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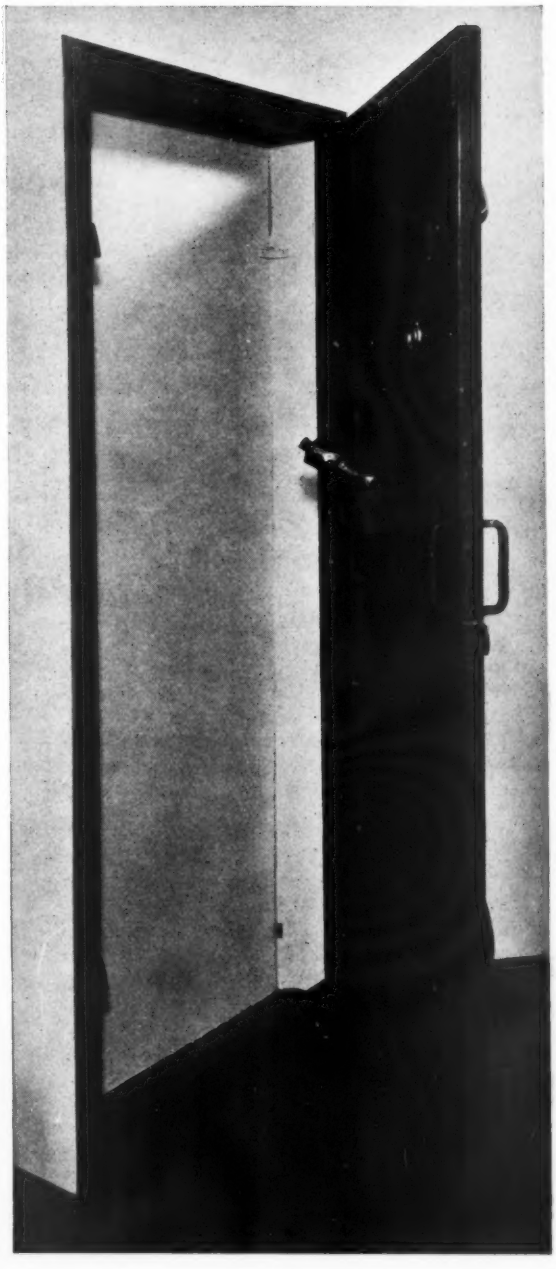

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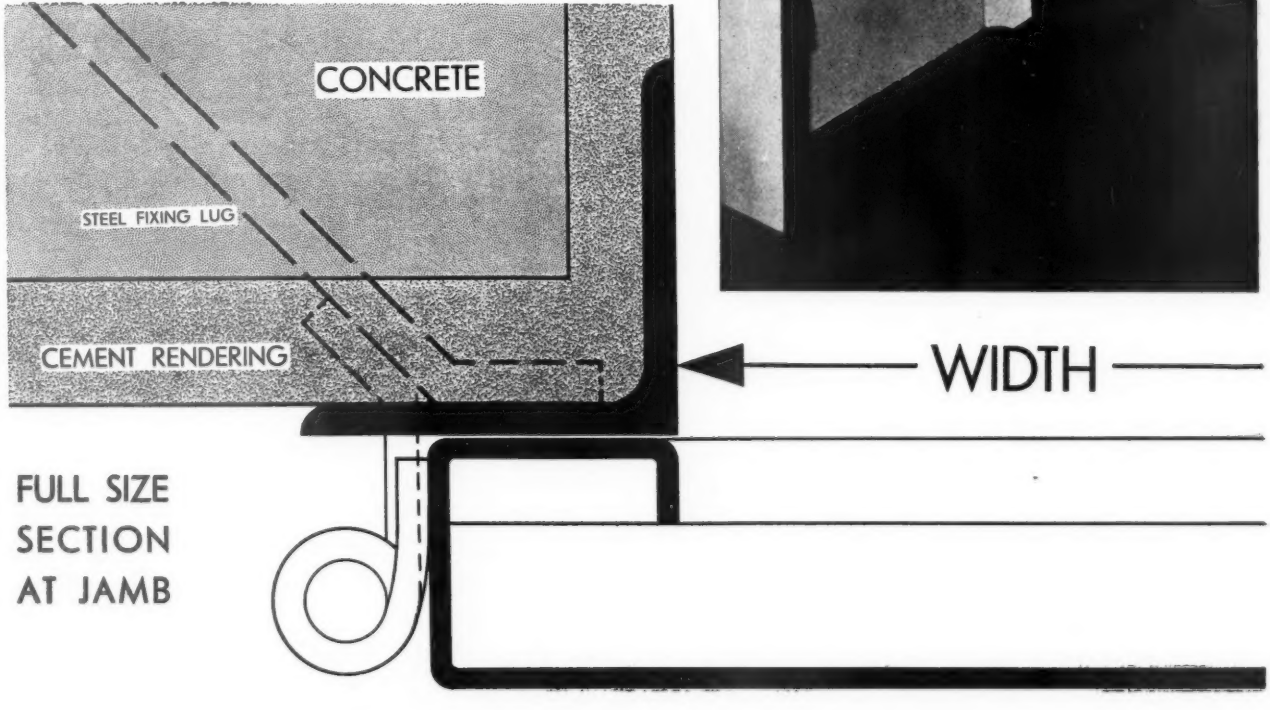

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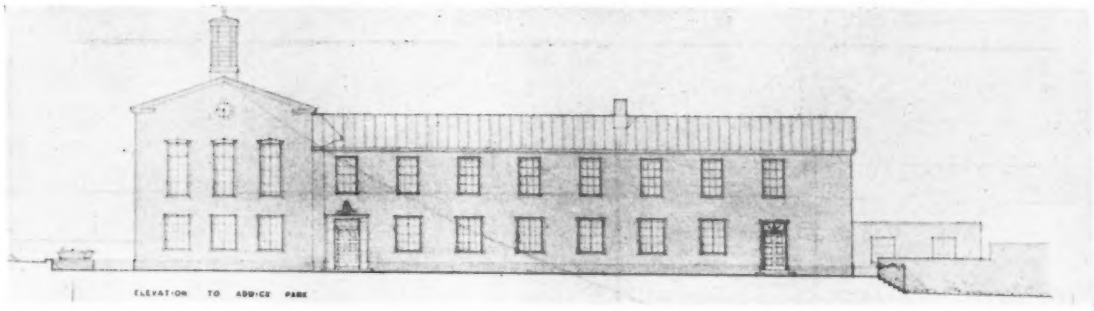
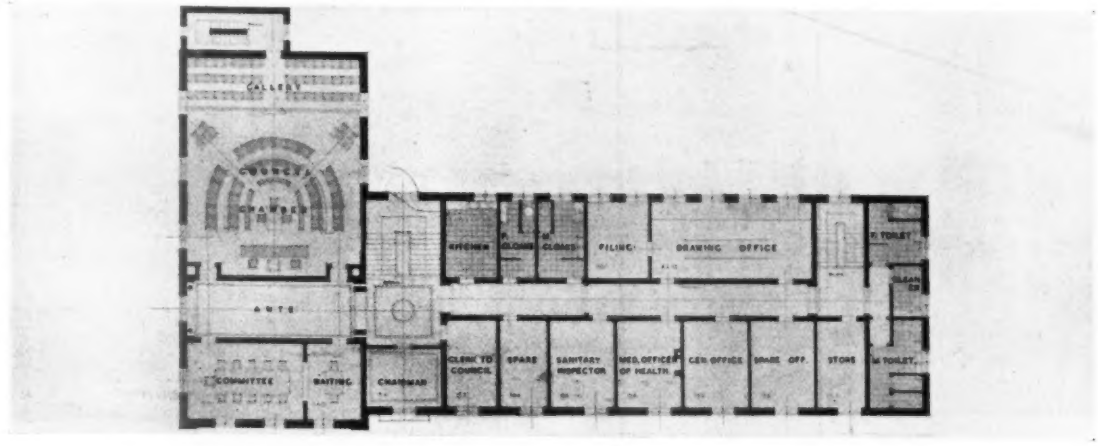
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

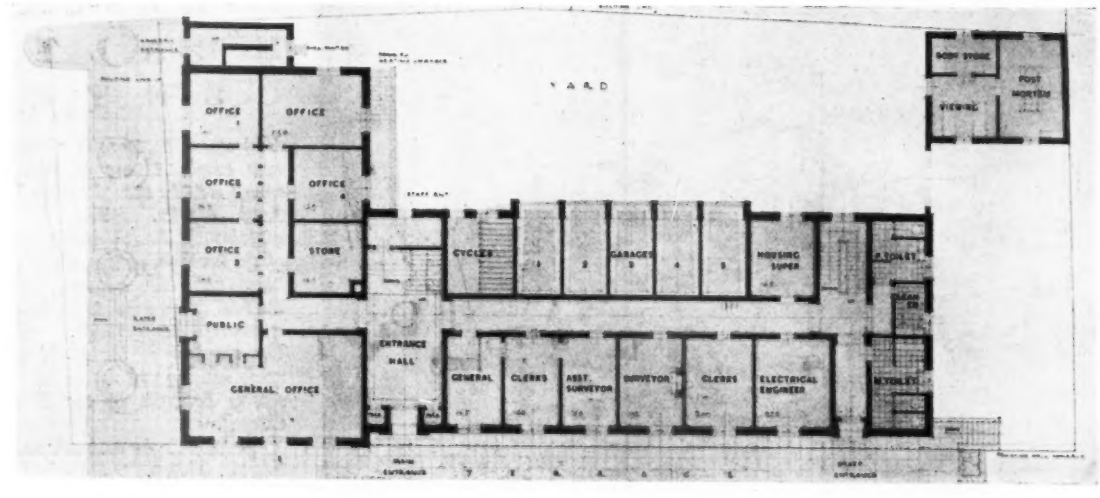
THURSDAY, OCTOBER 20, 1938 NUMBER 2283 : VOLUME 88

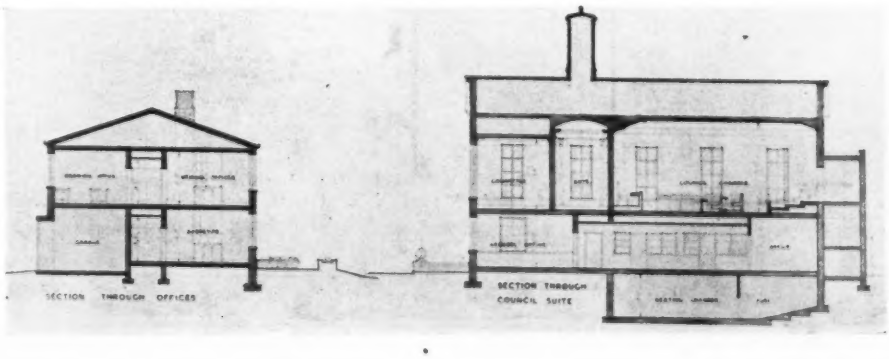
PRINCIPAL CONTENTS

THE ADWICK-LE-STREET COMPETITION: WINNING DESIGN

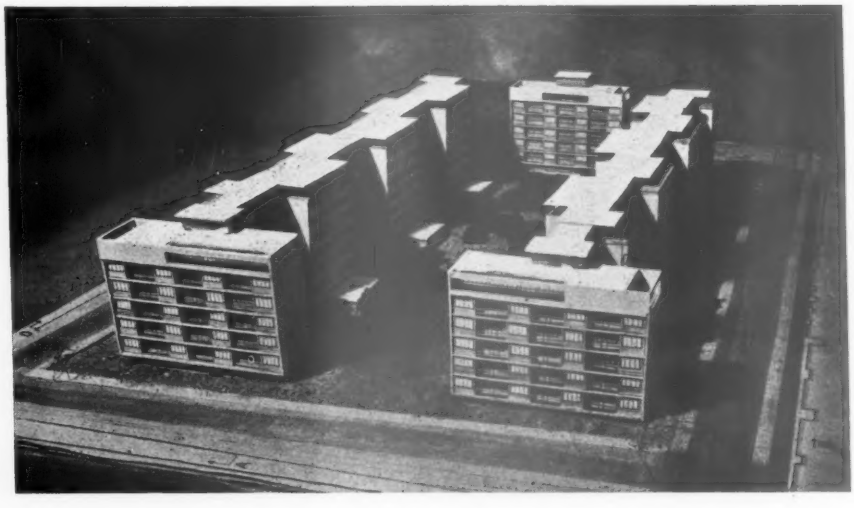








Main elevation, ground and first floor plans, and sections of the winning design, by Messrs. Shapley and Davidson, in the competition for new Council Offices, Adwick-le-Street. The full award of the assessor (Mr. John C. Procter) was published in last week's issue.

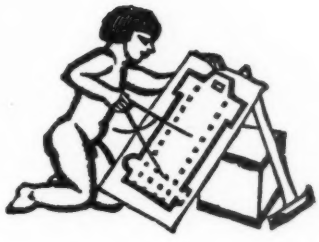


FINSBURY HEALTH CENTRE

The upper photograph shows the new Health Centre at Finsbury, which will be opened tomorrow by Lord Horder. The building contains the health administration of the borough, clinics, disinfecting plant and lecture-rooms, and is the first of its kind to be built by a Metropolitan borough.

On the left is the model of a new housing block which will shortly be built by the Borough Council.

The architects for both schemes are Messrs. Tecton.



FINSBURY'S HEALTH

THE opening of the Finsbury Health Centre by Lord Horder tomorrow is a special occasion in many ways.

The Government is emphasizing the importance of eurhythmics ; almost every food, drink, and medicine manufacturer is suggesting short cuts to physical perfection ; and by less advertised and more democratic methods the local authorities are doing some of the real work.

The Metropolitan Borough of Finsbury contains about 70,000 inhabitants whose incomes and surroundings limit their power to help themselves. About three years ago the Council began a new programme of work to improve the health of the borough ; firstly by a centralized health centre ; secondly, by rehousing schemes which would be the best possible on the available sites.

For such work, when it is carried out by a local authority three golden rules are generally observed : *Do nothing which other councils have not done, and do it in exactly the same way ; get an existing official, or a temporary assistant in his department, to execute the work ; provide a certain amount of pomp to encourage local pride—but, of course*, familiar *pomp*.

These rules do not give any guarantee of good value for money. They account for the large proportion of the downright bad in municipal work. But they create the least friction and give the opposition the fewest catch-cries in the next election—after all, politics are politics.

But at Finsbury, three years ago, the Council began to wonder whether the path of least resistance was good enough.

It needed a health centre, and it managed to visualize a health centre as an efficient, cheery, colourful, bracing place. And it decided that colourful, efficient, bracing and cheery its centre would be.

The courage of the Council has been great. Entrusted with public money, it has dared to do something different. The strongest man must shudder at the electioneering slogans it has given its opponents.

Now the centre is built and ready to open. Critics will swarm down upon it and through it. And Alderman Riley and Dr. Katial (who have believed in and worked for the centre for years), the Health Committee and the Council must prepare to defend themselves.

What has this centre, they will be asked, which an ordinary building would not have ?

In answering the Council had better be *practical*. Nothing which cannot be demonstrated to a grocer with the same certainty as that loaf sugar is easier handled in packets than loose, should be put forward as an argument. What, then, can they say ? These things:—

The circulation is so obvious that no one can lose his way. Each room is lighted all down one side from windows which never overlook a closed court or light well. No soil or service pipes are anywhere visible, but are all accessible from removable panels. The building is cased in tiles which can be washed down from a travelling sling (provided).

Individual clinics will constantly alter in size ; so all floors span between outside walls, and partitions can be rearranged in any way.

Under each window (three or more to a room) is a breeze brick. By removing this and an *external* screwed panel a basin can be fixed or removed in two hours.

Ceiling heating coils are continuous, and power runs and ceiling light points are in continuous clipped and screwed troughs ; new apparatus or lights can be fixed anywhere.

Service access and circulation for disinfecting of clothes and bedding are on different levels and distinct from the rest of the centre.

As to the cheerfulness : the architects have designed or selected every colour scheme and article of equipment or furniture.

Finsbury need not bother to plunge into the controversies of architectural æsthetics (if it does, it will find there is a strong body of architectural opinion which will support its choice), but we hope the Council will take its stand on the practical advantages of its first experiment. It can ask how the building it might have built (there are plenty available) compares point by point with that it has built.

While Finsbury continues with the two rehousing schemes which are its next bold development, the JOURNAL hopes the L.C.C. and other Metropolitan boroughs will judge the health centre by results : by first cost, maintenance cost, ease of working and other *practical* qualities.

And when they have watched it for a year they may decide that a few catcalls are not important beside the advantage of getting value for money.

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NOTES & TOPICS

AFTER CHESTER

THE energy and sincerity of the C.P.R.E. have now been with us for eleven years. Both have been astonishing. And if the results of the Council's struggles have not come to very much, the most distinguished of its members have been probably the least surprised.

*

Preservation from the outset is the banner of a losing cause. It will be flocked to by sentimentalists. A minority may struggle to show that change is inevitable and that the C.P.R.E. stands for intelligent, thoughtful change: the majority will simply pay no attention.

*

It is because of all this that the Eleventh C.P.R.E. Conference raised such hopes. Professor Stapledon on Agriculture and Lord Justice Scott on National Planning seemed to prove that the C.P.R.E. was making the great change: from intelligent *preservation* to intelligent *development*.

*

Perhaps one hoped for too much. Professor Stapledon, the most constructive of our agricultural experts, only emphasized that the rural population must not be sacrificed in the interests of townsmen; Lord Justice Scott showed that a National Planning Commission would work.

*

But—after the last four weeks—to hear the old pleas for protecting a countryside which no longer exists was rather sad.

*

The C.P.R.E., and everyone else, must surely realize that the case for planned development has gone far beyond "amenity." Last month continued existence nearly depended on a regrouping of the population—a somewhat hurried regrouping. Whether for war or peace, redistribution must take place in the future and it will be a planned redistribution.

Towards making it a wisely-planned redistribution the C.P.R.E. could do in a year more than it has yet done in eleven.

SMALL HOUSES

Last Thursday Mr. J. B. Priestley and Miss Ellen Wilkinson opened the *Small Houses* Exhibition at the R.I.B.A.

*

I gather Mr. Priestley likes traditional architecture, preferably genuine period. And there is no reason why he shouldn't. For the rest, as I was not at the opening, I can only suppose it was adequately done.

*

My concern is to withdraw the carefully worded, yet slightly sinister, remarks I made some weeks ago about the secrecy in which this exhibition was concealed.

*

It is a small and excellent exhibition. Under the chairmanship of Mr. H. T. Cadbury-Brown, the sub-committee has decided to keep few and emphatic the points on which they hoped to convince the public.

*

Four points only were chosen: Bad housing development (today); good housing development (past); good housing development (today); and "Why a modern house looks funny."

*

There has been no playing for safety. The modern houses—brick, stone or timber—are the best the committee could find. And even the public can hardly miss the quality of genuineness that these share with the Regency and Georgian exhibits.

*

It is in the taxi afterwards that one wonders whether anything will come of such an exhibition—whether in the whole of Britain there is not one estate developer whom the R.I.B.A. could persuade into trying, just *once*, a civilized layout of about fifty acres.

*

One must believe that in, say, London there are two hundred people who would want to escape from the present alternatives of a "luxury gaol" or a two-hour train journey. Let us try snob glamour, propaganda, *anything* to make a beginning in stopping the rot.

MR. GOODHART-RENDEL'S RESIGNATION

Since I last wrote apologizing for inaccurate statements I had made regarding the new educational policy at the A.A., the situation has become simpler, if not clearer. Mr. Arnold Silcock has resigned from the bursarship, and Mr. Goodhart-Rendel from the directorship, of the School. When the acting principal, Mr. Fernand Billerey, hands over to Mr. Jellicoe, the new Director-Principal will, I understand, telescope these three activities in one.

CHANGE OF GOVERNMENT

I suppose it is safe to assume that those morbid rumours of a return to Beaux Arts methods will now evaporate. But is it safe to assume that the A.A.'s progressive educational experiment, rapidly becoming famous by way of unparalleled results, is to be allowed to continue in a straight line?

The stand of the British Road Federation at the Motor Show at Earls Court. The stand was designed by Mr. Barnett Freedman.

PLEBISCITE

An important element in this experiment, student co-operation in educational policy, is now at stake. Continuance of the student minority vote in the election of members of council is to be determined by plebiscite. Judging by the lively general meeting the other night, at which some of the most capable, well-reasoned speeches were by students, the odds are just about even.

*

Danger of losing the Board of Education's grant may have some slight influence on the voting, but I cannot believe that such an enlightened body as the B. of E. (witness their approach to the planning of schools, well in line with A.A. principles) would base its grant on educational methods rather than on educational results.

*

And it is obvious from the work produced in the last few years that the School has given new stimulus to the students by widening the scope of architecture and interpreting its sociological and technical implications in an imaginative yet practical way. Such teaching is, without any exaggeration, one of the most vital needs of our disordered time.

ROAD PROPAGANDA

Quite one of the most important innovations at this year's Motor Show is a show that is not a motor : the stand produced by the British Road Federation.

*

For the first time motorists are reminded when they go to examine the latest models that the improvements they are offered in the way of higher speeds and easier driving are by no means the whole story. As motoring progresses so must the facilities for motoring.

*

The stand exhibits a revealing collection of photographs illustrating good and bad precedent for road planning —rather after the manner of the *Architectural Review's* Roads Supplement of last year ; but the central exhibit is a large model of a modern road system illustrating the use of the clover-leaf crossing and other devices.

*

The miniature cars on the model actually move—without interruption : a contrast to the fate of most of the cars bought at the Motor Show, which will spend a large proportion of their life standing in traffic blocks and crawling in week-end queues.

JUST ANOTHER WORLD'S FAIR

If I hadn't felt unshakeable confidence in Messrs. Stanley Hall, Easton and Robertson, the press notices on the British Pavilion at New York's World's Fair would have given me the shivers. No afternoon tea party, this World's Fair. Waste land nearly four times the size of Hyde Park has been reclaimed for its site, a £2,000,000 sewage-disposal plant constructed, and 10,000 trees planted. The exhibition is designed to show something of " the advancement of human welfare, the creation of a better, easier, more abundant life."

*

" Close and friendly relations," as things go these days, have made it necessary for the United Kingdom to be represented on a very large scale. The pavilion will occupy a dominating position at the end of the great central avenue, facing the Trylon and Perisphere of the Theme Centre—so mercilessly caricatured in the *New Yorker* ever since whoever it was invented it.

*

The U.K. pavilion has two main departments : the Hall of Majesty and the Hall of Achievement, linked together by a bridge. The Hall of Achievement has special exhibits organized by the Ministry of Health, the Ministry of Labour and the Board of Education—also typical industrial exhibits including a Hall of Metals to illustrate Britain's contribution, by way of research and invention, to the development of efficiency in the use of metals. The Hall of Majesty is just what you think.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

We have received the following manifesto signed by all the principal academies of arts and sciences in Czecho-slovakia.

"TO THE WHOLE CIVILIZED WORLD"

We hear from many lands pleasure and exultation over the supposed assurance of peace. Our nation, however, stands exposed to the defamation of an unexampled enimical campaign of lying propaganda, betrayed by those to whom we have been loyal, robbed of a substantial part of the motherland bequeathed us by our forefathers, with our future crippled. In these, the most mournful moments our history has known, we, the representatives of Czech and Slovak intellectual life, conscious of the terrible injustice, make our protest against the shameful way in which supposed peace in Europe has been purchased at our cost.

We lived in our mothercountry desiring complete peace with our neighbours. Even the German population which, in the course of time, and especially during the period when we were bound to the Empire of the Habsburg dynasty, settled within the natural frontiers of the ancient Bohemian State, were accepted by us in our motherland as fellow-countrymen with the same rights that each one of us enjoyed. The causes of dispute inevitable in any communal life such as ours we had decided to eliminate for ever by conciliation although we were aware that recently many of them had been artificially provoked or immeasurably exaggerated and magnified. At the very moment when it appeared that we were reaching a complete and final agreement a foreign power intervened which desired a solution other than the solution of permanent and real peace and exploited a bad interpretation of the right of self-determination for aggressive aims.

Territories which for a thousand years have formed part of Bohemia are being torn away by brute force. The natural unity given to Bohemia by her frontier mountains and the great cultural unity created here through the course of centuries, is destroyed—and, at that, against the will of a considerable portion of our German fellow-countrymen. Our historic right, which, in contradistinction to other historic rights, is based upon the undeniable fact that we are autochtonous, throughout the whole Czech area, is completely forgotten.

In the first place, of course, we feel anxiety for the existence of the present generation of our nation and of those who will come after us. By the Munich decision of September 30, the nation and its future generations have lost an essential part of their vital soil. They are deprived of the right of common usage of the natural wealth of our country, lying in the frontier mountains. They are deprived of part of the work they have already achieved in the districts torn away. The livelihoods of such a number of us is taken away or destroyed that, especially for the poorer members, the very roots of the existence of many of us are being killed. Our industry is broken up, our lines of communication cut, our military defence sapped. And as if this were not enough we are threatened that the nation will also be robbed of the eastern portions of the Republic.

We never believed that, in the cultured world, might could take the place of right at any time, in a manner so terrible that the injustice of it cries out to God; this has come about by the decisions of the four Great Powers which were made against us, and in our absence. We never believed that international assurances, treaties and obligations could be denied so irresponsibly. It is a question not only of ourselves, but of the whole future of the European peoples, and especially of the small nations, whose existence is based on the firmness of the moral order. And therefore we appeal today to the consciences of those who still retain within them a foundation of European culture: Take cognizance of this fact, a true, manly, straightforward and lasting peace never issues from the violation of the weak, by treachery and by cowardice. We, the representatives of the Czech and Slovak intellectual world, declare, that we shall never give up our rights to our historic soil, to free life upon it, and to the possibility of tolerable economic development, although superior force from abroad has forced us to admit its claims. Remember, it is your duty to support us with all your powers in this struggle for a real peace, assuring the live and the right of all. Bear it in mind that our fate will overtake you also if you do not decisively oppose the methods of violence and pressure by which we have been crushed.

The Czech Academy of Science and Arts. The Academy of Creative Art. The Industrial Art School. The State Conservatoire of Music and Dramatic Art. The "Matice Slovenska." The "Umelecka Beseda." "Blok." The Circle of Czech Writers. The "Maj" Czechoslovak Authors Association. The PEN Club of Prague. The Slovak PEN Club. The Association of Slovak Writers. The Syndicate of Czechoslovak Authors and Composers.

The Czech Philharmonic Orchestra. The Orchestral Artists' Club. The Composers' Club. The "Pritomnost" Association for Contemporary Music. The Ondricek Quartette. The Prague Quartette.

The "Ales" Club of Creative Artists. The "Hollar" Society of Czechoslovak Graphic Artists. The Union of Creative Artists. The "Manes" Union of Creative Artists. The "Myslbek" Union of Creative Artists. The Union of Slovak Creative Artists. The Brno Group of Creative Artists. The Slovak "Umelecka Beseda." The Association of Creative Artists. The Specialist Organization of Czechoslovak Creative Artists. The Syndicate of Creative Artists. The Club of Women Artists. The Association of Creative Artists of Moravia.

The Dramatic Union. The Club of Soloists of the National Theatre. The Club of Czech and German Theatrical Workers. The Soloists Club of the Municipal Theatre of Prague.

THE ARCHITECTS' DIARY

Thursday, October 20

R.I.B.A., 66 *Portland Place, W.1.* "*Small House*" *Exhibition. Until October 29.*

SCHEME FOR SOUTH BANK OF THE THAMES. *Exhibition at Charing Cross Underground (Booking Hall) of models, plans and photographs of the "Star's" scheme. Until October 21.*

SOCIETY OF ANTIQUARIES, *Burlington House, W.1.* "*Excavations at Atchana in 1938.*" *By Sir Leonard Woolley. 8.30 p.m.*

INSTITUTION OF ELECTRICAL ENGINEERS, *Savoy Place, W.C. Inaugural Address, by A. P. M. Fleming. 6 p.m.*

Friday, October 21

INSTITUTION OF MECHANICAL ENGINEERS, *Storey's Gate, S.W.1. Presidential Address, by David E. Roberts. 6 p.m.*

LONDON SOCIETY. *At the Royal Society of Arts, John Street, W.C.2.* "*Bressey–Lutyens Report, The Highway Development Survey (Greater London).*" *Speakers: Sir Charles Bressey, Sir Gwilym Gibbon, Rt. Hon. Viscount Davidson, Sir Lawrence Chubb and Messrs. F. J. Osborn and G. Langley-Taylor. 5 p.m.*

ROYAL SANITARY INSTITUTE. *At the Royal Pavilion, Brighton. Until October 21.* "*The Repair of Working-Class Dwelling Houses.*" *By A. H. Holt. 5 p.m. October 22: Visit to the new combined School Clinic and Infant Welfare Centre, and the Municipal Chest Clinic. 10 a.m.*

Saturday, October 22

A.A.S.T.A. *Visit to the Metropolitan Water Board's New Research Laboratories, Rosebery Avenue, E.C. 2.15 p.m.*

ECCLESIOLOGICAL SOCIETY. *Visit to St. Mary Aldermary, Queen Victoria Street (2.30 p.m.) and St. Stephen, Walbrook, E.C. (3.30 p.m.).*

Tuesday, October 25

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C. Presidential Address, by Verner O. Rees. Also, Annual Exhibition of members' holiday sketches. Until November 18.*

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Tuesday Lunch.* "*Some Aspects of Rural Housing.*" *By V. Malcomson. 1 p.m.*

Wednesday, October 26

LIVERPOOL ARCHITECTURAL SOCIETY, *Bluecoat Chambers, Liverpool.* "*Library Planning.*" *By H. A. Dod. 6 p.m.*

WORSHIPFUL COMPANY OF CARPENTERS, *Carpenters' Hall, E.C.* "*Framing of Joiners' Work.*" *By N. W. Kay. 7.30 p.m.*

L.C.C. CENTRAL SCHOOL OF ARTS AND CRAFTS. "*Asiatic Architecture* (4000–333 *B.C.*): *Influences, Architectural Character, Temples, Palaces and Tombs.*" *By Sir Banister Fletcher. 6 p.m.*

INSTITUTE OF WELDING. *Annual Dinner, at Grosvenor House, Park Lane, W.1. 7.30 for 8 p.m.*

A.A. SPECIAL MEETING

A special general meeting of the Architectural Association (Inc.) was held at 34, 35 and 36 Bedford Square, London, W.C.1, on Tuesday, October 11, 1938, at 6.30 p.m., Mr. Verner O. Rees (President), being in the chair.

The purpose of the meeting, which was attended by a large number of members, was to resume the discussion (which was started at the adjourned meeting held on August 8) of the proposed repeal of the existing by-laws of the Association, and the adoption of new by-laws, framed to form a Probationary (non-voting) Class of Membership.

The president, in opening the meeting, stated that the alterations to the by-laws were made necessary by the action of the Board of Education, who had intimated that the considerable grant they made to the Association's school could not be continued unless the vote in council elections was withdrawn from all future students. He recalled the four points brought forward by Mr. Maurice Webb at the adjourned meeting, and stated that since that meeting the A.A. Council and the A.A. Advisory Council had met on several occasions, that they were agreed on their policy, and that they recommended all members to vote in favour of the new by-laws. Further, that the Council, in consultation with the Advisory Council, were agreed upon certain other measures, particulars of which had been circulated to all members on October 7, 1938. A long discussion followed.

The Hon. Secretary read the names of the proposed scrutineers of the postal ballot, viz., Mr. A. R. F. Anderson, Mr. S. M. Desyllas, and Mr. E. L. Thompson, who were appointed by the meeting.

The meeting then terminated.

PRESENTATION TO SIR RAYMOND UNWIN

The first award of the Howard Memorial Medal, established by the Garden Cities and Town Planning Association, has been made to Sir Raymond Unwin, PP.R.I.B.A., PP.T.P.I. It has been arranged to present the medal to him at a complimentary dinner to be held at Grosvenor House, Park Lane, W.1, on Wednesday, November 23. Mr. Cecil Harmsworth, Chairman of

the Council of the Association, will preside, and the Minister of Health, The Rt. Hon. Walter Elliot, M.P., will be the principal speaker. Tickets, price 15s. each, may be obtained on application to : The Secretary, The Garden Cities and Town Planning Association, 13 Suffolk Street, Pall Mall, S.W.1.

POINTS FROM PAPERS

National Conference for the Preservation of the Countryside. Chester. "Agriculture and the Countryside." By Prof. R. G. Stapledon, C.H.E., M.A.

Up to the post-war period it would have been substantially true to say that agriculture and the countryside were in effect synonymous. There is now an immense difference between the environmental influences of even a small and non-industrialized country town and that of a village ; all villages and all hamlets are today brought within comparatively easy distance of the nearest county township. I think true rural psychology epitomizes in itself the Spirit of Place. There must be no violation of place, and everything done must be worthy and in keeping with the spirit of the particular place. Today whole counties almost are losing their rural characteristics and with these characteristics rural psychology is being rapidly undermined. I should imagine at least 60 per cent. of the road-making and cable-laying is being performed by quondam agricultural workers.

The peoples of country districts and even of whole counties are becoming completely industrialized and urbanized in outlook. All seek to adjust themselves to the standards and outlook of the city, the factory and the suburb. So it has come about that the sons of farmers seek to become agricultural scientists, livestock officers or inspectors under the Marketing Boards and agricultural officials of every sort and degree, men sincere and purposeful enough, who, driven by their matrimonial instinct perhaps desire to live in villas in the towns instead of in the country. A cottage is now, and almost by legal definition, just a box of utilities, and a village somewhere where it is possible to purchase tinned foods, and from which a bus will take the few remaining children daily to the nearest small township to be well and truly educated in the subtleties of urban psychology. Time was when rural psychology largely permeated or actually dominated the towns, and mercifully much watered down though it be, it can still be found lurking alike in the squares and the alleys of our great cities, but since it is the towns which in the last resort have planned all that has happened in rural England during the last decades, or by default allowed it all to happen, it is manifest that the towns need strong reinforcements of rural psychology.

Agriculture is nearer to nature—to nature in all her moods and tenses and in all her complexities—than is any other industry, and so those who serve agriculture are brought nearer to nature than those who serve other industries.

Those who are interested in the preservation of rural England should then, I think, fight first and foremost for a fair deal for agriculture.

I believe it to be of supreme importance that nothing should be done in rural England that reacts invidiously against the rural interests and exaggerates in any way the presumed-to-be-superior claims of the urban over the rural.

If holiday amenities are to be provided for the townspeople let not these amenities interfere with country folk and with country pursuits. I believe that there is general agreement now that national parks should be large—within them by all means have natural reserves, but my most earnest plea is that within them, too, agriculture should be interfered with as little as possible, and wherever appropriate intensified as much as possible.

I am being perhaps outrageously presumptuous when I would suggest to this conference that our greater concern should be rather for the countryman than for the townsman.

Professor Really Speaking

NOW that the lion is digesting the lamb, the two chief shepherds having successfully kept it from struggling, there may be a short interval of comparative peace till the lion looks round for its next victim. Unless therefore we are actually engaged in making burrows in the earth in which to hide, we may, in the half-hearted way which is all that is now left to us for doing anything, go back to some of the problems of our late civilization. Last month I raised the question as to what an architect should do if he became possessed of a goodly sum of money and wanted a house for himself. Should he build a new modern one or should he take over one of our beautiful old Georgian ones, restore it to its pristine loveliness, and fill it with the fine things of the period? Both ways seemed good, the saving of the old wealth or the creation of the new. I thought I had left the question open. Mr. Maxwell Aylwin, however, has written a very charming letter in which he assumes I did not.

I feel the answer is a question of temperament and ability. Some architects have the ability to make new wealth out of our ordinary building materials. They are the blessed ones. Others may appreciate and love all beautiful things and in consequence make the ideal curators of them. As one grows older, too, one may slip, almost unconsciously, from one class to the other. Generally speaking, it is for the young to experiment, for the old to preserve. The creative urge dies down with most people after sixty, if not before. Mr. Aylwin says I was myself looking for a good Georgian house a few years ago in which to end my days. Quite true, I was. The rest and quiet of such a house, especially if it had a garden with fine trees, including the necessary cedar of Lebanon, would be just the thing for a worn-out old professor who these days can only fulminate a little on paper like a half-burnt match.

When, however, Mr. Aylwin goes on to say we are still living in the Georgian era except for a few hot and cold taps and similar contrivances, there I disagree with him. I can hardly imagine any two epochs more different in outlook than that and our own. That many have found Georgian architecture a suitable starting point for their work is due to quite different things, such as that that style was at the end of the gradually evolving classical tradition and before the age of conscious revivals, and therefore at the right place at which to take up that tradition again. It might also be due to the fashionable admiration for the eighteenth century among literary men, collectors of pictures and connoisseurs generally, owing to the exquisite results that century achieved in certain limited fields.

To make sure I am right I have been looking at Professor Richardson's *Georgian England*, and A. S. Turberville's *English Men and Manners in the Eighteenth Century*. It is really the manners that matter. Now eighteenth-century manners were pompous and artificial to one's equals and cruel and harsh in the extreme to one's inferiors. Never was society in the widest sense more divided into Disraeli's two nations of rich and poor, much more so than in the early nineteenth century of which he was writing. The poor were outcasts living in filth. One has only to look at Hogarth's and Rowlandson's drawings to see that. In the feudal ages they were at least valued as sword and arrow fodder. Each knight turned up to battle with so many dependents whom he cared for as much as he cared for his horse. Not so in the eighteenth century. The ideal of that century was purely aristocratic.

An aristocracy of art and letters growing naturally out of a classless society might be a very fine thing, indeed. An aristocracy based on wealth and privilege and cruelty, even if it produces a high abstract and artificial standard of taste, is a very different matter. The eighteenth-century aristocracy turned its back on the masses of mankind and lived its sheltered, sophisticated life of pleasure in its magnificent apartments, its stately porticos and gardens, as if the vast majority of men and women did not exist at all.

Such an ideal of life is fortunately rare to-day even among the richest of our plutocrats, and, if it exists, dares not raise its head. For the rest of us we are more concerned that everyone should have a healthy life of sunlight and air than anything else. We are far enough, of course, from achieving it, but an era should be judged by its ideals. Ours, I hope, are equalitarian and democratic. Our garden cities with their communal schemes of life and the new blocks of tenements with their court after court of gardens, such as L. H. Keay is making out of Liverpool's nineteenth century slums, are, I suggest, more indicative of our trend than the rows of perky little suburban villas with their absurd names, each hiding from its neighbour behind its privet hedge. In America, as at Letchworth, the latter have already disappeared and a continuous garden sets off the buildings. They will not last much longer, I hope, with us. To Mr. Aylwin I

would say they are the last relic of eighteenth century exclusiveness.

To shut out the everyday world and to make a small and perfect world for oneself and one's friends was the eighteenth century's ideal. To open as big windows to the sky as possible and to embrace as wide a landscape and to make this available for everyone is, I should like to think, this century's.

P.S.: The above was written before I saw Mr. Sampson's letter in last week's issue, but I think it will serve as an answer to that as well.

EXHIBITIONS

[*By D. COSENS*]

MOST people are familiar with Picasso's much-discussed "Guernica," which was shown in the Spanish pavilion at the Paris exhibition last year and which has been so widely reproduced. It is now on view, with all his preliminary sketches and studies, at the New Burlington Galleries, under the auspices of the National Joint Committee for Spanish Relief. This is an enormous work, designed for a definite setting, and it is almost impossible in its present position to take it in as a whole. The composition which, in smaller reproduction or at longer range, is taut and magnificently co-ordinated, tends here to disintegrate into its various elements and to lose much of its power.

Though it may be used as such, "Guernica" is not propaganda. It is the careful and sensitive analysis by a master draughtsman of anguish, injustice and despair, and of the disquieting effects of certain distortions and relationships. Conceived perhaps in passionate resentment against the senseless stupidity of war, but painted logically through exact observation. This inquiring, analytical spirit raises it far above the transcience of deliberate propaganda, and places it as one of the masterpieces of our time. The preliminary studies are extremely interesting for they show the artist's reasoning and the gradual development of the design.

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John Banting is a very light-hearted surrealist in whom decorative ability and fine draughtsmanship are unusually well combined. Architects will be interested in his very successful use of blue-prints for reproducing some of his drawings, and especially surprised at the subtlety of line which it is possible to convey by this method. The decorative possibilities of the pattern of old blue-prints as a background to colleges and such is nothing new, but their use for any but the dreariest of working drawings is one of Mr. Banting's brighter ideas.

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There is much food for thought in contrasting Sir William Rothenstein's influence and broad aims at both Sheffield University and the Royal College of Art, with his personal achievements as a painter. For it is indeed strange that in his "Fifty Years of Painting" at the Leicester Galleries there should be so little co-relation between the two. Whistler's early influence soon vanishes, and throughout the exhibition the consistent pre-occupation with surface qualities and life-like accuracy is tediously anecdotal. Compare, for instance, his "Ruined House at Bourlon, Western Front" (40) with almost any of Paul Nash's treatments of a similar theme. Here might be a heap of bricks after any ordinary demolition, yet give Nash no more than these or a blackened tree stump, and there is an immense feeling of desolation. Sir William's most interesting and profound work is to be found in such early portraits as that of the unscrupulous Frank Harris, but his most enduring work will rest in the enthusiasm he aroused at the Royal College of Art.

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John Farleigh's sense of design and search for essentials, together with his excellent draughtsmanship, have long established him as one of our finest illustrators. His original drawings for the engravings for Bernard Shaw's "Back to Methuselah," with the author's comments and criticisms, are an interesting example of the successful adaptation of an artist's imagination to that of a tiresomely opinionated, but often right, author. But best are such free drawings as "Melancholia" (43), and the slighter but very charming water-colour "Weymouth Beach" (45).

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Picasso's "Guernica" with 67 Preparatory Studies. New Burlington Galleries. Until October 29.

Recent Works by John Banting. Storran Gallery, 5 Albany Courtyard, Piccadilly. Until October 21.

Fifty Years of Painting by Sir William Rothenstein. Drawings for the engravings for "Back to Methuselah" by John Farleigh. Until November.

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CONTROL OF OVERCROWDING IN SCOTTISH BURGHS

The fifth Order, bringing into full operation in any place in Scotland the provisions of the Housing (Scotland) Act, 1935, for the control of overcrowding, has just been issued by the Department of Health for Scotland. The Order applies to the Burgh of Ellon; the Royal Burgh of Cupar and the Burgh of Bonnyrigg and Lasswade, and fixes November 1, 1938, as the "Appointed Day."

Before the appointed day can be fixed for any locality, the Department of Health has to be satisfied that the greater part of the additional housing accommodation, shown by the Overcrowding Survey to be required in the locality, has been provided. The Town Councils of the Burghs mentioned have complied with the requirements.

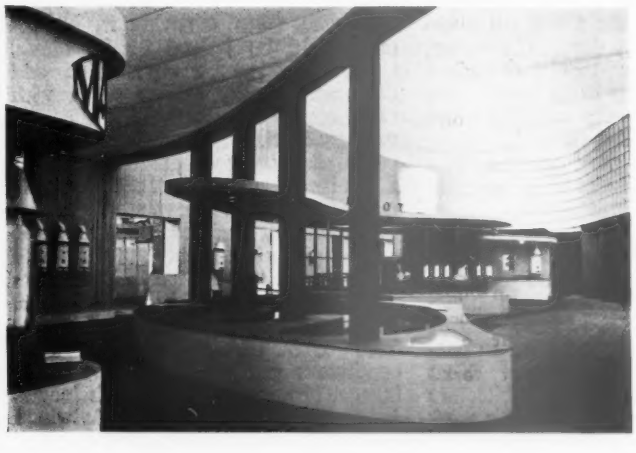
The other places in Scotland so far to which these provisions for the control of overcrowding apply, are the Dysart Ward of Kirkcaldy, the Burghs of Queensferry and Old Meldrum, and the Special Scavenging District of Kennoway in the County of Fife.

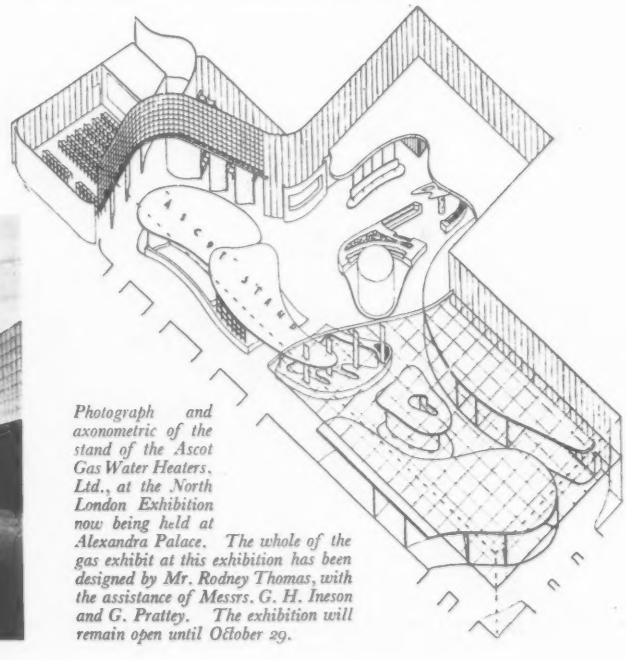
I.A.A.S.

The annual dinner of the Incorporated Association of Architects and Surveyors is to be held at the Dorchester Hotel, Park Lane, W.1, on Friday, December 9, at 7 p.m.

CHANGE OF ADDRESS

Mr. Thomas Lawrence Dale, F.R.I.B.A., has moved his office to Lloyds Bank Chambers, Carfax, Oxford.





Photograph and axonometric of the stand of the Ascot Gas Water Heaters, Ltd., at the North London Exhibition now being held at Alexandra Palace. The whole of the gas exhibit at this exhibition has been designed by Mr. Rodney Thomas, with the assistance of Messrs. G. H. Ineson and G. Prattey. The exhibition will remain open until October 29.

CONVALESCENT HOME, MARGATE

DESIGNED BY

E. P. WHEELER

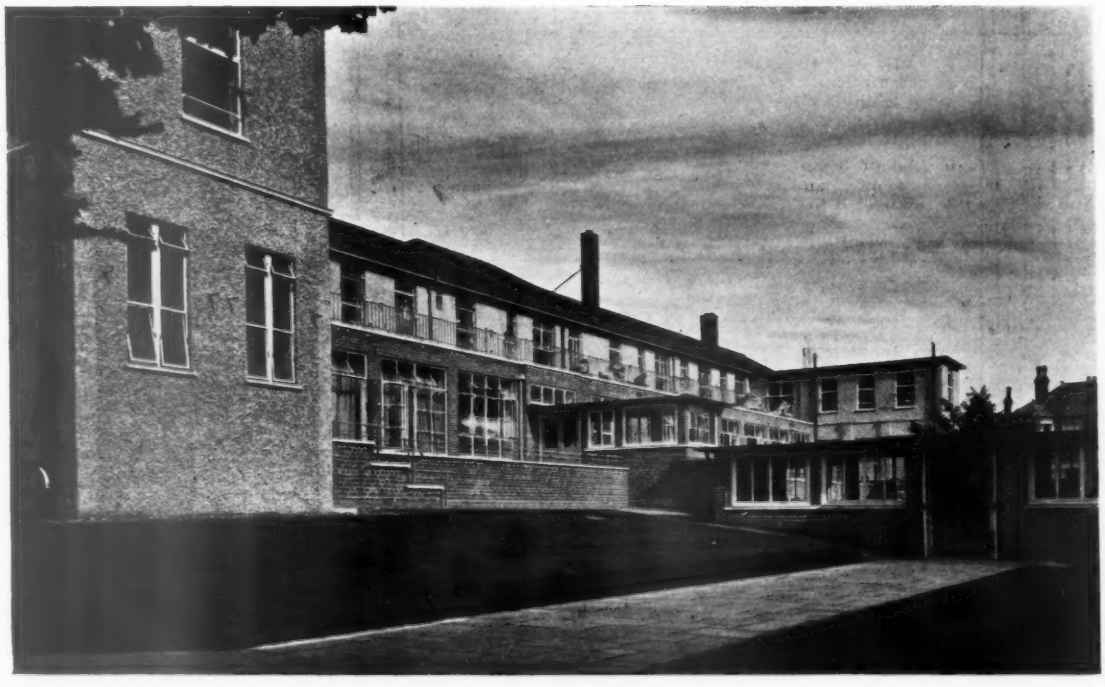
(Chief Architect, L.C.C.)

ASSISTANT ARCHITECT, G. WEALD

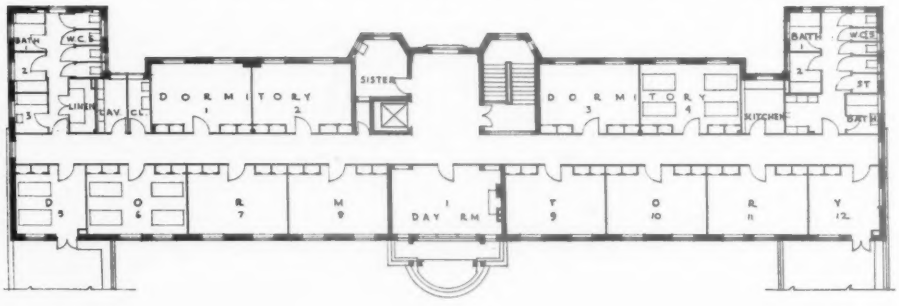
PROBLEM—*A convalescent home for 223 women and 14 babies, equipped for massage and electrical treatment. The existing building has been remodelled and a new dormitory block added.*

The slope of the ground to the south-east allows wide views over the adjoining country.

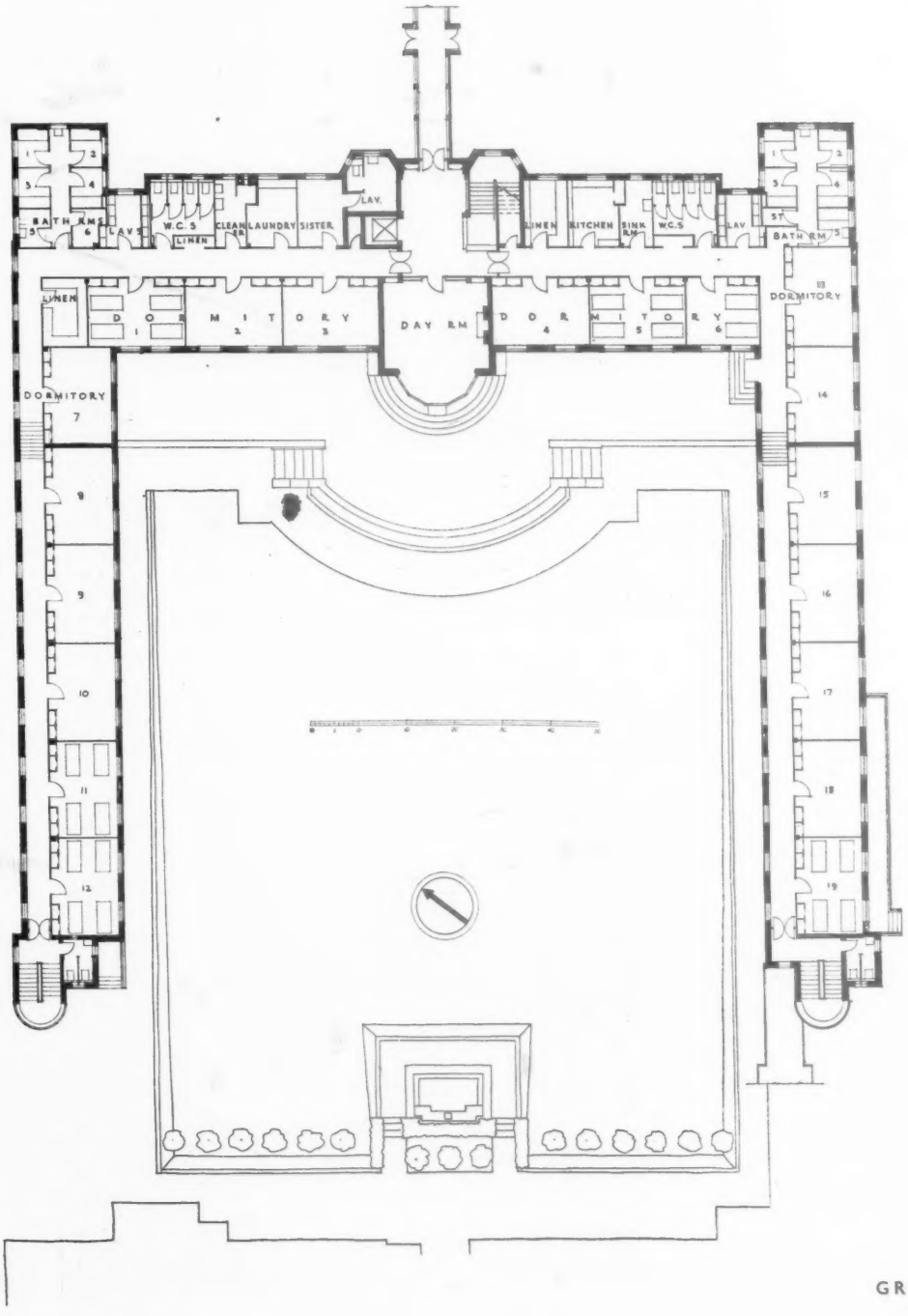
Above, the quadrangle of the new block. Below, the remodelled existing block and covered way.



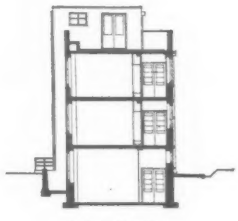
PRINCESS MARY'S CONVALESCENT



FIRST FLOOR PLAN



GROUND FLOOR PLAN



SECTION

HOME FOR WOMEN, MARGATE

DESIGNED BY

E. P. WHEELER
(Chief Architect, L.C.C.)

ASSISTANT ARCHITECT,

G. WEALD

CONSTRUCTION — *Weight-carrying brick walls,* **R.C.** *slab floors. Partitions of concrete blocks.*

ELEVATIONS—*Multi-coloured bricks in Dutch bond, steel casements in wood surrounds, and wrot-iron balustrades. Three-storey block roof is finished in plain tiles.*

INTERNAL FINISHES — *Floors: wood strip, generally. Main stair and lift hall are panelled in hard wood, and stair treads are teak.*

Top, the south-east elevation of the remodelled block. Centre, the terrace in front of the new dormitory block. Right, the north-east front of the dormitory block.

CONVALESCENT HOME, MARGATE

DESIGNED BY E. P. WHEELER (Chief Architect, L.C.C.) ASSISTANT ARCHITECT, G. WEALD.

SERVICES—*Heating: low-pressure hot water with coal fires in certain rooms. Patients' beds have press-button bulbs to summon nurses, and are also equipped with ear-phones.*
COST—*Contract price, £50,683.*

Above, the terrace and window to day-room. Below, the dining-room and entrance hall.

The general contractors were W. H. Gaze and Son; for list of sub-contractors see page 662.

LETTERS

O. A. DAVIS, P.A.S.I.
JOHN E. YERBURY

THE COMPETITION CUBE

SIR,—May I congratulate Astragal on his sensible remarks in the JOURNAL for October 6? I had always understood that one of the chief advantages of the competition system, from the architect's point of view, was that young and inexperienced architects had a chance of securing a large job by merit alone; is it seriously believed that an architect in this category, however brilliant a designer, is likely to be able to submit an accurate estimate for a large hospital, full of the most modern equipment, on a constricted site, and is months of work to be wasted and England to be deprived of the best design because the architect fails in this respect? Or are the estimates simply going to be ignored and a lot of the architect's time and my work and other specialists' work wasted?

I want to go further than Astragal and ask why competitors are *ever* asked to submit estimates of cost for *any* architectural competition? No architect to whom I have spoken has been able to answer that simple question, and I should very much like to know whether the present members of the R.I.B.A. Committee have ever really considered the point.

To start with, few people "cube" alike, particularly where there are balconies and other projections or where the site slopes considerably and foundations are stepped and, in places, at a considerable depth below floor line. If I were an assessor I would cube the few possible winning designs myself rather than try to follow other people's methods, quite apart from the difficulty of deciding what "bad marks" to give competitors if their cubing appeared to be faulty.

Has it occurred to anybody that the *difference* in cost between the various schemes submitted can be rationally determined by an assessor; and that widely differing estimates submitted by competitors based on different methods of cubing and on different standards of finish and equipment are only muddling? The four things which affect the cost are economy of planning, construction, finish and equipment.

As the area of accommodation is usually clearly defined and there is little room for divergence of opinion as to the minimum heights of rooms, the comparative economy of planning (i.e. amount of corridor space, etc., and the closeness with which the designs conform to the contours of the site) can be exactly determined by the assessor, providing he is allowed to cube all the possible winning designs himself, on the same basis.

The difference in cost between ordinary forms of construction is usually small because spans of floor and roof slabs are practically determined by the conditions (school classrooms, corridors, gymnasiums, etc., for instance, do not vary much in width). Abnormally large spans and expensive methods of construction *ought* to be noted by the assessor and the competitor *ought* to submit full particulars if he considers he has hit upon an abnormally cheap method of construction. Advocates of timber construction, steel frames and concrete frames, etc., are often biased and without practical experience and a single experienced assessor should be better able to judge the comparative costs.

Finish and services, the *only* other main factors affecting cost, should not influence the assessor at all. As far as I can see a scheme which is cubed at 1s. 6d. and allows for terrazzo floors and thermostatically-controlled heating in every room, is no better and no worse than a scheme perhaps cubed at 1s. which allows for granolithic floors and ordinary methods of heating.

Even if all competitors were really competent estimators, the assessor's job would be difficult enough, but as far as I can ascertain the most popular methods of estimating for competition work are: (1) to divide the total cost mentioned in the conditions by the number of cubic feet and so arrive at the price per foot cube, and (2) (when no cost is mentioned) to see what the winning competitor allowed in the last competition and to knock ½d. off (because most competitors think their own scheme is very economical and there is a 10 per cent. margin anyway). Surely the R.I.B.A. must know that 95 per cent. of the competitors have had no practical experience of the type of building for which they are competing, and that as most of the costs published for similar work are other competitors' figures rather than the actual cost of such work. The methods of estimating mentioned above are the natural result of assessors' demands.

Another difficulty which the assessor has to contend with, I imagine, is when two fairly similar designs are submitted and he wants to choose one which is estimated at a much higher figure than the other. Does he select the worse design, which is bad luck on the promoters and the competitors, or does he explain to the promoters that the estimates are all bunkum anyway?

I contend that under the present system the architect is called upon to do more than he is qualified to do, that the assessor has an impossible task if he is to take seriously estimates based on possibly faulty cubes and different standards of finish, that promoters are likely to be misled if the figures *are* taken seriously, and that the expenditure of hundreds of thousands of pounds of public money should be based on something better than the calculations of perhaps a young architect with no practical experience.

An alternative method appears to be quite simple:

1. That a chartered quantity surveyor *with practical experience of the particular type of building* should be appointed to assist the assessor.
2. That he should advise the assessor as to the comparative costs of the few possible winning designs judged on economy of planning and construction costs only *and not on different standards of finish.*
3. That he should estimate the cost of the winning design based on the standard of finish laid down in the conditions—which incidentally should be more clearly stated.
4. That the winning competitor should be required to obtain tenders within 10 per cent. of the estimated cost, in the usual manner, but that he should have the right of appeal if he considers the cost laid down unreasonable.

Should you, or any of your readers, consider these brief recommendations interesting, I should like to have the opportunity of submitting my proposals more fully.

O. A. DAVIS

"It Can't Happen Here"

SIR,—I do not know what this heading means. I cannot imagine anything that "can't happen here," or anywhere else, after our experience of last month.

It is difficult to refrain from politics, but I am sure you wish to do so, and I will therefore confine myself to one or two phrases in your leader which I do not like, viz.:

The expression "finding oneself a job." It reminds me of 1914.

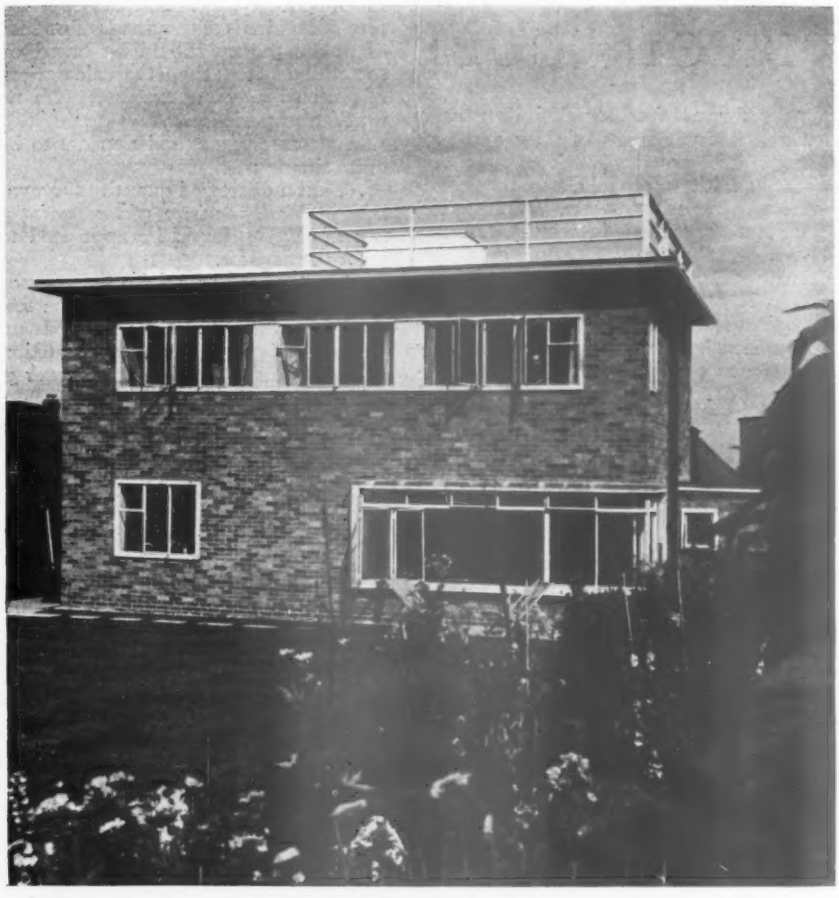
You write: "For three days no one could spare a second to think of a job for an architect, as an architect." I should hope in those three days, not as architects, but as citizens, every man was taking his part in response to the urgent calls of the local authorities.

"The individual architect is most conscious of having tried a dozen authorities, all of whom failed to find use for his services." Surely, sir, this cannot be true. Is there an individual architect such a fool as to bother overworked officials for an architect's job when those with more sense were doing the citizen's job given to them—mine was fitting and distributing gas masks; but not as an architect.

If architects take the work at hand, their skill, as architects, will be used if and when it is of more value than the work they are doing.

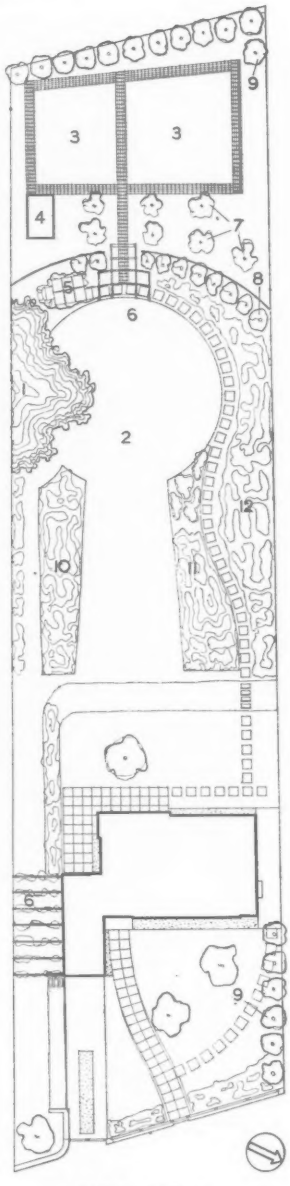
JOHN E. YERBURY

HOUSE AT BEXHILL-ON-SEA:



KEY

1 : Gorse Bush
2 : Lawn
3 : Kitchen Garden
4 : Garden Shed
5 : Sunk Garden with Rock Walls and Seat
6 : Pergola
7 : Fruit Trees
8 : Conifers
9 : Poplars
10 : Herbaceous Border
11 : Low Herbaceous Plants
12 : High " "



SITE PLAN

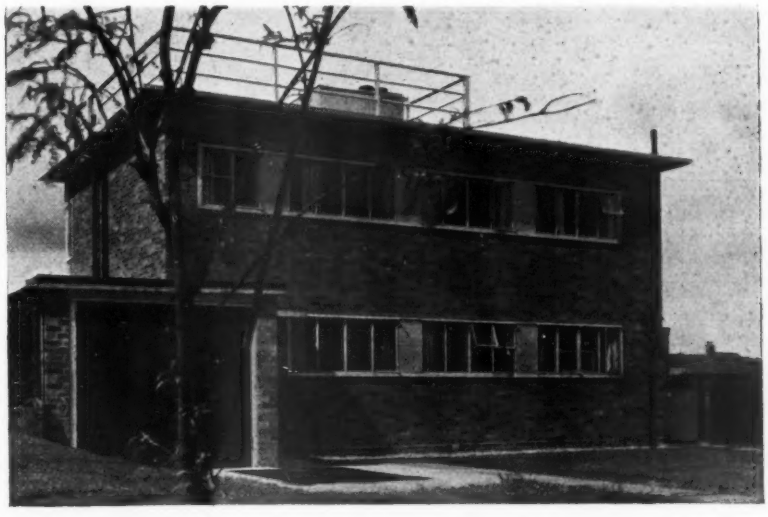
PROBLEM — *House for six people for week-end and summer use. Originally planned end on to the road with main rooms facing south with view of sea, but rejected by estate authorities on grounds of amenity. Elevations were required to be restrained in character ; plan to give maximum living area.*

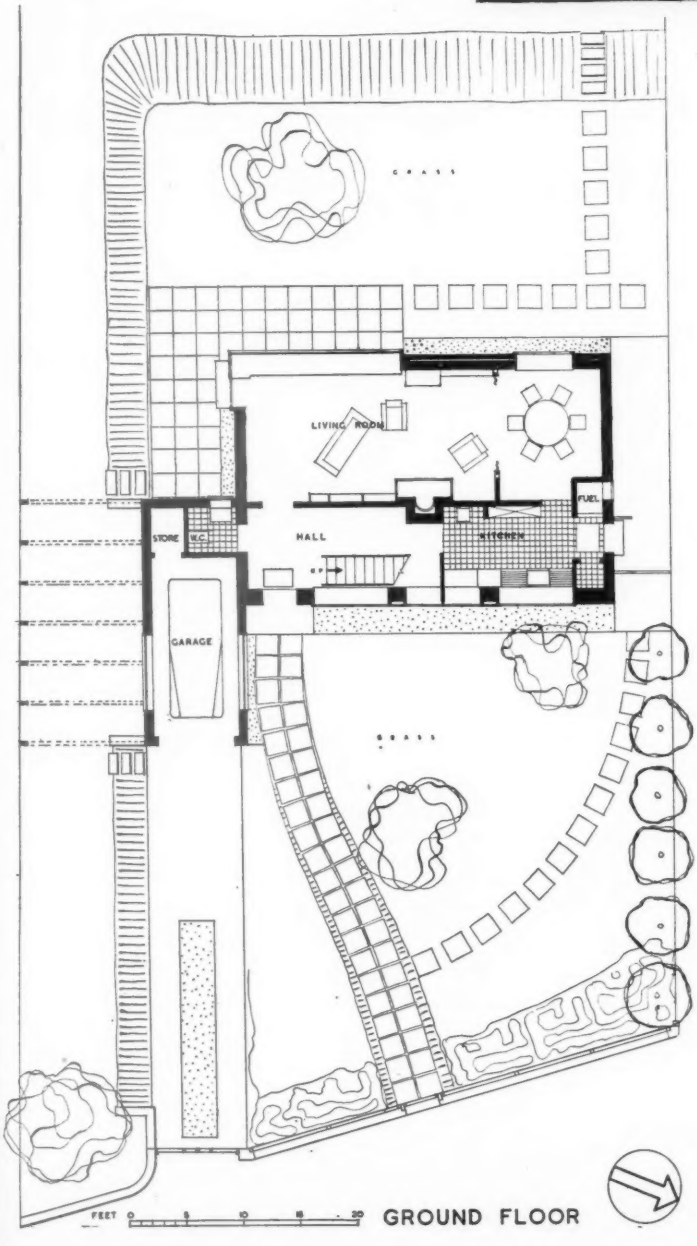
SITE — *West Bexhill about 200 yds. from the sea, with a gradual slope up from east to west ; 60 ft. frontage, 237 ft. deep.*

Above, the garden front ; left, the main entrance door.

DESIGNED BY REGINALD A. KIRBY

Right, the main (north-east) front.





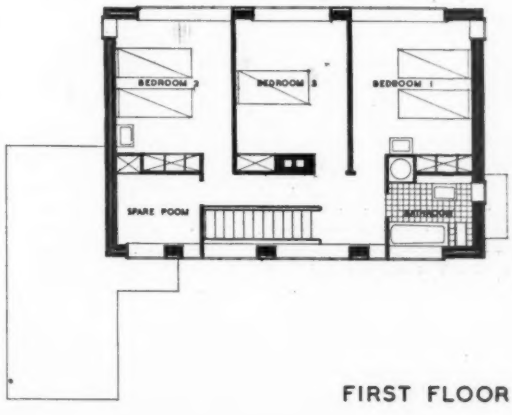
GROUND FLOOR

CONSTRUCTION AND EXTERNAL FINISHES—*Cavity brick walls (facings: orange and russet brown). Floors: Ground—6 ins. concrete, 1½ in. waterproof screed, Columbian wood-block finish. First—timber with T. and G. boarding, 3-in. radius cove skirting. Roof: Timber, with double layer of 9 ins. by 2 ins. joists, with ½ in. fibreboard insulation between; finally boarded and finished with three layers of bitumastic felt. Ceilings: plaster on plasterboard. All external doors, metal-faced flush doors; main door faced in bronze.*

INTERNAL FINISHES AND EQUIPMENT—*Staircase and joinery in living-room in Columbian pine. Handrail to stairs: cellulosed steel. Water service pipes in copper throughout. R.C. lintol and frame around large living-room window. All door furniture and switch plates in silver bronze. Lighting and heating plugs in every room. The sliding folding window to living-room is 10 ft. wide and is capable of being thrown open. Built-in wardrobes in all bedrooms; lavatory basins in bedrooms 1 and 2.*

SERVICES—*Hot water installation with three rads. (living-room and hall). Fuel: coke or anthracite, with electric immersion heater coming automatically into operation when fire drops below a predetermined temperature.*

COST—*1s. 5¼d. (approx.) per ft. cube, including garden work. The general contractor was R. A. Larkin; for list of sub-contractors see page 662.*



FIRST FLOOR

HOUSE AT BEXHILL-ON-SEA

Left, the staircase; above, the living room

DESIGNED BY REGINALD A. KIRBY

National Housing and Town Planning Council

A NATIONAL Housing and Town Planning Conference is to be held at Harrogate during the week end November 25–28, under the auspices of the above Council and the Scottish National Housing and Town Planning Council. The gathering will be arranged on similar lines to those held in the past for the purpose of considering points of importance in housing and town planning legislation and administration in England and Wales and Scotland. Following is the programme of the Conference :—

Friday, November 25.—First session : 3.30 p.m. to 4.30 p.m., in the Royal Hall. Chairman : Alderman S. E. Jackson, J.P., C.C., Chairman of the National Housing and Town Planning Council. Address by The Right Hon. Walter Elliot, M.C., M.P., Minister of Health. Second session : 5 p.m. to 7 p.m., in the Royal Hall. (Civic Welcome at 5 p.m. by His Worship the Mayor of Harrogate.) Chairman : Alderman S. E. Jackson, J.P., C.C., Chairman of the National Housing and Town Planning Council. Subject : "Housing Finance—Subsidies, Building Costs and Rents." (A separate session for Scottish delegates will be held from 5 p.m. to 7 p.m. in the Grand Hotel. Councillor John Hay, Chairman of the Scottish Council, will preside.) 9 p.m. : Variety Entertainment in the Royal Hall. Saturday, November 26.—Third session : 10 a.m. to 1 p.m. in the Royal Hall. Chairman : Alderman S. E. Jackson. Subject : "Management of Housing Estates." (A separate session for Scottish delegates will be held from 10 a.m. to 1 p.m. in the Grand Hotel. Councillor Hay will preside.) Fourth session : 2.30 p.m. to 5 p.m. in the Royal Hall. Chairman : Sir Raymond Unwin. Subjects : "The Administration of Operative Planning Schemes," "Decentralization and Satellite Towns," and "The Reservation of Sites for New Roads." (A separate session for rural delegates will be held from 2.30 p.m. to 5 p.m. in the Grand Hotel, to consider Rural Housing and Planning Problems. Mr. A. R. Kerrell-Vaughan, Clerk to the Aylesbury Rural District Council, will preside.) 5.45 p.m. : Joint Meeting of the Executive and General Committees of the National Council at the Grand Hotel.

Sunday, November 27.—1.15 p.m. to 4.15 p.m. : Motor coach visit to Temple Newsam Mansion and Leeds, for inspection of Corporation Housing Schemes. Tickets, 2s. 6d. per person. 5.15 p.m. to 6.30 p.m. Lantern lecture at the Grand Hotel by Mr. John Dower, M.A., A.R.I.B.A. Chairman : Alderman P. J. M. Turner, J.P., Vice-chairman of the National Housing and Town Planning Council. Subject : "National Parks." 8.30 p.m. to 10 p.m. : Vocal and Instrumental Concert in the Royal Hall.

Law Report

CONSTRUCTION OF A COVENANT TO REPAIR

Moss Empires, Ltd. v. *Olympia (Liverpool), Ltd.—Court of Appeal. Before Lords Justices Greer, Slesser and MacKinnon*

THIS appeal raised an interesting point as to repairs under a lease. The appellants were the defendants, the Olympia (Liverpool), Ltd., and Mr. A. E. Abrahams, who appealed from a judgment, of Mr. Justice Hilbery, sitting in the King's Bench Division, in favour of Moss Empires, Ltd., on a claim for £1,078, which they alleged was due to them under a lease of the Olympia Theatre, Liverpool, of October, 1924.

It appeared that Mr. Abrahams was a party to the original lease, and the other defendants were the assignees. The plaintiffs' case was that under the lease £500 a year should be expended on repairs and decorations, and that as that sum had not been expended, they were entitled to recover the amount claimed.

After hearing the evidence, Mr. Justice Hilbery found in favour of plaintiffs, and awarded them £737 against both defendants. It was from this decision that the defendants now appealed.

After hearing legal arguments, the Court, by a majority, allowed the appeal, Lord Justice Greer dissenting.

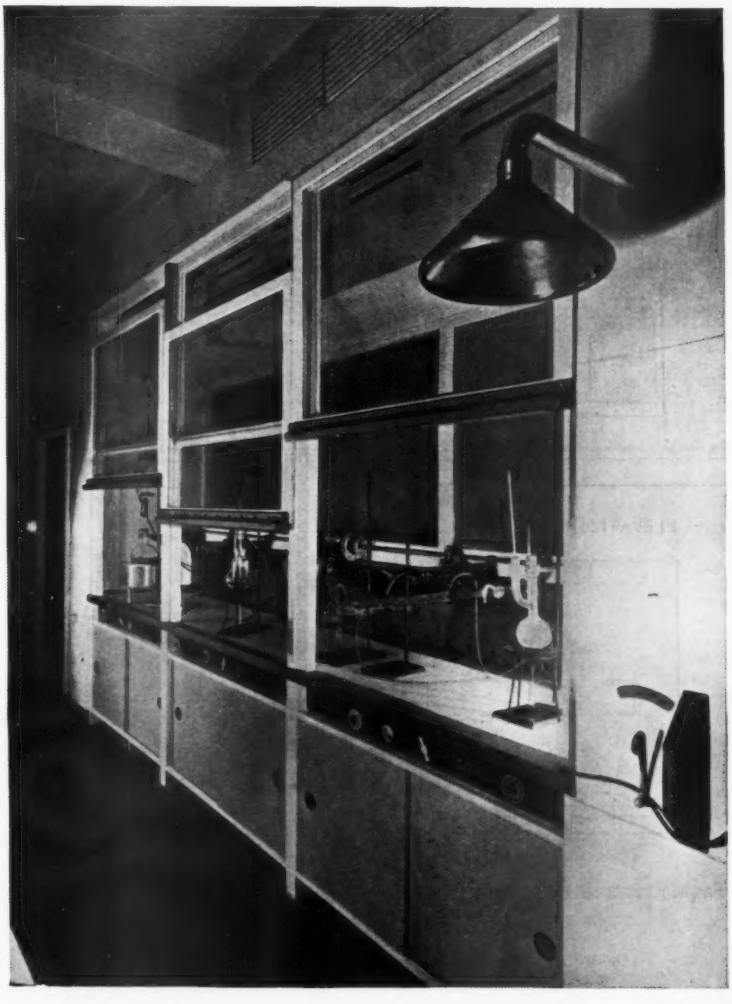
Lords Justices Slesser and MacKinnon came to the conclusion that the appeal by the defendants, should succeed, being of opinion that the case could only be formulated as one for damages for breach of covenant to repair, and in that way it was defeated at the outset by the Landlord and Tenant Act.

Lord Justice Slesser said he disagreed with the view of Mr. Justice Hilbery that the clause in the lease relating to the yearly expenditure of £500 was a covenant for performance of the repairing covenants in a particular way, and not an action to recover damages. To his mind the clause was no more than a means of quantifying the obligations to repair, and that it provided for their full satisfaction by payments in lieu of their actual performance. Under the Landlord and Tenant Act, 1927, the claim was no longer possible, and as there was here no suggestion of diminution in the value of the reversion, the Act provided a complete answer to the claim made.

Lord Justice Greer gave a dissenting judgment. He came to the conclusion that the clause meant that the lessees covenanted each year to perform their obligations to repair either by showing that they had expended the sum of £500, or, if not, to pay the lessors the difference between the sum so expended and £500. No question of damages would then arise, and the plaintiffs would have a good cause of action.

WORKING DETAILS : 693

LABORATORY SERVICES • RESEARCH LABORATORIES, BLACKLEY, MANCHESTER • SERGE CHERMAYEFF



The adoption of a structural unit and a uniform distribution of work benches throughout the building has made it possible to provide a series of fully accessible service ducts capable of accommodating future extensions to every fume cupboard and laboratory in any given position throughout the length of the building. Shallow horizontal ducts, with removable covers, in the laboratory floors passing under the benches, carry all services to each individual chemist.

The standard laboratory bench has a teak top and teak dashboard of connectors which is removable for access to all service pipes. The controls are set in the bench apron and are distinguishable by both colour and shape.

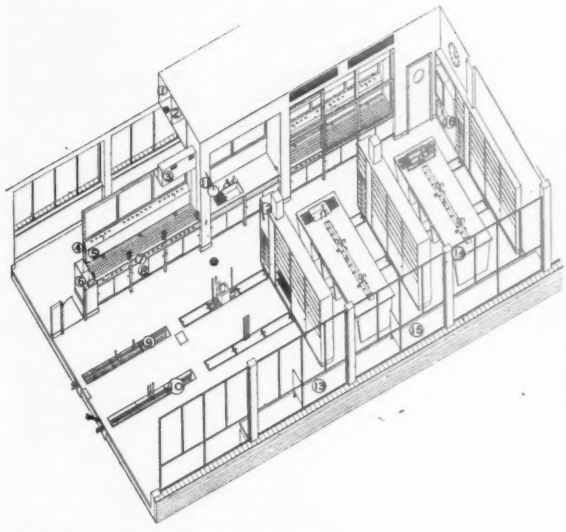
The fume cupboards are situated on the corridor side of the laboratories with access panels to service pipes in the corridor. They are glazed with Georgian wired glass, clear on the laboratory side and obscured on the corridor side, access from the laboratory being by sliding sash windows. The controls are outside the fume cupboards, but well set in to avoid accidental interference. Inside the fume cupboards there are connection dashboards above and continuous trough below a heavy gas duct in teak, while the light gas duct in asbestos runs overhead.

Artificial air conditioning was adopted for the whole building. The intake and extract ducts run parallel in the corridor ceiling, the fresh air inlet to the laboratories being above the fume cupboards, and the extract below the fume benches.

Details are shown overleaf.

WORKING DETAILS : 694

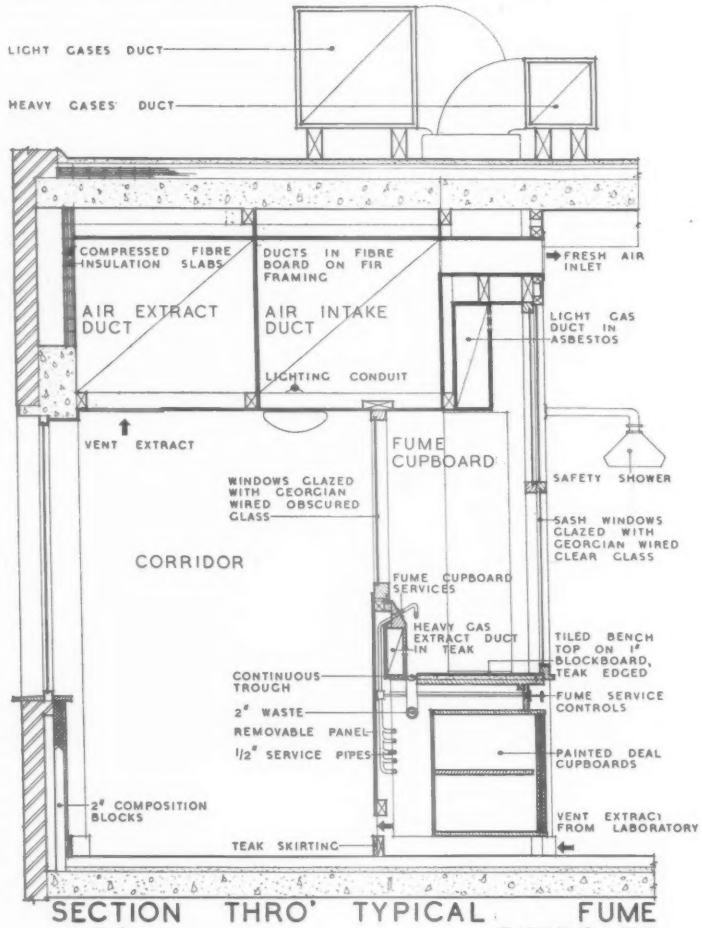
LABORATORY SERVICES • RESEARCH LABORATORIES, BLACKLEY, MANCHESTER • SERGE CHERMAYEFF



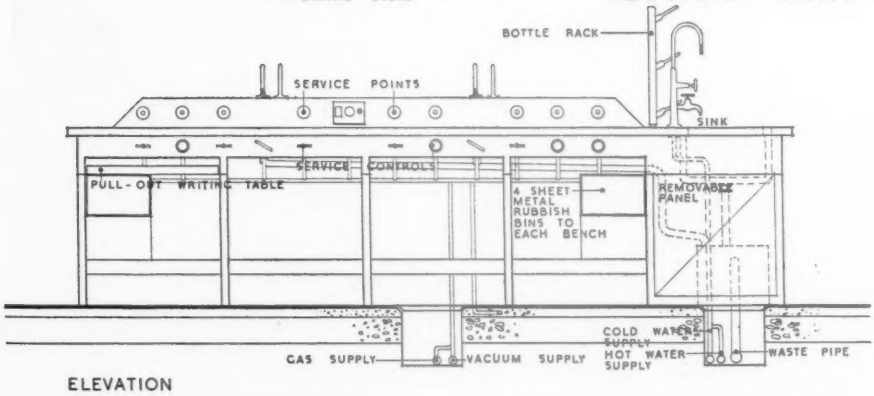
AXONOMETRIC OF STANDARD LABORATORY UNIT

KEY:

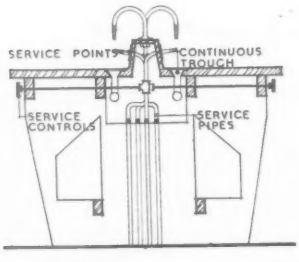
1. EXTRACT DUCT
2. INTAKE DUCT
3. LIGHT GAS EXTRACT DUCT
4. FUME CUPBOARD SERVICES: ELECTRICITY, GAS, STEAM, COMPRESSED AIR, VACUUM, WATER
5. HEAVY GAS EXTRACT DUCT
6. VERTICAL SERVICE DUCTS
7. FUME SERVICE CONTROLS
8. STORAGE SPACE
9. BENCH SERVICES: SINK WASTES, WATER, STEAM.
10. BENCH SERVICES: ELECTRICITY, GAS, VACUUM.
11. SAFETY SHOWER
12. STORAGE FIRST AID, TELEPHONE
13. BALANCE TABLE
14. TYPICAL BENCH
15. CHEMIST'S DESK
16. HIGH & LOW TEMPERATURE DRYING OVENS



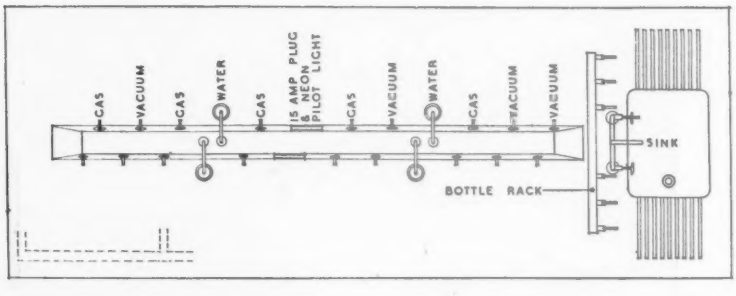
SECTION THRO' TYPICAL FUME CUPBOARD



ELEVATION

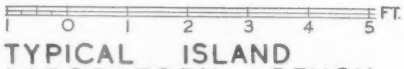


SECTION



PLAN

SCALE FOR FUME CUPBOARD SECTION & BENCH DETAILS



TYPICAL ISLAND LABORATORY BENCH

Axonometric and details of the laboratory illustrated overleaf.

The Architects' Journal Library of Planned Information

INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

671 Rainwater Gutters

672 Waterproofing

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 :

601 : Sanitary Equipment
602 : Enamel Paints
603 : Hot Water Boilers—III
604 : Gas Cookers
605 : Insulation and Protection of Buildings
606 : Heating Equipment
607 : The Equipment of Buildings
608 : Water Heating
609 : Fireplaces
610 : Weatherings—I
611 : Fire Protection and Insulation
612 : Glass Masonry
613 : Roofing
614 : Central Heating
615 : Heating : Open Fires
616 : External Renderings
617 : Kitchen Equipment
618 : Roof and Pavement Lights
619 : Glass Walls, Windows, Screens, and Partitions
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621 : Sanitary Equipment
622 : The Insulation of Boiler Bases
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634 : Weatherings—IV
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639 : Electrical Equipment, Lighting
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641 : Sliding Gear
642 : Glazing
643 : Glazing
644 : Elementary Schools—VIII
645 : Metal Curtain Rails
646 : Plumbing
647 : Veneers
648 : U.S.A. Plumbing—V
649 : U.S.A. Plumbing—VI
650 : Ventilation of Factories and Workshops—I
651 : School Cloakrooms (Boys)
652 : U.S.A. Plumbing—VII
653 : Plumbing
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657 : Floor Construction
658 : Partitions
659 : Equipment
660 : Asbestos-Cement Decorated Sheets
661 : Aluminium
662 : Sound Resistance
663 : Building Equipment
664 : Sheet Lead Work
665 : Building Equipment
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667 : A.R.P.
668 : Aerodromes
669 : Aluminium
670 : Metal Trim

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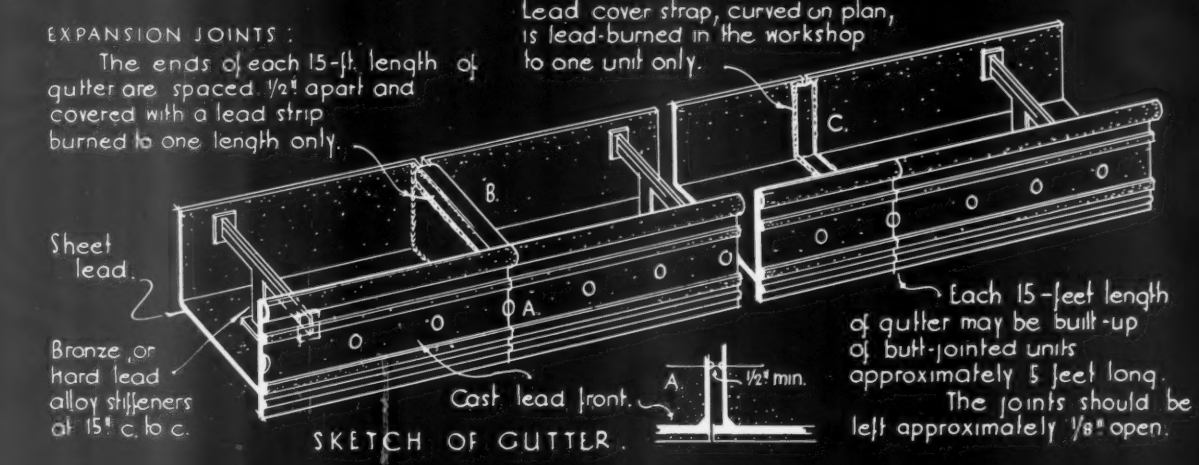
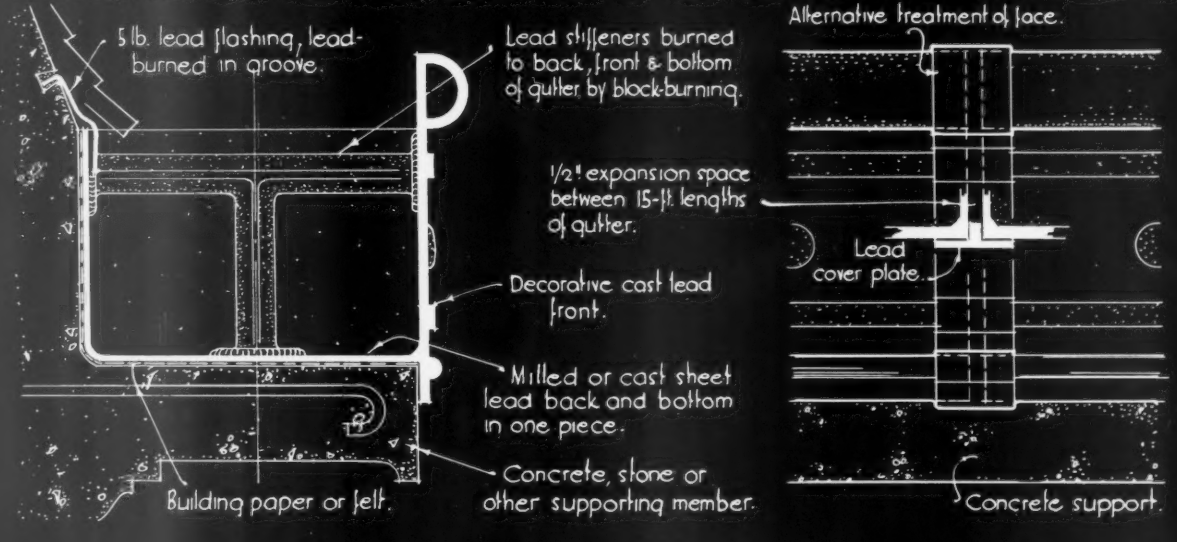
EXPANSION JOINTS IN EXPOSED LEAD GUTTERS SERVING DECORATIVE PURPOSES:

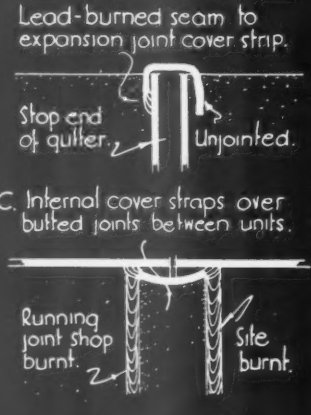


SKETCH OF GUTTER.

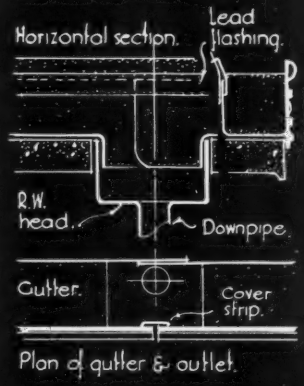
TYPICAL SECTION AND FRONT ELEVATION OF GUTTER SHOWING EXPANSION JOINT:



DETAILS OF JOINTS B. & C:

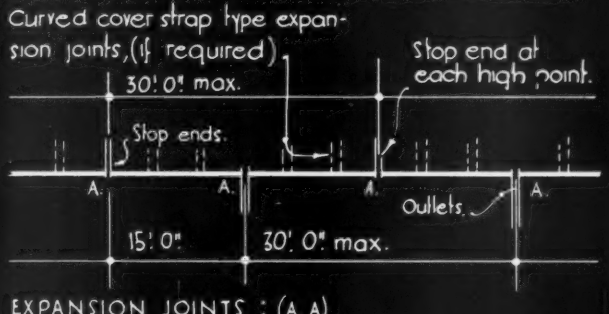


DETAILS OF R.W. OUTLET:



Plan of gutter & outlet.

ARRANGEMENT OF EXPANSION JOINTS & OUTLETS:



EXPANSION JOINTS: (A, A)

Outlets and stop ends provide the best type of expansion joint. Intermediate joints to facilitate handling may be used to provide curved cover strap type expansion joints.

Information from Lead Industries Development Council.

INFORMATION SHEET: EXPANSION JOINTS IN LONG LEAD GUTTERS: No 52.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Burnet, Tait & Lorne.

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INFORMATION SHEET

• 671 •

RAINWATER GUTTERS

Subject : Expansion Joints in Large Lead Gutters

General :

In previous Sheets, details have been given of the expansion joints which should be used in various types of lead-work : in this Sheet joints in the heavier type of lead gutter are dealt with. Expansion joints are particularly important in this type of gutter, since such gutters are usually in wholly exposed positions subject to extremes of temperature far greater than those obtaining in the more shaded built-in parapet gutters, etc.

Gutter Construction :

These gutters may be wholly cast lead or formed with a milled sheet lead back and bottom. The front may be of either milled or decorative cast lead. They are usually made up in the shop in lengths, which should not be greater than 5 ft. for ease of handling, and are assembled in position and the joints lead-burned toghether.

Three 5-ft. lengths make up each 15-ft. unit, each unit being self-contained, with stopped end and rainwater outlet. Between the ends of each 15-ft. unit a clear expansion space of not less than $\frac{1}{2}$ in. should be allowed. Between the butt ends of each 5-ft. unit a clear expansion space of not less than $\frac{1}{8}$ in. should be provided.

Stiffeners :

The number of stiffeners required depends upon the size (and particularly the depth) of the gutter, but generally there should be at least three stiffeners to each 5-ft. length ; in gutters more than 10 ins. deep they should be at not more than 15 ins. centre to centre. These stiffeners can be cast to pattern in hard lead (antimonial alloy) or heavy lead pipe can be used as simple stays. Purpose-made cast bronze brackets are also used. The stiffeners are fixed by lead-burning to the wall and sole of the gutter, the point of contact being built up for strength with extra lead during the burning.

Expansion Joints :

The expansion joints between the 5-ft. lengths are formed by lead-burning a lead strip over the joint, the lead being " looped " up as shown to allow free movement.

The expansion joint between the 15-ft. units is made by fixing a U-shaped cover strip over the top of the two stopped ends, the strip being lead-burned on one edge only ; the other edge is allowed to remain free to permit movement and weather the gap.

The joint running down the front may be left as a plain butt joint with a space of not less than $\frac{1}{8}$ in. for expansion, or it may be covered with a lead cover strip fixed only at the top as shown.

Under Felt :

An underlay of heavy building paper or good bituminous felt should be laid under the gutter throughout its length, to take up minor irregularities in the foundation surface, and to facilitate movement along the base.

Outlets :

When 15-ft. units with stopped ends are used each unit must be provided with a separate outlet.

If a cesspit type of outlet is used then two 15-ft. units may be discharged into it so that outlets may then be spaced 30 ft. apart, the stopped ends of the units being at the high points of the gutter centrally between outlets.

Bottom outlets may be either of the cess-pit type or the pipe may be brought up through the bottom of the gutter and lead-burned. Back outlets are usually made by bringing the pipe through the back and lead-burning the joint. Front outlets vary according to the design of the stack head and appearance required.

Weight of Lead :

The back and bottom of gutters up to 10 ins. deep should generally be in 8-lb. lead, deeper gutters in 10-lb. lead.

The weight of lead in the front should never be less than that used for the remainder of the gutter and is frequently heavier according to the design and decoration on the face.

Issued by : The Lead Industries Development Council

Address : Rex House, 38 King William Street, London, E.C.4

Telephone : Mansion House 2855

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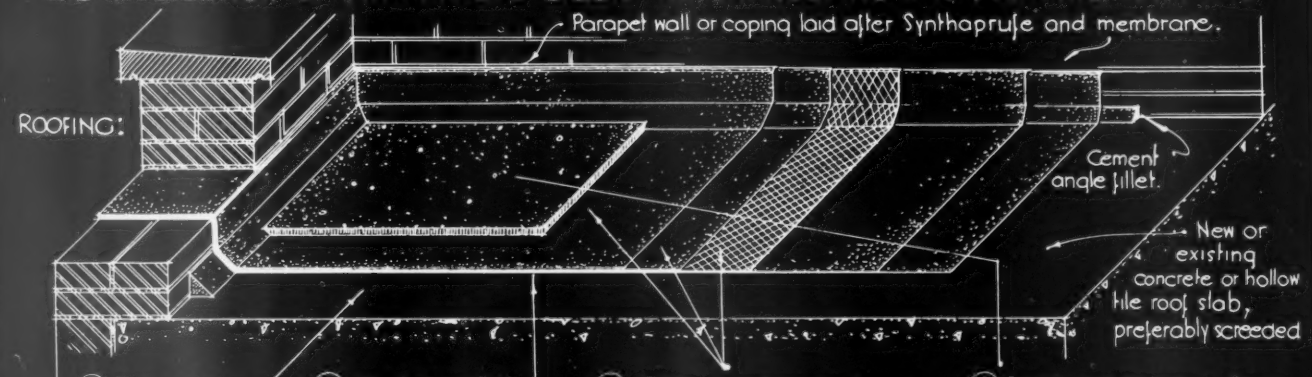
THE APPLICATION OF SYNTHAPRUFE LIQUID WATERPROOFING AND JOINTING MATERIAL



(1.) The surface of the roof should be free from loose dirt, dust, grease, etc. Cracks wider than 1/16" should be pointed before application of the waterproofing.

(2.) The first coat of Synthapruſe is poured on to the concrete, spread evenly and carried 6" up walls, & out as d.p.c. if required. It should be allowed to dry thoroughly before the similar application of the second coat.

(3.) Cotton membrane is dipped in water, wrung, placed in the wet second coat, and brushed so that no air pockets remain.

Joints should be lapped 2", and the material carried 6" up walls, & out as d.p.c. if required.

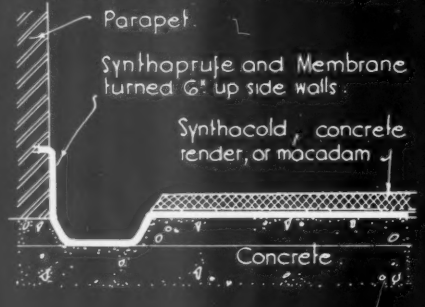
A 3rd. coat is allowed to dry before the 4th. & final is applied.

(4.) FINISH • (a.) No traffic: Sand blinding, or cement wash.

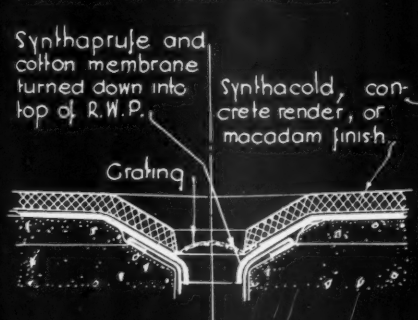
(b.) Light traffic: Synthacold Emulsion & 1/2" cover of fine chippings.

(c.) Medium & heavy traffic: 1", or 2" concrete rendering or 2" Synthacold macadam respectively.

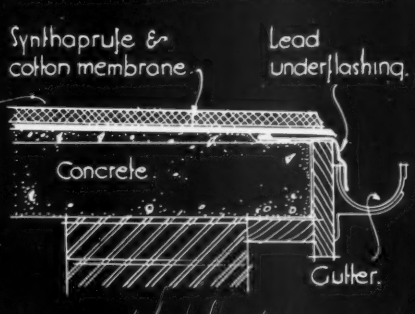
BOXED GUTTER AT PARAPET.



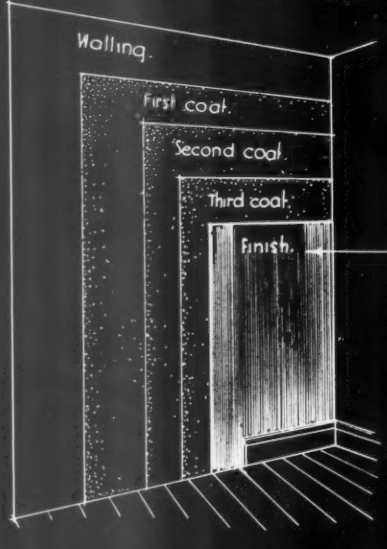
DETAIL AT ROOF OUTLET



DETAIL AT EAVES OF FLAT ROOF.



WALLS: APPLICATION OF SYNTHAPRUFE TO INTERIOR & EXTERIOR DAMP WALLS.



A. INTERIOR WALLS OF CONCRETE or RENDERED MASONRY

Wall surfaces to be free of wall paper, loose distemper, dirt, dust, grease, etc. Each of the three coats of Synthapruſe should be allowed to become completely dry before applying the next.

POSSIBLE FINISHES:

(a.) Wallpaper may be hung in the usual way on a key of two coats of good quality washable distemper, applied over Synthapruſe.

(b.) Distemper as required should be applied only over lining paper, hung over a dry preliminary coat of washable distemper.

(c.) Paint as required may be applied only after the thoroughly dry Synthapruſe has been sealed with a suitable undercoating.

B. CELLAR WALLS: Preparation and waterproofing as above, but last coat, while tacky, finished with sand, and with plaster, cement or colour wash.

C. EXTERIOR WALLS: Apply three coats of Synthapruſe as above, with last coat sand-blinded while tacky and covered with 1/2" cement rendering.

Information from Powell Duffryn Associated Collieries Limited.

INFORMATION SHEET: THE WATERPROOFING OF ROOFS, WALLS AND FLOORS.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Oscar A. Bayne.

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INFORMATION SHEET

• 672 •

WATERPROOFING

Product : Synthaprufe Waterproofing and Jointing Material

Description :
Synthaprufe liquid waterproofing and jointing material is a combination of synthetically prepared tar and high-grade rubber, weighing approximately 11 lbs. to the gallon. The material is of a creamy consistency.

On exposure, Synthaprufe sets rapidly, giving a black flexible film, similar in appearance to rubber. The softening point of the film after setting is approximately 170 deg. F. as determined by the ring and ball method. After a few months, the softening point increases to approximately 212 deg. F. In practice, however, it will withstand without flowing temperatures in excess of the foregoing.

Its hardness, expressed in terms of the Hutchinson's penetrometer test at 77 deg. F. is 75 tenths of a millimetre for fresh film and 40 tenths of a millimetre for film which has been set for a short time.

Elasticity :
The film is remarkably flexible and, in carefully prepared new specimens, it may stretch as much as nine times its original length.

Inflammability :
Synthaprufe in its liquid state is non-inflammable, and when set, the film for all practical purposes is non-inflammable. For instance, if Synthaprufe is painted on wood, and allowed to dry, it will not inflame if a blow-lamp is directly applied.

Resistance to acids :
At room temperatures Synthaprufe is resistant to all common dilute inorganic acids at strengths normally used. It is, however, not resistant to organic acids. It is also resistant to weak solutions of alkalis. Synthaprufe is itself resistant, but to prevent corrosion of materials to which Synthaprufe is applied, a sufficient number of coats must be given to ensure a complete film.

Concrete flat roofs :
Before applying Synthaprufe, cracks wider than 1/16 in. should be pointed, but smaller cracks can be filled with Synthaprufe during application.

Method of application :

1. The surface of the roof should be cleaned of all loose dirt, dust, grease, etc., and one coat of Synthaprufe applied evenly over the surface at the rate of 1 gallon to every 4 sq. yds. This coat should be carried 6 ins. up all walls, parapets and curbs to form skirtings, and allowed to dry thoroughly.

2. The second coat should be applied at the rate of 1 gallon to every 6 sq. yds. Cotton membrane, dipped in water and well wrung, should then be placed into the wet Synthaprufe, and brushed so that no air-pockets remain. Immediately the membrane is placed in position, two further coats of Synthaprufe should be applied, with a sufficient drying interval between each coat.

The cotton membrane should be lapped at least 2 ins. at all joints in the roof and in the skirtings.

Finish :
If a light-coloured finish is required, the final coat while still tacky (i.e. immediately the whole surface presents a black appearance) may be blinded with sand and a cement or similar wash applied.

Synthacold, an emulsion made from a synthetically refined tar, of which it contains 64 per cent. by weight, is primarily intended for use on paths, drives and roads, but as a finish over Synthaprufe on roofs intended to take occasional traffic, it is excellent.

The following is the suggested method :—

(*a*) Where light pedestrian traffic is expected, an application of Synthacold and chippings should be given as follows :—

Synthacold should be well agitated and then applied by pouring from the drum or from a watering can or bucket, and brushed on at the rate of about 1 gallon to 2 or 3 sq. yds. The treated surface should then be covered with ½-in. clean chippings, stone or shingle, at the rate of about 5 sq. yds. to the cwt. of chippings, and thoroughly rolled. An interval of 10-15 minutes should be allowed between the laying of the Synthacold and the application of the chippings, as this hastens the setting process. A further rolling within the next 24 hours is beneficial. Synthacold should not be applied during wet weather, frost or when there is a likelihood of heavy rain falling within twelve hours.

(*b*) For more frequent pedestrian traffic, a 1-in. rendering of concrete on top of the Synthaprufe is recommended, the proportion to be 3 parts aggregate (⅛-in.–¾-in. chippings or crushed gravel), 2 parts sand, and 1 part cement. If the area is large, it will be necessary to employ expansion joints.

(*c*) For heavy traffic, a 2-in. layer of concrete on top of the Synthaprufe is recommended, the proportion to be 4 parts aggregate (⅛-in.–1-in. graded chippings or crushed gravel), 2 parts sand, and 1 part cement.

A 2-in. layer of pre-mixed macadam prepared from Synthacold could be used as an alternative finish, the method to be adopted being as follows :—

1. *Hand mixing.* The graded stone should be thoroughly turned on a suitable mixing-board in quantities not exceeding one-third cub. yd. per batch (if dusty, the stone should first be moistened), while the Synthacold is poured slowly from suitable cans at the rate of 9 galls./ton in the case of 1¼-in.–⅛-in. graded stone or 10 galls./ton in the case of ½-in. chippings. The materials should be turned thoroughly to ensure proper coating but the mixing should not be prolonged unduly.

2. *Mechanical mixing.* Any normal type of concrete mixer is suitable. The graded stone should be introduced to the pan of the mixer (if dusty, the stone should be wetted before being placed in the pan) and the Synthacold added in the proportions previously specified. The materials should not remain in the mixer for more than two minutes.

Interior damp walls :
Method of application

1. Remove all wallpaper, loose distemper, dirt, dust or grease.

2. Apply three coats of Synthaprufe over the whole surface of the walls, allowing each coat to become completely dry before applying the next.

Covering capacity. On walls with smooth surfaces Synthaprufe should be applied at the minimum rate of 1 gallon for every 10 sq. yds. for each coat.

Finish :
Wallpaper. If a wallpaper finish is required, two coats of good quality washable distemper should be applied over the Synthaprufe to act as a key, and to prevent the Synthaprufe from "bleeding" through on to the wallpaper. Wallpaper may then be hung in the usual way.

Distemper :
If a distemper finish is required, one coat of good quality washable distemper should be applied over the last coat of Synthaprufe and a good lining paper hung over this when dry. The lining paper not only acts as a key for subsequent distemper finishes, but prevents the Synthaprufe "bleeding" through on to the final coats of distemper. Two or three coats of distemper may then be given as a final finish.

Paint :
Where a paint finish is required, the final coat of Synthaprufe must be sealed with a suitable undercoating, particulars of which can be obtained from the Selling Organization.

Cellar walls :
If the walls are slimy, they should be scraped clean, washed down and all excess water should be removed and the walls allowed to dry. Three coats of Synthaprufe should then be applied, allowing the necessary drying interval after each application. The final coat, while still tacky (i.e. immediately the whole surface presents a black appearance), may be blinded with sand, after which plaster, cement or colour wash may be applied.

The walls should be as dry as possible before the Synthaprufe is applied. It can, however, be applied to damp walls if necessary. The only effect of the damp is to retard the setting.

Exterior damp walls :
Method of application. At least three coats of Synthaprufe should be applied, each at the rate of 1 gall. to 4 sq. yds., and it is recommended that a final cement rendering be applied over the last coat. Synthaprufe should not be applied during wet weather, nor if there is a danger of rain within a few hours. The last coat should be blinded with sand, when tacky, to act as a key for the cement rendering.

Finish :
If a coloured finish is required without cement rendering then the third coat of Synthaprufe, after being blinded with sand, may be treated with a cement wash or other coloured wash.

Cost :
(*a*) Prices of Synthaprufe :—

1 pint	1/9
1 quart	3/2
½ gall.	5/3
1 gall.	9/-
5 galls.	7/- per gall.
10 galls.	6/6 per gall.
40 galls.	5/9 per gall.

Special prices for larger quantities may be obtained on application.

(*b*) Synthacold is supplied in 5-, 10- and 40-gall. containers at the following prices :—

5-gall. drum	9/3 per drum
10-gall. drum	15/9 per drum
40-gall. barrel	50/- per barrel

Prices for large quantities :—

2 to 4 barrels	45/- per barrel
5 to 9 barrels	43/6 per barrel
10 to 19 barrels	40/- per barrel
20 and upwards	36/9 per barrel

(*c*) Cotton membrane : The most suitable cotton membrane for use can be supplied in rolls of 37 yds by 41 ins. at 11s. per roll, carriage paid on orders of six rolls and upwards.

Manufacturers : Powell Duffryn Associated Collieries, Ltd.

Selling Organization : Stephenson Clarke & Associated Companies, Ltd. (By-products Department), Aberdare House, Mount Stuart Square, Cardiff

Telephone : Cardiff 7900-1

Nottingham Office : Equitable House, South Parade, Nottingham
Telephone : Nottingham 45032/6

Birmingham Office : Lombard House, 144 Great Charles Street, Birmingham
Telephone : Central 2905-6

Southampton Office : Phœnix House, Belvidere Road, Southampton
Telephone : Southampton 5791

Glasgow Office : 19 St. Vincent Place, Glasgow, C.1
Telephone : City 7941

Hull Office : Ocean Chambers, Lowgate, Hull
Telephone : Hull Central 15755

Sheffield Office : Prudential Chambers, Sheffield
Telephone : Sheffield 24378/9

Newcastle Office : Collingwood Buildings, Newcastle-on-Tyne
Telephone : Newcastle Central 22184

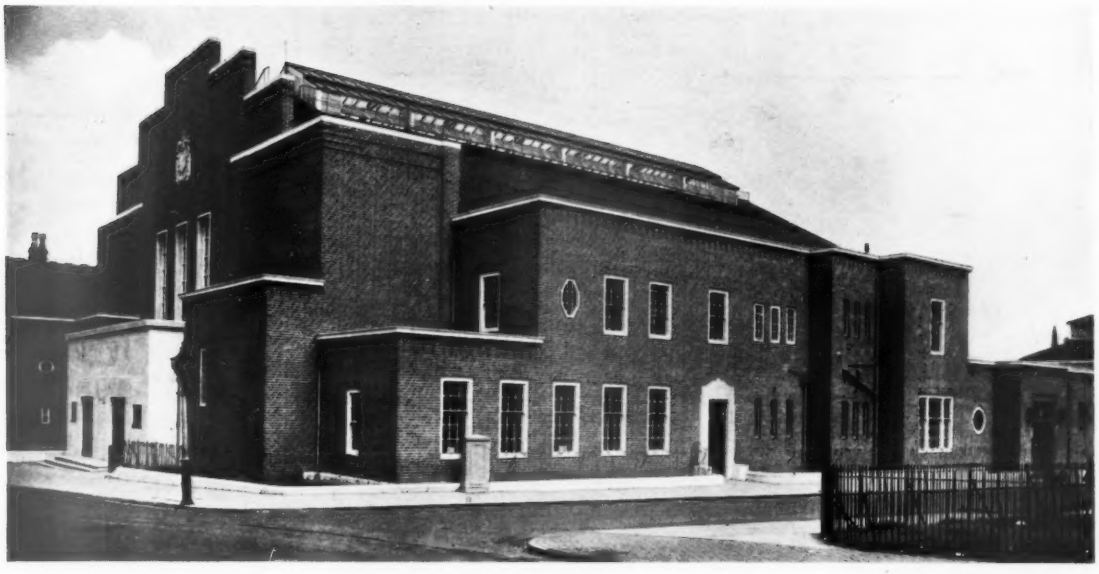
Belfast Office : Scottish Provident Buildings, Donegal Square West, Belfast
Telephone : Belfast 25108

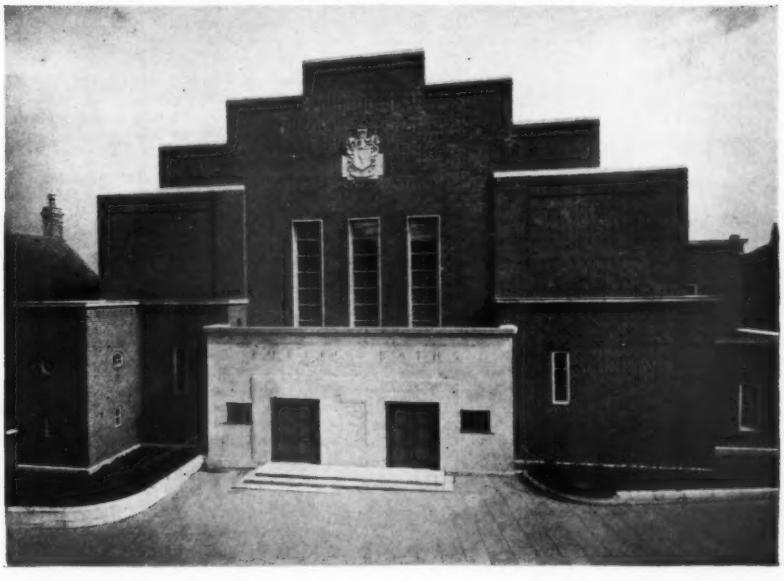
Liverpool Office : Martins Bank Buildings, Water Street, Liverpool, 2
Telephone : Bank 4961-2-3

Sturry Office : Chislet Colliery Office, Sturry, Nr. Canterbury
Telephone : Chislet 32

EXTENSIONS, WEST BROMWICH BATHS

BY D. ELLISON, BOROUGH ENGINEER (BERNARD LOWE, ARCHITECTURAL ASSISTANT)



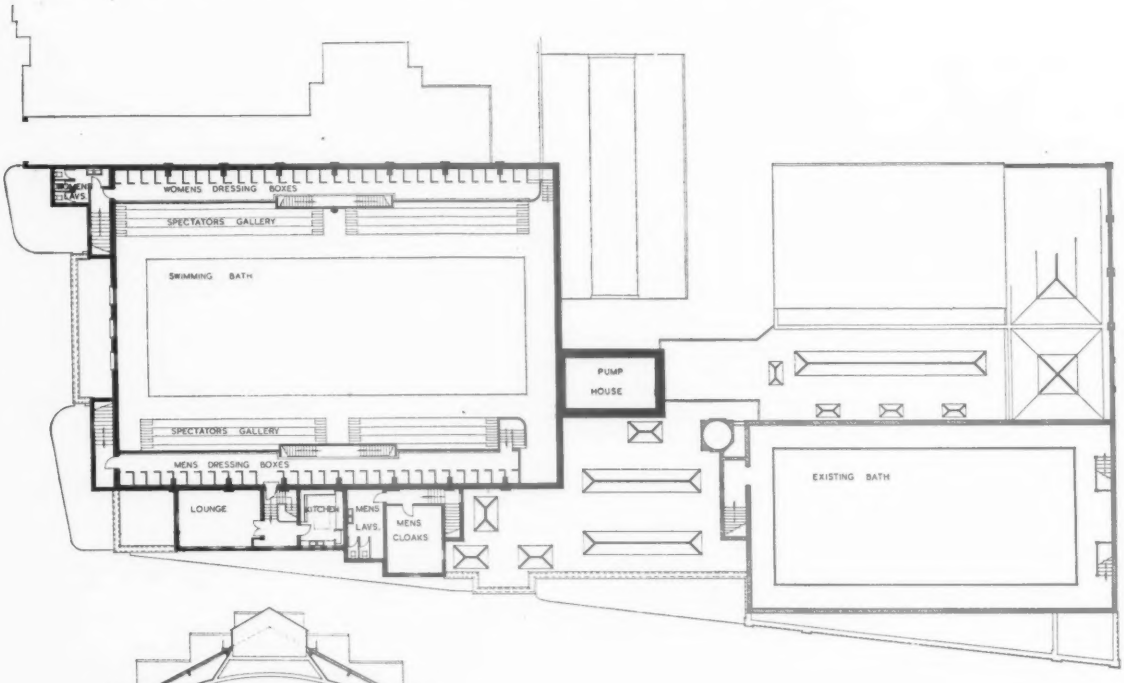


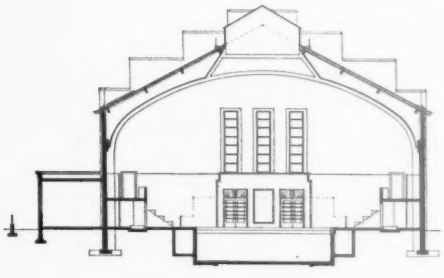
PROBLEM—*Reconstruction of existing baths. Provision of large "gala" bath equipped for championship meetings and capable of being floored over for dancing and other purposes.*

SITE—*The lay-out of the existing buildings hampered the arrangement of the new buildings. The existing pump controlled the placing of the new bath and its women's changing accommodation.*

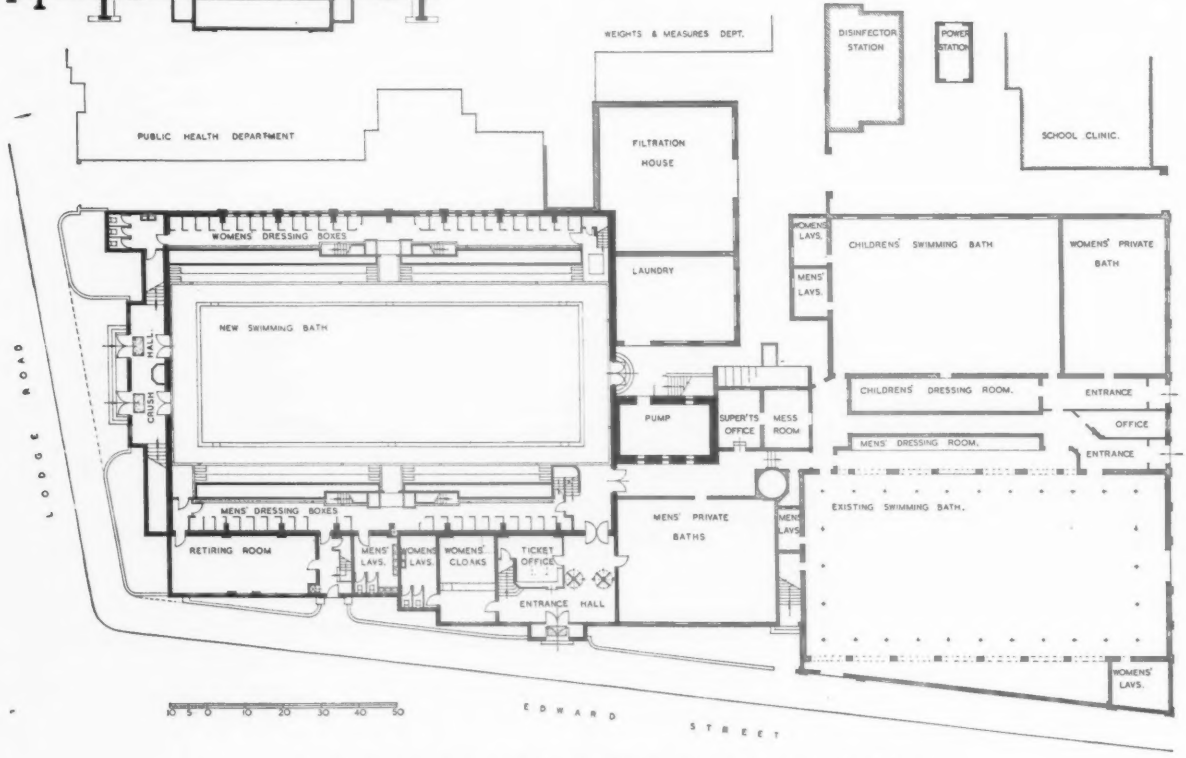
Top, the old buildings. Centre and right, two views of the new baths.

EXTENSIONS, WEST BROMWICH BATHS: BY





PLAN—*The suite of Café on Ground Floor, Lounge on First Floor, and Kitchen can be used separately if needed.*



GROUND AND FIRST FLOOR PLAN AND SECTION

D. ELLISON, BOROUGH ENGINEER

BERNARD LOWE, ARCHITECTURAL ASSISTANT

CONSTRUCTION—*The new bath hall is R.C. framed. Internal walls are of 9-in. brick to prevent sound transmission.*

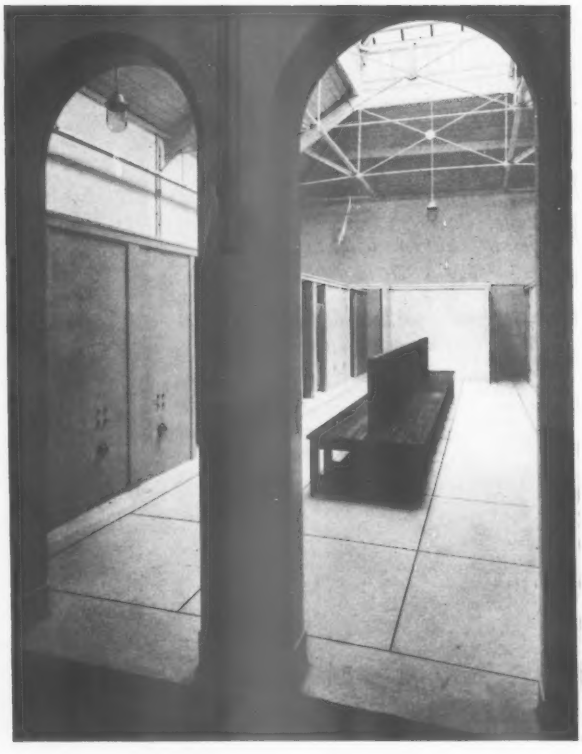
ELEVATIONS—*Sand-faced brick with steel windows, except in Café and Lounge. Grilles are wrot-iron and bronze, and stair handrail is wrot-iron.*

INTERNAL FITTINGS—*New bath hall: Dado of cream tiles with relief in blue and flame. Patent plaster over painted cream. Cubicle walls emerald egg-shell tiled. Doors and dressing boxes, teak. New entrance hall: Pale blue tiles with joinery in English oak. Café: Walls, light tan; joinery, teak and deal, painted. Slipper baths: Travertine terrazzo walls and floors.*

HEATING—*Low-pressure hot water to radiators with steam coils in lantern lights.*

Right, a detail of a doorway. Below, the second class bath, showing new cubicles; below, right, the new learners' bath.

EXTENSIONS, WEST BROMWICH BATHS



BY D. ELLISON, BOROUGH ENGINEER (BERNARD LOWE, ARCHITECTURAL ASSISTANT)

Top, the main bath hall. Left, the stairs to the upper tier dressing boxes in the new bath hall ; above, the women's slipper bath.

The general contractors were Parsons and Morrin, Ltd. ; for list of sub-contractors, see page 662.

IN THAT CONTINGENCY

Notes from the Building Research Station on*

THE THERMAL INSULATION OF BUILDINGS

PART I—GENERAL PRINCIPLES

INTRODUCTION

IN all cases where the interior of a building has to be maintained at a temperature different from that of the outside air, the degree of insulation afforded by the structure is of primary importance in determining the heating or cooling load : the equipment provided for heating or cooling the building must be carefully considered in relation to this factor. Under the climatic conditions prevailing in this country problems of thermal insulation most commonly arise in connection with the heating of buildings in winter. Recent advances in the technique of air-conditioning and the cold-storage of foodstuffs, however, are bringing into prominence the converse case of rooms maintained colder than their surroundings. Whatever the direction of heat leakage the problem must be regarded as one of a balance of costs, for by paying adequate attention to the question of insulation, considerable savings in heating or cooling costs can frequently be effected. In every case the increase in the cost of the building entailed by providing additional thermal insulation must be weighed against the anticipated economies in fuel or power. There is always an optimum condition beyond which it is uneconomic to go.

The object of the present note is to give in brief outline the general principles involved in any problem of thermal insulation. To avoid any confusion it is assumed that the leakage of heat to be considered is between two bodies of air at different temperatures with the structure intervening. This excludes the special case of heating by sunshine. Insulation against radiant solar heat may with advantage follow quite different principles, and will form the subject of a separate note.

Apart from any saving which may result from the " correct " thermal insulation of a building, it is frequently possible by the same means to minimise trouble due to condensation. In a poorly insulated building cold outside conditions cause serious cooling of the internal surfaces of the shell, which may result in the deposition of atmospheric moisture on these surfaces by the process of condensation. Better thermal insulation of the structure lessens the surface cooling and can in many cases prevent condensation. Other advantages arising from the correct use of thermal insulation are to be found in the reduction of thermal movements in buildings, the lessening of pattern staining and, for a given supply or extraction of heat, the shortening of the time required for the heating or cooling of a building.

It should be emphasized at the outset that the property of thermal insulation is not confined to a particular group of building materials. All the materials employed in building afford some degree of thermal insulation, although it is usual to class as " thermal insulating materials " those which are used specifically to increase the thermal insulation of a building the structure of which is determined by other factors. The structure of a building which is designed solely to meet the requirements of stability, rain exclusion, etc., will thus, incidentally, provide *some* thermal insulation.

UNIT OF MEASUREMENT

The thermal insulation value of a structure is measured by the amount of heat which will pass from the air on one side to the air on the other side of the structure. In the units commonly employed in building, this heat is measured by the number of British Thermal Units which will pass under steady conditions in one hour across an area of one square foot in a direction perpendicular to the area, when the difference in temperature between the air on one side and the air on the other side of the structure is one degree Fahrenheit. This value is known as the " *air-to-air thermal transmission coefficient.*"

In order to obtain a figure for the air-to-air thermal transmission coefficient of a structure, it is necessary to know the thermal conductivities of the materials which make up the structure and also something of the environmental conditions on both sides of the structure. Before the method is discussed by which the air-to-air thermal transmission coefficient of a structure can be obtained, it is necessary to understand clearly what is meant by the terms " thermal conductivity," " thermal conductance," " thermal resistivity," " thermal resistance," " surface resistance," and " air-to-air resistance," and the relationship which exists between these terms and the term " air-to-air thermal transmission coefficient " referred to above. Confusion between the above-mentioned terms is a common cause of error and misunderstanding whenever this subject is discussed. It is important that whenever figures for any of these terms are used, their significance should be kept clearly in mind.

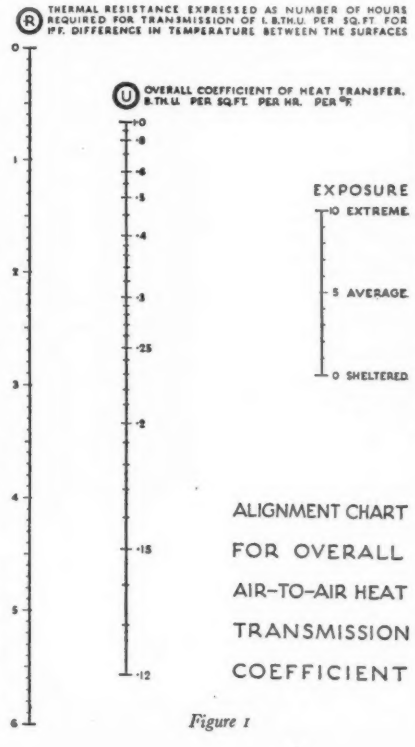


Figure 1

Thermal Conductivity

The thermal insulation values of building materials are commonly expressed as " thermal conductivities." The " *thermal conductivity* " of a homogeneous material may be defined as the rate of heat passing under steady conditions, per unit area, and per unit temperature gradient, in a direction perpendicular to the area. In the case of building materials, thermal conductivity is expressed as the number of British Thermal Units passing per hour across an area of one square foot, when the difference between the surface temperatures is one degree Fahrenheit per inch of thickness.

Thermal conductivity, it should be noted, varies only as between one material and another material.

Thermal Conductance

The term " *thermal conductance* " takes into consideration the *thickness* of the material or structure. For a homogeneous material, the thermal conductance varies inversely with the thickness. On the same standards as used in measuring thermal conductivity, thermal conductance is the number of British Thermal Units passing per hour across an area of one square foot of the material or structure (which may be of any thickness) when the surface temperatures differ by one degree Fahrenheit.

In order to understand the difference between " thermal conductivity " and " thermal conductances " the example of a window glazed with, say, 26-oz. glass may be considered. Glass, considered as a material and compared with, say, a metal, has a *low* thermal conductivity : glazing, however, considered as a structure which is only ¼ in. thick, has a *high* thermal conductance compared with, say, a brick structure which is 14 in. thick.

For practical purposes it is convenient to work, not in terms of thermal conductivities and conductance, but in reciprocals of these units—the " thermal resistivities " and " thermal resistances."

Thermal Resistivity

The " *thermal resistivity*," or more commonly the " *resistance per unit thickness*," of a material may be defined, in the same units used in the case of thermal conductivity and conductance, as the number of hours required for the transmission of one British Thermal Unit per square foot, when the difference between the surface temperatures is one degree Fahrenheit per inch of thickness.

Thermal Resistance

The " thermal resistance " of a material or structure is the number of hours required for the transmission of one British Thermal Unit per square foot of the material or structure (which may be of any thickness) when the surface temperatures differ by one degree Fahrenheit.

The advantages of dealing in terms of resistivities and resistances instead of conductivities and conductances are, firstly, that the resistance of a homogeneous material varies directly as its thickness and can therefore be readily calculated from a value per unit thickness, and, secondly, that the total resistance of a composite structure can be obtained by direct addition of the resistances of the component layers.

Surface Resistance

While the total resistance of a structure is of great importance in determining the rate

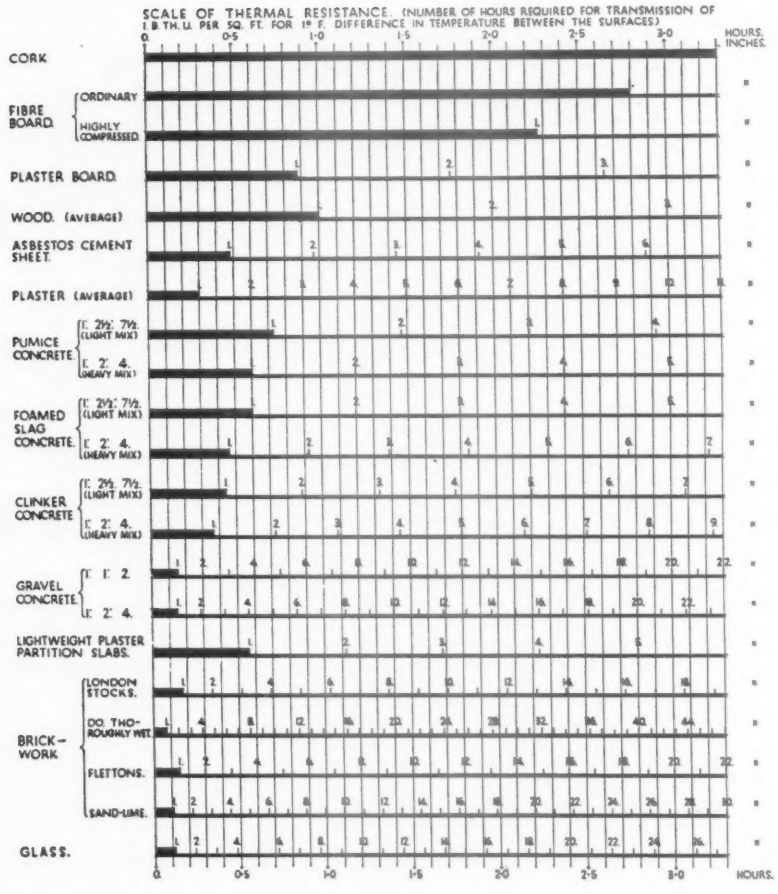


FIGURE 2. *THERMAL RESISTANCES. THE LENGTHS OF THE THICK BLACK LINES ARE PROPORTIONAL TO THE THERMAL RESISTANCES OF UNIT THICKNESSES OF VARIOUS MATERIALS. ANY VERTICAL LINE DRAWN THROUGH THE FIGURE INDICATES THE THICKNESSES OF MATERIAL NECESSARY TO GIVE EQUAL INSULATION.*

of flow of heat from warm air on one side to cooler air on the other, it is not the only factor. At the one side of the structure heat has to be transferred from the air to the surface of the structure and at the other from the surface of the structure to the air. In each of these transfers there is a certain resistance, which must be added to the resistance of the structure. The value of these resistances varies with the environmental conditions and is lower when air moves rapidly across the surface. It is worth noting that the heat flow through thin membranes of high conductance, such as glass, or some of the sheeting materials used in roofing, is almost entirely controlled by the surface effects.

Average values for the surface resistance of the walls of a building under normal conditions in this country are 0·75 hr./B.Th.U./sq. ft./°F. for internal surfaces and 0·25 hr. for external surfaces, but very different values may be found under exceptional conditions of exposure.

Air-to-Air Resistance

The sum of the resistances of the component layers of a structure and the surface resistances on each side of the structure, will give the "*air-to-air resistance*" of the structure.

Air-to-Air Thermal Transmission Coefficient

The reciprocal of the air-to-air resistance of a structure will give the "*air-to-air thermal transmission coefficient*" of the structure.

Example of Method of Calculation of Air-to-Air Transmission Coefficient

On the basis of the above-mentioned figures for the surface resistances, and taking the conductivity of the bricks and plaster to be 6·67 and 3·33 B.Th.U./in./sq. ft./°F., respectively, the air-to-air thermal transmission coefficient for a wall of a building constructed of 9-in. solid fletton brickwork with ¾-in. plaster on the inside, would be :

Brick—

Conductivity : 6·67 B.Th.U./in./sq. ft./°F.

Resistivity : $\frac{1}{6\cdot67}$ = 0.15 hr./B.Th.U./in./sq. ft./°F.

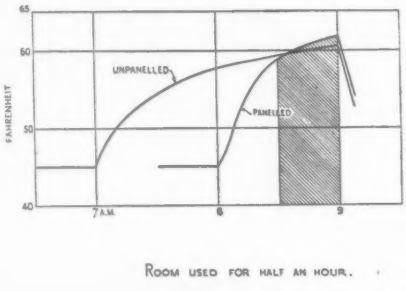
Resistance of a wall 9 ins. thick : 0·15 by 9 = 1·35 hr./B.Th.U./sq. ft./°F.

Plaster :

Conductivity : 3·33 B.Th.U./in./sq. ft./°F.

Resistivity : $\frac{1}{3\cdot33}$ = 0.3 hr./B.Th.U./in./sq. ft./°F.

Resistance of ¾-in. thick plaster: 0·3 × ¾ = 0·23 hr./B.Th.U./sq. ft./°F.



ROOM USED FOR HALF AN HOUR.

Figure 3

Adding the individual resistances will therefore give :—

Internal surface resistance	..	0·75
Resistance of ¾ in. plaster	..	0·23
Resistance of 9-in. brick	..	1·35
External surface resistance	..	0·25
Total resistance	.. ..	2·58

hr./B.Th.U./sq.ft./°F.

or an *air-to-air thermal transmission coefficient* of :—

$\frac{1}{2\cdot58}$ = 0·39 B.Th.U./sq. ft./°F. difference of air temperature.

The last stage of this calculation can be performed graphically by the use of a specially prepared alignment chart such as is shown in Figure 1. In this chart provision is made for varying conditions of exposure.

In using it, a straight edge is laid across joining a point representing the thermal resistance of the construction alone, on the left-hand scale, with the appropriate exposure for the worst conditions on the right-hand scale. The air-to-air transmission coefficient is read off on the middle scale.

Insulation Values for Representative Materials

Figure 2 illustrates in graphical form the relative thermal insulating values for various building materials for unit thickness and also of specific thicknesses of these materials. The values indicated are thermal *resistances* derived as described above from laboratory measurements of thermal conductivity and conductance.

Effect of Air Cavities

No account is taken in Figure 2 of the effect of air cavities. An air space, particularly when it is sealed, provides one of the best ways of obtaining thermal insulation. It is omitted from the list, however, because the efficiency of an air space varies considerably depending on its situation and surroundings—the only safe way is to consider each case separately. For instance, the thermal resistivity of a 2-in. air space with metal wall ties in a cavity wall is 0·20 hr./B.Th.U./sq. ft./°F. per inch thickness. This is much lower than the thermal resistivity of an air space between a wall and an interior lining which, when the lining is on wood studs and the air space is of a normal thickness, can be taken as 0·90 hr./B.Th.U./sq. ft./°F. per inch thickness.

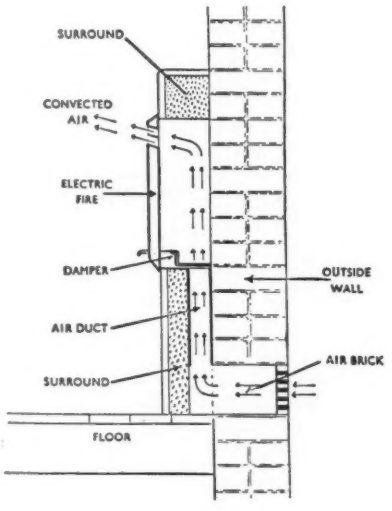
It should be realised that the thermal insulation value of a structure may be much less when it is wet than when it is dry. The figures given in Figure 2 are for dry conditions unless otherwise stated.

Thermal Capacity

An important property of materials which is closely allied to conductivity is "specific heat." The "*specific heat*" of a material may be defined as the amount of heat which is required to raise unit mass of the material through unit difference of temperature. The mass of a material multiplied by its specific heat will give its "*thermal capacity.*" The sum of the thermal capacities of the materials which make up a structure will give the thermal capacity of the structure. The lower the thermal capacity of a structure the more quickly will the temperature of the structure respond to fluctuations in the temperature of the environment while the higher the thermal capacity of the structure the slower will be the response. This fact should be made use of in the design of buildings. An example is furnished by a room which is required for occupation

during mealtimes only. An interesting experiment was made in a house some years ago. A small room, with brick walls finished with plaster in the usual way, was used for breakfast, and it was found necessary to turn on the gas fire 1½ hours beforehand to warm the room sufficiently. The walls were subsequently panelled in wood, and the period required for heating-up was then reduced to ½ hour. The curves in Figure 3 show rates of rise of temperature actually recorded before and after panelling. This result was achieved because the new lining was of lower thermal capacity and better thermal insulation than the bare wall. This is a case in which thermal insulation results in a distinct convenience by saving *time* as well as fuel costs.

(The thermal insulation values of certain common constructions, together with recommendations for the type of construction which should be adopted to provide good thermal insulation, will follow in Part II of this note.)



TRADE NOTES

[*BY PHILIP SCHOLBERG*]

Ventilating Electric Fires

ONE of the chief advantages claimed for the gas fire is that it provides plenty of ventilation, a virtue which has so far been largely ignored by the electrical industry, who have for many years been almost obsessed with the idea of one hundred per cent. efficiency and no heat going to waste up the flue. Lately, however, the electrical interests have realized that, from the point of view of comfort, ventilation is almost as important as heating, and a certain number of fires have been introduced in which there is some means of drawing in outside air, warming it, and pushing it out into the room by the convection currents induced by the warmth of the fire. This induced air not only ventilates the room, but has the additional advantage that the back of the fire is kept cool and that heat losses through the wall itself are reduced. Exactly how much warmed air comes in in this way it is not easy to tell, for a good deal will depend on the direction of the wind outside. The section at the head of these notes shows a typical ventilating fire by Frost & Co., and called the Sunhouse ; here an air brick is placed in the outside wall, and the incoming air is discharged through louvres at the top of the fire, these louvres being designed to throw the air clear of the wall and thus minimise staining. It will be seen that there is thus not very much height in which to get a really good pull on the air, so that the volume of air pulled into the room will presumably not be anything like as great as the amount pushed out by a gas or a coal fire at the bottom of a good long flue. Enquiries among the gas and electrical interests and from one or two independent consultants all confirm that no research has been carried out on the subject, and it seems a pity that the electrical industry should not have thought it worth while to provide the necessary finance for a proper programme to be carried out. Who does it, is more or less immaterial—possibly B.R.S., possibly the Institution of Heating and Ventilating Engineers—but done it should certainly be.

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All of which is not meant to imply that this Sunhouse fire is not a good idea. Quite obviously it is a lot better than the unventilated fire, and it is a very definite step in the right direction. Quite possibly we shall ultimately arrive at a fire of this kind with a motor-driven fan in the base to make certain that a large quantity of outside air really gets into the room. An exhaust fan like the Vent-Axia on the opposite side of the room would of course do the trick, but it might be better to have the fan embodied in the fire. But in the meantime, a fire which gives a certain amount of ventilation is certainly worth trying. The appearance of these fires is good, most of them consisting of a simple rectangular frame housing the parabolic reflector, though some of the models have the familiar heating element in which the wire is coiled and held in the rectangular refractory slab. There is also a model designed for hotels and boarding houses ; this has a slot meter built into the base and hidden behind a hinged flap. A simple and neat solution of a not too easy problem.—(*H. Frost & Co., Ltd., Fieldgate, Walsall, Staffordshire.*)

Nickel Silver

The Mond Nickel people are now publishing a whole series of illustrated booklets on the use of nickel alloys in different types of building such as cinemas, theatres, hospitals, restaurants and commercial and public buildings. These attack the problem from the right angle because they take the trouble to explain the different types of alloy which are suitable for different purposes. Used for such things as taps and plumbing fittings generally, the slight increase in cost may be more than offset by longer life and the fact that there is no coating to wear and peel off, for the stainless finish is solid and a nickel silver tap, for instance, could be scoured with harsh abrasives until it disappeared altogether. It is interesting to note that the Birmingham Corporation think the extra cost worth

The Monel sink unit in the kitchen organized by Mrs. Darcy Braddell for the Women's Gas Council at the Glasgow Exhibition ; the wringer swings down into the space between the two sink compartments.

while on many of their slum clearance schemes where there is presumably no money to be thrown away.

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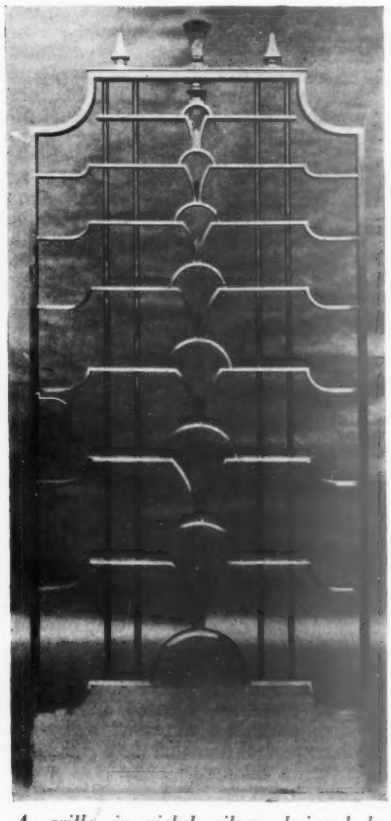
From the manufacturing point of view, none of these alloys has any noticeable vices, and any of them can be worked by a competent firm. Decoratively, much can be done with these alloys if they are used in conjunction with other materials such as bronze. The photograph below shows a grille designed by Mr. Frederick Barber, where bronze finials and enrichments have been used ; this was shown at the Building Exhibition by Henry Wiggin & Co. The



A grille in nickel silver designed by Frederick Barber.

other photograph, on page 661, shows a Monel metal sink, Monel, incidentally, being a copper nickel alloy containing 67 per cent. of nickel. It is published not so much for the sake of the sink, Monel sinks are quite well enough known by now, but because it shows a wringer fitting which I do not remember having seen before. The sink has two compartments, and the wringer swings down out of the way, and is housed between the two adjoining ends. Sensible and neat, for it uses up a space in which nothing can be put in the ordinary way.—(*The Mond Nickel Co., Thames House, Millbank, London, S.W.1.*)

Testing the Bearing Capacity of Soil

Mr. Frank Kneas, a consulting engineer in Philadelphia, has evolved a rather interesting method for testing the bearing capacity of different soils. Briefly, his apparatus consists of a 1-inch rod about 8 feet long, with a ring welded in the middle. A 25-pound weight is bored so that it will slide freely down the rod. This weight is dropped from the top of the rod, and when it hits the ring, it drives the rod into the ground, the bearing capacity of the soil being determined by the number of blows necessary to drive the rod each successive foot. It is not claimed that absolute bearing values can be directly obtained from the number of blows per foot, but the inventor maintains that " direct comparisons can be made between the relative penetrations at different parts of the same site, and also between tests on the same type of soil on different sites."

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It seems that this test method might be very useful on the average small house site. At the moment few architects do more than have a few trial holes dug just to see how far down it is to the gravel or whatever it is they expect to find. Reasonable discretion can be used in deciding just where the holes are to be dug, but the whole method cannot be looked upon as being really satisfactory unless the site is quite straightforward. Nine times out of ten, of course, it doesn't matter in the least, for the tables of safe loadings for different soils are very conservative. But the fact remains that buildings *do* have to be underpinned from time to time, and not always old buildings either, and it seems that a test of this kind might give some quite valuable figures. It is essentially practical in that a couple of labourers and a competent observer can obtain a figure in a few minutes, and remembering that there must always be somebody to hold the other end of the tape, or a ranging pole, it would not add to the difficulties of a survey if test figures were taken at quite a number of different points. And the apparatus necessary should not cost more than a few shillings. Since the Building Research Station took the trouble to evolve the slump test as a method of checking concrete on the site it seems not unreasonable to suggest that they might well look into this rod and weight technique and suggest a standard method for making the test.

"Ceramics in Art and Industry"

I have just been sent a copy of the first issue of *Ceramics in Art and Industry*, a review devoted to the uses of clay, and published by Doultons. To quote the letter which accompanies it, the review " intends to deal with the many applications of pottery materials in the fields of art, architecture and industry." As one would expect it is written from the Doulton point of view, but it is none the worse for that. When you come to think of it, it is very difficult to get away from pottery for very long, whatever your job may happen to be, and as Doultons have a pretty large finger in most of the pottery pies, it is only reasonable that they should make an occasional song and dance about it. The review is well illustrated, and there are brief notes on the methods of producing the company's various products, from glazed pipes to chemical stoneware. While the information cannot be exhaustive, one is left with the impression that Doultons would be an interesting works to visit, be it the table ware at Burslem or the glazed pipe works at Erith. Though this review is not the sort of thing most people will want to keep for ever and ever, it is well worth looking through at least once, if only to discover what a lot of widely differing things a single firm can make.—(*Doulton & Co., Ltd., Lambeth, London, S.E.1.*)

The Buildings Illustrated

THE PRINCESS MARY CONVALESCENT HOME, MARGATE (pages 639-642). Architect: E. P. Wheeler, Sculptor : Miss Julian Allen. The general contractors were W. H. Gaze and Sons, Ltd., and the sub-contractors and suppliers included : General Asphalte Co., Ltd., asphalt ; J. Bysouth, Ltd., stone ; "Noelite," Ltd., artificial stone paving ; McIntyre and Sons, Ltd., structural steel ; J. Macquire, tiles ; Acme Flooring and Paving Co., Ltd., hardwood strip and wood block flooring ; R. I. W. Protective Products Co., Ltd., waterproofing materials ; Fretwell Heating Co., central heating ; Bratt Colbran, Ltd., grates ; Berkeley Electrical Engineering Co., Ltd., electric wiring ; Builders Merchants (London), Ltd., sanitary fittings ; Alfred Olby and Son, Ltd., door furniture ; Doodson and Bain, Ltd., casements ; Dennison, Kett & Co., Ltd., rolling shutters ; S. W. Farmer and Son, Ltd., iron staircases and metalwork ; E. Hilburn & Co., dark blinds and sunblinds ; Carter & Co., Ltd., tiling ; James Gibbons, Ltd., cloakroom fittings.

HOUSE AT BEXHILL-ON-SEA (pages 644-646). Architect, Reginald Kirby. The general contractor was R. A. Larkin, and the sub-contractors and suppliers included : Crittall Manufacturing Co., windows ; Light Steelwork (1925), Ltd., stair handrails ; Venesta, Ltd., doors (external) ; Bryce White, Ltd., doors (internal) ; H. E. Fellows and Sons, electrical work ; Ruberoid Co., Ltd., roof ; British Ogro, Ltd., door furniture ; James Clark & Co., glass ; Taylor Pearse & Co., cupboard handles ; Shanks & Co., Ltd., and Doulton & Co., Ltd., sanitary fittings ; Hunter and Hyland, Ltd., curtain rails ; Stevens and Adams, Ltd., wood block floor ; W. L. Jackson & Co., Ltd., facing bricks ; The Lunsford Brick Co., Ltd., general bricks ; Troughton and Young, Ltd., electrical fittings.

WEST BROMWICH CORPORATION BATHS (pages 655-658). Borough Engineer, D. Ellison, A.M.INST.C.E. Bernard Lowe, Architectural Assistant. The general contractors were Parsons and Morrin, Ltd., and the sub-contractors and suppliers included : Alfred Brown & Co., Walker and Wood, Ltd., James Lister and Sons, Lockerbie and Wilkinson, Ltd., and Marley Bros., Ltd., ironmongery ; Wm. Arnold and Sons, Ltd., sanitary fittings ; Henry Hope and Sons, Ltd., steel casements ; Carter & Co., Ltd., wall tiling ; The Carrara Marble Co. (Liverpool), Ltd., and Lyne and Sons, Ltd., terrazzo ; D. G. B. (Dudley), Ltd., floor tiling ; Shaw's Glazed Brick Co., Ltd., faience lining ; J. R. Pearson (Birmingham), Ltd., railings, lamps and grilles ; Johnson Bros. & Co., Ltd., fencing ; La Brea Asphalt Co., Ltd., asphalt work ; Allied Guilds, Ltd., reconstructed stone ; James Allan, Senior & Co., rainwater heads, etc. ; Charles Winn & Co., Ltd., showers and mixing valves ; Venesta, Ltd., flush doors ; Express Lift Co., Ltd., service lift ; Accles and Pollock, Ltd., handrails ; J. A. Hewetson, Ltd., wood block floors ; Pyrene Co., Ltd., fire equipment ; Bigwood Brothers, iron platform and ladders ; Pearce and Cutler, Ltd., glazing ; H. B. Sale, Ltd., letters ; Keith Blackman, Ltd., fans ; Francis Morton Junior & Co., spring floor ; Soapless Foam, Ltd., foam bath equipment ; Walter Dix & Co., Ltd., diving stage and water polo equipment ; Synchronome Co., Ltd., clocks ; Brightside Foundry and Engineering Co., Ltd., heating ; Pulsometer Engineering Co., Ltd., filtration plant ; Bayliss, Jones and Bayliss, Ltd., turnstiles ; Constructors, Ltd., lockers ; British Reinforced Concrete Engineering Co., reinforced concrete ; L. G. M. Walker & Co., Ltd., plumbing ; Corporation of West Bromwich Gas Department, emergency lights and kitchen equipment ; Corporation of West Bromwich Electricity Dept., electric lighting and fittings ; J. W. B. Pratt, Ltd., facing bricks ; Baggeridge Brick Co., common bricks ; Hadley Bros. and Taylor, Ltd., bricks ; Edward Wood & Co., structural steel in alterations ; Ellis Partridge & Co., Ltd., slates ; Hill's Patent Glazing Co., Ltd., lantern lights ; Midland Plastic Co., plaster ; Chas. Bunn & Co., Ltd., stainless steel railings ; Pel, Ltd., nesting chairs.

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

PRICES

TIMBER AND A.R.P.

[*BY T. P. COPELAND*]

THE drain on the timber stocks of this country during the last three weeks has been so colossal that an immediate review of the position in its relation to future prices is imperative.

Up till the present no definite figures as to the quantity that has been used for emergency construction and A.R.P. work are available, but a figure as high as 60,000 standards has been estimated. Practically the whole of the quantity has already been delivered to various sites and it may be taken as certain that no appreciable amount of this will come back into circulation again.

Extraordinary as it may seem, the Timber Trade keeps no statistics of current stocks in England, though there has been a great agitation of late that this should be done. The sudden drain on stocks of the last few days will be a very good point in favour of those who wish that a statistical department should be set up. The only figures available are those of the dock-stocks, such as the London Surrey Commercial Docks, but although these are the biggest timber storage places, private wharves and yards also have to be counted in. With no current stock figures available it is impossible to say how a sudden withdrawal from circulation of some 60,000 standards will affect the available supplies, but it is obvious that an effect will be felt. It must be borne in mind, however, that the demand during the black week of September 23 to September 30 was primarily for certain sizes only, chief amongst which were 6 × 6, 4 × 4, 3 × 9, 3 × 4, 2 × 4 and 1 × 6 rough boards. Such was the demand for 2 × 4 that some merchants were forced to cut down 2 × 8 and other sizes to meet their orders.

During that week prices rose in some cases as much as £3 a standard. This was understandable. Merchants saw their stocks diminishing with no immediate chance of replacement and in an endeavour to hold some of the good sizes against their regular customers' orders they put the price up. This had little effect. Buyers were panicking and paid any price asked. Added to this was the fact that all transport was hopelessly disorganized and extra lorries for delivery were unobtainable. In consequence merchants had a vast amount of extra delivery to do with their own lorries and drivers, loading gangs and office staffs had to be paid overtime. A number of firms worked throughout the whole week-end of September 24–25 with full yard and delivery staffs. It must be said in passing that there was very little real speculating in the timber trade and no attempts have so far come to light of endeavours to corner the market in certain sizes. This may have been due to a timely request from the Government that should an emergency arise a Timber Control Board should be formed. Any would-be speculators realized that should this happen prices would immediately become fixed.

There is no doubt that general A.R.P. work will continue for some time in the way of trench-digging and the making of shelters. This is quite right. We suddenly woke up to the fact that our civilian defences were almost non-existent and now that a start has been made on them the job should be finished against another emergency. Timber will therefore still be in demand though to a lesser degree for these works, as most councils and public bodies have bought as much as they will require to complete present arrangements. Any more that will be required will be put out to tender and not ordered for immediate delivery regardless of price as happened of necessity during the crisis. This will tend to keep prices down. Added to this, the demand for private shelters will definitely drop off; in fact, this attitude can already be seen in the number of orders from private people that have been cancelled. During the scare these people were begging for timber for their own shelters. Now they are asking the merchants to take back the goods. To the merchants this smacks almost of immorality. However, this is beside the point, and the immediate question is: "How will all this affect timber prices for the future?"

Though stocks throughout the country have been badly depleted during the last three weeks it is lucky that this has

★ *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.*

happened before the Baltic ports have closed. Also the Scandinavians had been preparing to over-winter the balance of their stocks owing to the general lack of demand. Thus there is plenty of timber available and ready for immediate shipment. At the same time, however, the shippers realize that there will be a demand for certain sizes only and that merchants will not want to load up their yards with a lot of sizes of which they already have plenty, in order to be able to get some of the sizes of which they are short. The merchants for their part would much rather pay a higher price for the scarce sizes only, and should the shippers be able and willing to oblige them they will naturally increase their prices proportionately.

Another factor to be taken into account will be freights. If stocks are to be replenished this season the boats will have to be chartered immediately and this will tend to increase freightage rates. Cargoes will have to come over with the reduced deck load of winter shipment which alone will account for an increase in the c.i.f. price.

Thus the inference is that there will certainly be a hardening in the price of some sizes, particularly of 2 × 4, 3 × 4, and 1 × 6 rough boards, and this in itself will tend to increase prices all round till the market can adjust itself next spring.

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

1. **Current Market Prices of Materials, Part I.** (published last week)
2. **Current Market Prices of Materials, Part II.**
3. **Current Prices for Measured Work, Part I.**
4. **A. — Current Prices for Measured Work, Part II.**
   B — Prices for Approximate Estimates.

PART 2

IMMEDIATELY below, Messrs. Davis and Belfield mention the principal changes which have occurred in the last month. Similar notes, and the deductions that may be drawn from them, will be published on this page each month.

NOTES ON PRICE CHANGES

I have not been able to obtain satisfactory firm quotations for timber owing to fluctuations caused by sudden A.R.P. demands, etc. The timber prices published this month are the same as those published last month although at the time of going to press most timber prices and particularly certain scantlings are higher.

O. A. DAVIS, P.A.S.I.

Prices vary according to quality and quantity ordered.

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

CURRENT MARKET PRICES OF MATERIALS

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

JOINER

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

Joinery Timber

		Per standard £ s. d.	Per foot cube s. d.
3″ × 9″ Scantling	2nd Archangel	41 0 0	4 11⅜
3″ × 9″ ,,	3rd ,, ...	27 0 0	3 3½
2″ × 9″ ,,	2nd ,, ...	46 10 0	5 7¾
2″ × 9″ ,,	3rd ,, ...	27 10 0	3 4
3″ × 8″ ,,	2nd ,, ...	32 0 0	3 10¾
3″ × 8″ ,,	3rd ,, ...	24 0 0	2 11
2″ × 8″ ,,	2nd ,, ...	34 0 0	4 1½
2″ × 8″ ,,	3rd ,, ...	24 0 0	2 11
3″ × 7″ ,,	2nd ,, ...	31 10 0	3 10
3″ × 7″ ,,	3rd ,, ...	23 0 0	2 9½
2″ × 7″ ,,	2nd ,, ...	34 0 0	4 1½
2″ × 7″ ,,	3rd ,, ...	22 0 0	2 8
2″ × 6″ ,,	u/s ,, ...	21 0 0	2 7½
1½″ × 11″ ,,	3rd ,, ...	38 0 0	4 7½
1½″ × 9″ ,,	u/s ,, ...	34 0 0	4 1½
1″ × 9″ ,,	2nd ,, ...	46 10 0	5 7¾
1″ × 9″ ,,	3rd ,, ...	34 10 0	4 2¼
1″ × 11″ ,,	2nd ,, ...	49 0 0	5 11½
1″ × 11″ ,,	3rd ,, ...	39 0 0	4 8¾
1¼″ × 9″ ,,	2nd ,, ...	46 10 0	5 7¾
1¼″ × 9″ ,,	3rd ,, ...	35 0 0	4 3
1¼″ × 11″ ,,	2nd ,, ...	49 10 0	6 0
1¼″ × 11″ ,,	3rd ,, ...	40 10 0	4 11

JOINER—(*continued*)

Flooring

		⅞″	1″	1¼″
Yellow deal, plain edge in batten widths ..	per square	19/9	22/6	28/6
Ditto, T. & G.	per square	20/3	23/–	29/–
T. & G. rift sawn B.C. pine in 4″ widths ..	per square		29/–	
T. & G. random grain, in 4″ widths	per square		17/6	

Wall Linings

Deal Match Boarding :—

1″ × 6″ T.G.B.	per square	24/–
1″ × 4½″ T.G.V.	per square	28/6
¾″ × 6″ T.G.B.	per square	19/–
¾″ × 4½″ T.G.V.	per square	18/6
⅝″ × 6″ T.G.B.	per square	15/6
⅝″ × 4½″ T.G.V.	per square	15/–
½″ × 4½″ T.G.V.	per square	12/–

Asbestos-Cement :—

5/32″ Semi-compressed flat building sheets, grey	per yard super	1/3¾
3/16″ Ditto	per yard super	1/4½
¼″ Ditto	per yard super	1/11
¼″ Metal reinforced flat building sheets	per yard super	3/4

Prices are for orders of less than 1 ton.

CURRENT PRICES

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

JOINER AND STEEL AND IRONWORKER

JOINER—(*continued*)

Wall Boards :—

Asbestos-cement wall board (in sheets 8′ 0″ × 4′ 0″ only) under 5,000 feet super	per foot super	–2¾
Asbestos-cement stipple glazed sheets (in sheets 8′ 0″ × 4′ 0″ only)	per yard super	7/6
Ditto, plain white glazed sheets (in sheets 8′ 0″ × 4′ 0″ only) ..	per yard super	8/6
Marble glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″)	per yard super	7/6

	300 yards	300–1,000 yards	1,000–2,000 yards	Over 2,000 yards
½″ Fibre board ..	2/–	1/10½	1/9	1/7

	25-75 yards	150–300 yards	Over 600 yards
⅜″ Fireproof plaster board per yard super	2/2	1/10	1/6
¼″ Ditto .. .. .. per yard super	2/–	1/8	1/4
Joint tape (approx. 250 feet run) per roll	..	..	1/6
Joint filler .. .. per lb.	..	..	–/4

Plywoods :—

	4 m/m	5 m/m	6 m/m	9 m/m	15 m/m
✱Birch (A) per square	18/9	23/6	—	37/–	—
✱ „ (B) per square	15/6	—	21/–	30/6	43/–
✱Japanese figured oak (A.A.) per square	33/6	—	39 3	65/–	—
✱Austrian oak, figured one side, plain oak reverse (A.A.) per square	—	—	86/3	92/6	—
Australian walnut, finely figured oneside (boards 72″ × 36″) per square			¼″ 67/6	⅜″ 85/–	
Sycamore, figured one side (ditto) per square			75/–	85/–	
Honduras mahogany, figured one side (ditto) per square			75/–	—	
Honduras mahogany, finely figured (boards 84″ × 36″) per square			125/–	—	

Prices are for complete bundles.

✱Blockboards :—

Alder :—

Thickness		Boards 60″ × 183″	Boards 72″ × 183″
½″	per square	59/3	59/3
⅝″	per square	66/3	66/3
¾″	per square	72/6	72/6
⅞″	per square	79/–	79/–
1″	per square	85/6	85/6
1¼″	per square	99/6	99/6
1½″	per square	114/6	114/6
1¾″	per square	128/–	128/–

Birch :—

Thickness		Boards 60″ × 84″ & 54″ × 72″	Boards 60″ × 140″
½″	per square	43/9	47/3
⅝″	per square	50/–	54/–
¾″	per square	55/3	59/6
⅞″	per square	60/–	64/–
1″	per square	67/6	72/3

Prices are for complete bundles.

Hardwoods

Joinery Quality.

English oak	per foot cube	15/–
American oak (plain)	per foot cube	10/–
„ „ (quartered)	per foot cube	12/–
Australian Silky Oak (plain) ..	per foot cube	11/–
„ „ „ (quartered) ..	per foot cube	12/6
Walnut, European	per foot cube	18/–
Teak, Rangoon	per foot cube	15/–
„ African	per foot cube	12/–

JOINER—(*continued*)

Mahogany, Honduras	per foot cube	13/6
American whitewood	per foot cube	9/–
Birch	per foot cube	8/–
Cedar (aromatic)	per foot cube	16/–
Japanese oak (plain)	per foot cube	10/–
„ „ (quartered)	per foot cube	12/–
Austrian oak (plain)	per foot cube	10/6
„ „ (quartered)	per foot cube	14/–

Sundries

Slaters or sarking felt	per yard run	–/6
Roofing felt	per yard run	–/8
Bituminous hair felt	per roll	33/–
All rolls 25 yards long by 32″ wide.		
Cork slabs, 1″ thick (3′ 0″ × 1′ 0″)	per foot super	–/4¼
„ 2″ thick (3′ 0″ × 1′ 0″)	per foot super	–/8
Slagwool	per cwt. (approx.)	12/–
Building paper in rolls of 100 yards, 1-ply, 60″ wide (B.I.80 and L.G.I.80)	per roll	67/6
Ditto, 2-ply, 60″ wide (B.I.80)	per roll	135/–
Ditto, 2-ply, 60″ wide (B.I.20)	per roll	202/6
" Cabots " Quilt :—(Ex Works Twelve roll lots delivered carr. free.)		
Double ply .. per roll 42/–	per half roll	23/6
All rolls 28 yards long by 36″ wide. Special terms for quantities.		
Cut steel clasp nails, 1″ per cwt. 30/6	4″ per cwt.	21/6
„ „ floor brads, 2″ „ 20/9	3″ per cwt.	19/9
Bright oval wire nails 1″ „ 32/9	4″ per cwt.	21/6
Scotch glue	per cwt.	65/–

Floor Clips :—

		£ s. d.
One leg floor clip	per 1,000	8 8 0
2″ short leg floor clip	per 1,000	8 8 0
2″ Regular floor clip	per 1,000	8 15 0
3″ „ „	per 1,000	9 0 0
2″ Regular ceiling clip	per 1,000	8 15 0
Single leg ceiling clip (7½″)	per 1,000	10 10 0

Special terms for quantities.

STEEL AND IRONWORKER

Steelwork

		£ s. d.
Basis price for rolled steel joists sections 5″ × 3″ to 16″ × 6″, in 10 ft. to 50 ft. lengths	per ton	13 0 0
Extras on above for :—		
9″ × 7″ Section	per ton	0 5 0
4″ × 3″, 5″ × 2½″, 10″ × 8″, 12″ × 8″, 14″ × 8″ and 16″ × 8″ to 20″ × 7½″ sections inclusive	per ton	0 10 0
3″ × 1½″, 3″ × 3″, 4″ × 1¾″, 4¾″ × 1¾″ and 24″ × 7½″ sections	per ton	1 0 0
Channels, angles and tees	per ton	14 0 0
Mild steel plates	per ton	14 0 0
Screw bolts	per ton	35 0 0

Fabricated Steelwork

		£ s. d.
Joists cut and fitted	per ton	17 0 0
Stanchions, ordinary sections with riveted caps and bases	per ton	20 0 0
Stanchions, compound	per ton	23 0 0
Plate girders	per ton	25 0 0
Framed roof trusses, 25′ 0″ span	per ton	25 0 0
„ „ „ 60′ 0″ span ..	per ton	23 0 0

Prices ex stock are higher, and definite quotations should be obtained.

Prime Galvanized Corrugated Iron Sheets

(Ex London Stocks)

	10 cwt. lots £ s. d.	Less quantity £ s. d.
4 to 9 fts. 18 or 20 gauge, 8/3″ corrugations .. .. .. per ton	20 0 0	21 0 0
10 fts. 18 or 20 gauge, 8/3″ corrugations	20 10 0	21 10 0
4 to 9 fts. 22 or 24 gauge, 8/3″ corrugations .. .. .. per ton	20 10 0	21 10 0
10 fts. 22 or 24 gauge, 8/3″ corrugations	21 0 0	22 0 0
4 to 8 fts. 26 gauge, 8/3″ corrugations ..	21 15 0	22 15 0
9 fts. 26 gauge, 8/3″ corrugations ..	22 5 0	23 5 0
10 fts. 26 gauge, 8/3″ corrugations ..	22 15 0	23 15 0

✱ Items marked thus have fallen since September 22.

CURRENT PRICES

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

PLASTERER, PLUMBER AND INTERNAL PLUMBER

PLASTERER

Plaster and Cement

		1-ton loads	5-ton loads	
Sirapite (coarse)	per ton	70/–	64/–	
„ (fine)	per ton	78/–	—	
Victorite No. 1	per ton	85/–	78/6	6-ton loads
„ No. 2 or non sweat	per ton	80/–	73/6	6-ton loads
Thistle (browning, haired and pink finish)	per ton	70/–	64/–	
Thistle (fine)	per ton	78/–	—	
Pink plaster	per ton	66/–	—	
White plaster	per ton	78/–	—	
Keene's pink	per ton	112/6	—	
Keene's white	per ton	117/6	—	
Super Carbo	per ton	—	47/6	4-ton loads
Carbo-setting	per ton	—	57/6	4-ton loads

	1 ton upwards £ s. d.
Cullamix No. 2 cream (rendering mixture) per ton	5 10 0
„ No. 3 cream „ „ per ton	5 10 0
Snowcrete mixture „ „ per ton	5 5 0

Sundries

		Less than 150 yds.	Less than 300 yds.	Over 300 yds.
Sharp washed sand	per yard cube			8/9
Cow hair	per cwt.			40/–
Goat's hair	per cwt.			55/–
$\frac{3}{16}$″ laths	per bundle			2/–
$\frac{1}{4}$″ laths	per bundle			2/4½
Expanded metal lathing, 9′ 0″ × 2′ 0″ $\frac{3}{8}$″ mesh × 26 gauge	per yard super			–/11
Lath nails (galvanized) 1¼″ × 14 gauge ..	per cwt.			48/6
„ (bright wire) „ „ ..	per cwt.			27/–
½″ Plaster board ..	per yard super	1/–	–/11	–/10
1½″ Galvanized nails	per lb.		–/5	
Scrim cloth in 100-yard rolls	per roll		2/3	

Wall Tiles

Commercial quality.	
Ivory, white, etc., glazed 6″ × 6″ × ⅜″ ..	per yard super 9/9
Angle beads (1½″ wide)	per yard run 1/2¾
„ „ (1″ „)	per yard run –/10
Rounded edge tiles	per yard run 2/6½
Coloured enamelled bright glazed, 6″ × 6″ × ⅜″	per yard super 14/3
Angle beads (1½″ wide)	per yard run 1/4¾
„ „ (1″ „)	per yard run –/11½
Rounded edge tiles	per yard run 2/7
Eggshell gloss enamelled, 6″ × 6″ × ⅜″ ..	per yard super 15/–
Angle beads (1½″ wide)	per yard run 1/7½
„ „ (1″ „)	per yard run 1/0¾
Rounded edge tiles	per yard run 2/8½

PLUMBER

Lead

● 3½ lbs. and upwards milled sheet lead in quantities of 5 cwts. and upwards ..	per cwt. 23/6
Add if cut to sizes	per cwt. 3/–
Lead ternary alloy, No. 2 quality extra over sheet lead	per cwt. 7/–
● Allowance for old lead delivered to merchant	per cwt. 13/3

Cast Iron Rainwater Goods (Painted or Unpainted)

The following prices for rainwater pipes and gutters are subject to 20 per cent. trade discount, and the prices of the fittings are subject to 5 per cent. and 20 per cent. trade discount.

Rainwater Pipes

	2″	2½″	3″	3½″	4″	4½″	5″	6″
Round pipes per yard	2/8½	2/9¾	3/7¾	4/0¾	4/9½	6/1¾	7/2¼	9/2
Shorts, 2′ 0″, 3′ 0″ and 4′ 0″ extra per yard	–/3¾	–/3¾	–/3¾	–/3¾	–/3¾	–/5	–/5	–/5
Bends .. .. each	1/9	2/–	2/6	3/–	3/7	5/–	6/6	8/5
Offsets, 4½″ and 6″ projection .. each	2/2	2/8	3/–	3/5	4/4	6/3	7/6	9/10
Offsets, 9″ projection each	2/10	3/2	3/9	4/8	5/7	7/6	8/10	11/2
Branches, single each	2/7	3/1	3/9	4/4	5/3	7/6	8/5	13/1
Shoes .. .. each	1/6	1/9	2/–	2/8	3/–	4/4	5/5	7/6

● **Items marked thus have risen since September 22.**

PLUMBER—(*continued*)

Square and rectangular pipes.		
3″ × 3″	per yard	6/9½
3½″ × 3½″	per yard	8/4
4″ × 2″ or 2½″	per yard	7/4¾
4″ × 3″	per yard	7/4¾
4″ × 4″	per yard	9/0¾
4½″ × 3″	per yard	8/5½
5″ × 3″ or 3½″	per yard	9/7

Gutters

	3″	3½″	4″	4½″	5″	6″
Half round gutters per yard	1/9½	2/1	2/1	2/2½	2/4¾	3/7¾
Shorts 2′ 0″, 3′ 0″ and 4′ 0″ extra .. per yard	–/2½	–/2½	–/2½	–/2½	–/3¾	–/3¾
Angles and nozzle pieces each	1/5	1/7	1/9	2/–	2/2	3/1
Stop ends .. .. each	–/5	–/5	–/7½	–/9	–/10½	1/–
Ogee gutters per yard	2/1	2/3½	2/4¾	2/6	2/9¾	3/10½
Straight back and shorts 2′ 0″, 3′ 0″ and 4′ 0″ extra .. per yard	–/2½	–/2½	–/2½	–/2½	–/3¾	–/3¾
Angles and nozzle pieces each	1/11	1/11	2/–	2/4	2/8	3/3
Stop ends .. .. each	–/6	–/7½	–/9	–/10½	1/–	1/3

Mild Steel Rainwater Goods

✱ The following prices are subject to 12½ per cent. trade discount.

24 Gauge rainwater slip jointed pipes.

	2″	2½″	3″	3½″	4″
Galvanized round pipes with ears per 6′ 0″	2/7½	3/1½	3/9	4/3	4/9
Painted round pipes with ears per 6′ 0″	2/7½	3/–	3/4½	3/10½	4/3
Painted or galvanized short lengths with ears, extra each	–/6	–/6	–/6	–/6	–/6

18 Gauge Gutters.

	3″	3½″	4″	4½″	5″	6″
Galvanized half round gutters .. per 6′ 0″	2/–	2/3	2/4½	2/9	3/–	3/7½
Painted half round gutters per 6′ 0″	1/6	1/9	2/–	2/3	2/6	3/–
Painted or galvanized short lengths extra .. each	–/3	–/3	–/3	–/3	–/3	–/3

Asbestos-Cement Rainwater Goods

The following prices are subject to 10 per cent. trade discount.

Rainwater pipes.

Prices are for 6′ 0″ lengths, and 10′ 0″ lengths in 2″, 2½″ and 3″ diameters. Short lengths up to 2′ 0″ are charged as one yard. From 2′ 0″ to 4′ 0″ charged as 1½ yards. From 4′ 0″ to 6′ 0″ charged as 2 yards. Over 6′ 0″ charged as 10′ 0″.

Round pipes.	
2″	per yard run 1/10
2½″	per yard run 2/0¾
3″	per yard run 2/5¾
3½″	per yard run 2/11¼
4″	per yard run 3/4¾
4½″	per yard run 4/10¼
5″	per yard run 5/9½
6″	per yard run 7/1¾

Gutters.

Short lengths of gutter up to 2′ 0″ charged as 1 yard; from 2′ 0″ to 4′ 0″ as 1½ yards, and over 4′ 0″ as 2 yards.

	3″	4″	4½″	5″	6″	8″
Half round gutters per yard run	1/3¾	1/6¾	1/7¾	1/11	2/8	3/3½
Ogee gutters per yard run	—	1/11	2/0¾	2/5¾	3/0½	3/11½

INTERNAL PLUMBER

● Lead pipe in coils, 5 cwts. and upwards ..	per cwt. 23/–
● Lead soil pipe	per cwt. 26/–
Add if ribbon marked	per cwt. –/3
Lead ternary alloy, No. 2 quality extra over lead pipe	per cwt. 7/–
Plumber's solder	per cwt. 85/–
Tinman's solder	per cwt. 111/–

Drawn lead traps with brass screw eye, 6 lbs.

	1″	1¼″	1½″	2″
S. trap .. .. each	1/7	1/9	2/2	3/2
P. trap .. .. each	1/4	1/6	1/10	2/7
Extra for 3″ deep seal .. .. each	–/6	–/6	–/6	–/6

✱ **Items marked thus have fallen since September 22.**

CURRENT PRICES

INTERNAL PLUMBER

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

INTERNAL PLUMBER—(*continued*)

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.

Tubes.		½″	¾″	1″	1¼″	1½″	2″
Tubes 2 ft. long and over	per ft.	–/5½	–/6¾	–/9¼	1/1	1/4½	1/10
Pieces 12″ to 23½″ long	each	1/1	1/5	1/11	2/8	3/4	4/9
Bends	each	–/11	1/2	1/7½	2/7½	3/2	5/2
Fittings.							
Elbows, square ..	each	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round ..	each	1/2	1/5	1/8	2/4	2/10	4/8
Tees	each	1/3	1/7	1/10	2/6	3/1	5/1
Crosses	each	2/9	3/3	4/1	5/6	6/7	10/6
Sockets, plain ..	each	–/4	–/5	–/6	–/8	–/10½	1/3
Sockets, diminished	each	–/6	–/7	–/9	1/–	1/4	2/–
Flanges	each	1/–	1/2	1/4	1/9	2/–	2/9
Caps	each	–/5	–/6	–/8	1/–	1/3	2/–
Plugs	each	–/4	–/5	–/6	–/8	–/10	1/3

Fittings and flanges and tubes ordered in long random lengths are subject to the following trade discounts :—

	Tubes	Fittings	Flanges
Gas	62½%	53⅓%	57½%
Water	58⅓%	50%	52½%
Steam	56¼%	46⅔%	47½%
Galvanized gas	53⅓%	46⅔%	47½%
,, water	48⅓%	42½%	42½%
,, steam ..	43¾%	38⅓%	37½%

Brasswork. Best Quality

		½″	¾″	1″
Chromium plated screw-down bibcocks, screwed for iron ..	per dozen	34/6	56/3	99/–
Ditto, with screw ferrule	per dozen	43/–	67/3	105/6
Ditto, with capstan head lettered, screwed for iron ..	per dozen	40/6	62/3	108/–
Ditto, with screw ferrule	per dozen	49/–	73/3	124/6

		Brass Screwdown Stop Cocks with Unions both Ends	Brass Screwdown Stop Cocks with Screwed Ends	Brass Screwdown Stop Cocks with Male Screwed End and Iron Unions
½″	per dozen	37/6	43/–	35/–
¾″	per dozen	59/–	65/–	54/–
1″	per dozen	90/–	97/6	84/–
1¼″	each	12/9	13/6	12/–
1½″	each	20/6	21/6	19/–
2″	each	39/9	41/3	37/6

		½″	¾″	1″
Portsmouth pattern ball valve for low pressure, screwed for iron ..	each	3/7	5/5	11/3
Ditto, with flynut and union ..	each	4/3	6/3	12/9
High pressure ditto, screwed for iron	each	3/7	5/5	11/3
Ditto, with flynut and union ..	each	4/3	6/3	12/9

		2″	2½″	3″	4″
Socket thimble sloping shoulder	per dozen	10/–	13/–	15/9	22/3

		1½″	2″	2½″	3″
Flanged ferrule thimble ..	per dozen	7/9	9/–	13/6	16/–

		½″	¾″	1″	1¼″	1½″	2″
Union joints for lead and iron ..	per dozen	7/6	10/3	14/–	26/–	42/6	92/–
Single nut short boiler screws ..	per dozen	6/–	9/–	14/3	21/–	33/–	60/–
Double nut boiler screws	per dozen	8/3	9/9	15/–	22/6	43/6	69/–

Belfast sink wastes stamped brass with brass plug diameter of outlet 2″ .. .. per dozen 18/–

Galvanized Mild Steel Open Top Cisterns riveted with internal angle iron at top and corner plates

The following prices are subject to 15% and 20% trade discount :—

		14-gauge £ s. d.	12-gauge £ s. d.	¼″ plate £ s. d.	⅜″ plate £ s. d.
50 gallon capacity	each	2 5 11	2 14 5	3 1 7	7 0 8
100 ,,	each	3 8 9	4 2 11	4 16 9	9 10 8
200 ,,	each	6 6 9	6 19 5	7 18 3	13 1 0
500 ,,	each	12 6 0	13 16 1	15 16 3	22 6 9
1,000 ,,	each	—	21 9 4	24 19 5	34 15 4

INTERNAL PLUMBER—(*continued*)

Galvanized Hot Water Tanks, fitted with handhole cover.

The following prices are subject to 15% and 20% trade discount :—

Capacity		16-gauge tested to a pressure of 1 lb. per sq. inch = 1½ ft. head of water £ s. d.	14-gauge tested to a pressure of 3 lbs. per sq. inch = 4½ ft. head of water £ s. d.	12-gauge tested to a pressure of 7½ lbs. per sq. inch = 10 ft. head of water £ s. d.	¼″ plate tested to a pressure of 10 lbs. per sq. inch = 15 ft. head of water £ s. d.
20 gallons	each	2 0 3	2 3 11	2 7 8	2 12 9
40 ,,	each		3 1 7	3 9 0	3 16 8
			Tested to a pressure of 5 lbs. per sq. inch = 7½ ft. head of water		Tested to a pressure of 7½ lbs. per sq. inch = 10 ft. head of water
60 ,,	each		4 19 3		5 5 5
80 ,,	each				7 5 7
100 ,,	each				8 4 5

Screwed flanges or bosses

½″	¾″	1″	1¼″	1½″	1¾″	2″	2¼″	
1/8	2/–	2/4	2/11	3/4	3/9	4/8	6/9	Extra per flange or boss.

2½″	3″	3½″	4″	4½″	5″	6″
8/4	14/3	16/9	19/3	26/11	30/1	45/1

Galvanized Hot Water Cylinders, Mild Steel Riveted throughout, without Manhole, with usual number of flanges

The following prices are subject to 15% and 20% trade discount :—

Capacity		16-gauge tested to 5 lbs. pressure = 10 ft. head of water £ s. d.	14-gauge tested to 15 lbs. pressure = 30 ft. head of water £ s. d.	12-gauge tested to 20 lbs. pressure = 40 ft. head of water £ s. d.	¼″ plate tested to 25 lbs. pressure = 50 ft. head of water £ s. d.
20 gallons	each	1 18 7	2 2 8	2 8 4	2 15 4
40 ,,	each	2 10 11	2 16 8	3 6 1	3 15 0
65 ,,	each		4 8 7	5 1 8	5 16 1
75 ,,	each		5 1 7	5 15 0	6 11 4
85 ,,	each			6 10 8	7 11 9
100 ,,	each				8 2 5

Cast Iron Soil Pipes and Connections, L.C.C. 3/16″ metal.

The following prices for soil pipes are subject to 20% trade discount, and the prices of the fittings are subject to 20% and 5% trade discount.

	2″	2½″	3″	3½″	4″	5″ ¼″ metal	6″ ¼″ metal
Minimum weights in lbs. per 6′ 0″ length	24	30	35	41	46	78	92
Pipes coated or uncoated per yard run	3/10¼	4/0¾	4/5¾	5/–	5/8¾	11/8	14/0¾
Double sockets extra each	–/11¼	–/11¼	–/11¼	–/11¼	–/11¼	1/0½	1/0½
Short lengths extra 2′, 3′ and 4′ per yard run	–/3¾	–/3¾	–/3¾	–/3¾	–/3¾	–/5	–/5
Single spigot branch cast on pipe .. .. each	4/3	4/5	4/7	4/9	4/11	7/6	9/3
Single socket branch cast on pipe .. .. each	10/9	11/–	11/3	11/6	11/9	16/–	19/–
Bends, standard angles each	3/1	3/5	3/9	4/8	5/3	9/4	12/9
Large radius bends each	4/–	4/4	5/–	6/–	7/–	13/–	16/9
Inspection bends raised flange door, 4 gunmetal bolts .. .. each	16/1	16/11	17/9	18/8	19/3	31/10	36/6
Swannecks 4½″ and 6″ projection .. .. each	3/9	4/4	5/11	6/10	7/11	14/11	20/1
9″ ditto .. .. each	5/–	5/7	6/10	7/11	9/4	17/1	22/10
12″ ditto .. .. each	5/11	6/10	7/11	9/8	10/7	19/1	27/1
Single branch with two sockets. T pieces. T pieces diminishing two sockets, inverted two sockets.	3/9	4/8	5/7	6/6 each	7/6	15/10	21/8
Parallel branch pieces not exceeding 6″ centres. Y pieces. Anti-syphon branches with curved arm.	4/10	5/11	6/10	7/11 each	8/11	—	—
Double branch pieces, three sockets .. .. each	5/11	7/–	7/11	9/–	10/3	20/3	27/3
Inspection branch pieces double oval access door, 2 gunmetal screws each	12/11	14/–	14/11	16/6	17/9	29/2	36/2
Long branch pieces each	5/–	6/–	7/3	8/6	9/9	19/–	25/–

CURRENT PRICES

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

COPPERSMITH AND ZINCWORKER, GLAZIER AND PAINTER

COPPERSMITH AND ZINC WORKER

Copper

• Hot rolled copper sheeting in 1 cwt. lots, all gauges to 24 wire gauge	per lb.	–/9½
• Copper tube, seamless solid drawn	per lb.	1/0¾
• Copper wire, 10 and 12 gauge	per lb.	–/9½
Copper nails, 1″ and up	per lb.	–/10½

Fittings for Copper Tubes

Compression Type :	½″	¾″	1″	1¼″	1½″	2″	2½″
Straight coupling each	1/1½	1/4¾	2/0¾	2/8	3/9¾	5/7¾	14/–
Obtuse elbow each	1/10¼	2/2½	3/3	4/1½	7/1½	10/5¾	—
Tees .. each	2/1½	2/5½	4/–	5/9½	9/3	13/1½	19/3½
Crosses .. each	3/–	3/4¾	5/2½	6/8¾	10/11½	15/3	26/4¾
Reducing coupling each	—	1/4¾	2/0¾	2/8	3/9¾	5/7¾	14/–
Bends .. each	1/7½	1/11½	2/11	3/8¾	6/7½	9/10¾	14/1
Brass stop cocks each	3/11½	5/10¾	8/7½	15/11¾	22/3¾	37/8¾	—

Extra for Polishing 25%; Chromium plating 50%; Nickel plating and polishing 50%.

Capillary Type							
Straight coupling each	–/7¼	–/10¼	1/3¾	1/8½	2/3¾	3/4½	5/9
45° elbow .. each	1/3¾	1/8½	2/4½	3/2	4/9	7/1½	11/1
Tees .. each	1/5½	1/7¾	2/8	3/11½	5/7½	8/3¾	12/8
Crosses .. each	1/10½	2/0¾	3/4½	4/9	7/2½	10/6	18/2½
Reducing coupling each	—	–/6¼	–/8¾	1/0¾	1/7	2/9¼	4/4¼
Bends .. each	1/7	1/11	2/9¼	3/9¼	5/11¼	8/3¾	11/10½
Pillar tap connection .. each	1/–	1/5½					

Extra for Polishing 15%; Chromium plating 40%; Nickel plating 27½%.

Zinc

		Quantities of less than 3 cwts.	Quantities of more than 3 cwts.	Quantities of more than 5 cwts.
• Sheet zinc, 10 gauge and up ..	per cwt.	33/6	33/–	32/6
			5 sheets and under	12 sheets
8 gauge zinc safe hole perforated sheets, size 8′ 0″ × 3′ 0″ ..	per sheet		4/9½	4/0½
7 gauge ditto	per sheet		4/2¾	3/7
6 gauge ditto	per sheet		3/9½	3/3

GLAZIER

Sheet Glass cut to size (ordinary glazing quality)

		In squares not exceeding 2 ft.	4 ft.	5 ft.	Over 6 ft.
18 oz. clear sheet ..	per foot super	–/2¼	–/2¾	–/3	–/3¼
24 oz. ditto	per foot super	–/2¾	–/3¼	–/4	–/4⅜
32 oz. ditto	per foot super	–/4	–/5⅞	–/6⅞	–/7⅞
Obscured sheet glass net extra	.. ..	–/1½	–/1½	–/1½	–/1½
¼″ figured rolled glass, white	per foot super	–/6½			
¼″ ditto, normal tints ..	per foot super	–/9½			
Hammered, double rolled, Cathedral white	per foot super	–/6			
Ditto, normal tints ..	per foot super	–/8½			

Thick Drawn Sheet Glass cut to size

		In squares not exceeding 1 ft.	2 ft.	3 ft.	4 ft.	6 ft.	8 ft.
3/16″ thick ..	per foot super	–/9	–/11	1/–	1/2	1/3	1/4
¼″ thick ..	per foot super	–/11	1/–	1/3	1/5	1/7	1/9
		In squares not exceeding 12 ft.	20 ft.	45 ft.	65 ft.	90 ft.	100 ft.
3/16″ thick ..	per foot super	1/6	1/7	1/9	—	—	—
¼″ thick ..	per foot super	1/10	2/2	2/4	2/8	3/–	3/–

For selected glazing quality add 10 per cent. to the above prices.

British or Foreign Polished Plate Glass cut to size

Ordinary ¼″ Substance		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
In Plates not exceeding				
1 ft. super ..	per foot super	1/–	1/3	1/7
2 ,, ..	per foot super	1/4	1/6	1/10
3 ,, ..	per foot super	1/10	2/1	2/6
4 ,, ..	per foot super	2/6	2/9	3/2
6 ,, ..	per foot super	2/10	3/–	3/6
8 ,, ..	per foot super	2/11	3/4	3/8
12 ,, ..	per foot super	3/1	3/8	3/11
20 ,, ..	per foot super	3/1	3/9	4/1
45 ,, ..	per foot super	3/3	4/–	4/4
65 ,, ..	per foot super	3/7	4/9	4/11

GLAZIER—(*continued*)

British or Foreign Polished Plate Glass cut to size—(contd.)

Ordinary ¼″ Substance		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
In Plates not exceeding				
90 ft. super ..	per foot super	3/11	4/8	5/1
100 ,, ..	per foot super	4/–	4/10	5/4

Plates exceeding 100 ft. super or 160 in. long or 104 in. wide at higher prices.

The usual thickness of polished plate glass is about ¼″, but if required of special thickness for glazing purposes add to the above for :—

		Plates up to and including 4 ft. super	All plates over 4 ft. super
⅛″ to 5/32″ ..	per foot super	–/2	–/4
⅛″ to 5/32″ exact	per foot super	–/2	–/3
3/16″	per foot super	No extra	–/1½
¼″ bare ..	per foot super	,,	–/1¾
¼″ exact ..	per foot super	–/2	–/2
5/16″ to ⅜″ ..	per foot super	No extra	–/4½
⅜″ exact ..	per foot super	–/2	–/6

Special quotations should be obtained for other qualities and thicker substances.

Silvering

	Ordinary Quality on Polished Plate, Thick Drawn Sheet, Patent Sheet and Plain Sheet	On Embossed or Decorative Work
12 ft. super or 90 in. long per ft. super	9d.	1/4
20 ft. ,, or 100 in. long per ft. super	10d.	1/4
45 ft. super } or 110 in. long per ft. super	1/–	1/5
50 ft. ,, }	1/0½	1/6
55 ft. ,, } or 120 in. long per ft. super	1/1	1/6½
60 ft. ,, }	1/1½	1/7
65 ft. ,, } or 130 in. long per ft. super	1/2	1/8
70 ft. ,, }	1/3	1/9½
75 ft. ,, } or 140 in. long per ft. super	1/4	1/11
80 ft. ,, }	1/5	2/0½
85 ft. ,, } or 150 in. long per ft. super	1/8	2/5
90 ft. ,, }	1/11	2/9½
95 ft. ,, } or 160 in. long per ft. super	2/2	3/2
100 ft. ,, }	2/5	3/8

For silvering on fluted sheet, figured rolled and cathedral, add 4d. a foot to the prices set out in the first column for polished plate, etc.

Silvering bent glass, double or more, according to bend.

For plates over 100 ft. super, add 3d. per ft. super for every 5 ft. or part of same.

Plates over 160 in. long at special rates.

Stripping for re-silvering, add 8d. per ft. super.

Wired Glass Cut to Sizes

¼-in. Georgian rough cast	per ft. super	10d.			
	In squares not exceeding	1 ft.	2 ft.	3 ft.	4 ft.
¼-in. Georgian polished plate	per ft. super	2/6	2/8	2/10	3/2
		8 ft.	12 ft.	20 ft.	30 ft.
¼-in. Georgian polished plate	per ft. super	3/8	3/10	4/2	4/6

Supplied in sizes up to 110 in. long and up to 36 in. wide.

For cutting to allow for wires in adjacent pieces to be "lined up," add 4d. per foot super.

PAINTER

White ceiling distemper	per cwt.	11/6
Washable distemper	per cwt.	60/–
Petrifying liquid	per gallon	4/6
• Ready mixed white lead paint (best) 5-cwt. lots, in 14 lb. tins	per cwt.	69/–
White enamel	per gallon	25/–
Aluminium paint	per gallon	20/–
• Stiff white lead, genuine English stack process, 1-ton lots, in 1-cwt. kegs	per cwt.	49/3
Driers	per cwt.	36/–
Linseed oil raw (5-gallon drums)	per gallon	3/–
,, boiled ,, ,,	per gallon	3/3
French polish	per gallon	11/6
Knotting	per gallon	16/–
Oil stain	per gallon	12/–
Varnish, oak	per gallon	10/–
,, copal	per gallon	16/–
,, flat	per gallon	20/–
• Turpentine, genuine American, 5-gallon lots	per gallon	3/3
Creosote, 1-gallon lots	per gallon	1/4
Putty	per cwt.	13/–
Size	per firkin	3/6
Best English quality gold leaf, 23 carat	per book	2/4½
Extra thick, ditto	per book	3/6

• Items marked thus have risen since September 22.