Quiet...

Ensure quiet in the buildings you design by specifying

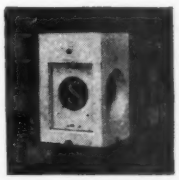
NEWALLS *asbestos acoustic* MATERIALS

NEWALLS INSULATION COMPANY, Branch of Turner & Newall Ltd., WASHINGTON STATION, Co. DURHAM.

NEWALLS BELL BRAND PRODUCTS

7 DAYS' (168 HOURS) LIGHT WITHOUT ATTENTION

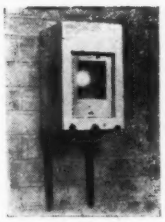
THOUSANDS OF POUNDS PER YEAR CAN BE SAVED ON MAINTENANCE ALONE WHERE IT IS NECESSARY TO USE A LARGE NUMBER OF LANTERNS



MODEL "A"
For building in the wall angles of Domestic Communal Surface Air Raid Shelters.

MODEL "B"
For Street Islands, PedestrianCrossings, Road Obstructions, etc.

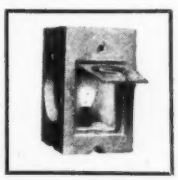
MODEL "C"
FOR INTERIOR ILLUMINATION



Model "C" has been specially designed for **interior illumination** of Air Raid Shelters, and provides the most practical and economical method of lighting for that purpose.

MODEL "D"
For Military Road Blocks. With longitudinal ruby windows 3" wide, as required by the Ministry of Transport.

MODEL "E"
For connection to Main Electric Supply. Immediately convertible to oil in case of emergency.



WRITE NOW for a copy of the folder illustrating and describing in detail the different types of lanterns available.

You would find a sample Lantern a most interesting and convincing test. May we send you one?

A. BELL & CO., LTD. (Dept. A), Gold Street and Kingsthorpe Works, NORTHAMPTON Telephone: 771 (2 lines)

GLASGOW: 98 Bath Street, C.2

"BELL" 7-DAY LANTERN

(Prov. Pats. Nos. 2957, 10133 and 10512)

APPROVED BY THE MINISTRY OF HOME SECURITY

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 45 THE AVENUE, CHEAM, SURREY

*

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

*

45 The Avenue, Cheam, Surrey
TELEPHONE: VIGILANT 0087–9 (3 LINES)

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, FEBRUARY 6, 1941. NUMBER 2402: VOLUME 93

PRINCIPAL CONTENTS

Owing to the paper shortage the JOURNAL, *in common with all other papers, is now only supplied to newsagents on a "firm order" basis. This means that newsagents are now unable to supply the* JOURNAL *except to a client's definite order.*

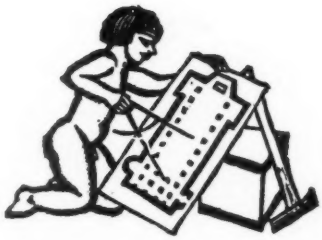
To obtain your copy of the JOURNAL *you must therefore either place a definite order with your newsagent or send a subscription order to the Publishers.*

SWISS VILLAGE SIGN

Carved and painted village sign at a landing stage on Lake Brienz. Such signs, often portraying local worthies, are common throughout Switzerland and Germany.

ST. MARY THE VIRGIN, ALDERMANBURY

St. Mary the Virgin, Aldermanbury, was rebuilt to Wren's designs in 1677 *at a cost of* £5,237. *The window treatment was a good example of Wren's theories of church lighting, all windows being of plain glass except the east window. The original plain glass was destroyed by a Zeppelin raid in* 1915, *and the church itself was burnt out in the recent City fire raid.*
The photographs show the burnt-out nave.



TWO MEN AND A BOY

JUST a month ago it was announced that Mr. Arthur Greenwood, Minister without Portfolio, had been appointed to examine post-war problems and to consult with all interested organizations how these problems could best be solved. By this appointment Mr. Greenwood became a symbolical figure: a symbol of the Government's determination not to repeat the blunders of 1919–1939, and a focus for the attention of those who hope that the good results of present conflict will amount to more than beating Hitler.

Twelve days ago, the *Sunday Express* reported an interview with Mr. Greenwood about his new work. Interviews rarely do justice to public men; big things are often not mentioned, and trivialities too much mentioned. So it may be of no real importance that Mr. Greenwood should have said at one point—"I've no Department here at the moment. . . . Just a man and a boy, as you might say." But there is no denying that people who have any memory for political precedents must have upset their morning tea over this *obiter dictum* and wished that the deadly news sense of the Beaverbrook Press had chosen anything else for a headline.

It is early days for Mr. Greenwood. Yet memories are still too vivid of a Minister for Co-ordination of Defence,* who also had to deal with vast problems and who was discovered later to be facing the embattled might of three Armed Services with a small office and a typist. Since then Ministers operating in such modest surroundings have made the British public uneasy; and Mr. Greenwood has to solve problems far more important and to upset far more long-established methods than those which fell to the former Sir Thomas Inskip.

Mr. Greenwood is charged with finding out how Britain after the war can be made a better place for the ordinary man than it ever was before. Mr. Greenwood himself puts it a little differently. "We must build the kind of country the people want *and are themselves willing to build.*"

This is a curious qualification. No one is likely to doubt that "the people" want good housing, healthy factories, good schools, fine health services, access to open air and recreation and freedom from unemployment. Very many people now believe that all these things can be provided in great measure if the country decides to have them—but their realization will require very large changes in the ways we have up to now done things in peace-time.

It is here that immense responsibility rests on Mr. Greenwood. If he allows the ordinary man merely to hear of the changes and not of the end at which they aim, if he allows the ordinary simple man only to hear that his local Council is to lose some powers, that a new township is to divert money from *his* town, that his local coal plant is to close down, without the *reasons* for these things being clear to him—then the country which *the people are themselves willing to build* will be exactly the country of 1919–1939. It is Mr. Greenwood's job not only to find out how the big post-war problems can best be solved and to outline the mechanism necessary for the purpose, but also to take the common man with him in complete agreement, step by step, all the way.

If he fails to do this the people, simple minded busy folk, will be left in the dark, worried and uncomprehending; and those who will decide what post-war Britain is to be will be "people" of a very different kind. They will be those who are now buying up devastated building sites in the City of London in order to await the day when the ground will again be worth £50 a square foot, who are already erecting Ancient Lights signs over alleys which should never have been allowed to exist, who are rumouring that Lord Reith intends to nationalize the building industry after the war and ruin its members. It is up to Mr. Greenwood to decide which of these two kinds of people will be able to choose what is to happen in Britain after the war.

This war, as we have been told often enough, is one in which a good idea is as good a weapon as a battleship or an armoured brigade, and has an advantage over both of them in that it moves subject peoples and neutrals as well as the enemy. Can anyone doubt that the spectacle of a tiny but well-chosen part of Britain's brains and labour being devoted, all the time, to preparing for a better Britain and explaining how it is to be brought about, would be a war weapon of tremendous power against which the enemy would have no protection?

As a beginning of this addition to our armament we have Mr. Greenwood. That is something. But if after another three months Mr. Greenwood—superman though he may be—and his man and his boy are all that exist towards the achievement of a new Britain, New Britain will be becoming something very like a joke: a bad joke. In this war of a thousand things at a time, of a hundred facets all equally important, we cannot afford bad jokes; least of all a bad joke on such a subject as this. Part of the world's attention, a great part of Lord Haw-Haw's attention, is on Mr. Greenwood.

* The announcement of whose selection was greeted in the Lobby with a now famous comment: "There has been no similar appointment since the Roman Emperor Caligula made his horse a Consul."

The Architects' Journal
45 The Avenue, Cheam, Surrey
Telephone: Vigilant 0087-9.

NOTES & TOPICS

ARCHITECTS AND BOMBED AREAS

NOW that very large additional numbers of men and women will soon be required for one form or another of war service, the position of architects becomes one which badly needs to be decided—finally decided.

*

There are grounds for doubting whether this final decision can be secured by Reservation alone; in fact, there are very strong grounds for holding that Reservation of architects as such at a certain age would do little to solve current problems.

*

Architects can have no illusions about themselves in these days. The Ministry of Labour and National Service has to answer three questions: (1) How many jobs now exist which can be filled only by architects; (2) How many more such jobs are likely to arise in the next six months; (3) How, having regard to the conditions of the work, can architects be found to fill (1) and (2) with the least possible strain on man-power needed for other work.

*

It is (3), in my view, which contains the knotty part of the problem. The work for which architects are most needed now is survey and repair work in bombed districts. And the bulk of the jobs available are those which—taking all factors into consideration—would be best filled by architects aged between 25 and 35. But architects up to 30 years of age have disappeared. They are already in the Services or working on essential building projects; and those between 30 and 35 are a rapidly diminishing band.

*

Architects are, however, still needed, and it is a safe bet to say that two or three thousand more may be badly wanted any moment now. The Home Office has attempted to meet current needs by asking all architects who are not already in the Forces or working on war building to come forward. By the time this appeal went out, most of those left to receive it were the over-forties, and some strong feelings have arisen over the manner of its reception.

There is no doubt that those who had changed their addresses or accepted jobs without notifying the Central Register were at fault—mild though the fault might be after a year and more of hopeless waiting. Those who did not bother to answer a definite offer of a job from the Home Office, after stating to the R.I.B.A. that they badly needed one, showed gross ill manners.

*

But these are side issues. What matters is that if the Government has an architectural appointment which must be filled and there are two candidates for it—one, aged 32, able to serve as a soldier, and another, aged 49, with little or no work and ineligible as a soldier—there is no doubt which candidate it ought to choose. And if the latter architect refuses the appointment on grounds of salary or personal circumstances, the question of compulsion looms inescapably on the horizon. "Why," the 32-year-old may ask, "should I risk bullets for 17s. a week when Blank won't risk a bomb for £6 or £7?" And the Home Office may agree.

*

Let us look at the other side of the question—because not even the 32-year-old really believes it is bombs which keep his elders from moving. The JOURNAL has received several letters from architects on this matter, and I quote a composite case below:

*

X., architect, aged 45. Wife and three children; served throughout last war; owns house near county town of 70,000 inhabitants; private practice; one partner, aged 68; holds personal appointment as surveyor to local body at salary of £150 a year, which lapses if he moves. Average income £850 for five years before war. Two other firms of architects in town possess vigorous principals of 50 years of age. X. has been making headway slowly against them.

X. is offered job on A.R.P. in London Area at £350 a year.

*

What does X. do? With pickings here and there he has made about £300 a year since war started. As he owns his house and rates are low he has been able to keep going somehow and pay school bills. But if he goes his surveyorship disappears, his "goodwill" locally must diminish, he has to pay for board and lodging, and will be lucky if he has left over one-half of what he was getting in semi-unemployment. He refused the job.

*

I don't blame him. Yet if we are to win this war, older architects who can do architectural work only must take the jobs of men who are fitted both for architecture and soldiering or other more active work. How this can be done with least individual hardship is a question which the profession must answer quickly.

WAR DAMAGE BILL

No doubt before the Bill becomes an Act, it will be amended to meet some of the criticisms directed against its details in the Debates in the Commons of the 17th and 18th December. For notwithstanding the general approval with which the measure (tardily produced) has been greeted by the House and press, there are several particulars which should be reconsidered.

MORTGAGEE AND EQUITY HOLDER

As it stands, it appears that in the case of totally demolished buildings where the compensation is assessed by the Commissioners upon a "brick and mortar" basis, in many cases the whole of the money payable will go to

the mortgagee, and the equity holder will not be recompensed for his share in the property or the legal charges originally incurred.

Mr. Bellenger, M.P., commenting upon this aspect of the Bill, expressed the view :—

> If they (the mortgagees) are to be compensated in full while the actual owner of the physical structure cannot get his home back, there will be considerable discontent after the war, and probably before the end of the war if *the people get to know that that is the way in which the Act will be administered.*

Since the equity holder is ostensibly paying for his protection, it seems unfair that in effect he is being taxed to protect the money lender. It is estimated that there are four million owner occupiers affected.

*

Existing experience shows that the number of damaged and repairable properties is largely in excess of those completely destroyed, and therefore it should not be difficult to provide that those owners who suffer total loss should be fully compensated. The number of sufferers may be comparatively small, and not electorally powerful. But they must not be allowed by the four million potential victims to stand alone.

LAST BOMB STORY

A few weeks ago I published an architectural bomb story, with the firm, self-protective and merciful declaration that it would be the last. I now break my own rule for, of course, the last time, to tell the tale of the Young Architect and the Parachute Bomb—obtained second-hand but, I believe, with exactitude.

*

This Young Architect lives in a north London square, and on one recent morning after a noisy night, he looked out to notice that a house facing his own, though not visibly damaged, looked *different*. Its slightly rakish appearance, coupled with a severe stance of a policeman at its door, gave it a look of having made a night of it.

*

Upon enquiry it appeared that during the night a time bomb had landed on the house and was now awaiting removal. Being one of those people who can always get round a policeman—in the full sense of the phrase—the Y. A. obtained permission to " run up and have a look." The house, which was a rather run-down hotel, was of course deserted, and seemed untouched, until upon opening a third floor bedroom door " IT " was suddenly revealed—" taut, magnificent and lonely " (as Dum-Dum once described an elephant's behind). It stood, fully nine feet high, with its nose resting gently on the lino, and its tail, with the parachute which had assisted its dignified descent, disappearing neatly into the ceiling above. All large pieces of machinery wear a perceptible sneer upon their faces, but in this case the sneer was tempered with distress at such sordid surroundings. The bomb looked as shamefaced and defiant as a cabinet minister apprehended in a chorus-girl's flat. It was even reported that the landlady, who discovered it during her morning round of the rooms, felt compelled, after she had recovered from the shock, to close the door quietly upon it in case anyone should see and thereby disturb it.

*

While the Y. A. stood appraising the monster, two naval ratings—mine specialists—arrived to dismantle it. Even they, bomb-blasé experts, were impressed, and they circled it, like grooms round a racehorse, patting and soothing with appreciative murmurs, before descending to the undignified business of removing fuses and detonators. The Y. A. remained to watch. It was, I gather, a moving little ceremony.

*

When asked to have another and describe his impressions, the Young Architect said that the ceremony resembled the degradation of a general : One moment, the bomb was potent and terrible : thirty minutes later, with the removal of some of the trimmings, its power was gone—or, at least, he thought, as he pattered down the stairs, almost gone.

MILK OF HUMAN KINDNESS

The architect, perhaps not altogether undeservedly, has a reputation for decrying all contemporary buildings except those conceived in his own brain. Certainly there are no designs quite so satisfactory in all respects as one's own, but on the whole I prefer to think of the architect as a kindly man. Though, sometimes, that kind heart is severely taxed.

*

There was the case of the old foreman bricklayer who greeted me on the job—a small country house—his face wreathed in smiles. He led me into the living room and proudly pointed to the fireplace and to three niches of varying sizes which he " 'ad managed to work into that there breast," off his own bat, so to speak. He was so pleased with himself, I could only smirk at his niches—rather foolishly, too, I felt. My clients loved them, of course.

*

I was relating this story to some architect acquaintances of mine recently. Naturally it was capped.

*

" Exactly the same sort of thing happened to me when I rented a quite inoffensive suburban house for a while, a year or two ago," said L. " I employed a little local builder to do the decorations, and chose some plain self-coloured papers for the whole house. I couldn't get along until the work was completed, and when I did I found the fellow had added the most luscious floral friezes, out of sheer goodness of heart and at no extra charge, because he thought the rooms looked a bit plain-like."

*

" The question in instances like these is: who gives the most—the builder or the architect ? " put in G. with the air of one about to tell the best yet. " Take the case of one of my first real jobs—a simple domestic dwelling in rural surroundings. I gave it all I knew, and the building was quite well advanced when somehow it began to look all wrong. It took me a little time to find out why, and then I discovered that this same goodness-of-heart of which you speak had caused the builder to add a foot to the height of all the downstairs rooms. Well, he was a small man—financially, I mean—so I couldn't make him rebuild the thing. Besides, not only was my client anxious to move in as soon as possible, she was tickled to death at getting the extra headroom for the same price. Of course the proportions of the place were now hopeless and the whole design absolutely ruined, but everyone else was no end pleased, so what could I say ? At all events I didn't. It stands alone yet, a monument to Generosity, but whenever I have to pass that way I still automatically make a detour to avoid Little Scantling."

ASTRAGAL

NEWS

WAR DAMAGE TO CHURCHES

The Archbishops' Commission on Damaged or Destroyed Churches, Parsonages, etc., is as follows :—

MEMBERS :

The Bishop of London (*Chairman*)
The Bishop of Winchester
The Bishop of Portsmouth
The Earl Grey
Sir Philip Baker-Wilbraham, Bt., M.A.
Mr. J. R. Brown
The Hon. R. D. Denman, M.P.
Mr. W. G. Hannah
Col. the Rt. Hon. Sir George Courthope, Bt., M.P.
The Dean of Norwich
Canon H. W. Bradfield
Mr. W. Curtis Green, R.A.
The Archdeacon of Liverpool

SECRETARY :

Mr. E. H. Johnson, No. 1 Millbank, S.W.1.

The Commission was appointed by the Archbishops of Canterbury and York in November, 1940. It is concerned immediately to examine the War Damage Bill with a view to securing such amendments as seem desirable in the Bill in its applicability to churches, parsonage houses, church schools, church halls and other church property, and to consider what resources from central or other resources are available towards meeting any burdens proposed to be imposed under the Bill in respect of such properties and the cost of effecting repairs, etc., due to enemy action. Questions of policy with regard to the restoration or rebuilding of churches, etc., damaged by enemy action will be studied by the Commission and eventually the desirability of raising a General Fund for the ultimate restoration or rebuilding of such buildings will be considered.

In considering its tasks the Commission will proceed by way of report to the Archbishops from time to time.

●

Some months ago, when the danger of damage to churches had become apparent, the President of the R.I.B.A. sent the following memorandum with a covering letter to all the Bishops and other ecclesiastical authorities. It is understood that in some cases the President's advice has been acted upon.

Air raids may do serious damage to many churches and other ecclesiastical buildings. Under existing arrangements it is possible that demolition squads and repair organisations may get to work at very short notice to deal with the damage. Unless the work they do is guided and supervised *from the start* by architects who have the necessary knowledge and experience great and irreparable harm may be done. Structure which might be skilfully preserved may be further destroyed through ignorance of its value and history. Damaged glass may be thrown away where it might have been carefully pieced together and largely reinstated.

In face of these dangers there is urgent need of a widespread organisation which would guard against them.

In the first place every church and ecclesiastical building of value should have, on a reduced scale, the same kind of skilled guard that has been available at St. Paul's Cathedral since the beginning of the war. A small party of faithful workers under the guidance of one or more experienced local architects should be enlisted to keep watch over the building and be instantly available in case of fire.

In the event of structural damage the immediate work of demolition where necessary, or of temporary repair where possible, should be *from the first* carried out under the instructions of an architect who has special qualifications for work of this kind. The diocesan architect or diocesan surveyor might have too much on his hands at the time or might be unable to reach the spot under war conditions and there is obvious need for extra skilled help at the shortest possible notice.

It is, therefore, suggested that under the auspices of the Royal Institute of British Architects and with the help of such bodies as the Society for the Protection of Ancient Buildings every diocese should possess an approved Panel of Architects with the necessary qualifications upon which the incumbents can at once call for the necessary help.

In every diocese the Bishop could have a list of the names and addresses of those on the Panel, and he could at once circulate the list to every incumbent and impress upon them the great importance of calling upon the services of the nearest available members of the Panel the moment the damage occurs.

D.I.A.

The following statement has been issued by the Design and Industries Association. Temporary address : 50 Southwood Lane, Highgate Village, N. 6 :—

The Executive Committee has given much thought to the position of the D.I.A. under present conditions. Circumstances have been such as to make the holding of meetings difficult and in some areas impossible, and have caused programmes which had been devised for the winter months to be curtailed or cancelled.

It is, of course, the intention of the Committee, and I am sure of all members, that the structure of the D.I.A. shall be preserved, in order that it may take advantage of every opportunity which will arise for useful action to be taken. At the same time it is clear that much of the work which the D.I.A. normally undertakes cannot be continued for the time being.

The Committee thinks therefore that some concession should be made to members in regard to subscriptions, and has decided that payment of the normal subscription shall not be a condition of continuation of membership during the war. Many members are experiencing difficulties and others are serving in various branches of the Forces, and to these the Committee would like to say that it is left to them to settle what subscription, if any, they feel able to contribute during the coming year. No doubt a large number of members will wish to continue payment of their ordinary subscriptions and thus help the D.I.A. to meet current expenses and to build up a reserve for effective use as occasion arises.

The D.I.A. is now federated with the Central Institute of Art and Design, and is represented on its Council. The Institute is issuing a bulletin periodically, giving news of all the federated Societies. The D.I.A. subscribes to the cost and its news will of course be included. Members will receive copies of each issue and will find the news in the pages allocated to the D.I.A. They will also be interested to read of the activities of other Societies, and thus keep in touch with what the world of art and industrial design is doing during the war. The first bulletin is in the press and members will receive their copies from the Central Institute within the next week or so.

The statement is signed by Mr. F. R. Yerbury, Chairman.

LETTERS

L. C. WOOD
A. L. FORSTER
F. ANDREWS · F. G. WISCHHUSEN

Ancient Lights

SIR,—I am surprised that after all the recent public consideration of schemes for " rebuilding London," a correspondent of yours, who is, I believe, an architect, should express serious concern for the maintenance of the old rights of light.

Surely, if one principle emerges before others from a review of past mistakes in building, it is that never again should town buildings be crowded together in small units in such way that the inhabitants' light and air depend on a legal apportionment.

The influences which prevented radical improvement in the 17th century rebuilding are well known, and similar influences may be expected to be at work to-day ; it would be a thousand pities if any architects were to support them.

LESLIE C. WOOD

Brick Aggregate for Concrete

SIR,—In view of the large amount of used bricks resulting from bomb-damage, it is important to examine the specifications which rule the practice in the use of concrete for building purposes. Many of the established specifications provide for only a limited range of choice amongst natural stones and do not offer the alternative of broken brick.

Any good type of brick when broken and properly sized makes an excellent aggregate for concrete, and if the details of the specifications are amended, after proper examination of a range of samples made up with brick aggregate, it will furnish an important outlet for much material which is lying at hand, and, unless used, will cost much money for final disposal.

For any type of brick which is found to yield a crushing strength appreciably lower than required by a standard specification the increase in thickness required, either for plain walling or many applications of reinforced work, is not likely to approach in cost that of newly quarried aggregate.

The possibilities in the use of brick in place of stone merits the attention of those institutions responsible for the Standard Specifications and the Building Research Laboratory.

A. LINDSAY FORSTER

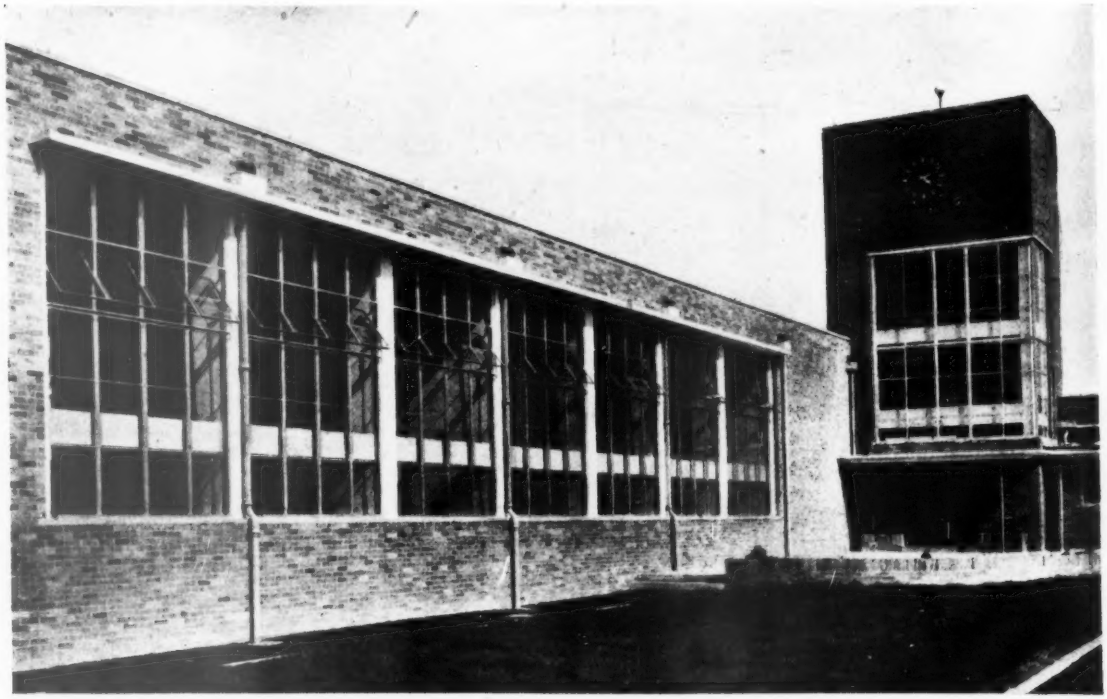
Architects' War Service

SIR,—Congratulations on your two recent leading articles dealing with this subject and for following up points raised in one of our previously published letters.

We hope you will keep stressing the need for proper technical use being made of architects' services and perhaps particularly of younger men who would be prepared to take on those 74 dangerous jobs turned down by their elders !

FRANK ANDREWS
F. G. WISCHHUSEN

TWO SCHOOLS AT STOKE-ON-TRENT



The junior assembly hall

MEIR JUNIOR AND INFANTS' SCHOOL

BY J. R. PIGGOTT, CHIEF ARCHITECT; W. I. WATSON, ASSISTANT ARCHITECT FOR EDUCATIONAL BUILDINGS

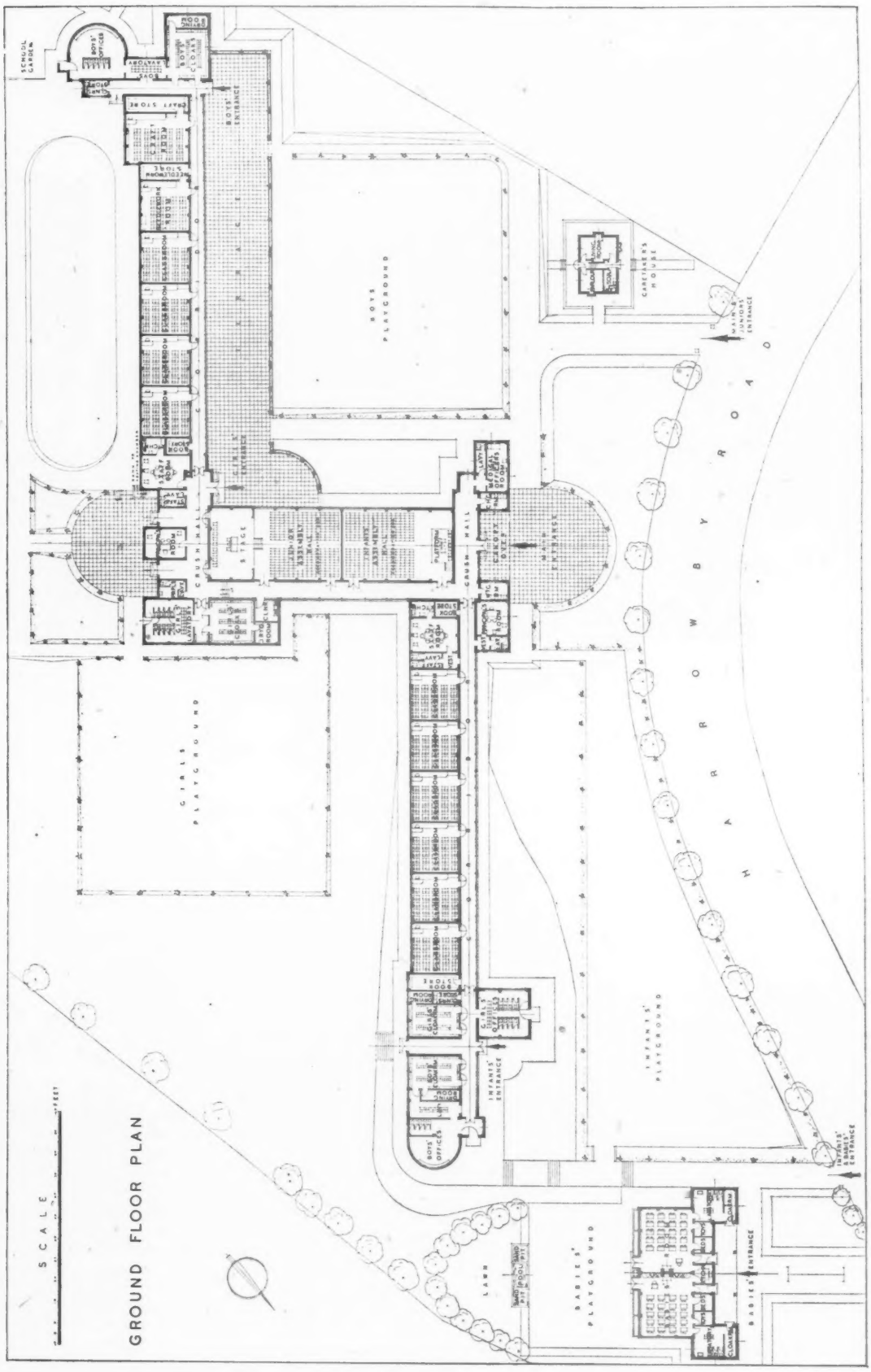
THE FIRST SCHOOL

GENERAL—Junior mixed and Infants' schools to serve a developing housing estate. Each school accommodates 300 children. A separate block of two classrooms accommodating 80 babies is attached to the infants' school. There are three playgrounds, and a small playing field for the juniors. An existing group of trees on the southern boundary has been augmented by flowering trees and shrubs. The babies' block has a separate playground, sandpits and pool, and a lawn surrounded by flowering trees.

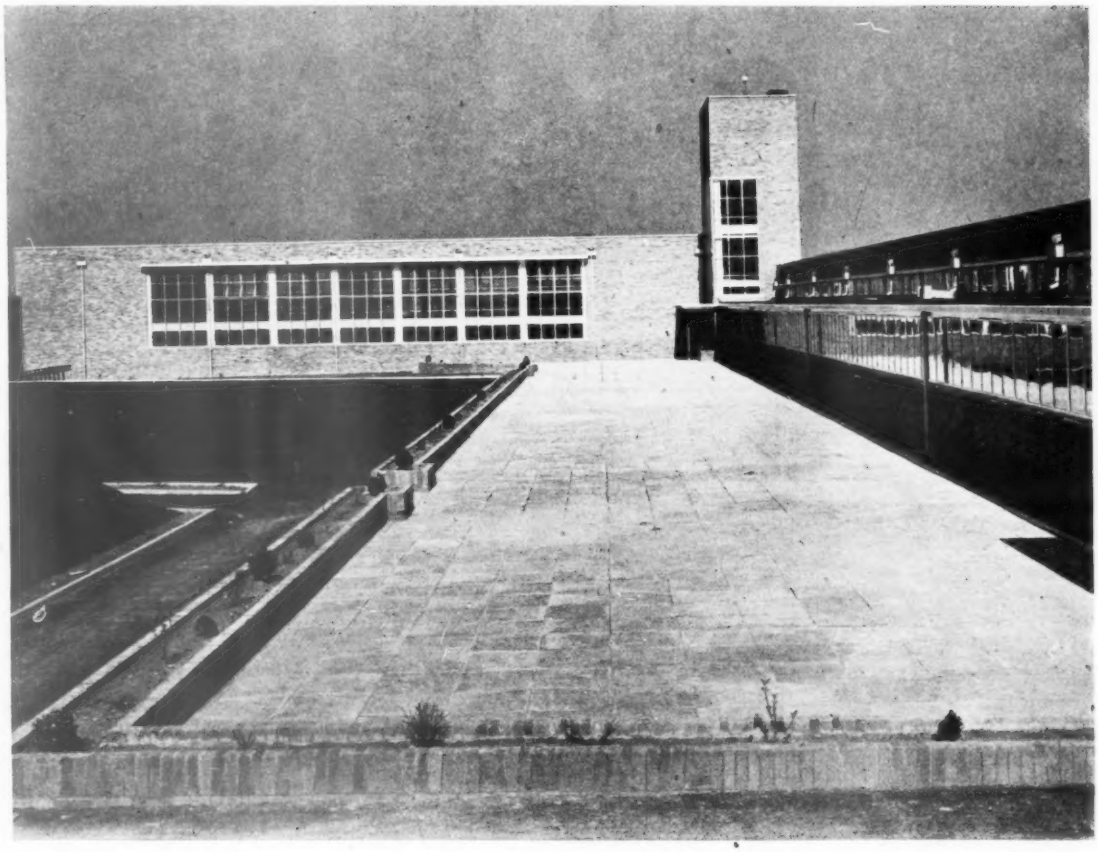
CONSTRUCTION AND EXTERNAL FINISHES—Reinforced concrete frame; multi-coloured local rustic facings; concrete framing used as window mullions. The exposed concrete faces were rubbed up from wrot sheeting and treated with patent cement, finished cream.

INTERNAL FINISHES—Walls generally, power-pressed concrete bricks, flush pointed, and finished two coats of water paint; walls of staff rooms, plastered. Floors: classrooms, reinforced composition; window frames painted aluminium, externally and internally. The floors of the two classrooms for the babies are finished in cork tiles, and heating is from ceiling panels and an open fireplace in a central stack. The two rooms are divided by soundproofed folding partitions.

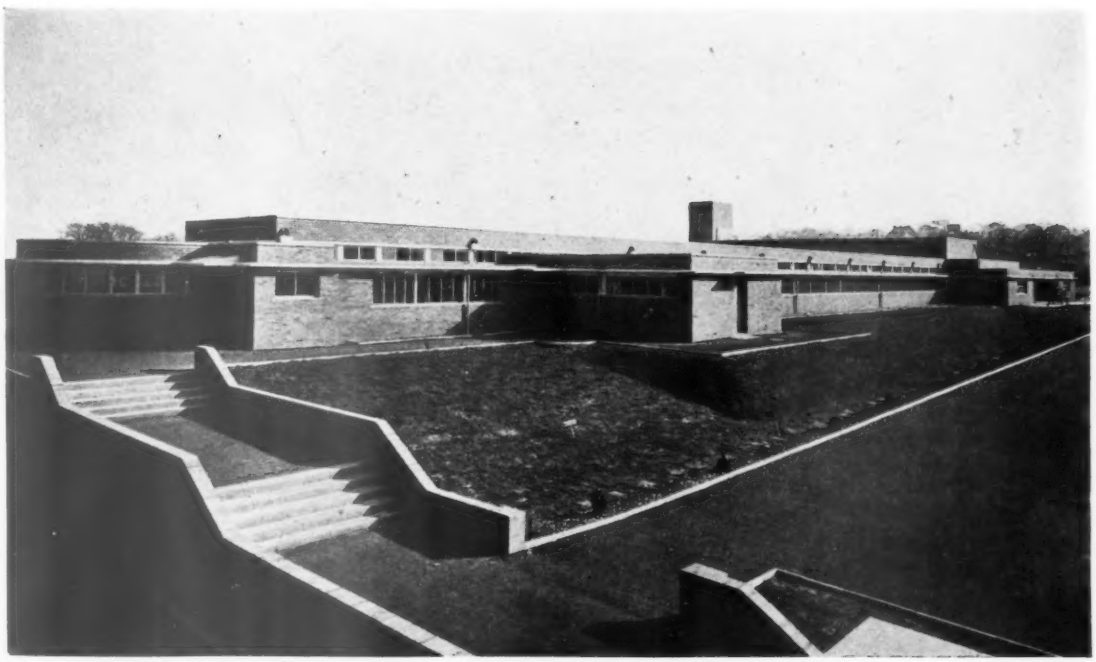
The general contractors were Messrs. Naylor and Nutt, Station Road, Tunstall; for list of sub-contractors, see page xvi.



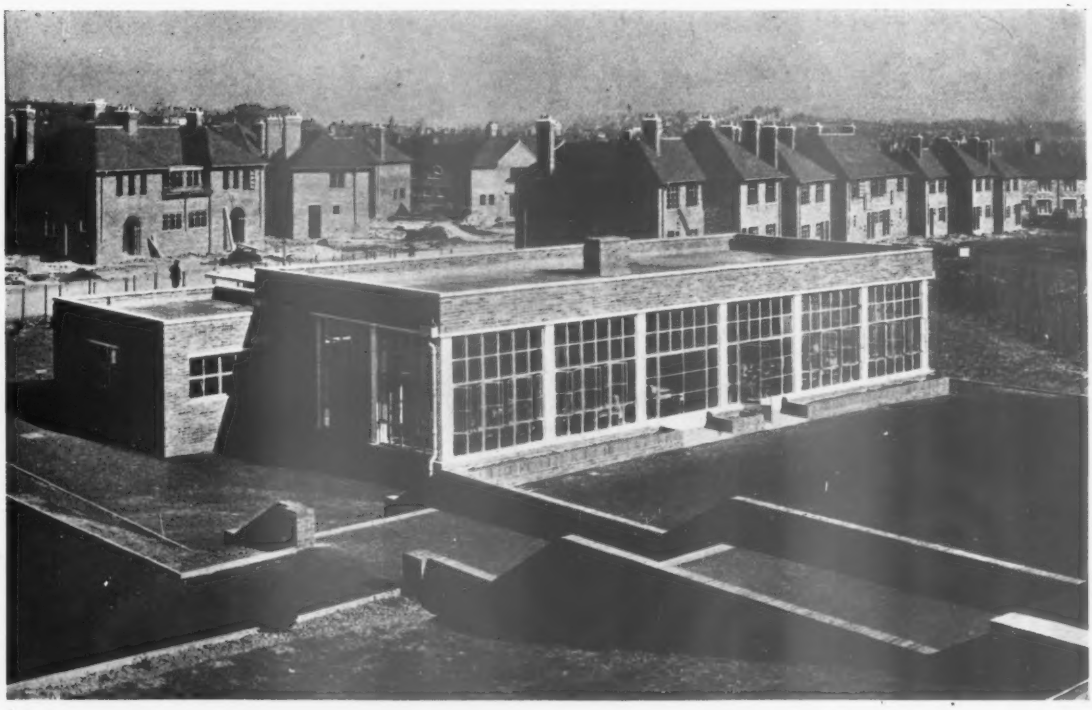
MEIR SCHOOLS, STOKE-ON-TRENT • BY J. R. PIGGOTT, CHIEF ARCHITECT;



Above, view from south-west, along the terrace towards the assembly halls; below, view from north, showing, on the extreme right, the main entrance.

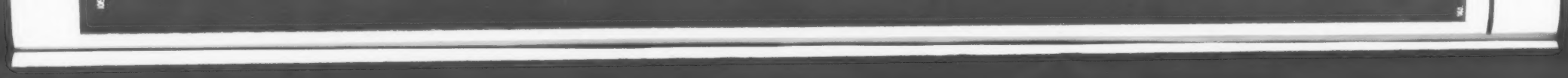


W. I. WATSON, ASSISTANT ARCHITECT FOR EDUCATIONAL BUILDINGS



Above, the babies' block ; below, assembly hall

MEIR SCHOOLS • DESIGNED BY J. R. PIGGOTT AND W. I. WATSON



105

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

ZEISS DYWIDAG CHISARC & SHELL D CONSTRUCTION :

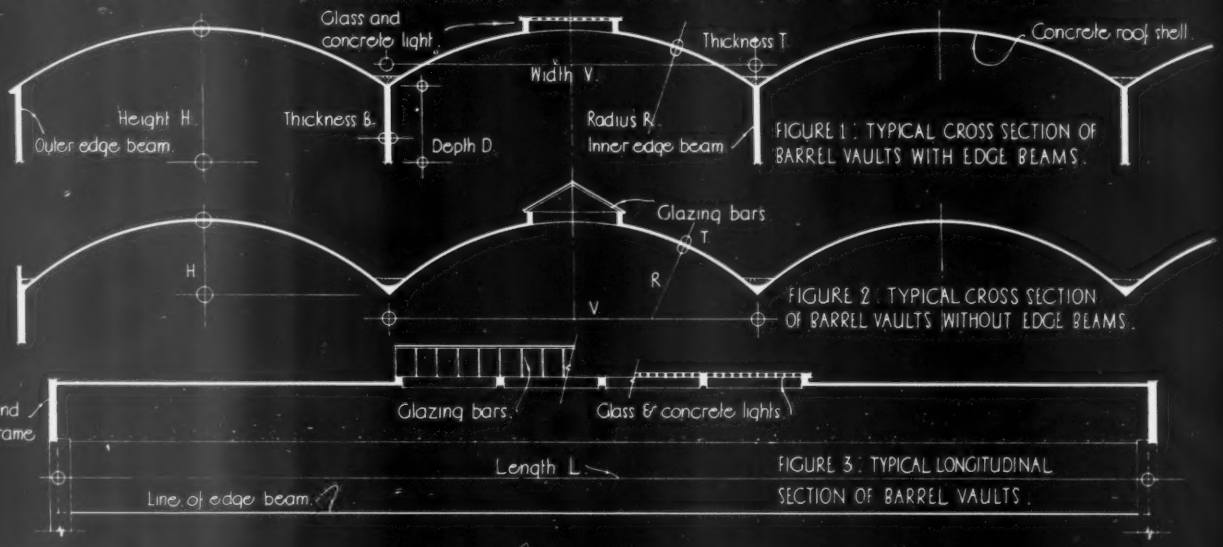
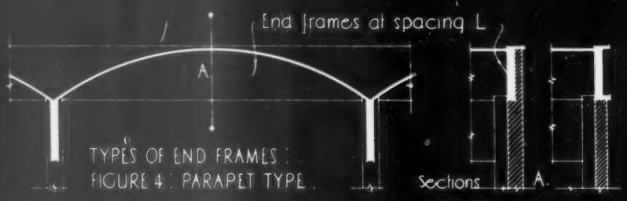


FIGURE 1 : TYPICAL CROSS SECTION OF BARREL VAULTS WITH EDGE BEAMS.

FIGURE 2 : TYPICAL CROSS SECTION OF BARREL VAULTS WITHOUT EDGE BEAMS.

FIGURE 3 : TYPICAL LONGITUDINAL SECTION OF BARREL VAULTS.



TYPES OF END FRAMES :
FIGURE 4 : PARAPET TYPE.

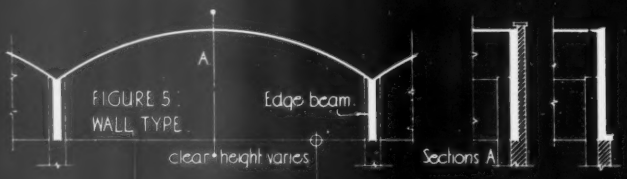


FIGURE 5 : WALL TYPE.

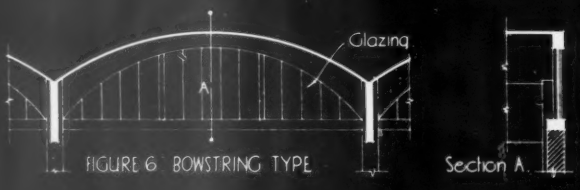


FIGURE 6 : BOWSTRING TYPE

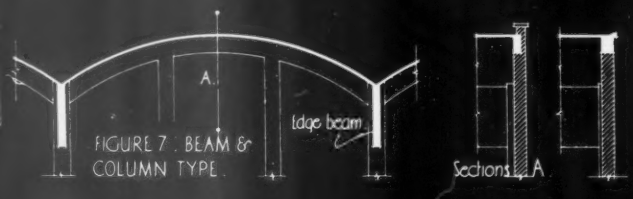


FIGURE 7 : BEAM & COLUMN TYPE.

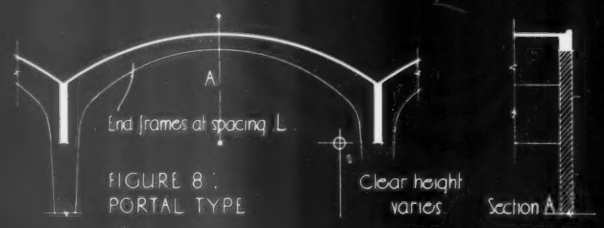


FIGURE 8 : PORTAL TYPE

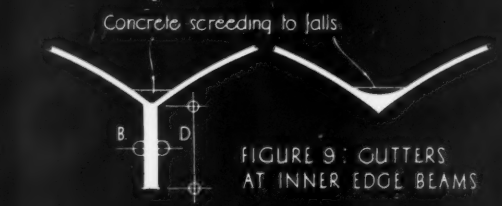


FIGURE 9 : GUTTERS AT INNER EDGE BEAMS

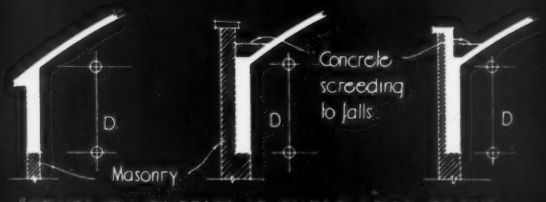


FIGURE 10 : GUTTERS AT OUTER EDGE BEAMS

FIGURE 11 : end frame for wide openings

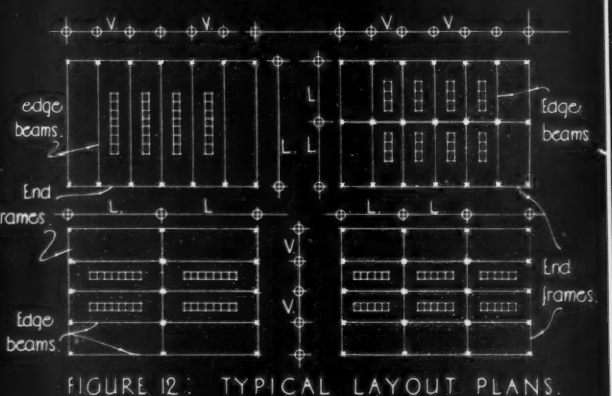


FIGURE 12 : TYPICAL LAYOUT PLANS.

Issued by Ernest A. Newton, Chartered Architect : Compiled by H. G. Cousins, Chartered Civil Engineer.

INFORMATION SHEET : ROOF CONSTRUCTION : R·C BARREL VAULTS-1-SMALL RADIUS.

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

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 815 •

ROOF CONSTRUCTION

Subject : Reinforced Concrete Barrel Vaults of Small Radius : Zeiss, Dywidag, Chisarc and Shell "D" Construction. (*British Letters Patent No.* 362473).
(Egypt Patent Nos. 223/51 & 10/51 & 107/51).

General :

This series of Sheets is designed and intended to give an outline of the application of the many types of roof construction available. It is not intended to give the full working details of the reinforced concrete, which are readily adaptable to the particular problem to be solved. There is a great variety in the shapes and dimensions of the roof surface and of the supporting members, the details of which can be varied to suit the required column spacing and height of the structure, and details of the wall fillings.

Each design in this construction includes the roof slabs together with all supporting beams and columns and foundations.

This Sheet is the first of the series and illustrates the dimensions of cylindrical reinforced concrete barrel vaults of small radius, or those in which the chord (v) of the arc is small in comparison with the length (L) of the barrel.

Span (L)	No. of spans	Raduis (R)	Depth (H)	Width (V)	Depth (D)	Thickness (B)	Thickness (T)
17′	1	25′	10½″	13′	—	—	2½″
30′	1	25′	3′	20′	9″	6″	2½″
55′	2	25′	5′ 10″	31′ 6″	—	—	3″
58′	1	16′ 6″	5′ 10″	16′ 6″	2′	6″	2½″
60′	1	30′	6′ 3″	30′	2′ 3″	6″	2½″
70′	2	36′	8′	45′	—	—	3″
75′	1	33′	9′ 4″	37′ 6″	3′ 6″	7″	2½″
80′	2	25′	8′	30′	3′	7″	2¼″
80′	1	39′	7′ 8″	33′	4′	8″	2¾″
82′	2	41′	8′ 3″	50′	—	—	3″
96′	1	28′	9′ 4″	30′	5′	8″	2¾″
100′	2	25′	12′	35′	2′ 9″	8″	2½″
105′	1	25′	10′ 6″	33′	4′ 3″	8″	2½″
120′	1	22′ 6″	13′ 3″	31′	7′	9″	2¾″
133′	1	22′ 6″	15′ 3″	33′	8′ 3″	9″	2¾″
135′	1	33′	14′	39′	7′ 10″	8″	2½″
150′	1	33′	16′ 3″	42′ 9″	8′ 9″	10″	3½″
165′	1	33′	18′	46′	9′	10″	2¾″

General Design :

The concrete shell slab is not rigidly supported at its springings as is common practice with vaulted roofs. Instead it spans as a beam of span (L) between rigid end frames.

The members at the springings or edge beams act only as tie members. The total height (H) should be at least one-tenth of the span (L) for single spans, or one-fifteenth of (L) for continuous spans.

The width (V) in this type is not usually more than 40′ 0″, generally 25′ 0″ to 30′ 0″. The maximum slope of the curved shell from the horizontal should not exceed 45 deg. and is usually about 35 to 40 deg.

The depth of the edge beams (D) is usually approximately ½ of the total height (H), but it is possible to reduce this dimension in the smaller spans, or to eliminate the edge beam altogether, as shown in Figure 2, provided that the necessary height (H) can be obtained.

In all cases, however, the outer edge beam should have depth (D) equal to about half height (H), unless intermediate supporting columns are inserted in its length, in which case (D) can be approximately one-fifteenth of such reduced column spacing.

End frames are of various types as shown in Figures 4-8. Since the end frames have to carry the whole load in one bay of the roof, the depth of the end frames at the column should be approximately one-twentieth of (L) in all cases except where there are intermediate columns to support the end frames, as shown in Figure 7.

Where an opening wider than (V) is required at the end frame, two or more barrel vaults may be supported on one end frame as shown in Figure 11. In this case, the total depth of the end frame should be at least one-tenth of the clear opening.

The thickness of the edge beams and end frames is usually from 6″ to 10″, except in cases of end frames shown in Figures 8 and 11, when greater thickness may be required.

The table below gives some typical dimensions for various spans which have been erected.

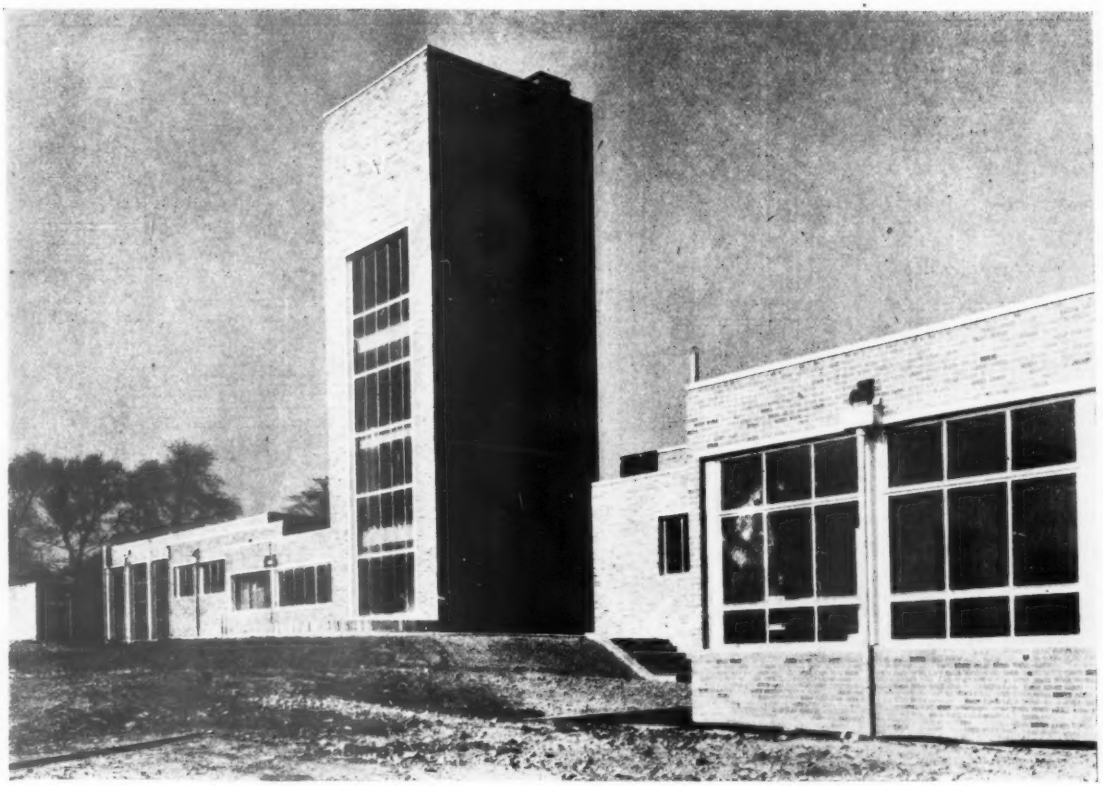
Roof Lighting :

Roof lighting can be obtained by forming openings in the crown of the barrel. Openings in this position give the best distribution of lighting in the building. Owing to the reflection obtained from the underside of the barrel and the absence of tie members, the area of lighting required is considerably less than in other forms of roofing. The lighting run is divided into a series of openings approximately square in plan, and can be glazed either with glazing bars or concrete and glass flats. The cross ribs are from 8″ to 12″ deep at the centre and from 6″ to 8″ wide according to the span (L) and size of the openings. The side kerbs are from 6″ to 8″ wide, their tops being level with the tops of the cross ribs.

Roof Loads :

Unless there are special requirements, the roof loads and the stresses used in design are in accordance with the Code of Practice for Reinforced Concrete as recommended by the Reinforced Concrete Structure Committee for the Building Research Board. Additional loads such as those due to overhead gantries and tackle can be carried on the end frames, edge beams or shell as required, with little alteration to the details shown on this Sheet.

Issued by : Ernest A. Newton, Chartered Architect
Address : Rutherford Chambers, Bow Lane, Manchester 2
Telephone : Manchester Central 1021



CARMOUNTSIDE SENIOR SCHOOL

BY J. R. PIGGOTT, CHIEF ARCHITECT; W. I. WATSON, ASSISTANT

TWO SCHOOLS AT STOKE-ON-TRENT :

THE SECOND SCHOOL

GENERAL—A Senior mixed school for 480 scholars, designed to accommodate in the future 720 in two departments of 360 boys and 360 girls. Certain teaching rooms and the assembly hall are not yet built. The cloakrooms and offices are large enough for 720 scholars, but fittings have only been installed for 480.

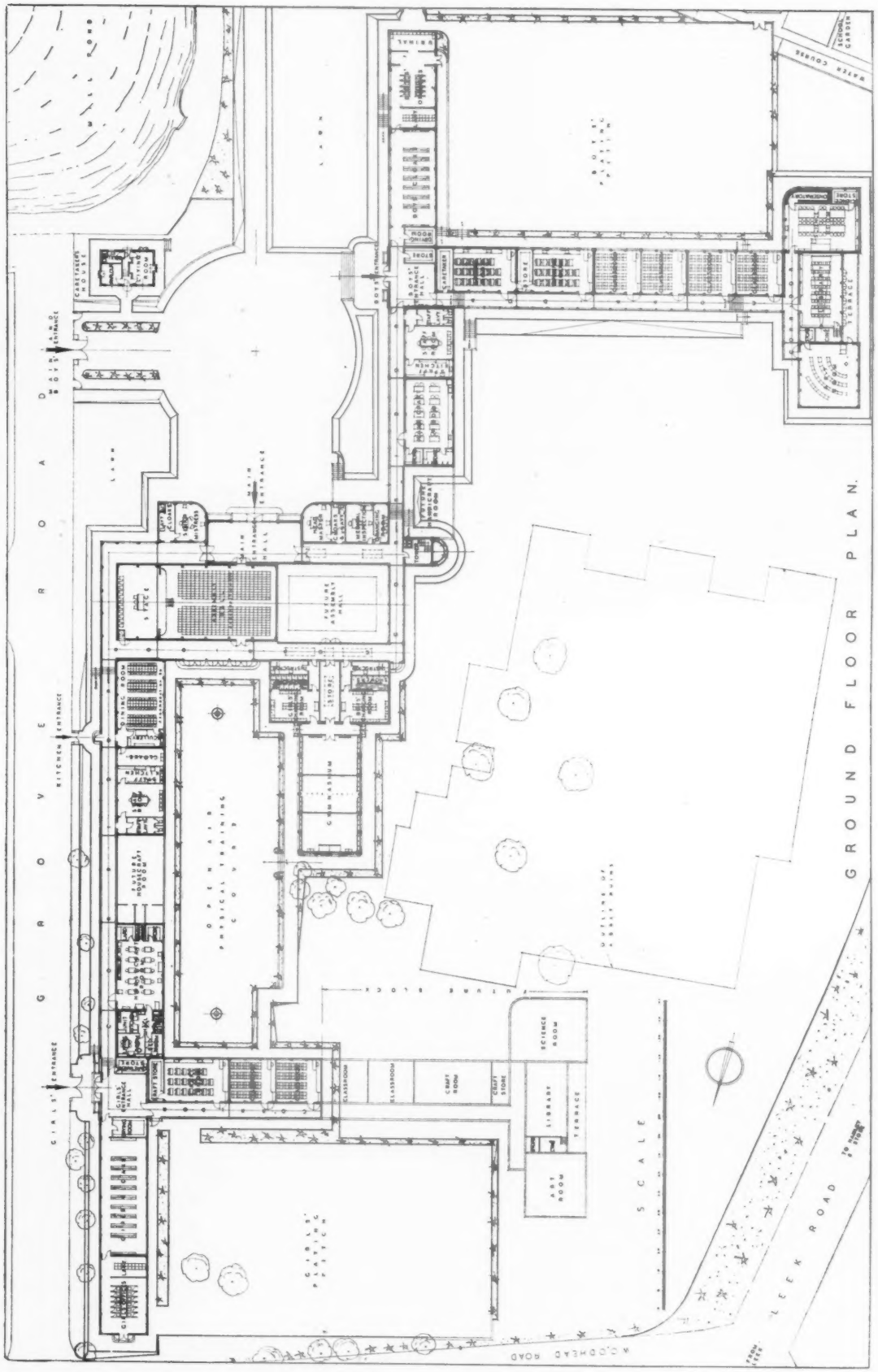
SITE—Liable to considerable surface subsidence and containing the ruins of an old Cistercian abbey, the actual site of which had to be retained for future exploration.

CONSTRUCTION—The building has been designed and constructed, as follows, to deal with the danger from surface subsidence :
(1) To counteract the danger from subsidence in a general way where the particular site is scheduled as a stable one by the Mineral Valuer, and (2) To use special precautions where the site is scheduled as an unstable one.
With regard to (1), the method was to design in a fairly stiff reinforced concrete frame construction where reasonable rigidity was obtained in the continuous horizontal concrete beams and the whole structure stiffened by the reinforced concrete floor and roof slabs.
With regard to (2), a very much stiffer reinforced concrete frame was designed with deep foundation beams heavily reinforced, and the building was split up into individual units about 60 ft. long separated from each other by a 2 in. gap covered by a copper strip in the form of a U to permit of movement.

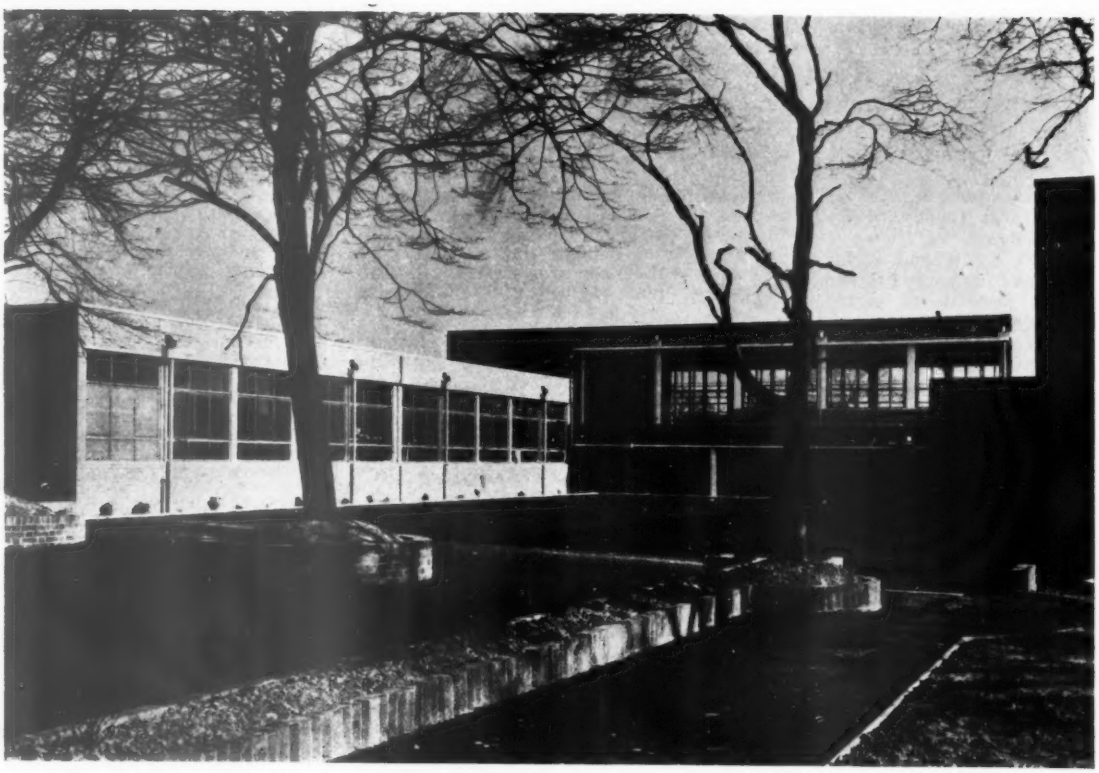
EXTERNAL FINISHES—Multi-coloured local rustic facings ; concrete framing used as window mullions. The exposed concrete faces were rubbed up from wrot sheeting and treated with patent cement, finished cream.

The general contractors were Messrs. Sambrook Bros., Ltd., Hamilton Road, Burslem ; for list of sub-contractors see page xvi.

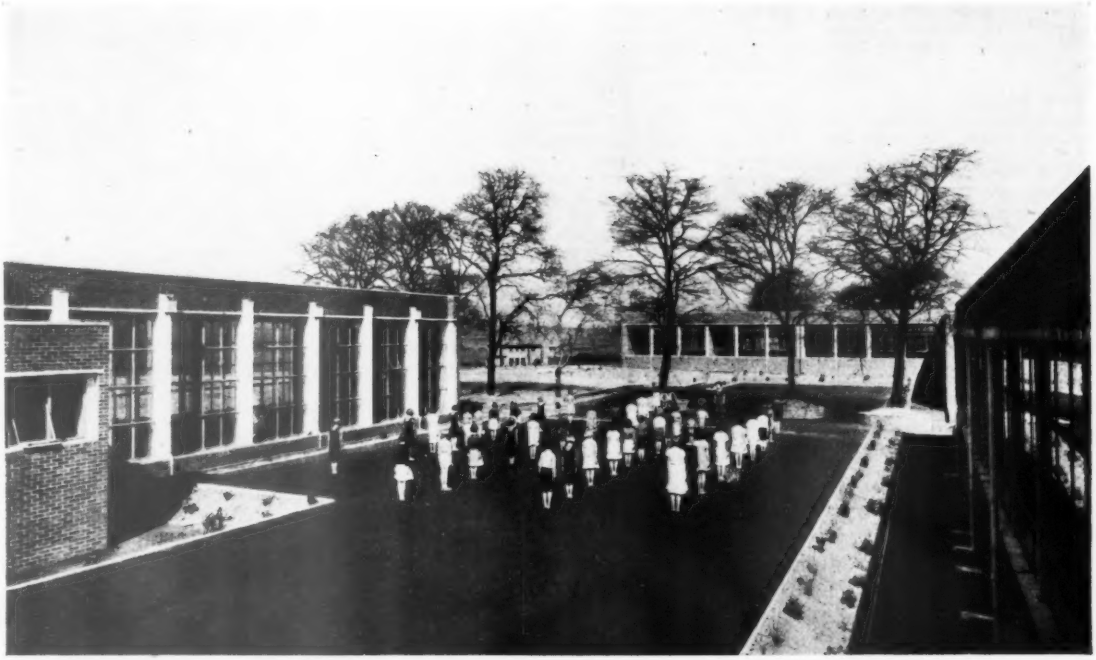
Above, main front from south



CARMOUNTSIDE SENIOR SCHOOL, STOKE-ON-TRENT • BY J. R.



Above, physical training court, looking towards the assembly hall; below, physical training court, looking north.



PIGGOTT, CHIEF ARCHITECT; W. I. WATSON, ASSISTANT

ARCHITECTS' REGISTRATION ACT

PROSECUTION FOR AN INFRINGEMENT AT AYLESBURY

At Aylesbury Petty Sessions, George Macdonald Brown and Richard Penn Cole (of the firm of Messrs. W. Brown & Co., surveyors, land agents and architects, auctioneers and valuers), Market Square, Aylesbury, pleaded not guilty " to unlawfully carrying on a business in the name style and title containing the word ' architect ' but not then being a person registered under the Architects' (Registration) Act, 1931." The defendants were severally charged.

Mr. J. C. Medley (Messrs, Field, Roscoe & Co., London) appeared for the proeecution, and Mr. Derek Curtis Bennett was counsel for the defence.

Mr. Medley pointed out that the Act was fairly recent and that there had been only a few cases dealt with under its provisions. It was the duty of the Registrar of the Architects' Registration Council to keep a register of architects, and it was a principle of the Act that no one could call himself a registered architect who did not register under that Act. And any firm was entitled to call themselves registered architects only if the firm was in control of a member who was a person registered under the Act. The Act of 1938 was really a charter of the architects' profession, and the main provision under the Act was that no person should practise an architects' business unless he was a registered person under the Act, and as the law stood no one but a registered architect could call himself a registered architect, and a firm could call themselves architects provided that one or each of the persons in charge of the firm's business was one who was a registered architect. If a person who was entitled to call himself an architect applied for registration and should call himself an architect before registration he would be deemed not to have committed an offence by calling himself an architect. The Registration Council, in instituting these proceedings, had no animus against the firm, which was a well-known and highly respected firm carrying on business in the district. But they felt compelled to take proceedings, especially in the early stages of the operation of the Act. Mr. Medley produced and read a copy of an advertisement culled from the *Bucks Herald* of November 1, 1940, in which the firm of Messrs. W. Brown & Co. described themselves as surveyors, land agents and architects, and, accordingly, the Registration Council wrote to the firm on November 21, 1940, asking them for the name of the architect in their employ in respect to whom they were entitled to call themselves architects. The reply to that letter was that Mr. W. Scott Baird was the person. Mr. Medley went on to say that Mr. Scott Baird had been a registered architect but that he had been struck out for ceasing to pay his retention fees. Mr. Scott Baird communicated with the Council with regard to his reinstatement, and he was informed that he would be able to obtain reinstatement on paying his arrears and that the matter was before the Council. He was not reinstated yet, and Mr. Scott Baird had not been made a defendant in this case.

Mr. Pembroke Wicks, of 68 Portland Place, W., said that he was registrar of the Architects' Registration Council. He stated that he had seen the advertisement which had been referred to, and gave details of the correspondence the Council had had with the firm and Mr. Scott Baird. Mr. Scott Baird was not a registered architect because he had been struck off for non-payment of his retention fees. At the end of October, 1940, Mr. Scott Baird applied for reinstatement, and the matter was being considered by the Council. Registered architects had been struck off for advertising. There had been three or four so struck off.

Questioned by Mr. Curtis Bennett, the witness said that the late Mr. C. Phillips Cole applied for registration about two years ago, and he had received letters from him as he (Mr. Cole) had said that he had heard nothing about the application he had made to the Council. He (Mr. Wicks) had replied to that inquiry that there were 3,000 applications to be dealt with and that the Council had to deal with them in the order they had been received, and that he regretted that he could not say when Mr. Cole's application would be considered. Mr. Cole was admitted on the 25th of October last year, as a member of the Society. But Mr. Cole had been registered under the 1931 Act. Mr. Scott Baird applied for registration soon after the death of Mr. Cole—about the 25th of October. He (Mr. Wicks) did not know that Mr. Cole had died soon after his registration.

Mr. Curtis Bennett : But if Mr. Cole had been registered was not the firm entitled to call themselves architects ?—No.

Mr. Curtis Bennett : If on October 9th, 1930, the firm was entitled to call themselves architects it is sheer nonsense to say that they were not entitled to do so on October 25th, 1940.

Referring to Mr. Scott Baird's application for re-admission on payment of his arrears, and that he had sent his cheque for 35s. for that purpose, Mr. Curtis Bennett asked why, if Mr. Scott Baird was going to be re-admitted, had he not been informed, and what had become of the cash.

Mr. Wicks replied that the cheque had been paid into the Council's bank, and that Mr. Scott Baird's re-admission might be about March 26th.

Speaking for the defence, Mr. Curtis Bennett said that the firm was founded by Mr. Brown's grandfather 100 years ago, and the firm had called themselves architects for 60 years—long before the Act of 1931 had ever been thought of, and it was difficult to understand why an old and reputable firm like this had been singled out for treatment like it was now receiving. It was but a small gap after Mr. Cole's death until now in which they called themselves architects. He asked the Bench in the circumstances to use their discretion under the Probation of Offenders Act and to dismiss the case because it was a case in which they would have to use their powers under the Probation of Offenders Act. Did they think it was right in these days, when people were not able to do anything in regard to putting up new buildings, was it commonsense or fair treatment to bring two partners in a business into a Criminal Court in war time because they had not scratched out the word architect from their advertisement and on their notepaper ? It was a farce, and he (Mr. Curtis Bennett) had no hesitation in characterizing it as such to bring this case into a court. The Registration Council as a statutory authority had not gone into the facts before bringing the case into court, he said. It was only a technical and most trivial case and a waste of time to bring it before the Bench. He submitted that the Council had behaved in a harsh and most unconscionable manner against a firm of such standing as Messrs. W. Brown & Co. At least, the Council could have chosen a better case and a better time to bring people of their standing before a Criminal Court.

George Macdonald Brown gave evidence in the course of which he stated that he knew that the late Mr. C. Phillips Cole was occupied two years in trying to become registered, and when he actually became registered, he was in a nursing home and died almost suddenly last October.

Richard Penn Cole, who said that he dealt mainly with the agricultural side of the business, and William Scott Baird, of Buckingham, employed by the firm, also gave evidence.

The Bench retired and on returning the Chairman said that they were of the opinion that a technical offence had been committed. But in the circumstances of the case the charges against both defendants would be dismissed under the Probation of Offenders Act, and they would have to pay costs of 4s. each.

•

CHADWICK PRIZE ESSAYS

The two prizes of £100 and £50 offered by the Chadwick Trustees for essays on the construction and management of air raid shelters, with special reference to ventilation, heating, sanitation and the provision of sleeping accommodation, have been awarded as follows :

First prize of £100 for the essay submitted jointly by Phillip O. Reece, A.M.INST.C.E., and S. L. Wright, M.D., M.R.C.P., D.P.H., of Wembley, Middlesex.

Second prize of £50 for the essay submitted by Jocelyn F. Adburgham, L.R.I.B.A., A.M.T.P.I., of Victoria Street, Westminster, S.W.1.

•

CHANGE OF ADDRESS

Mr. Edward Fincham, A.R.I.B.A., P.A.S.I., chartered architect and surveyor, has moved to the Red House, Orsett, Grays, Essex. Telephone : Orsett 93.

Mr. G. Alan Fortescue, F.R.I.B.A., architect and surveyor, to 25 Ludgate Hill, E.C.4 (City 7444) and 28 Alma Street, Luton (Telephone : 1583).

The R.W.A. School of Architecture to the Bristol Museum and Art Gallery, Queen's Road, Bristol.

•

REDFERN'S RUBBER WORKS

At a board meeting of Messrs. Redfern's Rubber Works, Ltd., held on January 15 the directors passed a resolution recommending that the following final dividends for the year 1940 be paid on February 15 : 3¾ per cent. on A and B preference shares, making 7½ per cent. for the year. 6¼ per cent. on ordinary shares, making 10 per cent. for the year, plus a bonus of 2 per cent. The annual meeting of the shareholders will be held at the registered office of the company at Hyde, on February 15, at 12 noon.

SOME QUESTIONS ANSWERED THIS WEEK :

★ *CAN you tell me the name and address of the person to whom I have to apply in order to obtain a licence or coupons for the purchase of Portland cement ?* - - - - - Q646

★ *I AM 17 years of age and am wondering whether I could take a course in architecture. Could you give me some advice?* - - Q647

★ *CAN you tell me the name and address of the manufacturers of an artificial stone which appeared on Information Sheets dealing with the methods of fixing artificial stone ?* - - Q648

THE ARCHITECTS' JOURNAL

INFORMATION CENTRE

DO NOT RING REGENT 6888

SINCE the Information Centre was set up in October, 1939, to help architects solve war-time problems, readers have been able to ask questions either by post or telephone.

The JOURNAL now announces that the telephone service of the Information Centre will be discontinued. There are two reasons for this curtailment. First, the great majority of questions which are now put to the Centre cannot be answered at once over the telephone. Second, the number of questions asked by telephone has been diminished by the interruptions and delays in the telephone system which have been unavoidable in recent months. During the same period postal enquiries have much increased.

The JOURNAL has therefore decided to suspend the telephone service of the Centre for the present. But it will do all it can to offset loss of time in the post by replying to all enquiries with the least possible delay.

Therefore any questions about architecture or building should be sent to :

THE ARCHITECTS' JOURNAL

45 THE AVENUE, CHEAM, SURREY★

★Readers in urgent need of an answer to a short question may be able to save time by telephoning it to VIGILANT 0087. The reply will come by post.

Q644

ARCHITECT, BIRMINGHAM. — *AIR RAID DAMAGE CLAIM. I write to suggest the preparation of a table of comparative percentage values of Building Costs compared with the March,* 1939, *Schedule of Prices, the officially recognized basis for pricing out all claims for Air Raid Damage. There are many cases of recently erected buildings where the amount of architect's original final certificate is known, and if a table were prepared of annual or six-monthly variations in price, set out on plus or minus per cent. lines, it would be most helpful for architects and others at the present time. For example : A building erected in* 1933 *and costing* £10,000 *could then be said to be worth a definite percentage increase or decrease as compared with March,* 1939, *prices. A claim figure could thus easily be adjusted to correspond with the actual certified cost and much time and trouble in rendering claims avoided.*

"The Architect and Building News" published a graph showing the trend of building costs from 1914 to 1941, in their issue dated 17th January, 1941. A copy can be obtained from the Architect and Building News, 2 Breams Buildings, London, E.C.4. Although this shows the trend it does not necessarily show accurately the

fluctuations in cost for any particular type of building. Unfortunately the rates of wages and the cost of all building materials do not fluctuate consistently and whereas the cost of building a house with wood floors and roof might have risen by 10 per cent. over a given period, the increase in cost of a steel-framed factory with asbestos roof and roof lights might have increased by considerably more or less, over the same period. Messrs. Davis and Belfield, who compile prices for THE ARCHITECTS' JOURNAL, have already been approached on the subject and they do not consider that it is possible to do anything very different from the chart already referred to. They point out that if more detailed information is not available the chart may be extremely useful, but that for comparatively recent jobs it should be possible to obtain greater accuracy by considering each one on its merits.

INFORMATION CENTRE

Q645

ARCHITECT, LEICESTER.—*I remember a really excellent BOOK DEALING WITH SCIENTIFIC BUILDING CONSTRUCTION was published some 12 months ago. I believe the authors were two technicians at the Building Research Station. Can you tell me the title of this book and other particulars? Also I believe a similar book dealing with SOUND TRANSMISSION IN BUILDINGS was published quite recently. Particulars of this also would be welcome.*

The books you require are almost certainly those given below:
Principles of Modern Building, Vol. 1, by R. Fitzmaurice, B.SC., ASSOC. M.INST. C.E. H.M. Stationery Office. Price 10s. 6d.
Sound Transmission in Buildings (Practical Notes for Architects and Builders), by R. Fitzmaurice and William Allen, B.ARCH., A.R.I.B.A. H.M. Stationery Office. Price 4s.

Q646

ARCHITECT, WINCHESTER.—*I should be obliged if you would kindly inform me as to the name and address of the person to whom I have to apply in order to obtain a licence or coupons for the PURCHASE OF PORTLAND CEMENT. I understand that applications for licences for cement should be made to the Government Department responsible for the type of work involved. This obviously applies to work of National importance, however, whereas the job in which I am interested is merely in connection with the basement of business premises, where it is intended to store important documents. I have made various enquiries but the answers are so conflicting that I should like your guidance.*

The Government has now discontinued the scheme under which vouchers were necessary in order to obtain Portland cement. You should, in future, be able to obtain cement from normal sources provided transport is available.

Q647

MANUFACTURER'S EMPLOYEE.—*I am 17 years of age, of secondary school education, and am wondering whether I could take A COURSE IN ARCHITECTURE. I belong to a firm who deals with drawings, etc., and should be much obliged if you could give me some advice. Could you let me know what I should study for, what exams. I should have in view and any other details or literature which might be of some assistance. I consider myself a capable artist, but have never gone beyond my school knowledge of architecture and perspective.*

If you wish merely to take a course in architecture (which presumably must either take the form of evening classes or postal tuition) you would normally be advised to go to one of the polytechnics. If you are particularly anxious to take a course now, and cannot find a suitable polytechnic course within reach of you, you might write to the two persons named below,* who undertake postal tuition. Such a course might enable you to obtain a job as a draughtsman in an architect's office, particularly if there is a building boom after the war, but you must appreciate that there are numerous fully trained assistants and you would not be likely to rise high in the profession unless you showed outstanding ability. We do not think that you will gain much by taking examinations unless you propose taking the full R.I.B.A. examinations, which will be a difficult matter in your present position. If you consider taking the examinations and entering the architectural profession, you would be best advised to write to the Secretary, The Board of Architectural Education, The Royal Institute of British Architects, 66 Portland Place, London, W.1, who will forward you all the necessary particulars. You will, no doubt, be recommended to attend at a recognized school with full time day courses for at least three years. Failing this you will probably have to attend evening classes or receive postal tuition for at least five years.

* *L. Stuart Stanley, M.A., A.R.I.B.A., 161 West Heath Road, London, N.W.4. SPEedwell 6745. C. W. Box, F.R.I.B.A., M.R.San.I., 115 Gower Street, London, W.C.1. EUSton 3606.*

Q648

ARCHITECT, LONDON.—*Can you tell me the name and address of the manufacturers of ARTIFICIAL STONE, which appeared on Information Sheets dealing with the methods of fixing artificial stone?*

The names and addresses of the manufacturers are:—Messrs. D. G. Somerville & Co., Ltd., 1 Buckingham Palace Gardens, London, S.W.1; Messrs. John Ellis & Sons, Ltd., 29 Dorset Square, London, N.W.1.

TRADE NOTES

Heating and Lighting of Shelters

In these winter months those who have to use their shelters find that tolerable heating and good lighting are necessities.

Reliability, economy, minimum of attention and safety, all these factors should be considered when the selection of a shelter heater is being made; the heater too is usually required to be cheap in first cost and simple to install.

Coke burning appliances of efficient design have much to commend them. The fuel supply can be kept at hand and is not subject to interruption by damage to supply mains, stoking should not be necessary more than twice a day, and with proper installation there is no risk of combustion gases entering the shelter; provision is made for the air supply to be drawn from outside.

The Eagle Range & Grate Company, Ltd., have produced a series of coke burning heaters specially designed for shelter requirements. The chief feature of the series is the precision of the combustion control, providing a liberal output of heat when required (i.e. when the shelter is unoccupied) and a very slow combustion rate, just sufficient to keep the fire alight, when the shelter is sufficiently warm and occupied. Those who have already had the responsibility of shelter heating thrust upon them will know that chief concern must relate to the provision of heat during the periods when the shelter is not in use—it must not be allowed to get cold and damp, particularly when mattresses and bedding

PROGRESS IN LIQUID STORAGE

No. 7
TANKS OF THE WORLD

These two pages were taken from the latest Braithwaite brochure, and illustrate two of the largest Pressed Steel Tanks in the world. They provide adequate supplies of water where a natural reservoir would have been impossible.

Responsible executives are invited to apply for a copy of this brochure, which provides a complete illustrated guide to the application of liquid storage for all purposes. Application should be made on business letter heading.

BRAITHWAITE & COMPANY ENGINEERS LTD.

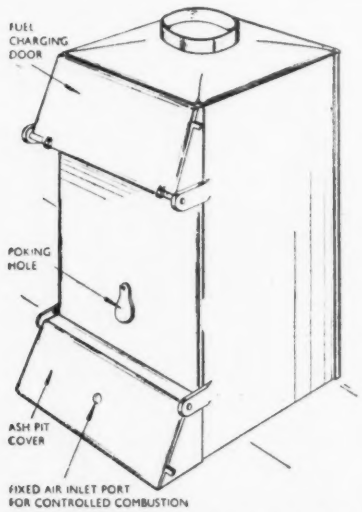
London Office *Temporary Address*

35 KINGS HOUSE · HAYMARKET · S.W.1.

BRIDGES · PIERS · JETTIES · STEEL BUILDINGS · SCREWCRETE PILES AND CYLINDERS · PRESSED STEEL TROUGHING · PRESSED STEEL TANKS

are stored there; with the shelter fully occupied very little artificial heat is required to maintain a comfortable atmosphere as, except in extreme weather conditions, the heat given off by the occupants is usually sufficient.

The sketch accompanying this note shows the Eagle small-shelter heater designed for small family shelters of the Anderson and other types; this has an approximate heating capacity of 2,500 cubic feet and the normal maximum fuel cost over 24 hours is estimated to be 2d. to 3d. These small heaters operate on coal.



Small shelter heater having a cubic capacity of approximately 2,500 cubic feet, suitable for small family shelters of the Anderson and other types.

The larger Eagle shelter heaters have an approximate heating capacity ranging from 15,000 to 5,000 cubic feet according to the type and size of heater selected.

Full details of all the seven different sizes made may be obtained from the manufacturers or from Radiation, Ltd., 7 Stratford Place, London, W.1.

BUILDINGS ILLUSTRATED

MEIR SCHOOLS, STOKE-ON-TRENT (pages 95-98). J. R. Piggott, A.R.I.B.A., Chief Architect; W. I. Watson, A.R.I.B.A., Assistant Architect for Educational Buildings. Messrs. Christiani and Nielsen, Ltd., acted as reinforced concrete engineers. Mr. H. Lawton was the clerk of works. The work was carried out in two contracts at a total cost, excluding furniture and fittings, of £37,247, including the cost of the caretaker's house and complete site works. The main contractors in each case were Messrs. Naylor and Nutt. Sub-contractors and suppliers included: Penfold Fencing, Ltd., fencing; W. Truswell and Sons, low pressure heating system; R. Crittall and Co., Ltd., panel warming; A. and F. Bew, electrical installation; Luxfer, Ltd., ferro-concrete roof lights; Hilcrete, Ltd., cast stone; Doodson and Bain, Ltd., metal windows and doors; A. Brown and Co., cloakroom fittings; A. J. Moss and Co., Ltd., sanitary fittings; Flexo Plywood Industries, Ltd., flush doors; Venesta, Ltd., w.c. doors and partitions; A. Wood and Co. (Longton), Ltd., cork tile flooring; May Acoustics, Ltd., acoustic plaster; J. Hill and Sons, trees and shrubs; Neville Watts and Co., Ltd., door fittings; Ruberoid Co., Ltd., roofing; Christiani and Nielsen, Ltd., cell concrete; H. L. Tucker, flooring work; Neuchatel Asphalte Co., Ltd., tarmac paving; City Gas Department, gas boilers, heaters; Berryhill Brickworks, Ltd., bricks; and Brittain Adams and Sons, grates.

CARMOUNTSIDE SENIOR SCHOOL, STOKE-ON-TRENT (pages 99-101). Same architects as for Meir Schools. The work, which cost £52,382, including an allowance of £8,500 for special precautions against mining subsidence, was carried out in two stages; firstly the reinforced concrete frame, and secondly the brickwork and finishings, the main contractors in both cases being Messrs. Sambrook Bros., Ltd. Sub-contractors and suppliers included: G. Hollins and Sons, Ltd., sanitary fittings; A. Brown and Co., cloakroom fittings; Hilcrete, Ltd., cast stone; Flexo Plywood Industries, Ltd., flush doors and w.c. doors and partitions; Doodson and Bain, Ltd., metal windows and doors; N. Watts and Co., Ltd., door fittings; H. L. Tucker, flooring work; May Acoustics, Ltd., acoustic plaster; J. Hill and Sons, trees and shrubs; Luxfer, Ltd., ferro-concrete roof lights; F. W. Harris and Co., Ltd., electrical installation; Penfold Fencing, Ltd., fencing; G. S. Hall, low-pressure heating installation; G. N. Haden and Sons, Ltd., panel warming; and Neuchatel Asphalte Co., Ltd., asphalt work. Messrs. Christiani and Nielsen, Ltd., acted as reinforced concrete specialists. Mr. H. Lawton was clerk of works.