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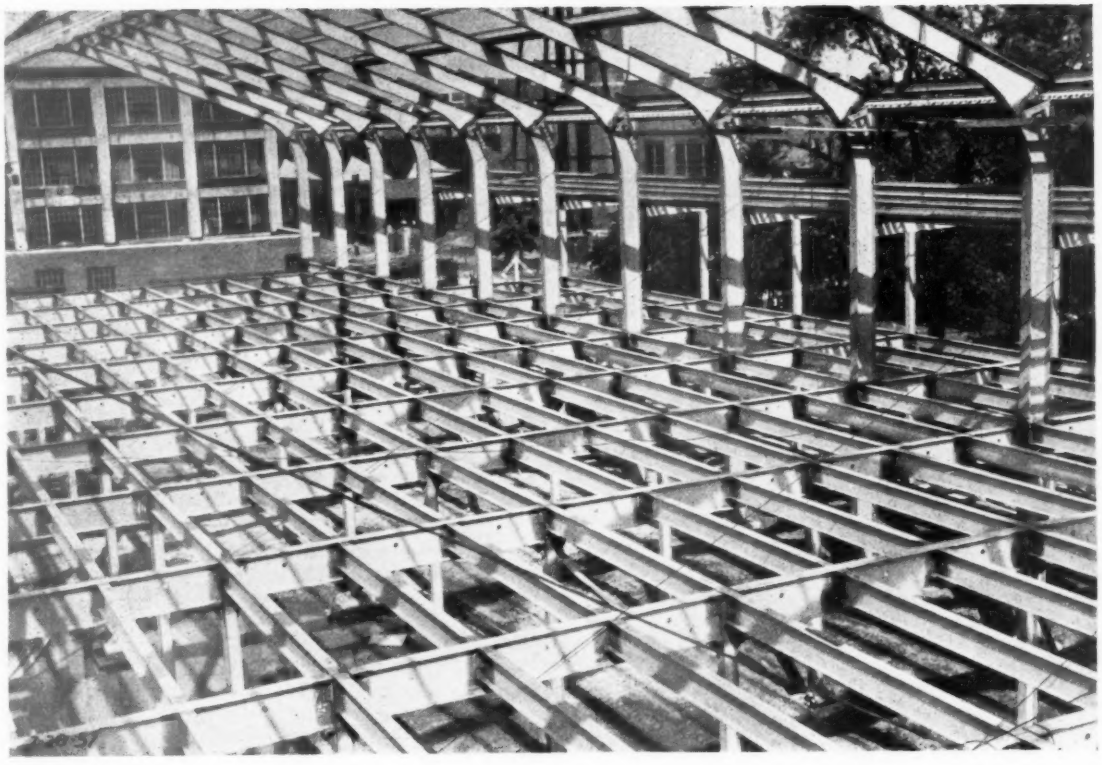
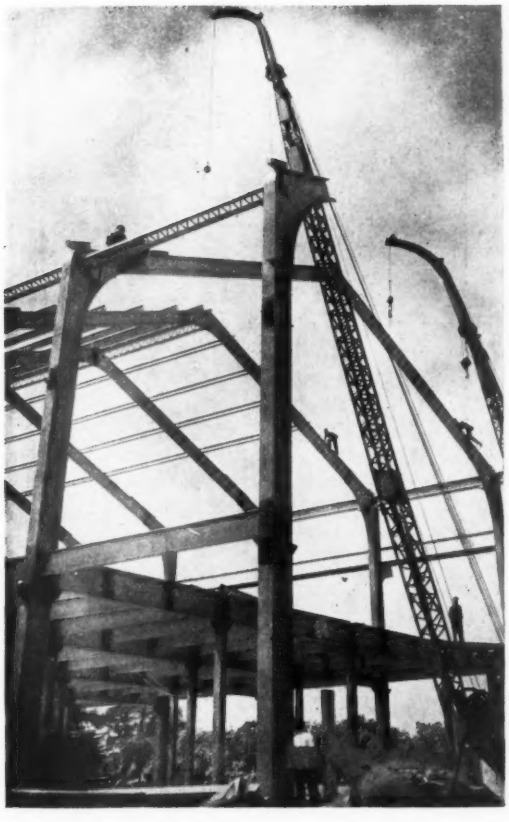
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, December 30, 1937. NUMBER 2241 : VOLUME 86

PRINCIPAL CONTENTS

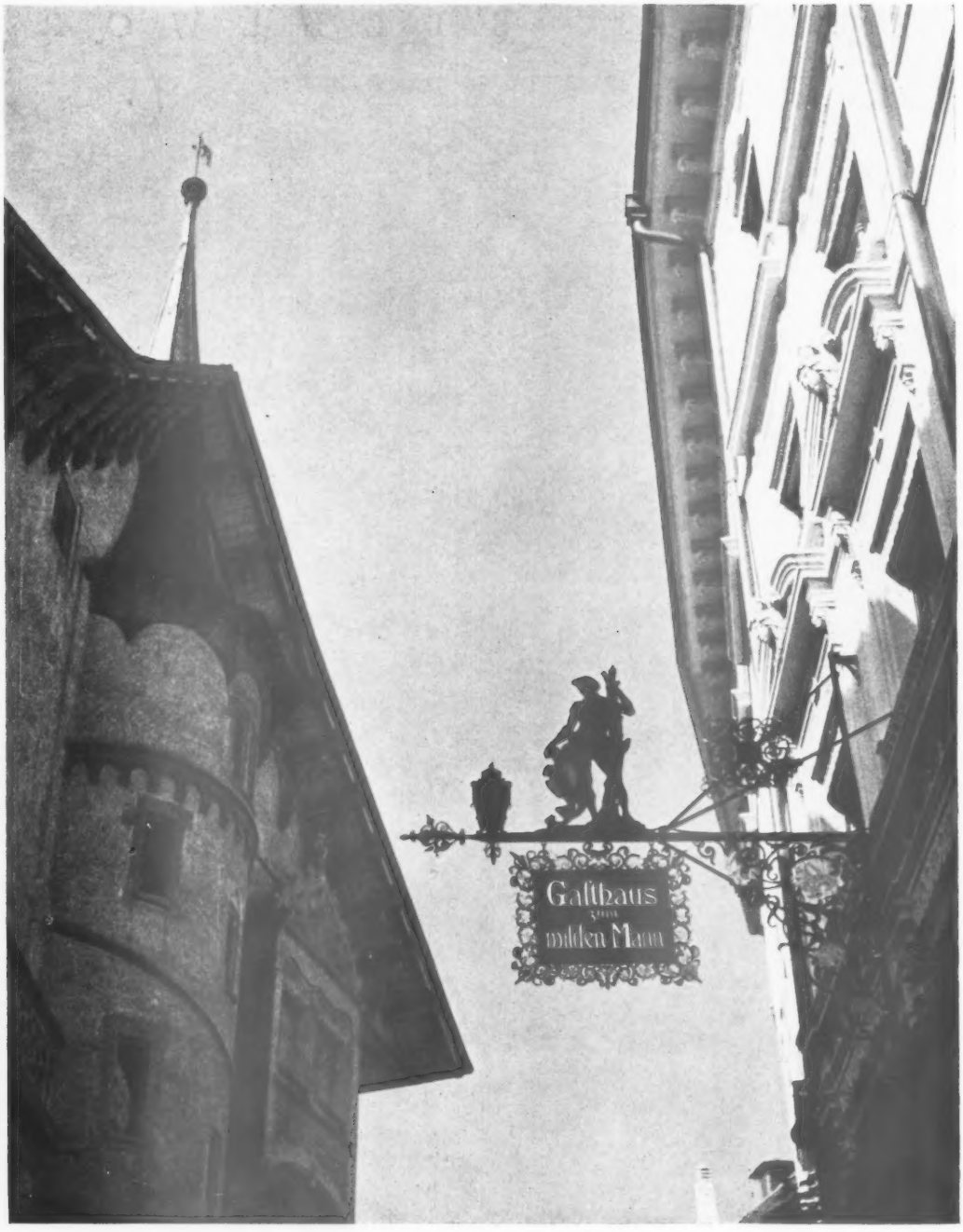
WELDED STEELWORK





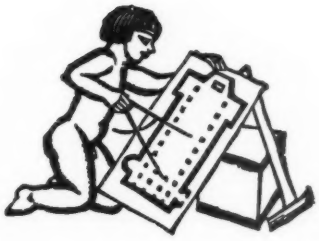
The use of all-welded steel frames is increasing rapidly in the U.S.A. The photographs were taken during the building of the Lincoln Electric Company's 200,000 ft. super extension to a welding equipment factory at Cleveland, Ohio, in which 1,300 tons of steel were erected in a month and up to 93 tons in a day. Above is the floor system of a 240-ft. factory bay. Right, handling the 65-ft. roof girders. The "tree-form" girders would be impracticable by other than arc-welding processes.

C



LOOKING UP

A detail of houses off the Hirschgraben at Lucerne. The photograph is by D. Chamberlaine.



WITH BEST WISHES FROM . . .

THERE they are. A long line of them across your mantelpiece ; and they will be there for another week. If, during the past days you have been sensible enough to sit still on occasion in front of the fire, and your thoughts have risen as high, you have probably noticed them.

You have realized that Robert, by one of the inscrutable workings of fate, was apparently alive until very recently ; and that about one-tenth of the row is from friends of yours of whom your wife has carelessly failed to remind you.

It is probable that your meditation has gone further. You have realized, rightly, that it is very queer that fellow architects, ostensibly men of taste, should not have perceived how much that is better concealed can be exposed on a Christmas card. You have held in delicate balance those who sent themselves and their contribution to the State in photo-montage (how much more there must be in *good* photo-montage than you had ever suspected) against those who have treated jobs, ideal or actual, in the same way. With wistful regret and post-prandial sense of tremendous creative power there has been brought home to you the loss to minor art caused by your failure, once more, to remember in time about your own Christmas card. Ah !—how different that would have been ; how effective and sufficient the fifteen inches super. of a Christmas card could be in proper hands, in your hands.

The goodwill of your rivals has been remarkably extensive, but your eye has noticed—just noticed—the other cards. By one as unsnobbish as you a penny card has, of course, often been gladly received. But a man who mixes with the world cannot miss a sense of irony on seeing Mrs. Williamson's slightly bent robins on a gate. Not that it mattered a hoot to you, thank heavens—it just seemed an error of taste to value a second cousin's goodwill at a penny when one had £7,000 a year, particularly when your wife had seen Mrs. Williamson's half-crown's worth on the Lord Mayor's mantelpiece.

At this stage, perhaps, you sighed. Yes, indeed. One has to take the world as one finds it. And if the world of Christmas cards was a little odder than the world of a dull Thursday in March, at least better intentions and more real feeling were included in the recipe.

Probably it was just about here that you got up and wondered whether to have a walk. There was really no need to. Nothing much is ever attended to between Christmas and New Year. Christmas cards, moreover, do not only represent people without the ability or generosity of their intention.

By no means. There on the shelf in all the emphasis of rag paper and lino-cut, is a card index of human psychology. There, hidden within that window apparently drawn by one who holds that windows are punched out afterwards, is the reason why you failed to hook Mrs. Todhunter's cottages. In the boot of that coach stuck in the snow from Alex—even if he did catch pneumonia from turning off the central heating in July—is the cause of the committee's giving the school to the borough engineer.

Exaggerated? No, indeed. In those forty-one cards—including the two that have slipped down behind—are what people want. You cannot wriggle out of that. You cannot even do so by a pretence of being practical. As your mouth opens to enquire who wants a suit of armour, a socking great fire in the middle of the floor, two nigger babies, a gilded boar's head, fourteen robins, a partizan, the Old Curiosity Shop, twelve snow-bound cottages, a battleship damaged in the post, and a back view of your principal rival at St. Leonard's—as your mouth opens you know the answer is " Yes," or rather, " Everybody."

You may know that Pepys was lousy, the old time Christmas a death-trap, the 74's floating coffins, and that if the knight in full plate mail had been ass enough to bend down to kiss the village maiden they would have had to take him home on rollers. Such knowledge, if yours, is mere historical fact. Those cards before you are reality. On them in letters of as much fire as can be managed for seven and three the gross is what people want and what at Christmas they are kind enough to wish for others.

You may think they must be in a pretty poor way. So they may be. But nothing in the new sciences about sublimation, extroversion, and happy marriages is likely to stop them wanting it for a very long time. And that is not the whole story—for you. They can't be always at the pictures, most of them have to do work unconnected with baronial halls. So it is probable, very probable indeed, that they will want some Romance from you. It may be of several kinds, but Romance it will have to be, and solid and satisfying at that.

There is no escape. Logic if you are hot at logic is useless here. You may ask them to look at aeroplanes ; but that will get you nowhere. Look at the one you have—pulled by three reindeer with Father Christmas's foot in the airscrew. So much for aeroplanes.

No. Study your Christmas cards carefully before Twelfth Night. Mark them well. Read what they represent. Lay your plans accordingly. *Remember Mrs. Todhunter.*

The Architects' Journal
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NOTES & TOPICS

ONE MORE YEAR

THE peculiar interregnum between Christmas and New Year never finds me at my best. I regret the possibility that I have eaten too much in the last week. My slight moodiness must therefore be caused by other people not being accessible by telephone and letter. While I can't do much at the board because of the premature explosion of a cracker too near my right forefinger tip.

*

It has been a good year. For architects generally; for architects in relation to factories, to schools; and particularly because of the Bill. And having said that, and meant it, I can, after dealing with a new London horror, ask you to think wistfully with me about the things that are being changed in London. But first, Sir Herbert Baker.

A PRESENT TO THE NATION

Sir Herbert Baker, whose latest building in London recently attracted the attention of the press by its use of a flint plinth and a royal opening, is once again in the news.

*

He has generously presented Owletts, his residence at Cobham, Kent, to the National Trust. With the house goes 20 acres of garden, a cherry orchard, a rookery, and a maintenance fund. The only condition made is reasonable enough, and was also made under similar circumstances by Sir Charles Trevelyan. It is that the owner shall be permitted to reside there during his lifetime.

MR. BERTRAM'S FINALE

In his last radio talk Mr. Anthony Bertram rightly praised the high standard of design maintained in their street equipment by the London Passenger Transport Board and the General Post Office. Their shelters, pillar boxes and signs are ornaments to any street. (Even those who criticize official architecture as reactionary must have noticed that all the new 'phone boxes have horizontal glazing bars.) Mr. Bertram included lamp-posts in his list of horrors, but omitted to mention an even more unpleasant piece of design which has become a frequent feature of our streets. I refer to the Police Telephone Box. I don't know who is responsible for it, but its coarse, blocky outline and modernistic detail are a direct return to the worst period of jazz-modern, a really horrible piece of work.

TRAFALGAR SQUARE

We are strange people. No sooner has Sir Edwin Lutyens exhibited his design for the refashioning of Hyde Park Corner than one hears that he, or at least *someone*, may soon be at work on Trafalgar Square. Provided, always provided, I say, that Sir Edwin's designs are as great as his best, there is nothing wrong with these civic efforts. On the contrary they are all too rare. Seen, however, against London as a whole, can we afford them?

*

One seems to see an overwhelming vision of slums waiting to be cleared, bridges waiting to be built, a green belt waiting completion, "fly-over" crossings in Stockholm but not in London, congested corners, bottle-neck streets, Covent Garden, Seven Dials, south-west Westminster all crying out for sound and drastic planning.

*

Meantime we pull down a row of eighteenth-century houses to make way for a memorial to George V, and Sir Edwin is let loose on turf and fountains—just as though the East India Company was making millions, Consols were 110 and he was a sort of Robert Adam-cum-Nash working for Whig landowners and you and I were "the lower orders."

*

However, I have heard so many times of the refashioning and beautifying of Trafalgar Square that I remain sceptical. Pending a complete replanning of the whole area in relationship to a new Charing Cross bridge, had it not better remain as it is? As architects we may find it irritating, but architecture, like patriotism, is not enough.

*

To the sentimentalist Trafalgar Square is sublime, for it synthesizes a peculiarly English view of things—synthesizes both its faults and its merits. When Big Ben is barely visible in the spring mist and the starlings perch themselves on the spire of St. Martin's and on Nelson's cocked hat we simply don't see the Bile Beans and Philco and South Africa House—we just let our hearts bleed for the days when Britannia ruled the waves and all that . . .

AND OTHER MEMORIALS

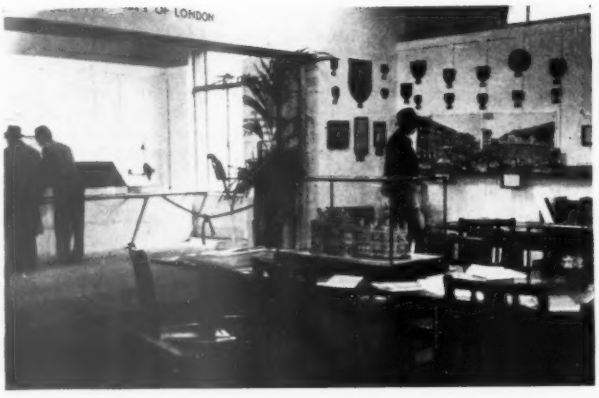
However, whether Trafalgar Square is to be "beautified" or not, R.A.s need not worry about their bread and butter. Nelson waited a quarter of a century before they perched him up on his Corinthian capital. Lord Beatty and Lord Jellicoe are now to have memorials.

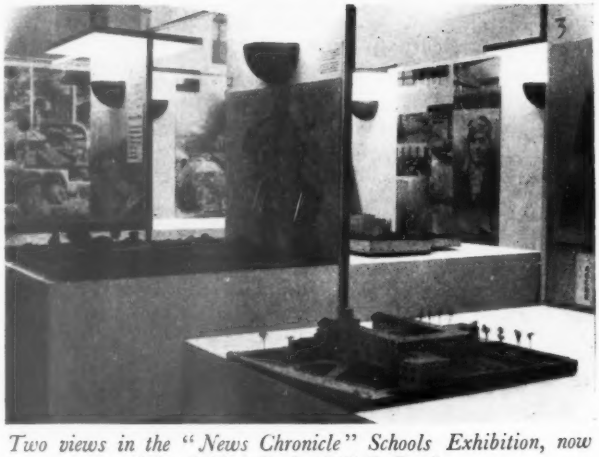
*

They have had to wait twenty years, it is true, but as admirals are not usually shown on horseback there is no reason to foresee undue delay—unless of course Lord Beatty is shown as a follower of the Quorn. In that case Colonel Gilbey might co-operate with Mr. Hardiman from the start and thus save a lot of blood and tears.

BODLEIAN

Rooms have been decorated with many oddments in the course of history—Sir Edwin once papered a bathroom with historic pages of *The Times*. As one lay in the suds one could choose between the inside story of the Boxer Rising or an obituary on Dan Leno. I have just seen the idea followed up in a study papered with all the front pages





Two views in the "News Chronicle" Schools Exhibition, now being held at Dorland Hall, London.

from the Librarie Européen—Signor Gayda and Madame Tabonis reconciled for ever under a coat of varnish.

*

Many people have also appreciated books as décor. I am not thinking of those amazing creatures who buy bindings *qua* bindings. To my mind there are only two points of view about books in this connection, they must be very modern and very bright—" Decorations by Jonathan Cape and the Cresset Press "—or they must be very leathery and very mellow.

*

It is in the latter guise that they are causing a rumpus at the Bodleian. The trouble has occurred in the beautiful hall at the entrance on the first floor and at right angles to Duke Humphrey's Library. This is the " Arts End " and houses Sir Thomas Bodley's own books.

*

Under a scheme of modernization these volumes are to be replaced by works of reference—modern encyclopædias, etc.—and Oxford is distressed and angry. All very commendable and charming, but how like the Academic mind. The octupus tentacles of Oxford-cum-Cowley wrecks the equivalent of a quarter of a county of our fairest landscape and the University does nothing ; disturb a cobweb of the inner sanctum and the sleeping æsthetic conscience of dons and deans is instantly roused.

GUY'S

Interesting original tenders for the 1725–38 buildings at Guy's Hospital have been discovered, for the buildings which Mr. Thomas Guy must have seen before he died. The muniment room in which these tenders were found is itself specified :

" A repository for the Writings as drawn or design'd in the Plan, groyn over with Brickwork of the best Kiln-burnt-Stocks, one brick and a half thick, with two good substantial Iron frames and Iron doors to ditto."

*

It is stipulated that any mortar used shall be " made of good drift Sand, and not less than 2 C of lime to each Rod of brickwork." The roof over the Court Room is to be " slated with the best Slates nailed on with Four-penny Nails, bedded Lime and Hair and all the rest of the Building to be tiled with the best plain tiles and best English Oak Lathes." The total tender was £3,298 os. od., which seems reasonable with hinges at 5s. per pair.

AYRSHIRE

Scotland is making an interesting architectural experiment. Ayrshire has already put up a block of timber houses, and the county authorities are so impressed that they are putting up a hundred more.

*

The houses have been given an official life of 50 years by the Department of Health, and the fact that they are not temporary buildings is emphasized. Prejudice dies hard. The local Press also says that timber houses are quite popular in Sweden under the present government. This seems rather mild considering that Sweden has built little else for the last thousand years or so.

*

The *Greenock Telegraph* is sceptical but quotes Burns to the effect that " better wee bush than nae beild."

MR. CARTER'S BIRD'S-EYE VIEW

Mr. Carter, from his eyrie on the fourth floor of number 66 Portland Place, is ideally situated for taking the bird's-eye view of professional life. But few librarians —who are proverbially reclusive people—have the vision or the sense of reality to collate their observations into a specific analysis of cultural needs. Mr. Carter has. That is why his paper at the R.I.B.A. lived up to its stimulating title, *The Case for a Learned Society.*

*

I cannot summarize in a few words the thesis that he expounded so ably in a full-length paper, but briefly his point was that the responsibility of the members of the R.I.B.A. to society—in their corporate capacity—lies essentially in the task of the collation and application of knowledge, and only incidentally in supporting a trade union for architects as professional men.

*

On this basis he pleaded with architects to be aware of life around them ; of a larger life than that which their own practice forces into their consciousness. (I was made horribly aware of the same need, by the way, recently, when I overheard a well-known critic, of whom it cannot be said he ought to know better, remark that " of course architects, like actors, are notoriously philistines.")

*

Mr. Carter pleaded for an architectural society that was a cultural force—though he did not make it sound as priggish an ideal as I do in writing it down.

*

His lively wit and obvious sincerity and the excellent English with which his ideas were " put across " (as Prof. Richardson expressed it, in congratulating him on the latter point) made what might in other hands have been a prosy sermon into a memorable occasion.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

THE MARS EXHIBITION

The Exhibition of modern architecture organized by the MARS (Modern Architectural Research) Group will open at the New Burlington Galleries on January 11, where it will run for three weeks. A section will afterwards be included in the Building Exhibition at Olympia next autumn, and it will probably be shown in other parts of the country.

It was originally planned to take place last summer, but the Group found that the organization needed to make the exhibition as comprehensive and as thorough as it wished necessitated its postponement until January.

Plans for the exhibition are now well ahead and show the result of the Group's work over the past few years. It demonstrates by drawings, photographs, models and statistics how changing conditions in every branch of life and activity should logically produce an architecture suitable to them. It is intended to encourage in the public, and in the building public particularly, an interest in contemporary architecture; and to show how much fuller advantage might be taken of the great advances that have been made in science and building technique.

Though it is not a trade show, the technical side of the exhibition will be of great interest. It will show, among other things, the effect on architecture of the rapid development of industrial production during the past few decades, and will include special demonstrations of technique grouped under headings such as standardization, methods of mass production, the modern principle of assembly on site (whereby an increasing proportion of the fabric of the modern building is actually constructed in the factories), utilization of new materials, etc.

A particularly interesting section will deal with the effect of scientific experiment on architecture. Timber will be taken as a typical example of new uses discovered by the scientist for old materials. Besides being cut and sawn to be used as joists or beams or boarding, it can be unrolled to form ply-wood, and veneers pulverized to form insulation board or bent to make furniture. Examples of new materials such as plastics, glass bricks, glass wool as acoustic absorbent, aluminium foil as insulation and photo-murals as decoration will also be shown.

Illustrations of design and technique will be drawn from abroad, as well as from this country; it will not be only an exhibition of work of members of the Group.

A series of lectures of various kinds will be arranged in the exhibition gallery for the general public, for students, and for the architectural profession. Facilities are planned for showing short cinema films relating to architecture and building.

THE ARCHITECTS' DIARY

Thursday, December 30

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Exhibition: "Rural Housing." Until the end of January.*

"NEWS CHRONICLE" SCHOOLS EXHIBITION. *At Dorland Hall, Lower Regent Street, S.W.1. Until January 12. Lecture: "Nursery Schools and Nursery Classes." By Dr. E. Davies. 11.30 a.m.*

BUILDING CENTRE, *New Bond Street, W.1. Exhibition of Interior Design by students of the L.C.C. Central School of Arts and Crafts. Until January 8, 10 a.m. to 6 p.m.*

Friday, December 31

R.I.B.A., 66 *Portland Place, W.1. Second of three lectures for children. By G. A. Jellicoe. 3.30 p.m.*

Monday, January 3, 1938

"NEWS-CHRONICLE" SCHOOLS EXHIBITION. *At Dorland Hall, S.W.1. "Why Bother about Architecture? An Historical View of School Building." By E. J. Carter. 5 p.m.*

R.I.B.A., 66 *Portland Place, W.1. Last of three lectures for children. By G. A. Jellicoe. 3.30 p.m.*

Tuesday, January 4

"NEWS CHRONICLE" SCHOOLS EXHIBITION. *At Dorland Hall, S.W.1. "Materials and Finishings for School Buildings." By G. F. Rowe. 6.30 p.m.*

Wednesday, January 5

"NEWS CHRONICLE" SCHOOLS EXHIBITION. *At Dorland Hall, S.W.1. "Present-day Requirements of the Board of Education in regard to the Planning and Arrangement of Schools." By H. W. Burchett. 6.30 p.m.*

INSTITUTION OF HEATING AND VENTILATING ENGINEERS. *At the Institution of Mechanical Engineers, S.W.1. "Air Conditioning Factors." By T. Chester. 7 p.m.*

Thursday, January 6

LONDON SOCIETY. *The Children's New Year Party. Lancaster House, St. James's, S.W.1. 4.15 p.m. to 6 p.m.*

"NEWS CHRONICLE" SCHOOLS EXHIBITION

The *News Chronicle* Schools Exhibition was opened at Dorland Hall, Regent Street, London, on December 20.

Sir Walter Layton, of the *News Chronicle*, said that the exhibition was designed to show to parents how, under the most favourable conditions, young people could be prepared to face the world. It was designed to enable teachers and educationalists to see what others were doing in their own field, and it was designed by ocular demonstration and by the interchange of experience to publicise the most fruitful ideas regarding the schools of the future. It was, however, more than a schools exhibition in the narrow sense, for it covered education from infancy upwards. It dealt with the things that impinged on the young minds both in and out of school, and it aimed in the difficult problem of choosing a career. The exhibition was an experiment, but their belief that it would meet a need had been more than justified by the very warm response they had received from Government departments, from education authorities, from exhibitors of all kinds, and from the teaching profession itself.

Mr. Kenneth Lindsay, Parliamentary Secretary to the Board of Education, said he thought it was a very enterprising thing for a great national newspaper to stage this, what was nothing more nor less than a popular front on education, and those who regard education not as a luxury but as a rock-bottom necessity, would be extremely glad to go round and see this piece of enterprise on behalf of the *News Chronicle*. He had the greatest pleasure in being present and associating the Board with it.

Sir John Withers, M.P., said we wanted improved country schools. The country schools that he had been into of recent years were very, very lacking in proper arrangements; we wanted more of them.

BANBURY'S NEW SCHOOL

Despite strong opposition from a minority of members who believed the job should be done by an outside architect, the Banbury Town Council has decided to accede to a request from the local Education Committee that the Borough Surveyor (Mr. Sidney Hilton) who is a registered architect, should design the town's new £16,000 senior school to be built for opening in September, 1939. A point which influenced the Council in making the decision was that a considerable amount of ratepayers' and taxpayers' money

COMPETITION RESULT

The result of the competition for extension of St. Andrew's Cathedral, Sydney, N.S.W., has been announced as follows:

First Premium (£500): Messrs. R. A. P. Pinckney, F.R.I.B.A., and A. F. E. Gott, of 7 Gray's Inn Square, London, W.C.1.

Second Premium (£300): Mr. M. Saphir Smith, A.R.I.B.A., of 11 Murray Street, Croydon, Sydney, N.S.W.

Third Premium (£200): Sir Charles Nicholson, Bt., M.A., F.R.I.B.A., and Mr. T. J. Rushton, F.R.I.B.A., of 2 New Square, Lincoln's Inn, London, W.C.

The Assessors in the Competition were: The Archbishop of Sydney, Sir Giles Gilbert Scott, R.A., F.R.I.B.A., and Mr. Bertrand J. Waterhouse, F.R.I.B.A.

A NEW COMPETITION

The Wood Green Town Council invites architects of British nationality to submit designs for new council offices and petty sessional courts to be erected at Wood Green. Messrs. C. H. James, A.R.A., F.R.I.B.A., and S. Rowland Pierce, A.R.I.B.A., are the assessors, and the following premiums are offered: £300, £200, and £100.

Conditions, etc., are obtainable from Mr. H. Chubb, Town Clerk, Town Hall, Wood Green (Deposit £2 2s.). The latest date for submission of designs is April 26.

would be saved, while the opposition maintained that it was not fair that the Borough Surveyor, who is a full-time officer, should compete with architects having their living to earn.

R.I.B.A.

NEWS BULLETIN

R.I.B.A. Prizes and Studentships.—The results o the annual competitions for prizes and studentships will be announced at the General Meeting on Monday, January 10. The criticism is to be given by Mr. Fernand Billerey. The principal competition this year is for the Soane Medallion, of which the subject is "A Musical Centre in a Public Park" containing two concert halls and a museum. The subject of the Tite Prize is "A Library and Formal Garden in Northern Italy" overlooking the usual lake. That of the Bossom Studentship is a municipal office building and assembly hall forming part of a commercial building.

Royal Gold Medal.—The announcement of the Council's nomination for the Royal Gold Medal 1938 will be made at the General Meeting on January 10.

R.I.B.A. Exhibitions.—"Modern Schools" is at Dorland Hall, Regent Street, until January 12.

"Airports and Airways" opens at the Museum and Art Gallery, Leicester, on January 15.

"Civic Centres" closes at Huddersfield on Saturday next, January 8, and opens at Blackpool Art Gallery on January 15.

PARTIAL EXEMPTION FROM THE R.I.B.A. INTERMEDIATE EXAMINATION

The Council of the Royal Institute of British Architects has amended the regulation for partial exemption from the R.I.B.A. Intermediate Examination.

The revised regulation, which will come into operation on January 1, 1938, reads as follows :

"Partial exemption may be granted to :—

(1) Students of Recognized Schools of Architecture ;

(2) Dominion Students ;

(3) In very special circumstances other students,

who produce evidence of having passed approved examinations of a standard equivalent to the R.I.B.A. Intermediate Examination in certain subjects, viz., The General and Specialized History of Architecture ; The Calculations of Simple Structural Members."

R.I.B.A. MEDALS

The Council of the R.I.B.A. on the recommendation of the Board of Architectural Education, has made the following awards :—

R.I.B.A. Silver Medal and £5 in Books.—The R.I.B.A. Silver Medal and £5 in Books for Schools of Architecture recognized for exemption from the R.I.B.A. Final Examination has been awarded to Mr. Peter Whiston of the School of Architecture, Edinburgh College of Art.

R.I.B.A. Bronze Medal and £5 in Books.—The R.I.B.A. Bronze Medal and £5 in Books for Schools of Architecture recognized for exemption from the R.I.B.A. Intermediate Examination has been awarded to Mr. Andrew Renton of the School of Architecture, Edinburgh College of Art.

Certificates of Honourable Mention have been awarded to Mr. F. C. Dobson of the School of Architecture, King's College, Newcastle-on-Tyne, Mr. S. G. Kadleigh of the School of Architecture of the Architectural Association, London, and Mr. R. J. Ash of the Birmingham School of Architecture.

R.I.B.A. PRIZE FOR SCHOOLS

The R.I.B.A. Prize of £5 in Books for Schools of Art and Technical Colleges with facilities for the instruction of intending architects has been awarded to Mr. K. E. Bradley of the Manchester Municipal School of Art.

LAW REPORT

SIR BRUMWELL THOMAS

v.

HAMMERSMITH B.C.

In the reserved judgment in this action, Sir Alfred Brumwell Thomas, the plaintiff, was awarded £7,000 damages for breach of contract by the Hammersmith Borough Council in connection with his design for a new town hall on Brook Green. This sum included £3,000 Sir Brumwell had already received. A stay of execution was granted on the payment of £1,500 to the plaintiff.

On this and the following five pages we publish the judgment of Mr. Justice Porter. The action was brought by Sir Brumwell Thomas to recover from the Hammersmith Council £1,500 for work done and services rendered by him for the defendants as architect under the footing quantum meruit *and further, and in the alternative £5,000 damages, being the balance of the plaintiff's scale remuneration for work as the architect of the defendants in pursuance of a contract in writing contained in a series of letters passing between the parties from August 15, 1930, to November 24, 1933, and in a writing under common seal of the defendants, dated June 28, 1933, and which sum the defendants refused to pay. It was originally intended to build the Town Hall on Brook Green, but the Brook Green Defence Committee was formed, and so energetic and well-supported were the efforts of its organizers —Mrs. Baron and Mr. R. A. Duncan—that the Green was saved. After the proposal to build on Brook Green had been abandoned by the Council, another site was acquired and Mr. E. Berry Webber was appointed architect for the new scheme.*

THE plaintiff in the present proceedings is a well-known architect who has designed a number of public buildings, including the Belfast, Woolwich and Clacton town halls. The action may compendiously be described as a claim for damages for breach of contract and for remuneration in respect of the plaintiff's services in designing a town hall for Hammersmith.

The claim need not for the moment be more exactly formulated. It arises in this way. By the year 1930 the defendants were already considering the necessity of erecting a new town hall and municipal offices. About this time the Government, anxious to increase the work available to assist the unemployed, had set up an Unemployment Grants Committee and the defendants hoped by advancing the erection of their town hall to obtain a grant from that body. For this purpose it was necessary for an architect to be appointed to prepare the necessary plans and estimate of cost for submission to the committee. The defendants accordingly approached the President of the Royal Institute of British Architects (afterwards herein referred to as the R.I.B.A.) with a request that he would nominate a number of architects who had been employed in erecting town halls so as to enable the council to make a selection. The defendants accordingly wrote the plaintiff on August 15, 1930 (P.4, page 13), as follows : "The Hammersmith Borough Council, for some time past, have had before them the question of the desirability of the erection of a new town hall and muncipal offices, in order that the requisite additional facilities may be provided to enable the borough council more effectively to carry out the extra duties which have been brought about as the result of legislation in post-war years. In connection with the matter, the borough council have also had under consideration the renewed invitation issued by the Minister of Health to local authorities, on behalf of the Government, urging the preparation of further schemes of work in order to assist in relieving the unemployment situation likely to arise during the forthcoming winter, and, in response to the Minister's representations, the council are in communication with the Unemployment Grants Committee with a view to the arrangements for the erection of the new town hall building being advanced and the work accepted as a scheme to rank for Government grant. It is accordingly necessary that an architect should be appointed for the purposes of preparing the necessary plans, estimate of cost, etc., for submission to the Unemployment Grants Committee and in this connection your name is being considered as are also names of three other gentlemen. Having regard to the necessity for submitting the required particulars to the Unemployment Grants Committee at an early date so that the work may be put in hand to relieve unemployment during the forthcoming winter, it will be necessary for the gentleman appointed to undertake the preparation of plans, estimate of cost, etc., almost immediately. I shall be glad to hear whether, in the event of your appointment, you could arrange for this to be done, and also to have some idea as to your terms for the preliminary work in the event of the scheme not maturing. What my council have in mind is that, possibly, you may be prepared to carry out this preliminary work for a nominal fee provided the council guarantee your appointment as architect if the scheme proceeds."

The plaintiff replied on August 18 on page 16 : "In view of the council's intention to appoint the selected architect to carry out the work if the scheme proceeds, the charge for the preliminary work at this stage would be the out-of-pocket expenses incurred in the preparation of the plans and estimates for submission to the Unemployment Grants Committee, or a fee of 250 guineas if a definite sum is preferred."

Again on page 18 on September 22 the council wrote : "With reference to previous correspondence regarding the proposal of the borough council to proceed, as an unemployment relief scheme for submission to the Unemployment Grants Committee, with the erection of a new town hall and municipal building, I now have pleasure in informing you that the council's General Purposes Committee, following consideration of a number of nominations by the President of the Royal

Institute of British Architects (including your name), have decided to put forward a recommendation to the council, at their meeting on 24th instant, to appoint you to prepare the requisite plans, estimates, etc., of the proposed building which will be required by the Unemployment Grants Committee: the fee to be on the basis quoted, namely, the out-of-pocket expenses which you will incur, or a fee of 250 guineas, which ever proves to be the lesser. I am also pleased to inform you that the committee are making a further recommendation that, subject to the scheme being accepted as an unemployment scheme by the Grants Committee on the terms of Government grant thereto which have been indicated, and to an agreement, in terms satisfactory to myself being entered into, you be appointed by the council as architect for the proposed building, on terms to be agreed. I shall be glad if you will let me know, if possible, before the meeting of the council on Wednesday evening, that you are prepared to carry out the preliminary work on the terms mentioned, in the event of the council adopting the committee's recommendation, and, at the same time, perhaps you will let me have your suggestions as to an agreed fee for acting as architect for the building, to be erected at a cost of say £200,000, in the event of the committee's further recommendation being adopted. It is assumed that should the scheme be approved by the Unemployment Grants Committee and the work proceed accordingly, your fee for the preliminary work will merge in the agreed architect's fee for the building." To that letter the plaintiff replied on September 24 (page 34): "In reply to your letter of the 22nd instant, I am prepared to carry out the preliminary work on the terms mentioned in the first paragraph of your letter, and in the event of the council's adopting the committee's recommendation, I am prepared to carry out the work on the basis of the ordinary scale of fees of the Royal Institute of British Architects."

At this time the defendants had purchased, or were in process of purchasing, a portion of the grounds of St. Paul's Girls' School on the south side of Brook Green in Hammersmith, and it was proposed to erect the town hall there. Indeed there was no other convenient site available, and the plaintiff was informed by the officials of the defendants, that they had looked in vain elsewhere.

In order to assist the plaintiff to draw his plans he was provided with a suggested proposal relating to the accommodation to be provided and instructed to proceed at the earliest opportunity with the preparation of the preliminary work required for the purposes of the application to the Unemployment Grants Committee. About the same time he received the papers in connection with the site and enquired what, if any, restrictions were imposed by obligations towards or agreements with the adjoining owners. It appeared that there were certain rights of light in the owners of Phœnix Mansions on the west of the site which prevented the carrying up of the defendants' building beyond a certain height on that side, and on the south side the trustees of the school reserved the right to build up to a position not nearer than 19 ft. from the defendants' boundary.

On October 3 (P. 4, page 48) the plaintiff submitted preliminary draft plans to the General Purposes Committee of the defendant council which provided the accommodation required, and these plans were on October 10 (P. 4, page 61) forwarded to the Unemployment Grants Committee together with an application for the desired grant. Meanwhile the plaintiff had lent to the town clerk and had returned to him photographs of the Belfast town hall showing the type of elevation which he was accustomed to design.

On receiving the application for a grant the Unemployment Grants Committee first referred the proposal to the London County Council as the loan sanctioning authority for its observations. The London County Council thought the cost too high for the number of officers employed, with the result that a reduction was made in the size and cost of the town hall, and on December 24 the London County Council expressed itself satisfied that the additional accommodation provided by the proposed building was necessary, and so informed the Unemployment Grants Committee.

Meanwhile, on November 10 and December 9, the town clerk had sent to the plaintiff two suggested forms of agreement to neither of which the plaintiff assented, his contention being that it was only necessary to seal the letter of August 15 addressed to him by the council, a contention with which the town clerk did not agree. As a result of the reduction of the accommodation required by the London County Council a revised plan was prepared by the plaintiff and sent to the town clerk on January 12, 1931, and by him forwarded to the Unemployment Grants Committee on the 15th of that month. No immediate decision as to the making of a grant was given, and the the plaintiff, who was anxious to proceed with his work, urged that he should be given authority to proceed further with the plans so that the defendants should be ready to proceed with the work as early as possible (P. 4, page 154). As a result the council on February 25, 1931, authorized the General Purposes Committee to arrange with the architect for the preparation of working drawings for submission to the council for approval in due course.

Contrary to the defendants' expectations the Unemployment Grants Committee refused on March 3, 1931, to recommend any grant (P. 4, page 173), and in spite of protests adhered to their decision (P. 4, page 201). This refusal put an end to any immediate building of a town hall, and after waiting until December 30 the plaintiff wrote enquiring what, if anything, was being done. In reply he was informed that the scheme had not been dropped.

By the end of October 1932 the plaintiff, who was anxious to regularize his position, wrote again to the town clerk and on November 19 suggested a part payment of his fees. After some correspondence the town clerk on May 25, 1933, indicated that the London County Council would probably be prepared to make a loan to the defendants for the purpose of erecting the town hall, and ultimately it was decided to proceed with the building, and on June 28, 1933, the plaintiff was formally appointed architect with an agreement to pay him fees in accordance with the scale of professional charges of the R.I.B.A., it being agreed that the scale charge should be inclusive of all incidental fees and services whatsoever in connection with the works, including services already performed.

The plaintiff was not at first prepared to accept a fee inclusive of work which might far exceed that required under the R.I.B.A. scale, but ultimately on being reassured as to the council's interpretation of the wording, accepted the appointment which had already been duly sealed. Following upon his appointment the plaintiff proceeded with his working drawings.

In June, 1933, when building costs were at a low figure, the defendants had expressed the opinion that a suitable town hall might be erected for £200,000 to include the cost of the site, but by April, 1934, it was apparent that that cost would be exceeded, and the defendants accordingly reverted to their original figure of £200,000 in addition to the site. The plans were more than once submitted to the

One of the screens in the exhibition "Rural Housing" now being held at the Housing Centre, London.

committee and council and by them were approved generally, subject to certain alterations in that month and again in June, 1934. But by the later date it had occurred to the plaintiff that a more suitable and imposing site for the building would be on Brook Green itself, and that the London County Council might be persuaded to allow part of that space to be used if an equal superficial area on the original site were given in exchange. This suggestion of what I may call the Brook Green scheme was enthusiastically received, and the plaintiff promised to prepare fresh plans without making any extra charge so as to be ready as early as possible with either scheme, and in fact did a certain amount of work for the suggested new scheme.

Although the London County Council approved, this proposal raised a storm of opposition to which the defendants ultimately gave way and reverted to the earlier scheme. Meanwhile the plaintiff had applied for and received £3,000 on account of his fees (P. 4, pages 438 and 449).

After the abandonment of the Brook Green scheme, the latest set of plans for the erection of the building on the original site was brought up for reconsideration, and by March 6 the plaintiff wrote that the working drawings were ready. By this time new members of the council had been elected and the committee to some extent reconstituted, and a considerable number of fresh suggestions were put forward both by the members of the committee (P. 4, page 583) and by the officers of the council (P. 4, page 586). The only external change suggested was the substitution of a turret for the dome which the plaintiff had added in 1934 to meet the criticism then made of the flat run of the roof, but other suggestions were for the provision of a large amount of internal accommodation, much of which comprised additions to or alterations of the plans already made. These suggestions were sent to the plaintiff by letter of March 25, and he was informed that the town clerk had called a meeting of the full council to discuss the matters for the 27th. The plaintiff, perhaps not unnaturally, deprecated the discussion of this mass of detail at that meeting and expressed the hope that only the elevation would be discussed.

On March 18 meetings of the sub-committee and the committee had been held and recommended that the council do renew their approval of the plans, the former without qualification, the latter with the proviso that the lay-out should be further considered. The latter recommendation came before the council at its meeting on March 27, but by that time a great deal of hostile criticism was levelled against the plans, with the result that the recommendation was referred back to enable further consideration to be given to the plan : by the committee in conjunction with the architect. In order that the plaintiff might revise the plans in accordance with the wishes of the council a number of letters passed between the architect and the town clerk relating to the accommodation required, and on April 17 (P. 4, page 603) the town clerk put forward a demand for a considerably increased accommodation. The plaintiff thereupon set to work to try to furnish this additional accommodation, and meanwhile visits were paid to various town halls, Woolwich, Wimbledon and Clacton, that the defendants might see the arrangements which had been made in those cases.

By June 3 the architect had revised his plans and furnished them together with a report to the sub-committee on that day, pointing out that it was impossible to provide the increased accommodation unless the medical officer were housed on the lower ground floor. The plans so amended were discussed at the meeting of the committee on that day, and the plaintiff was subjected to a fire of questions, the answers to which were not satisfactory to the committee, particularly an observation of the architect that it would not be a light town hall. Following this meeting the plaintiff endeavoured to meet some of the objections and asked for the return of his plans, which were sent back two days later. On June 17 he returned the plans with a note in explanation of the design setting out the main issues arising, and later sent an elevation showing the dome omitted. Finding, however, difficulty in providing the accommodation now required, he suggested the revival of the Brook Green scheme, a suggestion which the committee and council refused to reconsider though the plaintiff urged its readoption more than once.

A further meeting of the sub-committee took place on June 24, at which that body proved itself no less hostile to the plans than at the meeting of June 3. The criticisms then made are somewhat fully set out in a letter from a Mr. Waters, a new member of the council and committee, which is to be found at page 661a, in P. 4. After this meeting the plaintiff suggested a meeting of the whole council in committee at which he could explain the position. Actually, however, a further meeting of the General Purposes Committee took place on July 8 at which the plaintiff was not present, and at that meeting a resolution was passed : "That the plaintiff be informed specifically of the accommodation the committee desire and expect him to provide, and that if he is unable to modify his plans for the erection of a building on the site incorporating the council's wishes, together with alternative elevation, the committee will have very seriously to consider the question of abandoning the scheme." This resolution, together with the main matters of complaint, was sent to the plaintiff by the town clerk in a letter of July 11 (P. 4, page 668).

On the same date the plaintiff replied reiterating that the additional accommodation could not be supplied without recourse to the lower ground floor, and pointing out that the dome was added to meet a criticism of the sub-committee, and wrote further in support of his position on July 16, 19 and 22. On July 17 the committee of the whole council had met as the result of a notice dated June 12 (I think in error for July). How the council got into committee is not very clear, but is, I think, immaterial. The plaintiff was not present, and the meeting was adjourned until July 22 when the defendants determined to abandon the scheme, and the plaintiff was so notified by letter of the next day (P. 4, page 676).

In spite of a request from the plaintiff to meet the council and explain his position the defendants adhered to their decision and ultimately this action was brought. The first question is to determine what was the plaintiff's legal position. He had been appointed architect by resolution of the defendants, and that resolution was under seal. Moreover he had been instructed to prepare working drawings. It was said on his behalf that he had also received a guarantee that he would be architect if the scheme proceeded. Such a guarantee was in fact given, but I do not think that it applies in the circumstances of this case. In the first place, in my view the guarantee was only applicable if a grant from the Unemployment Grants Committee was obtained—the scheme, in this view, means an unemployment relief scheme (see P. 4, page 18). In any case the guarantee is not under seal, and is, in my view, unenforceable. But the resolution under seal did appoint him architect after the scheme was revived, and *prima facie* I should hold the plaintiff entitled to be architect for a complete work, namely, the designing and building of the town hall, and to damages for breach of this contract. I should hold it a term of the contract that the defendants should carry out their scheme or pay the plaintiff the appropriate scale fee. The case is not like *Rhodes* v. *Forwood* (reported in Vol 1, Appeal Cases, at page 256) where the defendants promise to pay a commission on goods sold, but are under no obligation to supply goods. It is rather a case where they promise to pay the appropriate fees—in this case 6 per cent.—at the appropriate times and can only carry out their bargain if they carry out their scheme or pay that fee. (See *Turner* v. *Goldsmith*, 1891, Vol 1, Queen's Bench, page 544.) But though that would be my general view I think it must be modified to some extent.

The plaintiff agreed to accept fees in accordance with the scale of the R.I.B.A. (P. 4, page 291). There are two scales, and I have first to determine which scale is applicable. Two were produced (P. 7 and P. 8). It appears that the earlier scale was in force when the defendants' resolution was passed. When exactly that resolution was sealed is unknown, but the plaintiff did not accept the offer contained in it until November 17, 1933. In the meantime the new scale had come into force on July 22, 1933. If there were nothing to lead to a contrary conclusion I should think the true inference to be that the later scale applied. But the question is not what scale was in force, but what the parties meant. I do not think that the words "R.I.B.A. scale" used at a particular moment necessarily mean the R.I.B.A. scale then in force. I think they are sufficiently ambiguous to permit me to look at the documents generally in order to ascertain their meaning. Clause 2 (*a*) of the defendants' draft agreement in P. 4, page 279, and the plaintiff's reference to clause 5 of the R.I.B.A. scale show, I think, that it was the old and not the new scale to which they were referring. I so hold.

It was contended, however, by Mr. Morris that the contract was not for payment of the scale fees referred to in clause 5, but for payment of the final fee of 6 per cent. and that therefore the plaintiff was entitled to damages for breach of contract because he was prevented from earning that fee by the failure of the defendants to carry out the scheme, even if he had received no guarantee to that effect. Undoubtedly there are references to 6 per cent. in the letters and resolutions, and it is also true that the plaintiff warned the defendants that if they persisted in the form of their resolution they might lose the benefits of clause 5.

I have, therefore, to determine what the true meaning of that resolution was. In my view, to appoint a man architect for a particular scheme is not in all circumstances (though, if no more be said, it may be) equivalent to saying, "I appoint you to design and carry out to its conclusion the construction of a building." Under the R.I.B.A. scale, for instance, I think it means no more than "I appoint you to carry out such instructions as I give you up to one of the stages specified in the R.I.B.A. scale, and if I give no instructions, then up to the next stage." I think the resolution imports both the quantum of fees payable and also the terms as to liability for their payment. I am not sorry to come to this conclusion as I think it carries out the intention of the parties. (See the plaintiff's letter of June 30, 1933, P. 4, pages 251 and 252, in which he is content to be appointed architect, and the draft agreement already referred to, P. 4, page 279.) The contract therefore is that the architect is employed to do the work and receive the remuneration specified in clause 5 (*b*) of the old scale.

There still remains the question whether under clause 5 the client is entitled to abandon at will or only for good cause. No one can compel him to continue his contemplated building, but if he does abandon he is, in my view, under an obligation to the architect to pay for such services as he has instructed him to perform, that is to say, in the present case for the services under clause 5 (*b*), for which 4 per cent. is payable, since the defendants had instructed him to prepare working drawings.

Mr. Pritt argued that the architect was only entitled to receive payment up to the stage last reached. If this was so in the present case, I should think the plaintiff entitled to nothing as he had not reached the only stage applicable, but I cannot believe that the client is entitled to let the architect proceed almost to completion of his plans, then abandon the work and pay nothing. I think the plaintiff is entitled to damages for his loss by the abandonment—damages which may amount to the whole 4 per cent., or may be diminished because the plaintiff has avoided payments he would have been obliged to make, or has been able to use his own and his assistants' time to advantage on other projects.

This is, I think, the claim as framed under

paragraph 11 (*c*) of the statement of claim. Originally the plaintiff put his claim somewhat differently—under paragraph 7 he claimed £1,500 for his preliminary work in preparing plans for the grant scheme. This claim, I think, fails, because (1) the employment was not under seal; (2) only £250 could at most be due, as in my view, unless a grant were obtained, no more was promised; and (3) the plaintiff by the contract under seal promised to charge scale fees only to include all preliminary work, and if he gets scale fees he can get no more.

Paragraphs 8, 9 and 10 claim the 4 per cent. scale fees on the ground that the plaintiff had completed the work necessary to recover that amount under Clause 5 of the R.I.B.A. scale. This is an alternative to the claim in paragraph 11 (*c*), and its recovery depends upon the plaintiff's ability to establish the completion or substantial completion of the work to that stage. I deal with the question whether the plaintiff has proved this contention when I deal with the plans. Paragraph 12 is a claim for loss of publicity. If I am right in my view that the defendants can abandon the scheme before the erection of the town hall, it is admitted that this claim cannot succeed. But even if I am wrong in that, I should still think the amount irrecoverable. The principle has only been applied, so far as I know, to the case of actors and actresses for the stage or films. Though recoverable in that case, it is an unusual type of damage to allow, and I can see great difficulty in carrying it further. Is a painter to receive such damages when his picture is rejected, or an author when his book is not published?

In the amended claim, in paragraph 11 (*a*) a claim is made in respect of the Brook Green plans as for a *quantum meruit*. I think this claim fails: (1) because there is no seal, and (2) because the plaintiff acknowledges that he promised to do the work as an alternative to the original scheme and without payment if the later scheme was not adopted. I see no evidence of nor do I find any express or implied promise to pay if the defendants did not permit the plaintiff to carry out that or the earlier scheme.

The claim in paragraph 11 (*b*) for a *quantum meruit* could only arise if the plaintiff abandoned the contract. If he does not do so, his claim is for breach of contract and a *quantum meruit* cannot be claimed. If he does abandon, I think he fails because there is no seal, and the mere preparation and receipt of the plans is insufficient to entitle an architect to establish this claim against a local body. (See *Young* v. *Mayor of Leamington*, Vol. 8, Appeal Cases, page 517.) Paragraphs 11 (*e*) and (*f*) are alternatives, and having regard to my view do not arise for discussion.

If then the plaintiff's claim is for breach of contract to employ him as architect on the terms of the R.I.B.A. scale of charges, what is the defendants' answer? It is contained in paragraphs 11 to 14 of the defence, and I understand it to be that the plaintiff either did not advise the defendants that their scheme was impracticable on the site chosen, or that he could not (because he was not sufficiently skilful), or would not comply with the defendants' requirements. In considering such a defence one must first determine what the duties of an architect are. In the present case he was not employed under clause 8 of the scale to advise as to the selection or suitability of the site, but no doubt it would be his duty, if the accommodation which he was asked to provide could not be furnished on the site, so to inform his clients. Nor do I think it his duty to comply with all the demands of his clients. All reasonable demands, no doubt, he must meet, but from an architect who designs and is known to design a classical building, I do not think it reasonable to require a modern elevation, or a complete change of elevation, or where accommodation is to be of a stipulated quantity and type, to demand a largely increased quantity and type at a later stage. Minor changes may no doubt be properly required, but not major ones. Of course, if the architect has been informed from the beginning what is to be provided, and, though it be practicable, fails to provide it, he has failed to carry out his contract.

By paragraph 11 the defendants plead that the plaintiff failed to deal with criticisms of design and detail and would not or could not satisfy their requirements, by paragraph 12, that he should have known if those requirements were impracticable and so informed the defendants, and by paragraph 13 that they were not guilty of any breach of contract. The requirements are not set out in the defence, but are to be found in the letter in P. 4 at page 668, and are dealt with under seven main heads. I have dealt with head 1 in considering the obligation to furnish an alternative elevation and I refer to the question of the dome later. Heads 2 to 5 raise the question of the accommodation to be provided, the 6th refers to heating, lighting and ventilation, and the 7th is a minor matter which could at any time be provided for.

The question of accommodation is an important one, and if the defendants had from the first specified the accommodation which they ultimately required and its situation in the building, there might well be ground of complaint. What then are the facts? When the plaintiff was first appointed he inquired what accommodation was required, and on September 23, 1930 (P. 4, page 30), he was supplied by the town clerk with the figures. In discussing them I think it necessary only to consider the accommodation required for two of the departments, namely, those of the borough treasurer and of the medical officer. From the start it was made plain that both these departments should be housed on the ground floor. Whatever other complaint may be made as regards the other departments, in my view there was ample room for their accommodation on other floors. The accommodation required was for the borough treasurer, 5,765 sq. ft., and for the medical officer, 5,045 sq. ft. Of this latter space, however, 1,500 sq. ft. was in respect of a hall, for which room was in fact found on the lower ground floor, and no objection was taken to this arrangement. There was left, therefore, a space of 5,765 and 3,545, namely, 9,310 sq. ft. to be found on the ground floor. From time to time certain changes were made in the space provided by the architect, but when in 1933 the scheme was revived and he asked if any change was required in the accommodation, he was told none, and stated that his plans were based on this requirement. (P. 4, pages 307 and 309.)

In March and April, 1934, he put before the committee plans which he said showed 5,651 sq. ft. for the Borough Treasurer, and 4,293 sq. ft. for the medical officer. He stated in his report (which was presented by the town clerk to the General Purposes Committee of the defendant council and its sub-committee which dealt with the town hall) that the details of the official departments had been approved by the principal officials, and this statement was never challenged. These plans were generally approved by the sub-committee on March 5, 1934, recommended to be sent to the London County Council by the General Purposes Committee on March 19, 1934, and after reference back by the council, were generally approved by the General Purposes Committee on April 16, 1934, and generally approved, subject to certain alterations to be made therein, by the council itself on April 23, 1934. The plaintiff was at the same time asked to prepare working drawings. (P. 5, pages 84 to 102.)

The plaintiff accordingly revised his plans, and at a meeting of the General Purposes Committee on June 18, 1934, these revised plans, perspective drawings and elevations were again approved subject to any incidental variations or details, and this approval seems to have met with the support of the full council on June 27, 1934 (P. 5, pages 106 and 111). It is true that at these last mentioned meetings the question of the Brook Green scheme was mooted, and possibly the committee and the council paid rather less attention than they would otherwise have done to the plans, but the committee say in their minutes that they have carefully considered them, and I do not see why I should disbelieve this statement. No further discussion took place as to accommodation on the original site until after the Brook Green scheme was given up at the end of February, 1935. During this period I find that the plans so approved were those numbered 16 to 33 in the list attached to the Statement of Claim, and they, or the majority of them, were available to the committees and the council. I think Mr. Slim is mistaken in thinking that very few of them were ever provided for the defendants.

After the Brook Green scheme was abandoned the defendants returned to their original intention, and on March 18 the sub-committee recommended the renewal of the approval of the plans submitted, and on the same day the committee made the same recommendation, but added the word "provisional" before "approval" and preceded their recommendation by the words "on the understanding that the lay-out will be further considered." An election to the council had taken place in the preceding November and some change of personnel had taken place both in the council and the committees, and I find that whereas both the full committee and the council had expressed a general approval subject to amendations of detail, the new committee and council were more critical of the plans now that they were again submitted. The points criticized are to be found in P. 5 at page 135.

This meeting was followed by a meeting of the council on March 27, 1935. Before the meeting the town clerk had forwarded to the plaintiff certain observations on the plans, which will be found at page 585 in P.4 and following. At the meeting, at which the plaintiff was present, there was a long and critical discussion of the plans. The dome was objected to, the provision of three committee rooms instead of four, the omission of a staff mess room, the inadequacy of refreshment accommodation, and the inability of dancers to see the band were all referred to. I do not think these complaints of vital importance. The dome could readily be omitted, and the space which it occupied on the first and second floors utilized, if necessary; but indeed lack of space on those floors was never a serious matter. The four rooms which had been committee rooms still remained, though one was called the Mayor's parlour, the staff mess room had been omitted on the lower ground floor, but was afterwards added on the third floor, further refreshment space could, I think, have been provided, and the invisibility of the band may perhaps be neglected. As a result of these criticisms the committee withdrew its recommendation of approval.

Following on this meeting the plaintiff proceeded to revise and complete his plans, and some discussion took place as to the space required by the departments and its allocation. On April 17 (P. 4, page 603 and following) a new statement of accommodation was sent by the town clerk. From this it appeared that the borough treasurer required 7,625 sq. ft. and the medical officer 5,145 sq. ft., or if the health exhibition hall be omitted, 3,645 sq. ft., a total, without the hall, of 11,295 sq. ft., as against 9,310 sq. ft. required in 1930.

The sub-committee met again on June 3 and the plaintiff was present. The meeting was obviously a stormy one at which the plaintiff was subjected to a fire of questions, particularly by Mr. Waters, who knew nothing of the history of the scheme and thought that the architect's work was in its early stages. His complaints are to be found at page 661 in P. 4, and perhaps the most serious objection in his view was the statement that the town hall "would not be a light town hall." In a sense this is true, more particularly if the neighbouring owners were to build up as near to the town hall as they legally might, but the restrictions on the site had been known to the defendants and their officials from the start, nor was it very likely that any erection would take place on the south side. The plaintiff was never asked in cross-examination as to the size of the light wells, and if he had been, I have little doubt that he would have replied that with the restricted floor space available he could not spare more room.

On June 10 the plaintiff furnished a note and explanation in answer to these criticisms pointing out that even on the 1930 requirements the ground floor had only a superficial area of 10,750 sq. ft., whereas 14,585 sq. ft. were required. To anyone examining the plans this fact must have been in evidence from the beginning, but if the figures on page 650 are looked at it will be observed that the deficiency of 3,835 sq. ft. is almost exactly equal to the area of the health exhibition hall and the small public hall.

Now the health exhibition has not been objected to on the lower ground floor, and the defendants themselves by their town clerk directed that the small public hall should be omitted. (See P. 4, page 316, though in fact, the plaintiff provided it, as Mr. Slim said.) If then the small public hall had been omitted, the plaintiff could, I find, have provided the accommodation required in 1930 on which his plans were based. But the defendants made no suggestion of giving up the small hall, and the medical officer required a considerable amount of extra space. The plaintiff therefore, found himself unable to provide the floor space demanded in 1935, except by putting part of the medical officer's quarters on the lower ground floor. Finding himself in this difficulty, the plaintiff more than once tried to induce the committee to revert to the Brook Green scheme, and though he continued to make certain alterations in his plans, as, for example, the provision of a mess room, it is clear that his object at the moment was to try to revive the Brook Green scheme rather than make such changes as were possible if the original site was retained. The committee were not prepared to go back to the proposal to build on Brook Green and after meetings on June 24 and July 8, the town clerk communicated their views to the architect in the letter of July 11, 1935 (P. 4, page 668).

I find that the plaintiff fulfilled or substantially fulfilled the obligations as to accommodation which were put upon him in 1930 on which his plans were based. It is quite true that no final approval of his plans was ever expressed, but sites are not elastic. He had enough space for the 1930 requirements, and it seems to me unreasonable after the plans had been to the sub-committee, the committee, and the council, and general approval had been expressed, suddenly to require larger accommodation and a considerable change of plan.

Head 6 complains of the absence of proposals relating to heating, lighting and ventilation. So far as lighting and ventilation are concerned, the architects called by the defendants both stated that these matters should be amongst those earliest dealt with, and that plans which do not show what was intended in those respects are far from complete. With the question whether the plans were complete as working plans I deal later. At the moment I am concerned with the defendants' requirements. Mr. Tatchell, though admitting that the architect is not a dictator, took the view that the architect should insist on a decision from his client, particularly as, if a boiler house was required, the whole foundation plan might have to be changed unless a decision had been come to. No doubt, heating is an important matter and should be dealt with as early as possible, but as Mr. Tatchell said, it is not unreasonable to await a decision as to accommodation and its details before finally deciding upon the form of heating, and, indeed, even apart from his statement, I should take that view.

In the present case I find the architect suggesting a meeting to discuss heating as early as October, 1930 (P. 4, page 64). When the scheme was renewed in 1933 the town clerk himself recognizes that the question must be decided by the council, and says he will put the matter on the agenda. On January 10, 1934, the plaintiff, in reply to a letter from the town clerk asking whether an extra high tension chamber can be provided in the basement, again raises the question of heating (P. 4, page 323). In March the sub-committee and committee recommended that this matter be dealt with by getting estimates from specialist firms, but the council referred the matter back (P. 5, pages 89 and 92). In April (P. 5, page 96) the plaintiff again suggested that consideration should be given to the matter, and the committee proposed to consider it carefully with a view to reporting to the council, but nothing seems to have been done before the change to the Brook Green scheme took place, and then the matter dropped until the earlier scheme was taken up again.

In March, 1935, the council, on the recommendation of the committee, did pass a resolution that the architect should get four specialist firms to submit quotations and schemes, but by this time the whole of the plans had been heavily criticized and the architect instructed to amend them. By June the committee and council were extremely hostile. In my view it was not unreasonable for the architect to amend his plans and to desire a decision as to the accommodation required and its position before approaching the specialists and deciding upon the scheme of heating, ventilation and lighting, more particularly as the council were themselves in no hurry to decide the matter. Provisional heating for undetermined rooms is at least difficult and may result in much waste of labour. At no time after March were the defendants satisfied with the plans or prepared to give them even general approval.

I have already said that in my view it was unreasonable after so long a lapse of time to ask for a fresh elevation and that the dome could easily be omitted. The only other numbered complaint in the letter on page 668 is as to the accommodation for the public in the council chamber. This is a minor matter and could easily have been remedied—indeed was remedied in later plans which the defendants did not see. But by that time they, or their committee, were not prepared to meet the architect or discuss his plans, and he had no opportunity of showing what he had done.

The final general complaint is that the architect did not inform the defendants at an early date that the site was in his view unsuitable for a town hall of the type the defendants required and with the accommodation which they had specified. Whatever may have been the architect's duty in this respect (and he was not retained to advise on the site) in my view the site was suitable and adequate so long as the defendants were content with the accommodation which they at first desired and which was provided for them in the earlier plans. The trouble was really caused by a demand for increased accommodation and amenities by a council and committees which had changed their personnel, some of whom were quite unfamiliar with what had already been done and treated the matter as if the planning and arrangements had only just begun.

Apart from their contention that the plaintiff would not or could not fulfil their requirements, the defendants maintained that the plans had not reached or anything like reached the stage at which they could go to the quantity surveyor. They said the plaintiff's work was so deficient and incompetent that it was useless, and in any case was more than adequately remunerated by the £3,000 which they had already paid. Indeed this was the main contention at the trial, and the failure to provide sufficient accommodation and to deal with the defendants' other requirements was used rather to accentuate the inadequacy of the plans than as a separate reason for dismissing the architect.

It is not necessary or within reasonable limits possible to deal in detail with the many complaints made, but some of the more important must be considered. Before, however, I deal with the various matters subjected to criticism, it is desirable that I should state my method of approach to the questions in issue. On behalf of the plaintiff no other architect was called, whereas his plans were subjected to the criticism of two architects. Both of these gentlemen were capable and careful in their work, and much of their criticism was, in my view, justified up to a point. But the very care and particularity with which they carried out their own work was such as to make them, I think, over-critical of less careful workers. In particular the plans of Mr. James which were put before me for comparison were executed for competitive work, and so were naturally executed with more exactness than would be necessary in the case of an appointed architect or as an adequate instruction to a quantity surveyor. After all, the question is not, have the plans been executed with great care and do they give the fullest details, but are they reasonably sufficient for a quantity surveyor? Of this, I think a quantity surveyor the best judge, and both for this reason and because I have seen the witnesses, I have been guided in my outlook by the views of the quantity surveyors called on each side to a greater extent than by the outlook of the architects.

The chief complaints were of the failure to make trial of the soil and determine the depth and sizes of the foundations, to calculate an adequate steel frame, to provide sufficient plans to give the necessary information to the quantity surveyor, to determine and show the heating and ventilation, to obtain at any rate a sufficient provisional approval from the London County Council and district surveyor and generally that there were an abnormal quantity of omissions and errors in the plans provided, and that they were far from complete.

Let me say at once that in my view the plans had not reached, nor were within reasonable distance of reaching the stage at which they could go to a quantity surveyor, and if the defendants were right in saying that the plaintiff could only recover such sum as is payable for the stage last reached, I should say that the plaintiff was entitled at most to the £3,000 already paid. But as I take a different view, it is necessary to consider these objections and to determine their effect on the architect's right to recover.

(1) Admittedly the plaintiff had not caused trial holes to be dug, nor had he indicated, save by pencil lines drawn 2 ft. below the earth's surface, the depth to which the foundations were to be taken. In my view, in order to complete the plans, both would have to be done. The architect's answer was that any quantity surveyor would see that the depth indicated was not then finally determined or determinable since the question of the heating and consequently of the sub-basement had not been decided. Admittedly the foundations in the case of the lower ground floor and of the sub-basement would be far below what is indicated by the pencil lines. Moreover, in finding the lower level of the foundations it would not be safe suddenly to lower that level from a position 2 ft. below the level of the soil to 2 ft. below the levels of the lower ground floor and of the sub-basement—the level would have to be gradually stepped down from one level to the other. But it was said, and as I find said truly, that a quantity surveyor would recognize that the level shown was indicative of the position and not of the depth, and that in default of further information he would have to show a provisional quantity and not an actual one. It was, as I think, not unreasonable to leave the exact position undetermined until the method of heating and the size and position of the lower basement were decided, though I do not take the view that the plans were properly completed until these matters were finally agreed upon.

Further the bases for the steel stanchions were all shown of the same size, though the weight carried by each might vary to a considerable extent. This procedure would, as I hold, indicate to the quantity surveyor that the position was accurate but the size conventional, and he would estimate a provisional and not an actual quantity. Again I do not think the procedure unreasonable. The actual calculation might wait until the load to be borne was determined, but the plans would not be complete until that load was ascertained. The whole matter being still provisional, I do not think that the criticism that the bases would run into one another need be considered a serious one. If they were ultimately found to do so, a raft could be provided. The trial of the soil might wait until the weight of the

steel frame was accurately known, though it is the practice of some architects, and I think the better practice, to determine these matters as early as possible.

(2) The steel frame was undoubtedly defective. Though all except two of the stanchions shown were adequate for their purpose, still the existence of those two made the calculations suspect, and in any case many were too heavy, and the strength of others was not calculated in proportion to the weight they would have to bear. Such parts as the angles, rivets and grillages were not determined at all or not determined accurately, the direction in which the stanchion faced was not shown, and much of the work was altogether omitted, for instance, the steelwork in the wing at the south-west corner, the work round the turrets, the insets at the first floor, the mansard roof and the frame for holding down the main cornice. The failure to provide for carrying the water tanks, and the omission of any indication as to how the gallery in the public hall or how the projection room were to be supported were further causes of criticism. Moreover, the steelwork for the roof of the public hall was shown at two different angles and was quite inadequately determined, and that for the dome was only ascertained by photographing one of the drawings for the Belfast Town Hall on a reduced scale and altering the figures showing the sizes of the main beams, but in many instances leaving those of the smaller beams unaltered. Further, the calculations for the structure actually designed were made (it is true under the supervision of the plaintiff) by Miss Sanders, the plaintiff's secretary, and by Mr. Fox, his assistant, neither of whom was called and neither of whom, even with the assistance of the plaintiff, was sufficiently skilled to be entrusted with the work.

A further difficulty arose from the fact that Miss Sanders and Mr. Fox's calculations had been destroyed, and I was told, and accept the evidence, that the District Surveyor who would have to pass the plans would require the calculations as a condition precedent of his considering the steelwork plans. The steelwork designs were quite incomplete, and though they would have been of some or even of considerable use if the calculations had been in existence, they were useless without them and the whole work would have had to be done over again. The plaintiff admitted that the calculations for the stanchions were difficult though he said those for the joists were easy. Having regard to the character of the building I have no doubt that the determination of the sizes of the stanchions and design of the steelwork involved a complicated and intricate calculation, and indeed would have taken some three months for a competent staff, and necessitated some 500 pages of figures.

It is to be noted that the plaintiff had always previously had a steel consultant. In the present case I think he would have had to go, and intended to go, to a steel specialist and fabricator who would, in my opinion, at once have seen the deficiences and re-calculated the strain and stresses, but I find that by July, 1935, no part of the steelwork can be said to have been adequately designed. It was asserted by Mr. Pritt, and I think properly asserted, that the defendants would not have grudged the expense of a steel engineer, and in my view the criticism is rather of the inadequacy of the plans than of any impossibility of carrying out the work.

(3) It is said that a great many more plans and sections should have been provided showing certain parts of the work in greater detail and on a larger scale. Perhaps two examples will suffice. The construction of the staircase was said to lack constructional details and also to lack information about its covering, balustrades, and so forth. Similar complaints of a lack of detail were made about the interior of the dome. Undoubtedly, there was a failure to provide all the plans necessary; the dispute was not as to this, but as to whether such plans must be provided before the stage of submitting the plans as a whole to the Quantity Surveyor, or whether detail of this kind is only required at a later stage.

I think there was some insufficiency in the number of plans provided even at the earlier stage, an insufficiency which to some extent increased the matters left uncompleted when the architect was dismissed, but I think that the omissions from and errors in the plans actually provided constitute a greater matter of complaint, though as the dome was to be omitted I do not include failure to determine either its steelwork or internal construction and decoration amongst these matters.

(4) I have already dealt with the question of heating—lighting may, I think, be regarded as dependent upon a detailed decision as to the position and size of the various offices, and ventilation only concerns the large spaces such as the public hall and council chamber, and is to some extent bound up with the type of heating adopted. Like the heating, lighting and ventilation I think the details of the structural floors might well be left until after the departmental accommodation was agreed. In Mr. Tatchell's view this was desirable.

(5) Not only is it wise to obtain the provisional approval of the London County Council, but in the present case at any rate in April, 1935, if not inferentially before that, the plaintiff was expressly instructed to approach that body. By that date the architect's plans, and indeed design, had been heavily criticized, and I do not think it unreasonable for him to delay a little to see if he could satisfy his clients before he went, even for provisional approval, to the London County Council. But admittedly he could, and I think he should have gone earlier, and indeed he did do so. One visit only is proved. In April, 1934, he seems to have sent a Mr. Clough, a friend of his who assisted him in his work, to see the officials of the three relevant departments. Some difference exists between Mr. Clough and those officials as to what took place at the interviews, the officials maintaining that they told him little more than to keep in touch with the three departments as the plans progressed, Mr. Clough asserting that they gave him a general provisional approval, and indicated that there would be no real difficulty in obtaining their final consent. I accept Mr. Clough's evidence substantially. I have seen him, and also I think that his recollection of a particular interview is more likely to be accurate than theirs, since to them the interview was only one of many similar incidents. I find that he was justified in the inference which he drew from the conversation which took place.

No doubt there was room for further discussion as to, for example, the position of the emergency stairs and the exits from the halls and gallery, but that is rather a complaint of the unsatisfactory nature of the plans than of the plaintiff's failure to approach the London County Council. As to the district surveyor I think there is a divergence of practice amongst architects, and while some, and perhaps the more cautious approach the district surveyor at a very early stage, others do not ask his approval until the plans are completed, or practically completed.

(6) There were as I find a large number of omissions from and errors in the plans which were produced to the court. As omissions I may instance a paucity of figured dimensions, the failure to provide lifts, the omission already noted of details of the principal staircase, the lack of any plan of the roof over the upper storey, the failure to provide support for the projection room, the omission to arrange for a proper method of entering the garage, the failure to plan the emergency staircase, the non-determination of roof covering material, the lack of information as to the thickness of floors and floor covering material, the lack of information as to retaining walls and as to the position which the various doors which had been designed were to occupy, and other matters of the like kind.

Amongst errors I may mention a door which opened on a corridor 8 ft. below it, the existence of windows on the lower ground floor which had a wall of earth immediately outside them, a stairway from a public gallery which led to a passage half way between a kitchen and a refreshment room, the passage having never been properly designed, having a door below it which led nowhere, and the provision of a projection room which did not conform to the regulations. The repetition of the lower ground floor on two plans and the omission of any plan of the mezzanine kitchen may, I think, be included under either head. These are not all, but I think they sufficiently indicate the omissions and errors complained of. I find that these errors and omissions were much more numerous than would normally occur in an architect's plans though some errors and omissions might be expected. The cause of this excess is, I think, partly to be found in the numerous changes of plan which took place, and partly because the plans had not been properly completed and required careful examination and revision. The fact is the plans required the expenditure of a great deal more time and attention before they would be ready for the quantity surveyor.

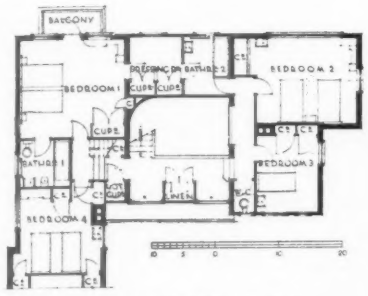
The plans put before the court as complete working drawings, namely, plans 40 to 70, were not proved to be, and I think were not in existence at the termination of the contract; they were printed afterwards; but I do not think much turns upon this fact as the plaintiff seems to have hoped to be allowed to continue his work, and in any case both the blue prints from which they were taken and also some earlier plans were in existence, the latter in certain instances containing more information than was to be found amongst those numbered 40 to 70. The reduced photograph of the dome and the plan of the roof over the public hall were admittedly prepared for this case. I think it would have been better not to have furnished them, but I do not find their preparation for the court more than unwise.

Mr. James stated that in his view the plans would be useless, at least to him, and both he and Mr. Tatchell took the view that there were so many errors that it would be easier to begin again than to amplify and correct the plans already made. By this Mr. Tatchell, at any rate, meant no more than that a clean set of plans should be traced out and the necessary information supplied on them—not that the work already done was wasted. Obviously the conception, the design, and much of the details had been considered and worked out and could be used by merely inserting them in the new tracings if new tracings were necessary.

Though I do not say I agree with all Mr. Landon's detailed criticism, I agree with his general conclusion when he says that the plans indicated that the plaintiff had a clear conception of what he wanted, but would take a considerable time in perfecting his drawings, and though he (Mr. Landon) could take out a large proportion (he put it at 75 per cent.) of the quantities required if he used his discretion, yet there would still remain a substantial portion, and he would feel uncomfortable about much that he did. In this he differs little from Mr. Healing, who says that the drawings were not complete save for the major operations and as regards conception. I think Mr. Landon is right in saying it would take about two months to complete them—indeed Mr. Tatchell put it at three.

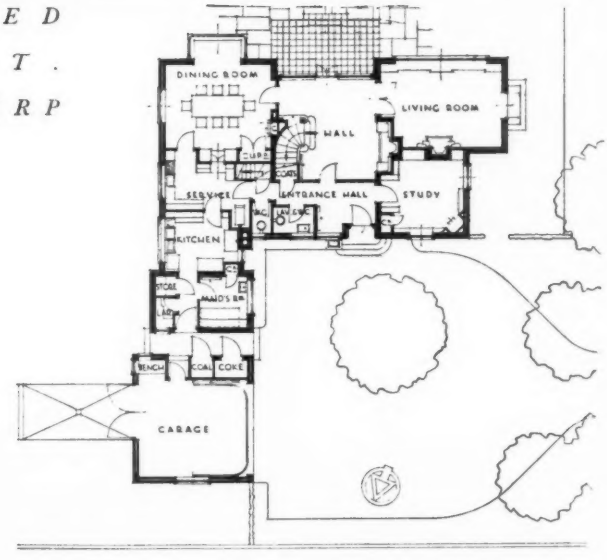
What then should I give to the plaintiff to answer his claim? It was given in evidence that an architect has only completed about one-third of his work when the plans are ready for the quantity surveyor, and Mr. Pritt argued that the scale in giving two-thirds at that stage added a sum to recompense him for the loss of his contract. I am not sure that I appreciate what one-third of the work means—quite possibly twice as much time will be expended by the architect after he has instructed the quantity surveyor as was expended before. But I do not consider that an architect's work is paid for on a time basis. The conception may well merit a large portion of the payment, and in any case I do not think one can speculate too closely as to the grounds of and considerations for an architect's emoluments. If I had to give only the value of the work completed at the date of the breach I should award £4,500, but as I think the plaintiff is entitled to damages for breach of contract on the lines I have indicated, my judgment is for £7,000.

HOUSE AT EFFINGHAM, SURREY



FIRST FLOOR PLAN

DESIGNED BY R. T. WESTENDARP



GROUND FLOOR PLAN

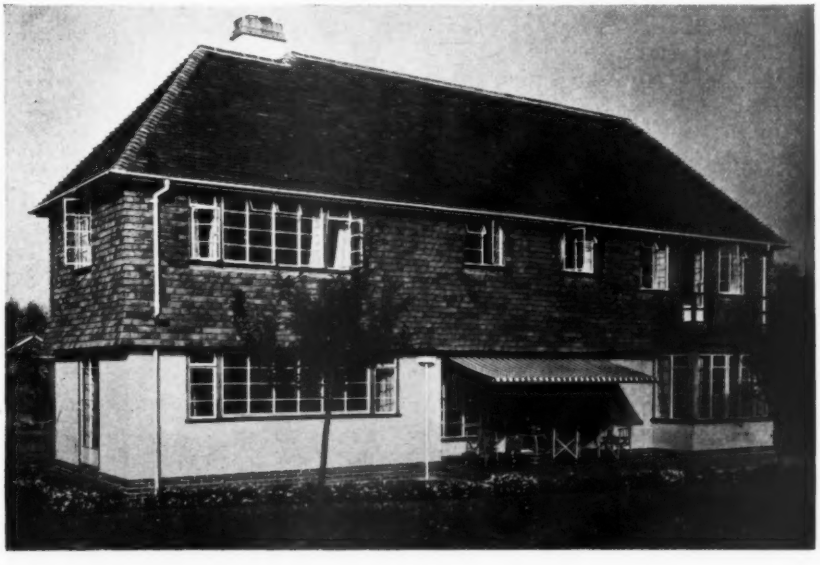
SITE—*The site is an existing orchard of which as many trees as possible were retained. A high brick wall runs along the north boundary, the road boundary being on the west side. The building was therefore placed well back from the road, with the chief rooms facing south, in which direction the best views were to be obtained. The garage block was placed at right angles to the main building, to form an entrance courtyard enclosed on three sides. The client desired the elevations to be traditional in feeling, with distempered brickwork, tile hanging and a tiled roof.*

PLAN—*The client's requirements were: main rooms to face south; a lounge hall rising through two floors with gallery round, and having space to take a large embroidered curtain; owner's bathroom to be entered direct from bedroom; second bathroom to be* en suite *with dressing room for owner's use when required; as much furniture as possible to be built in; lighting to be indirect with a minimum of ceiling points and fittings to be built in where possible. The house is planned to be run with one servant, and all bedrooms have lavatory basins, built-in dressing tables, and fitted wardrobes with interior lighting.*

CONSTRUCTION AND EXTERNAL FINISHES—*11-inch cavity walls faced with rustic flettons, cream distempered, and plinth of multicoloured Dorking bricks, to ground floor. The first floor is tile hung with red sand-faced tiles of slightly lighter tone than the roof tiling. Floors are wood joists. Internal walls of studding except the two main cross walls, which are 9-inch brick. Windows are metal, cream painted in oak frames. The front door is of oak boards in narrow widths, with moulded oak cover fillets.*

COST—*The work was carried out under a day-work contract with a separate contract for the furniture. The price was approximately £4,600, or just under 2s. per cube foot, including furniture and all electrical fittings and equipment.*

The photographs show: top, a view from the west; right, the south front.



HOUSE AT EFFINGHAM, SURREY

DESIGNED BY H. T. WESTENDARP

INTERNAL FINISH—*The floors in the hall, living room and dining room are of polished oak boards in narrow widths. The entrance hall is paved with buff quarry tiles and the floors of the kitchen, service and bathrooms are of rubber on plywood. The first floor is close carpeted. Walls and ceilings generally are rough plastered and distempered except the kitchen and bathrooms, which are finished with gloss paint above tiling. The stairs are of polished oak with green rubber treads inlaid and the balustrade is finished with a metal handrail. The grille is wrought iron, painted bronze.*

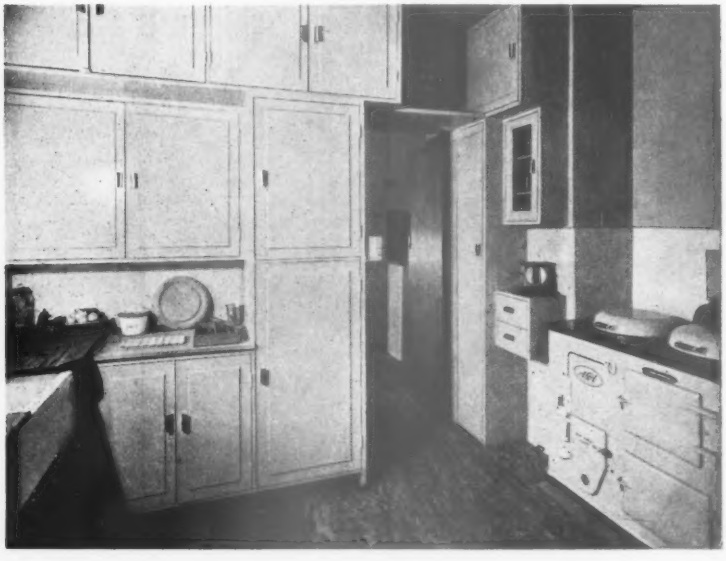
The owner's bathroom has green glazed tiling and green fittings and a floor of mottled green and buff rubber. Bathroom 2 is glazed with white tiles and the floor is of rubber in blue and white squares.

The flush doors are veneered french walnut to the principal rooms on the ground floor and on the landing ; and oak in the entrance hall.

SERVICES—*Central heating and domestic hot water supply are run from one coke-fired boiler. There are radiators in the dining room, hall, landing and maid's room. Heating is by electric fires in the study and bedrooms. There are coal fires in the living room and hall.*

The photographs show : above, the staircase ; below, the kitchen ; right, top, a corner of the study and, below, fitments in the principal bedroom.

For list of general and sub-contractors, see page 1103.



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INFORMATION SHEET

SUPPLEMENT

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588 Roof, Floor and Wall Tiling

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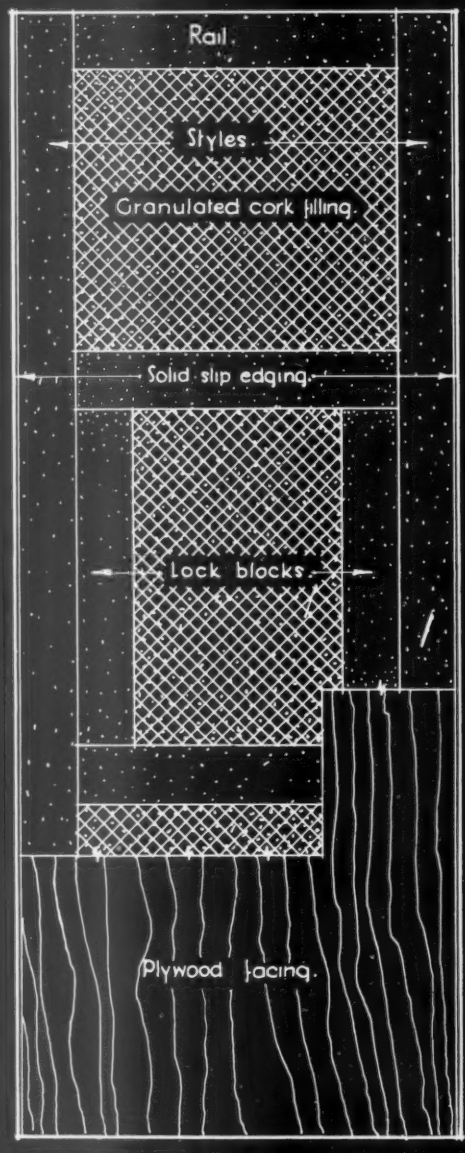
THE TIBBENHAM FLUSH DOOR WITH COMPRESSED CORK CORE.

Patent Req. Nº 444·069.



ELEVATION OF DOOR SHOWING TYPICAL CONSTRUCTION.
SCALE : 1" to 1'0"

SIZES : The doors are made in any sizes up to 15'0" x 5'0"

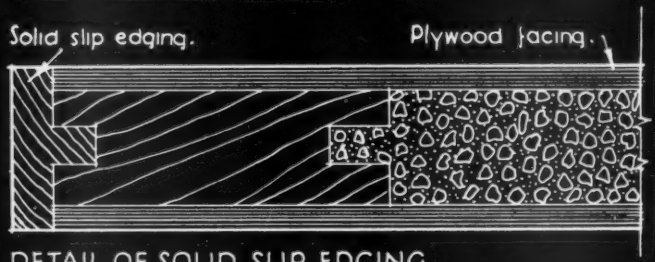
THICKNESS : The doors are made in any thickness required but usually either 1 7/16" or 1 5/16"

FRAMING : Styles and rails are cut from rift sawn kiln dried Western Red Cedar.

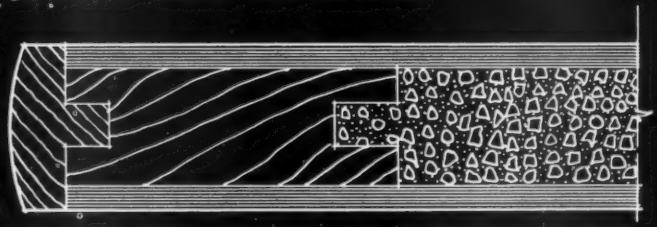
PLYWOOD : The plywood facing may be sand finished for painting or veneered as required.

CORK : The core is formed of compressed impregnated granular cork.

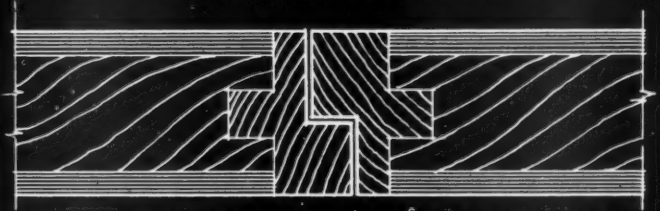
HALF FULL SIZE DETAILS :



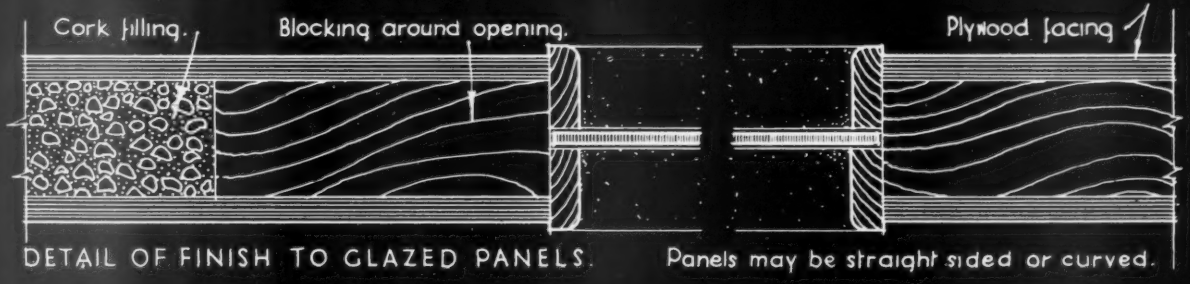
DETAIL OF SOLID SLIP EDGING.



DETAIL OF ROUNDED HEEL EDGING FOR SWING DOORS.



DETAIL OF REBATED MEETING FOR DOUBLE DOORS.



DETAIL OF FINISH TO GLAZED PANELS. Panels may be straight sided or curved.

Information from Frederick Tibbenham Ltd.

INFORMATION SHEET : FLUSH DOORS WITH COMPRESSED CORK CORE.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BELFORD SQUARE LONDON WC1. Oliver A. Bayne.

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 587 •

FLUSH DOORS

Product : The Tibbenham Cork-Cored Flush Door.

General :

This cork-cored flush door is a door of patent construction (Reg. Patent No. 444,069) which is purpose-made to any size to suit requirements. This door is to all intents and purposes, a solid core door. It has been used in L.C.C. areas where L.C.C. fire regulations call for a fire-resisting door.

Framing :

The internal framing of the door is morticed, tenoned and glued together and formed out of prime rift sawn kiln-dried Western Red Cedar. All styles and rails are 4 ins. wide and of the thickness required.

Cork Core :

The core of the door consists of granulated compressed cork.

Lock Blocks :

Lock blocks are provided wherever required to take the type of lock called for.

Plywood Facing :

The timber used for the plywood is alder or gaboon, the plys being glued together under pressure with a cold water glue of high tensile strength.

Veneer and Finishes :

Doors for painting are finished in alder or beech with a sanded finish.

Doors for waxed or polished finish may be veneered with any suitable wood either plain or jointed as required with patterns, cross-bandings or quarterings.

Edging Slips :

Edging slips are always provided on at least one long edge of the door to protect the plywood and veneer edge.

Slips can be provided on both long sides and on the top and bottom if required, in the same material as the finished veneer or, if required, in a wood of contrasting colour.

Glazed Panels :

Perforations for glass can be provided in the door to sizes as required.

Panels may be straight sided, curved or circular.

Blocking pieces are provided in the door around all glazed panels and beads are provided in the same material as the finish veneer, and can be flush, recessed or projecting as desired.

Weight :

This door answers the same purpose as a solid door but is much lighter in weight, averaging approximately 3½ lbs. per ft. super.

Prices :

The doors not being mass produced, special prices are quoted for each job, but the following prices may be taken as an approximate guide, based on market prices of raw materials for October, 1937.

For Lots of 10 Doors :

	£	s.	d.
Doors for paint 6 ft. 8 ins. by 2 ft. 8 ins. by 1 15/16 ins. ... each	2	7	6
Doors for paint, 6 ft. 8 ins. by 2 ft. 8 ins. by 1 15/16 ins., in gaboon for polish	2	9	6
Doors for paint, 6 ft. 8 ins. by 2 ft. 8 ins. by 1 15/16 ins., in oak for polish	2	17	6
The above prices are for one long edge slipped. Add for the other long edge slipped, per door		3	6

Polishing :

Natural cellulosed wax polish finish per door all sizes	10	6	

Manufacturers : Frederick Tibbenham, Ltd.

London Office : 4 Fitzroy Square, W.1

Telephone : Euston 3145-6-7

Head Office and Works : Turret Lane, Ipswich

Telephone : Ipswich 3715-6

741

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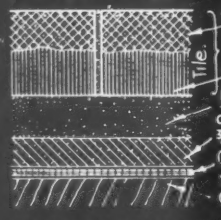
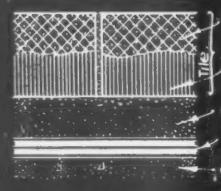
THE ·VALCOTHERM· CONCRETE-FACED ASPHALTE TILES FOR ROOFS, PAVING AND WALLS:

The size of the standard tile is 10" square; cove tiles are cast with 1½" radius; skirting tiles are 3½" or 5" high. All are made in two thicknesses; ¾" for facing walls and parapets; and 1" thick for paving and covering flat roofs.

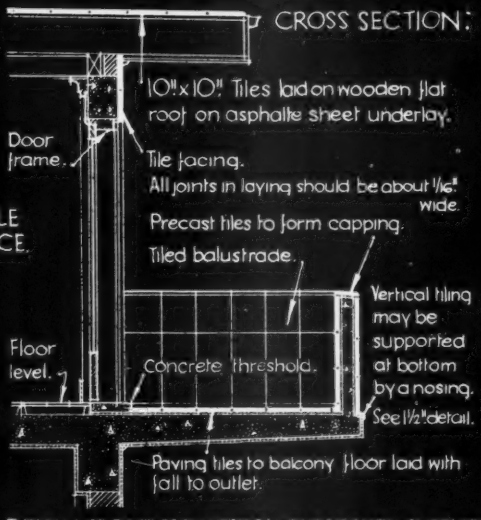


½ F.S. DETAIL OF 1" ·VALCOTHERM· TILE ON CONCRETE OR TIMBER SURFACE.

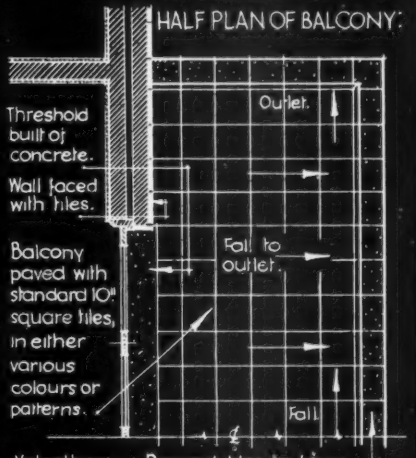


½ F.S. ALTERNATIVE DETAIL OF 1" ·VALCOTHERM· TILE ON CONCRETE SURFACE ONLY.

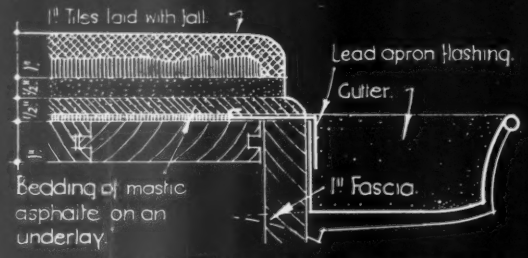
CROSS SECTION:



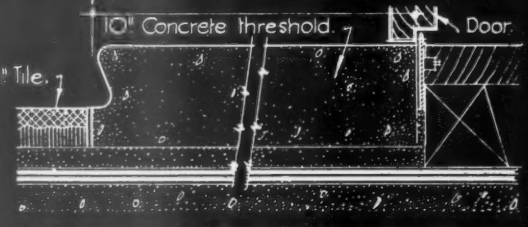
HALF PLAN OF BALCONY:



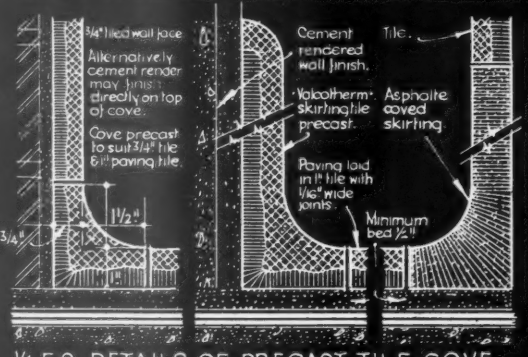
TYPICAL USE OF TILES ON VERTICAL & HORIZONTAL SURFACES: DETAILS ILLUSTRATE CANTILEVER BALCONY.



¼ F.S. DETAIL SHOWING METHOD OF FINISHING TILES AT EAVES TO A FLAT ROOF IN TIMBER.

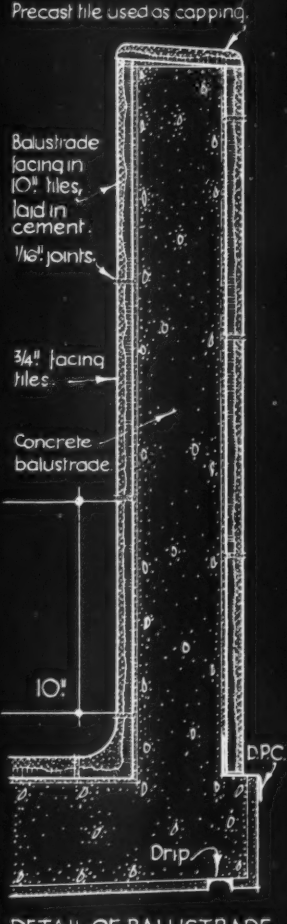


¼ F.S. DETAIL SHOWING PRECAST CONCRETE THRESHOLD.



¼ F.S. DETAILS OF PRECAST TILE COVE, COVED SKIRTING & ASPHALTE COVE.

METHOD OF LAYING TILES TO PREVENT EFFLORESCENCE. 1½" to 1'0"



DETAIL OF BALUSTRADE Scale 1½" to 1'0"

Information from The Val De Travers Asphalte Paving Co. Ltd.

INFORMATION SHEET: INSULATING & DAMP-PROOF ROOFING & PAVING TILES:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1· Wm. A. Boyne.

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INFORMATION SHEET

• 588 •

ROOF, FLOOR AND WALL TILING

Product: The "Valcotherm" Asphalte Tile, with a decorative Concrete Finish

Description:

This product is composed of a layer of asphalte and a layer of concrete, the two materials being mechanically bound together under high pressure. Each layer has approximately the same thickness. The concrete layer contains graded aggregate which forms a hard, long-wearing finish to the damp-proof asphalte base layer.

Uses:

The tiles are used for covering and protecting wood or concrete flat roofs, faces of walls and light areas, and for floor paving generally. Besides forming a waterproof and protective surface to the structural walls, they provide a hard-wearing and colourful surface. They may be laid on horizontal surfaces of timber, brick or concrete construction, and may be arranged in various patterns and colours.

Finish:

Tiles may be obtained with a plain or ground finish to the concrete, and in a variety of colours. For external stair treads, nosings, thresholds and paving, etc., a special non-slip surface may be used.

Properties:

The tiles combine by the nature of their structure such qualities as hardness, insulation against dampness, noise and heat. Measurements of reflectivities for solar heat of two different specimens of the tile have been carried out at the Building Research Station. Results of the tests are shown in the following table:—

Colour of Specimen	Reflection Co-efficient
White ...	0·66
Mottled grey	0·45

Reflection co-efficients for coloured tiles are slightly lower.

The tiles are made in the standard size of 10 ins. square and can be obtained in overall thicknesses of from $\frac{3}{4}$ in. up to 2 ins. The $\frac{3}{4}$ in. thick tiles are recommended for covering vertical surfaces, while 1 in. thick tiles are adequate for ordinary paving, floors, flat roofs, etc.

Precast tiles of various shapes and sizes for forming coves, skirtings, cappings and thresholds are available. The tiles may be cut on the job, and this is the method usually adopted where small quantities of special-shaped tiles are required. If large quantities of special-shaped tiles of the same size and shape are required they are purpose-made at little, if any, extra cost over the standard tile.

Laying:

The tiles are readily laid, being bedded in a $\frac{1}{2}$ in. minimum bed of special bituminous cement, this being placed on the $\frac{3}{8}$ in. underlay of mastic asphalte and sarking for concrete or wood surfaces, or alternatively for concrete surfaces only—directly on to two layers of bituminous felt. If a waterproofed job is not essential, the tiles are bedded in cement mortar direct.

The tiles may be laid to any required falls to outlets, gutters, coves, etc., the usual joints between tiles being $\frac{1}{16}$ in. wide. When mastic asphalte is used under the bedding, this may be turned up to form parapet skirtings, pipe flashings, gutter soles, ball-nosed verge finishes, etc., the tiles being stopped short as indicated on the asphalte cove and skirting detail overleaf.

Laying can be carried out by any competent firm, but this company with its specialized staff will undertake the laying as well as the supply of tiles and materials in any part of the country.

Manufacturers: The Val de Travers Asphalte Paving Co., Ltd.
Address: Val de Travers House, 21/22 Old Bailey, London, E.C.4.
Telephone: City 6422

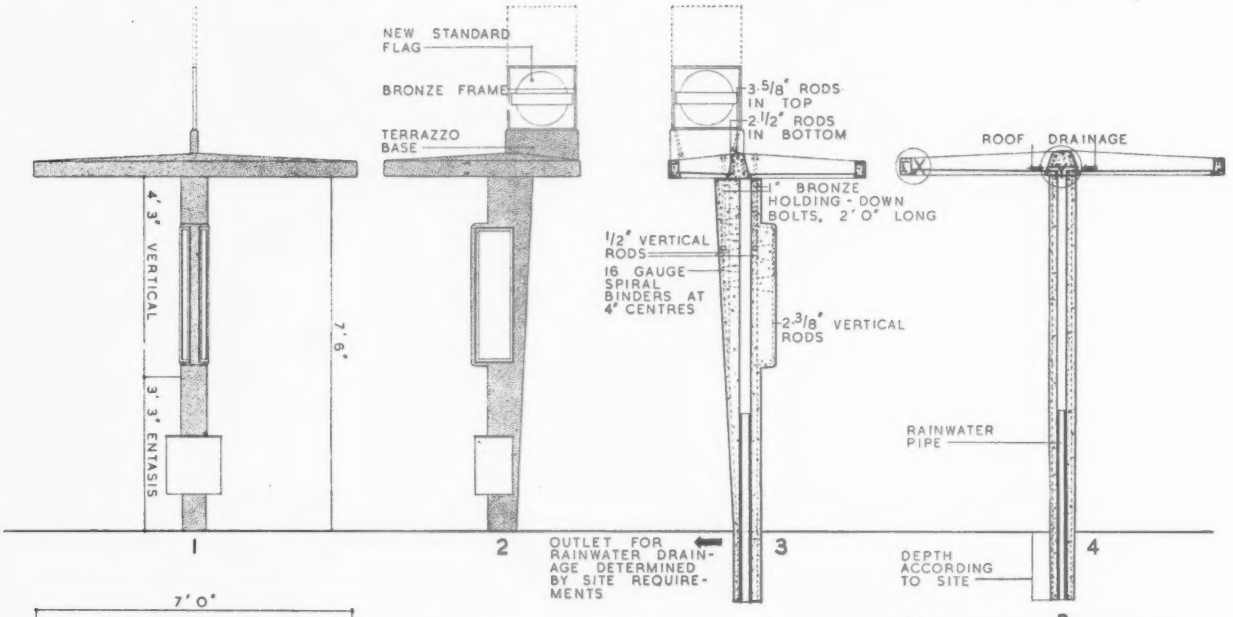
WORKING DETAILS : 617

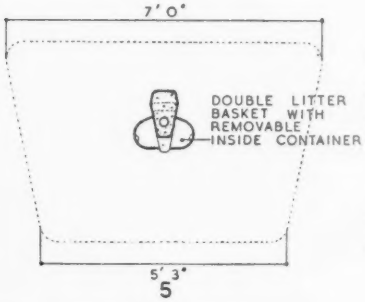
BUS SHELTER • KING'S CROSS, N.W. • PUBLICITY DEPT., LONDON PASSENGER TRANSPORT BOARD

This experimental bus shelter at King's Cross is one of a series of signs and shelters which have recently been built by London Transport. The construction is steel-channel and steel tube reinforced terrazzo. The umbrella and shank are made separately and bolted together on the job. Terrazzo is white Carrara and slightly darkened Portland cement, fairly smoothly polished. Glazing is ¼-in. Georgian wired, sand-blasted on the underside. Rainwater drains down the central tube of the upright, with outfall 1 in. above ground. This outlet for rainwater will vary in other shelters according to site requirements. Poster frame is bronze, as is also the standard sign above the canopy. Details are shown overleaf.

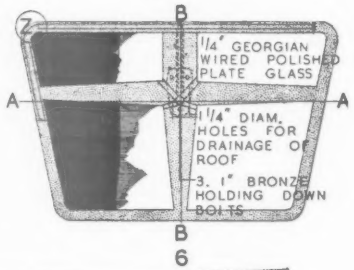
WORKING DETAILS : 618

BUS SHELTER • KING'S CROSS, N.W. • PUBLICITY DEPT., LONDON PASSENGER TRANSPORT BOARD

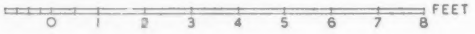


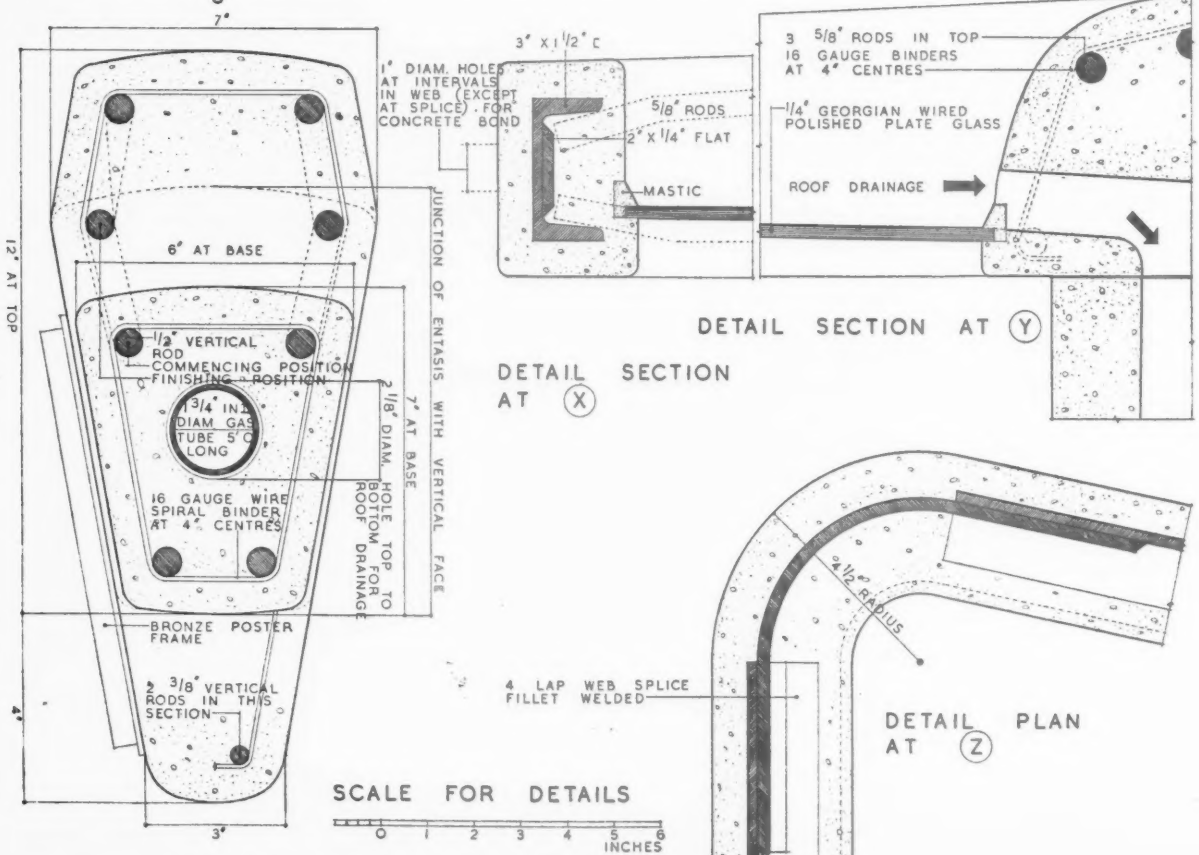


1 FRONT ELEVATION
2 SIDE ELEVATION
3 SECTION A-A
4 SECTION B-B
5 PLAN
6 ROOF PLAN



SCALE





SCALE FOR DETAILS

DETAIL PLAN OF COLUMN

Details of the bus shelter illustrated overleaf

1092

WORKING DETAILS : 619

LIFTS • GOODGE ST. STATION, W.C. • S. A. HEAPS, IN CONJUNCTION WITH W. S. GRAFF-BAKER

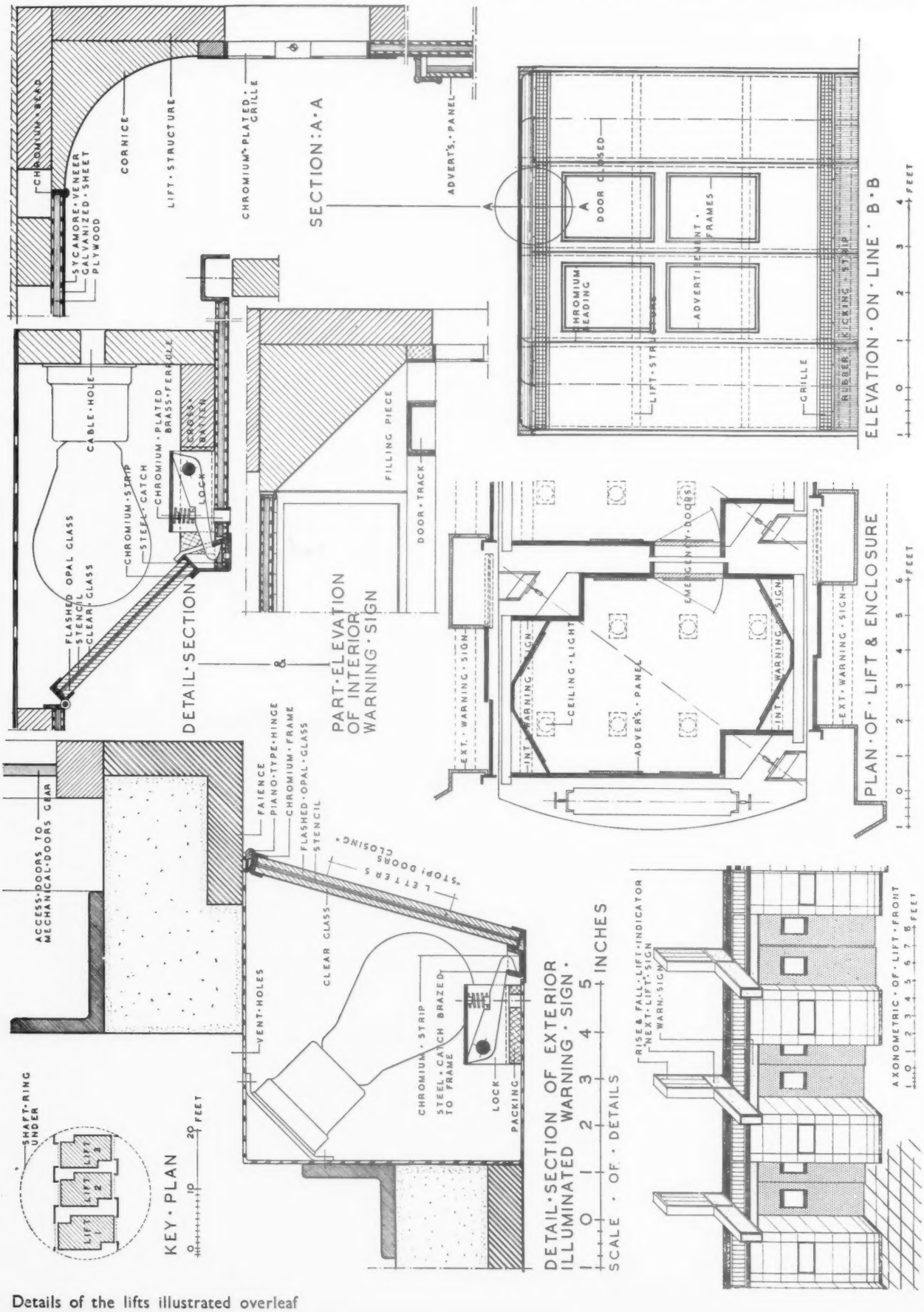
These lifts are a new self-working type being tried out by London Transport. They are completely automatic and a frequent and regular service is provided. Sliding doors of a new type are fitted to the lifts ; these slide along the sides of the lift and facilitate easier entrance and exit.

The ceiling and sides of the lift are faced with sycamore plywood ; poster frames are fixed to the walls and doors ; these are in chromium. Ventilating grilles are also in chromium. Both exterior and interior warning signs are in flashed opal glass with chromium frames. Floors and skirting are in rubber.

Details are shown overleaf.

WORKING DETAILS : 620

LIFTS • GOODGE ST. STATION, W.C. • S. A. HEAPS, IN CONJUNCTION WITH W. S. GRAFF-BAKER



Details of the lifts illustrated overleaf

SCHOOLS

The Architects' Journal Library of Planning

Junior Schools

PLAN UNITS : INDOORS

Assembly Hall

A HALL is necessary in Junior Schools of four classes or more. In smaller schools two classrooms capable of being thrown into one will serve the purpose.

The hall will normally be used as a meeting place for parents and children, for music and rhythmic exercises, physical training, dramatics, cinema and lantern lectures.

A separate gymnasium is usually out of the question for Junior Schools. Gymnastic equipment need not be elaborate and need not interfere with other activities. Two ropes and a set of rings may be provided and made to pull out of reach when not wanted, while there should be storage space for parallel bars and a small vaulting horse.

The hall should be placed so that it immediately adjoins the principal entrance, which will be used by parents and visitors. It need not be centrally placed in relation to the rest of the school, but at the same time the circulation of children between hall and classrooms should be made direct. Staff lavatories should be near the entrance so that they may be used by visitors.

Size. For four to six classes, area should be 1,500 ft. ; for over six classes, 1,800 ft. Height may be from 14 to 18 ft.

Stage. Dramatics are now considered very valuable in the training of both Junior and Senior children. A fixed stage should be provided, the full width of the room and 15 to 20 ft. deep. No proscenium wall is necessary, but there should be provision for curtains and a pelmet suspended from the ceiling to conceal the upper part of the stage.

A movable screen, 7 ft. 6 ins. by 6 ft. 6 ins. or larger, should be provided at the stage end, and at the other end a power plug for lantern and 16 mm. movie projector. No provision need be made for a projection room unless the hall is to serve other purposes, such as community hall. Professional non-safety film is not likely to be shown in Junior assembly halls. Windows should be easily darkened with blinds or curtains.

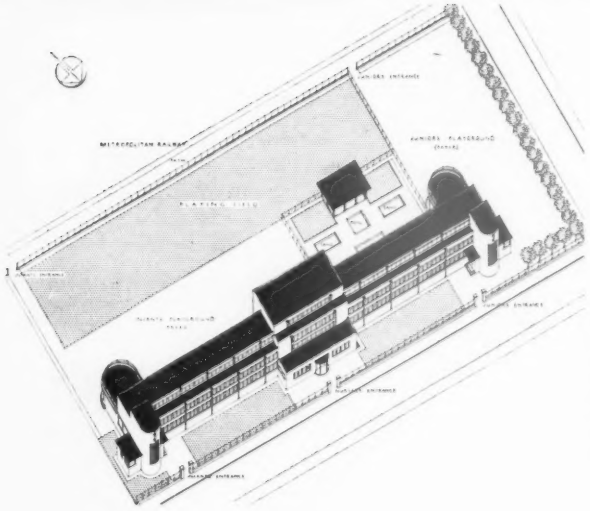
In some cases, particularly in abnormally large schools, the requirements of a Junior School hall will be similar to those for a Senior School. A fuller discussion of the uses of large school halls, with notes on windows, lighting, heating, ventilation, surface finishes and acoustics will be given under Senior School Plan Units.

Storage, for books and toys, chairs (which may be stored under stage), gymnastic apparatus, lantern, movie projector, and a general store, 50 to 100 ft. in area, should be provided.

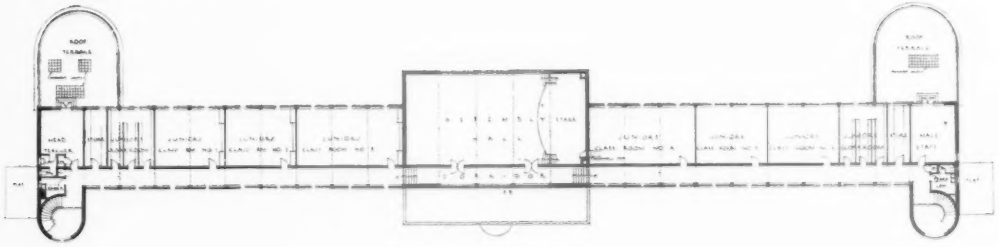
Furniture and Equipment. Other than gymnastic apparatus, equipment should include :

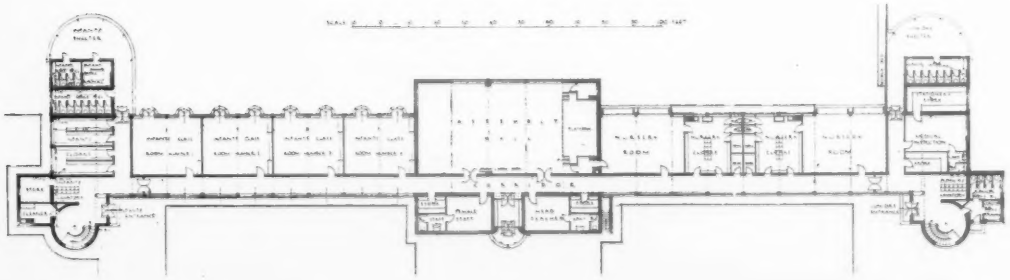
Nesting chairs or wood folding chairs battened in groups of four. These should be of two heights,

One of Neutra's experimental schools in the U.S.A. Light steel frame-and-panel prefabrication. Translucent roller blinds control Californian sun and keep classrooms cool.

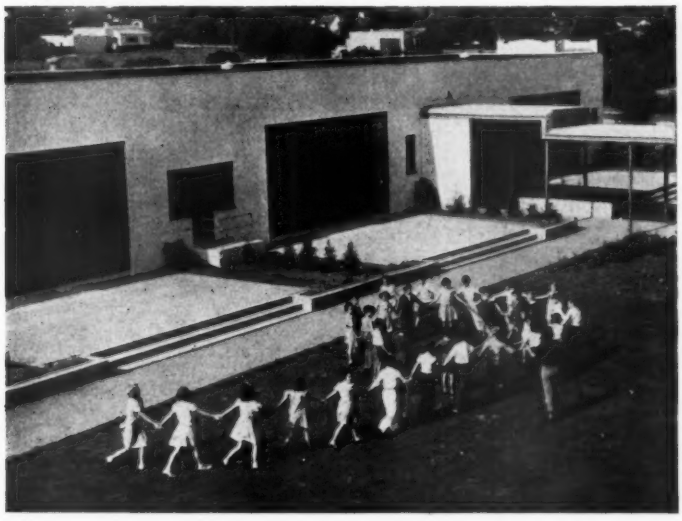


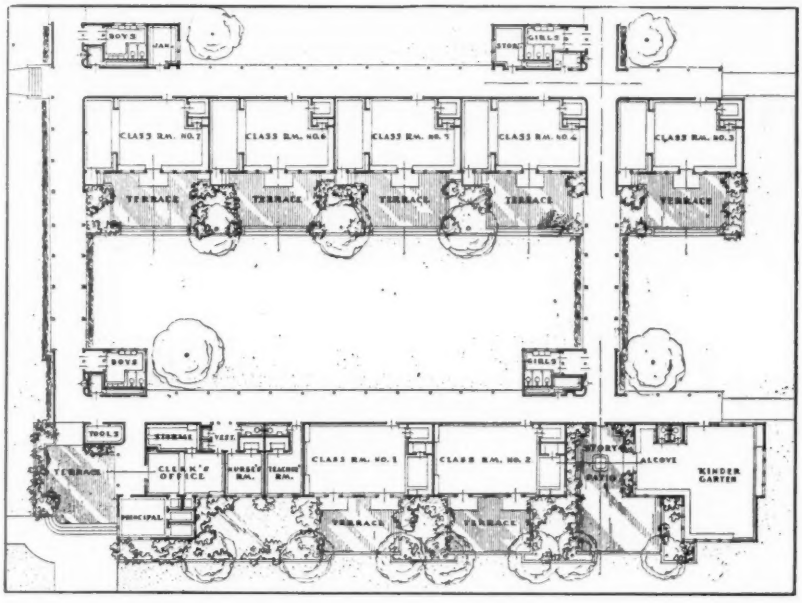
School at Willesden for Junior, Infant and Nursery children, opened this year. Economy demanded a combined school planned on two floors. Disadvantages of such an arrangement have been described, but of its type this is one of the best schools in the London area. Character is simple and unpretentious, though symmetry of plan may appear slightly forced.
Designed by F. Wilkinson ; G. F. Rowe, chief assistant architect for Willesden Education Committee.





SCHOOLS





School in California with covered way access possible in mild climates. Classroom planning illustrates some of the suggestions made in this section. Only part of the plan is shown : the upper unit being repeated. This type of classroom grouping can be extremely attractive if sensitively treated, particularly in one-storey buildings where planting and spacious play lawns separate classroom groups. With a large number of classrooms confinement of closed quadrangles and monotony of strung-out planning are avoided. Architects : Marsh and Powell.

(13 ins. and 14 ins.) and in addition there should be a small number of full-size chairs for visitors. Chair storage may be made under the stage.

Piano, for which storage need not be provided.

Radio for broadcast talks. Loud speaker might be built in.

Cinema Projector. 16 mm. type, with a range of at least 45 ft.

Lantern. Special storage is advisable for projector and lantern.

Classrooms

For easy supervision classrooms should be planned in a continuous series on the ground floor, though a less rigid arrangement can be made very attractive and easily workable provided the connections with other units are planned with skill. Classrooms planned on the diagonal, or dispersed as isolated pavilions (as in the famous example at Surêsnes by Beaudoin and Lods) have the advantages of good noise insulation and unlimited fresh air, but before such an extravagant principle is adopted its advantages should be carefully weighed against disadvantages of over-dispersion in large schools. Details of the pavilion type of classroom will be discussed under Senior Schools.

Classrooms should always be on the ground floor and have direct access to the outdoors. Outdoor teaching spaces, possibly paved and screened by shrubs, can be made attractive features immediately outside classroom windows. Alternatively, children might be given direct access to a lawn. In Junior Schools the hard playground is large and is not so pleasant a prospect as a lawn. It is usually best placed at the back with immediate access from classroom corridor.

Size. A floor area of 520 sq. ft. should be the absolute minimum for an ordinary classroom with 35–40 children. It must be remembered that movable tables and chairs are taking the place of heavy desks and benches, that more space is now needed for freer grouping. Formal lessons will still be avoided and, as in the

Nursery-Infant School, it is necessary to think of the classroom as a centre of *activity*. When space economy is not the first rule (it never should be) it is worth planning at least some of the classrooms with recesses where small groups could be separated and special work done. These recesses might vary in size and shape in different classrooms and might in some be raised 6 ins. or more above the main floor.

As the detailed requirements for classrooms are fundamentally the same in Junior and Senior Schools, notes on Windows, Lighting, Heating, Ventilation, Finish, Furniture and Equipment will be grouped under Senior Schools.

In the Junior School craftrooms can be grouped with classrooms. They are in effect extra large class-rooms fitted up for what the Board of Education calls "adventures in elementary crafts." This means simple joinery, needlework, modelling, drawing.

Size. Craftrooms must not be less than 700 sq. ft. in area. It is necessary to provide one room of this size to every four ordinary classrooms.

Except for variations listed below, requirements are similar to those for ordinary classrooms.

Windows. Full window-walls down to bench level on at least two sides are an advantage. In large schools with three or more craftrooms, one might be planned specifically for art work, its main window facing north.

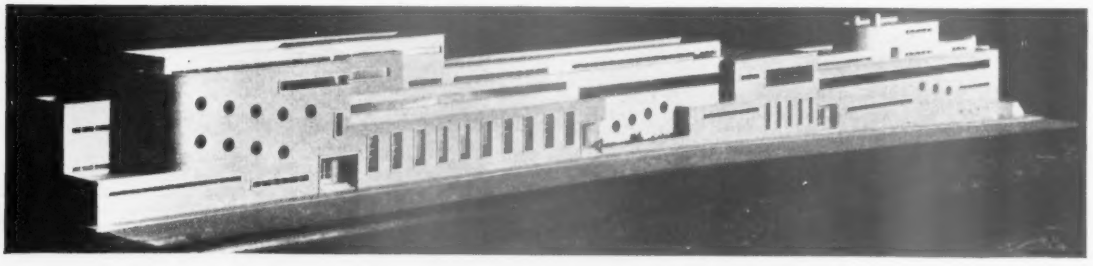
Storage. Low cupboards the full length of one or even two walls for children's finished and unfinished work, and a small teacher's store.

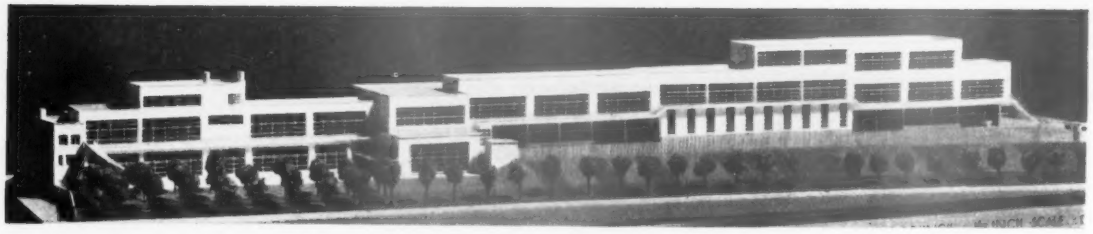
Furniture and Equipment. In addition to usual classroom chairs and tables, equipment should include :

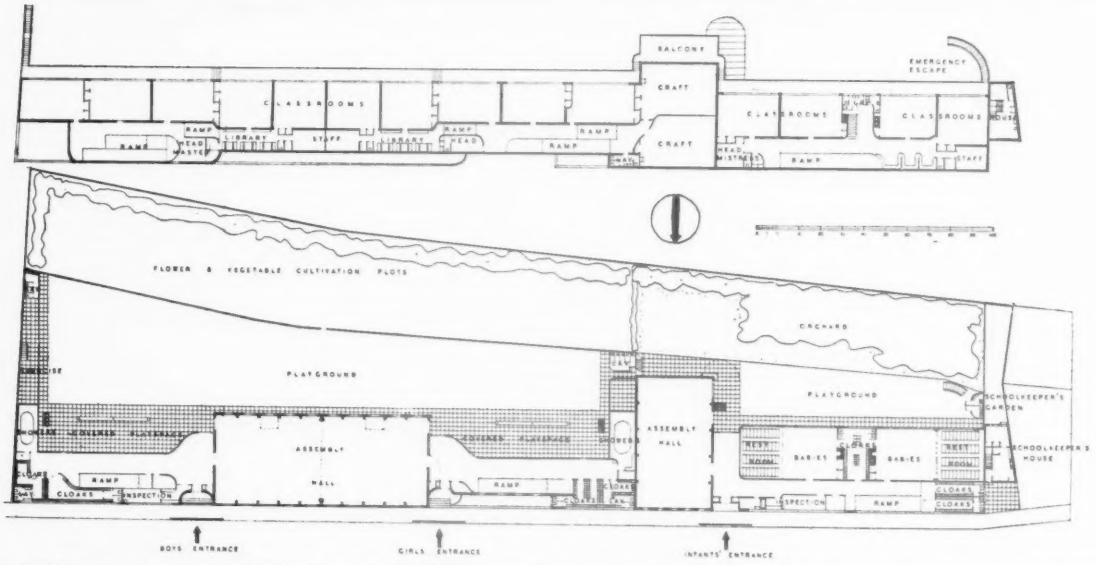
Sink with hot and cold water.

At least one table (or bench) of greater solidity than the ordinary tables. Two of different heights, 6 to 8 ft. long, are good.

Lavatories and other plan units will be considered under Senior Schools.



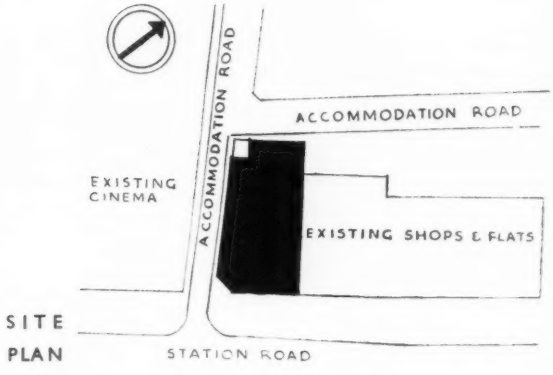




L.C.C. enterprise. A model school designed to demonstrate "progressive" principles and actually to be carried out next year. Unfortunately, an awkward site has necessitated ingenious rather than straightforward planning. There is good separation between Junior and Nursery-Infant departments which are virtually separate buildings. Ramps are used instead of stairs. Architect : Oliver Hill.

SHOWROOMS AND OFFICES, EDGWARE

DESIGNED BY WELCH AND LANDER



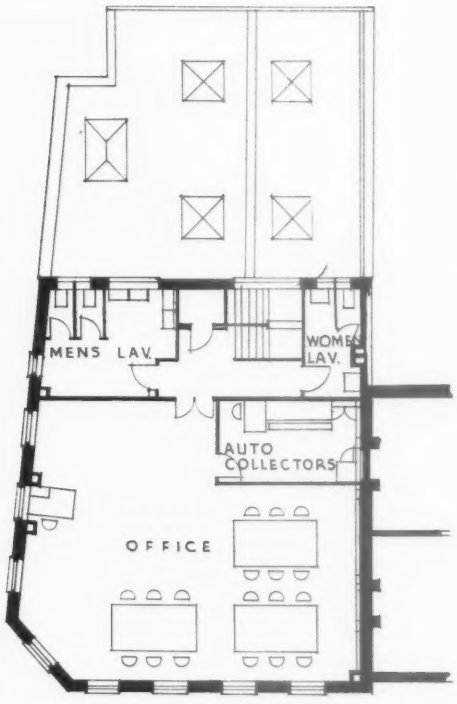
SITE—*Station Road, Edgware, Middlesex.*

CONSTRUCTION—*Steel frame; 13½-in. brick walls; tiled roof and asphalt flats. Floors: ground, boarding on slab concrete; first, hollow block; partitions, terra cotta slab.*

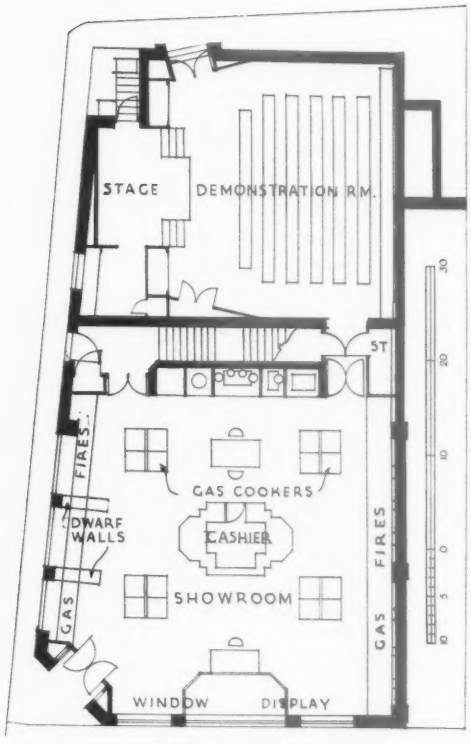
EXTERNAL FINISHES—*Multi-coloured bricks; shop front, granite; double-hung sash windows. The chromium name-letters are painted bright red and are illuminated by gas fittings.*

The photographs show: above, a general view from Station Road; left, the the main entrance.

SHOWROOMS AND OFFICES, EDGWARE:



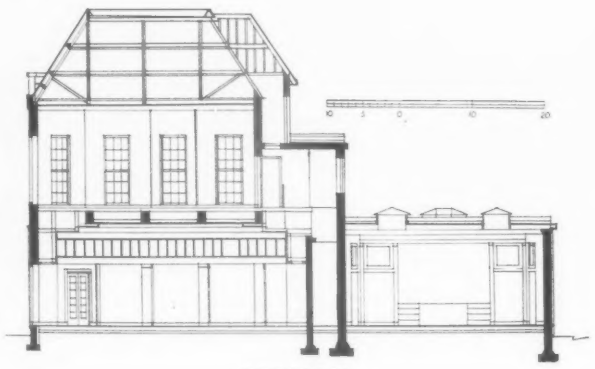
FIRST FLOOR PLAN



GROUND FLOOR PLAN

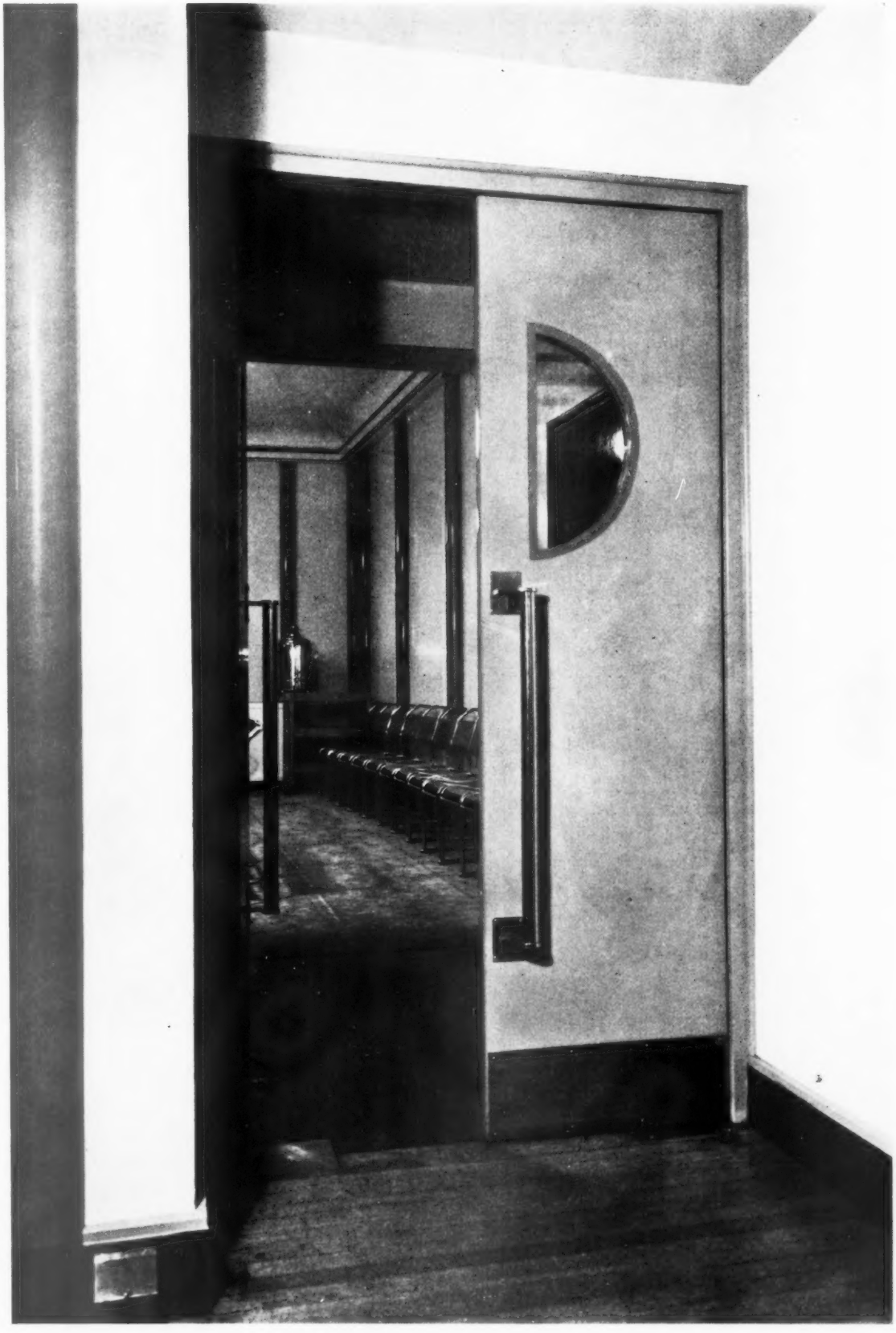
PLAN — *The accommodation required included: a showroom, a demonstration theatre, and an office. The clients desired that the office should be planned above the showroom and that the demonstration theatre should be entered through the showroom. A separate entrance has been provided for the staff.*

INTERNAL FINISHES — *The showroom ceiling is faced with glass in three levels; centre portion, pale blue; middle ring, grey; outer ring, pale yellow. It is illuminated by concealed trough lighting and four gas pendants. The walls are coloured pale yellow, the columns bright red, and the cornice is picked out in bright red. The demonstration theatre ceiling is of plaster, coloured neutral with two ventilating laylights and four gas pendants with vents over. The walls are of a neutral tint with pale green columns. The cornice is grey, picked out in red. The walls of the office are finished in cream. Above is a view in the showroom. For list of general and sub-contractors,* *see page 1103.*

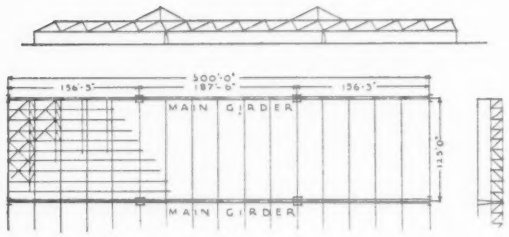


SECTION

DESIGNED BY WELCH AND LANDER



A view from the foyer to the demonstration theatre, showing part of the theatre.



TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

An All-Welded Factory

SINCE the Murex people make welding electrodes it would be only natural to assume that they would use welding freely when doing a job for themselves, and sure enough they have taken their own medicine, not only at their old factory (now too small) at Walthamstow, but also on their new job at Waltham Cross, which is due to be completed early in the New Year.

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The main features of the structure are shown in the accompanying part general arrangement drawing, and the design of the steelwork will be seen to be definitely unorthodox. The primary consideration was the provision of the maximum possible unobstructed floor space. A number of schemes were considered, but a design with only four internal columns was finally adopted as being the most practical and economical. The factory at present covers an area of 4½ acres in a rectangular block 500 ft. by 375 ft., and provision is made for future extensions in two directions.

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The purlins, which are 3 ins. by 2½ ins. by ¼ in. angles, are carried on joist rakers spaced at 12 ft. 6 ins. centres. These were preferred to the more usual lattice trusses as giving a lighter structure, as well as dispensing with the unsightly maze of light internal members often seen on this type of job. The ends of these joist rakers are carried on 125-ft. span lattice girders, spaced at 31 ft. 6 ins. centres and weighing approximately 4½ tons each. These girders have their axes inclined at 66 deg. to the vertical, so as to lie in the same plane as the ¼ in. wired glazing. The rest of the roof is covered with corrugated asbestos cement sheeting lined with Celotex board. Running the entire length of the structure, and carrying the ends of these lattice girders, are three main girders each 500 ft. long and weighing approximately 70 tons. These are designed to be continuous over two intermediate supports, and in order to take care of the large positive bending moments, the effective depth of the girder is increased at these intermediate supports by the addition of the hump. The total weight of steelwork in the structure is approximately 850 tons, giving a weight of 10 lbs. of steel per sq. ft. of floor space.

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The welding throughout, in the shops and on the site, was done by the electric arc process, using Murex welding plant and Ironex electrodes. Some idea of the speed of working by this method is given by the fact that the light secondary girders (of which there are 48 in the structure) were turned out at the rate of three per week by a gang of three welders and four erectors, from cut lengths delivered on site. The welding of these girders was carried out on a 125-ft. jig. The steelwork design is by Mr. E. S. Needham. (*Murex Welding Processes, Ltd., Ferry Lane Works, Forest Road, Walthamstow, London, E.17.*)

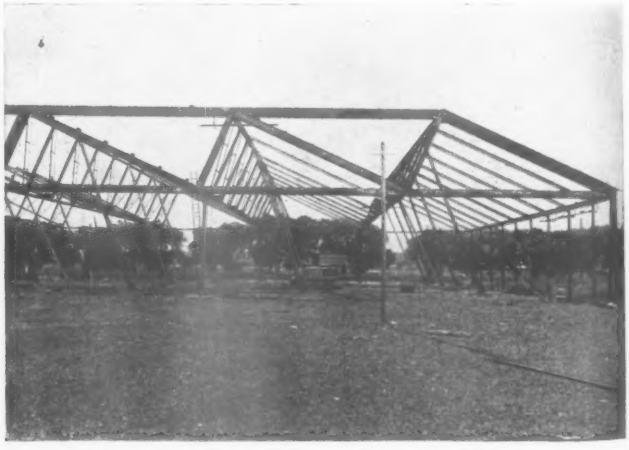
Stuffiness in Rooms

A fortnight ago I asked what caused stuffiness and general discomfort in rooms where no form of heating was installed, and my question has brought a reply from Sir Leonard Hill, whose letter is printed in full below :—

Feelings of closeness and malaise in rooms are due to the physical qualities of the environment and particularly to the quality of the dark heat rays which are given off by sources of dark and dull red heat and by human bodies, this quality being unrelieved by cool moving air. Dark heat rays do not penetrate, but warm the surface of the skin. Thence heat is conducted into the superficial nerve endings of the epidermis and to the blood circulating in the capillaries of the derma. The effect of such rays is to produce a stuffy feeling and to cause reflexly, by way of the nerves, some congestion and swelling of the mucous membrane of the airways and sinuses of the nose (hence the stuffiness felt in the head), and of the air-tubes of the lungs.

If one comes in from the fresh air outside and goes near a source of dull red or dark heat rays, the face feels a dry, taut and uncomfortable sensation of heat. Cool moving air at once sets these feelings aside and relieves the reflex narrowing of the air-ways. Bright sources of heat give off in addition to dark heat, visible and short infra-red rays, and these penetrate the epidermis and reach the blood circulating in the derma. The red and the short infra red rays pass through the derma and are absorbed by somewhat deeper tissues. If a glow lamp be held in the mouth while one stands in front of a mirror in a dark room, a faint red glare will be seen on the cheek : this signifies a penetration of about 5 mm. Such penetrating rays excite flushing and transudation of moisture, and thus cause a pleasant sensation of warmth.

In the case of some people a bright source of heat counteracts the stuffy effect of a dark source just as cool air does. People vary, some disliking a heated closed railway carriage and wanting a window open, others liking the warmth and wishing the windows shut. To make rooms feel fresh there must be enough cool moving air to counteract the effect of dark heat. There must, of course, not be any sensible draught. Ventilation carries away infecting microbes exhaled by people and lessens the dust stirred up in rooms. For these reasons, also, it is needed. The malaise felt in crowded, ill-ventilated rooms has nothing to do with the chemical quality of the air. There is never any excess of carbondioxide or deficiency of oxygen which matters, and there are no poisonous substances given off by humans. Rooms must of course be kept free from smell, but it is worth noting that Eskimos live healthily in igloos wherein the stench of unwashed bodies and furs and of blubber and entrails of seals is such as to make a white man vomit. But when accustomed to this he, too, is glad to share in the warmth; the cold walls, of course, prevent any stuffiness due to dark heat.



***A steelwork plan** (headpiece) and two views of the main girders being erected for the new Murex factory. Overall dimensions are 500 ft. by 375 ft., with only four internal columns. See note on this page.*

Without a precise definition of "sources of dark and dull red heat" it is perhaps unwise to be too emphatic, but it would seem that the only heat sources which would meet with Sir Leonard's full approval are the coal or gas fire or the bright electric fire, and that all forms of low temperature convected heating are undesirable. But note that "a bright source of heat counteracts the stuffy effect of a dark source just as cool air does." Is this the reason for the amber panels in so many flueless gas heaters? They cannot give out very much heat, or rather I imagine that the amount given out is small compared with the amount convected; is the effect partly psychological or must the bright heat source be fairly large compared with the dark heat? One hears complaints from English people about the stuffiness of American central heating, but this is generally assumed to be due to lack of humidity and also to the fact that Americans seem to like an indoor temperature of about 70 deg. F. during the winter. (Hence, I suppose, raccoon and camel coats.)

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We seem to have wandered rather a long way from the earlier note, but could Sir Leonard perhaps produce clearer definitions and decide exactly what types of heating come up to his requirements and how much bright heat we need to make the dark heat systems bearable?

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 MILES RADIUS)

ACTON. *Factories, etc.* Plans passed by the Acton Corporation: Factory, Adelaide Grey Ltd., Bollo Bridge Road, Percy Pratt and Blount; factory, Brunel Road, and Telford Way, Hillier, Parker, May and Rowden: 19 houses, Cloister Road, Mr. G. L. Russel.

CHELSEA. *Housing.* The Chelsea B.C. has approved a scheme by Mr. E. W. Armstrong, architect, for the redevelopment of the Onslow housing site at a cost of £59,000.

CHELSEA. *Flats.* The Chelsea B.C. has approved plans by Mr. Alan Marlow, for the erection of 18 flats on the sites of 21 to 24, Chesham Place.

EALING. *Flats, etc.* Plans passed by the Ealing Corporation: 40 flats, Beverley Gardens, Western Avenue, R. Lancaster and Sons; 28 houses, Birkbeck Avenue, B. Smith and Son (Builders), Ltd.; 27 flats, Hanger Lane, Messrs. Anns and Haigh; 35 houses, Castle Road, and 50 houses Clayton Farm Estate, Swannell and Sly; 74 houses, Laughton Road, Henry Boot (Garden Estates), Ltd.; 28 flats, Woodville Gardens, The Great Western Land Co.; 11 blocks of flats, Oldfield Lane, R.S.P. Properties, Ltd. (architect, Mr. F. H. Shearley); 12 flats, Ravenor Park Road, Barr and Mead; two blocks of flats (10 flats), Oldfield Lane, W. H. Read & Co., Ltd.

HACKNEY. *Housing.* The Hackney B.C. is to acquire a site in Homerton High Street at a cost of £80,200, for a housing scheme.

EASTERN COUNTIES

NORWICH. *Offices, etc.* The Norwich Corporation has approved plans by Messrs. C. H. James and S. Rowland Pierce, for the provision of office accommodation and the tuberculosis clinic for the Health Department on the City Hall site, at a total estimated cost of £49,708.

SOUTHERN COUNTIES

CROYDON. *School.* The Croydon Education Committee is to erect a school for 300 junior and infant children on the First National Housing Trust Estate, Lodge Lane.

CROYDON. *School Extensions.* The Croydon Education Committee is to prepare plans for school extensions at a total cost of £35,068.

DARTFORD. *Houses, etc.* Plans passed by the Dartford Corporation: 170 houses, off Francis Road, Mr. P. C. Brazier; nine houses, Wentworth Drive, R.E.M. Building Co.; eight houses, Wentworth Drive, Messrs. J. B. Heale & Co.; 12 houses, Chastilian Road, Mr. H. C. Wright; 42 houses, West Hill Drive, J. R. Davies, Ltd.

EAST BEDFONT. *Children's Homes.* The Middlesex C.C. is to erect a group of children's homes in Hatton Road, East Bedfont, at a cost of £13,000.

HANLEY. *Houses.* Plans passed at Hanley: 40 houses, Queen's Road, for Messrs R. Ray and Sons; 12 houses, Etruria Vale, for Mr. G. H. Wignall.

HARROW. *School.* The Middlesex Education Committee is to erect an elementary school in Hatch End, Harrow.

HAYES. *Clinic, etc.* The Middlesex C.C. has purchased a site for a school clinic and maternity and child welfare centre in Judge Heath Lane, Hayes.

HILLINGDON. *Hospital Extensions.* The Middlesex C.C. has approved proposals for extensions at the Hillingdon County Hospital at an estimated cost of £721,000.

MUNDESLEY. *Children's Home.* The Middlesex C.C. is to acquire and adapt Clarance Hotel, Mundesley-on-Sea, as a convalescent home for children at a cost of £10,000.

SOUTHAMPTON. *Convalescent Home.* The Middlesex C.C. has prepared a scheme for the provision of a convalescent home at Netley Castle, Southampton, at a cost of £28,000.

SOUTHGATE. *Shops, etc.* Plans passed by the Southgate Corporation: 12 shops with 12 maisonettes, Chase Side, Marshall and Tweedy; 64 flats, Eversley Park Road, Mr. A. E. Moffatt; 30 houses, Bramley Road, Cockfosters, Mr. C. E. Ward; flats, Avenue House, Chase Side, Mr. O. Law; 12 flats, "The Orchard," Farm Road, Mr. J. R. Scarborough.

SOUTH MIMMS. *School.* The Middlesex Education Committee has purchased land in Mutton Lane, South Mimms, for the erection of a secondary school.

SWANSCOMBE. *Houses.* The Swanscombe U.D.C. is to erect, by direct labour, 26 houses on the Knockhall Lodge site at an estimated cost of £9,100.

WEST MIDDLESEX. *Hospital Enlargements.* The Middlesex C.C. has approved plans by the county architect for the enlargement of the West Middlesex County Hospital at an estimated cost of £234,761.

MIDLAND COUNTIES

BARNSLEY. *Houses.* The Barnsley Corporation has approved plans by the borough surveyor for the erection of 152 houses on the California Gardens Estate.

BRADFORD. *School.* The Bradford Corporation has agreed to lend £37,000 to the governors of the Bradford Grammar School, for the erection of new premises.

BRADFORD. *Houses.* The Bradford Corporation has approved plans by the City Architect for the erection of ten houses at White Abbey Road.

BRADFORD. *Housing.* The Bradford Corporation has approved an amended plan by the City Architect for the erection of 64 dwellings on the Broomfields area.

STOKE-ON-TRENT. *Cinema.* A scheme has been prepared on behalf of Mr. E. Pointon for the erection of a cinema in Stone Road, Trent Vale, Stoke-on-Trent.

WOLVERHAMPTON. *Houses, etc.* Plans passed by the Wolverhampton Corporation: 30 houses, off Church Road, Oxley; 24 houses, Spring Hill Estate, W. Bannister & Co.; 161 houses, Hollybush Estate, A. M. Griffiths and Son, Ltd.; 14 houses, Gibbons Road, Brookes and Edwards; 72 houses, Rake Gate Farm Estate, Oxley Moor Road, Mr. E. A. Colman.

NORTHERN COUNTIES

CARLISLE. *Hospital Alterations.* The Carlisle Corporation has approved plans for alterations at the City General Hospital, at a cost of £14,000.

CARLISLE. *Community Hall, Extensions, etc.* The Carlisle Corporation has approved plans for extensions to the Community Hall at Heysham Park, and the conversion of the hall into a community centre, at an estimated cost of £6,897.

CARLISLE. *Houses.* Plans passed by the Carlisle Corporation: 24 houses, Uldale Road, Mr. H. Irving Graham; 58 houses, Currock Bank Estate, Border Engineering Co., Ltd.

CHESTER. *Schools.* The Chester Education Committee has approved plans by the City Surveyor for the erection of a senior school for boys on the Lache Estate, and the conversion of Love Street Council School into a mixed senior school.

CHESTER. *Houses.* Plans passed by the Chester Corporation: 17 houses, Western Avenue, Blacon Point, Thos. B. Gorst and Sons.

COLNE. *School.* The Lancashire Education Committee has obtained sanction to borrow £52,411 for the erection of new premises for the Colne Grammar School.

DARLINGTON. *School Enlargements.* The Darlington Education Committee is to enlarge the Eastbourne Senior School at a cost of £30,336.

THE BUILDINGS ILLUSTRATED

SHOP, DEMONSTRATION THEATRE, AND OFFICES, EDGWARE (pages 1099–1101). Architects: Welch and Lander. The general contractors were Commercial Structures, Ltd., and the sub-contractors and suppliers included: Portland Stone Co., stone; Fenning & Co., Ltd., granite: Redpath, Brown & Co., Ltd., structural steel: Field and Palmer, "Macflex" roofing; Pugh Bros., Vitrolite glass; Haywards, Ltd., patent glazing; Caxton Floors, patent flooring: Thomas Potterton (Heating Engineers), Ltd., central heating and boilers; Bratt Colbran, Ltd., stoves; Gas Light and Coke Co., stoves, grates, gas fixtures and gasfitting; Alpha Manufacturing and Electrical Co., Ltd., electric wiring; Speirs & Co., sanitary fittings, door furniture and window furniture; Fred Hodge, Ltd., tiling; Peerless Kitchen Cabinets, furniture (kitchen equipment); Courtney, Pope & Co., Ltd., and Haskins, shop fittings; E. Pollard & Co., Ltd., signs.

HOUSE AT EFFINGHAM, SURREY (pages 1083-1084). Architect: R. T. Westendarp. The general contractors were E. H. Cummins & Co., Ltd., who were also responsible for the plumbing and plaster. Waldo Maitland, lighting consultant. The principal sub-contractors and suppliers included: D. Anderson and Son, Ltd., dampcourses (Baseite); London Brick Co., bricks (Phorpres rustic facings); Dorking Brick Co., bricks (plinth); Sussex Brick Co., tiles; Hooper and Ashby, tiling; C. Collin, Ltd., glass; Hollis Bros. & Co., flooring (oak strip); Redfern's Rubber Works, Ltd., patent flooring (rubber floors, kitchen, service and bathrooms), and stairtreads: Aga Heat, Ltd., stoves (cooker); Candy & Co., Ltd., grates (Devon fires); Ideal Boilers and Radiators, Ltd., boilers and radiators; Frank Johnson & Co. (Worcester Park), Ltd., electric wiring; Allom Bros., Ltd., Best and Lloyd, Ltd., and C. Harvey & Co., electric light fixtures; Ferranti, Ltd., electric heating (built-in fire in study); Dent and Hellyer, Ltd., and W. N. Froy and Sons, Ltd., sanitary fittings; Garton and Thorne, Ltd., door furniture (also handrail and w.i. grille), and metalwork; Crittall Manufacturing Co., Ltd., casements; G.P.O. Telephones, telephones (also private lines to office); J. Dean, sunblinds; Wood Processes, Ltd., joinery (flush doors); Richards Tiles, Ltd., tiling; O. C. Hawkes, Ltd., mirrors; D. Burkle and Son, Ltd., furniture.

RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule. Column I gives the rates for craftsmen; Column II for labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

			I. s. d.	II. s. d.
A	ABERDARE ...	S. Wales & M.	1 7	1 2½
A	Aberdeen ...	Scotland	1 7	1 2½
A_1	Abergavenny ...	S. Wales & M.	1 6½	1 2
A_3	Abingdon ...	S. Counties	1 5½	1 1½
A	Accrington ...	N.W. Counties	1 7	1 2½
A_2	Addlestone ...	S. Counties	1 6	1 1½
A	Adlington ...	N.W. Counties	1 7	1 2½
A	Airdrie ...	Scotland	*1 7	1 2½
C	Aldeburgh ...	E. Counties	1 3	0 11½
A	Altrincham ...	N.W. Counties	1 7	1 2½
B_3	Appleby ...	N.W. Counties	1 5½	0 11½
A	Ashton-under-Lyne	N.W. Counties	1 7	1 2½
B	Aylesbury ...	S. Counties	1 5	1 0½
B	BANBURY ...	S. Counties	1 5	1 0½
B_1	Bangor ...	N.W. Counties	1 4½	1 0½
A_3	Barnard Castle	N.E. Coast	1 5½	1 1½
A	Barnsley ...	Yorkshire	1 7	1 2½
B	Barnstaple ...	S.W. Counties	1 5	1 0½
A	Barrow ...	N.W. Counties	1 7	1 2½
A	Barry	S. Wales & M.	1 7	1 2½
B	Basingstoke ...	S.W. Counties	1 5	1 0½
A_3	Bath	S.W. Counties	1 6	1 1½
A	Batley ...	Yorkshire	1 7	1 2½
A_3	Bedford ...	E. Counties	1 6	1 1½
A_3	Berwick-on-Tweed	N.E. Coast	1 6	1 1½
A_3	Bewdley ...	Mid. Counties	1 6	1 1½
B	Bicester ...	S. Counties	1 5	1 0½
	Birkenhead ...	N.W. Counties	*1 8	1 3
A	Birmingham ...	Mid. Counties	1 7	1 2½
A_1	Bishop Auckland	N.E. Coast	1 6½	1 2
A	Blackburn ...	N.W. Counties	1 7	1 2½
A	Blackpool ...	N.W. Counties	1 7	1 2½
A	Blyth	N.E. Coast	1 7	1 2½
B	Bognor ...	S. Counties	1 5	1 0½
A	Bolton... ...	N.W. Counties	1 7	1 2½
A_3	Boston ...	Mid. Counties	1 5½	1 1½
A_3	Bournemouth...	S. Counties	1 6	1 1½
B_3	Bovey Tracey	S.W. Counties	1 4	1 0
A	Bradford ...	Yorkshire	1 7	1 2½
A_1	Brentwood ...	E. Counties	1 6½	1 2
A	Bridgend ...	S. Wales & M.	1 7	1 2½
B	Bridgwater ...	S.W. Counties	1 5	1 0½
A_1	Bridlington ...	Yorkshire	1 6½	1 2
A	Brighouse ...	Yorkshire	1 7	1 2½
A	Brighton ...	S. Counties	1 6	1 1½
A	Bristol... ...	S.W. Counties	1 7	1 2½
B	Brixham ...	S.W. Counties	1 5	1 0½
A	Bromsgrove ...	Mid. Counties	1 7	1 2½
B	Bromyard ...	Mid. Counties	1 5	1 0½
A	Burnley ...	N.W. Counties	1 7	1 2½
A	Burslem ...	Mid. Counties	1 7	1 2½
A	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury	N.W. Counties	1 7	1 2½
A_1	Buxton ...	N.W. Counties	1 6½	1 2
A_1	CAMBRIDGE	E. Counties	1 6½	1 2
B_3	Canterbury ...	S. Counties	1 4½	1 0½
A	Cardiff... ...	S. Wales & M.	1 7	1 2½
A	Carlisle ...	N.W. Counties	1 7	1 2½
B	Carmarthen ...	S. Wales & M.	1 5	1 0½
B	Carnarvon ...	N.W. Counties	1 5	1 0½
A_1	Carnforth ...	N.W. Counties	1 7	1 2½
A	Castleford ...	Yorkshire	1 7	1 2½
A_3	Chatham ...	S. Counties	1 5½	1 1½
A_3	Chelmsford ...	E. Counties	1 5½	1 1½
A_3	Cheltenham ...	S.W. Counties	1 5½	1 1½
A	Chester ...	N.W. Counties	1 7	1 2½
A	Chesterfield ...	Mid. Counties	1 7	1 2½
B	Chichester ...	S. Counties	1 5	1 0½
A	Chorley ...	N.W. Counties	1 7	1 2½
B_1	Cirencester ...	S. Counties	1 4½	1 0½
A	Clitheroe ...	N.W. Counties	1 7	1 2½
A	Clydebank ...	Scotland	1 7	1 2½
A	Coalville ...	Mid. Counties	1 7	1 2½
A_3	Colchester ...	E. Counties	1 6	1 1½
A_1	Colne	N.W. Counties	1 6½	1 2
A_3	Colwyn Bay ...	N.W. Counties	1 6	1 1½
A_1	Consett ...	N.E. Coast	1 6½	1 2
A_3	Conway ...	N.W. Counties	1 6	1 1½
A	Coventry ...	Mid. Counties	1 7	1 2½
A_3	Crewe	N.W. Counties	1 6	1 1½
A_3	Cumberland ...	N.W. Counties	1 5½	1 1½
A	DARLINGTON	N.E. Coast	1 7	1 2½
A	Darwen ...	N.W. Counties	1 7	1 2½
B_1	Deal	S. Counties	1 4½	1 0½
A_3	Denbigh ...	N.W. Counties	1 5½	1 1½
A	Derby	Mid. Counties	1 7	1 2½
A	Dewsbury ...	Yorkshire	1 7	1 2½
B	Didcot... ...	S. Counties	1 5	1 0½
A	Doncaster ...	Yorkshire	1 7	1 2½
B_1	Dorchester ...	S.W. Counties	1 4½	1 0½
A_3	Driffield ...	Yorkshire	1 5½	1 1½
A_3	Droitwich ...	Mid. Counties	1 6	1 1½
A	Dudley ...	Mid. Counties	1 7	1 2½
A_3	Dumfries ...	Scotland	1 6	1 1½
A	Dundee ...	Scotland	1 7	1 2½
A	Durham ...	N.E. Coast	1 7	1 2½
A_2	EASTBOURNE	S. Counties	1 6	1 1½
A_1	Ebbw Vale ...	S. Wales & M.	1 6½	1 2
A	Edinburgh ...	Scotland	1 7	1 2½
A_2	Exeter... ...	S.W. Counties	*1 6	1 1½
B	Exmouth ...	S.W. Counties	1 5	1 0½
A_2	FELIXSTOWE	E. Counties	1 5½	1 1½
A_3	Filey	Yorkshire	1 5½	1 1½
A	Fleetwood ...	N.W. Counties	1 7	1 2½
B_1	Folkestone ...	S. Counties	1 4½	1 0½
A	Frodsham ...	N.W. Counties	1 7	1 2½
B_2	Frome	S.W. Counties	1 4	1 0
A	GATESHEAD	N.E. Coast	1 7	1 2½
B	Gillingham ...	S. Counties	1 5	1 0½
A_1	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6½	1 2
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 6	1 1½
A_2	Goole	Yorkshire	1 6	1 1½
A_2	Gosport ...	S. Counties	1 6	1 1½
A_3	Grantham ...	Mid. Counties	1 5½	1 1½
A_1	Gravesend ...	S. Counties	1 6½	1 2
A	Greenock ...	Scotland	*1 7	1 2½
A	Grimsby ...	Mid. Counties	1 7	1 2½
B	Guildford ...	S. Counties	1 5	1 0½
A	HALIFAX ...	Yorkshire	1 7	1 2½
A	Hanley ...	Mid. Counties	1 7	1 2½
A	Harrogate ...	Yorkshire	1 7	1 2½
A	Hartlepools ...	N.E. Coast	1 7	1 2½
B	Harwich ...	E. Counties	1 5	1 0½
B	Hastings ...	S. Counties	1 5	1 0½
A_2	Hatfield ...	S. Counties	1 6	1 1½
B	Hereford ...	S.W. Counties	1 5	1 0½
A_2	Hertford ...	E. Counties	1 6	1 1½
A	Heysham ...	N.W. Counties	1 7	1 2½
A	Howden ...	N.E. Coast	1 7	1 2½
A	Huddersfield ...	Yorkshire	1 7	1 2½
A	Hull	Yorkshire	1 7	1 2½
A	ILKLEY ...	Yorkshire	1 7	1 2½
A	Immingham ...	Mid. Counties	1 7	1 2½
A_2	Ipswich ...	E. Counties	1 6	1 1½
B_2	Isle of Wight ...	S. Counties	1 4	1 0
A	JARROW ...	N.E. Coast	1 7	1 2½
A	KEIGHLEY ...	Yorkshire	1 7	1 2½
A_2	Kendal ...	N.W. Counties	1 5½	1 1½
A_2	Keswick ...	N.W. Counties	1 5½	1 1½
A_1	Kettering ...	Mid. Counties	1 6½	1 2
A_2	Kidderminster	Mid. Counties	1 6	1 1½
B_1	King's Lynn ...	E. Counties	1 4½	1 0½
A	LANCASTER ...	N.W. Counties	1 7	1 2½
A_1	Leamington ...	Mid. Counties	1 6½	1 2
A	Leeds	Yorkshire	1 7	1 2½
A	Leek	Mid. Counties	1 7	1 2½
A	Leicester ...	Mid. Counties	1 7	1 2½
A	Leigh	N.W. Counties	1 7	1 2½
B	Lewes	S. Counties	1 5	1 0½
A	Lichfield ...	Mid. Counties	1 6	1 1½
A	Lincoln ...	Mid. Counties	1 7	1 2½
	Liverpool ...	N.W. Counties	*1 8½	1 3½
A_2	Llandudno ...	N.W. Counties	1 6	1 1½
A	Llanelly ...	S. Wales & M.	1 7	1 2½
	London (12-miles radius)		1 8½	1 3½
	Do. (12-15 miles radius)		1 8	1 3
A	Long Eaton ...	Mid. Counties	1 7	1 2½
A	Loughborough ...	Mid. Counties	1 7	1 2½
A_1	Luton	E. Counties	1 6½	1 2
A	Lytham ...	N.W. Counties	1 7	1 2½
A_1	MACCLESFIELD	N.W. Counties	1 6½	1 2
A_3	Maidstone ...	S. Counties	1 5½	1 1½
A_3	Malvern ...	Mid. Counties	1 5½	1 1½
A	Manchester ...	N.W. Counties	1 7	1 2½
A	Mansfield ...	Mid. Counties	1 7	1 2½
B_1	Margate ...	S. Counties	1 4½	1 0½
A_2	Matlock ...	Mid. Counties	1 5½	1 1½
A_1	Merthyr ...	S. Wales & M.	1 6½	1 2
A	Middlesbrough	N.E. Coast	1 7	1 2½
A_2	Middlewich ...	N.W. Counties	1 6	1 1½
B_2	Minehead ...	S.W. Counties	1 4	1 0
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 4	1 0
A	Morecambe ...	N.W. Counties	1 7	1 2½
A_2	NANTWICH ...	N.W. Counties	1 6	1 1½
A	Neath	S. Wales & M.	1 7	1 2½
A	Nelson... ...	N.W. Counties	1 7	1 2½
A	Newcastle ...	N.E. Coast	1 7	1 2½
A	Newport ...	S. Wales & M.	1 7	1 2½
A	Normanton ...	Yorkshire	1 7	1 2½
A	Northampton	Mid. Counties	1 7	1 2½
A	North Shields...	N.E. Coast	1 7	1 2½
A	North Staffs ...	Mid Counties	1 7	1 2½
A_1	Norwich ...	E. Counties	1 6½	1 2
A	Nottingham ...	Mid. Counties	1 7	1 2½
A	Nuneaton ...	Mid. Counties	1 7	1 2½
A_2	OAKHAM ...	Mid. Counties	1 6½	1 1½
A	Oldham ...	N.W. Counties	1 7	1 2½
A_2	Oswestry ...	N.W. Counties	1 5½	1 1½
A_1	Oxford ...	S. Counties	1 6½	1 2
A	PAISLEY ...	Scotland	*1 7	1 2½
B_3	Pembroke ...	S. Wales & M.	1 3½	0 11½
A	Perth	Scotland	*1 7	1 2½
A_1	Peterborough	E. Counties	1 6½	1 2
A	Plymouth ...	S.W. Counties	*1 7	1 2½
A	Pontefract ...	Yorkshire	1 7	1 2½
A_1	Pontypridd ...	S. Wales & M.	1 6½	1 2
A_2	Portsmouth ...	S. Counties	1 6	1 1½
A	Preston ...	N.W. Counties	1 7	1 2½
A	QUEENSFERRY	N.W. Counties	1 7	1 2½
A_2	READING ...	S. Counties	1 6½	1 2
B	Reigate ...	S. Counties	1 5½	1 1½
A_2	Retford ...	Mid. Counties	1 5½	1 1½
A_1	Rhondda Valley	S. Wales & M.	1 6½	1 2
A_3	Ripon	Yorkshire	1 5½	1 1½
A	Rochdale ...	N.W. Counties	1 7	1 2½
B	Rochester ...	S. Counties	1 5	1 0½
A_1	Ruabon ...	N.W. Counties	1 6½	1 2
A	Rugby ...	Mid. Counties	1 7	1 2½
A_2	Rugeley ...	Mid. Counties	1 6	1 1½
A	Runcorn ...	N.W. Counties	1 7	1 2½
A_1	ST. ALBANS ...	E. Counties	1 6½	1 2
A	St. Helens ...	N.W. Counties	1 7	1 2½
B_2	Salisbury ...	S.W. Counties	1 3½	0 11½
A_1	Scarborough ...	Yorkshire	1 6½	1 2
A	Scunthorpe ...	Mid. Counties	1 7	1 2½
A	Sheffield ...	Yorkshire	1 7	1 2½
A	Shipley ...	Yorkshire	1 7	1 2½
A_3	Shrewsbury ...	Mid. Counties	1 6	1 1½
A_2	Skipton ...	Yorkshire	1 6	1 1½
A_2	Slough ...	S. Counties	1 6	1 1½
A_1	Solihull ...	Mid. Counties	1 6½	1 2
A_3	Southampton ...	S. Counties	1 6	1 1½
A_1	Southend-on-Sea	E. Counties	1 6½	1 2
A	Southport ...	N.W. Counties	1 7	1 2½
A	S. Shields ...	N.E. Coast	1 7	1 2½
A_1	Stafford ...	Mid. Counties	1 6½	1 2
A	Stirling ...	Scotland	1 7½	1 2½
A	Stockport ...	N.W. Counties	1 7	1 2½
A	Stockton-on-Tees	N.E. Coast	1 7	1 2½
A	Stoke-on-Trent	Mid. Counties	1 7	1 2½
B	Stroud ...	S.W. Counties	1 5	1 0½
A	Sunderland ...	N.E. Coast	1 7	1 2½
A	Swansea ...	S. Wales & M.	1 7	1 2½
A_3	Swindon ...	S.W. Counties	1 5½	1 1½
A_1	TAMWORTH ...	N.W. Counties	1 6½	1 2
B	Taunton ...	S.W. Counties	1 5	1 0½
A	Teeside Dist. ...	N.E. Coast	1 7	1 2½
A_2	Teignmouth ...	S.W. Counties	1 6	1 1½
A	Todmorden ...	Yorkshire	1 7	1 2½
A_1	Torquay ...	S.W. Counties	1 6½	1 2
B_2	Truro	S.W. Counties	1 4	1 0
A_3	Tunbridge Wells	S. Counties	1 5½	1 1½
A	Tunstall ...	Mid. Counties	1 7	1 2½
A	Tyne District...	N.E. Coast	1 7	1 2½
A	WAKEFIELD	Yorkshire	1 7	1 2½
A	Walsall ...	Mid. Counties	1 7	1 2½
A	Warrington ...	N.W. Counties	1 7	1 2½
A_1	Warwick ...	Mid. Counties	1 6½	1 2
A_1	Wellingborough	Mid. Counties	1 6½	1 2
A	West Bromwich	Mid. Counties	1 7	1 2½
A_2	Weston-s.-Mare	S.W. Counties	1 6	1 1½
A_2	Whitby ...	Yorkshire	1 6	1 1½
A	Widnes ...	N.W. Counties	1 7	1 2½
A	Wigan ...	N.W. Counties	1 7	1 2½
B	Winchester ...	S. Counties	1 5	1 0½
A_2	Windsor ...	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 7	1 2½
A_3	Worcester ...	Mid. Counties	1 6	1 1½
A_3	Worksop ...	Yorkshire	1 5½	1 1½
A_1	Wrexham ...	N.W. Counties	1 6½	1 2
A_3	Wycombe ...	S. Counties	1 5½	1 1½
B	YARMOUTH ...	E. Counties	1 5	1 0½
B	Yeovil ...	S.W. Counties	1 5	1 0½
A	York ...	Yorkshire	1 7	1 2½

* In these areas the rates of wages for certain trades (usually painters and plasterers) vary slightly from those given.

The rates for every trade in any given area will be sent on request. The rates of wages have been revised consequent upon the increase in wages which came into operation on February 1, together with all revisions following authorised annual regradings.

CURRENT PRICES

The wages are the standard Union rates of wages payable in London at the time of publication. The prices given below are for materials of good quality and include delivery to site in Central London area, unless otherwise stated. For delivery outside this area, adjustment should be made for the cost of transport. Though every care has been taken in its compilation, it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry. The whole of the information given is copyright.

WAGES

	£ s. d.
Bricklayer . . . . . per hour	1 8½
Carpenter . . . . . ,,	1 8½
Joiner . . . . . ,,	1 8½
Machinist . . . . . ,,	1 9½
Mason (Banker) . . . . . ,,	1 8½
,, (Fixer) . . . . . ,,	1 9½
Plumber . . . . . ,,	1 8½
Painter . . . . . ,,	1 7½
Paperhanger . . . . . ,,	1 7½
Glazier . . . . . ,,	1 8½
Slater . . . . . ,,	1 8½
Scaffolder . . . . . ,,	1 4½
Timberman . . . . . ,,	1 4½
Navvy . . . . . ,,	1 3½
General Labourer . . . . . ,,	1 3½
Lorryman . . . . . ,,	1 6½
Crane Driver . . . . . ,,	1 7½
Watchman . . . . . per week	2 10 0

MATERIALS

EXCAVATOR AND CONCRETOR

	£ s. d.
Grey Stone Lime . . . . . per ton	2 2 0
Blue Lias Lime . . . . . ,,	1 18 6
Hydrated Lime . . . . . ,,	2 6 0
Portland Cement, in 4-ton lots (d/d site, including Paper Bags) . . ,,	2 2 0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags) . ,,	2 8 0
White Portland Cement, in 1-ton lots ,,	8 15 0
Thames Ballast . . . . . per Y.C.	6 6
¾" Crushed Ballast . . . . . ,,	7 0
Building Sand . . . . . ,,	7 6
Washed Sand . . . . . ,,	8 6
2" Broken Brick . . . . . ,,	8 0
½" ,, ,, ... ,,	10 3
Pan Breeze . . . . . ,,	6 6
Coke Breeze . . . . . ,,	8 9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4"		6"	
		s.	d.	s.	d.
Straight Pipes . . .	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends . . .	,,	3	6	5	3
Rest Bends . . .	,,	4	3	6	3
Single Junctions . .	,,	3	6	5	3
Double	,,	4	9	6	6
Straight channels . .	per F.R.	1	6	2	6
¾" Channel bends . .	each	2	9	4	0
Channel junctions . .	,,	4	6	6	6
Channel tapers . . .	,,	2	9	4	0
Yard gullies . . .	,,	6	9	8	9
Interceptors . . .	,,	16	0	19	6
IRON DRAINS :					
Iron drain pipe . . .	per F.R.	2	3	3	8
Bends	each	6	4	13	1
Inspection bends . .	,,	11	5	14	4
Single junctions . .	,,	11	2	22	10
Double junctions . .	,,	17	2	30	9
Lead Wool	lb.		6		—
Gaskin	,,		5		—

BRICKLAYER

	£ s. d.
Flettons . . . . . per M.	2 12 0
Grooved do. . . . . ,,	2 14 0
Phorpres bricks . . . . ,,	2 15 0
,, Cellular bricks . . ,,	2 15 0
Stocks, 1st quality . . ,,	4 11 0
,, 2nd ,, . . . ,,	4 2 6
Blue Bricks, Pressed . . ,,	8 14 0
,, Wirecuts . . ,,	7 12 6
,, Brindles . . ,,	7 0 0
,, Bullnose . . ,,	9 0 0
Red Sand-faced Facings . ,,	6 18 6
Red Rubbers for Arches . ,,	12 . 0 0
Multicoloured Facings . ,,	7 10 0
Luton Facings . . . ,,	7 10 0
Phorpres White Facings . ,,	3 17 3
,, Rustic Facings . ,,	3 12 3
Midhurst White Facings . ,,	4 0 0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality :	
Stretchers . . . . ,,	21 0 0
Headers . . . . ,,	20 10 0
Bullnose . . . . ,,	27 10 0
Double Stretchers . . ,,	29 10 0
Double Headers . . ,,	26 10 0
Glazed Second Quality, *Less* . ,,	1 0 0
,, Buffs and Creams, *Add* . ,,	2 0 0
,, Other Colours . . ,,	5 10 0
2" Breeze Partition Blocks . per Y.S.	1 7
2½" ,, ,, ,, . . ,,	1 10
3" ,, ,, ,, . . ,,	2 1
4" ,, ,, ,, . . ,,	2 6

MASON

The following d/d F.O.R. at Nine Elms :	s. d.
Portland stone, Whitbed . . F.C.	4 4½
,, ,, Basebed . . ,,	4 7½
Bath stone . . . . ,,	2 10
York stone . . . . ,,	6 6
,, ,, Sawn templates . ,,	7 6
,, ,, Paving, 2" . . F.S.	1 8
,, ,, ,, 3" . . ,,	2 6

SLATER AND TILER

First quality Bangor or Portmadoc slates d/d F.O.R. London station :

	£ s. d.
24" × 12" Duchesses . . per M.	28 17 6
22" × 12" Marchionesses . ,,	24 10 0
20" × 10" Countesses . . ,,	19 5 0
18" × 10" Viscountesses . ,,	15 10 0
18" × 9" Ladies . . . ,,	13 17 6
Westmorland green (random sizes) . per ton	8 10 0
Old Delabole slates d/d in full truck loads to Nine Elms Station :	
20" × 10" medium grey . per 1,000 (actual)	21 11 6
,, ,, green ,, ,,	24 7 4
Best machine roofing tiles . ,, ,,	4 5 0
Best hand-made do. . . ,, ,,	4 17 6
Hips and valleys . . . each	9
,, hand-made . . . ,,	9½
Nails, compo . . . . per lb.	1 4
,, copper . . . . ,,	1 6

CARPENTER AND JOINER

	£ s. d.
Good carcassing timber . . F.C. 2s. 7d.–2	10
Birch . . . . . as 1" F.S.	9
Deal, Joiner's . . . . ,, ,,	5
,, 2nds . . . ,, ,,	4
Mahogany, Honduras . . ,, ,,	1 3
,, African . . . ,, ,,	1 1
,, Cuban . . . ,, ,,	2 6
Oak, plain American . . ,, ,,	1 0
,, Figured ,, . . ,, ,,	1 3
,, plain Japanese . . ,, ,,	1 2
,, Figured ,, . . ,, ,,	1 5
,, Austrian wainscot . . ,, ,,	1 6
,, English . . . ,, ,,	1 11
Pine, Yellow . . . . ,, ,,	1 0
,, Oregon . . . . ,, ,,	4
,, British Columbian . . ,, ,,	4
Teak, Moulmein . . . ,, ,,	1 3
,, Burma . . . . ,, ,,	1 2
Walnut, American . . . ,, ,,	2 3
,, French . . . ,, ,,	2 3
Whitewood, American . . ,, ,,	1 1
Deal floorings, ⅜" . . . Sq.	18 6
,, ½" . . . ,,	1 1 6
,, ¾" . . . ,,	1 2 0
,, 1" . . . ,,	1 5 0
,, 1¼" . . . ,,	1 10 0
Deal matchings, ⅜" . . ,,	14 0
,, ½" . . ,,	15 6
,, ¾" . . ,,	1 4 0
,, 1" . . ,,	16 0
Rough boarding, ¾" . . ,,	18 0
,, 1" . . ,,	1 6 0
,, 1¼" . . ,,	

Plywood per ft. sup. :

Thickness	⅜"			½"			⅝"			¾"		
Qualities	A	B	BB	A	B	BB	A	B	BB	A	B	BB
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder .	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine .	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak .	6½	5	–	7½	5½	–	10	8	–	1/–	9	–

	d.
Scotch glue . . . . . lb.	8

SMITH AND FOUNDER

Tubes and Fittings :

(The following are the standard list prices from which should be deducted the various percentages as set forth below.)

	¼"	½"	1"	1½"	2"
Tubes 2'–14' long per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"–23" long . each	10	1/1	1/11	2/8	4/9
,, 3"–11½" long . ,,	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long ,,	11	1/3	2/2	2/10	5/3
,, ,, 3" M–½" long ,,	8	10	1/5	1/11	3/6
Bends . . . . ,,	8	11	1/7½	2/7½	5/2
Springs not socketed . ,,	5	7	1/1½	1/11½	3/11
Socket unions . . ,,	2/–	3/–	5/6	6/9	10/–
Elbows, square . . ,,	10	1/1	1/6	2/2	4/3
Tees . . . . ,,	1/–	1/3	1/10	2/6	5/1
Crosses . . . . ,,	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples ,,	3	4	6	8	1/3
Diminished sockets . ,,	4	6	9	1/–	2/–
Flanges . . . . ,,	9	1/–	1/4	1/9	2/9
Caps . . . . ,,	3½	5	8	1/–	2/–
Backnuts . . . ,,	2	3	5	6	1/1
Iron main cocks . . ,,	1/6	2/3	4/2	5/4	11/6
,, with brass plugs . ,,	—	4/–	7/6	10/–	21/–

Discounts	Per cent.		Per cent.
TUBES			
Gas . . .	66½	Galvanised gas .	56½
Water . . .	61½	,, water	51½
Steam . . .	58¾	,, steam	46½
FITTINGS			
Gas . . .	57½	Galvanised gas .	48½
Water . . .	53½	,, water	46½
Steam . . .	48¾	,, steam	41½

	s. d.
Rolled steel joists cut to length . . cwt.	15 6
Mild steel reinforcing rods, ¾" . . . ,,	18 0
,, ,, ,, ½" . . . ,,	17 9
,, ,, ,, ⅜" . . . ,,	17 6

SMITH AND FOUNDER—*continued*

	s. d.
Mild steel reinforcing rods, ¾" . . . cwt.	17 6
,, ,, ,, ½" . . . ,,	17 6
,, ,, ,, ⅜" . . . ,,	17 6
,, ,, ,, 1¼" . . . ,,	17 6
,, ,, ,, 1" . . . ,,	17 6

Cast-iron rain-water pipes of ordinary thickness metal . .	3" F.R.	s. d. 1 0	4" F.R.	s. d. 1 3½
Shoes	each	2 0	each	3 0
Anti-splash shoes . .	,,	4 6	,,	8 0
Boots	,,	3 0	,,	4 0
Bends	,,	2 7	,,	3 9
,, with access door .	,,	—	,,	6 3
Heads	,,	4 0	,,	5 0
Swan-necks up to 9" offsets	,,	3 9	,,	6 0
Plinth bends, 4½" to 6" .	,,	3 9	,,	5 3
Half-round rain-water gutters of ordinary thickness metal .	F.R.	5		6
Stop ends	each	6		6
Angles	,,	1 7		1 11
Obtuse angles . . .	,,	2 0		2 6
Outlets	,,	1 9		2 3

PLUMBER

		3"		4"		6"	
						s.	d.
Lead, milled sheets . .	Cwt.					1 7	3
,, drawn pipes . .	,,					1 6	9
,, soil pipes . .	,,					1 9	9
,, scrap . . .	,,					18	0
Solder, plumbers' . .	lb.					1	1½
,, fine do. . .	,,					1	4
Copper, sheet . . .	,,					1	0½
,, tubes. . .	,,					1	2½
L.C.C. soil and waste pipes :							
Plain cast . . .	F.R.	1 0		1 2		2	6
Coated . . .	,,	1 1		1 3		2	8
Galvanized . . .	,,	2 0		2 6		4	6
Holderbats . . .	each	3 10		4 0		4	9
Bends	,,	3 9		5 3		10	3
Shoes	,,	2 10		4 4		9	6
Heads	,,	4 8		8 5		12	9

PLASTERER

	£ s. d.
Lime, chalk . . . . per ton	2 0 0
Plaster, coarse . . . ,,	2 15 0
,, fine . . . . ,,	4 7 6
Hydrated lime . . . ,,	3 0 9
Sirapite . . . . ,,	3 5 0
Keene's cement . . . ,,	5 0 0
Gothite plaster . . . ,,	3 6 0
Pioneer plaster . . . ,,	3 6 0
Thistle plaster . . . ,,	3 6 0
Sand, washed. . . . Y.C.	11 6
Hair . . . . . lb.	6
Laths, sawn . . . . bundle	2 4
,, rent . . . . ,,	3 9
Lath nails . . . . lb.	3

GLAZIER

	s. d.		s. d.
Sheet glass, 24 oz., squares n/e 2 ft.	s. F.S.		2½
,, ,, 26 oz. ,, ,, ,,	,,		3½
Flemish, Arctic, Figures (white)*	,,		7½
Blazoned glasses . .	,,		2 6
Reeded : Cross Reeded .	,,		11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	,,		6½
Crown sheet glass (n/e 12" × 10")	,,		2 0
Flashed opals (white and coloured)	,,	1 0 and	2 0
⅛" rough cast ; rolled plate .	,,		6
⅛" wired cast ; wired rolled .	,,		10½
⅛" Georgian wired cast .	,,		11½
¼" Polished plate, n/e 1 ft. .	,,	†1 0 to	‡1 3
,, ,, 2 . .	,,	†1 4 ,,	‡1 6
,, ,, 4 . .	,,	†2 6 ,,	‡2 9
,, ,, 8 . .	,,	†2 11 ,,	‡3 4
,, ,, 20 . .	,,	†3 1 ,,	‡3 9
,, ,, 45 . .	,,	†3 3 ,,	‡4 0
,, ,, 100 . .	,,	†4 0 ,,	‡4 10
Vita glass, sheet, n/e 1 ft. .	,,		1 0
,, ,, 2 ft. .	,,		1 3
,, ,, over 2 ft. .	,,		1 9
,, plate, n/e 1 ft. .	,,		1 6
,, ,, 2 ft. .	,,		3 0
,, ,, 5 ft. .	,,		4 0
,, ,, 7 ft. .	,,		5 0
,, ,, 15 ft. .	,,		6 0
,, ,, over 15 ft. .	,,		7 6
"Calorex" sheet 21 oz., and 32 oz.	,,	2 6 and	3 6
,, rough cast ⅛" and ¼"	,,	8½ ,,	1 0
Putty, linseed oil . . .	lb.		3

* *Colours, 1d. F.S. extra.*
† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

	£ s. d.
White lead in 1-cwt. casks . cwt.	2 17 9
Linseed oil . . . . gall.	3 2
Boiled oil . . . . ,,	3 5
Turpentine . . . . ,,	3 9
Patent knotting . . . ,,	14 0
Distemper, washable . . cwt.	2 6 0
,, ordinary . . . ,,	2 0 0
Whitening . . . . ,,	4 0
Size, double . . . . firkin	3 0
Copal varnish . . . . gall.	13 0
Flat varnish . . . . ,,	14 0
Outside varnish . . . ,,	16 0
White enamel . . . . ,,	1 15 0
Ready mixed paint . . . ,,	13 6
Brunswick black . . . ,,	7 6

CURRENT PRICES FOR MEASURED WORK

The following prices are for work to new buildings of average size, executed under normal conditions in the London area. They include establishment charges and profit. While every care has been taken in its compilation, no responsibility can be accepted for the accuracy of the list. The whole of the information given is copyright.

EXCAVATOR AND CONCRETOR	£ s. d.
Digging over surface n/e 12″ deep and cart away	Y.S. 2 9
,, to reduce levels n/e 5′ 0″ deep and cart away	Y.C. 8 6
,, to form basement n/e 5′ 0″ and cart away	,, 9 0
,, ,, 10′ 0″ deep and cart away	,, 9 6
,, ,, 15′ 0″ deep and cart away	,, 10 0
If in stiff clay	add ,, 6
If in underpinning	,, ,, 4 0
Planking and strutting to sides of excavation	F.S 1 0
,, ,, to pier holes	,, 5
,, ,, to trenches	,, 5
,, ,, extra, only if left in	,, 3
Hardcore, filled in and rammed	Y.C. 10 0
Portland cement concrete in foundations (6–1)	,, 1 6 0
,, ,, (4–2–1)	,, 1 12 6
,, ,, underpinning	,, 1 16 0
Finishing surface of concrete, space face	Y.S. 7

DRAINLAYER		4″ s. d.	6″ s. d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1 6	2 3
Extra, only for bends	Each	2 8	3 9
,, junctions	,,	3 9	4 6
Gullies and gratings	,,	16 6	18 0
Cast iron drains, and laying and jointing	F.R.	5 9	8 3
Extra, only for bends (cast iron)	Each	12 3	18 4

BRICKLAYER	£ s. d.
Brickwork, Flettons in lime mortar	Per Rod 26 10 0
,, ,, in cement	,, 27 12 6
,, Stocks in cement	,, 34 0 0
,, Blues in cement	,, 50 0 0
Extra only for circular on plan	,, 2 0 0
,, backing to masonry	,, 1 10 0
,, rising on old walls	,, 2 0 0
,, underpinning	,, 5 10 0
Fair Face and pointing internally	F.S. 1¼
Extra over fletton brickwork for picked stock facings and pointing	,, 8
,, ,, ,, red brick facings and pointing	,, 11
,, ,, ,, blue brick facings and pointing	,, 1 4
,, ,, ,, glazed brick facings and pointing	,, 3 0
Tuck pointing ,, ,,	,, 7½
Weather pointing in cement	,, 3
Slate dampcourse	,, 10
Vertical dampcourse	,, 1 1

ASPHALTER	s. d.
½″ Horizontal dampcourse	Y.S. 4 9
½″ Vertical dampcourse	,, 7 9
½″ paving or flat	,, 6 3
1″ paving or flat	,, 7 6
1″ × 6″ skirting	F.R. 1 0
Angle fillet	,, 2½
Rounded angle	,, 2½
Cesspools	Each 5 6

MASON	£ s. d.
Portland stone, including all labour, hoisting, fixing and cleaning down, complete	F.C. 17 9
Bath stone and do., all as last	,, 13 6
Artificial stone and do.	,, 13 0
York stone templates, fixed complete	,, 10 6
,, thresholds	,, 13 6
,, sills	,, 1 0 6

SLATER AND TILER	s. d.
Slating, Bangor or equal to a 3″ lap, and fixing with compo nails, 20″ × 10″	Sqr. 3 10 0
Do., 18″ × 9″	,, 3 7 0
Do., 24″ × 12″	,, 3 17 0
Westmorland slating, laid with diminished courses	,, 6 0 0
Tiling, best hand-made sand-faced, laid to a 4″ gauge, nailed every fourth course	,, 3 0 0
Do., all as last, but of machine-made tiles	,, 2 16 0
20″ × 10″ medium Old Delabole slating, laid to a 3″ lap (grey)	,, 2 16 0
,, ,, ,, ,, ,, ,, ,, (green)	,, 4 15 0

CARPENTER AND JOINER	£ s. d.
Flat boarded centering to concrete floors, including all strutting	Sqr. 2 2 6
Shuttering to sides and soffits of beams	F.S. 7
,, to stanchions	,, 7
,, to staircases	,, 1 6
Fir and fixing in wall plates, lintols, etc.	F.C. 3 9
Fir framed in floors	,, 4 6
,, ,, roofs	,, 6 6
,, ,, trusses	,, 7 6
,, ,, partitions	,, 8 6
¾″ deal sawn boarding and fixing to joists	Sqr. 1 14 6
1″ ,, ,, ,, ,,	,, 1 17 6
1½″ ,, ,, ,, ,,	,, 2 3 0
¾″ × 2″ fir battening for Countess slating	,, 9 6
Do., for 4″ gauge tiling	,, 12 0
Stout feather-edged tilting fillet	F.R. 4½
Patent inodorous felt, 1 ply	Y.S. 2 3
,, ,, ,, 2 ,,	,, 2 9
,, ,, ,, 3 ,,	,, 3 3
Stout herringbone strutting to 9″ joists	F.R. 10½
1″ deal gutter boards and bearers	F.S. 1 2
1½″ ,, ,, ,, ,,	,, 1 6
2″ deal wrought rounded roll	F.R. 8
1″ deal grooved and tongued flooring, laid complete, including cleaning off	Sqr. 2 1 0
1½″ do.	,, 2 10 0
1¾″ do.	,, 2 17 0
1″ deal moulded skirting fixed on, and including grounds plugged to wall	F.S. 1 6
1¼″ do.	,, 1 9

CARPENTER AND JOINER—*continued*	s. d.
1½″ deal moulded sashes of average size	F.S. 1 9½
2″ ,, ,, ,, ,,	,, 1 11½
1½″ deal cased frames, double hung, of 6″ × 3″ oak sills, 1¼″ pulley stiles, 1¼″ heads, 1″ inside and outside linings, ¾″ parting beads, and with brass faced axle pulleys, etc., fixed complete	,, 3 7
2″ ,, ,, ,, ,,	,, 3 10
Extra only for moulded horns	Each 6
1½″ deal four-panel square, both sides, door	,, 2 0
2″ ,, ,, ,, ,,	,, 2 8
1½″ ,, but moulded both sides	,, 2 4
2″ ,, ,, ,, ,,	,, 3 0
4″ × 3″ deal, rebated and moulded frames	F.R. 1 0
4½″ × 3½″ ,, ,, ,, ,,	,, 1 4
11″ deal tongued and moulded window board, on and including deal bearers	F.S. 1 9
11″ deal treads, 1″ risers in staircases, and tongued and grooved together on and including strong fir carriages	,, 2 6
1½″ deal moulded wall strings	,, 2 1
1½″ ,, ,, outer strings	,, 2 4
Ends of treads and risers housed to string	Each 1 9
3″ × 2″ deal moulded handrail	F.R. 1 3
1″ × 1″ deal balusters and housing each end	Each 2 0
1½″ × 1½″ ,, ,, ,, ,,	,, 2 9
3″ × 3″ deal wrought framed newels	F.R. 1 3
Extra only for newel caps	Each 6 0
Do., pendants	,, 6 0

SMITH AND FOUNDER	£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt. 18 6
Riveted plate or compound girders, and hoisting and fixing in position	,, 1 6 6
Do. stanchions with riveted caps and bases and do.	,, 1 2 0
Mild steel bar reinforcement, ½″ and up, bent and fixed complete	,, 1 4 6
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g	F.S. 11
Wrot-iron caulked and cambered chimney bars	Per cwt. 1 10 0

PLUMBER	£ s. d.
Milled lead and labour in flats	cwt. 1 18 0
Do. in flashings	,, 2 1 6
Do. in covering to turrets	,, 2 7 0
Do. in soakers	,, 1 12 9
Labour to welted edge	F.R. 3½
Open copper nailing	,, 3
Close ,, ,,	,, 4

		½″ s. d.	¾″ s. d.	1″ s. d.	1¼″ s. d.	2″ s. d.	4″ s. d.
Lead service pipe and fixing with pipe hooks	F.R.	1 2	1 4	1 8½	2 7	3 6	—
Do. soil pipe and fixing with cast lead tacks	,,	—	—	—	—	—	7 3
Extra, only to bends	Each	—	—	—	—	2 3	7 6
Do. to stop ends	,,	6½	8	9	11	1 0	—
Boiler screws and unions	,,	3 3	3 9	5 0	8 0	—	—
Lead traps	,,	—	—	—	8 0	11 6	—
Screw down bib valves	,,	6 9	9 6	11 0	—	—	—
Do. stop cocks	,,	7 0	9 6	12 6	—	—	—

	s. d.
4″ cast-iron ½-rd. gutter and fixing	F.R. 1 0
Extra, only stop ends	Each 1 0
Do. angles	,, 1 6
Do. outlets	,, 2 9
4″ dia. cast-iron rain-water pipe and fixing with ears cast on	F.R. 1 7
Extra, only for shoes	Each 1 3
Do. for plain heads	,, 5 6

PLASTERER AND TILING	£ s. d.
Expanded metal lathing, small mesh	Y.S. 2 0
Do. in n/w to beams, stanchions, etc.	,, 2 9
Lathing with sawn laths to ceilings	,, 1 3
½″ screeding in Portland cement and sand or tiling, wood block floor, etc.	,, 1 5
Do. vertical	,, 1 7
Rough under on walls	,, 1 2½
Render, refloat and set in lime and hair	,, 1 9
Render and set in Sirapite	,, 1 11
Render backing in cement and sand, and set in Keene's cement	,, 2 9
Extra, only if on lathing	,, 4
Keene's cement angle and arris	F.R. 6
Arris	,, 1½
Rounded angle, small	,, 3
Plain cornices in plaster, including dubbing out, per 1″ girth	,, 1½
1″ granolithic pavings	Y.S. 3 6
1½″ ,, ,, ,,	,, 4 6
6″ × 6″ white glazed wall tiling and fixing on prepared screed	,, 7 6
9″ × 3″ ,, ,, ,,	,, 1 2 6
Extra, only for small quadrant angle	F.R. 8

GLAZIER	s. d.
21 oz. sheet glass and glazing with putty	F.S. 6½
26 oz. do. and do.	,, 7½
Flemish, Arctic Figured (white) and glazing with putty	,, 1 1
Cathedral glass and do.	,, 1 2
Glazing only, British polished plate	,, 7
Extra, only if in beds	,, 2
Washleather	F.R. 4

PAINTER	s. d.
Clearcolle and whiten ceilings	Y.S. 6
Do. and distemper walls	,, 9
Do. with washable distemper	,, 1 1
Knot, stop, prime and paint four coats of oil colour on plain surfaces	,, 3 3
Do. on woodwork	,, 3 6
Do. on steelwork	,, 3 0
Do. and brush grain and twice varnish	,, 5 6
Stain and twice varnish woodwork	,, 1 11
Stain and wax polish woodwork	,, 4 6
French polishing	F.S. 1 2
Stripping off old paper	Piece 2 0
Hanging ordinary paper	from ,, 2 9