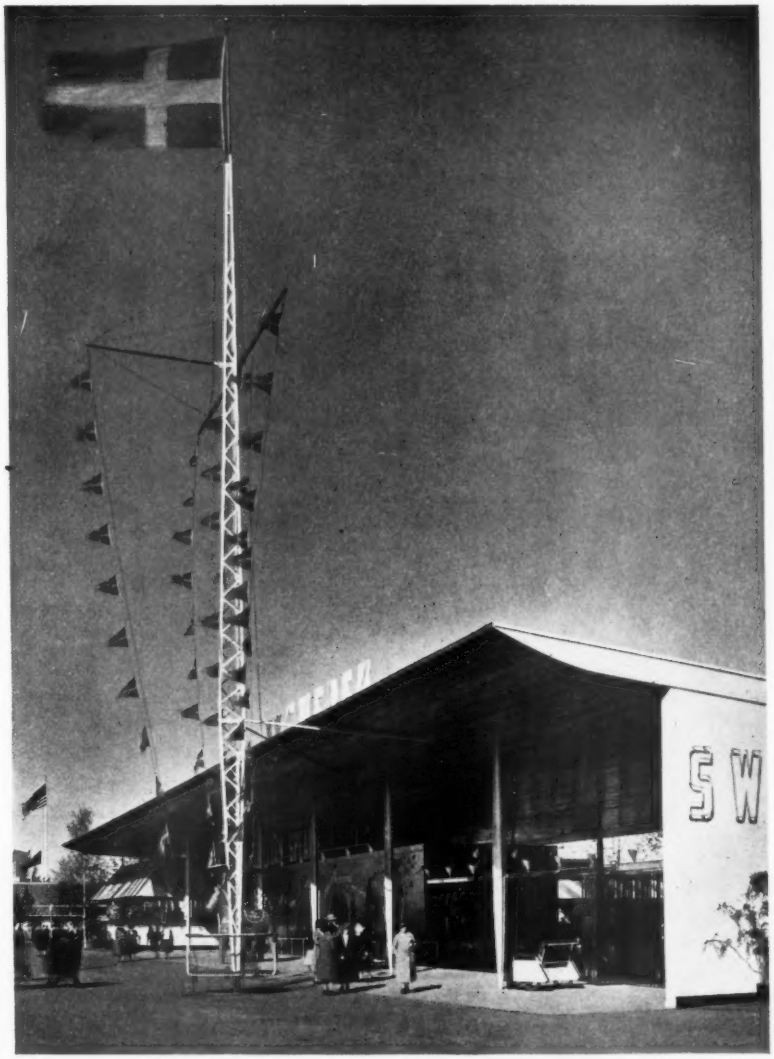
We are informed by Robert Kearsley & Co. that the cooling towers of the Leicester City Electricity Services, a photograph of which was published in our issue for July 27, were finished in their Stippolo oil-bound water paint and not patent concrete paint as stated in the description.



LAVATORY BLOCK

WORKING DETAILS : 771

ROOF CONSTRUCTION • SWEDISH PAVILION, NEW YORK WORLD'S FAIR • SVEN MARKELIUS : ASSOCIATES, POMERANCE & BREINES

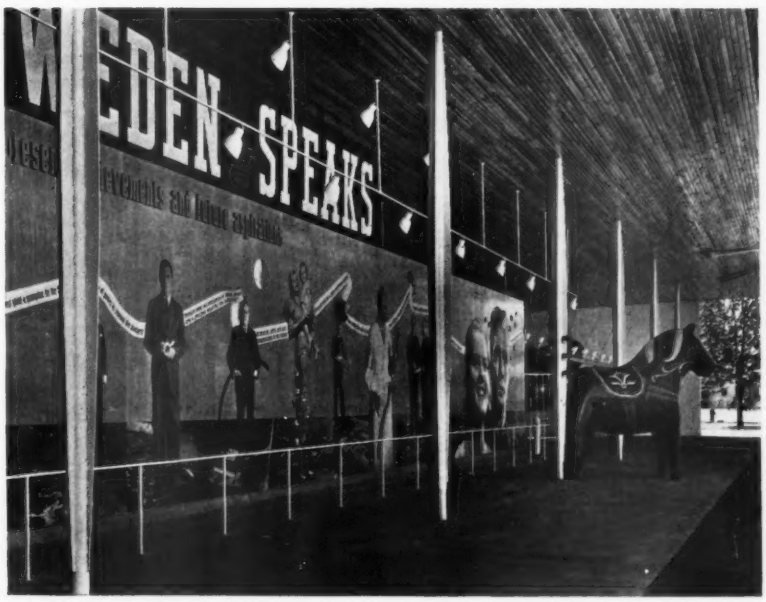


A large part of the pavilion site is given over to an informal garden and pool, and there is not a large roofed exhibit area. Three sides of the central garden court are sheltered by wooden roofs, supported on cast steel columns with spot welded metal fins, each of these roofs being at a slightly different level.

At the front and back edges of the canopy roofs, the wooden slats with which they are faced, are slightly separated to allow for the ventilation which will provide an insulating barrier against the heat of the summer sun.

On the fourth side of the courtyard is an enclosed building for the display of furniture, fabrics, pottery, glass and silver ; also the restaurant, half in and half out of cover.

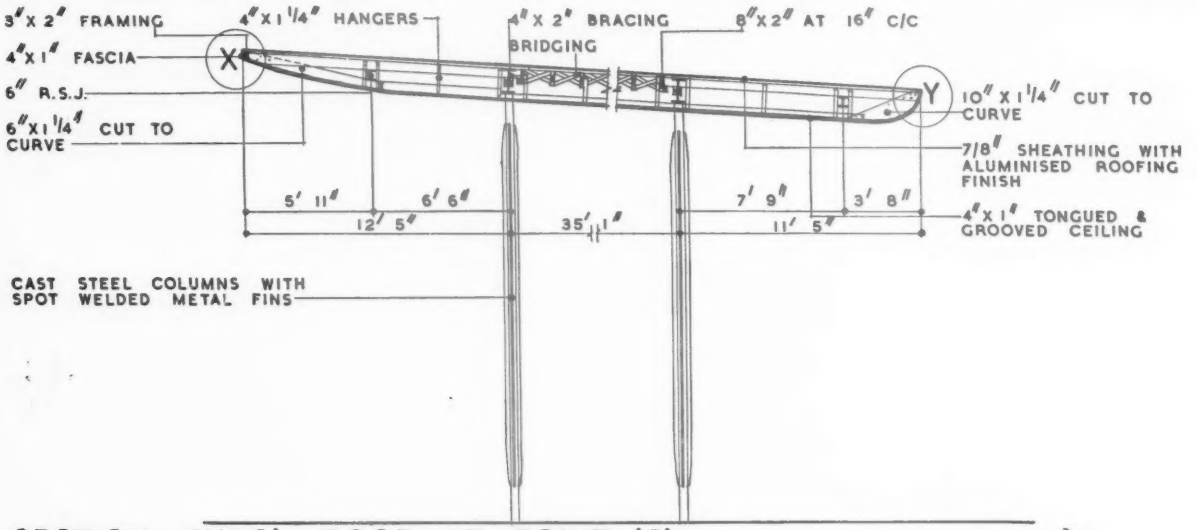
Details are shown overleaf.



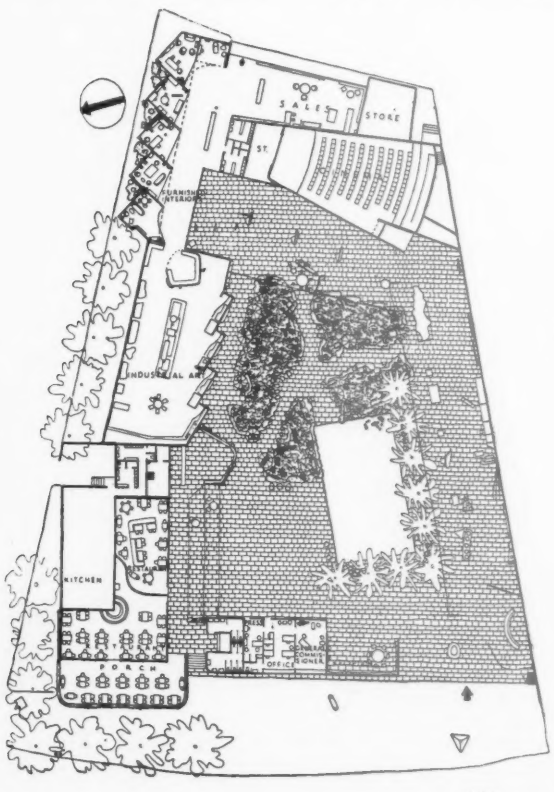
FILING REFERENCE:

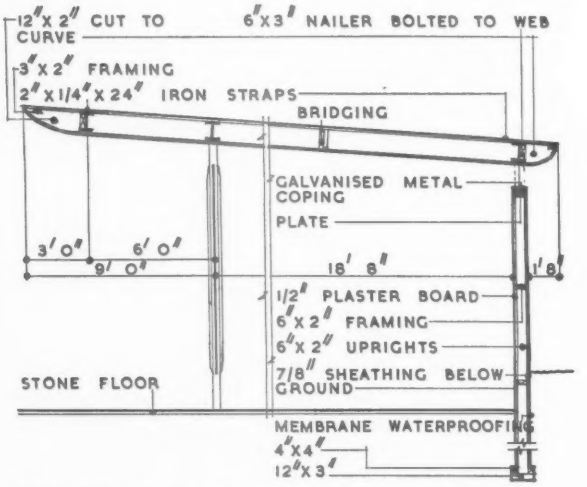
WORKING DETAILS : 772

ROOF CONSTRUCTION • SWEDISH PAVILION, NEW YORK WORLD'S FAIR • SVEN MARKELIUS : ASSOCIATES, POMERANCE & BREINES

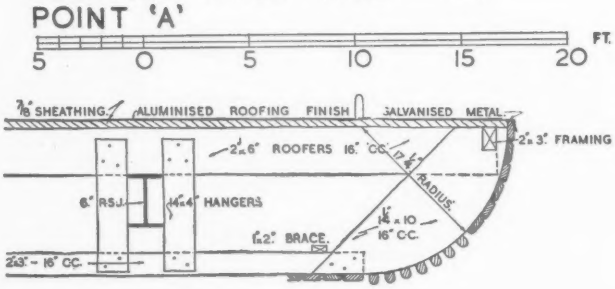


SECTION THRO' ROOF AT POINT 'B'



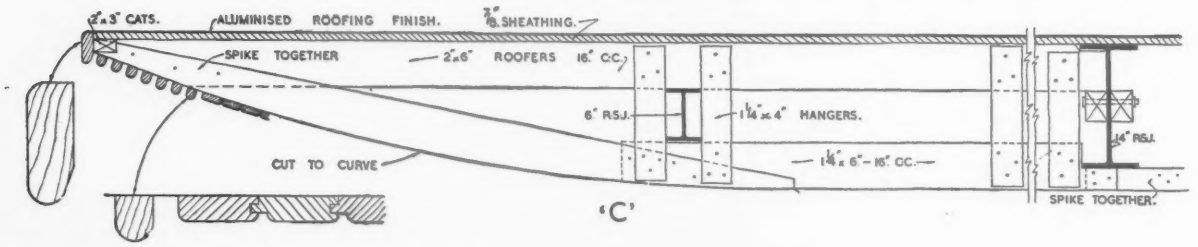


SECTION THRO' ROOF AT POINT 'A'



KEY PLAN

DETAIL SECTION AT (Y)



DETAIL SECTION AT (X)

Details of the Swedish pavilion illustrated overleaf.

The Architects' Journal Library of Planned Information

INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

755 Structural Steelwork

756 Metalwork

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

Sheets issued since index :

701 : Tile Hanging
702 (420 revised) : Fixing Insulating Board
703 : Sheet Metals
704 : Plan Elements
705 : Metal Work
706 : Plan Elements
707 : Furniture Layout
708 : Plan Elements
709 : Flue Construction
710 : Natural Lighting
711 : Glass and Glazing
712 (109 revised) : Quarry Tiles
713 : Glass and Glazing
714 : Metalwork
715 (106 revised) : Hot Water Radiators (Pressed Steel)
716 : Furniture Layout
717 : Metalwork
718 : Flooring Materials
719 : Plumbing
720 : Water Heating
721 : Wall Facing Materials and Wallboards
722 : Roofing
723 : Metalwork
724 : Timber Construction
725 : Sanitary Fittings
726 : Metalwork
727 : Waterproof Jointing and Bedding
728 : Timber Construction
729 : Steelwork
730 : Wall Facing Materials and Wallboards
731 : Metalwork
732 : Concrete Construction
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

)08.

THE USE OF PLATED ROLLED SECTIONS AS BEAMS:

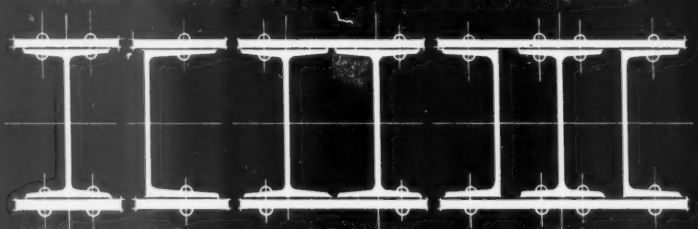


FIG.1. FIG.2. FIG.3. FIG.4.

Joists and channels can be plated to increase their section moduli. Where a plain joist or channel will afford sufficient strength it should be adopted as it is more efficient than a plated section. Where the depth is limited, however, or when the heaviest joist is insufficient it may be necessary to provide additional flange plates. Groups of plated sections can be used in combinations, and in such cases the section moduli can be found from those of the individual plated members.

THE SECTION MODULUS OF A COMPOUND SECTION:

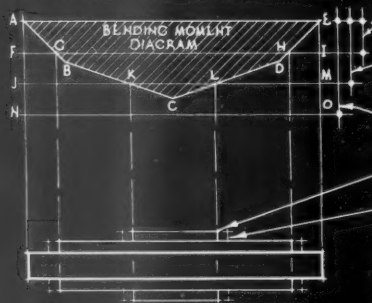
The section modulus for a compound section can be found from the approx. formula:

$$Z_n = \left(\frac{Z_{nj}}{h} + A_n\right) h_n$$

Z_{nj} = the net section modulus of the joist or channel (i.e. with the necessary holes deducted).
h_n = the depth of the joist or [(without plates).
h = the total or overall depth of the compound section.
A_n = the net area of plates on one flange.
Z_n = the required section modulus of the compound section.

for the definition of the section modulus 'Z', see Sheet 736, N°3 in this series.

FIG.5. CURTAILMENT OF FLANGE PLATES: (See note (b) on back of this Sheet).

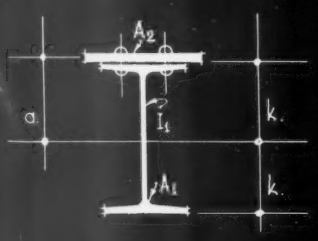


Resisting moment of plain section only.
Resisting moment of plain section + 1st. flange plates.
Resisting moment of plain section + 1st. and 2nd. flange plates.
Theoretical point of curtailment.
Actual point of curtailment - to permit extra plate to be fastened to the member before it is actually required for strength purposes.

FIG.6. ASYMMETRICAL PLATING: (See note (c) on back of this Sheet).

For asymmetrical plates the section modulus can be found from the following formula:-

$$Z = \frac{I_1 (A_1 + A_2) + A_1 A_2 a^2}{A_1 (k+a) + A_2 k}$$



in which:
A_1 = gross area of plain section.
k = half depth of plain section.
I_1 = moment of inertia of plain section.
A_2 = gross area of flange plate.
a = distance between the centres of the plain section & of the plate.

TABLE GIVING APPROX. NET SECTION MODULI & EFFICIENCY COEFFICIENTS OF PLATED JOISTS.

	REQUIRED SECTION MODULUS	SECTION. R.S.J. in. x in.	SECTION. 2 PLATES in. x in.	EFFICIENCY COEFFICIENT.
	693	24 x 7½	12 x 2	2·70
	607	22 x 7	12 x 2	2·51
	599	24 x 7½	10 x 2	2·65
	564	24 x 7½	12 x 1½	2·61
	540	20 x 6½	12 x 2	2·33
	520	22 x 7	10 x 2	2·46
	494	24 x 7½	10 x 1½	2·58
	487	22 x 7	12 x 1½	2·42
	457	20 x 6½	10 x 2	2·23
	430	20 x 6½	12 x 1½	2·25
	423	22 x 7	10 x 1½	2·39
	390	24 x 7½	10 x 1	2·47
	374	18 x 6	12 x 1½	2·11
	368	20 x 6½	10 x 1½	2·15
	327	22 x 7	10 x 1	2·29
	320	18 x 6	10 x 1½	2·00
	286	24 x 7½	10 x ½	2·31
	281	20 x 6½	10 x 1	2·05
	277	18 x 6	12 x 1	2·02
	266	18 x 6	8 x 1½	1·93
	240	18 x 6	10 x 1	1·92
	232	22 x 7	10 x ½	2·13
*	211	24 x 7½	•	2·23
	204	18 x 6	8 x 1	1·87
	194	20 x 6½	10 x ½	1·88
*	167	20 x 7½	•	1·88
*	152	22 x 7	•	2·04
	144	18 x 6	8 x ½	1·76

The figures marked with an asterisk are the values for unplated rolled steel joist sections, and have been included for purposes of comparison only.

for further matter in connection with the table see back of this sheet.

Issued by Braithwaite & Co., Engineers, Ltd.
Compiled by C.W. Hamann, Consulting Engineer.

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 755 •

STRUCTURAL STEELWORK

Subject : Economical Beam Sections, 3

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 eighth Sheet of the series, and sets out in tabular form the comparative economic efficiency of plated rolled sections for given sets of conditions.

Beam Sections :

Practically every rolled steel section may be used as a beam, although certain sections, specially produced for that purpose, are more efficient than others.

1. The simple sections are :
   - (*a*) Joists
   - (*b*) Channels
   - (*c*) Angles (equal and unequal)
   - (*d*) Tees
   - (*e*) Plates
   - (*f*) Troughs
   - (*g*) Flange rails
   - (*h*) Bridge rails
   - (*i*) Z sections.
2. Common compound sections are :
   - (*a*) Plated joists
   - (*b*) Plated channels
   - (*c*) Plate girders.

Special asymmetrical sections are usually of advantage when beams are subjected to longitudinal forces in addition to the transverse forces causing bending, and also when axially loaded members are subjected to bending.

(*a*) *Plated sections as beams :*

Where the section modulus of a joist or channel is insufficient for the bending moment when these sections are to be used as beams, they may be strengthened by flange plates (see figures 1 and 2 on this Sheet) ; where the web area is insufficient for the shear force, the joist or channel may be strengthened by web plates.

Rolled steel sections with additional flange plates are commonly known as compound sections, and where one such section is insufficient, a combination of two or more may be used with flange plates of suitable width (see figures 3 and 4 on this Sheet).

In addition to this type of strengthened member, another section can be used when the normal rolled sections are insufficient. It is known as a plate girder and details will be given in the next Sheet of this series.

The plating of joists and channels is usually arranged symmetrically although, as will be shown, a heavier or wider plate on the compression flange is sometimes of advantage. Plates added to the webs of sections add little to their section moduli.

Approximate section moduli for a selection of plated members have been given in the table on this Sheet, but the table is by no means exhaustive, as the possible combinations of plates and basic sections are infinite.

In addition to the section moduli, the efficiency coefficients have been set out. It is clear that plated sections are only economical when they are deep, and for this reason the properties of basic sections less than 18 in. deep have not been given.

It will be seen from the table that, for example, if a section modulus of 280 is required, it is more economical to use a 24″ × 7½″ R.S.J. + 10″ × ½″ plates than a 20″ × 6½″ R.S.J. + 10″ × 1″ plates, since the respective efficiencies are 2·31 and 2·05. Similarly a 24″ × 7½″ R.S.J. by itself is better than an 18″ × 6″ R.S.J. + 8″ × 1″ plates, the respective efficiencies here being in the proportion of 2·23 : 1·87.

For compound sections which are not listed the section modulus can be found from the formula given on the front of this Sheet. Although only approximate, this formula gives results sufficiently correct for all practical purposes.

Because rivet holes must be deducted, only the net section can be considered in calculations of strength ; but in order to reduce the amount of unstressed material it is wise to stagger the rivets in the flanges and if possible to have only one hole in each flange in any cross section of the member.

(*b*) *Length of flange plates :*

Flange plates need not continue for the full length of a member. They may be curtailed at points where the bending moment is such that the full section is not required. In figure 5 on this Sheet a graphical method for determining the points of curtailment is set out.

A.B.C.D.E. represents the bending moment, and lines *FI*, *JM* and *NO* are drawn parallel to the longitudinal axis of the member and at such distances from the base of the bending moment, diagram *AE*, as are proportional to the resisting moments of (*a*) the plain section only, (*b*) the plain section plus the first flange plates, and (*c*) the plain section plus the first and second flange plates, etc.

In each case the resisting moment is to be taken as the actual section modulus of the appropriate section multiplied by the actual stress to which the appropriate section will be subjected in the composite member. The stress varies from zero at the neutral axis to the maximum permitted stress at points most remote from it. Stresses at intermediate points are in direct proportion to their distances from the neutral axis.

(*c*) *Asymmetrical plating :*

Where the modulus of a plain section is only slightly less than that required, it is often of advantage to add a plate to the compression flange only, as it also is when the compression stress must be reduced because of considerations of buckling, i.e. when it is not adequately restrained laterally. Where this occurs the full or gross area of the section flange and of the new flange plate can be taken, as deductions need not be made for rivets in compression members.

For such asymmetrical plates the modulus can be found from the formula (figure 6 on the front of this Sheet) derived by F. J. Samuely.

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, and
No. 751—Economical Beam Sections, 2.

Issued by : Braithwaite & Co., Engineers, Ltd

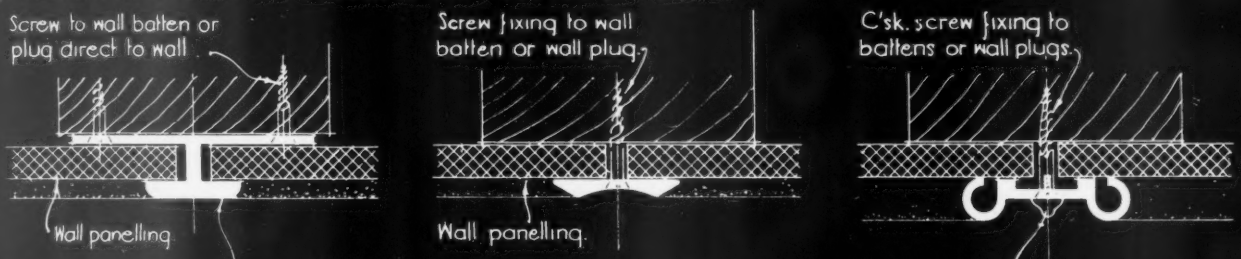
Address : Horseferry House, Horseferry Road, London, S.W.1

Telephone : Victoria 8571

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

EXTRUDED ALUMINIUM COVER & FIXING STRIPS FOR WALL PANELLING MATERIALS

(A) TYPICAL COVER STRIPS FOR HORIZONTAL AND VERTICAL BUTT JOINTS

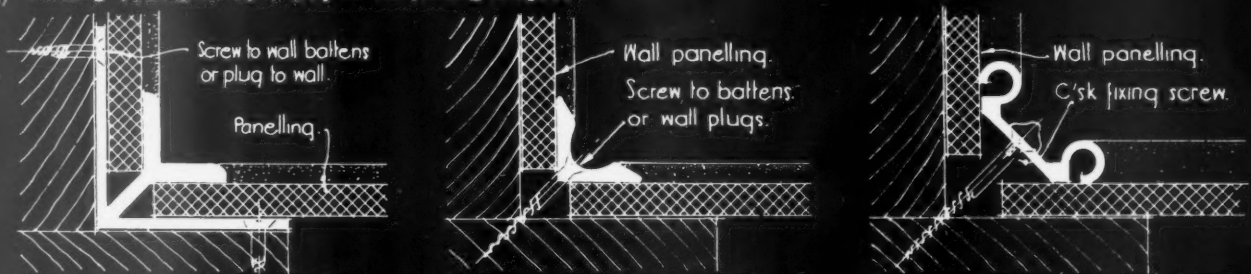


One-piece plain cover strip and back plate for secret fixing.

Concave type cover bead only, face fixed.

Ornamental convex type cover bead, with screwed aluminium face studs.

(B) TYPICAL SECTIONS FOR USE AT INTERNAL ANGLES

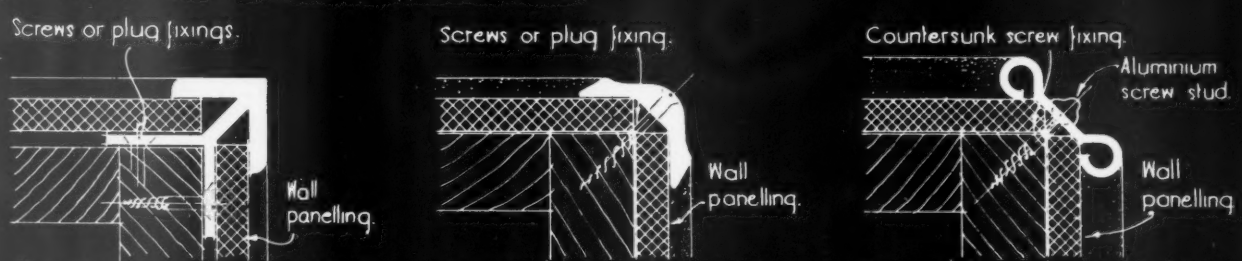


One-piece plain angle strip and back plate for secret fixing.

Concave type angle bead only, face-fixed.

Ornamental convex type angle bead, with screwed aluminium face studs.

(C) TYPICAL SECTIONS FOR COVERING EXTERNAL ANGLES



One-piece plain angle strip and back plate for secret fixing.

Concave type angle bead only, face fixed.

Ornamental convex type angle bead, with screwed aluminium face studs.

(D) TYPICAL SECTIONS FOR FINISHING EDGES OF PANELS

One-piece plain edge strip and back plate for secret fixing.

Concave type panel edge trim, face fixed.

Ornamental convex type edge trim, with screwed aluminium face studs.

Information from the Northern Aluminium Company Limited.

INFORMATION SHEET: ALUMINIUM, No 21: FIXING & TRIMMING SECTIONS: (A) WALL PANELLING
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 756 •

METALWORK

Subject : Fixing and Trimming Sections, I

General :

This is the first of a series of Sheets illustrating aluminium sections for fixing and trimming purposes, and deals with cover fillets for the joints and edges of wall panelling. Although in the details the linings are shown of equal thickness, and by standard representation, in practice their depth and composition are immaterial and may, if necessary, even differ on either side of the joint or corner.

Fabrication :

Aluminium sections of this kind are invariably produced by the extrusion process, and this method of fabrication permits considerable scope both in the design of the members and in intricacy of detail. The smooth finish and fineness of structure enable expensive machining operations to be eliminated, while the adoption of a suitable section combined with the correct choice of alloy ensure economy and increased rate of production.

Dies :

It should be noted that in addition to the arbitrary shapes drawn, the Company maintains in stock a large variety of standard dies. A full classification is given in the Noral Handbook, Section C. New dies, in the smaller sizes, can be made at a small cost.

Maximum Sizes :

Almost any section (subject to certain limitations of thickness) may be produced, provided that the cross-sectional dimensions fall within a circle 12 in. in diameter. Where not ordered otherwise, sections are supplied in 12 ft. lengths with a proportion of shorter lengths.

Types :

Three general types of section are illustrated :

(1) Secretly fixed sections ;

(2) Face fixed sections with or without screwheads finished with the same surface as the adjoining metal ;

(3) Face fixed sections with the countersunk fixing screws hidden by ornamental aluminium studs screwed on. Plain, convex and concave sections are generally obtainable for any of these types.

Assembly :

Aluminium cover strips are readily cut, mitred, drilled and countersunk on the site by means of standard machine tools. Anodising should, however, be done after cutting or drilling.

Finishes :

For a brief description of the surface finishes suitable for extruded sections, see Sheet No. 505.

Insulation :

Although insulation is usually unnecessary when aluminium is used internally, precautions should be taken against electrolytic and chemical corrosion of the sections, when used in contact with certain other metals, or with timber, cement, etc., in the presence of moisture, see Sheet No. 738. Such precautions are additional to any waterproofing of joints that may be necessary.

Previous Sheets :

Previous Sheets of this series dealing with the architectural uses of aluminium are Nos. 492, 501, 504, 505, 510, 661, 669, 673, 680, 686, 714, 717, 723, 726, 731, 734, 738, 742, 746 and 749.

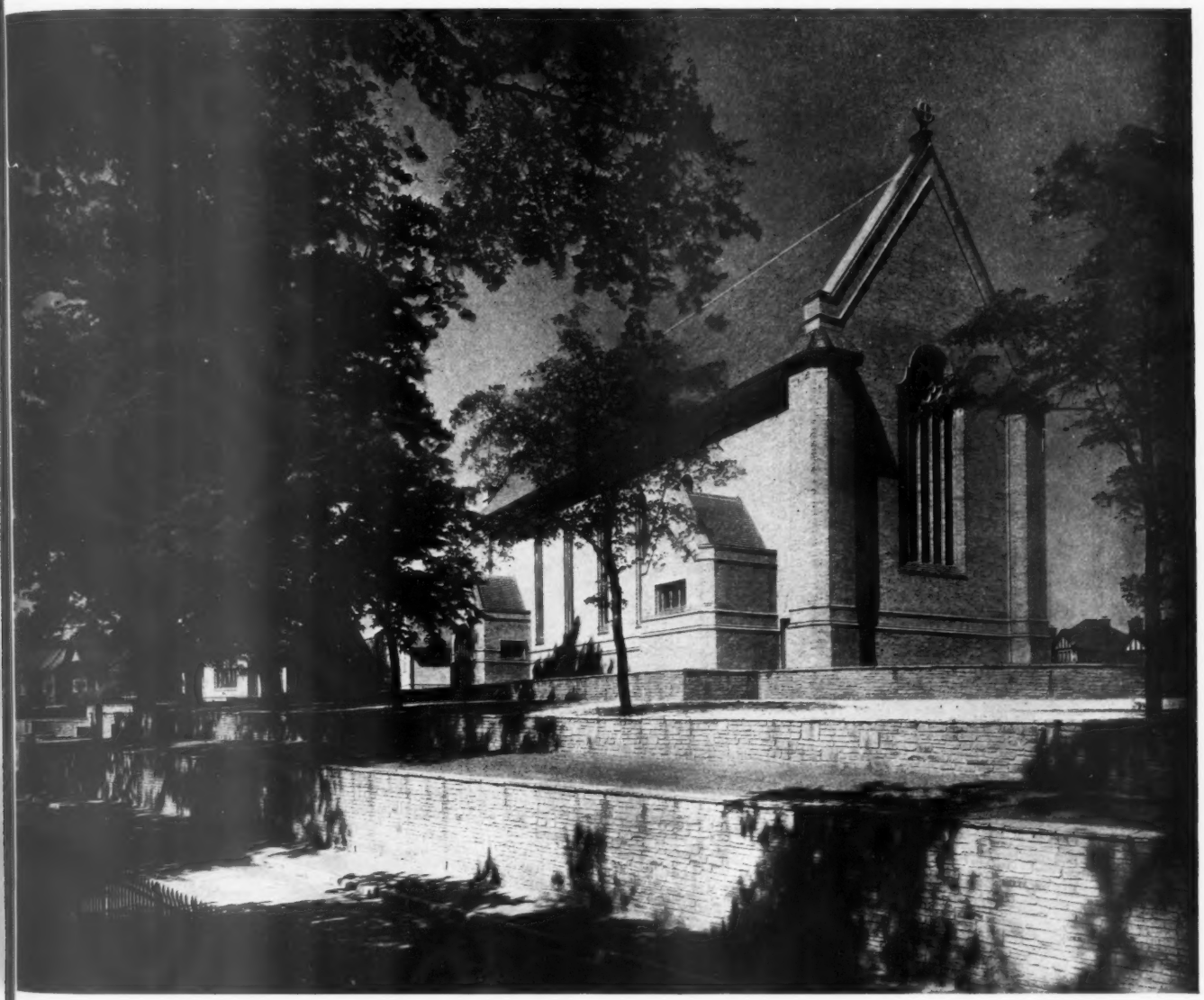
Issued by : The Northern Aluminium Company, Ltd.

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

Telephone : Temple Bar 8844

ST. MARY'S CHURCH, NOTTINGHAM

DESIGNED BY T. CECIL HOWITT



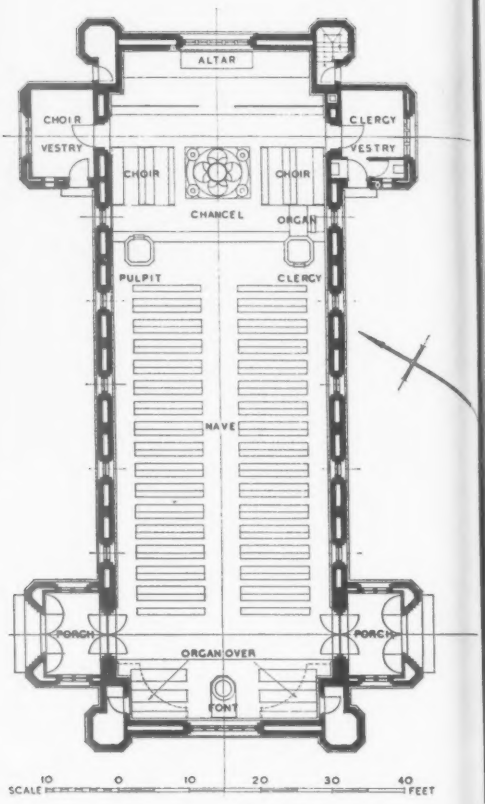
VIEW FROM EAST

PROBLEM—*Church, church hall, and curate's house, for the growing residential area of Wollaton Park.*

SITE—*Wedge-shaped, and raised high above the level of the surrounding roadways. The church is placed on an east-west axis, with trees to form a natural setting. The site was restricted by deep building lines on the two road frontages.*

D

VIEW OF CURATE'S HOUSE AND PART OF CHURCH FROM SOUTH



PLAN

CONSTRUCTION AND EXTERNAL FINISHES—*External walls are two 9-in. brick skins with a 9-in. cavity between. The roof is of timber rafters, purlins, and boarding covered with dark stone-coloured hand-made tiles, and is supported by steel trusses, which form the base of construction for the internal semi-circular, oak coffered ceilings. External walls are faced with light stone-coloured hand-made bricks inter-spaced with orange dressings. Tracery windows are introduced at the east and west ends, and stained glass heads to the windows on the long façades.*

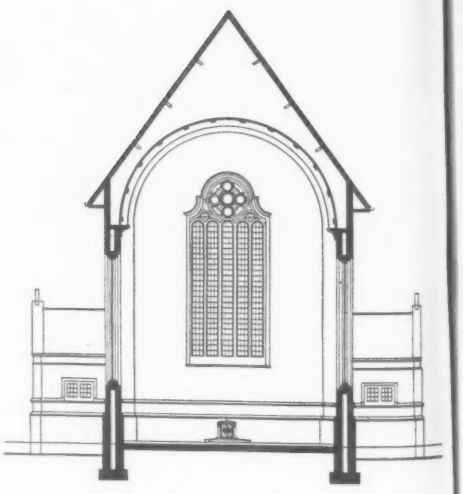
INTERNAL FINISHES—*The interior walls are finished in light stone-coloured bricks, and the floor is paved with natural travertine slabs. The continuous barrel ceiling has ribs and beams of natural oak, the ceiling panels being in acoustic boards decorated in brilliant colours. Pews, choir-stalls and the altar reredos are natural oak, wax polished. Door furniture, electric fittings and lectern are in hand-wrot iron, rustless steel finish. The organ, placed behind carved oak grilles on either side of the west window, has a remote all-electric action console in the choir.*

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

COST—*The main building contract was £10,660; 1s. 1d. per cubic foot. Furnishing contract, £4,180; 4.7d. per cubic foot.*

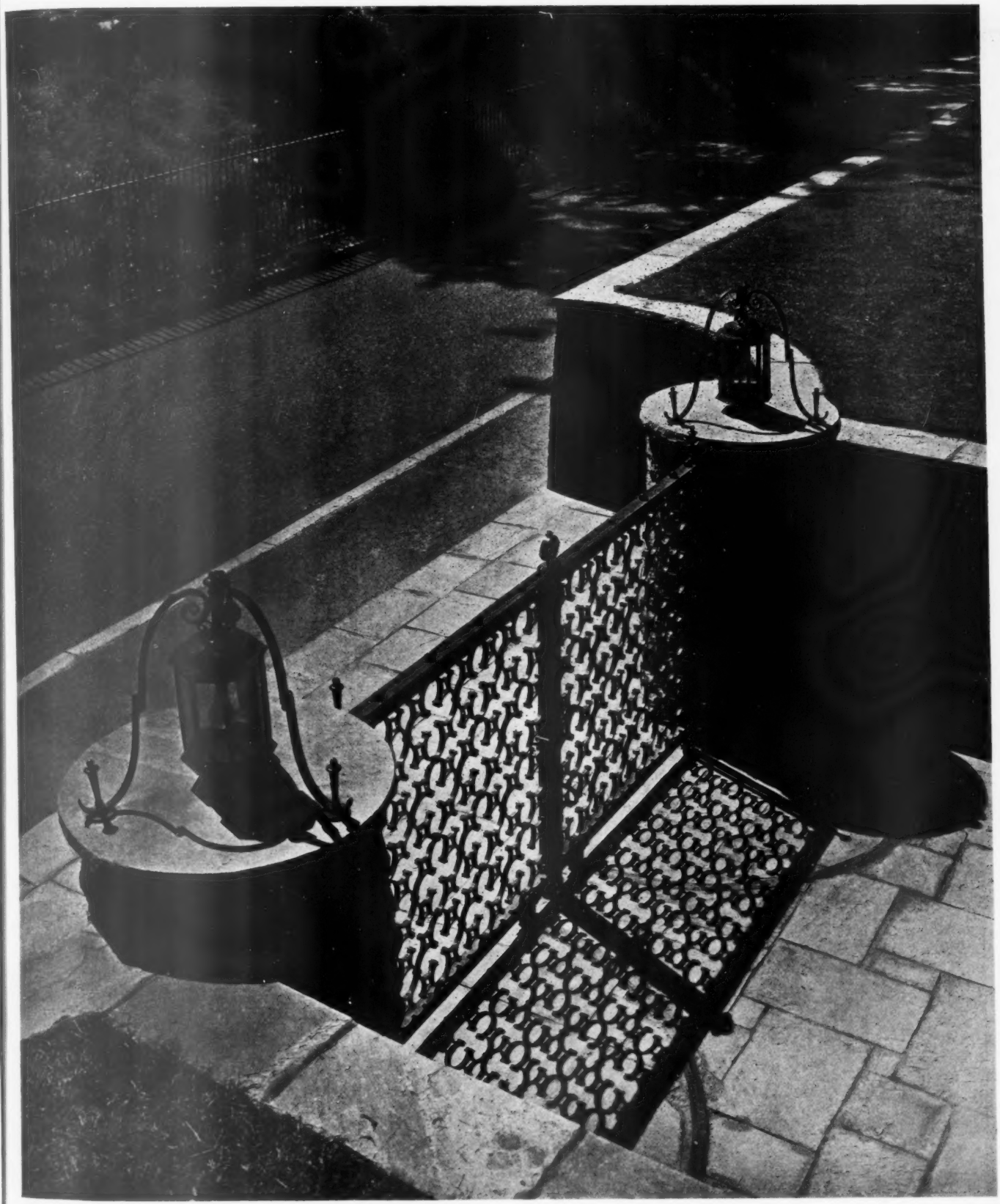
The general contractor was Mr. H. Butler.

For a list of sub-contractors, see page 252.



SECTION

ST. MARY'S CHURCH, WOLLATON PARK, N



THE ENTRANCE GATES

NOTTINGHAM • DESIGNED BY T. CECIL HOWITT

LEFT, THE NAVE, LOOKING WEST; ABOVE, CHANCEL AND ALTAR

LEFT, THE ALTAR; BELOW, THE FONT

ST. MARY'S CHURCH, WOLLATON PARK, NOTTINGHAM

THE LECTERN

BY T. CECIL HOWITT

LAW REPORT

DEMOLITION OF WALLS : JUDGE AND CORPORATION'S ACTION

Urban Housing Co., Ltd., v. City of Oxford and another.—Chancery Division. Before Mr. Justice Bennett.

IN this action the Urban Housing Co., Ltd., sought an injunction against the defendants, the Corporation of Oxford, and Mr. Charles Richard Fox, the Chief Constable of the City, to restrain them from interfering with or preventing the plaintiffs, from re-erecting certain walls built by the plaintiffs in December, 1934, on plaintiffs' land adjoining Wentworth Road and Carlton Road, Oxford. Plaintiffs alleged that their walls had been unlawfully demolished by the Corporation on June 7, 1938.

It appeared that in 1934, when plaintiffs were developing a residential estate on a portion of their land, and the Corporation were developing in a similar manner land on the east side of plaintiffs' land, a dispute arose, with the result that plaintiffs erected a wall across each of two parallel roads, which passed through the two estates and gave access to the Banbury Road.

The result was that plaintiffs' walls prevented the occupants of the Corporation's estate from passing along the roads through the plaintiffs' estate, so as to reach the Banbury Road.

The defence of the Corporation was an allegation that the walls had been wrongfully erected so as to block the roads and that the roads were public highways, and that under these circumstances the Corporation were entitled to remove them as they constituted breaches of certain bylaws in force within the City of Oxford, and of the plaintiffs' obligations under a conveyance of September, 1933.

Mr. Fox, by his defence, pleaded that he had no interest in the dispute except to carry out his duties as Chief Constable.

Mr. E. Simes and Mr. C. E. Scholefield appeared for the plaintiffs, and Sir Stafford Cripps, K.C., and Mr. Wilfred Hunt for the defendants.

JUDGMENT

His lordship, in a reserved judgment, said the case was an important one, and raised many interesting points. One of the questions which had arisen was whether a wall made of brick could properly be said to be a fence within the meaning of a condition restricting the erection of a fence. He saw no reason why he should not regard a wall as a fence, seeing that the Oxford Dictionary included a wall in its definition of a fence.

The conclusion he had come to on what he regarded as the real point here, was that the Corporation had failed to establish that the restrictive covenants into which the plaintiffs had entered in 1933 had been and would be infringed by the erection of the walls which the Corporation had demolished. Under these circumstances the defence failed.

There were one or two things which he desired to say before parting with the case. During the course of the case he had made some observations on the action of the Corporation in taking the law into their own hands as they did in June, 1938. Everybody in the country was under the law, from the highest to the lowest. There was no human being above it, and for those who had to administer the law the utmost respect was due to the rule of law. It protected people in their rights and

property, and in their persons. The City of Oxford was a city not without its importance in this country, and one would have thought that the governing body of the city would have set an example in respecting the rule of law. He had said before, and he repeated, that he thought it was deplorable, after plaintiffs' wall had been up for three and a half years, that the Corporation should have thought it right violently to pull it down instead of going to the King's Courts to have their wrongs redressed, if they had any.

It had been suggested that the reason why they acted as they did was because there were people in Oxford who could not wait until the legal position had been ascertained. The answer to that was that they might have taken steps at any time after the end of the year 1934 to have their rights determined, but they did not choose to do so. They allowed the wall to stand for three and a half years, and then said that they could not wait for a year to have the matter legally determined.

The result was that the plaintiffs' action succeeded and the defendant Corporation must pay the plaintiffs' costs. With regard to the second defendant, his lordship was satisfied that Mr. Fox was prepared to do his duty to keep the peace. He did not suppose that Mr. Fox had been put to any expense in the matter of costs, and he therefore made no order as to his costs, as doubtless if any had been incurred they would be paid by the Corporation. As a matter of fact, there was no necessity to have made him a party to the action.

His lordship said he would make a declaration against the first defendants, that the plaintiffs were entitled to erect and maintain on the sites on which they formerly stood the two walls referred to in their claim, which were demolished by the Corporation on June 7, 1938. He did not think it would be necessary to grant the injunction asked for. As to the question of damages, he assessed them at £180, and there would be judgment accordingly.

He dismissed the action against Mr. Fox, but made no order as to his costs.

•

Team Valley Trading Estate

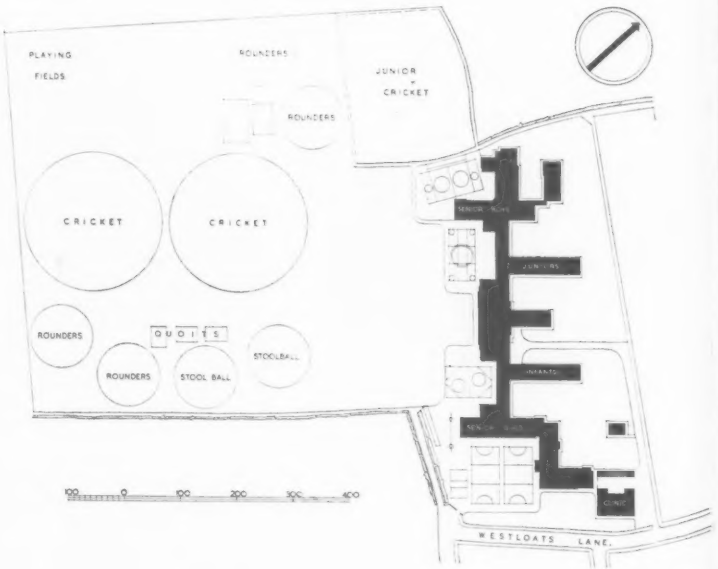
Further evidence that not all of the increase in employment is due to re-armament is shown in the latest figures of North-Eastern Trading Estates, most of whose factories at Team Valley and other centres are producing peace-time goods. The company now has 145 tenants, an increase of three on last month, of whom 110 are in production, employing 3,720 people, which is 447 more than the number employed on June 30, a record monthly increase. There are also 538 men engaged on building work. Among the new tenants are manufacturers of paint brushes, confectionery, snap-fasteners, building chemicals, manicure sets, steel roof-frames, fancy leather goods, batteries, mattresses, costumes, quilts, and aeroplane components.

The last named is the first aircraft factory to be built in the North East, and has obtained good contracts from the Air Ministry. Starting with a nucleus of 100 men, it is expected to employ four times that number after six months. Many skilled men who left Tyneside during the slump have asked to return to their birthplace to join this new factory.

SCHOOL, BOGNOR REGIS

DESIGNED BY C. G. STILLMAN

VIEW FROM SOUTH-EAST



GENERAL—*Accommodation was required for 360 senior boys at the north end of the building, 360 senior girls at the south end, and between these two blocks, a junior school for 384 children, and an infants' department for 240. The centre block contains a large hall, divided by a folding partition, which can be used by both junior and infants' departments concurrently.*

SITE—*Includes twelve acres of playing fields immediately accessible from four separate tar-paved playgrounds. The main entrance in Westloats Lane also gives access to the clinic and caretaker's cottage, situated on the south-east corner of the site. Provision has been made for future extensions on the north side of the senior boys' and junior mixed blocks.*

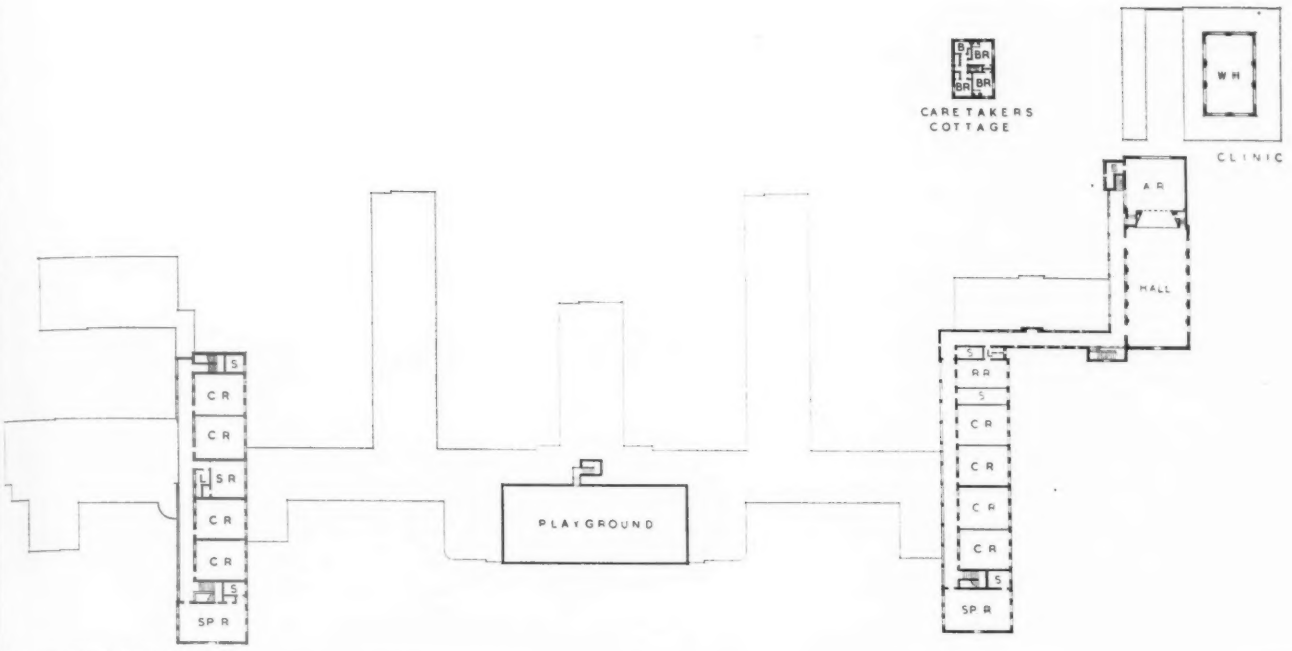
CONSTRUCTION AND EXTERNAL FINISHES—*External walls, 11-in. cavity brick, internal partitions 4½-in. and 9-in. brickwork. The floors and flat roofs are of concrete, the latter being covered with asphalt and accessible for use as open-air classrooms. The two-storeyed senior girls' block has a pitched roof covered with warm orange-red pantiles. Walls are faced with stock facing bricks and have artificial stone copings. Windows are metal, built direct into the brickwork openings.*

INTERNAL FINISHES—*Walls to classrooms and halls are plastered, except for the 6-ft. high special glazed wall covering in the domestic subjects room. Kitchen, domestic subjects room and clinic are floored with rubber linoleum. Classroom floors are teak and the assembly and dining halls are finished with maple strip flooring.*

COST—*Contract price, £55,991. Price per cub. ft. = 1s. 6d.*

The general contractors were Messrs. Chapman, Lowry and Puttick, Ltd., of Hindhead.

For a list of sub-contractors see page 252.

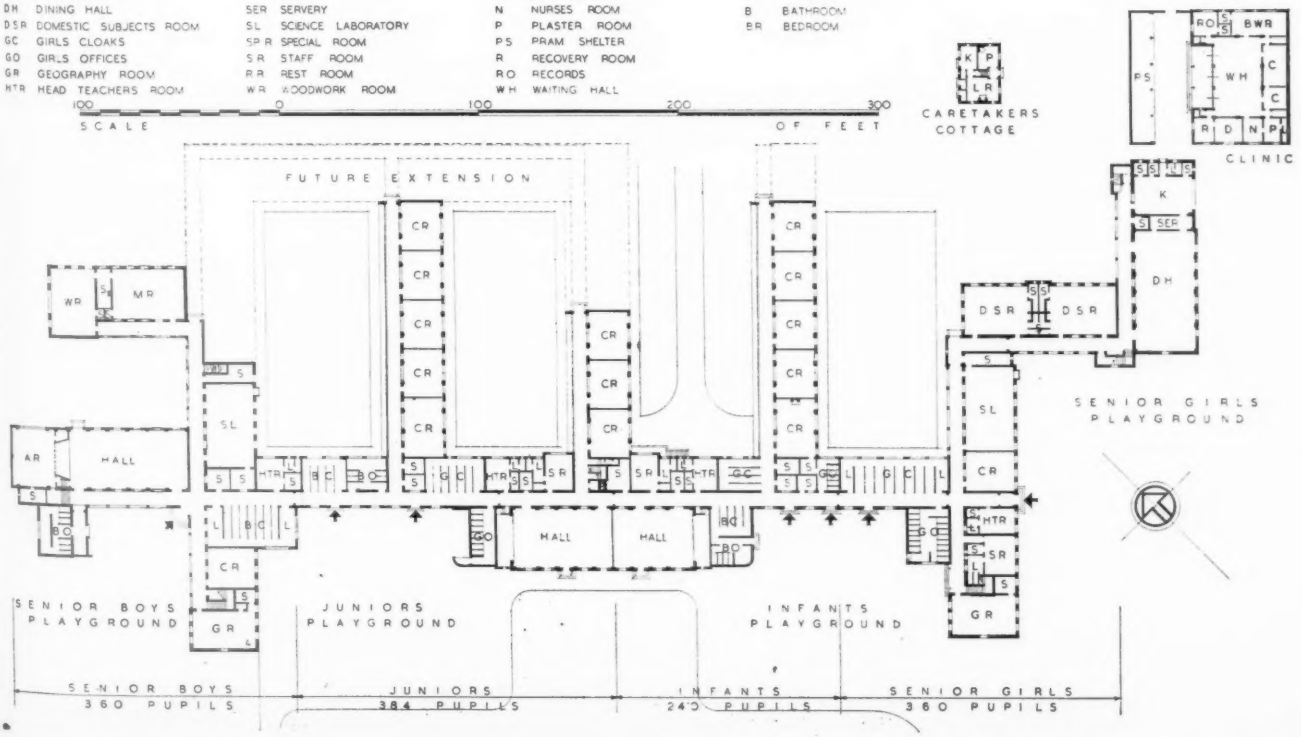


FIRST FLOOR PLAN

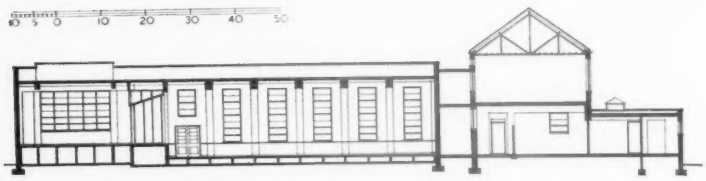
VIEW OF SENIOR GIRLS SCHOOL FROM SOUTH

GROUND FLOOR PLAN

AR	ART ROOM	K	KITCHEN	CLINIC		COTTAGE	
BC	BOYS CLOAKS	L	LAVATORY	BWR	BABIES WEIGHING ROOM	K	KITCHEN
BO	BOYS OFFICES	MR	METALWORK ROOM	C	CONSULTING ROOM	LR	LIVING ROOM
CR	CLASSROOM	S	STORE	D	DENTISTS ROOM	P	PARLOUR
DH	DINING HALL	SER	SERVERY	N	NURSES ROOM	B	BATHROOM
DSR	DOMESTIC SUBJECTS ROOM	SL	SCIENCE LABORATORY	P	PLASTER ROOM	BR	BEDROOM
GC	GIRLS CLOAKS	SP R	SPECIAL ROOM	PS	PRAM SHELTER		
GO	GIRLS OFFICES	S R	STAFF ROOM	R	RECOVERY ROOM		
GR	GEOGRAPHY ROOM	R R	REST ROOM	RO	RECORDS		
HTR	HEAD TEACHERS ROOM	W R	WOODWORK ROOM	WH	WAITING HALL		



ABOVE: SENIOR BOYS' HALL; RIGHT: TOP, TYPICAL CLASS ROOM; BOTTOM, HALL IN CENTRAL BLOCK



SECTION

SCHOOL AT BOGNOR REGIS • BY C. G. STILLMAN

PERIODICALS

JULY ANTHOLOGY

AMERICA

Architectural Forum

(Monthly, $1.00. 135 East 42nd Street, New York)

JULY. Useful notes on flat roof construction; the Saarinens' winning design for the Smithsonian Gallery of Art in Washington; fifteen American modern houses, two or three of them built by the architects for their own occupation.

Architectural Record

(Monthly, $1.00. 115 West 40th Street, New York)

July. District railway terminus in San Francisco, designed by Pflueger, Brown and Donovan, 14,000 passengers are dealt with in the 5-6 p.m. period, and considerable use is made of ramps; constructional details of Maillart's concrete pavilion at Zürich; private house and surgery for a doctor by Edouard Mutrux; nine bathrooms by different designers; the Design Trends section covers current churches in ten pages and continues with the effects of air conditioning on building design, while Building Types deals with the more recent systems of house construction.

Pencil Points

(Monthly, 50 cents. 330 West 42nd Street, New York)

June. An article by Royal Barry Wills, on "the technique of persuading potential clients to become actual ones"—professional ethics seem slightly different in this country; an article by Professor Talbot Hamlin on the Work of Sven Markelius; the records of Early American Architecture cover wall cabinets and kitchen dressers; an excellent and very thorough article on Plastics by E. F. Longer.

July. Several articles on different aspects of model making, a habit which seems to be growing in America, as several large firms of architects, not to mention industrial designers, maintain model making shops with quite elaborate machinery, while the subject is also taught in many schools of architecture.

•

FRANCE

L'Architecture

(Monthly, 10 frs. 2 Rue de L'Echelle, Paris 1er)

June. M. Laprade's prize-winning scheme for the Génissiat barrage; a "folie" at Versailles by Patrice Bonnet; new equipment and reconstruction of the Opéra; the French pavilion at San Francisco; church at Helsinki by J. S. Sirén.

July. Architecture and decorative art at the Salons; the work of J.-Ch. Moreux; stage reconstruction of the Palais de Chaillot.

La Technique des Travaux

(Monthly, 10 frs. 54 Rue de Clichy, Paris 9e)

July. A testing laboratory for electrical materials at Arnhem, by Schoemaker, Fels and Hamerpagt; a town in Sardinia for housing mine workers; the water exhibition at Liége.

•

GERMANY

Baukunst und Städtebau

(Monthly, 1m. 90 pfg. Bauwelt Verlag, Charlottenstrasse 6, Berlin, S.W.68)

July. Buildings for the Stuttgart garden exhibition; barracks by Gustav Gsaenger; two country schools by Walter Kratz; building regulations for walls and partitions.

Bauwelt

(Weekly, 90 pfg. Bauwelt Verlag, Charlottenstrasse 6, Berlin, S.W.68)

July 6. A.R.P. in hospitals, by K. Otto; notes by Hans Schoszberger on the Anderson shelter; buildings from the Stuttgart garden exhibition.

July 13. Competition for a church and hall in Hamburg, won by Karl Koch; a brief review of contemporary French architecture by Raoul François.

July 20. New housing in Krefeld by Wolfgang Baugert.
July 27. A.R.P. notes: garage and parking space for the detached house, a well-illustrated article by K. Pieper.

Innen Dekoration

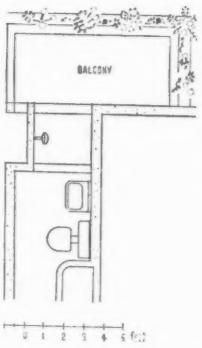
(Monthly, 2m. 50pfg. Alexander Koch, Neckarstrasse 121, Stuttgart)

July. The garden exhibition at Stuttgart; current living rooms. An article by Hermann Gretsch; domestic lighting fittings.

Moderne Bauformen

(Monthly, 3m. Julius Hoffmann, Stuttgart)

July. Brick houses in the Rhineland by Theodor Merrill; a small house near Berlin by Gustav Hassenpflug; some good simple furniture by Arno Lambrecht; a tobacconist's shop in Dusseldorf by Bernhard Pfau; two factories.



A minimum bathroom in which the shower curb is high enough to be used as a bath; the balcony outside can be used for sunbathing. Designed by Gregory Ain. [From the "Architectural Record."]

HOLLAND

Bouwkundig Weekblad Architectura

(Weekly, 15 florins per annum. Weteringshaus 102, Amsterdam)

July 1. Hospital and clinic in Rotterdam by Brinkman and van den Brock.
July 8 and 15. The Zürich exhibition, reviewed by Fritz Leusvelt.
July 22. Competition for a new town hall at Eindhoven.
July 29. New York World's Fair reviewed by G. Friedhoff.

de 8 en opbouw

(Fortnightly, 30 cents. Amstel 22, Amsterdam, C.)

June 24. Posters, photographs, bookbindings, etc.
July 15. Children's crêche and clinic in Rotterdam by J. C. Boks; cinema sight lines, an article by Dr. Lajos Szekely.

ITALY

Architettura

(Monthly, 15 lire. Via Palermo 10, Milan)

June. The work of the late Cesare Bazzani: reconstruction of the via Roma in Turin; a church at Montille by Fauste Seudo.

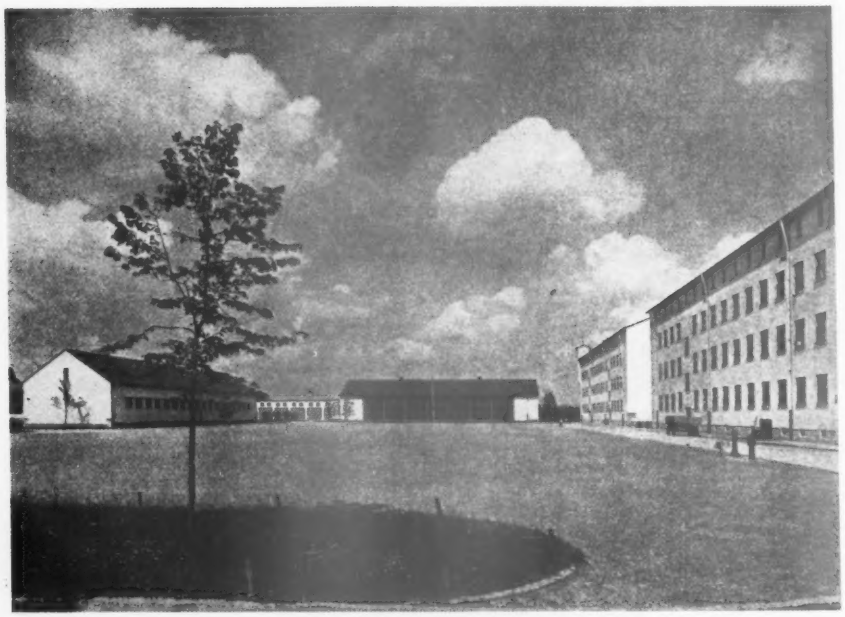
Rassegna di Architettura

(Monthly, 15 lire. Via Podgora 9, Milan)

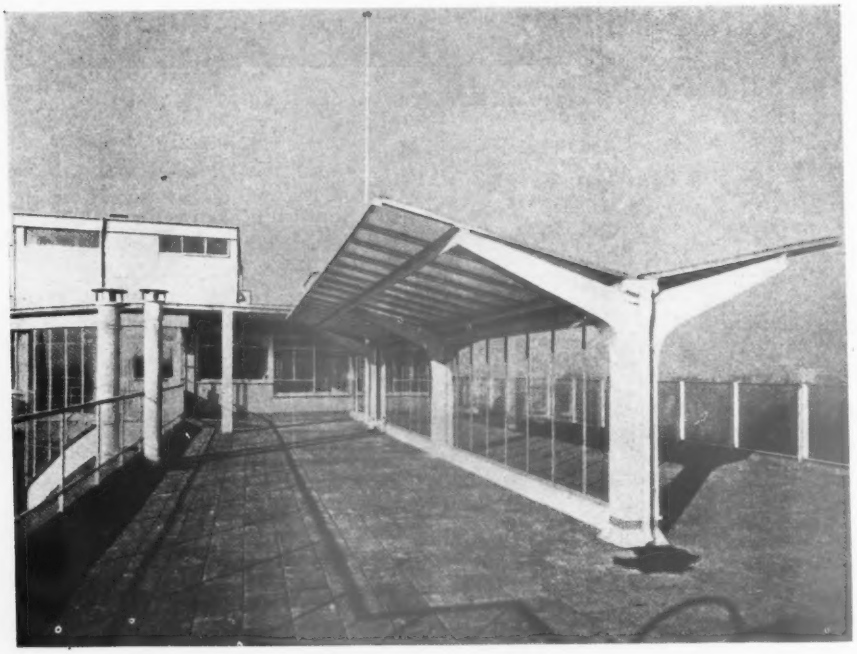
April. A number devoted entirely to gardens.
May. The "Palazzo Montecatini" at

Above, much German furniture design remains comparatively simple: the designs above are by Arno Lambrecht. [From "Moderne Bauformen."]

Left, a church by J. S. Sirén now under construction at Helsinki. [From "L'Architecture."]



A German barracks, with drill hall in the centre background, shows the maximum simplification possible under the present régime. Architect, Gustav Gsaenger. [*From "Baukunst und Städtebau."*]



Open air treatment area on the roof of a Rotterdam clinic, by Brinkman and van den Brock. [*From "Bouwkundig Weekblad Architectura."*]

Milan, the Massimo cinema, and a winning scheme for the modernization of a theatre in Bergarno, all by Gio Ponti and others.

•

SWEDEN

Byggmästaren

(Weekly, 20 kr. per annum. Kunsgatan 32, Stockholm)

No. 18. Astragal's vigilance committee reported: competition for a concert house and town hall at Lund, won by Friherger, Molander and Sundahl.

No. 19. Town planning queries in Gothenburg, an article by Uno Ahren.

No. 20. An article on air conditioning by Axel Rosell.

No. 21. Flat blocks in Stockholm suburbs and in other towns.

No. 22. Monumentality, an article by Gunnar Sundbärg, illustrated by the San Francisco bridge, the Parthenon, the New Haven stadium and Lurçat's Villejuif school.

•

SWITZERLAND

Schweizerische Bauzeitung

(Weekly, 1 fr. Dianastrasse 121, Zürich)

July 1. The design and ventilation of automobile tunnels; repairs to Zürich town hall.

July 8. Children's home near Lucerne by W. Burri.

July 15. Railway developments.

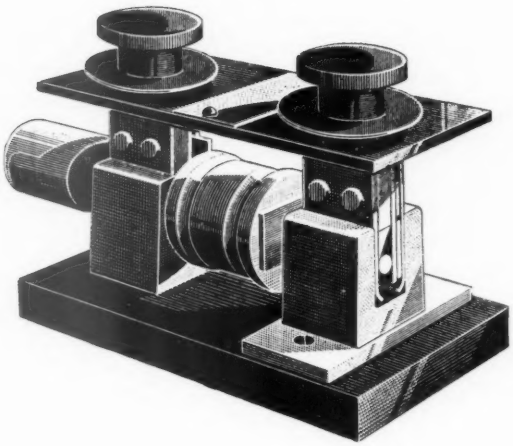
July 22. Airscrew research.

July 29. Airscrew research continued; a church on the lake of Thun by J. Wipf.

Werk

(Monthly, 3 fr. 50. Mühlebachstrasse 55, Zürich)

June and July. Two numbers devoted to the Zürich exhibition—many photographs.



TRADE NOTES

[*By PHILIP SCHOLBERG*]

High-Rupturing Capacity Fusegear

DONOVANS of Birmingham have produced a new design, illustrated at the head of these notes, for high-rupturing capacity fusegear. The knurled knobs give a powerful wedging action against the contacts, and the cartridges are renewable in a few moments without the use of any tools. Contacts are solid and are unlikely to overheat, while the whole design is quite compact and a battery of fuses can be grouped in a comparatively small space. —(*The Donovan Electrical Co., Ltd., Stechford, Birmingham, 9.*)

Asbestos Dampcourses . . .

A new type of dampcourse has just been introduced by Turners under the name of Serval. It is composed of 40 per cent. asbestos and 60 per cent. asphalt, a combination which has been found to give a maximum of resistance to moisture while remaining flexible. The material is available in all widths up to 36 inches and in rolls containing 8 lineal yards, standard Serval being approximately $\frac{1}{8}$ inch thick with an average weight of 7 lb. per yard super. A lead-cored type is also available, the lead weighing 4 oz. to the square foot, giving an average weight of 9¼ lb. per yard super with the same thickness. Prices are 2s. and 3s. 8d. a yard super for the two types.

. . . and Precast Canopies

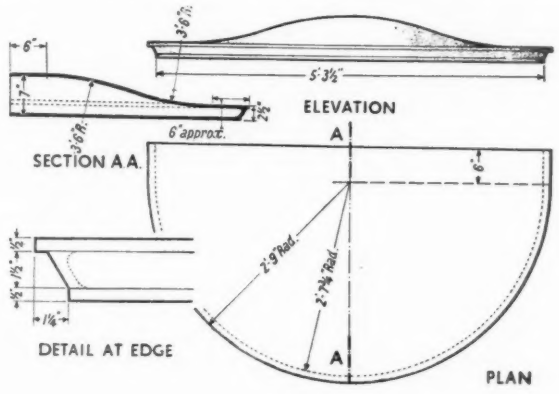
The same firm has also recently issued a small booklet describing a series of precast asbestos cement canopies which they made for a housing estate in Staffordshire. The sketch in the adjoining column shows the overall dimensions of the canopies, and gives some idea of their appearance. Not everybody realises that asbestos cement is a moulded material, and that therefore almost any design can be executed at a reasonable cost provided that a fair quantity are needed. For such things as these canopies, or for balcony fronts, these mouldings seem a very good idea, and there is no reason why wider uses should not be found for this material. It should, of course, be borne in mind that it is possible to mould almost any shape or size, but the idea will defeat itself if the mouldings are too large for easy transport, though there is no reason why any large unit should not be made in sections.

Given intelligent design, precast units such as these could show an appreciable saving in building costs, for they are delivered on the site all ready for fixing, and, once in position, they need no painting or subsequent upkeep. And here it may not be entirely out of place to put in a mild plea that this material should be used *as asbestos cement*, and not made to look like something else. Like all other materials, asbestos cement has its own characteristics of colour and texture, and there is no reason why it should not be allowed to look like itself. Most designers understand this by now, but there will doubtless be some who will try their best to make it look like tiles or marble, and it will be up to Turners to do their best to discourage them and to insist that their material is properly used.—(*Turners Asbestos Cement Co., Ltd., Trafford Park, Manchester, 17.*)

Reinforced Concrete Studies

The eighth* of the Building Research Station's studies in reinforced concrete has just been published, and deals with the strength and deformation of slabs subjected to concentrated loading. In the past the design of reinforced concrete slabs has been based on analyses of plate action according to the theory of elasticity, or on rule of thumb methods expected to give similar or more conservative results. The theory is based on the assumptions, amongst others, that the plate is homogeneous and wholly elastic, neither of which conditions can be expected to apply to a slab after it has cracked. The theory of plate action has been solved mathematically for only a limited number of types of loading and restraint, and the solutions are sometimes based on approximate methods which may not be altogether satisfactory. A particular instance is the analysis of the stresses in a slab in the immediate neighbourhood of a concentrated load, for here the ordinary theory breaks down and more elaborate analysis is necessary.

The report now published gives the results of an investigation carried out by B.R.S. for the Ministry of Transport " with the object of checking the validity of applying the results of the elastic theory of thin plates to the design of reinforced concrete slabs fixed along two or four edges when loaded over a small area at the centre of the slab." The results show that, at low loads, before any cracks have started, the slabs deform according to the theory of the elastic homogeneous plate. At higher loads, after cracking, there is apparently a considerable redistribution of moments, with the result that the ultimate loads sustained by the slabs are about twice as great as the values calculated according to the elastic theory for the square slabs, and 1¾ times as great as the calculated values for the rectangular slabs. It appears, therefore, that the design of reinforced concrete bridge deck slabs on the basis of the elastic theory is conservative for point loadings under static conditions, since the high theoretical stresses in the neighbourhood of the load are considerably reduced as a result of plastic deformation at the high loads. The mechanics of slab action are, however, so complex after the cracking starts that no alternative method of design is at present suggested. The report gives full details and photographs of all the tests carried out, and information of the mixes and reinforcement used. There are also diagrams of the cracks themselves, with figures to represent the load at which the cracking reached the points marked.



7

New Electric Fire Designs

Most of the electric fire manufacturers are announcing their new designs for the

* B.R.S. Technical Paper No. 25. By F. G. Thomas. H.M.S.O. Price 1s. 3d.

autumn, one of the first to do so being the G.E.C., who have half a dozen models, ranging from a simple reflector wall bracket for bathrooms or bedrooms to a more elaborate screen type with illuminated glass panels at the sides. Prices vary from 25s. to £6 6s. and all models have heavy-gauge metal bodies which will not rust or discolour.—(*The General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2.*)

An Adjustable Batten Lamp-Holder

Lighting Trades, Ltd., have recently introduced a batten lamp-holder which is arranged to swivel through two right angles, so that if the holder is mounted vertically on the wall the lamp can be swivelled either straight up or straight down. Mounted horizontally the lamp can be swivelled sideways. As a handy means of fixing a lamp and shade to any flat surface this seems a sensible fitting, and an improvement on the ordinary batten holder in that it has the extra swivelling movement. There is also a convenient locking ring at the back of the shade carrier, so that the lamp can be fixed in any position and will not gradually droop like some fittings it would be better for me not to mention. Retail prices are 14s. and 18s. a dozen in brown and white Bakelite, and the back plate is 2¾ inches diameter.—(*Lighting Trades, Ltd., 51–55 Garratt Lane, Wandsworth, London, S.W.18.*)

Copper Conduit and Fittings

The British Standards Institution has issued a new specification (No. 840) for light gauge copper or copper alloy conduit and fittings. The quality of copper to be used is described, and detail of manufactures and tests are also given. In order that steel, malleable or cast-iron boxes may be used with copper conduit, the specification gives details of suitable couplings and also of other fittings such as copper saddles and clips, which differ slightly from those used with steel conduit owing to differences in external diameter. The cost of the specification is 2s.—(*The British Standards Institution, 28 Victoria Street, London, S.W.1.*)

Holiday Warning

A circular dated August 10 has for some reason reached me from the National Safety First Association. The opening sentence, "Kite-flying is not a dangerous pastime," is undoubtedly true, whether kites are taken to mean kites or rubber cheques. The notice goes on to say, however, that "recently a man was flying a kite using a string with a steel core, which came in contact with an overhead cable, and the man received a shock from which he died."

So it is probably better not to do any kite-flying at all during your holidays, and you might also remember that the current which Mr. Quigley sends around overhead is no use at all for lighting your tent or caravan. At least it will only give one very bright light indeed for a comparatively short space of time.

THE BUILDINGS ILLUSTRATED

ST. MARY'S CHURCH, NOTTINGHAM (pages 241–245). Architect: T. C. Howitt, F.R.I.B.A. General contractor, H. Butler, who was also responsible for the excavation, foundations and dampcourses. Sub-contractors and suppliers included: Nottingham Rock Asphalte Co., asphalt; Williamson Cliff, Ltd., bricks; Clipsham Quarry Co., Clipsham stone; Trent Concrete Co., artificial stone; Moreland, Hayne & Co., structural steel; A. Wright (Tilers), Ltd., tiles, roofing felt; A. J. Dix, glass; Korkoid Decorative Floors, Ltd., patent flooring; J. Jeffreys & Co., Ltd., central heating; Beeston Boiler Co., boilers; Attenborough and Turpin, Ltd., electric wiring; Cecil Ern & Co., Ltd., electric light fixtures, door furniture and metalwork; A. G. Abdy, plumbing; Woodhouse & Co., Ltd., sanitary fittings; Crittall Manufacturing Co., Ltd., window furniture; J. W. Walker and Sons, Ltd., organ; General contractor, joinery; Paske and Thorpe, stonework; J. Whitehead and Sons, Ltd., marble; J. Wippell & Co., Ltd., textiles and church fittings; Local Authority, water supply.

SCHOOL AT BOGNOR REGIS (pages 246–248). Architect: C. G. Stillman, F.R.I.B.A. General contractor: Chapman, Lowry and Puttick, Ltd. Sub-contractors and suppliers included: G. Asserati, Ltd., asphalt and special roofings; British Reinforced Concrete Engineering Co., Ltd., reinforced concrete; Associated Brick and Tile Works, Ltd., bricks; Blokcrete Co., Ltd., artificial stone; Matthew T. Shaw & Co., Ltd., structural steel and iron staircases; Roberts, Adlard & Co., Ltd., tiles; North of England School Furnishing Co., Ltd., partitions and school fittings; Crittall Manufacturing Co., Ltd., glazing and casements; Horsley, Smith & Co. (Floors), Ltd., wood-block flooring; B. Holden & Co., Ltd., Ruboleum patent flooring; A. A. Byrd & Co., Ltd., Tricosal waterproofing material; T. S. Knight and Sons, central heating; A. Olby and Son, Ltd., Triplex grates; Bognor Gas and Electricity Co., gasfitting; Hall Boilers, Ltd., boilers; Phillips and Dart, Ltd., electric wiring, electric light fixtures; J. and R. Howie, Ltd., sanitary fittings; Bunce & Co., Ltd., door furniture; Granitese (Great Britain), Ltd., decorative plaster; Bayliss, Jones and Bayliss, Ltd., metalwork; Alfred Brown & Co., cloakroom fittings.

The new G.E.C. Headquarters at Shanghai, at 49 Szechuen Road

The Strength of Long Reinforced Concrete Columns

The Department of Scientific and Industrial Research has issued a Building Research Technical Paper (No. 24, published by H.M. Stationery Office, 9d. net) dealing with the strength of long reinforced concrete columns in short period tests to destruction. The paper is the seventh in a series of studies in reinforced concrete. It is pointed out that it is impossible to avoid some eccentricity of loading in a reinforced concrete column, and the column bends as a result. When the column is short, the lateral deflection is usually unimportant. But in a long column, particularly at high loads, an appreciable increase in the eccentricity of the load from the column axis is introduced; the bending stresses are thereby magnified; and the ultimate strength of the column is diminished.

The present paper describes an investigation undertaken to determine the strength of long columns in short period loading tests to destruction for cases when the initial eccentricity of loading is small, that is, of the order that may be regarded as "accidental" in practice. The work was carried out in co-operation with the Reinforced Concrete Association.

It is impossible, even for well-defined initial conditions of loading, to carry out a rigorous, mathematical analysis of the stress distribution, which, in view of the effects of the creep of the concrete, must be in some way a function of the time under load. The experiments described have shown, however, that a simple approximate analysis can be used to estimate the strength of long columns for the conditions specified.

PRICES

On the following pages appears Prices for Measured Work—Part I, with prices last published on July 20, brought up to date.

IMPORTANT ★ NOTE

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

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

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

PART 3

CURRENT PRICES FOR MEASURED WORK—I

BY DAVIS AND BELFIELD

PRELIMINARIES

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

EXCAVATOR

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

EXCAVATOR—(*continued*)

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

CONCRETOR

Foundations and Mass Concrete

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

CURRENT PRICES

BY DAVIS AND BELFIELD

EXCAVATOR, CONCRETOR AND BRICKLAYER

CONCRETOR—(*continued*)

Add if mixed by hand labour ..	per yard cube	2/–	
Add if in foundations not exceeding 12″ thick	per yard cube	2/3	
Add for mechanical hoisting ..	per yard cube	1/6	
Add for hand hoisting per 10 feet	per yard cube	2/3	
Surface Beds			
Portland cement concrete 1 : 6, bed 6″ thick, spread and levelled	per yard super	3/10	*2/9½*
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/5¾	
Add for surface finished with spade face	per yard super	–/3½	
Add if laid in two layers with fabric reinforcement (measured separately) ..	per yard super	–/3½	
Upper Floors and Flats			
Portland cement concrete 1 : 2 : 4 as before described, 6″ thick, packed around fabric reinforcement (measured separately) finished with spade face	per yard super	5/3	*3/8½*
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/7½	
Casings			
Portland cement concrete 1 : 2 : 4 as before, in encasing to steel joists	per foot cube	1/3	–/9¾
Ditto, packed around rods (measured separately) in lintols, sectional area not exceeding 36 inches	per foot cube	1/5½	–/9¾
Ditto, ditto, over 36 inches and not exceeding 72 inches sectional area	per foot cube	1/4½	–/9¾
Ditto, ditto, over 72 inches and not exceeding 144 inches sectional area	per foot cube	1/3½	–/9¾
Ditto, ditto, over 144 inches sectional area	per foot cube	1/2½	–/9¾
Walls in Situ			
Portland cement concrete 1 : 6 with unscreened ballast in 9″ walls packed around rods (m/s)	per yard super	6/6	*4/2*
Ditto, in 12″ walls ditto	per yard super	7/11	*5/6½*
Reinforcement			
⅝″diameter and upwards mild steel rod reinforcement, cut to lengths, including bends and hooked ends and embedding in concrete lintols ..	per cwt.	20/9	*14/9*
Under ⅝″ diameter, ditto	per cwt.	22/3	*16/3*
Formwork			
Close boarded formwork to soffites of floors and strutting up	per yard super	3/9	*1/6*
Vertical formwork to sides of concrete walls, including struts, etc. (both sides measured)	per yard super	3/–	*1/3*
Formwork to sides and soffites of concrete lintols and beams	per foot super	–/6	–/2½
Wrot ditto	per foot super	–/7	–/2½

BRICKLAYER

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

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

BRICKLAYER—(*continued*)

Horizontal double slate damp-proof course 4½″ wide bedded in cement mortar ..	per foot run	–/4	*–/1⅞*
Ditto exceeding 4½″ in width ..	per foot super	–/10	*–/5*
Vertical ditto	per foot super	1/–	*–/5*
" Ledkore " (Grade B) D.P.C. ..	per foot super	–/9	*–/7*
Plumbing angles	per foot run	–/1	
Rake out joints and point to lead flashings	per foot run	–/2	
Ditto stepped	per foot run	–/3	
Bedding door frames	per foot run	–/1	
Ditto and pointing one side	per foot run	–/2	
Ditto and pointing both sides	per foot run	–/3	
Parge and core flues	each	4/–	
Set and flaunch only chimney pots	each	5/–	
Hoisting and fixing metal windows size 3′ 6″ × 4′ including cutting and pinning lugs to brickwork and bedding frames in cement mortar and pointing in mastic on one side	each	5/–	
Ditto, including screwing to wood frame (measured separately)	each	3/–	
		9″×3″	9″×6″
Form opening for air brick including slate lintol and render around in cement and sand to 13½″ wall and build in Terra Cotta air brick	each	1/6 *–/10½*	2/6 *1/7*
Galvanized cast iron School Board pattern air bricks and building in	each	1/1½ *–/6*	1/10½ *1/–*
Fixing only fireplace simple interior and surround	each	27/6	

Partitions

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

Facings

Prices are extra over Fletton brickwork and are for raking out joints and pointing with a neat struck weathered ½″ joint in cement mortar. For raking joints and pointing in white cement add an extra 11d. per yard super to the following prices.

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

	Rustic Flettons	Stock Facings	Sand Faced Hand Made Reds
Half brick wall stretcher bond in cement mortar built fair and joints raked out and pointed in cement mortar on one side .. .. per yard super	8/7½	9/9½	12/–
	4/4½	*5/6¼*	*7/1½*
Ditto and pointed both sides per yd. super	10/6	11/8	13/10
	4/5	*5/6¾*	*7/1¾*
One brick wall in cement mortar built fair and joints raked out and pointed in cement mortar on one side per yard super	15/5	17/8½	22/1
	8/9½	*11/1*	*14/3*
Ditto and pointed both sides per yd. super	17/3	19/6½	23/10
	8/10	*11/1½*	*14/3½*
Half brick wall built in best quality white glazed one side bricks, stretcher bond, in cement mortar built fair and pointed in Parian cement per yard super		31/–	*24/2*
Ditto white glazed both sides and pointed both sides .. .. .. per yard super		41/9	*32/7*

CURRENT PRICES

BY DAVIS AND BELFIELD

BRICKLAYER, DRAINLAYER, ASPHALTER AND PAVIOR

BRICKLAYER—(*continued*)

Facings—(continued)

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

DRAINLAYER

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

Prices per 12″ average depth per foot run :	Ordinary ground	Clay
Trenches not exceeding 3′ 0″ deep	–/2¼	–/3
Ditto, exceeding 3′ 0″ and not exceeding 5′ 0″ ..	–/5¼	–/7
Ditto, exceeding 5′ 0″ and not exceeding 10′ 0″ ..	–/8¼	–/9¼

		4″ pipes	6″ pipes
6″ thick Portland cement concrete bed 6 : 1, 12″ wider than diameter of pipe, and flaunched halfway up sides of pipe ..	per foot run	–/8¼	–/10
		–/6	*–/7½*
6″ ditto, and completely encasing	per foot run	1/7	1/11
		1/2	*1/4¼*

Agricultural land drain pipes, laid complete with butted joints, exclusive of digging .. .. .. per yard run	2″	3″	4″	6″
	–/4	–/6	–/8	1/1
	–/2¼	*–/3¼*	*–/4¼*	*–/8¼*

British Standard Quality Salt Glazed Socketed Stoneware Drainpipes and Fittings

	4″ pipes Over 2-ton lots	4″ pipes Under 2 tons, 100 pieces upwards	6″ pipes Over 2-ton lots	6″ pipes Under 2 tons, 100 pieces upwards	9″ pipes Over 2-ton lots	9″ pipes Under 2 tons, 100 pieces upwards
Pipes jointed in 1:1 cement and sand per foot run	1/1	1/3	1/7	1/10	2/8½	3/4
	–/8¾	*–/10¾*	*1/1¼*	*1/4¼*	*2/–*	*2/5½*
Extra for bends .. each	1/4	1/7	2/–	2/4	3/6	4/–
	–/11¾	*1/2¼*	*1/5½*	*1/9½*	*2/7½*	*3/2½*
Ditto, single junction each	1/10	2/2	2/9	3/3	4/9	5/8
	1/5½	*1/9½*	*2/2½*	*2/8¼*	*3/11¼*	*4/8*
Trapped yard gulleys with galvanized iron gratings, and setting in concrete and jointing to drain each	10/–	11/5	12/4	14/–	19/–	22/–
	8/3	*9/8*	*9/11*	*11/7*	*15/11*	*18/11*
Ditto, with horizontal back inlet .. .. each	11/5	13/–	13/9	15/7	20/5	23/7
	9/8	*11/3*	*11/4*	*13/2*	*17/4*	*20/6*
Ditto, with vertical back inlet .. .. each	12/–	13/9	14/4	16/4	21/–	24/4
	10/3	*12/–*	*11/11*	*13/11*	*17/11*	*21/3*
Intercepting trap with Stanford stopper and setting in manhole and making good .. each	20/5	23/10	25/4	29/8	—	—
	16/11	*20/4*	*21/6*	*25/10*	—	—

Coated Cast Iron Socketed Drain Pipes

	4″	6″	9″
Pipes in 9′ 0″ lengths and laying in trench, including caulked lead joints per foot run	3/4½	5/1	8/11
	2/4½	*3/8*	*6/7*
Cutting and waste .. .. each	1/9	3/6	—
Extra for bends, including extra joints and cutting and waste on pipe each	10/8	20/7	56/6
	7/7	*17/4*	*51/1*
Ditto, junction ditto .. each	17/2	32/5	95/4
	11/7	*25/7*	*79/11*
Intercepting trap .. .. each	48/–	77/9	166/2
	41/4	*53/–*	*136/6*
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet	38/9	81/10	—
	21/7	*51/10*	—
H.M.O.W. gulley trap with 9″ inlet with high invert outlet for use with raising pieces	33/5	48/–	—
	22/–	*29/9*	—

DRAINLAYER—(*continued*)

4″ inspection chamber with one 4″ branch	each	64/5	*41/11*
4″ ditto with two 4″ branches one side ..	each	98/1	*64/5*
6″ ditto with one 4″ branch	each	93/–	*59/9*
6″ ditto with two 6″ branches one side ..	each	137/9	*89/1*
9″ ditto with one 9″ branch	each	209/1	*141/6*
9″ ditto with two 9″ branches one side ..	each	313/10	*210/11*

		White glazed	Salt glazed
4″ half-round straight main channel 24″ long	each	4/10	2/1
		4/1½	*1/4½*
Ditto, channel bends (ordinary)	each	8/1	3/–
		7/5	*2/0½*
4″ Three-quarter round branch bends (short)	each	8/6	6/9
		7/2	*5/6*
Fixing only, manhole covers and frames, including bedding in grease and setting in cement mortar	each	4/–	

ASPHALTER

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

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

PAVIOR

		1″	1½″	2″
Granolithic paving ..	per yard super	2/7½	3/6	4/7
		1/5½	*2/2*	*2/10½*
Add for dusting with carborundum powder	per yard super ..		..	–/9
Cement and sand paving (1 : 3)	per yard super	1/10	2/4½	—
		–/9	*1/1½*	—

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

		½″	¾″	1″
Sheet rubber	per yard super	11/7	14/8	17/10
Rubber tiles	per yard super	13/8	16/10	19/11
		⅜″	½″	¾″
Cork tiles, polished ..	per yard super	12/10½	11/–	10/–

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

CURRENT PRICES

BY DAVIS AND BELFIELD

MASON, SLATER, TILER AND ROOFER, AND CARPENTER

PAVIOR—(*continued*)

		⅝″ thick	¾″ thick
6″×6″ best quality red quarry tiles	per yard super	9/8	11/2
		5/8	*6/10*
6″×6″ best quality buff quarry tiles	per yard super	10/5	11/9
		6/3	*7/5*
2″ Yorkshire stone paving, square joints and bedding	per yard super	22/–	*17/4½*
2″ Finished path of coarse gravel finished with good binding gravel to slight camber	per yard super	1/7½	*–/9¾*
3½″ Do. path of clean hard clinker and 1½″ gravel finished to slight camber	per yard super	2/3	*1/3*
7½″ Do. carriage drive of 3″ clinker, 3″ coarse gravel and 1½″ binding gravel finished to slight camber	per yard super	3/9	*2/2*
2½″ Do. tar paving in two layers, tar sprayed and blinded with sand	per yard super	4/9	*3/3*

MASON

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

Yorkstone

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

		Thickness 3″		4″		6″	
Size 9″×9″ ..	each	1/8	*1/4¾*	2/3	*1/10½*	3/4½	*2/9¾*
„ 14″×9″ ..	each	2/7½	*2/2¼*	3/6	*2/11*	5/3	*4/4½*
„ 18″×14″ ..	each	5/3	*4/4½*	7/–	*5/10*	10/6	*8/9*
„ 22½″×14″ ..	each	6/6	*5/5½*	8/8	*7/3½*	13/–	*10/11*
„ 27″×14″ ..	each	7/10½	*6/6¾*	10/6	*8/9*	15/9	*13/1½*

Artificial Stone

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

Reconstructed Stone

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

Slate

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

SLATER, TILER AND ROOFER

Bangor and Portmadoc Slates

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

Old Delabole Slates

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

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

Westmorland Green Slates

Randoms		Bests 24″ to 12″ long proportionate widths
No. 1 Buttermere, fine light green ..	per square	122/9
No. 2 Buttermere, light green (coarse grained)	per square	120/9
No. 5 Buttermere, olive green (coarse grained)	per square	117/6
Broughton Moor light sea green, olive green, silver grey green and mixed shades ..	per square	128/–

Tiles

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

SLATER, TILER AND ROOFER—(*continued*)

Pantiles

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

Sundries

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

Cedarwood Tiles

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

Asbestos

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

CARPENTER

Centering

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

Fir Sawn and Fixed

Plates, dragon ties, sleeper joists and lintols, ground floor (4″×2″ and 4″×3″)	per foot cube	3/10	*3/–*
Floor joists (7″×2″).. ..	per foot cube	4/2½	*3/0½*
Partitions (stud) (4″×2″ and 4″×3″)	per foot cube	5/1	*2/11½*
Rafters and ceiling joists (4″×2″ and 4″×3″)	per foot cube	4/10	*2/11½*
Purlins (6″×4″)	per foot cube	5/4	*3/5½*
Hand labour wrot face ..	per foot super	–/2	
Machine ditto	per foot super	–/1	
Rebates, grooves, beads, chamfers and splays	per foot run	–/1	
1½″×9″ ridge	per foot run	–/6¾	*–/4½*
1½″×11″ hips or valleys, including cutting ends of rafters against same ..	per foot run	–/8½	*–/5¼*
Extra labour trimming 6″×2″ floor joists around fireplace, including notching ends of joists at 14″ centres to trimmer joist 7′ 0″ long and two tusk tenons	each	6/–	
Boring small hole per inch of depth	per doz.	–/6	
Ditto large	per doz.	1/–	

Deal Battening for Slates and Tiles

2″×1″ spaced for Countess (20″×10″) slates to 3″ lap	per square	11/2	*8/4*
2″×1″ ditto for Ladies (16″×8″) ..	per square	14/9	*11/–*
2″×1″ ditto for Duchess (24″×12″) ditto	per square	9/3	*6/9*
2″×1″ ditto for randoms 24″/22″ to 12″/10″	per square	12/3	*7/8*
1½″×¾″ ditto for plain tiles (10½″×6½″) to a 4″ gauge	per square	14/7	*9/7*
1½″×1″ ditto for pantiles to approximately 11¼″ gauge	per square	6/11	*3/6*

Roof Boarding

		¾″	1″
Deal roof boarding in batten widths close jointed	per square	28/3 *20/–*	33/4 *25/7*
Ditto, prepared for patent flat roofing and including firrings to falls	per square	38/3 *25/–*	44/4 *30/7*
Small tilting fillet	per foot run	–/2	–/¾
Large ditto	per foot run	–/4	–/1½

Felt

Sarking or slaters felt, fixed with 2″ side laps and 6″ end laps	per yard super	1/1½	*–/8¾*
Roofing felt ditto	per yard super	1/3½	*–/10¾*
Bituminous hair felt ditto ..	per yard super	2/3½	*1/10¾*

Weather Boarding

Rough deal feather edge boarding in batten widths ½″ average with 1½″ laps	per square	30/5	*20/3*
Western Red Cedar ditto ..	per square	32/1	*21/11*

Fascia and Soffite Boards

1″×6″ wrot deal splayed fascia fixed to rafter feet	per foot run	–/4½	–/1½
1″×9″ wrot deal soffite tongued both edges, including grooves	per foot run	–/8½	–/2¼

(To be continued in next issue)