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THE ARCHITECTS' JOURNAL

THURSDAY, FEBRUARY 10, 1938. NUMBER 2247 : VOLUME 87

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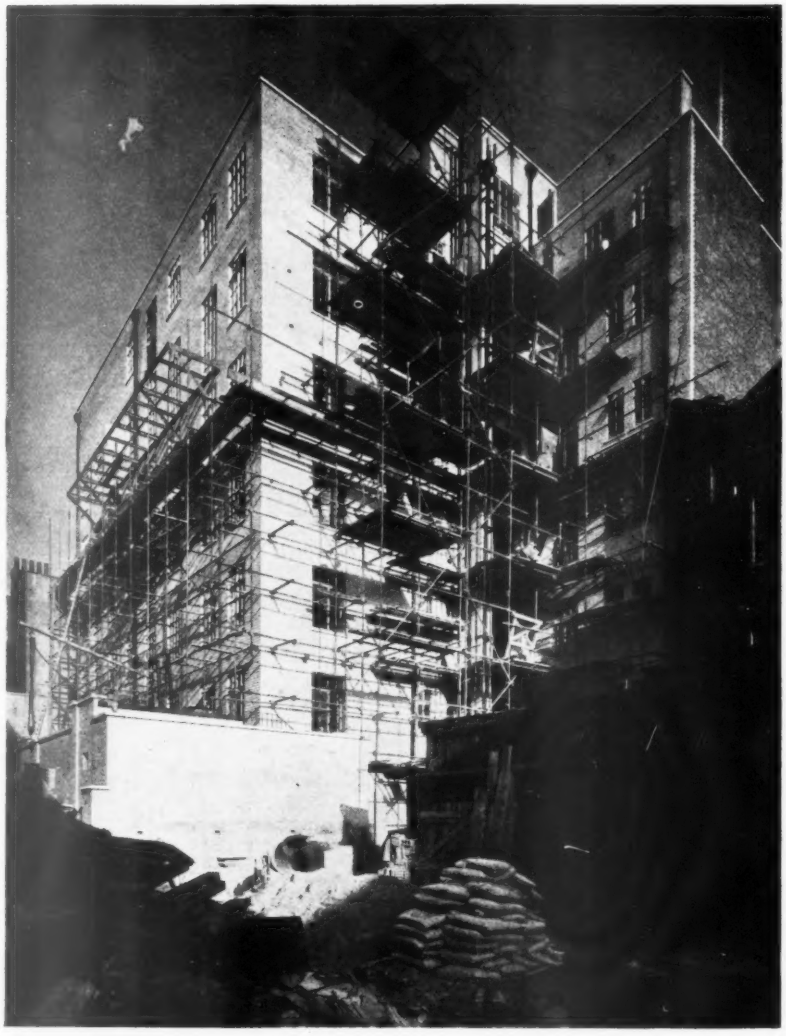
PRINCIPAL CONTENTS

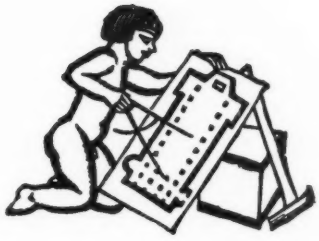
FILM COMPANY'S OFFICES



The new offices for the Twentieth-Century Fox Film Company in Soho Square is now nearing completion. The architect is Mr. Gordon Jeeves. Above is a progress photograph of the rear elevation. (Photo: Jack Bostock).

MADONNA DEL SASSO

The pilgrimage church of Madonna del Sasso, above Locarno, Lake Maggiore. Founded 1480 and rebuilt in 1569. (Photo: B. White.)



THE COMMISSION CONTINUES

THE Royal Commission on the Location of Industry continues to hold its sittings with businesslike absence of fuss. This, considering the importance of the terms of reference, may be taken as encouraging. Or it may not.

The location of industry is tied up with things like the decline of, and presumably permanent smaller activity in, the heavy industries, the spread of light industries, and the decline in population. But what put it on the map, or at least before a Royal Commission, is its strategic aspect—and this really means the size of the London area. Enormous, unmissable, close to the Continent and containing nearly a quarter of the country's inhabitants, London strategically was a weakness which really could not be ignored any longer—even if London from other aspects could have been.

The difficulty has been that London could not be examined by itself. And the problems of the location of industry and population now before the Commission brought with them almost every other problem raised by being alive at all. Town planning, housing, the birth rate, trading estates, are all before Sir Montague Barlow; and there as well, distinctly uninvited, are the public ownership of land and the full planned economy of Socialism.

Last Thursday, Mr. Humbert Wolfe, of the Ministry of Labour, gave evidence:

> There was usually a desire to establish a business in London or the South, and it required a great deal of persuasion to induce them (foreign firms) to go to depressed areas. The firms who had gone to depressed areas had increased their businesses to a greater extent . . . than those who started in the South.
>
> Dealing with the location of industry, he pointed out that in the past the individual industrialist had decided for himself where to establish his undertaking, but the consequence of his decision did not end with himself. The decision to transfer an undertaking to a new district might involve unemployment, might affect local authorities, and might increase rateable value in one district and decrease it in another.
>
> It seemed obvious that every practicable step should be taken to secure that in the establishment of industrial undertakings the fullest attention should be paid to all the aspects, economic and social, of the question in each case, and that industrialists should be induced to take the fullest advantage of the information available from all sources.
>
> Mr. Wolfe replied (to a question from the Chairman) that an advisory committee of an authoritative kind might have a considerable effect.

Mr. A. Noel Mobbs, Chairman of Slough Trading Estates, Ltd., also gave evidence:

> He said a lot of exaggerated statements had been made about industry moving to London and the South. What had happened was that there had been a growth in light industries as opposed to heavy industries. The manufacturer in the light industries usually decided to locate his factory within 10 or 20 miles of a great centre of population. From the point of view of cost of production, cost of distribution, and wide opportunity for sales, and to obtain labour, this decision was usually right.
>
> Dealing with the trading estates provided by Government assistance, he suggested that the Commission should consider carefully whether their experience proved that trading estates could be established wisely at will in other than the distressed areas on any grounds except an economic desire on the part of manufacturers to go to a particular neighbourhood.
>
> The trading estate was looked upon by some as the panacea for all evils. While not unimportant, its importance should not be exaggerated.

These two witnesses, the JOURNAL believes, may easily prove to be fair samples of the evidence which will come before the Commission. Mr. Humbert Wolfe represents the view that a crowded industrial population must eventually be regulated in its use of land by some kind of professional regulators if everyone is not to get in everyone else's way to an absurd, as well as inefficient and unhealthy, extent. Mr. Mobbs appears to think that manufacturers do not need Government help in deciding what is good for them. But even Mr. Mobbs, it will be noted, now believes that a Trading Estate (which is or ought to be a planned industrial area in miniature) has its uses.

Even if it assumed that the party of Mobbs rather than of Wolfe will publish the majority report, a change is probable in our attitude towards industry. London may remain much where and as it is, but the idea that at least new industries should be grouped together in efficient units and not be allowed to be littered about in the way of other activities may come to stay.

In this there ought to be something interesting for those in charge of publicity for architects and for those interested in the future of the A.A. School of Planning. The JOURNAL does not know whether any architects or anyone connected with the School are putting evidence before the Commission. If they are not, it would seem the first have been—at the least—negligent, and the second has missed a first-class opportunity.

Publicity for architects ought to keep up present prestige. That is being done. It ought also to look out for and prepare future fields of activity. The Trading Estate idea, small though its present showing may be, is the first form of territorial planning to be constructive instead of negative. Because constructive planning is bound to come the Trading Estate, factory grouping to begin with but bound to expand to cover all other needs of the workers on it, becomes a preliminary study for real territorial planning. Those who prepare the preliminary studies will probably be chosen to carry out the design.

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NOTES & TOPICS

PANELS

THE Public Relations Committee of the R.I.B.A. is still worried about the working of the Panel system. When the Town and Country Planning Act first came in, many people thought that the architects would find themselves holding a thorny stick, and as a recent R.I.B.A. memorandum says, "though the intention of the Act was to prevent badly designed and inappropriate building by unqualified persons, there is danger of undue interference with the work of qualified architects and the application of new methods of building."

*

That the employment of Panels will ever be obligatory instead of permissive is unlikely. But when the Government is politely suggesting that elderly J.P.s might well make way for younger men, the R.I.B.A. might do worse than try the same tactics.

*

I do not suggest that this would make the system perfect. The idea of the Panels was presumably that local architects, by kindly guidance, would be able to coax all builders into achieving a reasonable decency of external appearance in their schemes. In actual working almost the only schemes submitted to the Panels have been the "odd" ones—those possessing an external appearance which Building Committees of local authorities have not seen ten thousand times before. And the Panels seem certainly to have been quite as ready to pull the qualified architect "back to normal" when he has got a little ahead, as they have been to raise the standards of the speculative builder.

*

Soon architects must realise that, rather than have architect v. architect news in the Press every month or so, it were infinitely better to end the whole Panels system.

PUBLICITY AT THE A.A.

Seldom can an A.A. discussion meeting have had greater possibilities, not only for amusement but for generally constructive argument as well, than that on Tuesday, February, 1. Yet there was no connected thread running through the speeches. Mr. Ramsey performed the proper function of an opening speaker and threw out a series of suggestions—Mr. Bird and Mr. Yerbury kept both feet firmly on the ground—and Messrs. Ward, Hastings and Gloag trailed their coats (or burnt their boats) each in his own way.

*

Now would it not have been possible for all these speakers to have met a day or so before the meeting to decide what they were going to say? I seem to remember another meeting at the A.A. between architects and engineers which failed to be an outstanding success for the same reason.

*

Architects are not (let us admit it with regret) good enough extempore to allow the fuel provided by the opening speakers to be enough for those who follow—without its being supplied to them beforehand.

*

Good publicity depends largely on good organization well-concealed. A successful discussion (among architects) needs the same ingredient.

THE IDEAL CLIENT

Professor Albert Speer is now firmly entrenched as the official exponent of the Nazi style in Germany. Nuremberg, the Paris pavilion, and now he is "to transform the architectural face of Berlin during the next decade."

*

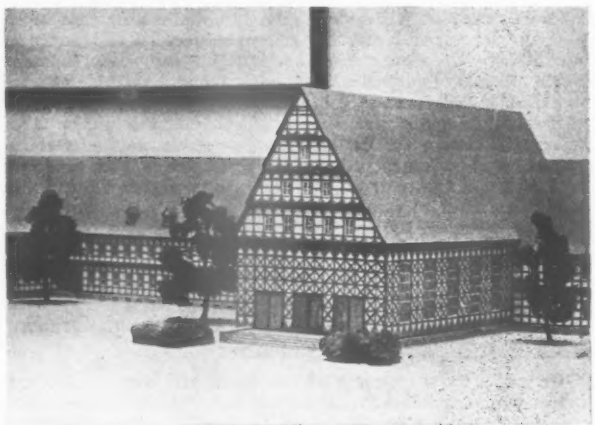
All with the backing of the Führer, whose speech at the opening of the German Architectural Exhibition at Munich seems to give him a pretty free hand. "The plans and models shown are the result of the quiet work of many years. This is typical of the National Socialist Reich, where great tasks are not subjected beforehand to public discussion. How can ordinary people measure their small minds against the minds of great men?" (See below.)

*

That's just the sort of client I should like.

GLASGOW

It is some weeks now since I got myself into hot water with the Glasgow Press for "passing remarks" about the Empire Exhibition, although actually I was only concerned



A model of the school for instructresses of the German Girls' Associations at Braunschweig; from the Munich Architectural Exhibition. The design is described as a return to the old peasant style.

A perspective of the proposed new headquarters for the B.B.C. in Belfast, work on which is shortly to begin. The architect is Mr. James S. Miller.

at the time with one exhibit. However, I am glad to be able to retract what I never actually said.

*

Seen under the worst conditions—the whole place a depressing sea of mud—Mr. Tait's work showed promise of real magnificence. The world will not get and, presumably, will not expect the lightness and *joie de vivre* that marks an international show, but the grey and solid north is making a big effort and may even give us something better. "Tait's" tower, although work on it has been held up owing to the high winds, is looking well and the cascade is fine—a sort of modernized Tite prize drawing come true.

*

In view of all this it would be an advantage if the world as a whole could be told that the Exhibition exists. It may have been unfortunate chance; but the only publicity I have seen, worth talking about, was in the vicinity of the Exhibition itself—the least useful place. In London the B.I.F. posters are already fairly prominent, but where are Glasgow's?

THE MAIL MUST GO THROUGH

Nowhere: unless the Exhibition is trusting in the publicity I saw in a Sunday paper.

*

The whole layout plan was apparently drawn out by the architect "with an ordinary pen and blue-black ink," during one Sunday afternoon; has not been altered since.

*

A weekly council meets every week with "magical results." One man could not supply 5 ins. by 4 ins. R.S.J.'s. It would take weeks to make them. The expert was asked if $4\frac{1}{2}$ ins. by 4 ins. would do. He said they would. The maker had plenty of $4\frac{1}{2}$ ins. by 4 ins. joists—the work went on.

*

I do hope this does not explain the misfortune of the Canadian Pavilion.

*

Those who were at Paris will hear with a gratitude equal to mine that 30,000 seats are being provided.

NEW YORK WORLD FAIR

Paris, Glasgow and New York; hard upon Glasgow has come the news that the British Pavilion at the New York World Fair in 1939 is to be designed by Messrs. Stanley Hall and Easton and Robertson.

*

There could hardly be a better choice, and no one will feel other than pleased. Nevertheless, we had regarded this as an opportunity for the D.O.T. to display an unwonted breadth of vision and hold an open competition. Under the inspiration of Paris, who knows what such a competition might or might not have produced? Mr. Howard Robertson of the same firm designed the pavilion at Brussels; presumably in 1941 it will be Mr. Oliver Hill's turn once more—that is, if the world does not feel by then that it has had a surfeit of exhibitions.

*

Not the least interesting feature of the New York World Fair will lie in observing where the Americans themselves draw their inspiration—so many roads are open to them, European precedents in the McKim fashion, Frank Lloyd Wright, Beaux Arts *via* Yale or the Professor of Architecture at Harvard—an embarrassing choice.

GLASS ON TOUR

The glass publicity train, now on exhibition at Victoria Station, is at the half-way stage of an elaborate English tour. The best advertisement of the material is that the train has covered some thousands of miles without so far suffering a single breakage.

*

The utilization of space inside is ingenious and effective: one compartment being almost too much so. This one is semi-circular in shape and panelled with mirrors to give the illusion of being fully circular. Any number of people have walked straight into the mirrors, deceived in spite of the fact that if they thought about it they would realize that the planning of the permanent way does not allow of one compartment in a railway train being twice as broad as the others. There is now a rope across.

*

As a conclusion, I suggest a well-staged crash when they have finished. It would be worth watching.

LUCREZIA BORGIA'S PARTY

Once at Murrayfield I saw 120,000 people all together. Using this as a basis there may have been rather fewer at Portland Place on Monday. One who ought to know said there were 400 and a higher official said 800. Anyway, they were more than enough to emphasize the success of the Social Committee's shows.

*

The Secretary, flitting in lounge suit through the building at a late hour, may have meant that one room was kept from the guests. The others were full to capacity.

*

A photograph exhibition, dancing, a Spanish dancer, the famous Borgia Party (twice nightly in the lecture hall) and several buffets were focal points. Those who couldn't or wouldn't go to these seemed happy enough where they were.

*

These parties having proved (*a*) that architects can be sociable; (*b*) that, properly handled, they are prepared to be sociable together, may have one regrettable consequence. If they continue, the JOURNAL may be compelled to start a "People and Parties" column, with bits about tulle and organdie. I will watch developments with anxiety.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

THE NEW HOUSING BILL

On Friday last the text of the new Housing (Financial Provisions) Bill was published. The Bill makes provision for further State assistance for slum clearance and the elimination of overcrowding, and lays down the rates of subsidy which will be payable for houses built for these purposes which are completed after January 1, 1939.

In order that progress may be made in both directions with equal vigour, the new subsidy will, for the first time, be uniform both for slum clearance and for overcrowding, and it will take the form of annual payments for forty years in respect of each new dwelling.

The Bill will be submitted to the House of Commons for second reading in about a week's time.

NOTTINGHAM APPOINTMENTS

Mr. E. W. Roberts, A.R.I.B.A., has been appointed county architect, and Mr. E. Frear, A.R.I.B.A., deputy county architect, to the Nottingham County Council.

"GLASS AGE" EXHIBITION TRAIN

The "Glass Age" Exhibition Train made its first appearance in the South of England when it arrived at Victoria Station on Monday last. The train will remain on view at Victoria, No. 6 platform, until February 12, between the hours of 3 p.m. and 9 p.m.

NEW L.C.C. FLATS IN HACKNEY AND STEPNEY

At Tuesday's meeting of the L.C.C., the Housing and Public Health Committee submitted a scheme, estimated to cost £137,500, for the erection of three blocks of flats, with accommodation for about 1,100 persons, in Gascoyne Road, Hackney.

The Committee also submitted proposals for the erection of five blocks of flats, to provide accommodation for about 550 persons, in Malay Street, Stepney. The total estimated cost of the scheme, which includes provision for a children's playground and a garden, is £70,850.

THE ARCHITECTS' DIARY

Thursday, February 10

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C. Exhibition of photographs by members. Until February 17.*

R.I.B.A., 66 *Portland Place, W.1. Photographic Exhibition arranged by the Camera Club. Until February 11.*

INSTITUTION OF CIVIL ENGINEERS. *At the Hotel Metropole, Leeds. "Experiments in Stress Distribution in R.C. Arches." By R. H. Evans. 7.30 p.m. Birmingham and District Association. At the James Watt Memorial Institute, Birmingham. "Estuary Channels and Embankments." By B. Cunningham. 6 p.m. Bristol and District Association. At the Royal Hotel, College Green, Bristol. "Moving Bridges, with particular reference to Bascule Bridges." By J. B. Bennett. 5 p.m.*

INSTITUTION OF ELECTRICAL ENGINEERS. *At Grosvenor House, W.1. Annual Reunion and Dinner. 7.30 p.m.*

INSTITUTION OF STRUCTURAL ENGINEERS. *At the Institution of Civil Engineers, Gt. George Street, S.W.1. "Examples of the Under-pinning of Heavy Structures." By W. Muirhead. 6.30 p.m.*

Friday, February 11

R.I.B.A., 66 *Portland Place, W.1. Annual Dinner. 7.30 p.m.*

TOWN PLANNING INSTITUTE. *At Caxton Hall, Caxton Street, S.W.1. "Planning a County." By W. R. Davidge. 6 p.m.*

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS (London and Home Counties Branch). *Annual Dinner. At the Park Lane Hotel, W.1.*

INSTITUTION OF STRUCTURAL ENGINEERS. *Western Counties Branch. At the Merchant Venturers' Technical College, Bristol. "Graphical Constructions for Loaded Frames." By C. F. Mountney. 7.15 p.m.*

Tuesday, February 15

HOUSING CENTRE, *Suffolk Street, S.W.1. "Housing Without Planning—A National Calamity." By F. J. Osborn. 1 p.m.*

Wednesday, February 16

INSTITUTION OF STRUCTURAL ENGINEERS. *Lancashire and Cheshire Branch—Junior Members' Section. At the Y.M.C.A., Peter Street, Manchester. "Design and Construction of Two-Hinged Steel Arch Bridges." By H. A. Whitaker. 7.30 p.m. Scottish Branch. At 129 Bath Street, Glasgow. "Notes on the Welding of High Tensile Structural Steels." By William Barr. 7.15 p.m.*

CHARTERED SURVEYORS' INSTITUTION, *Gt. George Street, S.W.1. Half-yearly general meeting of the Quantity Surveyor Members. Discussions will be opened on "The special problems of the Quantity Surveyor outside London," by T. Cuthbertson Hill, and "Pitfalls in the Path of the Quantity Surveyor," by B. G. Coffin, 8 p.m.*

LIGHTING SERVICE BUREAU, *Savoy Hill, W.C. "Lighting for Commerce and Industry." By H. Lingard. "Night Illumination in Relation to Town Planning." By John Gloag. 7 p.m.*

ROYAL SOCIETY OF ARTS, *John Street, W.C. "The Future Designer—from Elementary School to College." By Cyril Kisby. 8.15 p.m.*

A.A.S.T.A. ESSAY COMPETITION

Professor C. H. Reilly, O.B.E., Mr. H. deC. Hastings, Editor of the *Architects' Journal*, and Mr. F. J. Maynard, A.R.I.B.A., President of the A.A.S.T.A., assessors in the A.A.S.T.A. Essay Competition on "The Future and the Architectural Assistant," have made their award, as follows :

1st Prize (£20) : R. D. Manning, L.R.I.B.A., of 2 Pentley Park, Welwyn Garden City, Herts.

2nd Prize (£10) : Ailwyn Best, B.ARCH., A.R.I.B.A., of 6 Milborne Grove, S.W.10.

3rd Prize (£5) : Malcolm Mactaggart, L.R.I.B.A., of Bridge House, Welwyn, Herts.

Specially Commended : A. P. Hodgson, of 286 Derington Road, London, S.W.17.

Mr. Manning is an architectural assistant in the Middlesex County Council Architect's Department ; Mr. Best is in H.M. Office of Works, Mr. Mactaggart in the L.M.S. Railway Architectural Department, and Mr. Hodgson in the office of Messrs. Pite, Son and Fairweather. Mr. Manning and Mr. Hodgson are both members of the A.A.S.T.A.

A NEW COMPETITION

Conditions of a competition for timber cottages, organized by the Timber Development Association, are now obtainable from the Secretary of the Association, 47 King William Street, London, E.C.4. The assessors are : Sir Guy Dawber, R.A., and Messrs. C. H. James, Edward Maufe and John Gloag ; and the following premiums are offered : First, £100 ; second, £50 ; third, £25, and six special mention awards of £10 each. The object of the competition is to show how accommodation for agricultural workers can be provided at an economic rent, by timber-built structures. The latest date for submission of designs is May 2, 1938. Full details of the competition are printed on page xv of this issue.

BRITISH PAVILION, NEW YORK WORLD FAIR

In the House of Commons on Monday, Lord Balniel asked the Secretary to the Overseas Trade Department if an architect had yet been selected for the British pavilion at next year's New York World Fair ; and what steps were being taken to secure the co-operation of United Kingdom industry.

Mr. R. S. Hudson said that the reply to both parts of the question was in the affirmative. On the recommendation of a specially constituted and representative selection committee, he had appointed the firm of Stanley Hall and Easton and Robertson as architects for United Kingdom participation. In order to assist his Department to secure the maximum of possible co-operation from industry in this country, an advisory committee under his chairmanship had been set up, the membership of which was :

The Rt. Hon. the Lord Riverdale of Sheffield, K.B.E., and Sir Geoffrey Clark, C.S.I., O.B.E., a past and present President, respectively, of the Association of British Chambers of Commerce ;

Mr. Peter Bennett, O.B.E., J.P., and Mr. Guy Locock, C.M.G., Deputy President and Director, respectively, of the Federation of British Industries ; and

Mr. T. St. Quintin Hill, C.M.G., O.B.E., Comptroller-General, Department of Overseas Trade.

Sir P. Harris : "Will the hon. gentleman keep the design of this pavilion in the hands of his own Department in order to prevent a recurrence of the unfortunate experiment in Paris ?"

Mr. Hudson : "I have already stated that I set up a special selection committee to give me advice, and on their advice I have nominated this particular firm to be the architects."

EXHIBITIONS

[By D. COSENS]

THE exhibition at Rosenberg and Helft's is the second of Léger's work within the last few months. The last, at the London Gallery, was almost entirely confined to his very recent *gouaches*, the present one covers the period from 1912 to 1930. And it is, on the whole, much less satisfactory than the London Gallery show, for in that he had broken away to a new experiment. Though Léger was one of the earliest cubists, he seems to have changed very little between 1912 and 1930, and there is, within the scope of this exhibition, little development of his inventive quality. One is inevitably drawn to comparison with the immense distance travelled by Picasso, and in a lesser degree by Braque, from the cubist starting point. Any of these paintings of Léger's, hung alone in a large bare room, would make a grand wall decoration ; together they are all rather too much the

Aldous Huxley. By Sava Botzaris. From the exhibition at the Leicester Galleries.

same, and good directly in proportion to their derivation from Braque. In "Nature Morte" (11), the finest of them, this influence is most apparent and most successful. "Deux Femmes à la Nature Morte," painted ten years earlier, is also very fine and equally sensitive in colour.

•

Sava Botzaris is perhaps best known as a caricaturist. But he is also a sculptor—or rather he is a sculptor who, from the faithful observation of character, has evolved a shorthand for recording it. His work at the Leicester Galleries divides roughly into two groups, his "straight" portrait busts and drawings, and the brief sketches that sum up a character in a few lines. Simon, Beaverbrook and Churchill are mercilessly and accurately dissected—but not maliciously. One of the charms of Sava's caricature is that it is unusually free from malice, and simply an unbiased statement of essentials in the most economical terms. In much of his sculpture there is a narrow margin between portraiture and over-emphasis that is not so successful in this medium as in his drawings. In his best work, Aldous Huxley, Harold Nicolson, or "The Boxer," this is entirely lacking; in Hailé Selassié it crops up again in a stylization that is too mannered. His direct pencil portraits of Sir Louis Sterling, Baldwin and Wells are extremely good, and all his work shows great versatility and observation.

•

Edward Bawden has illustrated books, designed wallpapers, and practised almost every form of commercial art, including the design of displays for the British Pavilion at the Paris Exhibition last year. His work at the Leicester Galleries consists entirely of landscapes. It is original and charming, in the best sense of the word, and its success is very largely due to his great feeling for the texture of paint. This is unusual in water colour, and the way in which he lays on his dry, superimposed washes and scratches or cross-hatches the finished surface, is entirely his own and extremely successful. His preoccupation is very largely with the time of year or the hour of the day, "April 11 a.m." or "April 5 p.m.", and he renders these subtle differences in atmosphere with remarkable skill. In all his paintings of the countryside, there is life and movement and a feeling of space.

•

At the same galleries there is also a good collection of water-colours, drawings and sculpture by the London Group. The most interesting are John Piper's "Beach" in cut-out coloured paper and wash (11), Hans Feibusch's "Floating Figure" (23), Noel Adeney's "Effigies" (25), Edward Wolfe's "Laugharne Castle" (33), and John Nash's "Willow Grove" (34). All these, except the first, are typical of the work one expects from these painters at their best—the first, John Piper's "Beach" is much slighter than his usual work, but very successful.

•

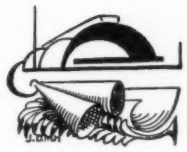
Léger. Rosenberg and Helft's, 31 Bruton Street. Until February 16.

Sava Botzaris. Leicester Galleries. Until February 21.

Edward Bawden. Leicester Galleries. Until February 21.

London Group. Leicester Galleries. Until February 21.

A perspective of the combined Services pavilion to be erected at the Empire Exhibition, Glasgow, by the Army and the Royal Air Force. The Architect is Mr. Launcelot H. Ross.



A PROPHECY

[By J. T. Rhys]

As far back as 1763 there was published in London an unpretentious little volume which greatly intrigues the curious today. It is a prophecy of what King George VI would be like and what events would occur to disturb and to glorify his reign.

Not for the first time in human history the prophecies have not been fulfilled, but even that does not detract from the interest of the volume. He prophesied that the throne of Britain would be occupied by George VI in the twentieth century; a successful hit, but he was wrong in the actual date which he gave as 1900-1925. How dangerous a trade (or is it a profession?) it is may be judged from the fact that he gave the population of North America (i.e. United States and Canada) in 1920 would be eleven million souls. Britain's national debt would be about £210,000,000. The prophecy purports to be a history, and Sir Charles Oman, who edited an edition published about forty years ago, thinks it was written to hint to George III the lines along which he should govern England.

What has interested me mainly is what he wrote about architecture and architects, town planning and public buildings, and especially what he wrote about London, which had so outgrown itself that a new capital had to be built which he named Stanley and which was located in Rutlandshire. What he said is so curious that it seems worth quoting *in extenso*.

The Arts and Sciences at this period in England wanted nothing but encouragement to raise them to a splendid height and to make the age of George VI rival any of those remote ones that are so celebrated in history. . . .

George had a natural taste for them; and what was of equal consequence to their success, was rich, liberal, and magnificent. Hitherto his time had been engrossed by more weighty concerns; but now that peace left him the master of his time, he displayed a taste and genius in more arts than that of war.

London, though the wonder of the world, never pleased the King. Its prodigious size was its only boast; it contained few buildings that did honour to the nation; in a word, it was a city finely calculated for trade, but not for the residence of the polite arts. The meanness of his Majesty's palace disgusted him; he had a taste for architecture, and determined to exert it in raising an edifice, that should at once do honour to his kingdom and add splendour to his court.

In Rutlandshire, near Uppingham, was a

small hunting box of the late King's, which George admired ; not for the building, but its beautiful situation. In his hours of rural amusements the king formed the design of raising a palace. Few parts of his dominions could afford a more desirable spot for such a purpose. The old seat stood on an elevated situation, which commanded an extensive prospect over the adjacent country. It was almost surrounded with extensive woods; which, having been artfully planted, added the greatest beauty to the prospect without intercepting the view. On one side there was an easy descent of about three miles, which led into an extensive plain, through which a river took its meandering course. Many villages seemed to rise here and there from out the woods, which gave a great variety to the scene, and the fertile plain was one continued prospect of villages, groves, meadows and rivulets, and all was in the neighbourhood of a noble and capacious forest.

This charming situation must have struck any person of less taste than the King ; he was charmed with it at the first sight, and soon after thought of building a palace on so advantageous a situation. The famous Gilbert, whose name is immortalized by so many works of genius, was, at that time, architect to the King. He drew the plans of several palaces, out of which his Majesty chose one ; and immediately set him about the work. Many difficulties were to be overcome, before even the first stone could be laid ; the fabric was to be built with Portland stone, which could not be brought to the spot without an infinite expense overland. To remedy this inconvenience, the parliament passed an act to make the river Welland navigable to the very plain, at the bottom of the hill on which the intended palace was to be raised. The same session also granted his Majesty a million sterling towards the expence of building this magnificent pile. The King spared no cost to render this edifice the most magnificent and superb palace in the universe. Gilbert had an unlimited power granted him to follow his genius in every particular, without the least restraint. Fleets of ships were continually passing from Portland to Hull and Lynn with cargos of stone, which were conveyed in barges to the place where the palace was to be built. Ten sail were sent to the different ports of Italy, to load the finest marbles. In short, nothing was spared to make this palace the wonder of the world ; but the erection of it was only a part of the King's design.

In the plain above described his Majesty formed the scheme of raising a city, but was staggered at the thoughts of the expence. However, Moor the architect hinted to him, that if his Majesty was to raise a few public edifices, and remove some of the courts from London thither, they would alone occasion numbers to build near their residence ; that his Majesty's fixing his own residence there, would also occasion a vast increase of building. The King was pleased with the thought, and determined to execute it. The great Gilbert drew the ground plot of that part which now reaches from St. Mary's Church quite to Great Hollis Street and Scotland Square. St. Stephen's was his work, too, and is a beautiful monument of his taste and genius ; that church and the Academy for Architecture were the two first public buildings that were raised ; Moor was the artist who erected the latter ; but this deserves a more particular mention.

Architecture was one of the King's favourite studies ; but its being an art was recommendation enough for that great monarch to encourage it. The plan on which this Academy was formed was finely imagined to secure a perpetual protection. It consisted of a President, with a salary of two thousand pounds a year ; Gilbert was the first. Six senior and twelve junior professors had, the former five, and the latter three hundred pounds a year each. What a noble institution was this ! Worthy the Monarch who formed the outline, and the Minister that finished the design. George had the satisfaction of seeing Stanley increased beyond what his most ardent wishes could have desired. Most of the nobility, and many of the rich commoners, in imitation of their Sovereign, erected magnificent palaces ; it grew the fashion among the higher order of his subjects to erect houses at Stanley. The Dukes of Suffolk, Buckingham, Richmond, Kent and Bridgewater, the Earls of Surrey, Winchelsea, Middleton and Bury, and Mr. Molesworth, particularly distinguished themselves by the splendour of their palaces, amongst many others. But what gave a prodigious increase to this noble city was the erection of the Senate House ; that noble building, which is now the admiration of all Europe, was the master-piece of the celebrated Moor. The front is certainly one of the finest pieces of architecture in the world. It was finished in 1913. The same year the Parliament assembled in it ; and here I cannot help quoting a passage in their address, as the praise it contains was perfectly merited by this great Monarch. "Assembled in this edifice, which is one of the many marks of your Majesty's magnificence, and princely encouragement of the arts and sciences, we cannot omit congratulating your Majesty on the completion of so noble a monument of your grandeur and the nation's glory. And we return your Majesty our most dutiful acknowledgements, for so splendid a mark of your esteem for your Parliament, which led you to erect so magnificent a Senate House out of your private revenue. We join with the rest of your Majesty's subjects in expressing our admiration of your royal and princely virtues ; your noble encouragement of the arts and sciences, adds a fresh lustre to the title of hero, which your Majesty's great actions had before most justly conferred." This session voted the King a million sterling for the senate house, and granted five hundred thousand pounds a year *till his Majesty's building should be finished*.

Nothing could exceed the magnificence of Gilbert's plan for this glorious city. The houses were all built to form one general front on each side of every street. Nothing was used but Portland stone. The streets were broad, well paved, and the buildings not too high. Many noble squares were marked out, and some finished. The theatre was the work of his Majesty himself, who drew the plan, and showing it to Gilbert, that great man told the King it had not a single fault ; but this compliment had not sincerity enough in it. It certainly contains some blemishes, but is undoubtedly a work of genius. The three centuries before his Majesty's reign did not produce so fine a building. Its simplicity and grandeur are admirable.

The name of the author is, so far as I am aware, a mystery, which is a pity.

LETTERS *FROM* READERS

LANCE AMADEUS

T. QUELCH

T. J. MURRAY

The MARS Exhibition

SIR,—since it is a pity to let a reactionary pass unchallenged, i ask to say a thing or two about the mars exhibition.

in the first room the sponsors remark so excellently that a house should function like a human being, and in the second they show that their's will not.

the first quality of man is that he is always changing. he changes his ideas and he changes his skin. but the martians use concrete to practise their humanism. i dont know why. a concrete building is an irrevocable statement . . . it endures for ever. it has the mobility of a marble dove. the man who is going to live in a monolith must first close his mind to all thoughts of improvement.

but the martians go further than this. not only do they fix the structure for all time, but they also plan the interior with scrupulous accuracy. the whole house is arranged to suit the conditions of one given moment. the sofa is planted here and the table there. it is all very nice. but if you suddenly want to keep a tame koala or have two more children or dance the big apple, you just cant do it.

accuracy and rigidity are of the greatest value but only so long as they are combined with freedom of action. the mars interior was a very pleasant room and i for one would be prepared to sacrifice a great many of my more exotic activities in order to live in it. but the sacrifice would have to be made, and the potential cost of a room goes up in proportion as its uses are narrowed.

but the martians are right. we must have a greater degree of fitness to purpose ; but—and this is a thing they keep forgetting—it can only be æsthetically justified by a decrease in cost.

now the martians are as extravagant as they know how. if they can find a new and expensive hardwood no one can stop them from using it. they are not interested in the duration factor nor do they worry overmuch about economics. on the one hand their merit seems so universal that their work will never become obsolete, and on the other—well that is the client's business.

i suspect that when they are alone in their closets, the greater part of the martians have a horror of the machine, and that their use of aero engine photographs was little more than an act of frenzied bravado.

there was some talk of prefabrication in the passage, but no great point was made of it. and prefabrication is the one thing that can make mars ideals practicable. buildings must be easily put up and easily taken down again, and furniture must be of some synthetic material that can be melted and remodelled. concrete is meant for roads.

but perhaps the most serious trouble with the martians is that they are determined to be architects. it suits them very badly. after all, they are the best we have got yet. and the architect is one of the most rare

phenomena of the age. he is distinguished from other men by a great aura of self-esteem. his traditional puff estranges him from technicians and workmen alike. someday, perhaps, he will gain and deserve his position of *régisseur* of the building industry. but only when he has welded it into a whole and learnt to work inside it. at the moment the industry is split into innumerable fragments, the architect being a heavenly body who floats at a distance. and the martians float with him. it is a pity. they are capable of so much and are actually doing so little. a new economy must be found to suit their ideals or else they will only evolve another style. in fact they have already done so. LANCE AMADEUS. W.

[*Punctuation and typography of this letter are the author's—Ed. A.J.*]

Air Raid Precautions

SIR,—I am not an architect. I am a workman deeply concerned with the position of people like myself, the head of a family, living in a typical working-class cottage dwelling. All my life I have been an active anti-militarist. During the Great War I underwent imprisonment and hard times—to say the least—on that account. I loathe militarism. I hate everything relating to the slaughter industry. I regard with the utmost detestation the growing militarism in our midst. Because I do so, and because, consequent thereon, I have given some study to the state of present affairs, I should like to make an appeal to architects to give the utmost consideration, in the light of their knowledge and technical experience, to the problems of Air Raid Precautions.

As I say, I am concerned about the situation of the working people, who number more than 90 per cent. of the population of Britain. They are poor. They are defenceless. They dwell in cottages, tenements, the rejected houses of the middle class ; crowded in the industrial areas, in the slums and mean streets, and in the housing estates in the suburbs which are scarcely much better. They go to work in the factories and workshops, stores and offices, munition centres, aircraft manufactories ; at the docks, railway stations and other focal points of transport, at the power stations, gas and electricity works, indeed, in all those places which, in the new art of war, are the special objects of air attack. Their children are assembled in the elementary schools, places which, to judge from what is happening in Spain and China, are also special military objectives.

The big towns are the big targets. In every respect. The principal aim in modern war is to smash the will of the people ; the will to resist, to fight. To this end war is conducted with the utmost ruthlessness, with the most deadly weapons, and with every means available, on land, on water, and, with increasing power and dominance, from the air. The aeroplane is, admittedly, the master weapon. The one law of modern war is illimitable lawlessness ; the abandonment of all standards of conduct, codes of ethics and morals, considerations of humanity. The greatest, most frightful massacre of human beings. The greatest destruction of property. The maddest excesses, the wildest criminal lunacy in every direction. Such is modern war.

The more weak and defenceless the people are the more hideous their murder. Think of Guernica. Think of the rape of Abyssinia. Think of the recent air raids on Barcelona and Valencia, and on the ancient towns of China. The more vital to the economic life of the people the property the more definite is the concentration upon its destruction.

With intimate study and detailed selection just those places are chosen as military objectives which will entail the maximum bloodshed, ruin and desolation. To be followed, inevitably, by widespread dislocation of industry, vast unemployment and poverty, hunger, famine, pestilence. The reckoning has not merely to be considered in terms of the actual war itself. The aftermath has also to be taken into account. The influenza epidemic of 1918, following the Great War, cost, we are told, twice as many lives as were lost in the war itself.

We must all be aware of the special vulnerability of this country. Britain is the most compact and most highly industrialized country in the world. We are so geographically situated that our big cities offer the most effective targets in the world. Especially London.

The more industrialized a country is the more sensitive it is to air attack. The more damaging is such attack. The big town is like a complex mechanism. Its living machinery is so intricate and delicate. Bombs dropped on a big town—smashing a key point or killing, maiming or even dispersing the workers at that key point—factory, docks, railway centre, aerodrome, etc., etc.—are like a spanner thrust into the very heart of an elaborated mechanism. It puts a whole system out of gear. Indeed, a bomb dropped in the middle of a road can do that. " In one street the explosive bomb tore a crater 20 ft. across, laying gas and water pipes and the sewer bare," says *The Times* report of an attack on Barcelona on January 19. Conceive what would result from a similar happening to a London highway, underneath the crust of which there is such a cobwebbery of mains, conduits, cables, pipes and sewers ? To slaughter, terrorize and scatter workers ; to destroy any focal point of transport, industry or commerce ; or even to sever the means of transmission of water, gas, electricity and sewerage would produce the most direful calamity over a large and enlarging area.

One need not be war-minded or pro-militarist to be conscious of the implications of all this. On the contrary, only the saddest kind of idiot could be conscious and still remain war-minded or pro-militarist. The best peace propaganda we could have would be that which would make the people understand what modern war implies.

I hold that human life is more sacred, more precious than anything else. Property, in my opinion, is only a secondary matter. How, in the present circumstances, we can protect human beings is my first consideration. If,

CHRIST'S COLLEGE, CAMBRIDGE

A perspective from the east of the new building by Walter Gropius and Maxwell Fry which has been under consideration by the Building Committee of Christ's College, Cambridge. The JOURNAL *regrets that in illustrating this scheme more fully last week it omitted the name of Professor Walter Gropius.*

by anything we can do now, no matter its cost, we can safeguard only one man, woman or child, in any respect, in any degree, we should do it. I should count it a blessing if, through any action of mine, any person were saved from being killed or crippled. That, in my opinion, should be the practical attitude of architects to Air Raid Precautions.

Either there is war danger or there is not. There *is* a danger of war, a grave danger of war. One must be completely detached from the realities of life, of happenings in the world, of the tragic state of international affairs, if one fails to realize it. The colossal expenditure on armaments by this country emphasizes the reality of that danger. War means air warfare. Air warfare in its most terrible, ghastly, devastating form. Is there nothing, therefore, which architects can do? No! There is much they can do.

We have it authoritatively stated that from 50 to 80 per cent. of the casualties from air attack arise from falling brickwork and masonry, bomb blast, flying pieces of shrapnel, splinters, etc. Protection against such casualties can surely be provided by architects and builders. The special thickening and strengthening of the walls and roof of a room in a cottage dwelling—say to 13 ins.—would probably resist blast pressure and provide protection against splinters and the lighter incendiary bombs. Stronger shelters *can* be built in blocks of flats and tenements, schools, factories and offices, cinemas, churches in any building where numbers of persons are usually assembled. Refuges, similar to those in Valencia, *can* be constructed along our highways. These are essentially structural problems. They are essentially problems for architects. They are not military problems. They are problems of passive defence. It is to save life, not to destroy it, that architects should act.

The people are crowded in the towns, like sheep herded for the shambles. The wealthy can get away. The workers are rooted to their homes and their work. What is the utmost that can be done for them in the way of structural protection? What are the reasonable, sensible things to do, in regard to all new buildings and to existing buildings to safeguard the lives of men, women and children? No matter, for the moment, the financial cost. That can be made a question of political agitation. What, for instance, would architects, collectively, agree, should be done with London to ensure its people the best protection?

I appeal to architects. I urge them, individually and collectively, to puzzle out the structural problems of A.R.P. More, I appeal to THE ARCHITECTS' JOURNAL to devote a special issue to A.R.P. The special numbers the JOURNAL has given us on Slums, London Slums, Factories, Schools, Cinemas, etc., are of extraordinary value. They have been a great stimulus to progress. One on A.R.P. would be tremendously helpful for Protection and for Peace.

T. QUELCH.

Salaries

SIR,—Your issue for January 20 contains an advertisement from South Shields Corporation offering a yearly salary of £200 for an assistant who must be an Associate of the R.I.B.A.

As the father of a boy who is at present studying at a school of architecture, I feel somewhat perturbed. If £200 represents the yearly cash value of an Associateship, parents will think twice before undertaking the heavy outlay necessary to enable their sons to secure this qualification.

Has the architectural profession no machinery for enforcing reasonable salary scales for its members? If so, why do you accept such an advertisement as the above?

I hesitate to believe that a great profession is so badly organized that its members must accept whatever salaries prospective employers may choose to offer.

T. J. MURRAY

From the A.A. exhibition of photographs by members: "Rotkogel Joch." By Bryan Westwood.

OBITUARY

Alan B. Munby

It is with deep regret we have to record the death, at the age of 68, of Mr. Alan E. Munby, F.R.I.B.A.

Mr. Munby was educated at Repton and Durham, Cambridge and Heidelberg Universities, and for several years studied natural science. In 1900 he turned to architecture and studied at the Architectural Association; he was articled to Mr. T. P. Figgis; qualified as an Associate of the R.I.B.A. in 1907; and five years later he was elected a Fellow of the Institute.

Mr. Munby was a member of the Science Standing Committee of the R.I.B.A., of which he was twice chairman, and on which he served almost continuously from 1907. He also served as joint secretary of the Practice Committee and as an Associate Member of the Council, and was responsible for papers at sessional meetings.

His architectural work included the Memorial Science Buildings of University College, North Wales; extensions, East Surrey Hospital; Clifton College Science School and Preparatory School; Science Buildings at Highgate School and Beaumont College; reconstruction of the Wigan Grammar School, and work at various public schools.

Charles Heathcote

We regret to record the death of Mr. Charles Henry Heathcote, F.R.I.B.A., of Branksome Park, Bournemouth.

Mr. Heathcote, who was 72 years of age, won the R.I.B.A. silver medal in 1869. He was articled to Messrs. Hanson and Son, of Bristol, and, in 1873, he commenced private practice in Manchester.

He was architect for the erection of important offices and factories during the time he was in business in the north, and during the war years acted for a branch of the Ministry of Munitions, designing and supervising the erection of vast warehouses for the storage of war material.

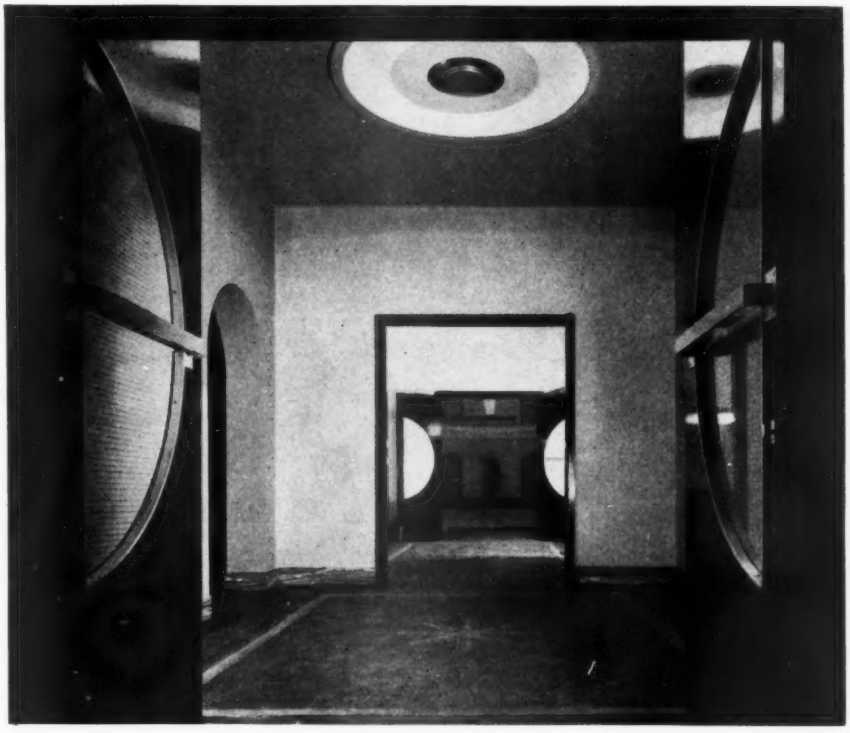
After the war Mr. Heathcote went into semi-retirement and lived in Bournemouth, but in 1926 he returned to his work, his firm being the architects and engineers to the Ford Motor Company for their factory at Dagenham—the largest of its kind in Europe—and also for their offices in Regent Street.

He finally retired five years ago, but since then even carried out some local architectural work.

He was elected an Associate of the R.I.B.A. in 1871; a Fellow in 1884; and was a vice-president of the R.I.B.A. (1922-1923).

ITALIAN CLUB, CHARING CROSS ROAD, W.C.

DESIGNED BY MICHAEL RACHLIS



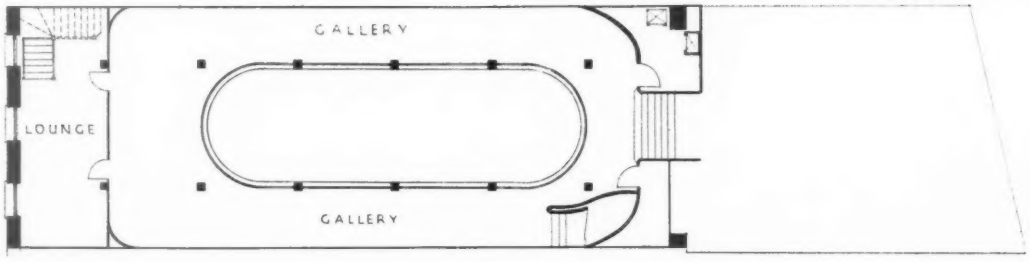
GENERAL PROBLEM—*Social club and administrative offices of the Italian colony in London.*

SITE—*Nos. 4–6 Charing Cross Road, W.C., formerly an old warehouse.*

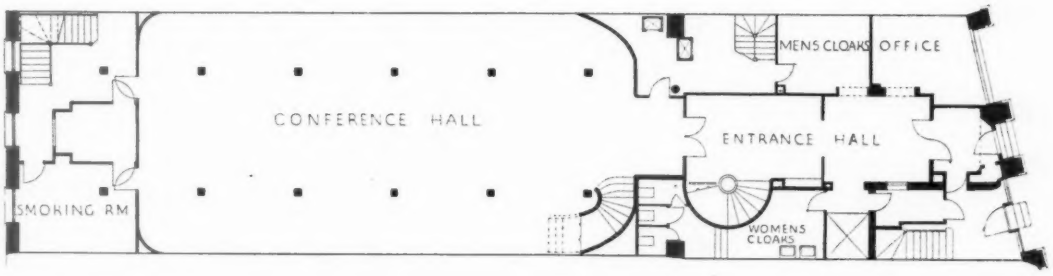
PLAN — *The building consists of basement and four floors on the street front; and basement, ground and gallery floors at the rear. The upper floors containing the offices are approached by a separate staircase. At the back of the building is another staircase designed to connect all floors to comply with the fire escape requirements of the London County Council. In the assembly hall are an Italian war shrine, Fascist and Italian emblems and flags, etc.*

The photograph is taken looking through the doors to the entrance hall and, beyond, through those to assembly hall.

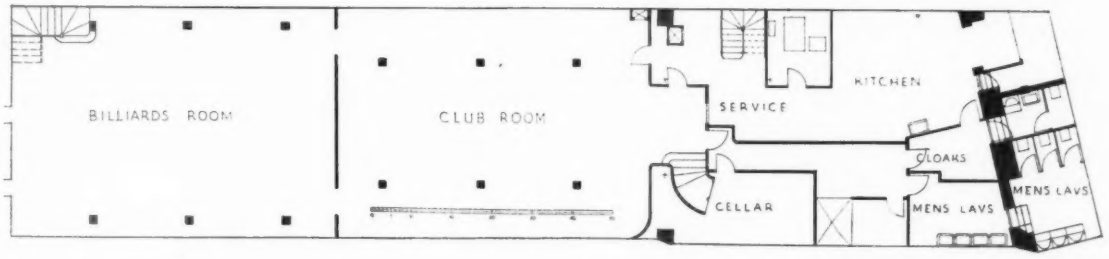
FIRST FLOOR PLAN



GROUND FLOOR PLAN



BASEMENT PLAN

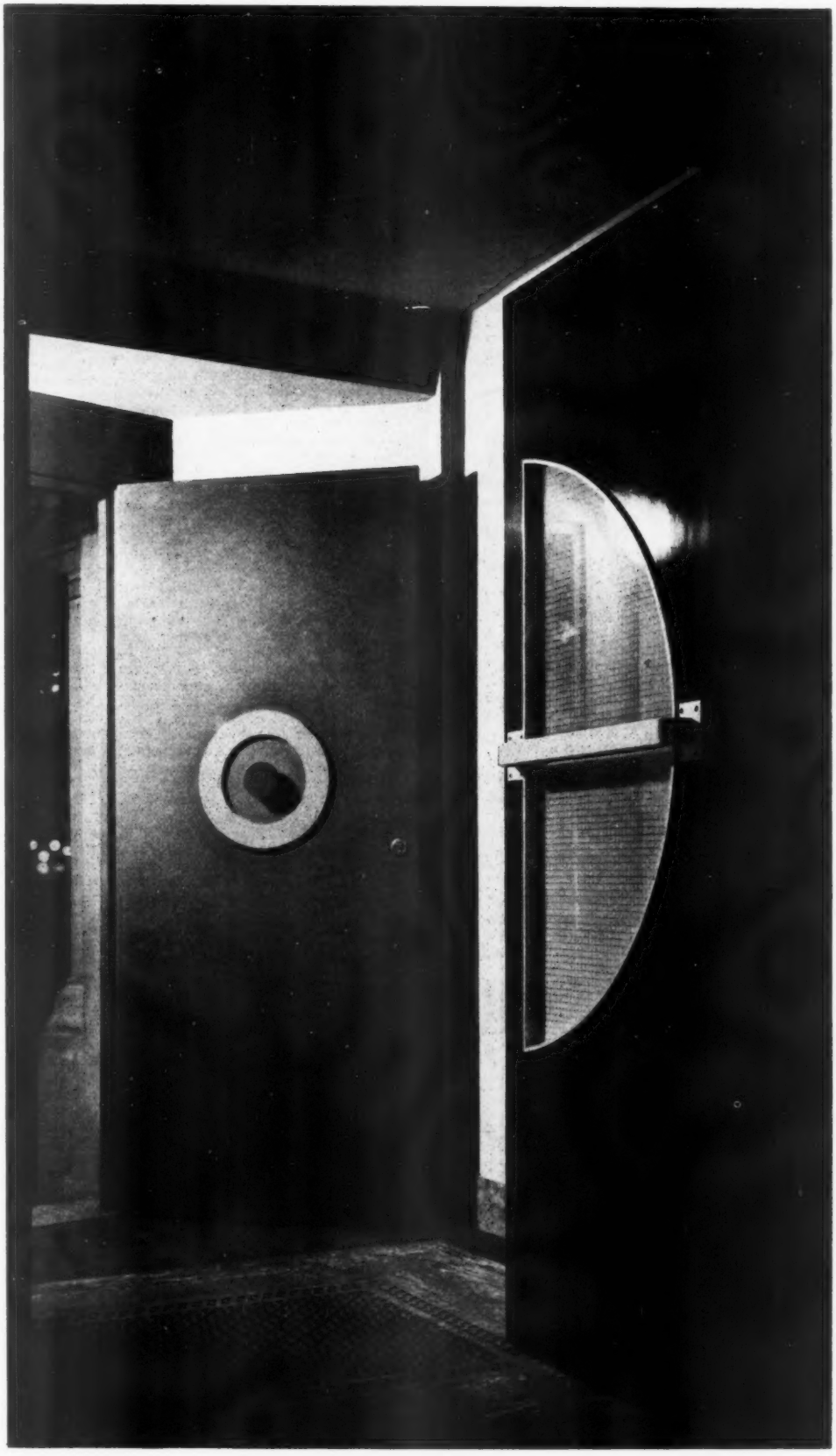


ITALIAN CLUB, CHARING CROSS ROAD, W.C.:

The photographs show: left and below, two views of the assembly hall; bottom, the top of the staircase leading from the entrance hall down to the basement; and a view in the gallery. (The photograph below is reproduced by courtesy of H. N. Barnes.)

CONSTRUCTION — *The street elevation was left as existing, except for alterations to the entrance doors. In the interior the alterations have been made in steel, breeze blocks, plaster boards and fibrous plaster. The roof of the old warehouse, now the assembly hall, was of ordinary lantern construction. A new ceiling has been formed below this, with a laylight blanking the iron and timber construction of the old roof. This laylight is designed to ventilate the assembly hall and the gallery.*

DESIGNED BY MICHAEL RACHLIS



INTERNAL FINISHES—

Floors are: assembly hall, strip oak; restaurant, Burma teak blocks; lobbies and all other rooms, rubber. Walls, plaster painted a mottled light grey and white. Skirtings, entrance lobby and hall, marble; other rooms, walnut covered with an anodized aluminium angle. This angle is used also for the staircase skirtings which, like the treads and risers, are of rubber. The balustrade to the gallery of the assembly hall is wrought iron, painted off white and has a silver anodized aluminium handrail. The semi-circular staircases leading up to the gallery and down to the basement have handrails in the same material. The doors of the entrance lobby and those of the assembly hall are double-glazed with fabric between the glass. In the assembly hall the lighting fittings are of lantern type finished red and glazed with flashed glass in varying tints; and the columns are plaster-covered and inset in various coloured lines.

For list of general and sub-contractors, see page 266.

The photograph shows one of the street doors and, right, one of the doors leading to the entrance hall.

R.I.B.A.

NEWS BULLETIN

Health, Sport and Fitness Exhibition.—Four public lectures will be given during the run of the exhibition. On private view day, March 2, at 5 p.m., Mr. John Gloag will speak on "The Object of the Exhibition." "Health and Welfare" will be discussed by Dr. J. Graham Forbes on Wednesday, March 9, at 6.30 p.m. Mr. A. J. A. Symons is to talk on "The Rights of Leisure" on Tuesday, March 15, at 6.30 p.m., and Mr. W. W. Wakefield, M.P., on "Organizing Sport" on Wednesday, March 23, at 6.30 p.m.

Informal General Meeting.—"Trunk Roads" are to be discussed at the second informal general meeting on Wednesday, February 16, at 6.30 p.m. Sir Charles Bressey, whose new road plan for London is shortly to be published, will be the chief speaker. Other speakers will be Mr. E. H. Fryer, Deputy Secretary of the Automobile Association; Mr. A. T. V. Robinson, of the Ministry of Transport; and Mr. G. H. Jack, of the C.P.R.E. Professor W. G. Holford, A.R.I.B.A., will be in the chair.

D.I.A. Meeting.—After the annual meeting of the Design and Industries Association on Wednesday, February 23, there will be a meeting, open to the non-members of the D.I.A., when "Design in General Education" will be discussed by Miss Marion Richardson, Miss Margaret Bulley, Mr. Leslie Brewer, and Mr. R. R. Tomlinson. Lord Sempill will be in the chair. The meeting is at 8.30 p.m.

Touring Exhibitions.—"Airports and Airways" is opening in Belfast on February 21. "Civic Centres" is at the Public Library, Museum and Art Gallery, Folkestone, until March 13. "Modern Schools" is opening at the Corporation Museum Art Gallery, Newport (Mon.) on February 28.

R.I.B.A. EXAMINATIONS

The questions set at the Intermediate, Final and Special Final Examinations held in November and December, 1937, have been published, and are on sale at the Royal Institute, price 1s. (exclusive of postage).

Below is a list of the dates on which the R.I.B.A. examinations will be held in 1938 and 1939. The dates on which the Final and Special Final Examinations will be held in the winter of 1938 have been altered from those previously published to those given in the list below.

Intermediate Examination

May 20, 21, 23, 24 and 26, 1938. (Last day for applications: April 20, 1938.)

November 18, 19, 21, 22 and 24, 1938. (Last day for applications: October 18, 1938.)

May 19, 20, 22, 23 and 25, 1939. (Last day for applications: April 19, 1939.)

November 3, 4, 6, 7 and 9, 1939. (Last day for applications: October 3, 1939.)

Final Examination

July 13, 14, 15, 16, 18, 19 and 21, 1938. (Last day for applications: June 13, 1938.)

November 30, December 1, 2, 3, 5, 6 and 8, 1938. (Last day for applications: October 28, 1938.)

July 5, 6, 7, 8, 10, 11 and 13, 1939. (Last day for applications: June 5, 1939.)

November 29 and 30, December 1, 2, 4, 5 and 7, 1939. (Last day for applications: October 27, 1939.)

Special Final Examination

July 13, 14, 15, 16, 18 and 19, 1938. (Last day for applications: June 13, 1938.)

November 30, December 1, 2, 3, 5 and 6, 1938. (Last day for applications: October 28, 1938.)

July 5, 6, 7, 8, 10 and 11, 1939. (Last day for applications: June 5, 1939.)

November 29 and 30, December 1, 2, 4 and 5, 1939. (Last day for applications: October 27, 1939.)

Statutory Examination for District Surveyor and the Examination for Building Surveyor

May 4, 5 and 6, 1938. (Last day for applications: April 4, 1938.)

October 5, 6 and 7, 1938. (Last day for applications: September 5, 1938.)

May 3, 4 and 5, 1939. (Last day for applications: April 3, 1939.)

October 4, 5 and 6, 1939. (Last day for applications: September 4, 1939.)

COUNCIL MEETING

Following are some notes from a recent meeting of the Council of the Institute:—

British Standards Institution.—The Science Standing Committee reported with regret that owing to ill-health Mr. Percival M. Fraser had found it necessary to resign from various Committees on which he was serving. On the recommendation of the Science Standing Committee Mr. C. J. Morreau (A.) was appointed to succeed Mr. Fraser as one of the R.I.B.A. representatives on the Building Divisional Council of the British Standards Institution and Mr. R. J. Angel (F.) was appointed as Mr. Fraser's successor on the British Standards Institution Technical Committee B/8, Asbestos Cement Sheeting.

Joint Lighting Committee of the Architectural Profession and the Electric Lamp Manufacturers' Association of Great Britain.—The following members were appointed to represent the R.I.B.A. on the Joint Lighting Committee of the Architectural Profession and the E.L.M.A.: Messrs. D. L. Bridgwater (A.), Walter Goodesmith (A.), E. Brian O'Rorke (A.), Howard Robertson (F.), and Thos. E. Scott (F.).

International Federation for Housing and Town Planning.—Mr. John Dower (A.) was appointed as one of the R.I.B.A. representatives on the International Federation for Housing and Town Planning in place of Professor S. D. Adshead, who was unable to accept reappointment.

Royal Sanitary Institute Health Congress, Portsmouth, 1938.—Mr. A. L. Roberts (F.) (President of the Hampshire and Isle of Wight Architectural Association) was appointed to represent the R.I.B.A. at the Health Congress of the Royal Sanitary Institute which will be held at Portsmouth from July 11 to 16, 1938.

Women Members' Committee.—Miss B. Acworth (L.) was appointed a member of the Women Members' Committee.

Welding Regulations.—A letter was submitted from the London County Council thanking the Institute for the co-operation and assistance rendered in connection with the statutory regulations to be made under Section 9 (2) of the London Building Act (Amendment) Act, 1935, relating to applications for modification or waiver of certain of the building Bye-laws, so as to permit of the use of electric (metal) arc welding.

Alteration of the Rules of the York and East Yorkshire Architectural Society.—Certain alterations of the Rules of the York and East Yorkshire Architectural Society were formally approved by the Council.

Membership: Reinstatements.—The following ex-members were reinstated: As Associates: Messrs. H. A. Burton and C. E. Cornish.

Resignation.—The following resignation was accepted with regret: Mr. A. R. Piercy (RETD. L.).

Transfer to the Retired Members Class.—The following members were transferred to the Retired Members Class: *As Retired Fellows:* Messrs. C. E. Blackbourn, E. S. Collins, S. W. Cranfield, F. W. Deas, L. Jacob, J. Keppie, W. A. Pite and C. Saunders. *As Retired Associates:* Messrs. E. W. Lees, G. J. T. Reavell and W. S. Tucker. *As Retired Licentiates:* B. Cooper, W. J. Dilley, H. Oldfield, A. C. Ridsdale and Evan Roberts.

Election of Students.—The following Probationers were elected as Students of the R.I.B.A.: Messrs. D. Bailey (Northern Polytechnic); J. N. Bruce (Architectural Association); (Miss) J. T. Byford (Liverpool School of Architecture); S. J. Clewer (Birmingham School of Architecture); J. P. Coia (Glasgow School of Architecture); J. H. Donald (Robert Gordon's Technical College, Aberdeen); N. D. Eyres (Northern Polytechnic); G. R. Hipwell (Nottingham School of Architecture); F. M. Jones (Liverpool School of Architecture); T. F. Lyon (Glasgow School of Architecture); G. E. Magnay (Architectural Association); W. N. Miles (R.W.A. School of Architecture, Bristol); D. Morgan (Liverpool School of Architecture); H. C. Parsons (R.W.A. School of Architecture, Bristol); T. E. Patrick (Edinburgh College of Art); E. O. Purser (The Polytechnic, Regent Street, London); M. Ryan (Architectural Association); J. P. Tingay (Architectural Association); J. E. Wheeler (Leicester College of Arts and Crafts); and (Miss) O. C. Wood (Architectural Association).

HEALTH, SPORT AND FITNESS EXHIBITION

Lord Aberdare, Chairman of the National Fitness Council, is to open on Wednesday, March 2, an Exhibition entitled "Health, Sport and Fitness" which has been organized by the R.I.B.A., at 66 Portland Place, W.1. The Exhibition will remain open until March 31 and will then go on a tour of the principal cities and towns of England.

The Exhibition will consist of some 700 photographic enlargements, models, diagrams and plans, arranged to relate a series of "stories." It will be divided into two main sections entitled "Everyday Health" and "Planning Physical Fitness."

The "Everyday Health" Section will show how health is secured and improvement can be made by town planning, collective health services, the provision of clean food and by healthy living and working conditions in home, school, office and factory.

The second section, entitled "Planning Physical Fitness" will show how the extensive planning requirements of the Government's National Fitness Campaign can be best and most economically met. It includes a subsection "Physical Fitness and the Countryside" which will show how a network of sport and recreation facilities can be provided all over the country. A special subsection will be devoted entirely to children. Another subsection will illustrate the best examples from all over the world of the enormous variety of buildings designed to serve the ends of sport. Leisure and the strenuous recreations are not forgotten.

The central exhibit will be a model, 13 ft. by 10, of an ideal Sports Centre for a small town. This has been planned by a group of architect-experts and will show how the requirements in sport and recreation of all ages and both sexes can be met in a single centre which can be repeated as a unit in other parts of the town.

The Exhibition will be open free to the public.

Announcements

The telephone number of Mr. G. Grey Wornum (39 Devonshire Street, W.1) has been changed to Welbeck 0067.

Mr. Eric N. Smallwood, L.R.I.B.A., has resigned his appointment as architect to Messrs. Express Dairy Co., Ltd., of Tavistock Place, London, W.C.1, and has commenced in practice on his own account. His address for the time being is 46 Farm Road, Edgware, Middlesex. Telephone No.: Edgware 4212.

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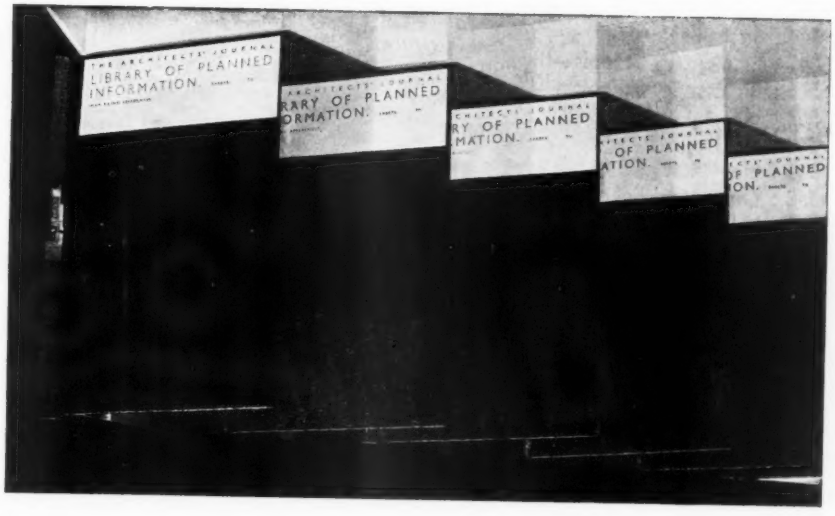
INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

599 Heating (Electrical)

600 Sewage Disposal



In order that readers may preserve their Information Sheets, specially designed loose-leaf binders are available similar to those here illustrated. The covers are of stiff board bound in "Rexine" with patent binding clip. Price 2s. 6d. each post free.

Sheets Issued since Index :

501 : Aluminium
502 : Fixing Blocks
503 : Approximate Estimating—XII
504 : Aluminium
505 : Aluminium
506 : Approximate Estimating—XIII
507 : Plumbing : Jointing of Copper Pipe
508 : Roofing—Valley Flashings
509 : The Equipment of Buildings
510 : Aluminium
511 : Elementary Schools—II
512 : School Lighting
513 : Approximate Estimating—XIV
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522 : Reinforced Asbestos-Cement Roofing Tiles
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526 : Leadwork to Photographic Developing Tanks
527 : Asbestos-Cement Corrugated Sheets
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555 : A.B.M. Draining Boards
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558 : A.B.M. Rainwater Pipes
559 : Flashing
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561 : Asbestos-Cement Roofing
562 : A.B.M. Rainwater Gutters and Fittings
563 : Asbestos-Cement Roofing
564 : The Equipment of Buildings
565 : Air Conditioning
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567 : Plywood—I
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569 : Gas Cookers
570 : A.B.M. Moulded Gutters and Fittings
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582 : Heating Stoves Burning Solid Fuel—II
583 : Plumbing
584 : Free Standing Gas Panel Heaters
585 : Leadwork
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588 : Roof, Floor and Wall Tiling
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590 : Heating
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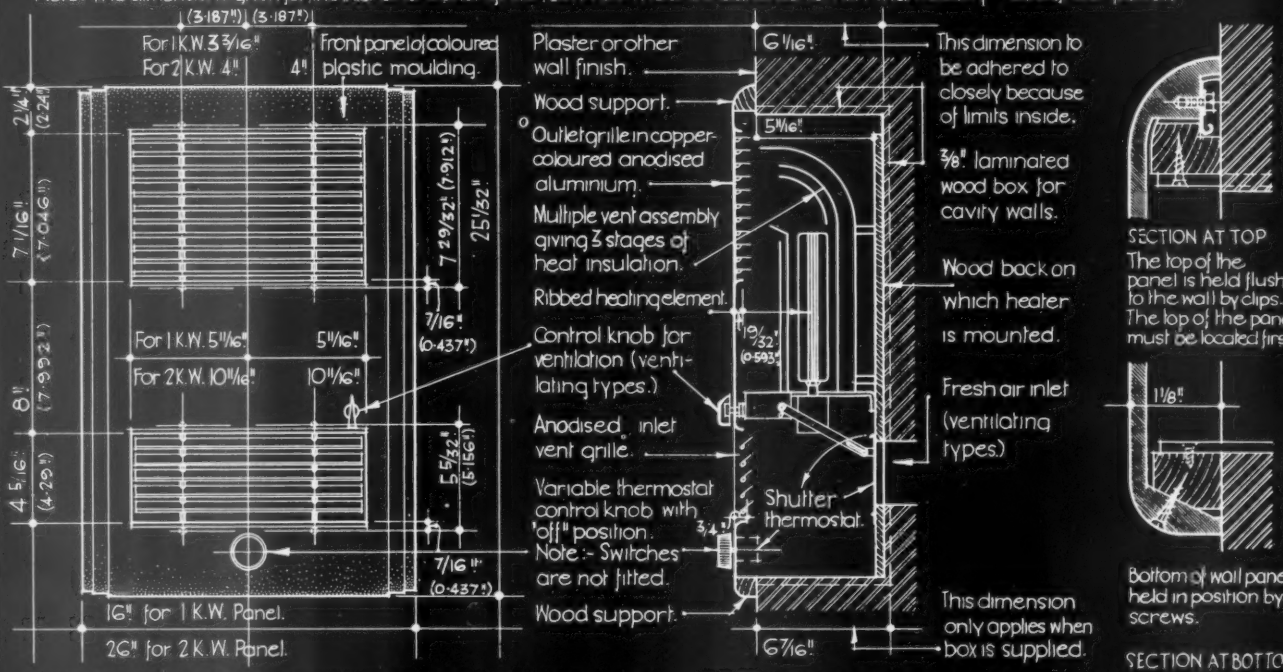
592 : The Equipment of Buildings
593 : Electric Lighting
594 : Sheet Leadwork
595 : Reinforced Brickwork
596 : Gas Heating Equipment
597 : Sanitary Castings
598 : Heating Equipment

CONSTRUCTION AND DIMENSIONS OF THE ·THERMOVENT· INSET ELECTRIC CONVECTION HEATER :

Note: The dimensions given for the inlet and outlet grille centres must be adhered to with individually - designed panels.



FRONT ELEVATION OF HEATER. SCALE : 1½" to 1'0" VERTICAL SECTION. SCALE: 1½" = 1'0"

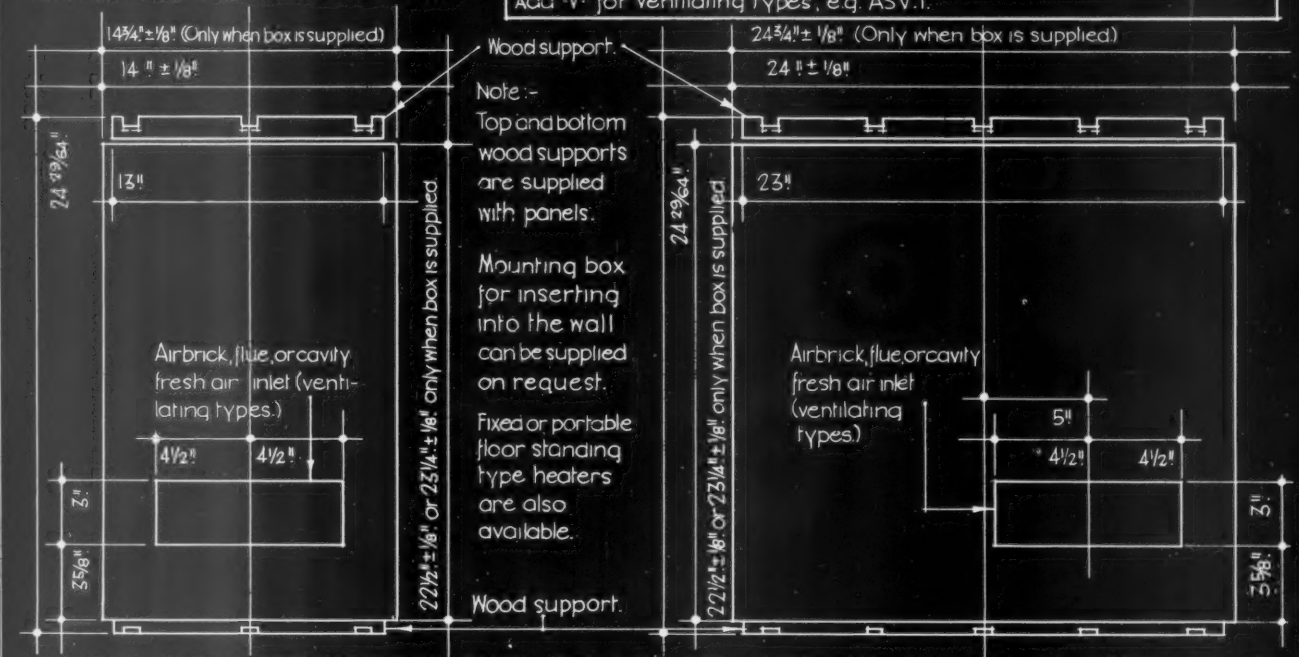
SECTION AT TOP
The top of the panel is held flush to the wall by clips. The top of the panel must be located first.

Bottom of wall panel held in position by screws.

SECTION AT BOTTOM OF WALL PANEL.

½ F.S. SECTIONS THROUGH WOOD SUPPORTS.

TYPE.	1. KILOWATT.	TYPE.	2. KILOWATT.
A. 1.	Non-controlled.	A. 2.	Non-controlled.
AC. 1.	Controlled.	AC. 2	Controlled.
AS. 1.	Skeleton form (non-controlled) i.e. without panel, with grilles.	AS. 2	Skeleton form (non-controlled) i.e. without panel, with grilles.
ASC. 1.	Skeleton form (controlled.)	ASC. 2	Skeleton form (controlled.)
Add ·V· for ventilating types, e.g. ASV. 1.			



ELEVATION OF WALL OPENING FOR 1 K.W. PANEL. SCALE: 1½" to 1'0" ELEVATION OF WALL OPENING FOR 2 K.W. PANEL.

Information from E. K. Cole Ltd.

INFORMATION SHEET : HEATING : ELECTRICALLY OPERATED INSET CONVECTION HEATERS :
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1· Oscar A. Bayne.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 599 •

HEATING (ELECTRICAL)

Product : Thermovent Convectors

Type illustrated :
Inset type Convectors (1 kw. and 2 kw.)

Description :

The Thermovent is an electric convection heater employing a patented system of multiple vent assembly, designed to give high convection efficiency in compact form.

The design ensures surface temperatures no higher than room temperature, and thus prevents wall blackening either by secondary convection from a hot surface, or by direct hot air stream. This, in the Thermovent, is projected with considerable velocity away from the wall.

The cool air is drawn through the bottom grille, passes over a ribbed heating element and is projected from the outlet grille, creating a constant circulation of warm air. This system of vents gives three stages of heat insulation, there being no radiation effect.

Estimating :

The volume of air passed per hour per kilowatt is 2,600 cu. ft. The average loading varies from 0·8 to 1·2 watts per cu. ft. up to a room height of ten feet. Increased loading gives a quicker temperature rise, usually accompanied by economy in current consumption.

Fresh Air Inlet :

Both styles can be provided with a fresh-air inlet, from airbrick, flue or cavity, and controlled from the front of the panel. This arrangement provides a supply of warmed fresh air and tends to equalise the inside and outside air pressures and thus minimise draughts.

Thermostat Control :

Standard models are for use on A.C. mains, being fitted with built-in thermostat control, continuously variable from 55° to 75° F. with "off" position, the control knob being at the base of the panel.

All models are available without thermostat for manual control, or for use on D.C. in conjunction with separate thermostat. Switches are not fitted. Mains voltage and whether A.C. or D.C. must be stated when ordering.

Finish :

The vent assembly is supplied on a laminated backboard for fitting into a suitable recess. A standard $\frac{3}{8}$-in. laminated wood box can be supplied for plastering flush, and boxing-in in the case of cavity walls. The standard front panel is a plastic moulding, walnut or black, with inlet and outlet grilles in copper-coloured anodised aluminium. Panels in other colours can be supplied to special order.

Both 1 kw. and 2 kw. types are available in skeleton form, i.e. without panel, but with grilles for mounting in panelling to architect's own design. As the outer surface remains cool, a wide choice of panel materials is permitted. The vent assembly is fixed independently of the panel, which is not fitted until after the building and decorating work is completed.

Floor Standing Types :

Where depth of wall or other circumstances prevent the use of the inset type Thermovent, floor standing types can be specified. These can be fixed to wall or floor, or used as portable heaters. These are available in similar ratings, with or without thermostat control. Certain models also include a luminous effect.

Illuminated Types :

An illuminated version of the standard panel can be supplied to special order. The exit louvres take the form of annealed glass rods which diffuse the light from a concealed source.

Booster Type Heaters :

Booster types (1 and 2 kilowatt sizes) are available for connection in the outlets of Plenum, air-conditioning systems, etc., to boost local temperatures where required. Booster types will be indicated by the addition of the letter B (e.g. AB. 1).

Name of Manufacturers : E. K. Cole. Ltd.

Address : Southend-on-Sea, Essex

Telephone : Southend 49491 (10 lines)

43.

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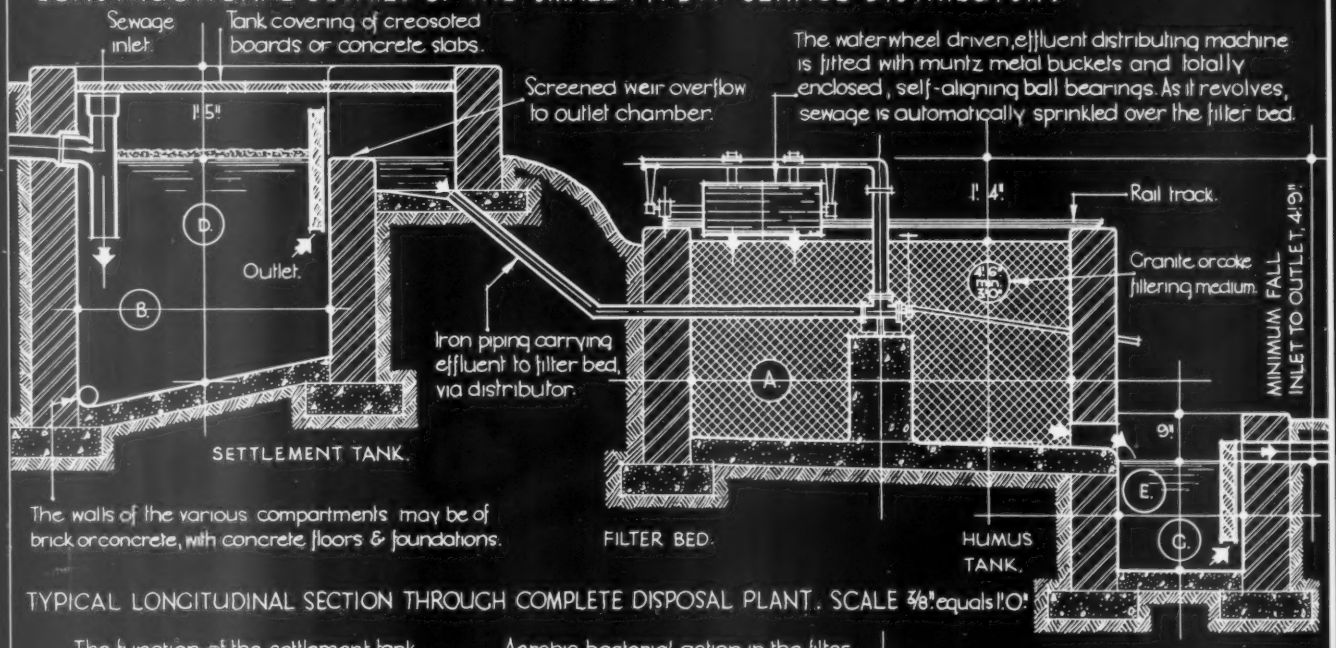
CONSTRUCTIONAL DETAILS OF THE SMALL TYPE N SEWAGE DISTRIBUTOR:

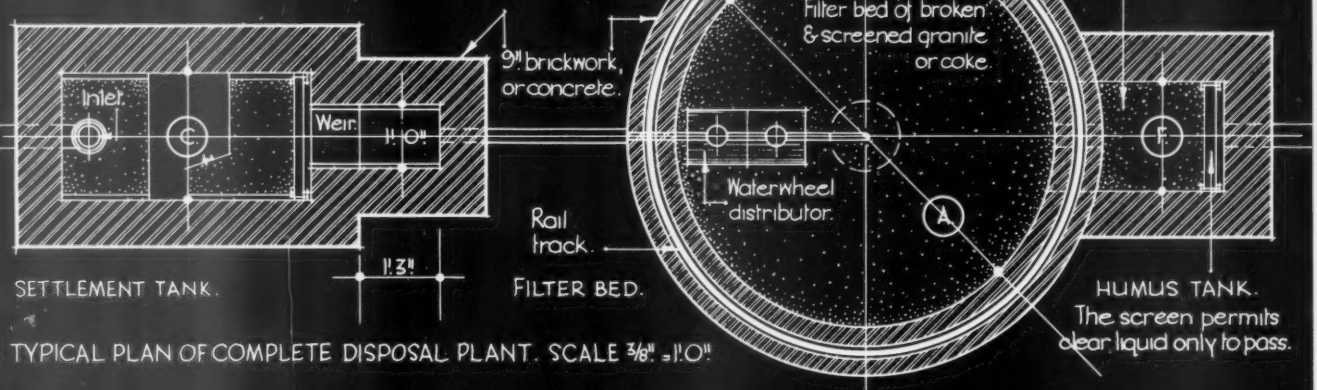


TYPICAL LONGITUDINAL SECTION THROUGH COMPLETE DISPOSAL PLANT. SCALE ⅜" equals 1'0"

The function of the settlement tank is to reduce the suspended solids in the sewage by allowing them to be gradually broken up & liquified by anaerobic bacterial action.

Aerobic bacterial action in the filter bed results in innocuous effluent and inoffensive, earthy humus.

The humus tank retains the resulting vegetable mould and any ash washed out of the filter bed.



TYPICAL PLAN OF COMPLETE DISPOSAL PLANT. SCALE ⅜" = 1'0"

TABLE GIVING APPROXIMATE DIMENSIONS OF PLANTS REQUIRED FOR HOUSEHOLDS OF VARIOUS INHABITANTS.

NUMBER OF PERSONS.		6.	8.	10.	12.	14.	16.	18.	20.	22.	24.	30.	40.	50.	60.	70.	80.	90.
FILTER BED.	A.	6'0"	6'0"	6'0"	6'0"	6'6"	7'0"	7'6"	8'0"	8'0"	8'6"	10'0"	11'0"	13'0"	14'6"	15'6"	16'6"	17'6"
SETTLEMENT TANK.	B.	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	6'4½"	6'9"	7'0"	7'3"	8'3"	9'0"	10'6"	12'0"	12'6"	13'6"	15'0"
	C.	1'9"	2'0"	2'3"	2'6"	2'7½"	2'9"	2'10½"	3'0"	3'3"	3'4½"	3'9"	4'6"	5'0"	5'6"	6'0"	6'6"	6'6"
	D.	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"	3'6"
HUMUS TANK.	E.	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'6"	3'0"	3'6"	3'6"	3'6"	3'6"	3'6"
	F.	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	2'0"	2'0"	2'6"	2'6"	2'6"	2'6"	2'6"
	G.	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	1'9"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"

Information from Jones & Attwood Ltd.

INFORMATION SHEET: SEWAGE PURIFICATION PLANT FOR COUNTRY HOUSES:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne.

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INFORMATION SHEET

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SEWAGE DISPOSAL

Product : Sewage Purification Plant

General :

This Sheet deals with a method of purifying domestic sewage from isolated houses, hotels, schools, hospitals and other buildings where small communities are housed. The plant shown is dependent upon the small Type N Sewage Distributor, and the complete system consists of a settlement tank, a filter bed, a distributor and a small humus tank. The units need not necessarily be arranged in a straight line as indicated in the plan, nor is there any fixed spacing between the settlement tank and the filter bed, but the sequence of the units in relation to the sewage inlet is always as shown, with a minimum fall of 4 ft. 9 ins. between the sewage inlet and the purified effluent outlet. The principal dimensions of the various parts are given for establishments having varying numbers of permanent inhabitants. The figures are approximations only, the actual capacity of the plant depending upon an exact calculation of the volume of the sewage and waste water to be purified, plus the usual factor of safety commensurate with this type of work. Upon the accurate designing and proportioning of the component parts, depends the ultimate success or failure of the plant.

Construction :

The settlement and humus chambers are generally constructed of brickwork and concrete, 9 in. rendered walls, the filter walls 9 ins. unrendered, with suitably sized foundations and floors of reinforced concrete provided. All walls, however, may be of concrete if desired.

Settlement Tank :

The function of the settlement tank is to reduce the suspended solids in the sewage, and this process is a biological one dependent upon the natural action of certain micro-organisms present in the absence of oxygen —namely, anaerobic bacteria. These organisms possess the power of transforming the complex matter contained in sewage into harmless constituents, and it is by this means that the solids are gradually broken up and liquified. The process involves the formation of scum or sludge on the surface of the water, and it is to prevent the disturbance or exit of this fermenting material that the sewage inlet is made to discharge some distance beneath the surface, while the sludge is prevented from overflowing the weir by a scum board.

It is necessary to remove the sludge about once a year, and to facilitate this operation the tank covering should be made of creosoted boards or concrete slabs. With domestic sewage free from grit and sand, the tank seldom requires emptying or other attention.

Filter Bed :

The tank liquor passed from the settlement tank is passed directly to the next unit of the installation, the filter bed. Here further biological action takes place, certain micro-organisms natural to all sewage being used for the process. These bacteria, known as the aerobic type, require oxygen for their functioning, and, after a short conditioning period has been allowed the filtering medium will be found capable of completely and permanently purifying the tank liquor during its passage through the filter.

As can be seen from the diagrams, the tank liquor is sprinkled in small doses on the upper surface of the filter bed by means of special machinery known as the Sewage Distributor. The Type N Distributor is a waterwheel driven machine, revolving about the central concrete support on a metal rail track fixed to the circular walls of the filter bed. The waterwheel is fitted with metal buckets into which the sewage flows by gravity, causing the whole to revolve, and at the same time sprinkling the liquid regularly and automatically over the bed, irrespective of the rate of flow. There are no small openings to restrict the flow, so that the distributor maintains high efficiency with little or no attention, save occasional lubrication and flushing. The machine is compact and noiseless, and requires a minimum head of only 16 ins. to be completely automatic in action. No dosing syphon is necessary, whilst the controlled distribution enables the bed to function for long periods without attention. The mechanism is guaranteed for twelve months against faulty material or workmanship.

Prices :

The cost of any individual plant depends upon local factors such as the nature of the ground, type of construction and filtering media best suited for the particular purpose, distance of the plant from the source, disposition and lengths of inlet and outlet pipes, etc. An approximation for a system suitable for 10 persons constructed under normal conditions, would be £90.

Manufacturers : Jones & Attwood, Ltd.

Address : Titan Works, Stourbridge

Telephone : Stourbridge 5106–7

SCHOOLS

The Architects' Journal Library of Planning

Senior Schools

PLAN UNITS : CLASSROOMS

THERE are many opposing ideas about planning and disposition of classrooms. At present the ideas are in an experimental stage and most experiments are still on paper, So there are few examples of existing schools where there has been any attempt to break away from the usual method of piling classrooms one upon the other in rows, sometimes to a height of three or even four floors, giving the impression (not always entirely false) that the school is an educational factory.

In describing the possible disposition of classrooms, arguments will be given for and against each type, based on information collected from some recently built schools. As a general principle, classrooms should be grouped together, to read as a separate unit of the plan: assembly hall, library, classrooms, science room, practical rooms, domestic science rooms, workshop—these are distinct departments and should be planned so that they can be appreciated as such. And for all types there are two warning signals: First, the ultimate objective is not merely to provide maximum sunlight and air, but to give every child maximum opportunity for *health* and *interest in his work*. Second, in the enthusiasm (certainly justified) for "freer planning" it must be remembered that the most free plan is not necessarily the most attenuated, but rather the one which functions most easily and pleasantly, having coherence in all its parts.

The possible types and grouping, with their advantages and disadvantages, are given here.

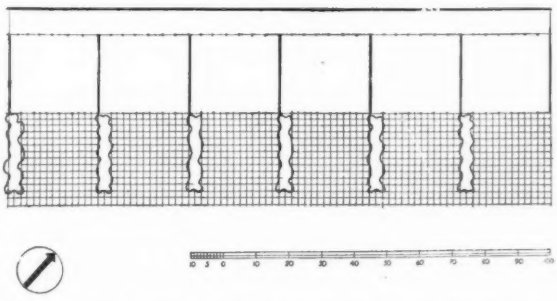
A. Courtyard

The grouping of classrooms round a courtyard became a habit as a result of confined sites allotted to schools in built-up areas. Though entirely unnecessary on generous sites, the habit still persists, even in premiated designs of school competitions. Financial stringency is the first cause of this type.

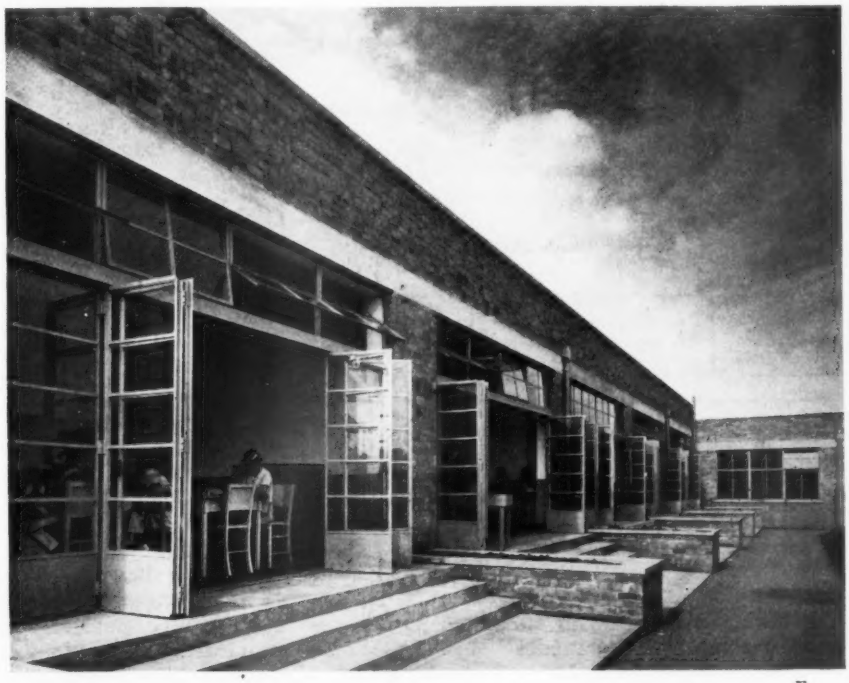
Advantages. — Compactness of circulation. Economy?

Disadvantages.—Impossible for all classrooms (and practical rooms) to be given good orientation. Overshadowing of rooms facing courtyard, particularly if building has two or more storeys. Cumbersome effect, shut-in feeling. Difficulties of adequate sound separation. Inflexibility.

B. Single Series



This is becoming the most common type for schools built on adequate sites.



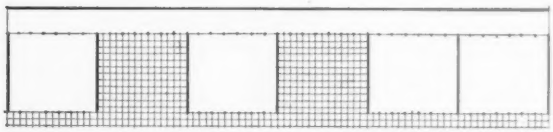
Down-to-ground classroom windows and outdoor teaching spaces of a rural school at Linton, Cambridgeshire. Architect, S. E. Urwin.

It is most successful when planned as a single floor with not more than eight classrooms. With more than eight classrooms the continuous corridor becomes tedious. When there is only one floor, supplementary lighting and cross-ventilation can be provided by forming a continuous range of windows above the corridor roof level, but when there are two or more storeys supplementary lighting to lower floors can only be provided by means of windows on both sides of the corridor, cross-ventilation by means of ducts below floors of upper corridors. Walls between classrooms can be made sufficiently soundproof by planning cupboards part of the way up the wall and using insulation board as lining for the remainder. Most sound leakage is likely to be through open windows. A glass sound baffle, projecting about four feet between windows of classrooms, will deflect a considerable amount of sound, and windows themselves, if made to open in the right direction, provide a certain amount of deflection. Low shrubs also help to absorb sound and at the same time form visual shields for outdoor teaching spaces. There is no point in making classrooms partitions more soundproof than windows.

Advantages. — Simplicity, easy circulation, economical construction.

Disadvantages. — Difficulties of overcoming sound leakage. Only one full window-wall.

C. Separated Single Series

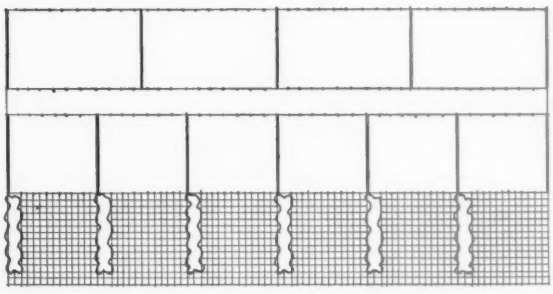


This type is only suitable for single-storey buildings. It provides outdoor teaching spaces between classrooms. A variation is to have two classrooms sharing one outdoor teaching space.

Advantages.—Sound separation. Sheltered and shielded outdoor teaching spaces. Adequate lighting and ventilation.

Disadvantages.—Length of corridor doubled. Expensive.

D. Double Series

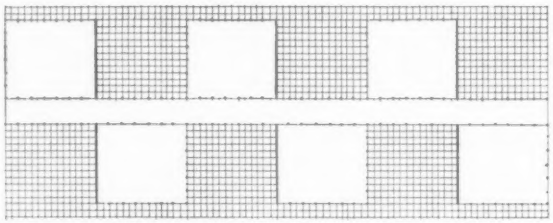


Planning with central corridors is noticeable in some recent "model" schemes. It is only possible in single-storey buildings, the corridor roof being kept low in order to get light and ventilation in the upper parts of inner walls. Domestic service rooms, art and needlework rooms are usually given the less sunny aspect. Corridors can be lighted and ventilated by the familiar dome method.

Advantages. — Reduced length of corridor. Reduced cost of construction. Variety of outlook.

Disadvantages.—Increased width of corridor (to cope with greater congestion). Sense of confinement in corridor (in spite of increased width). Wrong orientation for some classrooms.

E. Separated Double Series

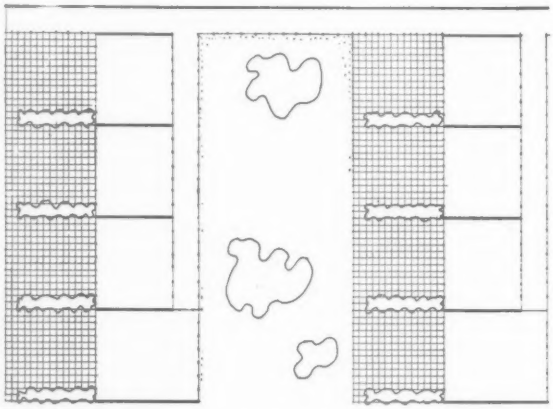


This type covers the same length as type B, while providing the intermediate outdoor teaching spaces of type C. It works best when classrooms are orientated with window-walls facing neast ad west.

Advantages.—Sound separation. Sheltered and shielded outdoor teaching spaces. Adequate lighting and ventilation. Variety of outlook.

Disadvantages.—Reduced sunlight in half of classrooms. Occasional west sun in teachers' eyes. Expensive.

F. Parallel Series



An arrangement which has been successfully used in several American schools. It is particularly suitable where a large number of classrooms have to be planned on one floor. If the spaces between each series are wide enough, an attractively planted playlawn can be provided for every four or five classrooms. It is

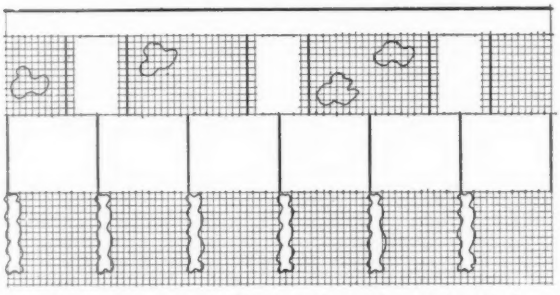
SCHOOLS

reasonable to make the main corridor a covered way, or, if attached to a covered play space, screened by windows on one side only.

Advantages.—Easy and pleasant circulation. Opportunity for planning covered way, coat-rooms and lavatories alongside main corridor without taking away light and outlook. Good orientation and variety of outlook for all class-rooms. Avoidance of monotony. Double window wall in end classrooms. Easy to add additional classrooms.

Disadvantages. — Difficulties of overcoming sound leakage. Only one full window wall in most classrooms. Additional lengths of corridor. Expensive.

G. Elbow Access, Square

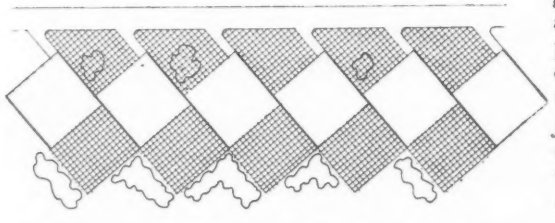


This type was discussed under *Circulation.* Its object is to get two parallel window-walls in each classroom. The planning becomes more feasible if minor corridors are widened out and used as locker rooms for each pair of classrooms.

Advantages.—Adequate light and ventilation on both sides of classrooms, whether planned on one or two floors. Extension of class outdoors in either direction. Classes undisturbed by circulation in corridor.

Disadvantages.—Sound leakage through windows likely to be exaggerated in small courts, particularly if two storeys high. Small courts difficult to keep attractive. Disturbance of main circulation by constant elbow bends. Extra lengths of corridor. Additional expense, including cleaning and upkeep.

H. Elbow Access, Diagonal

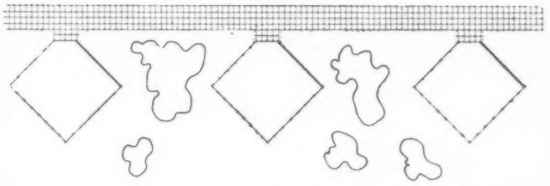


Not so suitable for two-storey planning as type G. Another variation of this type is to have classrooms in the same formation but directly connected with main corridor, the triangular space forming a bay for lockers. This cuts out the second window-wall but eases circulation considerably.

Advantages.—Same as type G plus good insulation between classrooms and between outdoor teaching spaces.

Disadvantages.—Even smaller courts than in type G, awkward in shape and difficult to keep attractive. Breaking up of main circulation, extra lengths of corridor, additional expense.

I. Isolated Pavilion



Originally intended for tubercular children, this type is now advocated for normal children by some experts. Pavilions are usually linked by covered ways instead of corridors. In the well-known Surêsnes example the principle of complete separation has been found to work well for noisy groups of very young children, but there are no really adequate reasons for adopting it for large Senior Schools. Down-to-ground folding windows and efficient floor heating are corollaries of open-air pavilion planning.

Advantages.—Complete noise separation. Adaptability to weather conditions. Opportunity for opening up classroom on three or even four sides at once. Release from institutional character.

Disadvantages.—Difficulty of warming effectively, except at great expense. Tendency to straggle and divide site into small compartments: loss of cohesion in large schools. Attenuated circulation. Difficult supervision. Very costly.

J. Roof Pavilions

The chief advantage in having classrooms on the ground floor is that in fine weather classes can extend outdoors. In a large school, however, the placing of all classrooms on one floor, particularly if planned on open air lines, is likely to waste useful ground and cause too much disintegration. An ingenious solution to the problem is to be found in the winning scheme of the famous *News Chronicle* competition (1937) for an ideal 3-stream Senior School. Domestic science and practical rooms are placed on the ground floor and above them the classrooms are arranged as isolated pavilions with paved and planted outdoor teaching spaces between them on the roof. (See plan on the next page.) This unprecedented solution may be called a *tour de force*, but there is no reason why it should not be considered a commendable type. If handled with competence, as it is here, it is likely to work extremely well.

In this particular example the golden rule of south-east aspect has been deliberately broken, full window-walls being provided on the north-east and south-west. Sunlight would enter the classroom for part of the morning and all the afternoon, while the paved courts would be flooded with sun during the mildest part of the day. Provided the rays of the setting sun can be shielded from the children's eyes, this unusual orientation is certainly worth a trial.

Advantages.—Open-air-pavilion planning without disintegration. Good noise separation. Full

lighting and ventilation from both sides of classrooms. Sunlit and sheltered outdoor teaching spaces. Classrooms undisturbed by circulation in corridor.

Disadvantages.—Separation from hard playgrounds.* Expense of efficient thermal and sound insulation to paved courts.

Requirements

Size

More than 40 children frequently have to be accommodated in a senior classroom, but 30 is the desirable maximum. A floor area of 480 sq. ft. is the Board of Education minimum for a class of 35–40 using desks, 520 sq. ft. if tables are used. Height need not exceed 10 ft. 6 ins.

Single or double desks with lockers are still frequently used in Senior Schools to avoid the expense of separate lockers, but the use of tables, particularly for the younger classes, should be considered important. A layout of single tables or desks is preferable to double ones, but takes slightly more space.

A short rectangular proportion is best for blackboard visibility, but if classrooms are lighted only from one side the minimum width should be 22 ft. Dimensions should be based on sizes of desk or table units. It should be possible for each child to leave his desk without disturbance and for the teacher to have easy access to him.

In special circumstances, one or two pairs of classrooms may have to be fitted with folding partitions, but this is likely to lead to acoustic difficulties unless double doors or special soundproof door construction is provided.

An additional recess is useful in one or two classrooms, but need not be considered so important as in Junior Schools.

Storage

Ample cupboards at least 12 ins. deep should be provided at the teacher's end of the room.

In Senior Schools lockers are usually provided for some, if not all, of the children. The placing of these depends to some extent on preferences of individual directors. There are four systems in common use:

1. Lockers grouped together adjacent to coatrooms at entrance. Unless spaciously planned this system is likely to cause congestion.

2. Lockers in each classroom. The disadvantage of this system is that there are always a number of "floating" classes, so that it is necessary for two classes to share lockers in the same classroom, causing interruption at changeover periods. This difficulty can be partly overcome by providing two-way lockers, accessible both from classrooms and corridor, though there is still likely to be a certain amount of noise disturbance.

3. Lockers in corridors, or bays of corridors. This is a fairly satisfactory system if corridors are made wide enough, or bays deep enough to keep circulation free.

4. Lockers in ante-room to classroom. This method works particularly well in plan-types H, I, and J.

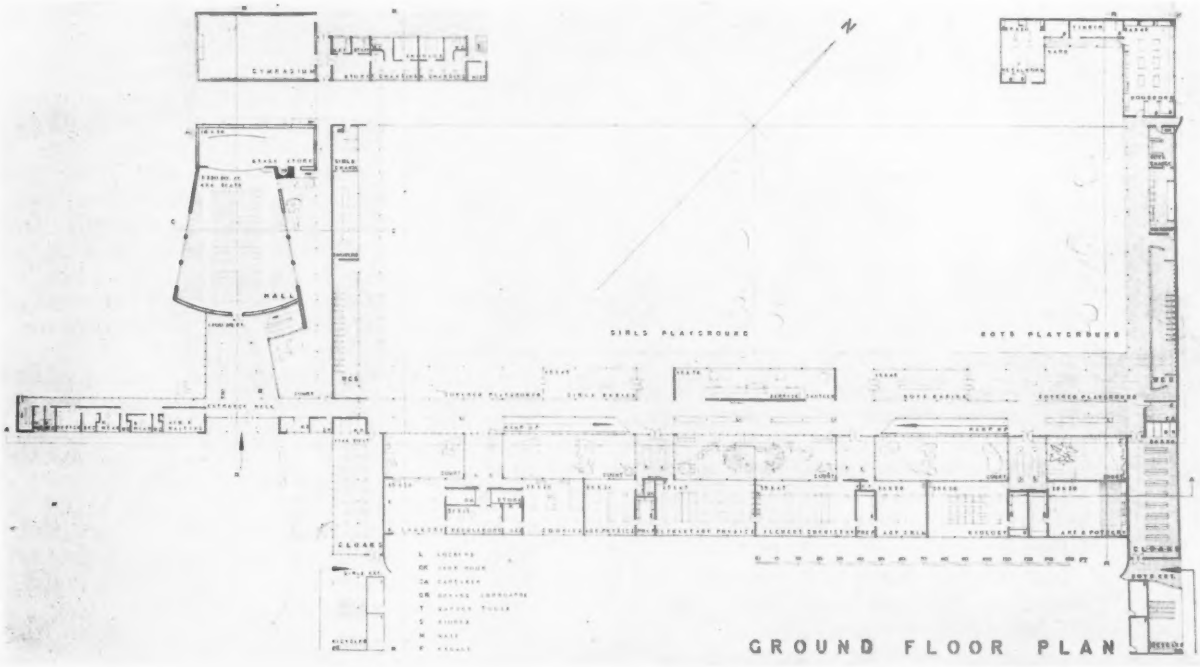
When classrooms are planned in series, locker rooms can be sandwiched between them, forming an effective sound baffle. Provided it does not cause too much elongation this method is likely to be the most satisfactory.

Each child's locker should be approximately 14 ins. wide, 10 ins. deep, 10 ins. high.

Windows

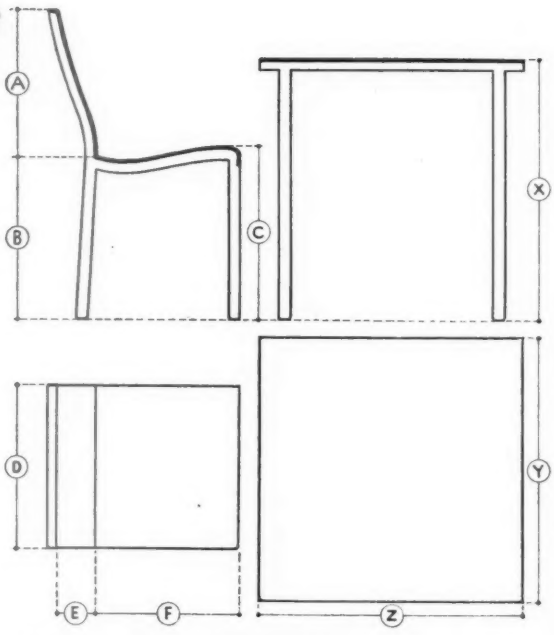
Windows should be taken up to the ceiling and down to within 2 ft. 6 ins. of the floor, so

* In the *News-Chronicle* scheme well-planned ramps provide exceptionally good vertical connections with playgrounds.



GROUND FLOOR PLAN

SCHOOLS



Chair and table sizes: Senior Schools.

Age 11 and 12: A = 14 ins. and upwards; B = 16 ins.; C = 16½ ins.; D = 12 ins.; E = 1½ ins.; F = 12-13 ins.; X = 28 ins.; Y = 24 ins.; Z = 18 ins. and upwards.

Age 13 upwards: A = 15 ins. and upwards; B = 17 ins.; C = 17½ ins.; D = 13 ins; E = 1½ ins.; F = 12-13 ins.; X = 29-30 ins.; Y = 24 ins.; Z = 18 ins. and upwards.

that it is possible for children to see out when seated. If taken down to the ground and made to slide, they can be made reasonably draught-proof by dropping the lower guide-rail slightly below the level of classroom floor.

For controlled ventilation, hopper types, fitted with all-together operating gear, are best, but concertina sliding windows have the advantage of an uninterrupted view and can be combined with hoppers placed immediately below and above them.

A window-wall uninterrupted by solid piers is to be aimed at, and dividing bars should be reduced to a minimum. Horizontal window boxes have become rather a *cliché*, whether in semi-Georgian or modern schools. It should be more generally realized that they make tiresome obstructions to any view worth looking at.

Artificial Lighting.—15 to 20 foot candles are necessary on table tops. The chief function of artificial lighting in classrooms (except when used for adult evening classes) is to provide supplementary or balanced illumination on extra-dull days or late winter afternoons.*

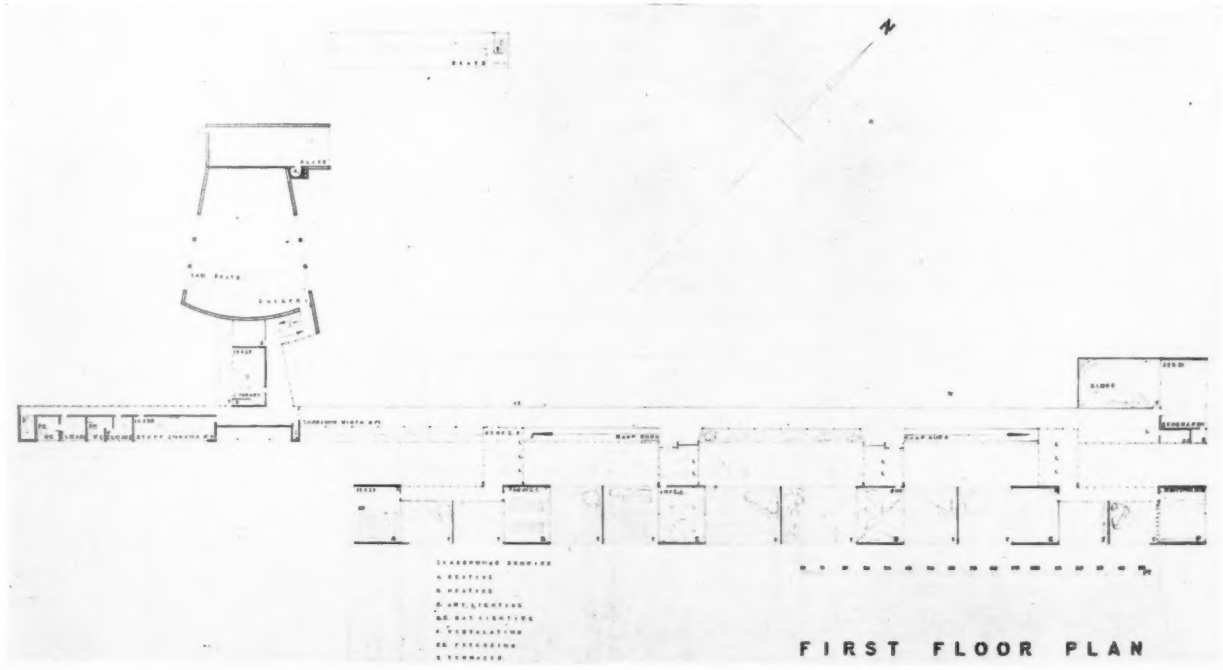
Lighting should be semi-indirect or evenly diffused by prismatic reflectors. If ceilings are not made too high (more than 11 feet) built-in reflectors can take the place of dust-collecting pendants.

Heating.—If ordinary low-pressure radiators are used, they should be in continuous low units recessed under the main windows, with supplementary radiators on the opposite side of the room. In pavilion types, with windows opening down to the ground, continuous heating grids in the floor along the entire window length have been found to provide the most satisfactory method. Ceiling panel heating by radiation, though avoiding large heat losses, is seldom found to be adequate for classrooms of the open air type.

A heating method which depends rather more

* Data on the balanced lighting of classrooms will be found in the *American Architectural Record* for June, 1936.

Ground and upper floor plans of the winning scheme in the *News - Chronicle* competition for a 3-stream Senior School. Notice "roof pavilion" classrooms planning described above. Ramp connections with play spaces below are admirably direct. Architect, Denis Clarke-Hall.



on radiation than on convection is best for health and alertness.

Ventilation.—Natural cross-ventilation along entire length of classroom is important.

Floor Finishes.—Hardwood blocks or boards in red deal or hardwood have so far been found one of the most satisfactory floor finishes. Linoleum is cheap and quiet, but always shows marks easily. If it is important to absorb sound at the source, high-density cork or cork-rubber flooring provide hard wearing, resilient and reasonably sound-absorbing surfaces which do not show marks badly and can be kept clean quite easily.

Wall and Ceiling Finishes.—Classroom surfaces must provide for:

1. Good acoustics. Reverberation and deadness both cause unintelligibility. Normally, wall behind teacher should have reflecting surface, ceiling and back wall absorbent surfaces.

2. Washability within finger range. Coloured tiles to a height of about 3 feet help to avoid markings, but dark-painted dados should be abolished.

3. Adequate light reflection. Except in unusually well-lighted classrooms (with two or more full window walls) walls should be reasonably light and ceilings *very* light to give good reflecting surfaces. Shiny finishes cause patchy reflections and should be avoided. Wall behind the teacher can be treated with deeper colouring than other walls, as maximum reflection is not necessary at this point.

4. Enlivening colour schemes. It is worth thinking out different colour schemes for each classroom. Large areas of full, insistent colours should be avoided, but walls and ceiling need not be neutral or nondescript. Cool colours are often condemned because they make a room feel cold, but in a properly heated classroom they can be very refreshing, giving an airy effect and inducing extra alertness. Warm colours tend to bring the walls closer while cool colours tend to make them more distant. Contrasting effects of this kind are valuable.

Furniture

Sizes for Junior and Senior Schools are shown diagrammatically. Fixed desks are of course taboo. Whether desks or tables are used they should be of a very light, easily movable kind, for even in the Senior School rigidity in grouping is avoided. Some of the best present-day classroom furniture combines wood or bakelite with aluminium welded tubing to produce strength with lightness, but such furniture is more common in France than in Britain. There is certainly no need for solid, dark-stained wood in every room. Bakelite has provided opportunities for brightly-coloured seats and desk-tops, wood and metal can be gaily cellulosed. They help to brighten intelligence.

A teacher's platform 4 to 5 ft. deep and raised 6 ins., should be provided. Teacher's desk, like children's, should be movable, and all drawer and cupboard space provided in the wall under or at sides of blackboard.

The blackboard is soon likely to become the *yellow*board. It has recently been realized that looking alternately at a light-absorbing blackboard and a highly-reflecting exercise book causes eye strain. So progressive schools may now use blue chalk on yellow boards.

The board, of whatever colour, should be approximately 4 ft. deep and should extend along almost the entire width of the room.

Modern Language Room

The teaching of one modern language has been newly introduced in Senior Schools. It is advisable, when possible, to provide a special room for the purpose. Frequently only half-classes are taken, so an area of 350 sq. ft. is sufficient. The room can form part of the ordinary classroom group or can be given some special corner to itself.

Provision should be made for a small lending library, a loud-speaker, a gramophone. Pin-rails for changing displays of photographs and posters would also be useful.

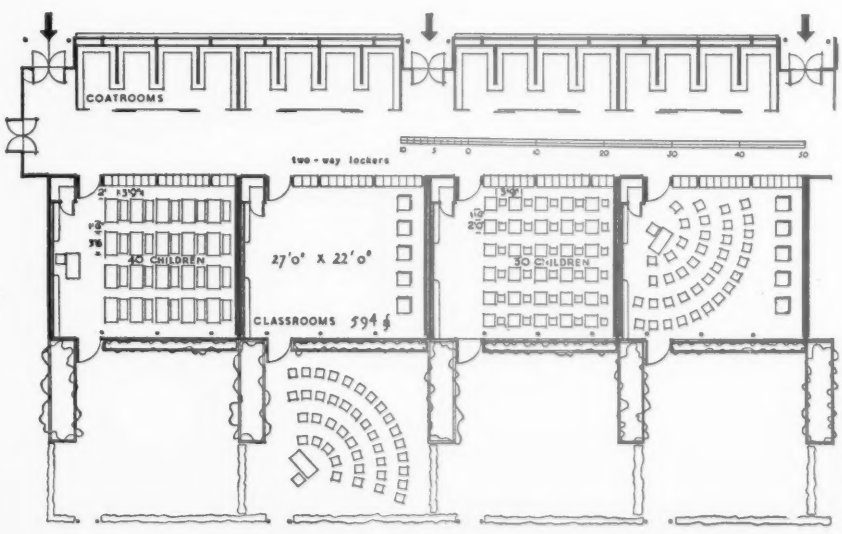
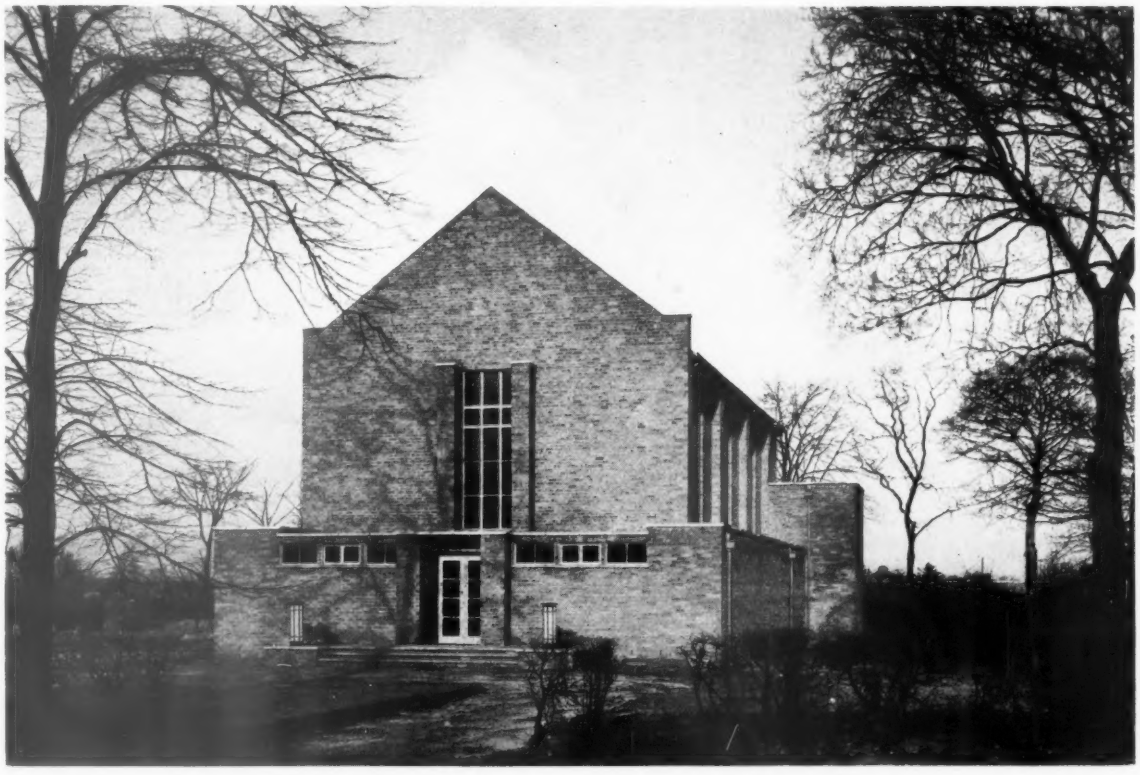


Diagram showing possible planning of coat-lobbies and two-way lockers in direct connection with classrooms. Spacing of classroom furniture, slightly more generous than usual, is also shown. Compare with Mr. Clarke-Hall's first floor plan and type G.

METHODIST CHURCH, TIMPERLEY, CHESHIRE



DESIGNED BY CHIPPINDALE AND NEEDHAM

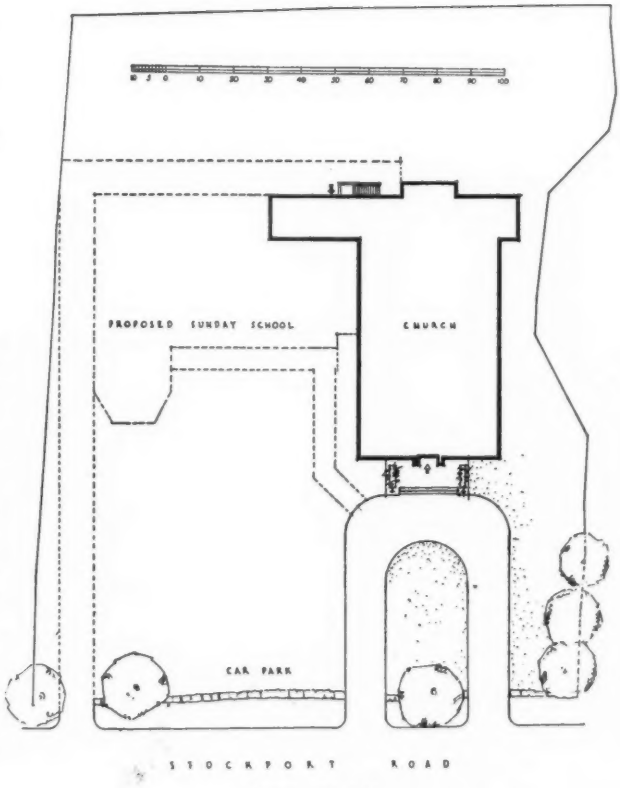
GENERAL—*The church here illustrated was the subject of a limited competition held in 1934. The original competition scheme made provision for a Sunday School and caretaker's flat ; these are to be built at a later date.*

SITE—*Stockport Road, Timperley, Cheshire. Under the provisions of the Ribbon Development Act it was necessary for the building to be set back 60 ft. to allow for a service road alongside the main Stockport Road.*

CONSTRUCTION—*Brick cavity walls throughout with solid brick piers carrying roof trusses. Solid concrete floors.*

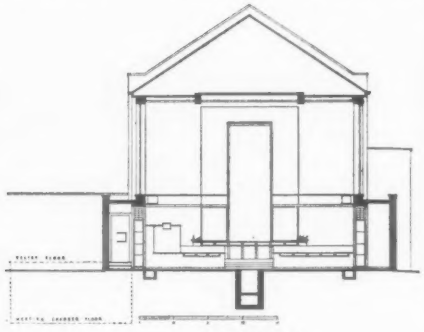
EXTERNAL FINISHES—*Walls 3 in. rustic bricks of light brown tone, with lightly struck joints ; roof, covered with green slates; metal windows, painted green; door finished in cream and maroon enamel paint. The lighting standards on either side of the entrance are cellulose on metal.*

Above is a general view from the south.



SITE PLAN

METHODIST CHURCH, TIMPERLEY, CHESHIRE:

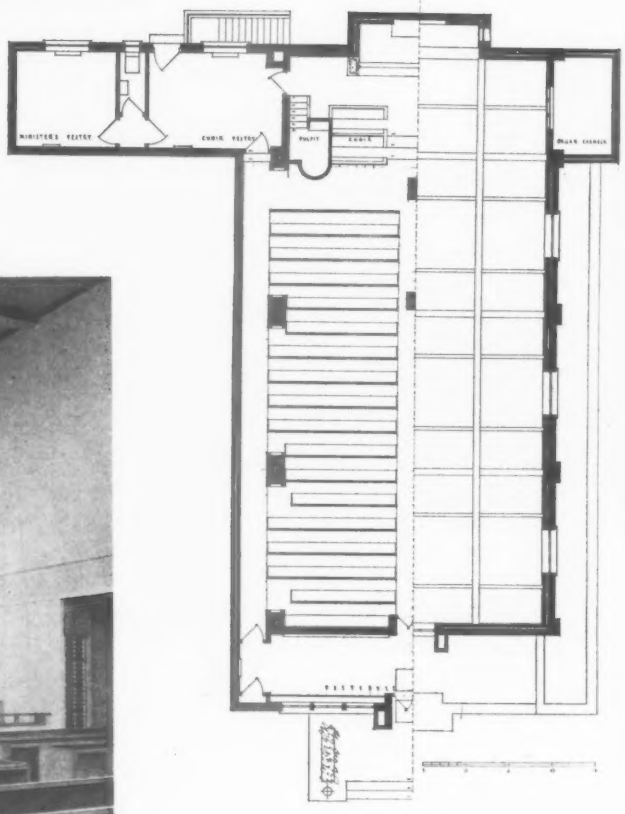


SECTION

PLAN—*The plan provides three aisles for free circulation, and easy access from the entrance vestibule. Seating accommodation is provided for 365-400 persons, including twenty in the choir.*

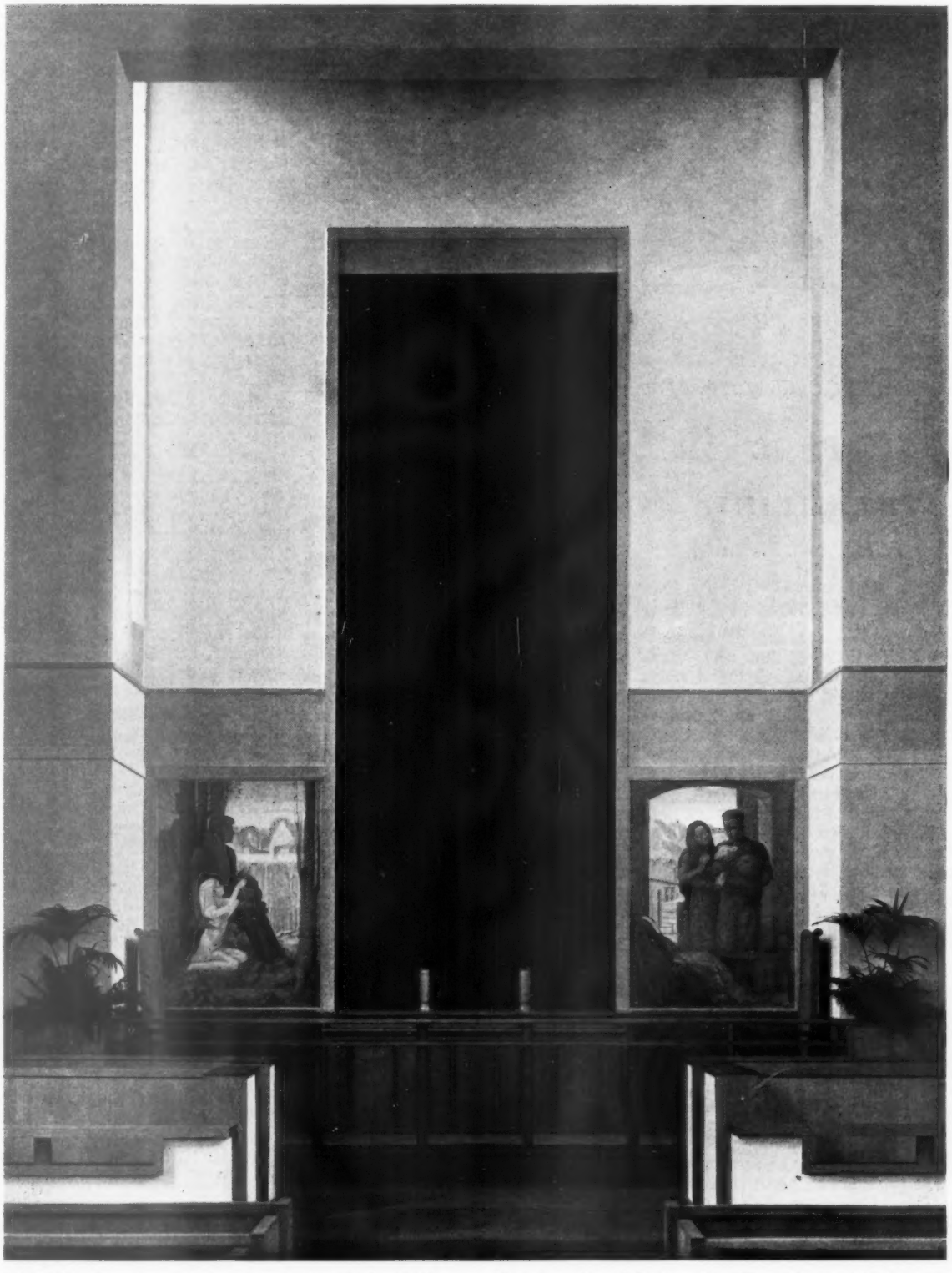
INTERNAL FINISHES—*The walls and ceiling of the vestibule are finished in oak plywood, and the floor is of cork tiles. The walls of the church are of plaster, cream painted; and the ceiling is of fibre board. The pulpit is of timber, metal lath and plaster. Special oak pews, wax polished, are fitted.*

The photographs show two views looking towards the chancel.



PLAN

BY CHIPPINDALE AND NEEDHAM

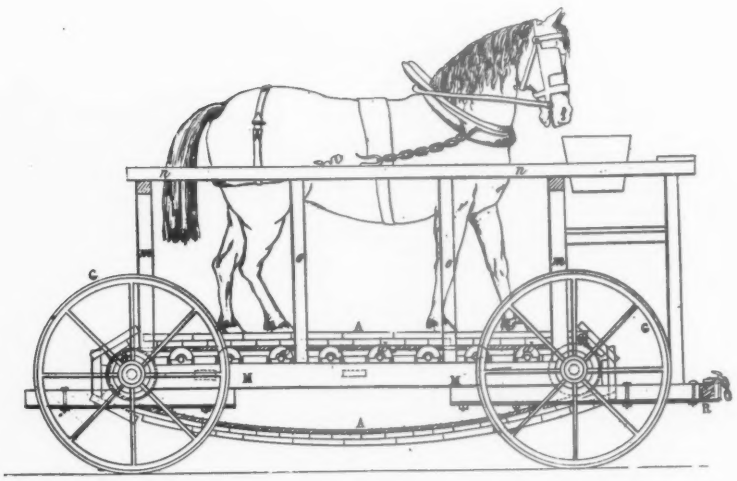


SERVICES—*Low-pressure hot water system by coke-fired boilers; solid type radiators fixed vertically on piers; warm air inlet grating next to chancel steps.*

COST—*£3,742, excluding loose furniture and soft furnishings. Total estimated cost, including fees, £4,400.*

Above is a view of the chancel. The main panel is in maroon colour velvet; the mural paintings, in pastel shades to tone with walls and fabric, were designed and executed by Mr. F. Newland Smith.

For list of general and sub-contractors, see page 266.



Brandreth's Cyclopede of 1829. From "Locomotive" by Raymond Loewy.

LITERATURE

STREAMLINIA

[*By PHILIP SCHOLBERG*]

Locomotive. By Raymond Loewy. No. 3 of the New Vision Series. London: The Studio. Price 5s.

ONLY a little less than fifty years ago the fastest scheduled railway run in the world was from Grantham to York, 82½ miles at an average speed of slightly more than 56 miles an hour, and now the Coronation Scot knocks off the 180 odd miles from King's Cross to York at an average of nearly 72. Not that this is anything approaching a record, for the Santa Fé Railroad's Burlington Zephyr is nearly 12 miles an hour faster over the slightly longer run from La Junta to Dodge City, though this admittedly happens once a week only. Nor, as the daily press would have us think, are these speeds entirely the result of careful streamlining, for, as railway engineers themselves point out, these high averages are given by sustained high speeds uphill and not by excessive speeds on falling gradients. This does not mean, however, that streamlining is not worth while, for the air resistance alone of an ordinary 6-coach train absorbs some 300 horse-power at 60 miles an hour, this figure increasing to 1,300 at 100 miles an hour. According to Sir Nigel Gresley, most of this resistance is due to the locomotive itself, which accounts for 40 per cent. of the whole, while the front coach is responsible for 10 per cent., intermediates for 9 per cent. each, and the remaining 14 per cent. for the tail coach, and on these grounds it is easy to see why the streamlining of the locomotive was attacked first and the smoothing out of coaches left until later, though the L.N.E.R. have now burnt their boats and produced a streamlined tail car, in spite of the disadvantage of having to turn it round at the end of each run. How much can this air resistance be reduced? Again, quoting Sir Nigel Gresley, it is comparatively easy to cut it down by 50 per cent., and, with trouble, as much as 75 per cent. saving can be obtained, though presumably this latter figure would involve so much in the way of cover plates and fairings for under-carriages that maintenance costs would jump too far for the fuel saving to be worth while. Even at a 50 per cent. reduction, 150 horse power at 60 miles an hour would seem to be worth considering, particularly when it is remembered that a 20-mile-an-hour head-wind on top of this will bring the saving up to nearly 400 horse-power, since the power required varies with the cube of the speed. Fuel costs will presumably be reduced though it seems more likely that the real gain will lie in increased speed for the same weight of engine, for engine size is limited mainly by the axle loading that the present permanent way can stand.

Streamlining, as applied to railway stock, dates back at least as far as 1827, when Medhurst produced a design for a self-propelled coach and added that "the body shall be tapered at both front and rear ends so the car will move through still air or head-winds with a minimum of resistance." Mr. Loewy deals with this and other early efforts in a few pages of enchanting drawings and prints and the rest of his illustrations cover current practice both in Europe and America, the captions supplying a running but not very informative commentary. Since Mr. Loewy has himself assisted at a numbe of wind-tunnel experiments on locomotive streamlining it would have been quite possible for him to write a short introductory essay on the value of streamlining in general and the influence of such factors as cross winds and the problem of smoke deflection, and it is difficult to understand why the publishers did not suggest that he should do so, for in these days of motor cars, washing machines and wireless sets the general public, for whom this series is presumably intended, is by no means as mechanically half-witted as most publishers and newspaper proprietors imagine. Unembarrassed by technicalities, Mr. Loewy looks at contemporary locomotive design with the eye of the industrial stylist and this eye allows him to be patronising about the early Silver Link type engines ("rather efficiently streamlined but somewhat lacking in grace") which, in spite of their mirth-provoking lamps. placed exactly where they will interfere most with the air flow, offer 10 per cent. less wind resistance than Mr. Loewy's own design for the Pennsylvania Railroad, although this latter job *looks* far better than anything else so far produced except the airscrew driven Rail Zeppelin running in Germany several years ago. From the point of view of appearance alone, however, Mr. Loewy is a very reliable guide, and he has collected a most interesting series of photographs to show how engineers in different countries tackle the same problem. Simple shapes and large areas seem to tempt most engineers into painted stripes and zigzags which only serve to destroy the unity of many designs, and this failing is even more marked in the Diesels and the electrically-driven jobs where it is far easier to get a good streamline shape. The photographs, as in the other volumes of this series, are admirable and, although one may wish that Mr. Loewy had asked an engineer to help with his commentary, one would far rather that Mr. Loewy had been about when a good many railwaymen were designing their engines.

FINISHING TOUCHES

The Weathervanes of Norfolk and Norwich. By Claude J. W. Messent. Norwich: Fletcher and Son. Price 3s. 6d. net.

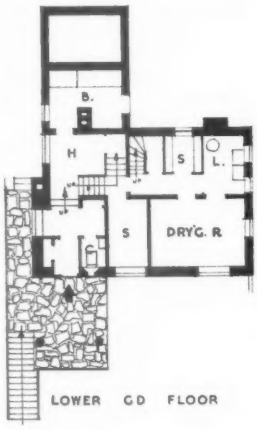
THERE is a good tradition of craftsmanship in the making of weathervanes—even in the sorry days of design of last century the village blacksmith was turning out admirable "finishing touches" for local buildings with no affectation and often some wit—and it is by no means dead today, as some of the examples here drawn show. Mr. Messent's drawings are

VILLA AT HOLMENKOLLEN, OSLO

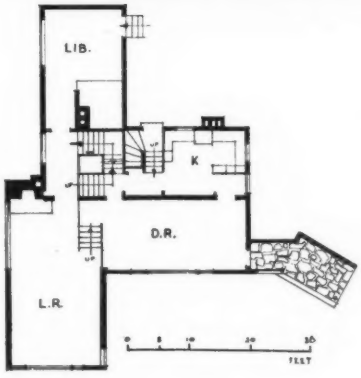
DESIGNED BY THORLEIF JENSEN

SITE—*The site is up in the hills above Oslo, and looks out over the Oslo Fjord.*

CONSTRUCTION AND FINISHES — *The terrace is constructed of random rubble, white-washed. The walls up to first floor level are cement rendered and painted white. The large projecting living-room is of reinforced concrete construction, painted ochre colour, and forms a colour contrast to the rest of the house, which is weather-boarded and painted a dark grey-blue colour.*



LOWER GD FLOOR



GROUND FLOOR

FIRST FLOOR

good, clear and adequate; the same cannot be said of the prose in which he writes preface, introduction and captions. That is a pity, for the book deserved to be uniformly good.

E. A.

LAW REPORTS

RIGHT OF WAY CLAIM

Burleigh v. *Wembley Stadium, Ltd.—Chancery Division. Before Mr. Justice Simonds.*

THIS was an action by Mr. D. S. Burleigh, the owner of a factory adjoining the Wembley Stadium, against the Stadium, for an injunction to restrain the defendants from interfering with a right of way leading from his land near Raglan Gardens to Empire Way, and he also asked for an injunction restraining defendants from parking cars on the land, and an order to the defendants to remove a hoarding which he alleged obstructed his right of way.

Defendants resisted the action, and denied that there had been any obstruction. It was true that cars were parked there, but a 15 ft. right of way was always kept open for the plaintiff.

His lordship, after hearing the evidence, said the conclusion he came to was that there had been no substantial interference with the plaintiff's rights by cars and/or buses to justify the granting of an injunction.

With regard to the alleged obstruction, that arose from differences between the parties. It appeared that defendants had an ice rink as well as the plaintiff, and defendants were dissatisfied with the way the plaintiff advertised his rink. Defendants did not wish the public to think that they were connected with plaintiff's rink, and they put up a hoarding, but left a gap 15 ft. wide, so as not to interfere with the right of way of the plaintiff. His lordship did not think there was any substance in the plaintiff's complaint.

He dismissed the action and a counter-claim by the defendants for rectification in the land registry.

A DISPUTED GABLE

Wood and another v. *Thirtle.—Chancery Division. Before Mr. Justice Simonds.*

THIS was an action by trustees of the Hutton Mount estate at Shenfield seeking a mandatory injunction against an owner of a house on the estate to compel her to alter a gable of her house.

The defendant was Mrs. M. I. Thirtle, and the plaintiffs' case was that she had built a gable which did not conform with the plans approved by them of a curved gable.

Mrs. Thirtle, whilst admitting that she had built a crow step gable, submitted that there

was nothing in it inconsistent with the buildings on the estate.

Mr. B. J. Dicksee, an architect called for the plaintiffs, supported the view that the existing gable detracted from the appearance of the road.

For the defendant, Mr. S. Jaques, A.R.I.B.A., gave evidence and expressed the opinion that the gable was a very good variation and not in any way detrimental to the amenities of the estate.

His lordship, in giving judgment, said when defendant built her house she knew exactly what she had to do to conform with the covenants she had entered into. The plan which the plaintiffs approved showed a Dutch gable as a prominent feature of the house. When the defendant erected her house she put a crow step gable, which was a variation requiring the assent of the plaintiffs, which she did not obtain. It was clear that what had been done by the defendant was a breach of covenant, and plaintiffs were entitled to a mandatory injunction compelling defendant to do what she had covenanted to do. Defendant must rebuild the gable to the plaintiffs' approved design.

NEW L.C.C. BY-LAWS

[BY W. E. J. BUDGEN]

FOR years past London building legislation has been attacked as being out of date in its requirements and clumsy in its machinery. This constant attack has now begun to achieve practical success. The clumsy machinery was overhauled in the London Building Act of 1935 which gave the L.C.C. power to express the detailed requirements of building law by means of by-laws instead of an Act of Parliament. The antiquity of many of its previous requirements has now disappeared with the first sets of new by-laws which came into force on January 1, 1938.

There are three such sets—

(1) By-laws for the construction and conversion of buildings and furnace chimney shafts. Price 1s. 6d.

(2) By-laws for the use of timber in the construction and conversion of buildings. Price 3d.

(3) Regulations made by the Council relating to applications for modifications or waivers of building by-laws Nos. 63, 64, 69, 70, 72, 74, 75, 78, 81, 85, 86, 87, 90, 91, 104 and 114, so as to permit the use of electric (metal) arc welding instead of riveting, bolting or lapping.

As regards the third set it is probably sufficient for the architect to know that they exist and that if he desires to erect a welded building his engineer has now a design code (and a satisfactorily elastic one) on which to work. There may be more delay in the plans stage of the job than in the case of a riveted job since, like other special structures, drawings and calculations must be approved by County Hall instead of the District Surveyor. To help in this matter the Council are "prepared to consider preliminary applications for approval in principle of the adoption of welding in relation to the construction of a building." If such application is granted it is still necessary for the detailed consent of the Council to be obtained to the methods to be adopted.

The timber by-laws are new (another curiosity of previous legislation was the absence of regulations governing timber construction). They introduce a new and good principle in that they specify loads and working stresses for those who calculate, and sizes of scantlings under various conditions for those who do not. The superimposed loads are similar to those for other forms of construction. Different stresses are specified for non-graded timber (these, with 800 lb. per sq. in. for the maximum allowable extreme fibre stress in bending seem low) and for "Grade 1,200 lb. f." timber on which as might be expected from its title an extreme fibre stress in bending of 1,200 lb. per sq. in. is allowed. The graded timber is to be Douglas fir (Pseudotsuga Douglasii) or long-leaved pitch pine (Pinus palustris).

The first and most important set of these new by-laws now governs practically the whole of the constructional side of buildings and chimney shafts. Broadly speaking it replaces the following sections of the 1930 Act—57, 61, 63, 65–69, 71, 73, 75, 80, 222, the 2nd and 3rd Schedules and the reinforced concrete regulations.

For constructional steel work it specifies loads stresses, etc., which are practically identical with those of the L.C.C. Code of Practice. There is, however, a very important difference in the scope of the by-laws. The Code of Practice only applied to the steelwork of a steel frame building. In other buildings steel, except that in external walls, could be left uncased in many cases and the stress in it was a matter which concerned the designer and not the authorities. Under the new by-laws for *any* steel in *any* building the "standards of stability and of protection from the action of fire shall, to the satisfaction of the district surveyor, be not inferior to those required" for the steelwork of a steel-framed building. Presumably, therefore, naked steel columns in shop windows and bressummers covered only with fascia boards will become a thing of the past.

The same remarks apply to the by-laws governing reinforced concrete construction. The allowable stresses are those given in the D.S.I.R. Code of Practice, but since the modular ratio departs from the convenient value given by that code, and remains at 15 for all mixes, all constants, graphs, etc. based on the code will not apply. The principle of high and ordinary grade concrete, with different allowable stresses, is allowed as in the Code.

Also as for steel, while the detailed requirements, which are few in number, apply only to reinforced-concrete frame buildings, the district surveyor must be satisfied that the standard of stability of all other reinforced-concrete work is not less than that specified for frame construction.

The by-laws for brick walls, like the timber by-laws, allow thicknesses to be calculated by those who calculate, giving the rules on which the calculations should be based, and, as an alternative, prescribe minimum thicknesses for those who do not calculate. These latter differ very little from those previously specified.

Cavity walls are now permitted without waiver and brick walls need not have footings.

It should also be noted that the notice to build to the district surveyor should be accompanied by "Plans and sections of sufficient detail to show the construction . . . together with a copy of the calculations of the loads and stresses to be provided for and particulars of the materials to be used," and again this does not only apply to frame buildings.

The printed copies of the by-laws draw particular attention to the Council's power of modification or waiver of any of the requirements, so that evidently they hope, wherever possible, to ease the new shoe if, as so often happens, it presses heavily at any particular place. It is also understood that they intend to reconsider these by-laws at the end of three years so that the old unhappy condition of building control in London should now disappear completely.

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Slum Clearance and Rehousing

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

Clearance Areas and Orders. — During December local authorities declared areas comprising 4,734 houses representing the displacement of 17,366 persons, as compared with 5,158 houses and a displacement of 20,448 persons in November.

The Orders submitted during December covered 3,855 houses and the displacement of 15,079 persons, as compared with 6,277 houses and the displacement of 29,207 persons in November.

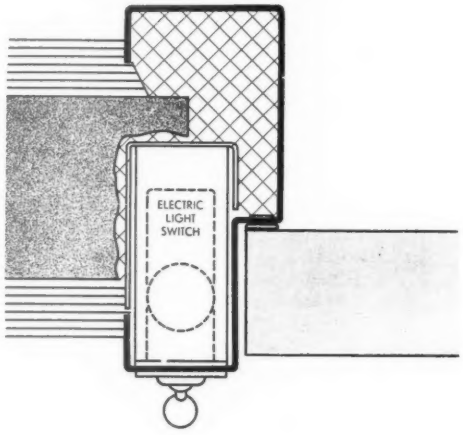
The Orders confirmed during December covered 3,587 houses and 13,781 persons as compared with 4,297 houses and 16,584

persons in November. The total number of houses in confirmed Orders is now 171,045, involving the displacement of 729,109 persons.

Rehousing Progress.—The latest available figures are those for November. At the end of that month there were 71,025 houses under construction as compared with 71,620 at the end of October and 71,554 at the end of September. 6,809 houses were completed during November as compared with 7,347 during October and 6,908 during September.

The great majority of these houses are being provided for rehousing persons displaced in connection with slum clearance schemes.

New houses approved during December numbered 8,742 as compared with 7,065 in November and 4,876 in October.



TRADE NOTES

[BY PHILIP SCHOLBERG]

Pressed Steel Doors and Frames

PRESSED steel doors and door frames are a new departure for Crittalls, though there is nothing particularly new about them so far as the building industry is concerned, for several firms have been making them for some years now. Crittalls are following more or less standard practice, with a welded frame and three lugs in each jamb to be bedded into the partition material as work proceeds, but I am glad to see that they are making their doors particularly stiff, for they all have light gauge internal stiffening webs, and the cork filling not only reduces sound transmission but also makes the doors less noisy in use. Price, as is usual with doors of this kind, is fairly high (75s. for a door and frame 2 ft. 6 ins. by 6 ft. 6 ins. suitable for a 4½ in. partition), but if the quantity required is at all large there is quite a considerable reduction. The drawing at the head of these notes shows a typical door frame section with an electric light switch built in.—(*The Crittall Manufacturing Co., Ltd., 210 High Holborn, London, W.C.1.*)

Improving the Blackboard

While plenty of brains have been concentrating on the equipment and planning of schools the old fashioned blackboard is still taken more or less for granted, though all teachers know that children suffer from a good deal of strain while copying from it. The reason for this strain is put down to the fact that the children copying have to move their eyes from a black surface with a reflection factor of from 10 to 15 per cent., to the white writing paper with a reflection factor of 85 to 90 per cent. According to a recent report published by the National Institute of Industrial Psychology (No. 7, price 1s. 6d.) white writing paper has only been introduced in the majority of schools since the beginning of this century (a surprisingly recent date) and it seems that undue strain did not arise in the old days when all pupils used chalk and a slate for writing.

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When the blackboard is used for purposes of demonstration only, for the drawing of diagrams or the working of calculations, "the visual task is not usually very difficult" and pupils with normal sight can read fairly easily; but for copying work it was thought that there might be a reduction in strain if a board with a higher reflection factor were used, if possible approximately equal to that of the white paper on which the copying is done. The choice of a colour for experimental work apparently presented some difficulties, for this is not a subject on which a great deal of research has been done, though there are grounds for believing that the poster man's favourite war cry of "Black on Yellow will fairly bellow" is not far removed from the truth, while some investigators maintain that black on yellow comes third in order of legibility, after blue on grey and black on grey. It was finally decided to experiment with a light yellow board, and to use a dark blue chalk, which was found to be more easily read than black, though at normal blackboard distance it is apparently impossible to tell whether the chalk is blue or black.

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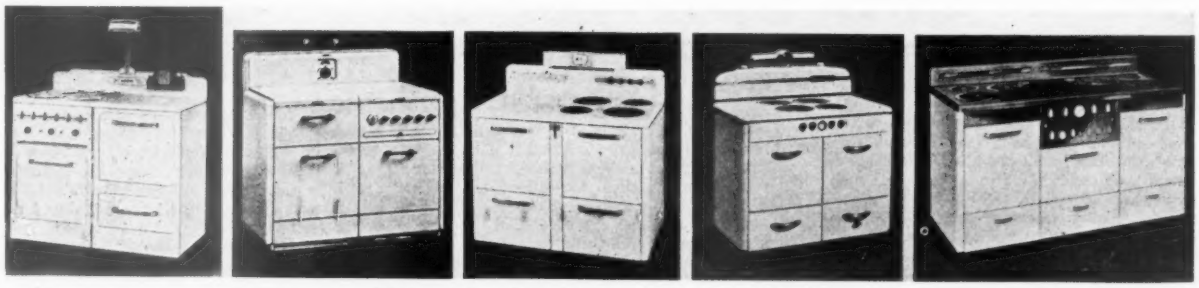
As a preliminary, laboratory tests with a moving tape were made on adults, and the results showed that words on the yellow board were read more rapidly than those on the blackboard, the average difference being 15·4 per cent. Of more importance, however, are the tests carried out under actual classroom conditions. In these a test passage of 100 words was written on the board and the children were told to read it right through and then copy it on paper. Three different methods of trial were adopted, covering over 1,000 cases, and under ordinary classroom conditions. The results all pointed definitely in the same direction—the children were found to copy nearly 10 per cent. more in the same time from the yellow board than from the black board, and it is suggested that this saving in time represents a material reduction in strain, an argument which seems entirely reasonable. Further research is in progress to find out the most suitable materials for boards of this type.—(*The National Institute of Industrial Psychology, Aldwych House, Aldwych, London, W.C.2.*)

Cooker Design

The illustration at the foot of this page shows a typical range of American electric cookers, and is reproduced from *House and Garden.* Whilst nobody would pretend that the standard of design is quite perfect, it does seem to be somewhat above the level prevailing at the moment in this country. Moffatts, Flavels, Parkinsons and one or two others are all producing good designs, but the cookers shown in this illustration are all about the same size, and I hardly think it would be possible to produce an equally good display from the designs now on sale here, and if one ignores the gas industry the range becomes much smaller. A pity, though it seems that design is slowly getting better; but must America always be so far ahead? In washing-machine design, for instance, the standard of design here is deplorably low, whereas in America it is



Various types of American cookers (see note above).

about as good as the cookers and other kitchen fittings.

Research, 1936–1937

Since the annual reports of the Building Research Board are brought up to the end of each year, the 1936–37 Report* of the D.S.I.R. naturally overlaps it to a considerable extent, and no attempt is made to describe the work of the Building Research Station at any great length. There are, however, some interesting results to which I have so far seen no printed references, notably some work on heat transmission through walls and the resistance of bends in ventilating ducts which, it has been found, can be reduced by the introduction of vanes and splitters until the resistance of an abrupt right-angled bend can be reduced to a figure little greater than that of a properly rounded elbow.

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Does the Building Industry as a whole spend as much as it should on research? While the report makes it difficult to extract precise figures, the answer would seem to be that it does not. There are, I know, a number of information bureaux maintained by different groups in the industry, but they exist very largely as centres for propaganda, and no figures are available for the amounts they spend on pure research. There are also various purely research associations in groups allied to the building industry—the paint people, for example, spending some £16,000 a year, but far too few firms go the B.R.S. for their information. The most encouraging feature is that a number of firms and other bodies have combined to finance an investigation on the crazing of renderings.

Plastic Rubber Flooring

Dunlop Plantations and the Limmer and Trinidad people have formed a joint company called Semtex, Ltd., to lay plastic rubber flooring. In the Semtex material there is a specially stabilized rubber latex which preserves the resiliency of rubber in its natural state and binds together the aggregates. The result is waterproof, non-skid, quiet and durable, and it can be supplied in a variety of colours and finishes. A considerable amount of research work has been done, and this has resulted in the production of different grades for various applications such as ship's work and industrial floors. Further research is in progress and the manufacturers hope to find a large market in the building industry. —(*Semtex Ltd., Steel House, Tothill Street, London, S.W.1.*)

Manufacturers' Items

Messrs. Holophane, Ltd., of Elverton Street, S.W.1, announce that a new range of "built-in" fittings will shortly be placed on the market. These fittings, which are fully illustrated and described in a catalogue just issued by the firm, will, it is stated, meet every lighting requirement for modern buildings.

This range of "built-in" fittings numbers 45, and apart from this number of standard fittings the unit construction will permit of an unlimited number of other designs to meet special requirements.

Perfect control of light is essential to secure lighting efficiency from units which are recessed, and have only one side for an outlet. This high efficiency is achieved by the use of Holophane Controlens and a series of special prismatic reflectors. The Controlens are prismatic glass plates of various designs, to suit different light distributions and having all the optical properties of lenses. The range includes square, round, flat and dished shapes.

The standard units are divided into three classes, flush-fitting, semi-recessed, and close ceiling units. Where depth will permit, flush unit type can be used; semi-recessed type can be used where there is not enough space above the ceiling to accommodate the flush type and the close ceiling type can be used where no recessment is possible. The flexibility of the system thus permits its use throughout the building and preserves uniformity of design. The scientific precision of light control from the Controlens enables these units to be used for lofty ceilings which were previously outside the range of modern architectural lighting units on the grounds of economy.

The lighting of shop windows, counters and exterior displays are specially catered for by two units—one square plate and one round dished unit. Two different light distributions are available with these units to meet the spacing ratio requirements.

Where a decorative effect is required the use of side panels of coloured opal can be arranged in the semi-recessed and close-ceiling units, whilst the metal work of all units can be obtained in colour-sprayed enamel, chromium plate or natural bronze finishes.

A number of Controlens units in which the plates are used both horizontally and tilted at special angles were designed for the lighting of operating theatres of hospitals and dental surgeries. Special data on the lighting schemes for hospitals are given on the pages in the catalogue illustrating these hospital units.

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Yelverton Dawbarn Bros., Ltd., door and general joinery makers, have opened an office at Baltic Chambers, 50 Wellington Street, Glasgow, C.2. Telephone No.: Central 4401.

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The Zinc Development Association has been formed with the object of improving the technique of using zinc in the building industry and other trades in Great Britain, and has offices at Great Westminster House, 27 Horseferry Road, Westminster, S.W.1. Telephone: Victoria 7581.

Enquiries are invited from architects, builders and others interested in this material, and the Association has on its staff assistants who have made a special study of the methods of using zinc, and who can answer all enquiries.

* *Annual Report of the Department of Scientific and Industrial Research.* London: His Majesty's Stationery Office. Price 3s.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICTS

EAST HAM. *Houses.* The East Ham Corporation is to erect 42 houses in Vicarage Lane, at a cost of £22,600.

ENFIELD. *Flats, etc.* Plans passed by the Enfield U.D.C.: Eight flats, The Grange, Cockfosters, B. Woolsey & Co.; 74 flats, Merlin Close, Eaton Road and four shops and 16 flats, off Brick Lane, Mr. E. W. Palmer; 60 houses, Beverley Road, W. Goodchild & Co.; 34 flats, off Caterhatch Lane, Mr. James Neilson; factory, Hertford Road, and 36 flats, Gordon Way, Bowyer and Bowyer; 84 flats, South of The Ride, A. E. Moffatt Hodford Properties, Ltd.

ENFIELD. *School.* The Enfield Education Committee has obtained a site for a school in Churchbury Lane.

MORDEN. *Schools.* The Surrey Education Committee is to erect a central mixed council school for 480 children; a junior mixed council school for 432 children; and an infants' council school for 424 children at the Morden Farm Estate.

WANSTEAD. *Houses, etc.* Plans passed by the Wanstead Corporation: 26 houses, Summit Drive; 28 flats, Hermon Hill.

PROVINCES

FILTON. *Clinic.* The Gloucestershire C.C. is to erect a clinic in Shields Avenue, Filton.

HASTINGS. *Houses.* Plans passed by the Hastings Corporation: Eight houses, Madeira Drive, Briars Estate, St. Leonards, Mr. F. Gordon Watford; eight houses, Down Road, Mr. H. Hubbard Foord; six houses, Oxford Road, Hollington Estate, St. Leonards, Mr. T. Francis Sayer.

HOVE. *Bungalows.* Plans submitted to the Hove Corporation: 66 bungalows, Dale View, West Way, Toms and Partners.

PONTEFRACT. *School.* The Pontefract Education Committee is to erect a senior girls' school at Carleton Park.

PONTEFRACT. *Houses.* The Pontefract Corporation has obtained sanction for a loan of £33,215 for the erection of 62 houses in Churchbalk Lane and Monkhill Lane.

ROTHERHAM. *Fire Station, etc.* The Rotherham Corporation has obtained sanction to borrow £38,358 for the erection of a fire station and firemen's dwellings.

RUGBY. *School.* The Warwickshire Education Committee has obtained a site in Dunchurch Road, Rugby, for a senior school.

SHEFFIELD. *Houses.* Plans passed by the Sheffield Corporation: Nine houses and seven flats and caretaker's quarters, Bolehill Road, Mr. J. C. Mason; 25 houses and reading-rooms, Bunting Nook, John Eaton's Trustees; six houses, Greystones Road, W. Malthouse, Ltd.

SWANSEA. *Cinema, etc.* Plans passed by the Swansea Corporation: 29 houses, Plasmarl, Mr. J. C. Oliver; nine flats, Newton Road, Picton Development, Ltd.; 18 houses, Wimmerfield Avenue, Mr. Syd Davies; six houses, off Mayals Road, Mr. Isaac Jones; cinema, High Street, Odeon Theatre Co.

WINDLESHAM. *School.* The Surrey Education Committee is to erect a school for junior mixed and infants, at Windlesham, at a cost of £12,505.

WYTHALL. *School.* The Worcestershire Education Committee is to obtain a site at Wythall for the erection of a senior school.

YORK. *School.* The York Education Committee has approved plans for the proposed new St. George's R.C. Senior Boys' School.

YORK. *School.* The York Diocesan Education Committee is to erect a Higher Grade School on the Manor site.

THE BUILDINGS ILLUSTRATED

ITALIAN CLUB, CHARING CROSS ROAD, W.C. (pages 243-245). Architect: Michael Rachlas. The general contractors were: H. N. Barnes, Ltd., and the sub-contractors and suppliers included: T. C. Jones, steelwork; Pirelli, Ltd., rubber floors; Calders, Ltd., oak flooring; Benham and Sons, equipment and ventilation of kitchen; Honeywill and Stein, "Gyproc" plaster boards.

METHODIST CHURCH, TIMPERLEY, CHESHIRE (pages 259-261). Architects: F. Chippindale and J. Needham, AA.R.I.B.A. The general contractors were: Wm. Thorpe and Son, who were also responsible for the excavation, foundations, dampcourses, asphalt, concrete blocks, and reinforced concrete, joinery and church fittings. The sub-contractors and suppliers included: Accrington Brick Co., bricks; Stuarts Granolithic Co., artificial stone; Cooke and Ferguson, structural steel; Lewis Tileries, Rosemary tiles; D. Anderson and Son, roofing felt; Cork Insulation Co., cork tiles; W. J. Harries, waterproofing materials; G. N. Haden and Sons, central heating; W. A. Callow, electric wiring; Falk, Stadelmann & Co., electric light fixtures; J. H. Enion and Son, plumbing; Shanks, Ltd., sanitary fittings; Laidlaw and Thompson, door furniture; Williams and Williams, casements; Ferguson and Son, plaster; John Wood and Son, textiles; Clibroons, Ltd., shrubs and trees; Thonet Bros., Ltd., box chairs in vestry.

PRICES

THE third section of the JOURNAL's Supplement on Prices is published this week. The intention of the new series, compiled for the JOURNAL by Messrs. Davis and Belfield, PP.A.S.I., is to form as complete and reliable a guide as is possible. Accuracy will be maintained by obtaining a special quotation for each price published. Comprehensiveness is more difficult in that a complete list of items obviously cannot be published, but by the division of the Supplement into four weekly sections a reasonably full and representative list has been secured.

In addition to Prices of Materials and Prices for Measured Work, the Supplement will contain a section on Approximate Estimating—on the lines of the series which have already appeared in Information Sheets—which will be found very valuable for estimates in which the cubing system is difficult to apply. Labour Rates, which alter only rarely, will be published in two weeks' time and subsequently only when they change. The JOURNAL will keep a stock of these rates and supply copies to those who ask for them.

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

1. Current Market Prices of Materials, Part I. (published Jan. 27).
2. Current Market Prices of Materials, Part II. (published Feb. 3).
3. Current Prices for Measured Work, Part I.
4. A.—Current Prices for Measured Work, Part II.

   B.—Prices for Approximate Estimates.

ANSWERS TO QUESTIONS

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

● *Prices are for work executed complete and are for an average job in the London Area, all prices include for overhead charges and profit for the general contractor.*

PART 3

CURRENT PRICES FOR MEASURED WORK—1

BY DAVIS AND BELFIELD, PP.A.S.I.

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 .. „ „ „	2/8

EXCAVATOR

	Ordinary Ground	Clay
Surface digging average 9″ deep and wheeling and edposiing on spoil heap, not exceeding two runs per yard super	–/9	1/1

EXCAVATOR—(*continued*)

	Ordinary Ground	Clay
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	2/10½	4/0½
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

CURRENT PRICES

BY DAVIS AND BELFIELD, PP.A.S.I.

EXCAVATOR, CONCRETOR AND BRICKLAYER

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	
Hardcore, broken brick, deposited, spread and levelled, and rammed to a true surface 6″ thick per yard super	1/4	

CONCRETOR

Foundations and Mass Concrete

Portland cement concrete 1 : 6 with unscreened ballast, in foundations and masses exceeding 12″ thick .. .. .. per yard cube ..	21/4½
Ditto, 1 : 3 : 6, with one part of cement and three parts of sand and six parts of clean gravel per yard cube	22/6
Ditto, 1 : 2 : 4 with one part of cement, two parts of sand and four parts of ¾″ crushed graded shingle per yard cube	26/5
Add if in foundations not exceeding 12″ thick per yard cube	2/3
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	4/–
Add or deduct for each inch over or under 6″ in thickness per yard super	–/6
Add for surface finished with spade face 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) .. .. per yard super	5/–
Add or deduct for each inch over or under 6″ in thickness per yard super	–/8

Casings

Portland cement concrete 1 : 2 : 4 as before, in encasing to steel joists .. .. .. per foot cube	1/3
Ditto, packed around rods (measured separately) in lintols, sectional area not exceeding 36 inches per foot cube	1/5½
Ditto, ditto, over 36 inches and not exceeding 72 inches sectional area .. .. .. per foot cube	1/4½
Ditto, ditto, over 72 inches and not exceeding 144 inches sectional area .. .. .. per foot cube	1/3½
Ditto, ditto, over 144 inches sectional area per foot cube	1/2½

Walls in Situ

Portland cement concrete 1 : 6 with unscreened ballast in 9″ walls .. .. per yard super	6/–
Ditto, in 12″ walls .. .. .. per yard super	7/3

Reinforcement

⅝″ diameter and upwards mild steel rod reinforcement, cut to lengths, including bends and hooked ends and embedding in concrete lintols .. .. per cwt.	26/6
Under ⅝″ diameter ditto .. .. .. per cwt.	28/–

Formwork

Close boarded formwork to soffites of floors and strutting up .. .. per yard super	3/9
Vertical formwork to sides of concrete walls, including struts, etc. (both sides measured) per yard super	3/–
Formwork to sides and soffites of concrete lintols and beams per foot super	–/6
Wrot ditto .. .. per foot super	–/7

BRICKLAYER

	Flettons £ s. d.	Second Stocks £ s. d.	Blue Staffordshire Wirecuts £ s. d.
Reduced brickwork with ½″ joints in lime mortar 1 : 3 ..per rod	24 4 6	33 12 7	
Ditto, cement mortar 1 : 3 „	26 10 6	35 18 8	53 0 0
Half brick walls in lime mortar 1 : 3 .. ..per yard super	5/3	7/5	
Ditto, in cement mortar 1 : 3 per yard super	5/10	7/11	11/8
One brick walls in lime mortar 1 : 3 .. ..per yard super	10/6	14/10	
Ditto, in cement mortar 1 : 3 per yard super	11/8	15/10	23/4
11″ hollow walls in lime mortar 1 : 3 including wall ties and forming cavity ..per yard super	12/–	16/4	
Ditto, in cement mortar 1 : 3 per yard super	13/2	17/4	24/10

	£ 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 „	5 0 0
Ditto, ditto, to quick sweep .. .. .. „	10 0 0
Extra for Internal fairface and flush jointing per yard super	1/1½
Extra for grooved bricks as key for plaster „	3d.
Raking out joints ditto .. .. .. „	4½d.
Hacking concrete ditto .. .. .. „	6d.
Horizontal double slate damp-proof course 4½″ wide bedded in cement mortar .. .. per foot run	4d.
Ditto exceeding 4½″ in width .. ..per foot super	10d.
Vertical ditto .. .. „	1/–
" Ledkore " (Grade B) D.P.C. .. .. „	9d.
Plumbing angles .. .. per foot run	½d.
Rake out joints and point to lead flashings „	2d.
Ditto stepped .. .. „	3d.
Bedding door frames .. .. .. „	1d.
Ditto and pointing one side .. .. „	2d.
Ditto and pointing both sides .. .. „	3d.
Parge and core flues .. .. each	4/–
Set and flaunch only chimney pots .. .. „	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/–

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	9″ × 3″ 2/6	9″ × 6″ 3/3
Galvanized cast iron School Board pattern air bricks and building in .. .. .. each	9d.	1/3
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
Clay tile ditto .. .. „	4/5	5/–	5/9	6/4½
Pumice ditto .. .. „	5/3	6/2	7/4	9/1
Plaster ditto .. .. „	5/1	6/1	7/3	8/11
White glazed both sides best quality bricks, set in cement mortar and pointed in Parian cement per yard super ..		42/5		

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. 95/– ..per yard super	5/1	5/6	4/2
Rustic Flettons p.c. 70/6.. „	3/4	3/6	2/11
Blue pressed p.c. 174/– .. „	11/3	12/6	8/10
Sand faced hand made reds p.c. 120/– per yard super	8/–	8/7	6/4
White glazed, headers p.c. 470/– and stretchers 480/– ..per yard super	32/–	36/–	24/8
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	9d.	10d.	6¾d.

CURRENT PRICES

BY DAVIS AND BELFIELD, PP.A.S.I.

BRICKLAYER, DRAINLAYER, ASPHALTER AND PAVIOR

BRICKLAYER—(*continued*)

Facings—(continued)

	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	9/10½	12/–
Ditto and pointed both sides „	10/6	11/9	13/10
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	17/11	22/1
Ditto and pointed both sides „	17/3	19/9	23/10
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/–
Ditto white glazed both sides and pointing both sides per yard super			41/9
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
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

DRAINLAYER

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

	For 4″ pipes	For 6″ pipes
Trenches not exceeding 3′ 0″ depth, per 12″ average in depth per foot run	–/3	–/3½
Ditto, exceeding 3′ 0″ and not exceeding 5′ 0″ depth, per 12″ average in depth per foot run ..	–/7	–/7
Ditto, exceeding 5′ 0″ and not exceeding 10′ 0″ depth, per 12″ average in depth per foot run ..	–/9½	–/9½
6″ thick Portland cement concrete bed 6 : 1, 12″ wider than diameter of pipe laid to falls, packed under and flaunched halfway up sides of pipe .. .. .. per foot run	–/8½	–/10
6″ ditto, and completely encasing per foot run	1/7	1/11

Agricultural land drain pipes, laid complete with butted joints, exclusive of digging .. .. per yard run	2″ –/4½	3″ –/7½	4″ –/10	6″ 1/4½

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
Extra for bends .. each	1/4	1/7	2/–	2/4	3/6	4/–
Ditto, single junction each	1/10	2/2	2/–	2/4	3/6	4/–
Trapped yard gulleys with galvanized iron gratings, and setting in concrete and jointing to drain each	9/–	11/6	13/–	14/–	19/–	22/–
Ditto, with horizontal back inlet .. .. each	10/6	13/3	14/6	15/9	20/6	23/9
Ditto, with vertical back inlet .. .. each	11/3	14/–	15/3	16/9	21/3	24/9
Intercepting trap with Stanford stopper and setting in manhole and making good .. each	20/6	24/–	25/6	29/–	—	—

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	3/6	5/3	9/3
Cutting and waste .. .. each	1/9	3/6	—
Extra for bends, including extra joints and cutting and waste on pipe each	10/10	20/9	59/5
Ditto, junction ditto .. .. each	17/5	32/6	99/5
Intercepting trap .. .. each	49/–	79/4	183/4

DRAINLAYER—(*continued*)

	4″	6″	9″
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet	45/5	79/6	—
H.M.O.W. gulley trap with 9″ inlet with high invert outlet for use with raising pieces	33/5	48/–	—
4″ inspection chamber with one 4″ branch	—	66/–	
4″ ditto with two 4″ branches one side	—	99/–	
6″ ditto with one 4″ branch	—	95/3	
6″ ditto with two 6″ branches one side	—	140/–	
9″ ditto with one 9″ branch	—	212/6	
9″ ditto with two 9″ branches one side	—	326/–	

	White glazed	Salt glazed
4″ half-round straight main channel 24″ long each	5/10	2/1
Ditto, channel bends (ordinary) .. .. each	8/6	3/–
4″ Three-quarter round branch bends (short) each	8/6	6/9
Manhole covers and frame bedded in grease and set in cement mortar .. .. .. each	4/–	

ASPHALTER

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

	Natural Rock Asphalte Best Quality	Natural Rock Asphalte Second Quality
Basement (Tanking).		
1½″ horizontal d.p.c. in three layers on concrete per yard super	8/5	6/10
¾″ vertical ditto in three coats on brickwork or concrete .. .. .. per yard super	11/6½	10/–
Double angle fillet .. .. per foot run	–/6¼	–/5¼
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	–/6¼	—
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	–/3¼	–/3¼
Parapet outlets .. .. each	4/2½	3/8

PAVIOR

	1″	1½″	2″
Granolithic paving .. per yard super	3/1	4/–	5/2
Add for dusting with carborundum powder per yard super			–/9
Cement and sand paving (1 : 3) per yard super	1/10	2/4½	—
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
⅝″ thick ditto, reinforced with laths and galvanised wire netting .. .. .. per yard super	—		6/0½
Add for polishing .. .. per yard super	—		–/6¼
Terrazzo paving, white chips set in white cement, panelled into squares with 1¼″×¼″ deep ebonite strips, on and including cement and sand screed. Total thickness 1½″ per yard super			19/5
Ditto, but white chips set in grey Portland cement per yard super			17/4
Terrazzo tiles, white chips set in white cement :—			
Size 9″ × 9″ × ¾″ .. .. .. per yard super			19/8
Size 12″ × 12″ × 1″ .. .. .. per yard super			17/10
Ditto, but white chips set in grey Portland cement :—			
Size 9″ × 9″ × ¾″ .. .. .. per yard super			18/1½
Size 12″ × 12″ × 1″ .. .. .. per yard super			16/3

	½″	3/16″	¼″
Sheet rubber .. .. per yard super	12/1	15/3	18/4½
Rubber tiles .. .. per yard super	15/3	18/4½	21/6
	5/16″	⅜″	¼″
Cork tiles, polished .. - per yard super	12/10½	11/–	9/9

CURRENT PRICES

BY DAVIS AND BELFIELD, PP.A.S.I.

MASON, SLATER, TILER AND ROOFER, AND CARPENTER

PAVIOR—(*continued*)

Hard red paving bricks laid flat (9″ × 4½″ × 2⅝″)	per yard super 9/–
Ditto, laid on edge	per yard super 11/9

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

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	11/9	17/–

Yorkstone

	Thickness 3″	4″	6″
Templates tooled on exposed faces, sawn beds and joints, and set in cement mortar :—			
Size 9″ × 9″ .. .. each	1/8	2/3	3/4½
„ 14″ × 9″ .. .. each	2/7½	3/6	5/3
„ 18″ × 14″ .. .. each	5/3	7/–	10/6
„ 22½″ × 14″ .. .. each	6/6	8/8	13/–
„ 27″ × 14″ .. .. each	7/10½	10/6	15/9

Artificial Stone

In steps, copings, band courses, etc., per foot cube, from	9/–

Reconstructed Stone

In steps, dressings, band courses, etc., per foot cube ..	12/6

Slate

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

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

SLATER, TILER AND ROOFER—(*continued*)

Tiles

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

Pantiles

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

Sundries

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

Cedarwood Tiles

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

Asbestos

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

CARPENTER

Centering

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

Fir Sawn and Fixed

Plates, dragon ties, sleeper joists and lintols, ground floor 4″ × 2″ and 4″ × 3″ .. .. per foot cube	3/9
Upper floor ditto (7″ × 2″) .. .. per foot cube	4/4
Partitions (stud) (4″ × 2″ and 4″ × 3″) per foot cube	5/–
Rafters and ceiling joists (4″ × 2″ and 4″ × 3″) per foot cube	4/9
Purlins, (6″ × 4″) .. .. .. per foot cube	5/4
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 including cutting ends of rafters against same .. .. per foot run	–/6¾
1½″ × 11″ hips or valleys ditto .. per foot run	–/8¼
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″ × 1″ ditto for Ladies (16″ × 8″) per square	14/6
2″ × 1″ ditto for Duchess (24″ × 12″) ditto per square	9/–
2″ × 1″ ditto for randoms 24″/22″ to 12″/10″ per square	12/2
1½″ × ¾″ ditto for plain tiles (10½″ × 6½″) to a 4″ gauge per square	15/4
1½″ × 1″ ditto for pantiles to approximately 11¼″ gauge per square	6/7

Roof Boarding

	¾″	1″
Deal roof boarding in batten widths close jointed per square	29/2	34/4½
Ditto, prepared for patent flat roofing and including firrings to falls .. .. per square	39/7	45/10
Small tilting fillet .. .. per foot run	–/2	
Large ditto .. .. per foot run	–/4	

Felt

Sarking or slaters felt, fixed with 2″ side laps and 6″ end laps .. .. per yard super	–/10½
Roofing felt ditto .. .. .. per yard super	1/1
Bituminous hair felt ditto .. .. per yard super	2/–

Weather Boarding

Rough deal feather edge boarding in batten widths ½″ average with 1¼″ laps .. .. .. per square	31/3
Western Red Cedar ditto .. .. .. per square	32/10

Fascia and Soffite Boards

1″ × 6″ deal splayed fascia fixed to rafter feet per foot run	–/4½
1″ × 9″ deal soffite tongued both edges, including grooves per foot run	–/7½

(*To be continued in next Issue*)