# OLD SHOPS AT HULL

## *A NEW MUSEUM EXHIBIT*

*A PERMANENT display of old English shop fronts is now being built at Wilberforce House, Hull, under the supervision of Mr. T. Sheppard, director of Hull's municipal museums. Some of the fronts have been given by the Victoria and Albert Museum and the remainder are from private sources.*
*On the right of the photograph is an apothecary's shop and next door is a clay-pipe maker's.*

# H O U S I N G  P R O G R E S S

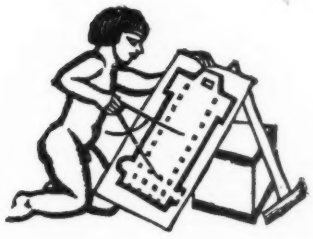
*In many of our towns*

*← this is being destroyed*

*to make room for*

*← this.*

*The question of communal and private gardens in re-housing schemes has always been considered of great importance — in theory. Whether their provision in practice gains equal attention was called in question by these photographs and captions from the Housing Centre's "New Homes for Old" exhibit at Olympia.*



# PLANNING AT OLYMPIA

THE 1936 Building Exhibition came to an end yesterday, and having done their bit towards upholding an established position or getting a bigger share in the turnover of building, exhibitors are prepared to forget about it all; until May or June, 1938, impresses upon them that they had better hurry up and get ready for the next one.

The JOURNAL realizes this general mood of a hectic fortnight being safely past, and, as both an exhibitor and commentator, to a certain extent shares in it. We are therefore fully aware of the risk of boredom which is run by the holding of an Exhibition post-mortem.

The JOURNAL considers, however, that such a risk is overborne by its conviction that now is the time to consider whether the Building Exhibition is all that it might be; that now, while everybody remembers exactly what the 1936 Exhibition was like, is the moment for improvements to be suggested and, if approved, adopted.

If this is a justifiable viewpoint, the first matter to be generally agreed is what should a building trades exhibition be. Primarily we feel that it should be a clearly arranged system of displaying building materials, tools and finishes to all who are professionally interested. Secondly, it should " put across " to the public something of the interest of building and of the ways to judge and appreciate buildings.

To take the second point first—is propaganda to the public worth while? We feel that for all manufacturers of good products it is eminently worth while. The King, during his visit to Olympia, said that the public ought to see the Exhibition. But can we, at present, entirely blame those who fail to take his Majesty's advice?

Is there any section, even a small section, of the Building Exhibition which is designed to show to those who pay for it the romance of building, how building methods have developed, and what is and is not good workmanship? If there is not, the public can hardly be blamed for buying anything and everything in blissful ignorance and disinterest and holding all concerned in building in a single profound suspicion.

But this is only the second component of a building trades' exhibition, although one worth thought. The attitude towards it of many exhibitors and visitors may be one of distaste. Olympia, they may say, is a building *trades* exhibition. It is a serious affair, not a centre for fun-fairs and spouts of mendacious persuasion playing on a suffering public. It is an exhibition of building exhibitors and visitors who know their jobs and do not need charts and guides to make them recognize a good thing when they see it.

This is a justifiable viewpoint, but even so does not justify the 1936, and previous, Building Exhibitions. The JOURNAL has maintained for some years that because of its seriousness and its interest to those who earn their incomes through building, Olympia should be laid out in a businesslike way. All buildings begin, more or less, with foundation concreting, and end, more or less, with internal decorative finishes. Specifications do the same, why should not the Building Exhibition? A lot of the visitors to Olympia are busy people; they may be on the lookout for an efficient and economical roofing, or partition block. As the stands now are, such busy men would spend endless time, if they did not become bored in the process, trudging to and fro in search of the right stands. Very few visitors are going to take the trouble to look up on the plan, carefully mark and finally visit all the manufacturers of these products. If, on the other hand, similar products were grouped together, a comparative tour could be done in half an hour.

Two years ago the JOURNAL made such a suggestion and circularized the exhibitors to obtain representative views. The replies were mixed.

Messrs. Halliday Boilers, Ltd., were pithy : " I consider the Building Exhibition as at present held is the most interesting exhibition in the country, and I would not consider for one moment wasting time to exhibit at a crazy planned exhibition as suggested by you."

Messrs. Wood Products, Ltd., put another point : that many architects have a favourite material in one group and that if all similar materials were segregated in that group, such architects would not bother to visit it; whereas with scattered stands a good thing has a chance of catching their eyes and interest amongst other products.

These two letters are representative of the strongest feeling underlying the unfavourable replies. There is the dislike of any organization, just as organization, and the query whether, with visitors who may feel a little of a holiday mood in the midst of their business visit, lucky dip methods will not bring more orders and interest than any grouping.

These preliminary shudders are natural to any British development. Enough order to prevent a breach of the peace and no more, is, however, a doctrine of limitations.

The JOURNAL feels certain that, at present, the serious visitor to Olympia, the man with an order in his pocket, has his nose held so firmly to a plan of the chaos which surrounds him, that he has precious little time for looking. If the Exhibition was so laid out that anyone with a knowledge of building could move towards the products he wanted at once, without any plan, he would see more of all the stands and more business would be done all round.

Such is the contention of the JOURNAL, and now is the time for organizers and exhibitors alike to think over its possibilities.

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

# NOTES & TOPICS

TAX ON COMPS.

THIS is the season of Income Tax assessments and the old question of payments on competition premiums is being raised again.

*

An architect who wins at least one second premium a year tells me that full income tax is charged on them all. An assistant who has won at least a dozen premiums (second and third) during the last ten years, says that on the advice of an income tax man he has never paid tax on any of them.

*

Post-graduate prizes and studentships do not, I believe, rank as taxable income—the Bossom man goes to America or the Rome man to Italy with £250 on top of his own income, if any.

*

Yet a friend of mine has just had to pay full tax on a £100 second premium won three years ago. What is *your* experience of this seemingly inconsistent question?

E. V. LUCAS AND HENRY BELL

Mr. E. V. Lucas complains in the *Sunday Times* that Henry Bell is not in the Dictionary of National Biography, and after a visit to King's Lynn he is rather indignant about the omission. Locally he could learn nothing of Bell, except that he was twice mayor.

*

Mr. Lucas during his visit heard all about the charters and King John's cup, but "could find no one who knew anything of the prettiest Customs House in the world . . . or who was Henry Bell, the architect." If Mr. Lucas refers to what Clough Williams-Ellis has called "a collection of rather desiccated but useful" *Lives of British Architects*, by Beresford Chancellor, he will find that the Henry Bell who was Mayor of Lynn was probably the father of Henry Bell the architect.

*

He will also find there a reference to E. M. Beloe's book, *King's Lynn; our Borough; our Churches*, and a suggestion that it contains all that is likely to be known about Bell. I have an idea that Sir Guy Dawber—who knows and loves Lynn better than anybody—would be able to add something to all the published information.

"HEIL" ARCHITECT

Things are indeed looking up. Who ever heard of governments giving informal luncheons with architects as guests of honour? Yet that is what the Government of Northern Ireland is doing for Mr. Maxwell Fry, who has gone over to Ulster to have a look round and then to broadcast some talks on town planning it.

*

The Ulster papers, hailing him as a distinguished authority on town planning, have given him an excellent press, and in one in Belfast there is a photograph of Mr. Fry surrounded by mayors and aldermen which is most impressive. It is the right spirit.

CALEDONIAN MARKET

The traders of the neighbourhood evidently don't like the Caledonian Market, or at least don't like its competition, for according to reports they are urging that the market, together with the cattle market beyond, should be acquired by the L.C.C. for housing.

*

It would undoubtedly make a good housing site, but I strongly suspect that the City Corporation will refuse to sell it, as they have done in the past, and they will be commended by that huge body of Londoners whose ambition it is, though generally unfulfilled, to go there some day.

SPAIN

On Monday I was dining with a friend, just returned from Spain, who had been out there since the beginning of the civil war, and amongst the things he told me was that practically all the churches in Barcelona had been burnt; but that the Gothic churches had withstood the fire and needed only minor repairs, while the Basque churches had been absolutely gutted and were fit only for complete demolition.

*

Another thing he told me was the sad fact that Gaudi's cathedral had proved to be of completely fire-resisting construction and had defied the best efforts of the incendiarists.

MORE SPAIN

Whilst on the subject of Spain, all newspaper readers must have been struck by the number of times the Alcazar (a building which I have sketched and for which I have a most tender affection) has been destroyed by shell, bomb, fire and mine and has yet remained sufficiently intact to be relieved by the rebels. It must surely have earned the title of the world's most indestructible building. Where is your concrete now? as the thatcher said.

ROME SCHOLARS?

And that reminds me. Where do the Rome scholars go to nowadays? When the British School at Rome was closed for the duration, the scholars were invited to reside in Madrid. There are, I am told, even more ruins for measuring in that unfortunate capital.

*

But perhaps the very fierceness of the international situation will help to save that important British scholarship


*"Hush!—SPA." Another German hint to motorists to bear in mind that quiet is appropriate to a holiday resort. A photograph by Mr. Cyril Carter.*

from merely assisting a very interesting hobby, instead of a live and creative art.

STREET LIGHTING

Individual lamps for street lighting have reached a high degree of efficiency. But street lighting has not—for it is a fallacy to believe that efficient lamps can, alone, ensure efficient lighting.

*

In a plain, simple, straightforward street the most efficient (and safest) lighting is an even glow over the whole surface, with the light source quite concealed. In a tree-lined avenue a little of the light might be expended upon the trees.

*

The pernicious habit of reflecting every ray of light through mirror reflectors on to the road surface has caused at least one accident, to my knowledge. Such lighting, as in the Grove at Hammersmith, produces dazzle spots of light through which one plunges into patches of inky gloom.

*

Another point of lighting design which is far too often ignored is the alignment of the lights, even when fittings suitable to the job have been chosen. The lights should follow evenly both the plan and the contour of the roadway —and not deviate unnecessarily around a bend to deceive the motorist into expecting a wiggle when the road in fact does a waggle.

PIONEERS OF MODERNISM

I have spent most of the week-end with William Morris, C. R. Ashbee, Adolph Loos, C. F. A. Voysey, Frank Lloyd Wright, Bruno Paul, Le Corbusier, and Walter Gropius. Dr. Nikolaus Pevsner, writing in a style that is a well-upholstered armchair for the mind, delivers a long, erudite lecture in a book which he has called *Pioneers of the Modern Movement.**

*

The sub-title of the book is *From William Morris to Walter Gropius*, and without anticipating any review that will appear in the JOURNAL, I think it is the best book that has ever been written on a fluent and complicated period of architectural growth and artistic passion.

*

Incidentally, the spirit of Morris still moves and breathes among the survivors of that period. One of them was heard to say recently, when he pressed a bell: "I like a good honest bell pull, something that you can take hold of—these new-fangled electric bells are like the stab of an assassin!"

*

In a way that spirit has been responsible for the ideas of the proprietor of a wireless store that I saw recently on the outskirts of Kingston. It was called "Tudoradio."

A.A. TOUR

The tourists have returned from Czechoslovakia full of enthusiasm for the country and their enjoyable reception.

*

They tell me that the simplest of realism mixes with the most exuberant baroque spirits—and that almost every group of buildings they officially visited included a mortuary, a crematorium and a home for aged people.

SHOOTING!

Returning last week-end along highroad No. 26, a detour brought me to an ancient inn, hotel, pub., roadhouse—what you will. Its long low first floor of colourwashed tile hanging (traditional in East Sussex) over a ground floor of weather-careless brickwork invited entrance.

*

In the 6 ft. 4 ins. height of its interior was a darts match. The local champion was on form—staggering form.

*

First dart a double 20; second dart a treble 20; third dart a treble 19—then everyone was to attention. His first dart of the second round produced a treble 20; the second a treble 18—and then someone realized that he could get his 301 with one more dart on double 15.

*

This was an occasion. The doors were closed, the windows shut, the radio switched off, the clock stopped and all breathing suspended—or so it seemed. And then the sixth dart missed the board completely . . .

*

But he got his double 15, and the game and the match with the seventh dart, and nobody thought of opening the doors and windows, of starting the radio and the clock, again.

QUERY

Who is the wag who has described a modern exhibition in Tottenham Court Road as an exhibition of Sir'ealism?

ASTRAGAL

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* *Pioneers of the Modern Movement.* By Nikolaus Pevsner. Faber and Faber. Price 10s. 6d.

# NEWS

## POINTS FROM THIS ISSUE



## THE ARCHITECTS' DIARY

**Friday, October 2**
TOWN PLANNING INSTITUTE. *Eighteenth Annual Country Meeting. At Norwich. October 2–4.*

**Wednesday, October 7**
INSTITUTION OF STRUCTURAL ENGINEERS (LANCASHIRE AND CHESHIRE BRANCH). *Chairman's Address by Mr. G. P. Bridges. At the Constitutional Club, Manchester.* 8.30 *p.m.*

**Thursday, October 8**
COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND. *Ninth National Conference for the Preservation of the Countryside. At Torquay. Until October* 11.

**Wednesday, October 14**
NATIONAL SMOKE ABATEMENT SOCIETY. *Eighth Annual Conference and Smoke Abatement Exhibition. In London. Until Saturday, October* 17.

**Friday, October 16**
LONDON SOCIETY. *Miss E. Jeffries Davis on "The Story of Bloomsbury."* 5 *p.m.*

**Friday, October 23**
ARCHITECTURAL ASSOCIATION. *Annual Exhibition of Water-colours, Etchings and other Drawings by Members. Until November* 6.

**Tuesday, October 27**
ARCHITECTURAL ASSOCIATION. *Presidential Address by Mr. L. H. Bucknell,* F.R.I.B.A. 8 *p.m.*

### *TOWN PLANNING DRIVE FOR NORTHERN IRELAND*

Northern Ireland has begun a comprehensive consideration of town planning in the four provinces. Mr. E. Maxwell Fry is making a tour of the province on the invitation of the Government. He is to "map out" potential town-planning areas and finally report on his findings in a series of talks to be broadcast from the Belfast studio of the B.B.C. Northern Ireland is believed to be the most backward part of the British Isles from a town-planning viewpoint, but the Government now intends to make changes in this respect within the next decade.

At a luncheon given in his honour in Belfast Mr. Fry gave his views on town planning for a province of the size and population of Northern Ireland. If it was to succeed, he said, it must carry the people with it. And by the people he meant not only the poor and unarchitectural people but those alive to the currents of life about them and who took an active part in the administrative sphere. They were only at the beginning of the industrial age and all around were strewn the mistakes made by their fathers and grandfathers in putting their works in wrong positions, but as the years went on they would have a greater volume of technical aid at their fingers to deal with it.

### *THE HOUSING BOOM: AN AMERICAN OPINION*

The American "Architectural Forum" considers that the British house mortgage is one of the best risks in the world and the American one of the poorest. In this fact, it suggests, lies the secret of England's housing boom, contrasted with the sluggish development of American domestic building. The basis of housing in Britain, it finds, is the building society mortgage, running from 80 to as high as 95 per cent. of the value of the house, at 4½ per cent. interest, without the necessity of any sort of Government guarantee. A 95 per cent. mortgage would triple the potential housing market in the United States.

The U.S. financier apparently quails at an 80 per cent. mortgage, and talks of a 5 per cent. deposit as madness.

The average American, the "Forum" considers, always hopes to exchange his house for a better one within a year or two, and thus prevents any long-term mortgage scheme being successful.

### *POST OFFICE ALTERATIONS*

The brighter Post Office movement is continuing with the opening of a new branch office in Birmingham in which a glass counter-screen replaces the more familiar bronze mesh. The latter has been the subject of complaints of eye-strain from assistants.

The new glass screens consist of louvres overlapping about one inch and are stated to be more healthy and to present no obstruction to sound.

### *THAT NEWCASTLE TOWN HALL*

After approximately seventy years of disputes about every particular of its proposed municipal buildings, it is now reported that Newcastle-upon-Tyne has found a site upon which there is some prospect of agreement.

It is not a particularly good site, being somewhat in a hollow, but it is central, and the battle has now shifted on to the question whether St. Thomas's church—a somewhat grim example of pseudo-Gothic by which Newcastle has been long accustomed to set its watch—should in its turn be moved (for the third time) in order, as the saying goes, "to let the fash see the folk." This is likely to take some time.

An interesting point which may arise during the next ten years is whether it would not be worth while to set the new scheme on the centre line of the City Hall (built a few years ago to the designs of Nicholas and Dixon-Spain) and form something of a civic place in that quiet portion of the city. This would allow a good bit of the Barras Bridge triangle to be kept as gardens, and a workable scheme on these lines was once prepared.

The last point which will be considered will be whether the scheme is to be thrown open to architectural competition. The Council are supposed to be "off" open competitions and certainly Newcastle hasn't an unclouded record in that way. The final decision will be interesting.

### *DEATH OF MR. EDWARD HUDSON*

The name of Mr. Edward Hudson will probably not be known to many architects, just as he was astonishingly little known to the public; states of affairs which his acute dislike of publicity greatly caused. Mr. Hudson's chief claim to fame and specially to architectural notice was his founding and his continuous devotion to *Country Life*.

The description and fine illustration of Britain's architecture, especially its country houses, has always been one of the most important features of that journal, and has both kept the public reminded of its possessions and responsibilities and has spread the knowledge of them throughout the world in one of the best kinds of national propaganda.

Mr. Edward Hudson will also be memorable as the restorer, with Sir Edwin Lutyens, of Lindisfarne Castle on Holy Island, from the upper terrace of which, on a fine day, there can now be obtained one of the finest views in England, including four of its best castles.

### *NEW L.C.C. LOAN*

The London County Council last week sanctioned a loan of £10,000,000 Three per cent. stock. The money is principally required to finance the council's current capital expenditure on slum clearance, the abatement of overcrowding, the building of hospitals and schools, and the purchase of land for the London Green Belt.

### *MAP OF NEW BUILDINGS*

At the All-Union Building Exhibition now being held in Moscow is an electrified map of the Soviet capital, thirty-six square metres in size, which shows the most important new buildings in the city, those completed, and those in course of construction. This map is proving of great interest to Soviet and foreign visitors.

### *UNIVERSITY EXTENSION LECTURES*

The University of London has just published its list of University Extension Lectures arranged for the forthcoming Session. These lectures, held in many parts of London and the suburbs, are given at hours convenient to those engaged in daytime occupations who wish to devote some part of their leisure to the study of the humanities. Courses on History, Literature, Biblical Studies, Architecture, Painting, Psychology, Philosophy, Political Science and Economics will be found in the programme.

### *NEW YORKSHIRE SCHOOLS*

According to a statement that has just been made at Bolton-on-Dearne, near Mexborough, by the vice-chairman of the

West Riding County Council, 60 new schools, costing over £2,000,000, are to be erected in the area administered by the Council before March, 1939.

### *RE-HOUSING OPPOSED*

Elgin traders have formed a defence association to combat a proposal to build near the town the first garden city in the Highlands. They state that the rehousing of workers on the outskirts has caused serious loss of trade, and that the condemned areas in the centre should be redeveloped before another transference is made to the proposed new estate.

### *BRIGHTON TOWN HALL PLANS*

Brighton Town Council last week rejected a proposal to build the first section of the proposed new town hall, which is estimated to cost £450,000. Instead, plans are to be sought for a new building for police and magistrates.

The Council decided to promote a Bill for a £300,000 sea front improvement scheme.

### *MEMORIAL TO G. K. C.*

Mr. Adrian Scott has prepared plans for the completion of the Roman Catholic church at Beaconsfield, Bucks, as a memorial to the late Mr. G. K. Chesterton, who lived in the village. The cost of the scheme is £10,000.

### *WORCESTER SCHOOL COMPETITION*

The following notice has been issued by the Royal Institute of British Architects: "Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions."

### *ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND*

A special meeting of the Council was held recently, the president, Mr. H. Allberry, occupying the chair. The president read a communication from Dr. Russell relative to the appointment of assessors for a proposed competition for a new sanatorium at Ballyfermot, and the Council agreed unanimously that the matter of the selection of assessors be left in the hands of the president, with power to nominate himself if he so desired.

The Board of Architectural Education reported that the following candidates have passed the final examination in June last: Messrs. J. E. Wilkinson, Michael J. Costello, A. Cunningham, T. F. Inglis, C. P. A. Kenna, C. J. Crowe, M. J. Scott, Sean G. O'Kelly, G. C. F. Henry, and T. J. McCarthy. The applications for membership were passed for posting for one month in accordance with the byelaws.

The following, having passed the Intermediate Examination, were recommended for registration as students of the Institute: Messrs. J. J. Wallace, A. Greene, I. S. Barrett, W. P. Guard, J. S. Deane, C. L. Murphy, J. F. McCormack, R. S. Scally, A. Douglas, C. Geoghegan and A. V. Swanton.

### *FUTURE TOWN PLANNING*

Some extracts from a recent paper by Mr. T. F. Thomson, entitled "The Third Dimensional Aspect of Planning" are given below:—

*Mr. D. G. Walton, winner of the Dartford Town Hall competition which is illustrated in this issue.*

At the last Summer School at Oxford in 1934, great hopes were expressed in regard to the newly acquired powers to plan both highly built and totally rural land.

What have we achieved in this regard during these two or three years? Rome was not built in a day! No, but it *was* built, and not merely planned on paper—and built largely by direction of the best architectural brains of the time.

The whole planning movement and profession has been occupied of late years in producing what Sir Raymond Unwin has picturesquely described for us as "the pattern and the background." With a little more pressure from our energetic Minister of Health we are in sight of achieving as much of this pattern as is likely, for the present, under the powers of the new Act. But what is the result? Is it "town" planning—is it "country" planning? If we are frank with ourselves, we must confess that a very great deal of it is neither.

This brings us to the core of the whole problem. It is an ever-present danger because a very great number of responsible persons are today in the position to regard themselves as town planners, when in reality they are nothing of the kind. They have neither the training, vision, personal aptitude nor experience to fit them to undertake this extremely important work in anything like an efficient manner. Nevertheless, they are undertaking it and town plans of a kind are being produced and expensively paid for by the public purse.

The task of planning successfully is a gigantic one, and we need more team work if planning is to produce the results that it should, and must.

Now to return to the town plan and its relation to the third dimension. The approach has been the engineering approach rather than the architectural approach. An engineer in preparing drawings of an engineering project seldom bothers about constructing perspectives or elevations from his plans and sections (often with disastrous æsthetic results in the completed works) merely because to him they serve no immediate useful purpose. He is interested merely in efficiency, performing a constructional feat—quantities being quite easily prepared from plans, and cross and longitudinal sections.

The architect, however, never works in this way. The plan is all-important, so are sections for working out constructional details, but all the time he sees his building in mass silhouette and in elevational detail, i.e. in its true perspective. It is this ability to design purposefully in three dimensions which distinguishes the architect from the mere building or structural engineer (whatever each type of person may in practice be called). What is true of architecture in this respect is also true of town planning.

One has yet to see the complete town plan of an English city sectionalized to a convenient scale in aerial perspective. So far as one can see at present, we are not within sight of the attempt, because in the majority of cases the city authorities are not in command of the personnel to produce such a town plan which will be as practical and economical in execution as it is good to look at.

A thorough civic survey is an essential base upon which the superstructure of the town plan can be imposed, and is an essential preliminary.

With the aid of these surveys it will be possible to design one's new street system to take the utmost advantage of alignment through "blacklisted" areas on the one hand, and alignment in relation to important buildings on the other.

It is not only the third dimension in regard to buildings which needs consideration in the complete town plan. The design and layout of streets and highways, both in relation to the proportions of their parts, as regards length and width, and every detail of their furnishing needs either designing initially for or controlling as regards subsequent importations.

Statutory planning in this country has proved less effectual than it should have done owing to being pre-occupied with half-hearted plans and legal procedure and formalities, rather than with obtaining a concrete grip on the problem in hand—that of directing the present spurt of town growth into channels which will add to, rather than detract from, the character of the particular town or locality.

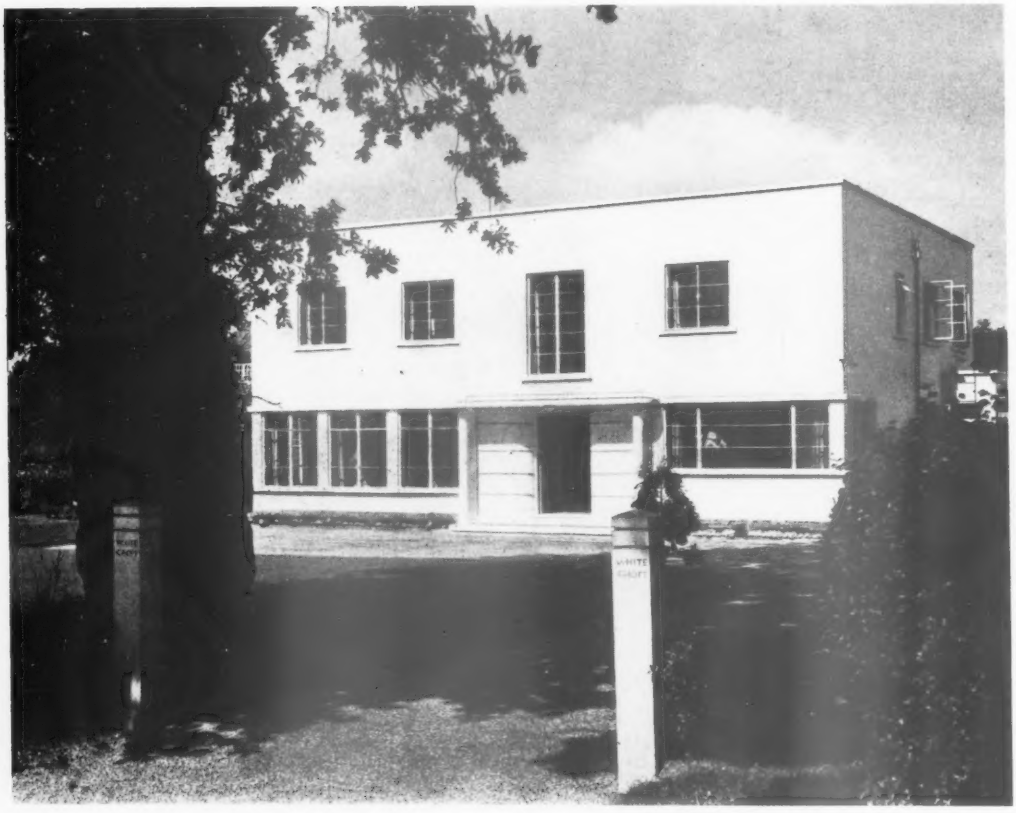
Indeed, if steps along the lines indicated in this paper are not taken within the next year or two by all of our great cities and boroughs, most that would have been worth doing well will soon be beyond the bounds of effective repair for at least another generation.

### *CHANGES OF ADDRESS*

Mr. Paul Mauger has moved from No. 18 Queen Anne's Gate to 22 Buckingham Gate, S.W.1.

Mr. R. E. N. Lowe, P.A.S.I., Chartered Quantity Surveyor, has moved to new offices at 82 Victoria Street, S.W.1. Telephone: Victoria 9732.

# HOUSE AT TETTENHALL

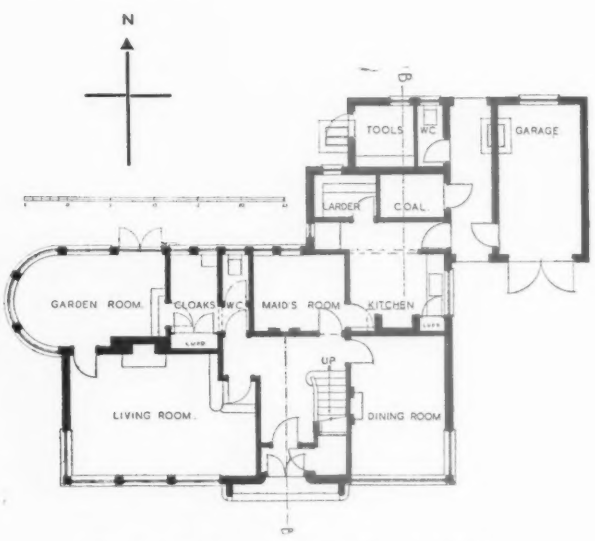


**SITE**—*In Wrottesley Road, Tettenhall, Staffs, on a long, narrow site, running north and south. The road is on the south side and other houses adjoin the site, that on the east being close to the boundary.*

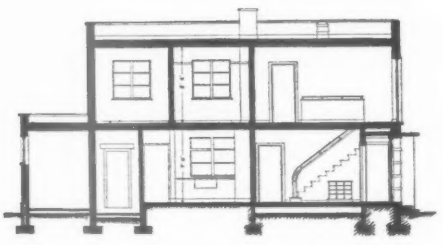
**PLAN**—*The garden room has a semi-circular end to catch the sun after midday, the terrace outside it being sheltered from the neighbouring houses on the east side by the projecting larder and garage.*

*The floors of the living-room and the garden room are 10 ins. lower than the general floor level. This allows the smaller rooms on the ground floor to be 8 ft. 3 ins. from floor to ceiling, and the living-room to be 8 ft. 11 ins.*

*The photograph is of the south front.*

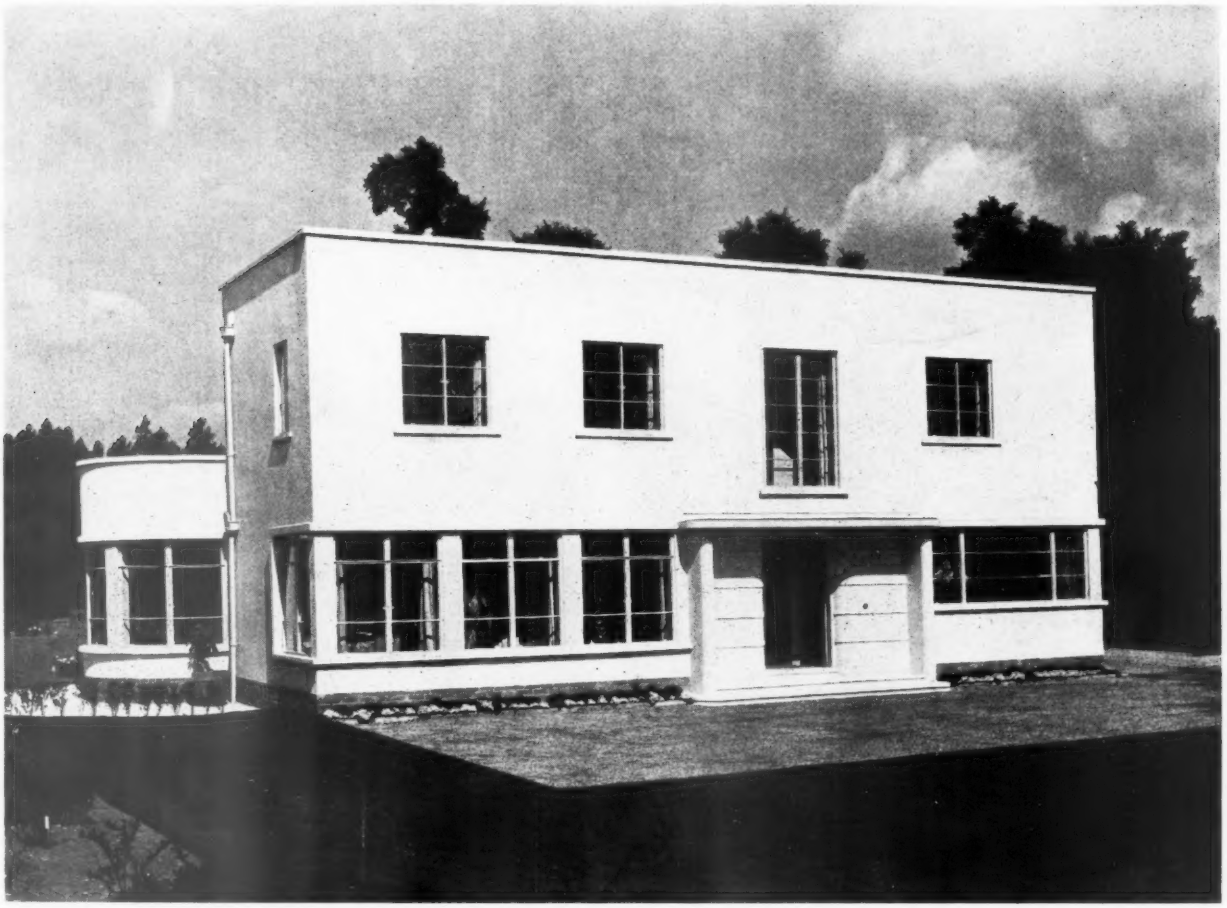



GROUND FLOOR PLAN



SECTION B—B

# BY LAVENDER AND TWENTYMAN



**CONSTRUCTION**—*Walls are 9-in. brick, cement rendered and colour-washed ivory. Windows are steel, painted ivory to match the walls. Copings are cast stone. The ground floor windows have* R.C. *heads, piers and sills. The roof is finished with bituminous felting.*

*The photograph shows another view of the south front.*


FIRST FLOOR PLAN

# HOUSE AT TETTENHALL

*DESIGNED BY*

*LAVENDER AND*

*TWENTYMAN*

**INTERNAL FINISHES**—*Floor finishes are: garden room, cloaks and kitchen, brown tiles ; living-room, oak blocks ; hall, oak strip ; other floors, deal boards. Flush doors are veneered oak or painted and built-in cupboards have laminated flush doors. The built-in fitting in the living-room, consisting of a sofa, wireless set and cocktail cabinet, in laminated board, oak veneered.*

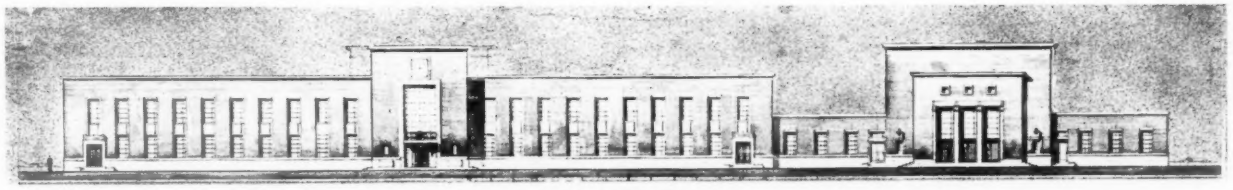
**SERVICES**—*Coal fires are installed in the living-room and one bedroom, and gas fires in other rooms. Domestic hot water is from the kitchen range. Under the big windows are electric tubular heaters.*

*The photograph is of the living-room and shows the built-in fitting.*

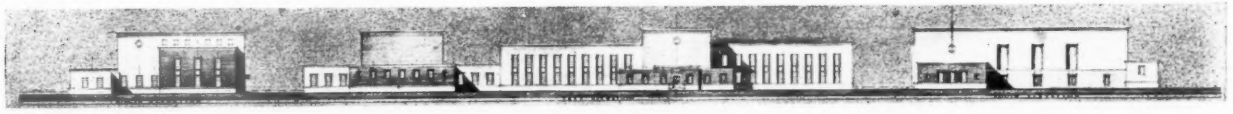
*For list of general and sub-contractors see page 470.*

# THE DARTFORD COMPETITION

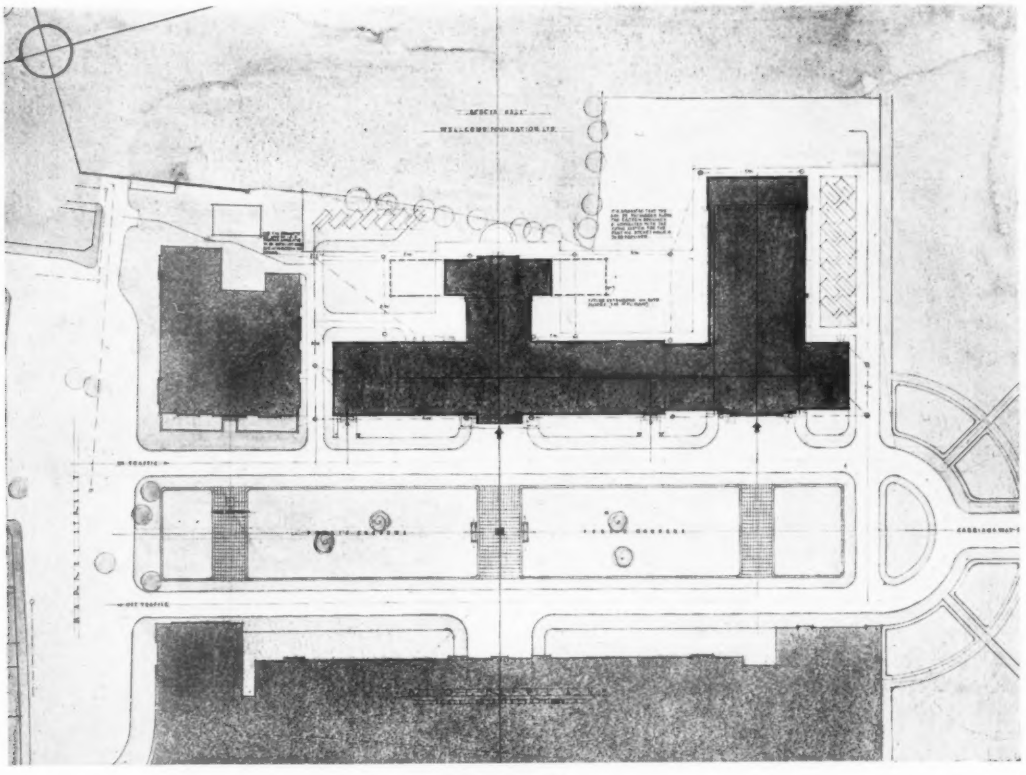
## *THE WINNING DESIGN*



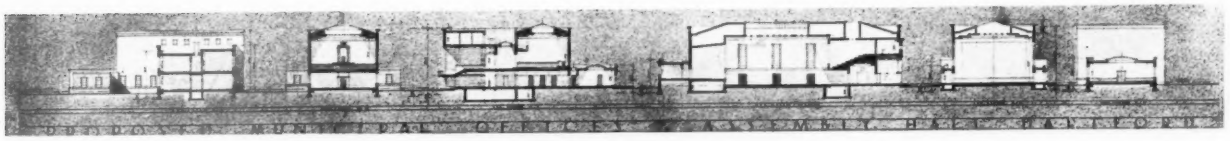
*The Principal Elevation*



*Subsidiary Elevations*



*The Block Plan*

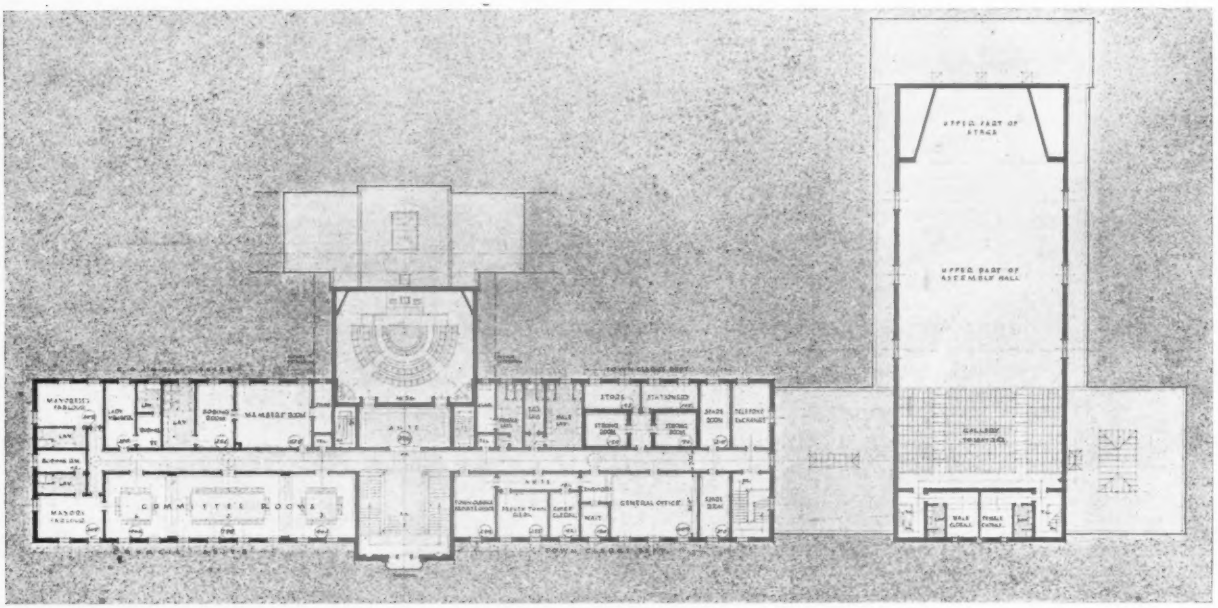


*Sections*

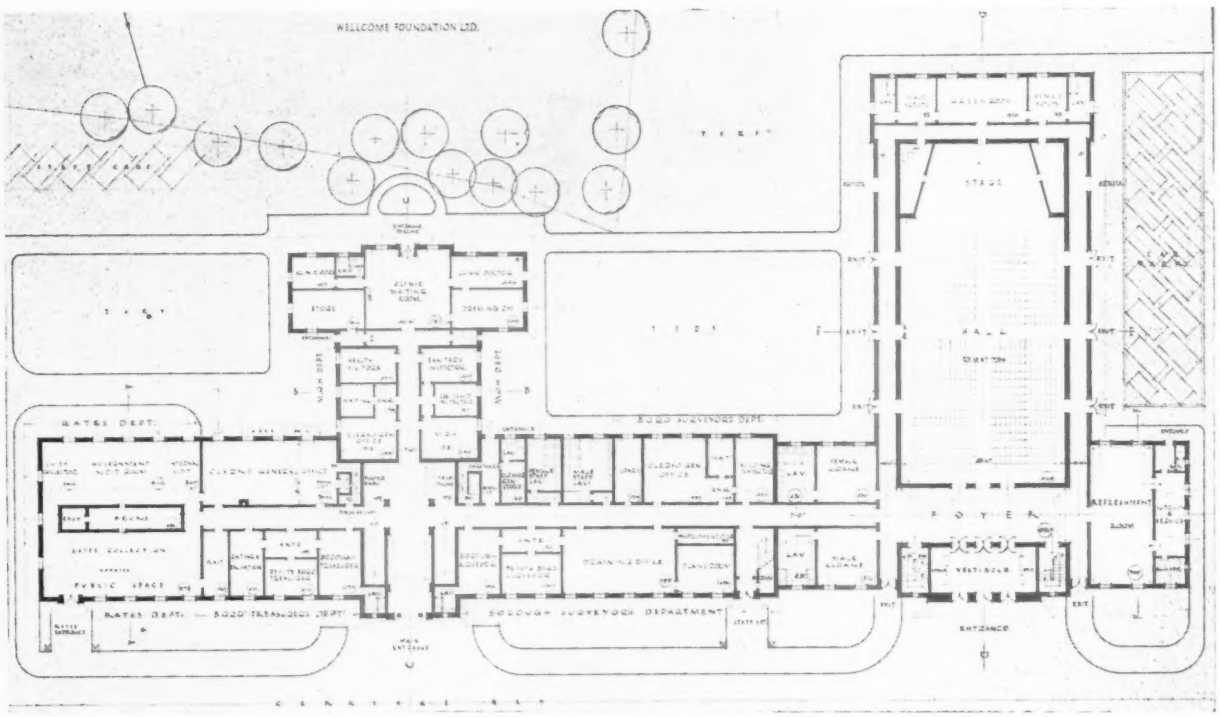
*BY DONALD G. WALTON*

# THE DARTFORD COMPETITION

## *THE WINNING DESIGN*




*The First Floor Plan*

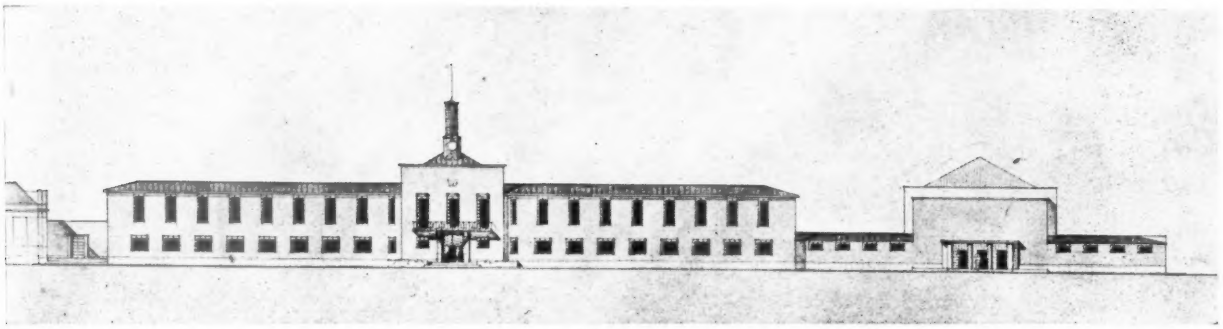



*The Ground Floor Plan*

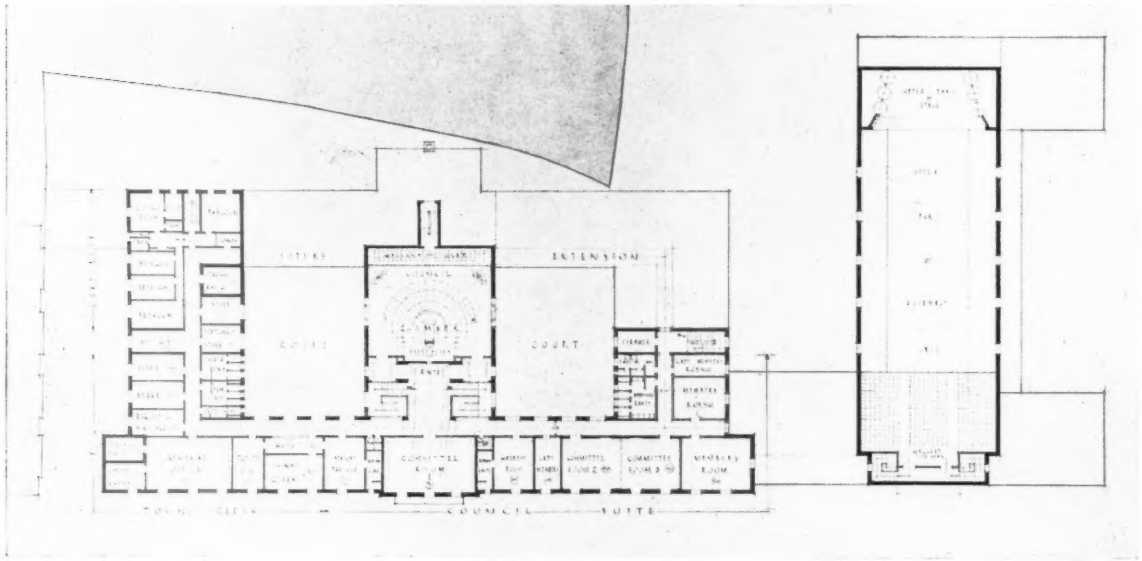
*BY DONALD G. WALTON*

# THE DARTFORD COMPETITION

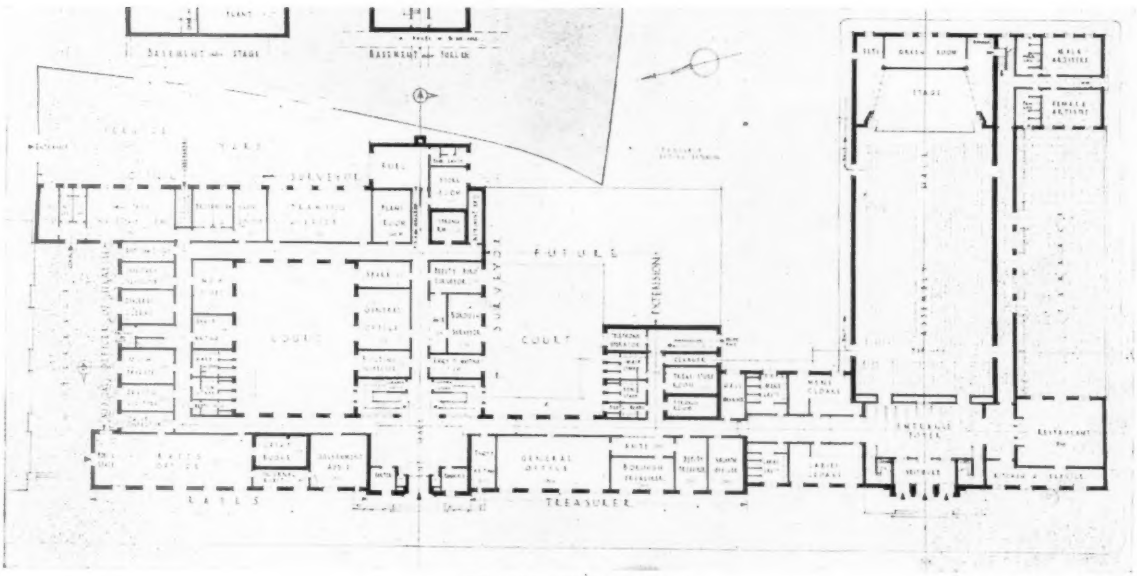
## *THE SECOND PREMIATED DESIGN*



*The Main Elevation*




*The First Floor Plan*

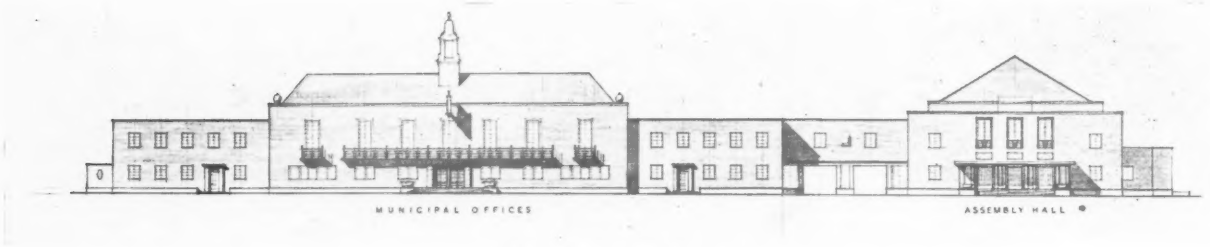



*The Ground Floor Plan*

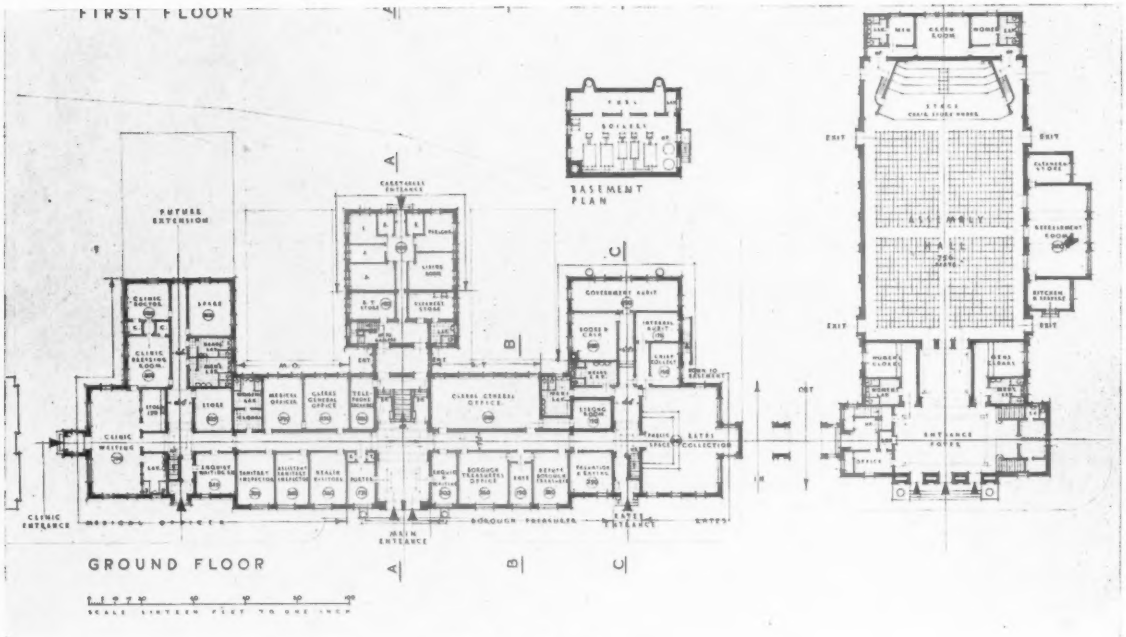
*BY CHARLES H. PIKE*

# THE DARTFORD COMPETITION

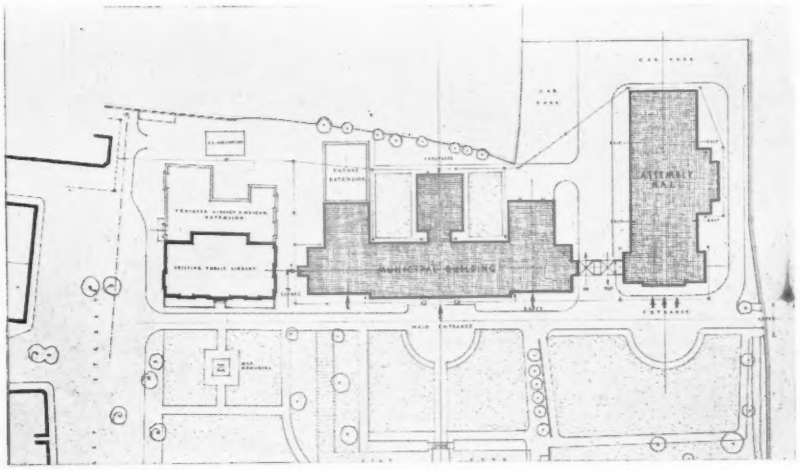
## *THE THIRD PREMIATED DESIGN*




*The Principal Elevation*




*The Ground Floor Plan*




*The Block Plan*

*DESIGNED BY A. W. KENYON*

# NEWPORT CIVIC CENTRE COMPETITION

## *THE CONDITIONS REVIEWED*

### BY A COMPETITOR

Assessors : Messrs. E. Berry Webber and C. F. Ward, Borough Architect.
Questions : September 1, 1936.
Sending-in day : November 30, 1936.
Premiums : £750, £500, £300, £200.

ON looking over these conditions, there are two rather striking innovations which might well be followed in similar future competitions :—(1) There is a printed form for competitors' schedules of accommodation provided to be filled in opposite the items of accommodation asked for, and (2) the form of Agreement which the successful competitor will be asked to sign, so that we all know exactly where we are.

With regard to this last item, I notice in Clause 5, the bold bad principle laid down that *all* the Architect's drawings, plans, specifications and estimates shall be the property of the Corporation. One wonders if the R.I.B.A. has sanctioned this unusual departure from accepted practice; and if so, why?

Again, in Clause 10. If the work does not proceed for 24 months the successful architect is *not* to be paid the usual fees in the event; (*a*) if the Ministry of Health or the Home Office refuse to pass the plans; (*b*) if this country is at war with any European nation, or with Japan; and (*c*) if the Government declare that a state of emergency has arisen.

This seems a little hard on the architect; but perhaps (*b*) and (*c*) will be hard on everyone.

#### The Site

The site is situated about 800 yards west of the existing Town Hall in the centre of the town, and is a very fine one—an island site—surrounded by residential property on all sides. It is bounded by Fields Road on the N.W.; Godfrey Road on the N.E.; Clytha Park Road on the S.W.; and Faulkner Road on the S.E. The site has a fall from west to east of 81 feet, and from north to south of 36 feet, which will give competitors food for thought and will no doubt largely influence their lay-out.

There are some fine old trees on the site; Chestnut, Copper Beech and Silver Birch, not forgetting the irrepressible "monkey tree."

Competitors are advised (in very large capitals) to "visit the site in order that their designs may make the most of its natural advantages"; sound advice which probably most of them will act on.

#### Accommodation

The accommodation asked for comes under four main divisions :—Municipal Offices, Council Chamber and Committee Suite, Public Assembly Hall, and Law Courts and Police Station. In addition, a site is to be suggested in the lay-out plan for a Museum covering an area of 30,000 sq. ft.

The Council Suite is the usual accommodation for 60 Councillors, total 8,650 sq. ft.; is to be on the first floor; and the main entrance is


*The Newport Competition : The Site Plan*

to be on the south-east front. Acoustics are to be carefully studied in the height and shape of the principal rooms, and the Report is to give details of the methods the competitors propose to adopt, together with the materials to be employed. Domes are to be avoided.

A public gallery to seat 50, with separate access; waiting room, 200 ft. sup.; members' reading room, 500 ft. sup.; reception room (with minstrel gallery), 1,500 ft. sup.; four committee rooms, 800, 600, 400, 400 ft. sup. (some of these to be en suite); Mayor's parlour, 600 ft. sup.; Mayoress's parlour, 400 ft. sup.; waiting room, 200 ft. sup.; secretary's room, 150 ft. sup.; robing room 500 ft. sup., with Members' lavatories completes the Council Suite.

### Municipal Offices

Municipal Offices are required as follows:

| | Sq. ft. |
|---|---|
| (1) Town clerk's department and public assistance .. | 8,410 |
| (2) Borough treasurer .. | 14,150 |
| (3) Health department .. | 7,120 |
| (4) Waterworks department | 4,110 |
| (5) Borough engineer's dept. (on top floor) .. .. | 7,630 |
| (6) Borough architect's dept. (on top floor) .. .. | 4,890 |
| (7) Education department .. | 5,420 |
| (8) Electricity and Tramways department .. .. | 8,900 |

### General

Quarters are to be provided for the Town Hall Keeper, on an upper floor with separate access.

Lavatories are to be provided for (*a*) heads of departments; (*b*) male clerks; and (*c*) female clerks, respectively.

Considerable storage must be provided in addition to that scheduled, say 4,000 to 5,000 ft. sup., either in a lower ground floor or a basement.

Waiting space on each floor, adjoining janitors' lobbies; enquiry office near principal entrance; mess rooms, dressing rooms and lavatories for men (4) and women (10) cleaners; passenger lift and telephone exchange.

Covered space for 50 cars, and separate storage for cycles is required.

Boiler house, heating and ventilating plant, and fuel store, with all necessary ducts, are to be provided, with suitable access.

### Assembly Hall

An assembly hall for 1,500 persons, with no galleries, with floor suitable for dancing, choir 200, orchestra 100, with space for organ. Entrance hall and foyer. Cloak rooms, *adequate* for both sexes. Lavatories adjoining. Box office, janitor, two retiring rooms for artists, with lavatories adjoining. Green room, chair store, refreshment room (2,000 sq. ft.) and service kitchen.

Entrance to hall to be separate from main entrance to municipal buildings. Convenient connection from council suite, and car approach to main entrance to assembly hall.

A properly equipped kitchen is to be provided, suitably placed for serving the reception room of the council suite and the refreshment room of the assembly hall. Provision is to be made for projection room and rewinding room in the assembly hall. Spacing of seats should average 1 ft. 8 ins. by 2 ft. 9 ins. back to back and .9 sq. ft. per person in the orchestra.

### Law Courts and Police Station

Two courts are asked for, each 2,000 sq. ft. and each with gallery to seat 50 persons. In addition to the criminal and civil courts, a police court, 1,500 ft. sup., and a children's court, 700 ft. sup., are required, also a central police station, giving a total of 36,190 ft. sup.

At a first glance at this somewhat formidable programme, it would appear that the future small item of 30,000 ft. for a museum (for which designs are not invited in the present scheme) will nevertheless have an important bearing on the final design, for it is much larger than the assembly hall and about the same size as the law courts and police station taken together. Yet according to the conditions it is only to be shown as an unconsidered trifle upon the block plan.

The elevations are to be faced with Portland stone, and the internal courts with light-reflecting surfaces. The cost is not to exceed £300,000, and competitors are asked to observe economy in plan and construction. It will need it.

### Drawings Required

The drawings required are reasonable, and will give competitors the minimum of trouble, but I see the inevitable detail is asked for, that last straw that breaks the camel's back. Surely this can now be omitted in first-class competitions such as this.

The finish of drawings is left to the competitor, "but elaborate drawings are not required."

I seem to have heard this before, but the winning scheme is usually very elaborate indeed, and so, one supposes, it always will be; if a design is good it is none the worse for being adequately presented.

To sum up, this competition will depend on three main points:—(1) The extent to which the natural advantages of the site are made use of; (2) the position and arrangement of the Museum; and (3) the extent to which the site levels are made the main factor in the whole composition.

## *COMPETITIONS PENDING*

BELFAST: NEW WATER OFFICES

The Belfast City and District Water Commissioners are proposing to hold a competition for new office buildings and Mr. H. Austen Hall has been appointed to act as assessor. Conditions are not yet available.

BIRMINGHAM: NEW CENTRAL TECHNICAL COLLEGE, ETC.

The Corporation of the City of Birmingham are to hold a competition for a new Central Technical College, Commercial College and School of Arts and Crafts. Mr. J. R. Adamson has been appointed to act as assessor and the premiums to be offered will be £750, £500 and £250. Conditions will be issued in the near future.

DUNDEE: COLLEGE OF ART

The Dundee Institute of Art and Technology are to hold a competition for the Duncan of Jordanstone College of Art and Mr. J. R. Leathart has been appointed to act as assessor. Conditions are not yet available.

EDMONTON: NEW TOWN HALL BUILDINGS

The Edmonton Urban District Council are proposing to hold a competition for new Town Hall buildings, and Mr. E. Berry Webber has been appointed to act as assessor. No conditions are available yet.

HACKNEY: RECONSTRUCTION OF CENTRAL BATHS

The Hackney Borough Council are proposing to hold a competition for the reconstruction of the Central Baths, and Mr. Frederick J. Horth has been nominated to act as assessor. Conditions are not yet available.

LEAMINGTON SPA: NEW POLICE AND FIRE STATIONS

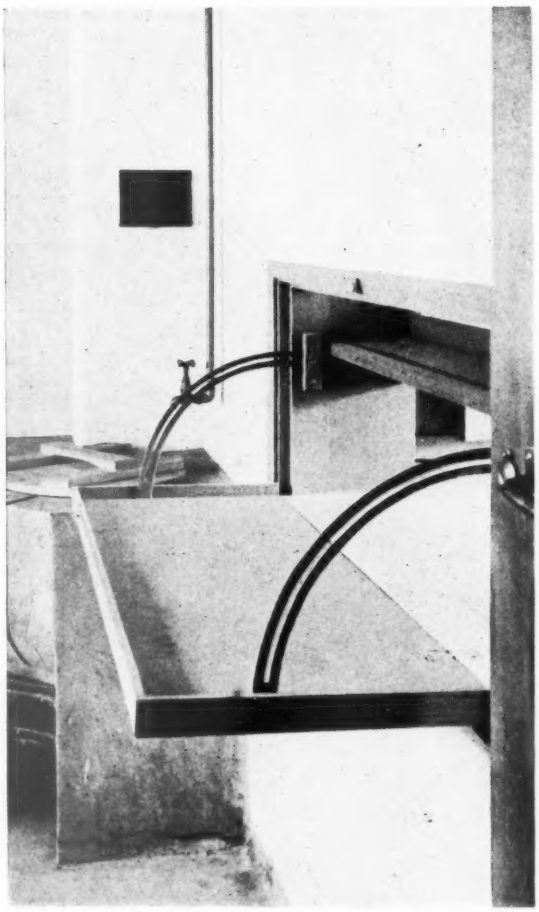
The Corporation of Leamington Spa are proposing to hold a competition for new police and fire stations, and Mr. R. Norman Mackellar has been appointed to act as assessor. The competition will be open to registered architects within the area of the Birmingham and Five Counties Architectural Association. Conditions are not yet available.

SOUTH SHIELDS: ASSEMBLY HALL AND LIBRARY

The South Shields Town Council propose to hold a competition for an assembly hall and library to be erected on a site at the rear of the Town Hall. Mr. Arthur J. Hope has been appointed to act as assessor. Conditions are not yet available.

# WORKING DETAILS : 499

POPLAR BOROUGH COUNCIL • FITMENTS • COMMODORE COURT, POPLAR

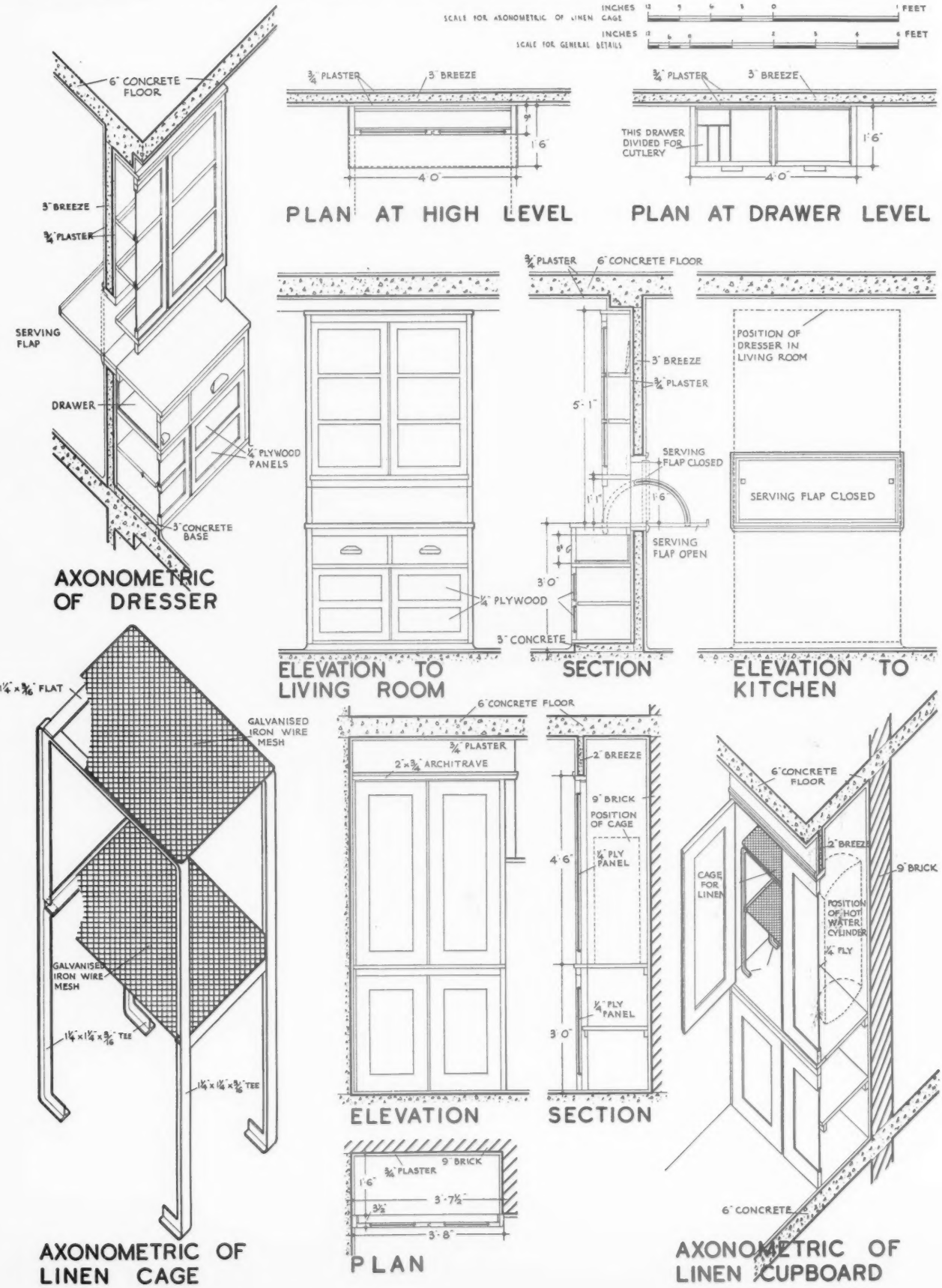


These photographs show fitments built in each flat at the Commodore Court Housing Scheme. The dresser between kitchen and living-room is fitted with a flap which when let down to act as a table in the kitchen, enables the working mother to keep an eye on her children in the living-room. The cupboard is fitted with a free-standing and removable metal cage for linen to reduce harbourage for vermin.
Rees J. Williams, A.M.Inst.C.E., P.A.S.I., Borough Surveyor.
Thomas Sibthorp, P.A.S.I., Architectural Assistant.
Axonometrics and details are given overleaf.

# WORKING DETAILS : 500

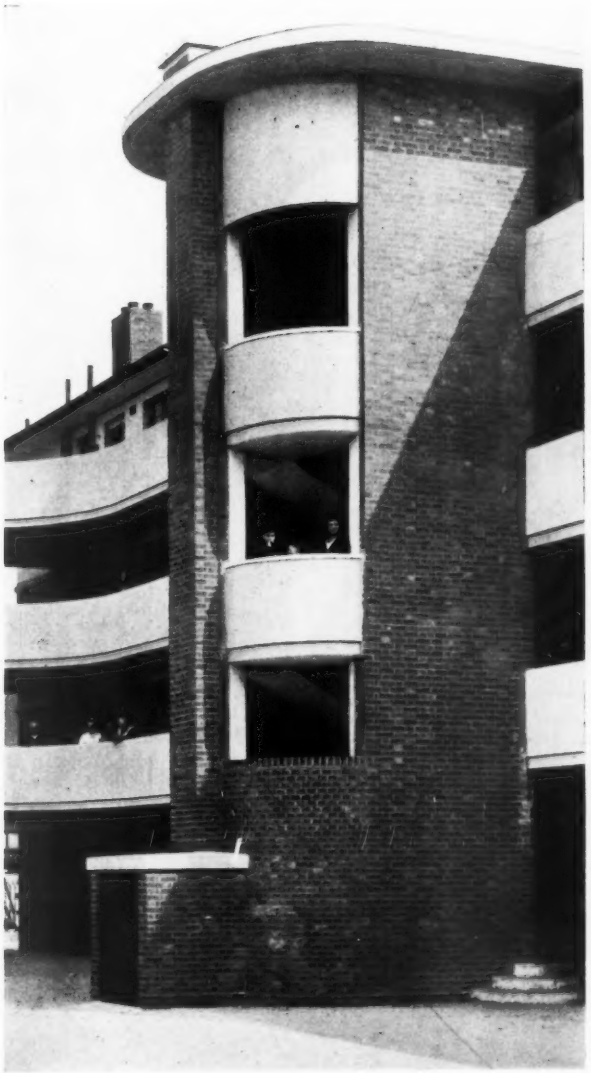
POPLAR BOROUGH COUNCIL • FITMENTS • COMMODORE COURT, POPLAR

# DRESSER & LINEN CUPBOARD



# WORKING DETAILS : 501

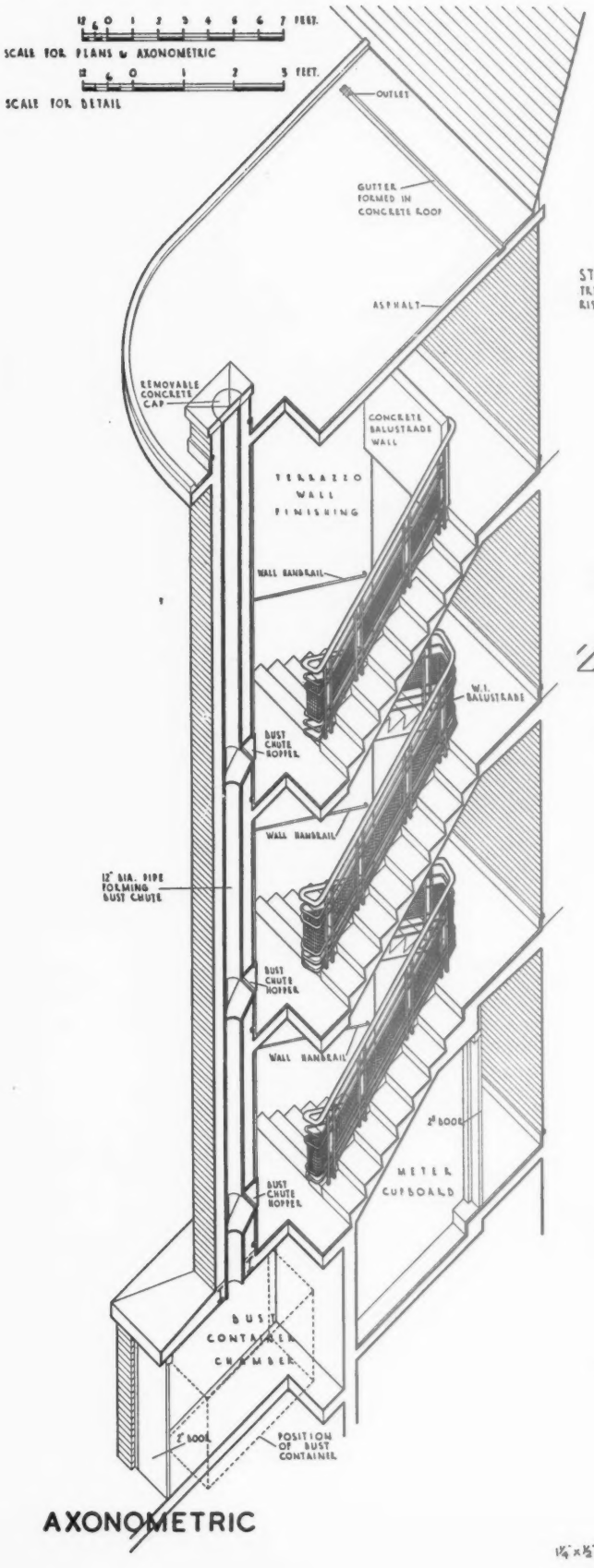
POPLAR BOROUGH COUNCIL • THE RUBBISH CHUTE • COMMODORE COURT, POPLAR



These photographs show the rubbish chute incorporated in the staircases at the Commodore Court Housing Scheme.
Rees J. Williams, A.M.Inst.C.E., P.A.S.I., Borough Surveyor.
Thomas Sibthorp, P.A.S.I., Architectural Assistant.
An axonometric and details are given overleaf.

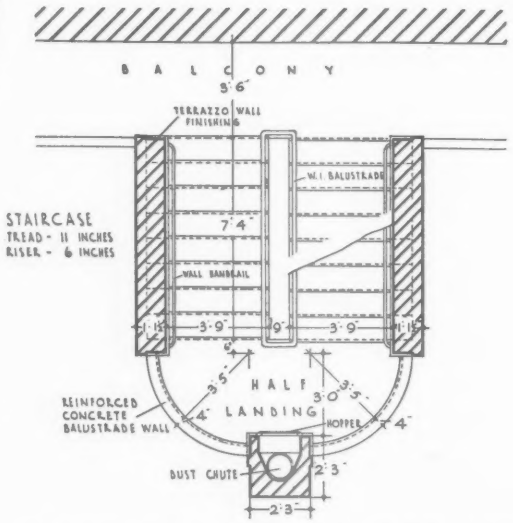
# WORKING DETAILS : 502

POPLAR BOROUGH COUNCIL • THE RUBBISH CHUTE • COMMODORE COURT, POPLAR

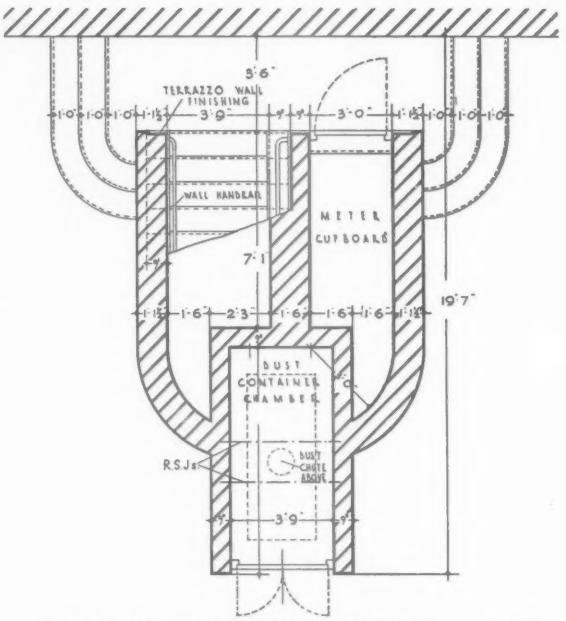



AXONOMETRIC

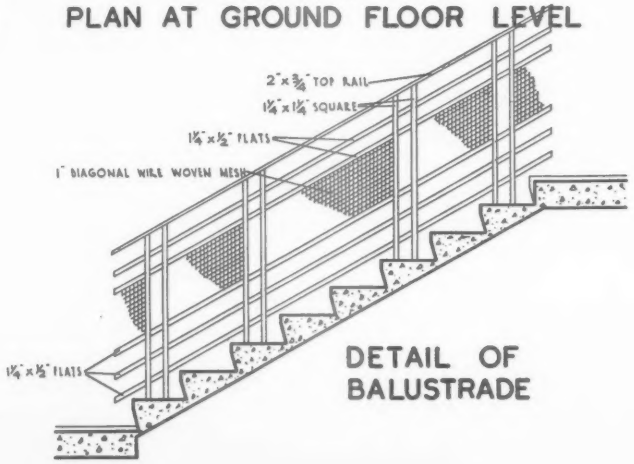
## STAIRCASE



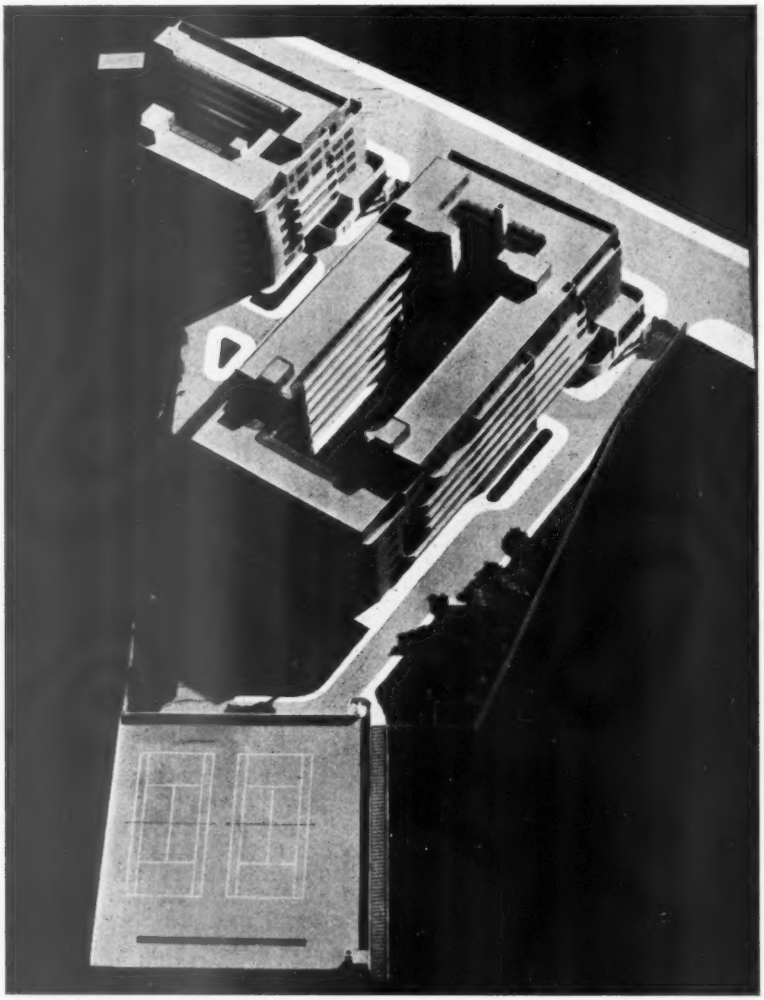

PLAN AT SECOND FLOOR LEVEL




PLAN AT GROUND FLOOR LEVEL




DETAIL OF BALUSTRADE



*Lichfield Court, a block of flats at Richmond. Designed by Bertram Carter and Sloot.*

# ARCHITECTURAL MODELS

## *BY KENNETH McCUTCHON*

(All the models illustrated were built by the Author)

MODEL making is probably the oldest method of studying architectural design, and models are still the most accurate medium of foreseeing a projected building. No Renaissance palace or Gothic cathedral was ever begun till its model in wood had been studied in detail; and early Egyptian models recovered from the tombs give us a glimpse of an otherwise obscure civilization.

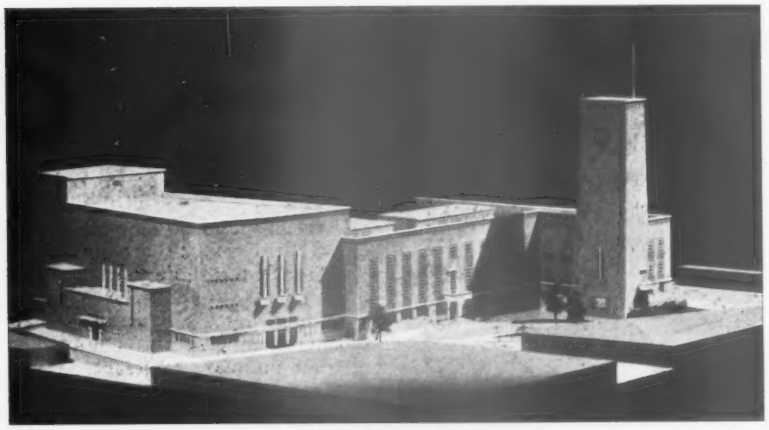
Nowadays, due probably to the growth of new materials and new methods of construction giving rise to new values in the questions of space and scale, the use of models is increasing in popularity. Of course, there are models and models; ranging from mere cartoons of the building to exact scale replicas of the complete design.

The author was fortunate to learn the need for paying closest attention to the architectural verities by his early association with the late Douglas Tanner, F.R.I.B.A., whose faith in models was equalled by his skill in making them. Mr. Tanner will always be remembered for the great influence he had in improving the standard of exhibition design in this country.

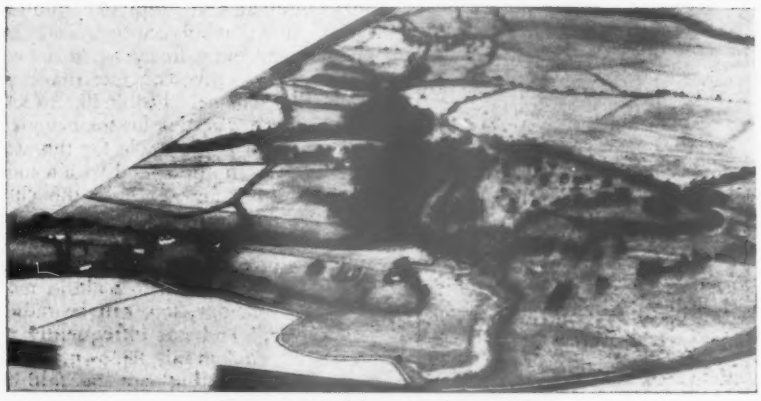
An architect's sketches can be well supplemented by sketch models, introduced very early into the conception of a building. The usual sketch perspectives serve very well as far as they go, but are necessarily limited in scope, and can only state a few aspects of the projected building. A model, on the other hand, gives a comprehensive idea from the first, and can be made if necessary in sketch form from the architect's "roughs." In this way faults and weaknesses that never reveal themselves on paper become instantly apparent, and these can be rapidly studied by altering the model or by adding and taking away pieces as desired, until the best solution of the problem is found, providing true "manipulation of space." All the elements of the design, from the largest to the smallest, can be worked out in this way.

From the point of view of the architect's client, models are invariably a welcome feature. Very few people are fully able to understand plans and elevations—some not at all—and perspectives can give but a limited idea of what the plans represent. It is not until a model appears on the scene that the building begins to take on reality so far as the layman is concerned. This is fully understood by estate development and hospital committees, who know that subscriptions and donations come more freely when a model is at hand to give concrete shape to a projected scheme. People like to know what they are getting for their money—a point that is profitable for the architect to keep in mind; and with a model it is possible for not only the client, but the architect to realize *exactly* what he is getting. Every shape, material and texture used in architecture is possible of reduction to scale in model making. Colour, too, can be reduced to "scale," and not infrequently presents a problem all its own. Grass, trees and planting can be faithfully reproduced, and when the model is finished and set in its entourage, if carefully enough done, it can be a perfect miniature of the building in its setting, accurate down to the last detail, the last texture and the last contour of the actual site. The whole effect is not unlike looking at a full-size building through the wrong end of a telescope.

By lowering the eye to the scale eye-level on the model, it is possible to "walk round" the building studying it from every possible future view. Literally hundreds of perspectives of the complete design are there, and, moreover, none of them are out of drawing. Nor need this perambulation be restricted to the outside. Interiors can be completely fitted up with all colours, forms and furnishings exactly reproduced, and by doing a few ingenious things with walls and roofs, adequate views of them can be comfortably obtained. One school that the author was called upon to reproduce in miniature was four storeys in height, and the main condition of the construction was that all interiors should be accessible. This was accomplished by each storey being made complete with its fitted interior as a separate section, and all the parts were then fitted together, much as a jigsaw puzzle, to form a finished building. Thus plans, sections,



*Greenwich Town Hall, by Culpin and Son.*



*An estate near Warsash, 1/1250 scale.*

and elevations of each floor, and of the whole structure were readily discernible in conjunction with innumerable perspective views.

The facility with which all the elements of the design could be comprehended compared very favourably with the real labour involved in going through literally hundreds of drawings necessary to explain the same things on paper. The added interest of actually seeing things in the solid is obvious.

It is interesting to note that just as $\frac{1}{8}$-in. scale drawings on the drawing-board in the main prove the most workable for the complete study of a building, so $\frac{1}{8}$-in. scale models generally give the most satisfactory results. The greater number are built to this scale, but as a rough guide to the desirable size of any particular model, it could be stated that if a building is most conveniently studied to $\frac{1}{16}$-in. scale on the board, the model should be $\frac{1}{16}$-in. scale also. If the drawings are to be $\frac{1}{4}$-in. scale, then the model should be of similar size, and so on. Models for the study of detail are most satisfactory if built to $\frac{1}{2}$-in. scale. Anything bigger than this tends to become cumbersome and seems to get "out of scale." If the architectural problem is at all difficult or unfamiliar, a carefully made $\frac{1}{2}$-in. model is very much more valuable and useful than the usual isometric drawings. In the case of one city building, where the stonework was extremely complicated, models of each of the stones had to be made so that the questions of bedding and bonding, and support, could be worked out fully. This was an excellent illustration of a case where flat representation on paper was inadequate for a solution of the problem.

In the construction of a model a good foundation is naturally a first essential. This is usually provided by a good base board built of wood, which has a clean, flat, upper surface, and which is well braced beneath. The board must be perfectly rigid, as any wobble will immediately produce deflections in the model itself.

If the site represented is anything but level, the model contours will be built up generally by a series of contour layers of card or board whose edges are cut exactly to conform to the contour lines of the map. In this way a stepped "cartoon" of the site is formed, and then the steppings are filled in with plaster or covered with cardboard to give a true scale image of the finished ground line.

For the construction of the model itself the author prefers to work in cardboard or plywood. Plaster models are losing favour as they do not lend themselves to delicacy or refinement in the representation of materials. Mounting boards are very useful, and water colour boards up to 400 lb. can be put to a variety of uses, and have surfaces that can be coloured much like a drawing.

Seccotine is the cleanest and strongest material for fixing the parts together, and ordinary household pins are often useful. For larger models plywood is the most satisfactory and is generally nailed and glued together with hot Croid.

It is impossible to generalize on the question of finishes, as each model presents fresh problems that have to be met in their own way; the amount of success in reproducing textures and materials to scale depends entirely upon the ingenuity and skill of the model maker.

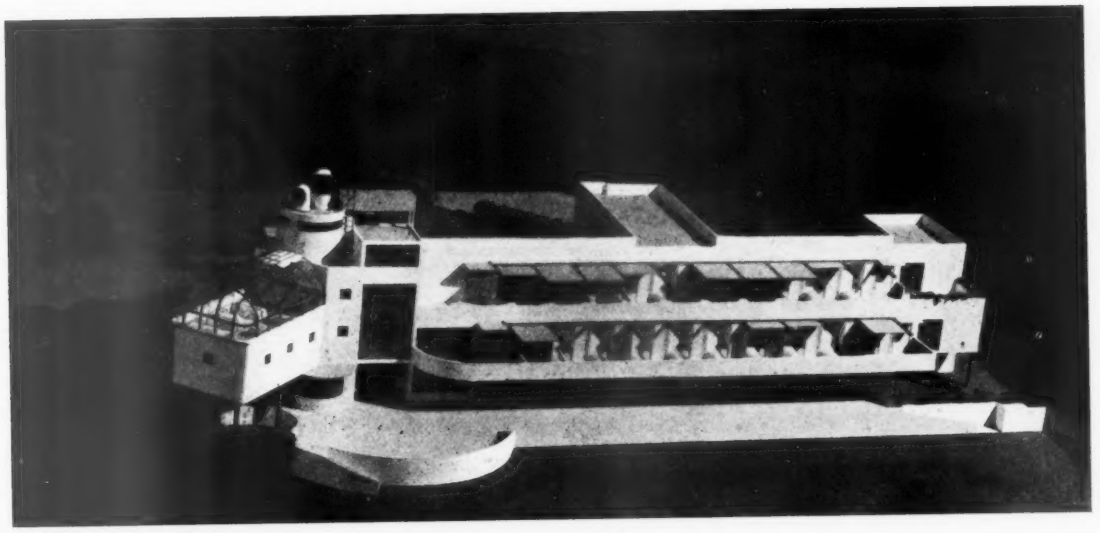
Fine wire and pins form invaluable aids in representing metal work, and celluloid or glass can be used for windows, according to the scale of the model. Frames and glazing bars are generally drawn on, although there have been cases where small imitation stainless steel sashes have been specially made.

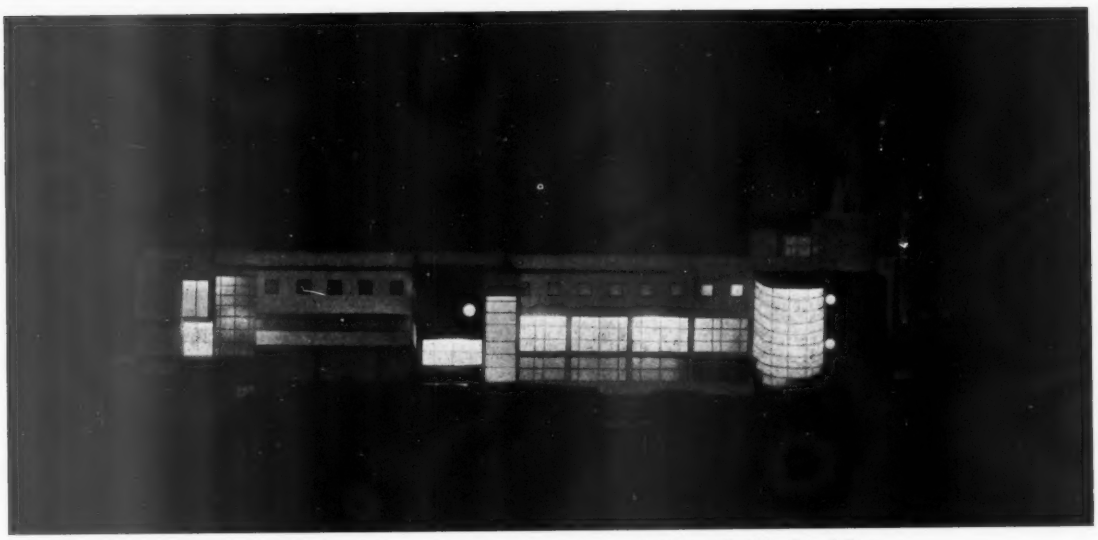
The essential shapes of sponges are so like trees that they need no more than a little trimming to make them very satisfactory for the job. When dyed and mounted on twigs and set about a model they give an extraordinary sense of reality. Loofa sponges, owing to their dense texture, make admirable hedges when cut to the required shape.

The foregoing is but the briefest survey of the materials used in model making, but it will give some idea of the method of approach to the problem.

Models are not nearly so costly as is generally supposed. Price is, of course, ultimately controlled by the type of model required, and the amount of finish desired. As a simple illustration, windows can be merely drawn on the surface of the model and rendered, or each window can be cut out, fitted with its own frame to scale, and "glazed" with one of the several representative materials available. And if, in addition, lighting behind them is required for night effects, this naturally has its influence upon the cost of the model. Incidentally, a model is an absolute necessity if the lighting is to be one of the predominating elements of the design, as by no other means can one study the differing values of light falling upon diverse surfaces.

As an indication of general costs, the model of Greenwich Town Hall, illustrated here, was built for no more than





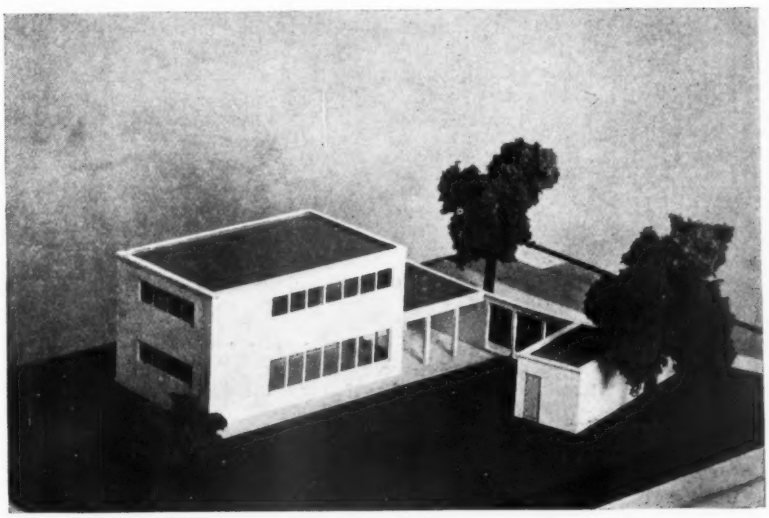
*Day and night views of a Preventorium by Connell, Ward and Lucas.*

the cost of two perspectives. And, as pointed out before, the number of perspective views available by this means is simply unlimited.

Accurate sketch models will generally mean the outlay of but a few guineas only, and the price scale will rise in direct proportion as the amount of detail and finish desired is increased.

A considerable amount of time can be necessary for a complicated model, and this is, of course, an important item.

The model of the large stretch of country on the shores of Southampton Water, shown on the accompanying illustration, has contours, woods, tidal limits, and all other natural features constructed to scale. This was a most fascinating model to build, and required much time to be spent on the actual site. Although not definitely architectural in character, it does not lack interest on that score.



*A house at Frinton Park, by Mendelsohn and Chermayeff.*

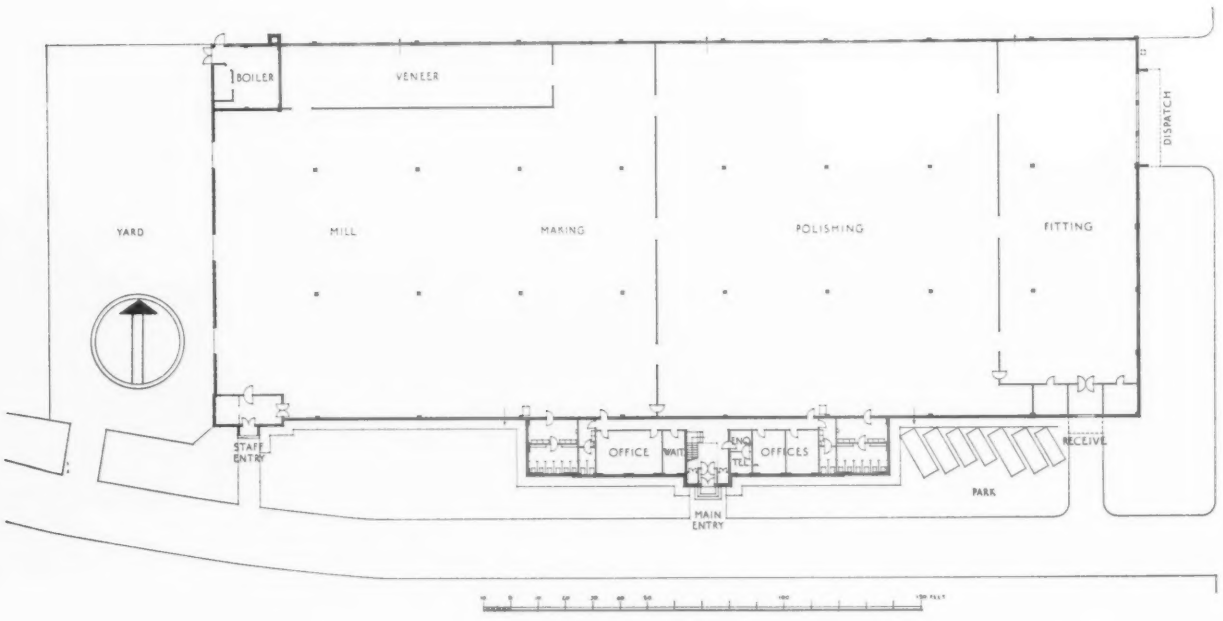
# FURNITURE FACTORY AT EDMONTON:

**GENERAL PROBLEM**—*Factory for the Great Eastern Cabinet Company, Ltd., for the manufacture of cabinet work and furniture.*

**SITE**—*Eleys Estate, Angel Road, Edmonton, N.*

**PLAN**—*Timber is received at the west end of the factory, and passes in proper sequence of manufacture through the veneering, assembling, making, fitting, and polishing shops, the finished article of furniture being despatched at the east end. Fittings and glass are received through a separate entrance.*

*Above is a general view of the office block.*




PLAN AT GROUND LEVEL

BY NICHOLAS AND DIXON-SPAIN

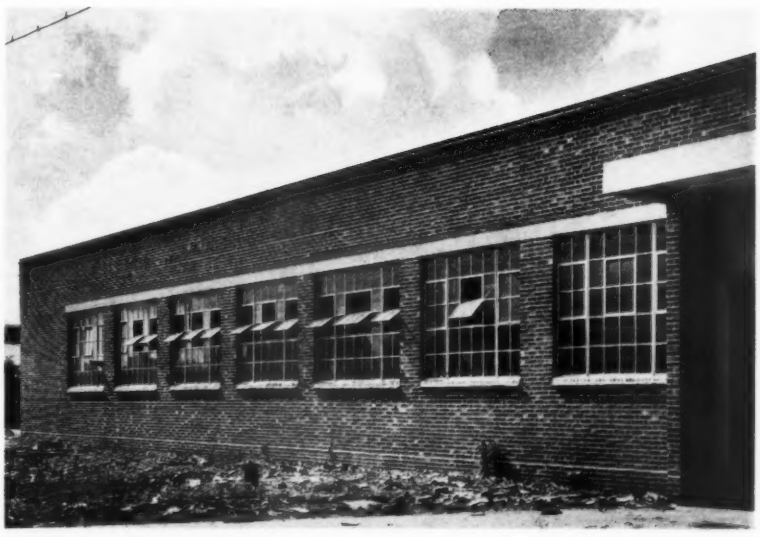
**PLAN**—*cont.: The corner position of the site gave freedom in planning and enabled the receiving and despatch departments to cope freely with the long lorries used by the trade.*

*The office block is provided with convenient access to the various factory departments, and contains large showrooms on the first floor. There is a large separate canteen building.*

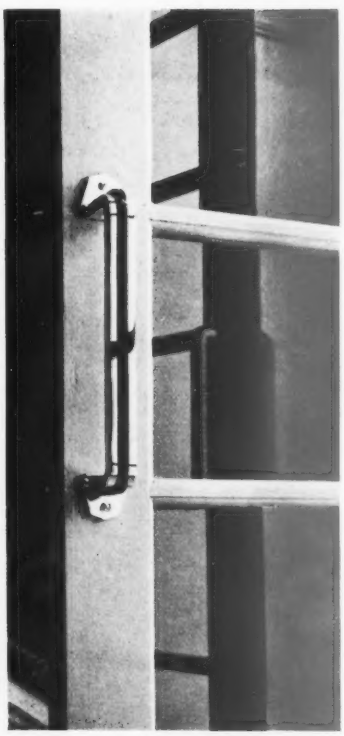
**CONSTRUCTION**—*The factory is steel-framed, with an infilling of brick, supported on wall beams. The offices are brick, with* R.C. *wall beams and concrete piers. Offices have hollow concrete floors and flats, and the factory has asbestos roofing sheets and troughing, and patent north light glazing. The steelwork has been designed with large spaces between the stanchions to give the maximum freedom to floor space. Roof trusses are supported by lattice girders.*

*The elevations are of rustic Fletton facings, with artificial stone dressings.*

*Above is the staff entrance at west end of the factory, and on the right a view of part of the east elevation.*



# FURNITURE FACTORY AT EDMONTON:



**SERVICES**—*The factory is provided with electrically-driven plant and steam presses and heaters. Exhaust ducts convey the wood chips and sawdust from the workshops into the fan over the boiler-house, for discharge to the boilers and incinerator.*

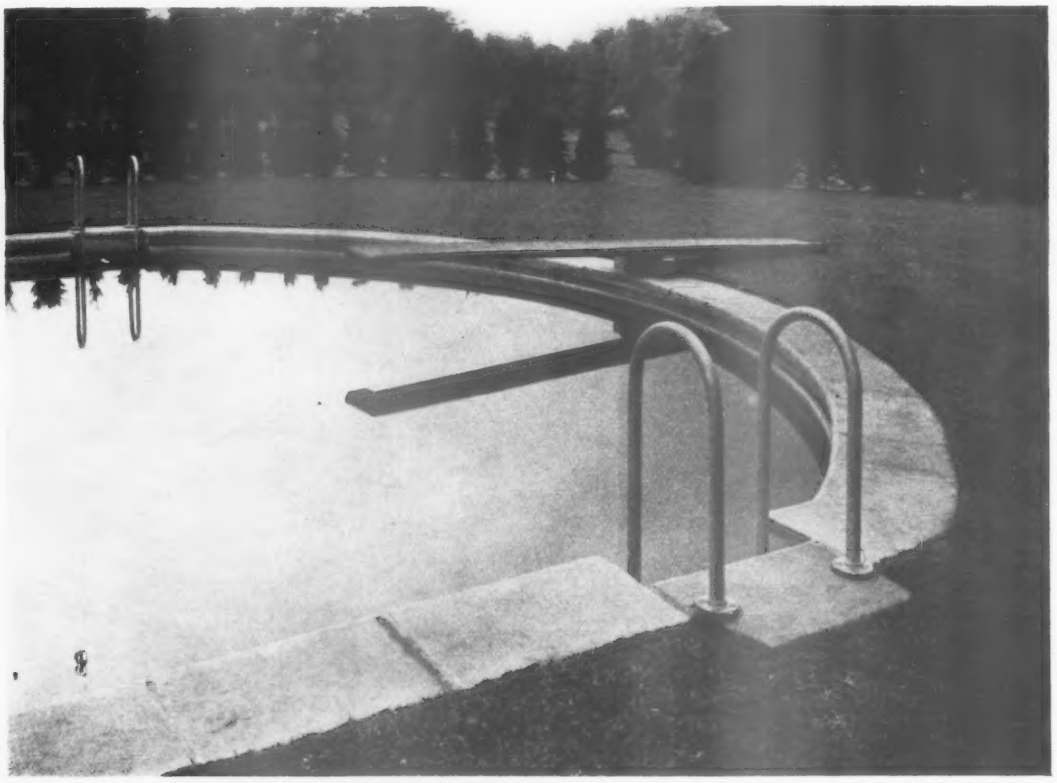
*There is full telephone communication between the offices and the factory, and all departments are protected from fire by sprinkler installation. Steam heating is installed in the factory, and low-pressure heating in the offices and showrooms.*
*For list of general and sub-contractors see page 470.*

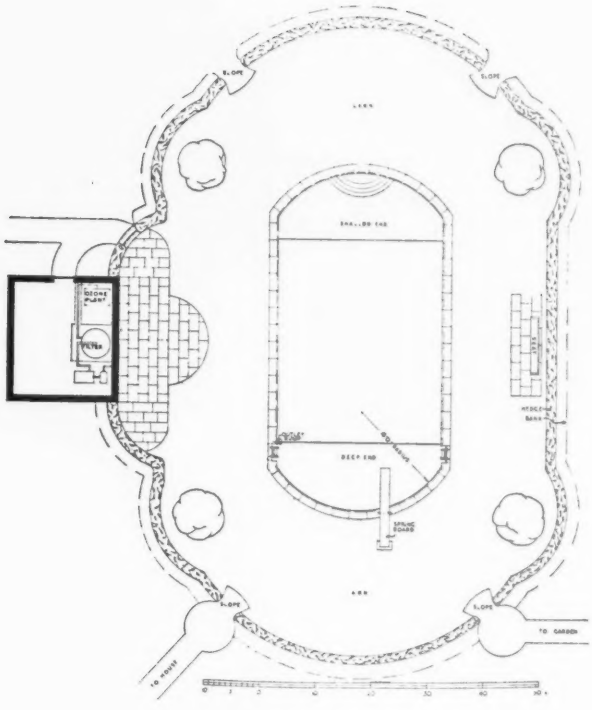
*The photographs are : above, the directors' office, showing the wood veneered wall decoration carried out by the clients ; below, right, the loading dock at the east end of the factory ; and left, a detail of the handles on the entrance doors of the office block.*

# BY NICHOLAS AND DIXON-SPAIN

*A detail of the staircase in the entrance hall. The stair is of reinforced concrete with a grano finish and non-slip insets. The balustrade is of wrot-iron finished sky blue and the skirting black. The hall floor is of rubber.*

# SWIMMING POOL AT MILFORD:





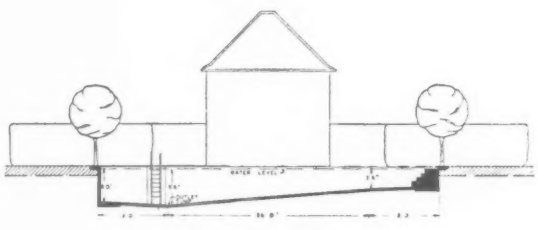

**PROBLEM**—*A private swimming pool in the garden of Rake Manor, Milford. The setting is a wide grass verge surrounded by a newly-planted yew hedge. An existing rubble building houses the filtration plant.*

**MATERIALS**—*The pool is of reinforced concrete with a simple York stone verge and tubular rails. Paving outside building is also of York stone.*

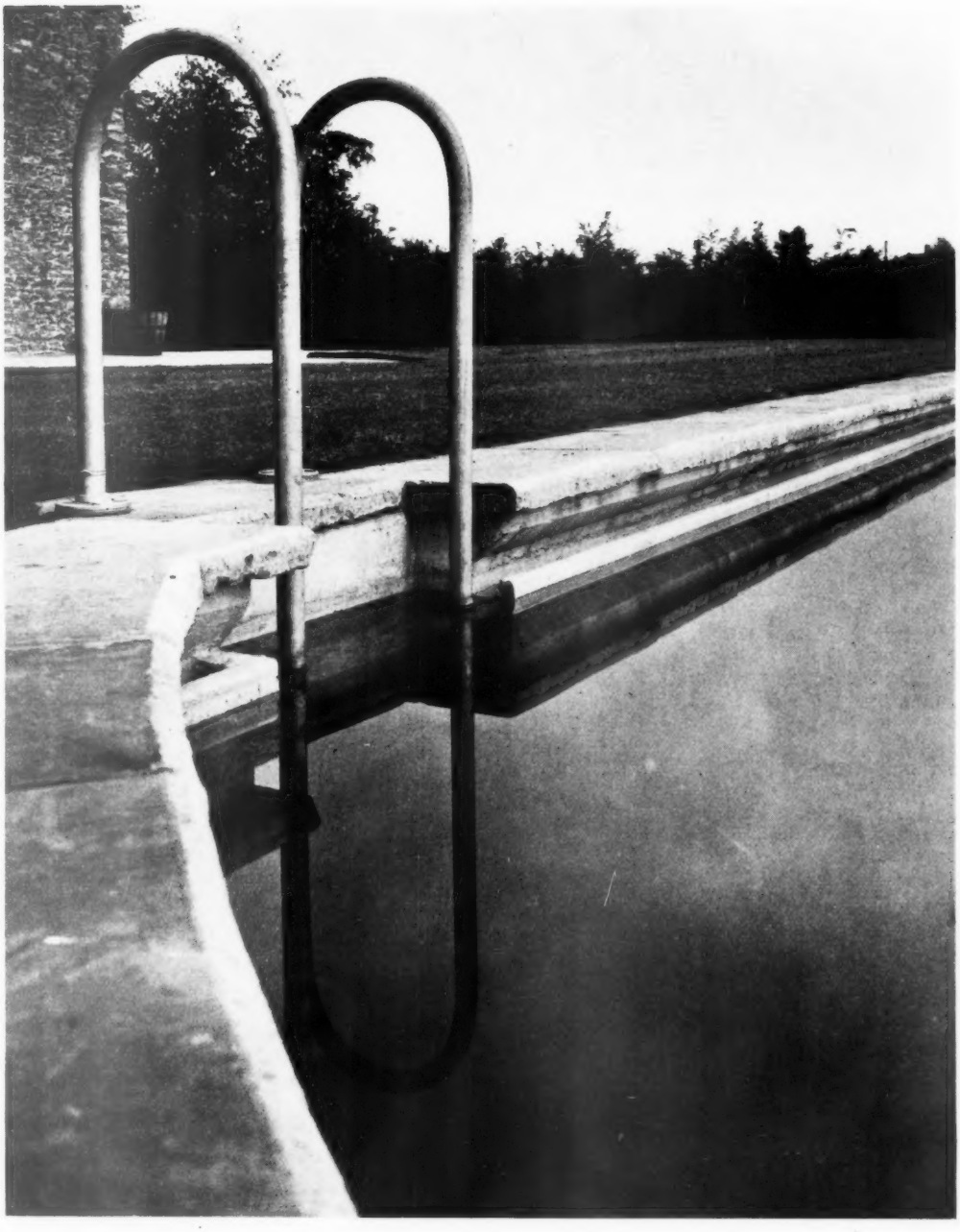
**EQUIPMENT**—*The filtering plant is of a recent type, ozone being used instead of chlorine. The ozone is introduced as a gas at the bottom of the bath. The water supply is drawn from a neighbouring lake.*

*Above is a view of the deep end of the bath.*

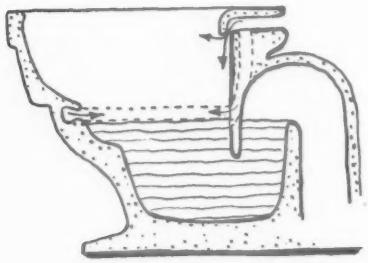
*For list of general and sub-contractors see page 470.*



BY OSWALD P. MILNE



*A detail of the pool scum channel, surround and tubular steel hand grips. On the left is the existing rubble shed which houses the filtration plant.*



# TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

## OLYMPIA AFTERMATH

IT would be idle to pretend that these notes, taken in conjunction with the report published in last week's issue of this JOURNAL, can succeed in dealing adequately with all the new materials and devices shown at the Building Exhibition. Some of them have doubtless been missed altogether, more have had to be omitted for reasons of space; an attempt will, however, be made to deal with them all seriatim during the next few weeks. Should any manufacturer feel aggrieved that his product has been passed over I should be glad to receive details of it, stipulating only that the product should be new, or, at least, not date back further than the previous Building Exhibition in 1934.

•

Stand design was, I suppose, better than in previous years, for the number of architect-designed stands grows slowly but steadily, but, oddly enough, one of the least exciting stands in the show proved to be one of the most interesting. The Tentest people had a stand which broke away completely from the usual wallboard display of curved surfaces and fancy jointings. The result was a stand in which "design"—in the usually accepted sense of the term—was completely absent; who was responsible for this I do not know, but the result was excellent, for it showed visitors how to fix wallboard and the various things which could be done with it. And showed it very well, too, which is, or should be, the object of a display at a show like this.

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One of the more ingenious fixing methods was that shown for fixing the board to light steel framing: see sketch below. T-section metal laths are used at the joints in the board and the exterior corrugated iron sheet is held on by hook bolts passing through the wallboard and round the intermediate angles—a neat method which should be very useful in factory buildings or garages, or in fact, anywhere where it is essential to enclose the maximum of space at the minimum of cost.

•

Various other fixing methods were shown and the company has also done a good deal of experimental work on the question of V-grooves for joints; these give a pleasant finish and overcome the need for the usual rather unsightly cover slip. A special tool for making these grooves is sold by the company, or can be lent to the contractor.

•

Coloured renderings have been attacked by the Adamite Company from a new angle, for they have succeeded in colouring the *sand* and using ordinary Atlas White cement. The colour goes right into the sand grains and becomes an integral part of them, as can be demonstrated by pounding up the grains into a fine dust, when the colour remains the same. The principle of putting the colour into the aggregate and not into the cement has the great advantage that the cement-sand ratio can be reduced, thereby reducing the tendency to crazing at the same time, while the colour, since it is in the aggregate, is bound to be permanent as long as the dyes are permanent, which tests have shown them to be. So far ten colours are available, but any colour can be made to order, provided that the amount required is reasonably large. Browns, buffs, and reds are £9 a ton, green and lilac more expensive, with dark blue at £18; these figures working out at about 2s. 3d. and 4s. 6d. a square yard for the cheapest and the most expensive.

•

The Rowley Gallery has a particularly good example of a built-in dining-room fitment for use where space is at a premium. The photograph on page 470 shows how the fitting is arranged, and there is also a two-seater model built on the same lines. All shelves are made adjustable, the ones in the centre being grooved for arranging dinner and tea services as on a dresser; the cupboard below the table is arranged for bottles, the two doors being hung on a central post to give easy access when the table is down. The supports for the table and legs lock into position automatically by means of a simple stay which cannot get out of order, and when closed, the fitment provides a clean flush front, handles having been eliminated on all but the doors to the cupboards. Prices vary from £25 in oak to £18 in soft wood, stained, the two-seat model being £16 10s., and £13 10s. for the same materials. The design, incidentally, is registered and a patent has been applied for.

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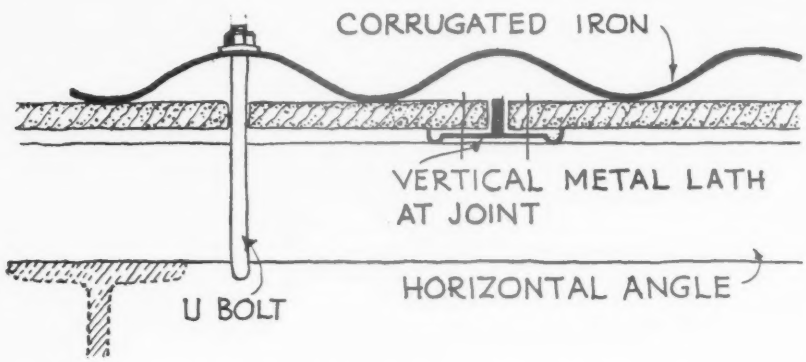
Nettlefolds have evolved a neat fixing for pull handles, which generally need a bolt passing through the door and thus have to be staggered. The sketch on page 470 shows, though only diagrammatically, how this has been




*A simple method of wallboard fixing for light steel-framed buildings (Tentest).*

achieved. The distance piece is screwed to the door but remains free to rotate and thus screw the handle firmly in position.

•

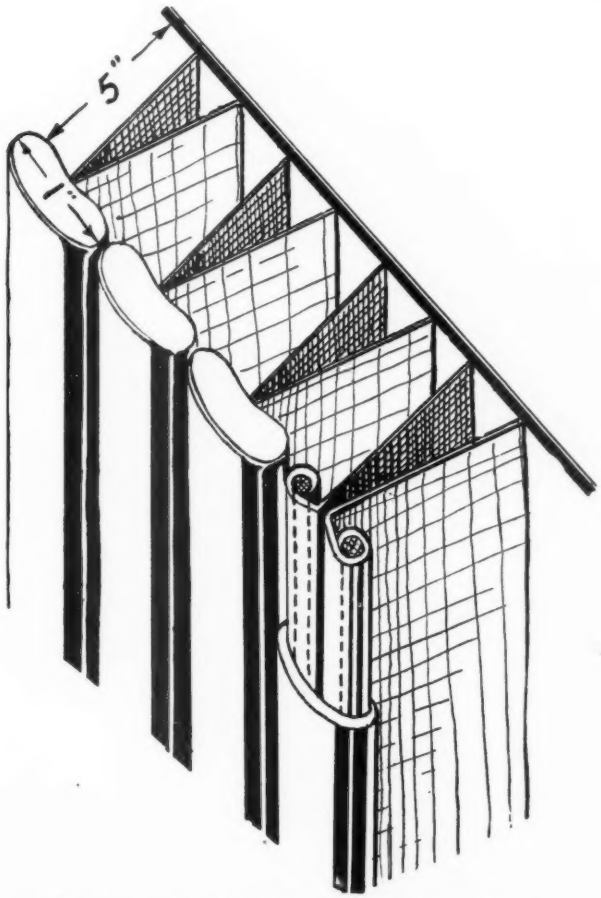
Adamsez, Ltd., have a new w.c. which has been designed without the usual rim. The section at the head of these notes more or less explains itself, but the advantages claimed are perfect clearance with only a two-gallon low-level flush. Other obvious advantages are more efficient flushing and a minimum of awkward corners to need further cleaning.

•

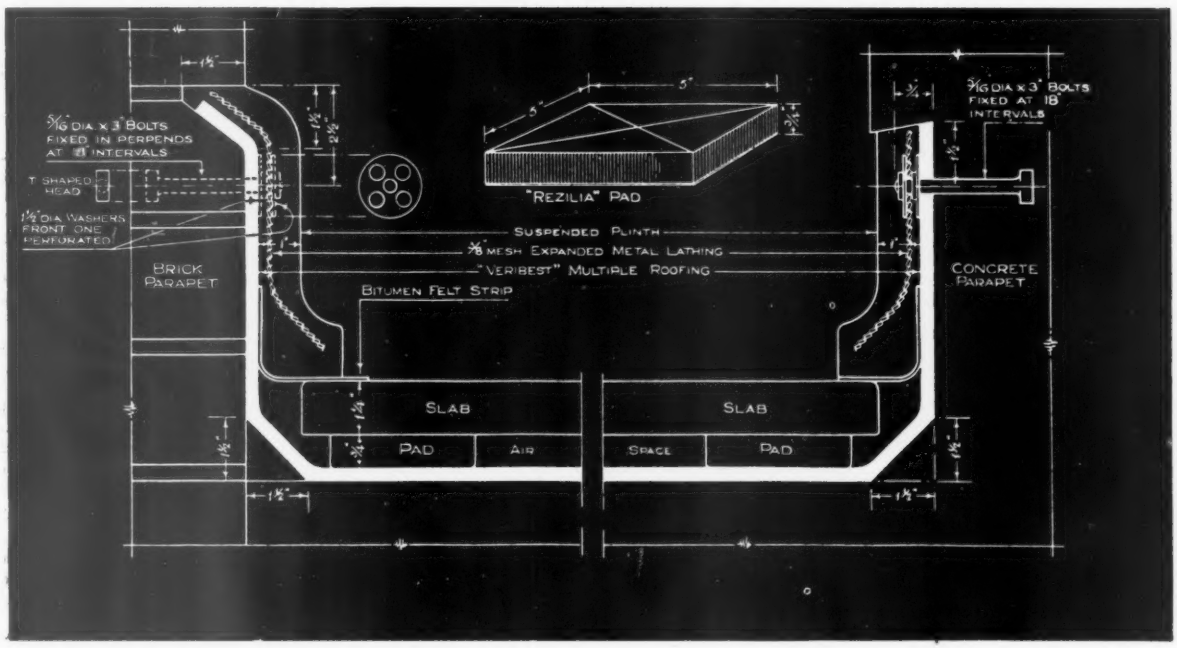
Advance news of a new type of wall-board was given on Turners' stand, but no prices are, as yet, available. I gather, however, that the new board will be half-way between the ordinary asbestos board and "asbestos wood."

•

The trouble of high surface temperatures on flat roof coverings, with consequent expansion and cracking, and the possibility that the resistance of the covering may be reduced, is familiar to most architects. Various remedies have been evolved, from crushed oyster shells to elaborate systems of tiling, the latest being a series of air-insulated slabs (Système Campistron) now being developed in this country by George M. Callender & Co. The drawing on this page explains simply enough how it works, the cement slabs 1 ft. 6 in. square resting



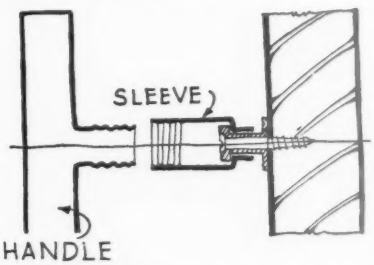

*A new type of gate evolved by the Bolton Gate Company. The mild steel shutter plates are hinged together by the bronze sections.*




*George M. Callender's air-insulated flat roof covering. 1 ft. 6 in. square slabs rest on 5 in. by 5 in. pads ¾ in. thick. See description above.*

*The four-seat version of Rowley's dining fitment.*

on 5 in. by 5 in. bituminous pads. This method gives a ¾ in. air space beneath each slab, and since the slabs themselves have a ⅛ in gap at the joints drainage is simple. Quite apart from heat insulation, this form of roof has the additional advantage of giving excellent sound insulation, the system being nearly the equivalent of the "floating floor" on which the National Physical Laboratory has recently been doing so much work.




*A diagrammatic sketch of an invisibly fixed pull handle by Nettlefolds.*

# LAW REPORTS

**IDENTIFICATION OF PROPERTY.—LAW AS TO A PLAN**

*Mead* v. *Sharman. Chancery Division. Before Mr. Justice Farwell*

THIS matter came before the court in a summons taken out under the Law of Property Act, 1925, and the question raised was whether the purchaser, Mrs. N. E. Mead, was entitled to a plan of the property at Norfolk Square, Brighton, which she purchased from the vendor, Mr. A. G. Sharman, in addition to identity given in her conveyance.

At the moment there was no question as to the identity of the property, but the plaintiff contended that she was entitled to a plan at the expense of the vendor. She submitted that the name of the square and the number of the property might be changed by the Corporation and that in these circumstances she should be given a plan.

The defendant's reply was that the identification of the property was clearly set out in the conveyance, which also gave a full description of it, and under those circumstances the court could not put the vendor to the expense of a plan, which was unnecessary.

His lordship, after hearing the arguments of counsel, held that the identification of the property as set out in the conveyance was ample and sufficient. He took the view that there was therefore no necessity for a plan and he dismissed the summons.

His lordship added that he was of opinion that if it was possible to convey the property by sufficient and full and satisfactory identification without a plan, then plaintiff could not come to the court and demand a plan at the expense of her vendor.

**QUESTION OF DEDICATION BEFORE HUMAN MEMORY**

*Attorney-General* v. *Ecclesiastical Commissioners and others.—Chancery Division.—Before Mr. Justice Luxmoore.*

This action was brought by the Attorney-General at the relation of the Truro Rural District Council, against the Ecclesiastical Commissioners, owners of land near Truro, and their tenants, for a declaration that there was a right-of-way from Porthcuel Ferry and the village of Tregassick to a point between the villages of Gerrans and St. Anthony-in-Roseland.

Defendants pleaded that no such right-of-way existed.

His lordship, in giving judgment, said there was no evidence of dedication between 1829 and the present time and therefore the plaintiff must establish dedication before 1829 to succeed in the action. He had had no evidence of formal dedication and it could only be inferred from evidence of user in the light of surrounding circumstances. Since 1829 was beyond human memory, there was an absence of direct evidence. This was a country case, and having considered the *locus in quo*, he had no doubt that the owners had allowed the use of the path with permission to certain persons without any intention to dedication. It was not used by strangers in his view till later years. He had also had evidence of persons being turned back, and of obstructions being erected which were not challenged. Under these circumstances he came to the conclusion that there was insufficient evidence upon which he could hold that the pathway was dedicated to the public before 1829. He therefore dismissed the action, with costs.

# THE BUILDINGS ILLUSTRATED

**HOUSE AT TETTENHALL** (pages 446 to 448). The general contractors were R. Hallett and Sons. The general sub-contractors and suppliers included: The British Reinforced Concrete Co., Ltd., reinforced concrete; Tarmac, Ltd., Vinculum cast stone; F. McNeill & Co., Ltd., special roofings; Davis Gas Stove Co., Ltd., "Panella" gas fires; J. H. Blount & Co., Ltd., electric wiring; Unity Heating, Ltd., tubular heaters; A. G. Curtis, plumbing; James Gibbons, Ltd., door furniture and casements; Venesta, Ltd., joinery; Craven, Dunnhill & Co., Ltd., tiling.

**FACTORY FOR THE GREAT EASTERN CABINET CO., EDMONTON** (pages 462 to 465). The general contractors were Commercial Structures, Ltd., also excavations, foundations and dampcourses. The general sub-contractors and suppliers included: Rapid Floor Co., Ltd., fireproof construction; Universal Asbestos Co., Ltd., grey Watford asbestos-cement tiles and asbestos-cement gutters; Moler Products, Ltd., partitions; The London Brick Co., Ltd., bricks; W. C. Richardson, artificial stone; Kelvin Construction Co., structural steel; W. H. Heywood & Co., Ltd., patent glazing; Jos. F. Ebner, Ltd., woodblock flooring; The Cellulin Flooring Co., patent floor covering; Edgar Fitton & Co., and Incinerator Co., Ltd., central heating, boilers and incinerators; The Tottenham and District Gas Co., gasfitting; The City Electrical Co., electric wiring and electric light fixtures; Sturtevant Engineering Co., Ltd., ventilation; Baldwin (Birmingham), Ltd., sanitary fittings; Yannedis & Co., door furniture; W. Janes & Co., Ltd., casements; F. A. Norris & Co., metalwork; R. Cattle, Ltd., joinery, flush doors; F. R. Shadbolt & Sons, joinery, panelling.

**PRIVATE SWIMMING POOL, RAKE MANOR, MILFORD** (pages 466 and 467). The general contractors were A. J. Tracey and Sons, and the sub-contractors: The Indented Bar and Concrete Engineering Co., Ltd., reinforcement; The United Filters and Engineering Co., Ltd., filtration plant; Messrs. Walter Dix & Co., diving boards and steps.

# THE WEEK'S BUILDING NEWS

## LONDON AND DISTRICT (15 Miles Radius)

BERMONDSEY. *Plans.* Plans passed by Bermondsey B.C. : Buildings, site of 177-185 Abbey Street, for Messrs. P. Leiner and Sons; warehouse extensions, Keetons Road, for Messrs. Peek, Frean & Co., Ltd.; extensions, Royal George public-house, Abbey Street, for Messrs. Mann Crossman and Paulin, Ltd.; warehouse, Shad Thames Street, for Butler's Wharf, Ltd.; factory, 214 Rotherhithe New Road, for Messrs. W. Harbrow, Ltd.; hall, 169 Jamaica Road, for Rotherhithe Labour Club, Ltd.; shop and flats, 22-4 Albion Street, for Messrs. Purvis and Purvis; alterations and additions, factory of Messrs. Crosse and Blackwell, Ltd., Grimscot Street, for Messrs. Joseph; warehouse, Bermondsey Wall, for Mr. D. G. Waring; factory, Jacob Street, for Messrs. Spillers, Ltd.; factory, 6 Clarehall Place, for Messrs. W. Smith, Ltd.; alterations, King John's Head public-house, Abbey Street, for Messrs. Watney Combe, Reid & Co., Ltd.; factory extensions, Macks Road, for Messrs. Griffiths Bros., Ltd.; alterations, 221-3 Southwark Park Road, for Mr. J. Rabin; shops and flats, 89-91 Jamaica Road, for Heath Estates, Ltd.

BERMONDSEY. *Works Depot.* Bermondsey B.C. is acquiring property for the extension of the works depot in Lower Road.

BERMONDSEY. *Civic Centre.* Bermondsey B.C. has prepared plans for the provision of a civic centre, comprising baths, library and clinic, in Rotherhithe Street, at a cost of £62,106.

CAMBERWELL. *Crematorium.* Camberwell B.C. has approved a scheme prepared by Mr. Maurice E. Webb, consulting architect, for the provision of a crematorium at the cemetery, at a cost of £35,879.

EAST HAM. *Houses.* Mr. H. Joseph is to develop land in Stevenage Road, East Ham, for housing purposes.

EAST HAM. *Houses, etc.* Plans passed by East Ham Corporation : Two houses, Sheringham Avenue, Messrs. J. Horn and Sons; two houses, Katherine Road, Messrs. C. Living and Son; alterations, High Street, Mr. W. Key; workshop and store, Boleyn Road, Mr. A. Sceats; workshop, Chesterford Road, Messrs. Haines and Warwick, Ltd.; two houses, Church Road, Mr. P. Caslake; alterations, High Street North, Messrs. Dunsmore Bros.; rebuilding Boleyn Cinema, Barking Road, Mr. C. Masey; dressing-rooms, sports ground, High Street South, Mr. R. J. L. Slater; alterations, Barking Road, Mr. A. Foreman.

EAST HAM. *Houses.* East Ham Corporation has approved plans by the borough engineer for the erection on the Bonny Downs site of 74 dwellings, at a cost of £42,515, and 132 houses elsewhere, at a cost of £89,056.

EAST HAM. *Houses.* East Ham Corporation has asked the borough engineer to prepare schemes, including plans and estimates, for the erection of four- and five-bedroomed types of houses or flats for re-housing purposes.

EAST HAM. *Extensions.* East Ham Corporation has approved revised plans by the borough engineer for extensions at Harts sanatorium, at a cost of £35,129.

EGHAM. *Houses.* The U.D.C., who are to erect 32 dwellings on the West End Housing estate, has now accepted the tender of Messrs. J. Gerrard and Sons, Ltd., Victoria House, Southampton Row, W.C.2, at £11,965.

HACKNEY. *Extensions.* The Rev. H. Cecil, the Rector of South Hackney Parish Church, is to extend the church day school and erect a church hall in Percy Road, Hackney.

HACKNEY. *Dwellings.* Hackney B.C. recommends the following tenders for the erection of dwellings in Cazenove Road : General building work, Messrs. M. J. Gleeson, Ltd., £38,427; fire-resisting flats, floors, etc., Messrs. Attoc Blocks, Ltd., £6,618 10s. 1d.; artificial stonework, Messrs. Challis Bros., £421 3s. 3d.; asphalte, Messrs. Permanite, Ltd., £677 3s. 5d.; joinery, Messrs. Rippers, Ltd., £4,952 18s. 9d.; plastering, screeds, etc., and granolithic, Messrs. Richardson's Plasterers, Ltd., £5,065 0s. 7d.; tile wall linings, sills and skirtings, Messrs. Builders' Merchants, Ltd., £3,195 10s. 4d.; baths, sinks, lavatory basins and w.c.s, Messrs. Wiggins-Sankey, Ltd, £1,291 6s. 8d.; balustrades to staircases, boundary railings and gates and balconettes, Messrs. C. A. and A. W. Haward, £1,217 5s. 5d.; electric lighting and power, Messrs. F. H. Wheeler & Co., Ltd., £1,998 18s. 9d.

HACKNEY. *Dispensary.* Hackney B.C. is to erect a dispensary and store in Hillman Street at a cost of £1,000.

HACKNEY. *Central Baths.* Hackney B.C. Baths Committee has arranged that for the purposes of the architectural competition a sum of £150,000 be fixed as the approximate cost of the proposed new central baths and that the following premiums be paid by the Council in connection with the competition for designs : first, £500; second, £300; and third, £200.

HACKNEY. *Community Hall.* Hackney B.C. has instructed Messrs. Joseph to proceed with a scheme for the provision of a community hall on the Nisbet Street housing estate, at an estimated cost of £3,150.

HACKNEY. *Depot.* Hackney B.C. is to erect a depot for street cleansing purposes in Hillman Street, at an estimated cost of £500.

HACKNEY. *Extensions.* Plans passed by Hackney B.C. : Extension to Mentmore factory, Tudor Grove; alterations, The Cricketers, Northwold Road; extension, Reeves' factory, Ashwin Street; extension to Lewis Trust Dwellings, Amhurst Road.

HACKNEY. *Working Class Dwellings.* Hackney B.C. has instructed Messrs. Joseph to proceed with a scheme for the erection of working-class dwellings upon the site of the Hindle Street clearance area and adjoining land at an estimated cost of £152,600.

## EASTERN COUNTIES

GRIMSBY. *New Nurses' Home.* Grimsby Corporation has approved plans for the erection and equipment of a new nurses' home at Bracebridge Mental Hospital, at an estimated cost of £36,000.

IPSWICH. *Houses.* Ipswich Corporation has approved a revised scheme for the erection of 50 houses on the Felixstowe estate at an estimated cost of £19,038.

IPSWICH. *Technical College.* Ipswich Education Committee is considering a scheme for the erection of a technical college, at an estimated cost of £150,000.

LEIGH. *Cinema.* It is proposed to erect a cinema at the junction of Blenheim Crescent and London Road. The architect is Mr. F. Buckley, Dale Road, Leigh.

LOWESTOFT. *Houses.* Lowestoft Corporation has accepted the tender of Messrs. R. H. Carter and Son, £2,780, for the erection of nine houses at the St. Peter's Street housing estate.

LUTON. *Factory.* The R.D.C. has approved plans for the proposed erection of a factory for the Percival Aircraft Co., Ltd.

## SOUTH-WESTERN COUNTIES

EXETER. *Swimming Baths.* At Exeter Corporation the Town Clerk reported that the recommendation that the proposed new swimming baths should be erected on the Exe Island area had been referred back by the City Council. It was agreed to hold a special meeting to further consider the matter with a view to presenting to the City Council a comprehensive scheme for the provision of swimming baths facilities in the city.

EXETER. *Houses.* Exeter Corporation has approved the proposals of the City architect for the provision on the St. Loye's Estate at Wonford of 64 new houses for the purpose of re-housing.

WINCHESTER. *Houses.* Winchester R.D.C. is to erect a four-family block of houses at Hamble at a cost of £1,550.

EXETER. *Alterations, etc.* Exeter Corporation has passed plans for alterations and additions at the Royal Devon and Exeter Hospital.

EXETER. *Hard Tennis Courts, etc.* Exeter Corporation has approved plans by the City Surveyor for the layout of the land at St. Thomas, including the provision of two hard tennis courts, children's playground equipment, paddling pool, culverting in of brook course and fencing, at a cost of £2,409.

SWINDON. *Engineering Services.* Swindon Corporation has accepted the tender of Messrs. J. Jeffreys & Co., Ltd., London, £5,677, for the engineering services in the new municipal offices.

SWINDON. *Bungalows.* Swindon Corporation is to erect a further 50 bungalows on the Hurst Estate.

## MIDLAND COUNTIES

DUDLEY. *Alterations.* Plans passed by Dudley Corporation : Alterations, 221 High Street, for Messrs. England and Sons; alterations, Castle and Falcon Hotel, Wolverhampton Street, for Messrs. Frank Smith, Ltd.; four houses, New Village, for Messrs. Easthope and Auden; alterations, 55-56 High Street, for Mr. J. W. Bayton; alterations, Green Dragon public-house, St. John's Street, for Messrs. J. Joule and Sons; factory extensions, Cradley Road, for Lloyd's British Testing Co., Ltd.; alterations, 22 Halesowen Road, for Messrs. Marsh and Baxter, Ltd.; works extensions, Blowers Green, for Messrs. I. Emms and Sons, Ltd.; shop, Porter Street, for Messrs. J. Joberns & Co.; two houses, Watson Green Road, for Mr. John Holland; bakery extensions, King Edmund Street, for Messrs. F. Marsh and Sons; house, Gervaise Drive, for Mr. Dandy; house, Gervaise Drive, for Mr. H. R. Hurst; houses, Himley Road, for Mr. A. Jones; works extensions, Halesowen Road, for Dudley Iron and Steel Co., Ltd ; extensions, Guild Hall, Bourne Street, for Rev. J. Ellis; stores, Porter Street, for Messrs. I. Woodall and Sons, Ltd.; stores, Vicar Street, for Messrs. Westley and Sons, Ltd.

DUDLEY. *New Police Buildings.* Dudley Corporation is to amend the plans for the new police buildings at the request of the Home Office and, in this connection, made arrangements to inspect police buildings in other towns.

DUDLEY. *Ice Rink.* Dudley Corporation is to prepare a scheme for the provision of a boating pool and ice rink in Priory Park.

DUDLEY. *Bus Station.* Dudley Corporation has instructed the borough engineer to prepare plans for the erection of a bus station and a market hall in the town centre.

DUDLEY. *Mission Hall.* The Rev. J. Powell is seeking a site on the Wren's Nest estate, Dudley, for the erection of a mission hall.

DUDLEY. *Houses.* Dudley Corporation has approved plans for the erection of 250 houses on the Rosland estate.

DUDLEY. *Shops.* Dudley Corporation has accepted the tender £13,677 8s., of Messrs. Jakeman and Round, for the erection of 14 shops on the Woodside estate.

DUDLEY. *Houses.* Dudley Corporation has accepted the tender, £73,851, of Messrs. Eadie & Co., for the erection of 200 houses on the Wren's Nest estate.

DUDLEY. *Works Depot.* Dudley Corporation has approved plans for the erection of a works depot in Lister Road, Netherton.

KETTERING. *Cemetery.* Kettering U.D.C. has had sketch plans in relation to the layout of the new cemetery in Rothwell Road, including the provision of roads, drainage and water supply, cemetery chapel and superintendent's and gardener's houses. The further consideration of the sketch plans, etc., was deferred pending a report as to the inclusion of a crematorium in the scheme

# 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. |
|---|---|---|---|---|
| $A_1$ | ABERDARE ... | S. Wales & M. | 1 5½ | 1 1½ |
| A | Aberdeen ... | Scotland | 1 6½ | 1 2 |
| $A_1$ | Abergavenny ... | S. Wales & M. | 1 6 | 1 1½ |
| $A_3$ | Abingdon ... | S. Counties | 1 5 | 1 0½ |
| A | Accrington ... | N.W. Counties | 1 6½ | 1 2 |
| $A_3$ | Addlestone ... | S. Counties | 1 5 | 1 0½ |
| A | Adlington ... | N.W. Counties | 1 6½ | 1 2 |
| A | Airdrie ... | Scotland | *1 6½ | 1 2 |
| C | Aldeburgh ... | E. Counties | 1 2½ | 11 |
| A | Altrincham ... | N.W. Counties | 1 6½ | 1 2 |
| $B_3$ | Appleby ... | N.W. Counties | 1 5 | 11½ |
| A | Ashton-under-Lyne | N.W. Counties | 1 6½ | 1 2 |
| $B_1$ | Aylesbury ... | S. Counties | 1 4 | 1 0 |
| $B_1$ | BANBURY ... | S. Counties | 1 4 | 1 0 |
| $B_1$ | Bangor ... | N.W. Counties | 1 4 | 1 0 |
| $A_3$ | Barnard Castle ... | N.E. Coast | 1 5 | 1 0½ |
| A | Barnsley ... | Yorkshire | 1 6½ | 1 2 |
| B | Barnstaple ... | S.W. Counties | 1 4½ | 1 0½ |
| A | Barrow ... | N.W. Counties | 1 6½ | 1 2 |
| A | Barry ... ... | S. Wales & M. | 1 6½ | 1 2 |
| $B_1$ | Basingstoke ... | S.W. Counties | 1 4 | 1 0 |
| $A_3$ | Bath ... ... | S.W. Counties | 1 5½ | 1 1½ |
| A | Batley ... | Yorkshire | 1 6½ | 1 2 |
| $A_2$ | Bedford ... | E. Counties | 1 5½ | 1 1½ |
| $A_2$ | Berwick-on-Tweed | N.E. Coast | 1 5½ | 1 1½ |
| $A_3$ | Bewdley ... | Mid. Counties | 1 5½ | 1 1½ |
| $B_3$ | Bicester ... | S. Counties | 1 3 | 11½ |
| | Birkenhead ... | N.W. Counties | *1 7½ | 1 2½ |
| A | Birmingham ... | Mid. Counties | 1 6½ | 1 2 |
| $A_1$ | Bishop Auckland | N.E. Coast | 1 6 | 1 1½ |
| A | Blackburn ... | N.W Counties | 1 6½ | 1 2 |
| A | Blackpool ... | N.W. Counties | 1 6½ | 1 2 |
| A | Blyth ... ... | N.E. Coast | 1 6½ | 1 2 |
| $B_1$ | Bognor ... | S. Counties | 1 4 | 1 0 |
| A | Bolton ... | N.W. Counties | 1 6½ | 1 2 |
| $A_3$ | Boston ... | Mid. Counties | 1 5 | 1 0½ |
| $A_3$ | Bournemouth... | S. Counties | 1 5½ | 1 1½ |
| $B_3$ | Bovey Tracey | S.W. Counties | 1 3½ | 11½ |
| A | Bradford ... | Yorkshire | 1 6½ | 1 2 |
| $A_1$ | Brentwood ... | E. Counties | 1 6 | 1 1½ |
| A | Bridgend ... | S. Wales & M. | 1 6½ | 1 2 |
| B | Bridgwater ... | S.W. Counties | 1 4½ | 1 0½ |
| $A_1$ | Bridlington ... | Yorkshire | 1 6 | 1 1½ |
| A | Brighouse ... | Yorkshire | 1 6½ | 1 2 |
| $A_3$ | Brighton ... | S. Counties | 1 5½ | 1 1½ |
| A | Bristol ... | S.W. Counties | 1 6½ | 1 2 |
| B | Brixham ... | S.W. Counties | 1 3½ | 11½ |
| A | Bromsgrove ... | Mid. Counties | 1 5½ | 1 1½ |
| B | Bromyard ... | Mid. Counties | 1 3 | 11½ |
| A | Burnley ... | N.W. Counties | 1 6½ | 1 2 |
| A | Burslem ... | Mid. Counties | 1 6½ | 1 2 |
| A | Burton-on-Trent | Mid. Counties | 1 6½ | 1 2 |
| A | Bury ... ... | N.W. Counties | 1 6½ | 1 2 |
| A | Buxton ... | N.W. Counties | 1 6 | 1 1½ |
| $A_1$ | CAMBRIDGE | E. Counties | 1 6 | 1 1½ |
| $B_1$ | Canterbury ... | S. Counties | 1 4 | 1 0 |
| A | Cardiff ... | S. Wales & M. | 1 6½ | 1 2 |
| A | Carlisle ... | N.W. Counties | 1 6½ | 1 2 |
| B | Carmarthen ... | S. Wales & M. | 1 4½ | 1 0½ |
| B | Carnarvon ... | N.W. Counties | 1 4½ | 1 0½ |
| A | Carnforth ... | N.W. Counties | 1 6½ | 1 2 |
| A | Castleford ... | Yorkshire | 1 6½ | 1 2 |
| $A_3$ | Chatham ... | S. Counties | 1 5 | 1 0½ |
| A | Chelmsford ... | E. Counties | 1 5 | 1 0½ |
| A | Cheltenham ... | S.W. Counties | 1 5 | 1 0½ |
| A | Chester ... | N.W. Counties | 1 6½ | 1 2 |
| A | Chesterfield ... | Mid. Counties | 1 6½ | 1 2 |
| $B_1$ | Chichester ... | S. Counties | 1 4 | 1 0 |
| A | Chorley ... | N.W. Counties | 1 6½ | 1 2 |
| $B_1$ | Cirencester ... | S. Counties | 1 4 | 1 0 |
| $A_1$ | Clitheroe ... | N.W. Counties | 1 6½ | 1 2 |
| A | Clydebank ... | Scotland | 1 6½ | 1 2 |
| A | Coalville ... | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Colchester ... | E. Counties | 1 5½ | 1 1½ |
| A | Colne ... ... | N.W. Counties | 1 6 | 1 1½ |
| $A_2$ | Colwyn Bay ... | N.W. Counties | 1 5½ | 1 1½ |
| $A_1$ | Consett ... | N.E. Coast | 1 6 | 1 1½ |
| $A_2$ | Conway ... | N.W. Counties | 1 5½ | 1 1½ |
| A | Coventry ... | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Crewe ... ... | N.W. Counties | 1 5½ | 1 1½ |
| A | Cumberland ... | N.W. Counties | 1 5 | 1 0½ |
| A | DARLINGTON | N.E. Coast | 1 6½ | 1 2 |
| A | Darwen ... | N.W. Counties | 1 6½ | 1 2 |
| B | Deal ... ... | S. Counties | 1 4 | 1 0 |
| $A_2$ | Denbigh ... | N.W. Counties | 1 5 | 1 0½ |
| A | Derby ... ... | Mid. Counties | 1 6½ | 1 2 |
| A | Dewsbury ... | Yorkshire | 1 6½ | 1 2 |
| B | Didcot ... | S. Counties | 1 4½ | 1 0½ |
| A | Doncaster ... | Yorkshire | 1 6½ | 1 2 |
| $B_1$ | Dorchester ... | S.W. Counties | 1 4 | 1 0 |
| A | Driffield ... | Yorkshire | 1 5 | 1 0½ |
| $A_3$ | Droitwich ... | Mid. Counties | 1 5½ | 1 1½ |
| A | Dudley ... | Mid. Counties | 1 6½ | 1 2 |
| $A_3$ | Dumfries ... | Scotland | 1 6 | 1 1½ |
| A | Dundee ... | Scotland | 1 6½ | 1 2 |
| A | Durham ... | N.E. Coast | 1 6½ | 1 2 |
| $A_2$ | EASTBOURNE | S. Counties | 1 5½ | 1 1½ |
| A | Ebbw Vale ... | S. Wales & M. | 1 6 | 1 1½ |
| A | Edinburgh ... | Scotland | 1 6½ | 1 2 |
| $A_2$ | Exeter ... | S.W. Counties | *1 5½ | 1 1½ |
| B | Exmouth ... | S.W. Counties | 1 4½ | 1 0½ |
| $A_2$ | FELIXSTOWE | E. Counties | 1 5 | 1 0½ |
| A | Filey ... ... | Yorkshire | 1 5 | 1 0½ |
| A | Fleetwood ... | N.W. Counties | 1 6½ | 1 2 |
| $B_1$ | Folkestone ... | S. Counties | 1 4 | 1 0 |
| A | Frodsham ... | N.W. Counties | 1 6½ | 1 2 |
| $B_2$ | Frome ... | S.W. Counties | 1 3½ | 11½ |
| A | GATESHEAD | N.E. Coast | 1 6½ | 1 2 |
| B | Gillingham ... | S. Counties | 1 4½ | 1 0½ |
| $A_1$ | Glamorganshire, Rhondda Valley District | S. Wales & M. | 1 6 | 1 1½ |
| A | Glasgow ... | Scotland | 1 7 | 1 2½ |
| $A_2$ | Gloucester ... | S.W. Counties | 1 5½ | 1 1½ |
| $A_2$ | Goole ... | Yorkshire | 1 5½ | 1 1½ |
| $A_2$ | Gosport ... | S. Counties | 1 5½ | 1 1½ |
| $A_3$ | Grantham ... | Mid. Counties | 1 5 | 1 0½ |
| $A_1$ | Gravesend ... | S. Counties | 1 6 | 1 1½ |
| A | Greenock ... | Scotland | *1 6½ | 1 2 |
| A | Grimsby ... | Mid. Counties | 1 6½ | 1 2 |
| B | Guildford ... | S. Counties | 1 4½ | 1 0½ |
| A | HALIFAX ... | Yorkshire | 1 6½ | 1 2 |
| A | Hanley ... | Mid. Counties | 1 6½ | 1 2 |
| A | Harrogate ... | Yorkshire | 1 6½ | 1 2 |
| A | Hartlepools ... | N.E. Coast | 1 6½ | 1 2 |
| B | Harwich ... | E. Counties | 1 4½ | 1 0½ |
| $B_1$ | Hastings ... | S. Counties | 1 4 | 1 0 |
| $A_2$ | Hatfield ... | S. Counties | 1 5½ | 1 1½ |
| B | Hereford ... | S.W. Counties | 1 4½ | 1 0½ |
| $A_2$ | Hertford ... | E. Counties | 1 5½ | 1 1½ |
| A | Heysham ... | N.W. Counties | 1 6½ | 1 2 |
| A | Howden ... | N.E. Coast | 1 6½ | 1 2 |
| A | Huddersfield ... | Yorkshire | 1 6½ | 1 2 |
| A | Hull ... ... | Yorkshire | 1 6½ | 1 2 |
| A | ILKLEY ... | Yorkshire | 1 6½ | 1 2 |
| A | Immingham ... | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Ipswich ... | E. Counties | 1 5½ | 1 1½ |
| $B_2$ | Isle of Wight ... | S. Counties | 1 4½ | 1 0½ |
| A | JARROW ... | N.E. Coast | 1 6½ | 1 2 |
| A | KEIGHLEY ... | Yorkshire | 1 6½ | 1 2 |
| $A_2$ | Kendal ... | N.W. Counties | 1 5 | 1 0½ |
| $A_2$ | Keswick ... | N.W. Counties | 1 5 | 1 0½ |
| $A_1$ | Kettering ... | Mid. Counties | 1 6 | 1 1½ |
| $A_2$ | Kidderminster | Mid. Counties | 1 5½ | 1 1½ |
| $B_1$ | King's Lynn ... | E. Counties | 1 4 | 1 0 |
| A | LANCASTER ... | N.W. Counties | 1 6½ | 1 2 |
| $A_1$ | Leamington ... | Mid. Counties | 1 6 | 1 1½ |
| A | Leeds ... ... | Yorkshire | 1 6½ | 1 2 |
| A | Leek ... ... | Mid. Counties | 1 6½ | 1 2 |
| A | Leicester ... | Mid. Counties | 1 6½ | 1 2 |
| A | Leigh ... ... | N.W. Counties | 1 6½ | 1 2 |
| B | Lewes ... ... | S. Counties | 1 3 | 11½ |
| $A_2$ | Lichfield ... | Mid. Counties | 1 5½ | 1 1½ |
| A | Lincoln ... | Mid. Counties | 1 6½ | 1 2 |
| | Liverpool ... | N.W. Counties | *1 8 | 1 3 |
| $A_2$ | Llandudno ... | N.W. Counties | 1 5½ | 1 1½ |
| A | Llanelly ... | S. Wales & M. | 1 6½ | 1 2 |
| | London (12-miles radius) | | 1 8 | 1 3 |
| | Do. (12-15 miles radius) | | 1 7½ | 1 2½ |
| A | Long Eaton ... | Mid. Counties | 1 6½ | 1 2 |
| A | Loughborough | Mid. Counties | 1 6½ | 1 2 |
| $A_1$ | Luton ... ... | E. Counties | 1 6 | 1 1½ |
| A | Lytham ... | N.W. Counties | 1 6½ | 1 2 |
| $A_1$ | MACCLESFIELD | N.W. Counties | 1 6 | 1 1½ |
| $A_2$ | Maidstone ... | S. Counties | 1 5 | 1 0½ |
| $A_2$ | Malvern ... | Mid. Counties | 1 5 | 1 0½ |
| A | Manchester ... | N.W. Counties | 1 6½ | 1 2 |
| A | Mansfield ... | Mid. Counties | 1 6½ | 1 2 |
| $B_1$ | Margate ... | S. Counties | 1 4 | 1 0 |
| A | Matlock ... | Mid. Counties | 1 5 | 1 0½ |
| $A_1$ | Merthyr ... | S. Wales & M. | 1 6 | 1 1½ |
| A | Middlesbrough | N.E. Coast | 1 6½ | 1 2 |
| $A_2$ | Middlewich ... | N.W. Counties | 1 5½ | 1 1½ |
| $B_2$ | Minehead ... | S.W. Counties | 1 3½ | 11½ |
| $B_2$ | Monmouth & S. and E. Glamorganshire | S. Wales & M. | 1 3½ | 11½ |
| A | Morecambe ... | N.W. Counties | 1 6½ | 1 2 |
| $A_2$ | NANTWICH ... | N.W. Counties | 1 5½ | 1 1½ |
| A | Neath ... ... | S. Wales & M. | 1 6½ | 1 2 |
| A | Nelson ... | N.W. Counties | 1 6½ | 1 2 |
| A | Newcastle ... | N.E. Coast | 1 6½ | 1 2 |
| A | Newport ... | S. Wales & M. | 1 6½ | 1 2 |
| A | Normanton ... | Yorkshire | 1 6½ | 1 2 |
| A | Northampton... | Mid. Counties | 1 6½ | 1 2 |
| A | North Shields... | N.E. Coast | 1 6½ | 1 2 |
| A | North Staffs ... | Mid. Counties | 1 6½ | 1 2 |
| $A_1$ | Norwich ... | E. Counties | 1 6 | 1 1½ |
| A | Nottingham ... | Mid. Counties | 1 6½ | 1 2 |
| A | Nuneaton ... | Mid. Counties | 1 6½ | 1 2 |
| A | OAKHAM ... | Mid. Counties | 1 5 | 1 0½ |
| A | Oldham ... | N.W. Counties | 1 6½ | 1 2 |
| $A_2$ | Oswestry ... | N.W. Counties | 1 5 | 1 0½ |
| $A_1$ | Oxford ... | S. Counties | 1 6 | 1 1½ |
| A | PAISLEY ... | Scotland | *1 6½ | 1 2 |
| $B_3$ | Pembroke ... | S. Wales & M. | 1 3 | 11½ |
| A | Perth ... ... | Scotland | *1 6½ | 1 2 |
| $A_1$ | Peterborough | E. Counties | 1 6 | 1 1½ |
| A | Plymouth ... | S.W. Counties | *1 6½ | 1 2 |
| A | Pontefract ... | Yorkshire | 1 6½ | 1 2 |
| $A_1$ | Pontypridd ... | S. Wales & M. | 1 6 | 1 1½ |
| $A_2$ | Portsmouth ... | S. Counties | 1 5½ | 1 1½ |
| A | Preston ... | N.W. Counties | 1 6½ | 1 2 |
| A | QUEENSFERRY | N.W. Counties | 1 6½ | 1 2 |
| $A_2$ | READING ... | S. Counties | 1 5½ | 1 1½ |
| B | Reigate ... | S. Counties | 1 4½ | 1 0½ |
| A | Retford ... | Mid. Counties | 1 5 | 1 0½ |
| $A_1$ | Rhondda Valley | S. Wales & M. | 1 6 | 1 1½ |
| A | Ripon ... ... | Yorkshire | 1 5 | 1 0½ |
| A | Rochdale ... | N.W. Counties | 1 6½ | 1 2 |
| B | Rochester ... | S. Counties | 1 4½ | 1 0½ |
| $A_1$ | Ruabon ... | N.W. Counties | 1 6 | 1 1½ |
| A | Rugby ... | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Rugeley ... | Mid. Counties | 1 5½ | 1 1½ |
| A | Runcorn ... | N.W. Counties | 1 6½ | 1 2 |
| $A_1$ | ST. ALBANS ... | E. Counties | 1 6 | 1 1½ |
| A | St. Helens ... | N.W. Counties | 1 6½ | 1 2 |
| $B_3$ | Salisbury ... | S.W. Counties | 1 3½ | 11½ |
| $A_3$ | Scarborough ... | Yorkshire | 1 6 | 1 1½ |
| A | Scunthorpe ... | Mid. Counties | 1 6½ | 1 2 |
| A | Sheffield ... | Yorkshire | 1 6½ | 1 2 |
| A | Shipley ... | Yorkshire | 1 6½ | 1 2 |
| $A_2$ | Shrewsbury ... | Mid. Counties | 1 5½ | 1 1½ |
| $A_2$ | Skipton ... | Yorkshire | 1 5½ | 1 1½ |
| $A_2$ | Slough ... | S. Counties | 1 5½ | 1 1½ |
| $A_1$ | Solihull ... | Mid. Counties | 1 6 | 1 1½ |
| $A_2$ | Southampton ... | S. Counties | 1 5½ | 1 1½ |
| $A_1$ | Southend-on-Sea | E. Counties | 1 6 | 1 1½ |
| A | Southport ... | N.W. Counties | 1 6½ | 1 2 |
| A | S. Shields ... | N.E. Coast | 1 6½ | 1 2 |
| $A_1$ | Stafford ... | Mid. Counties | 1 6 | 1 1½ |
| A | Stirling ... | Scotland | 1 7 | 1 2½ |
| A | Stockport ... | N.W. Counties | 1 6½ | 1 2 |
| A | Stockton-on-Tees | N.E. Coast | 1 6½ | 1 2 |
| A | Stoke-on-Trent | Mid. Counties | 1 6½ | 1 2 |
| B | Stroud ... ... | S.W. Counties | 1 4½ | 1 0½ |
| A | Sunderland ... | N.E. Coast | 1 6½ | 1 2 |
| A | Swansea ... | S. Wales & M. | 1 6½ | 1 2 |
| A | Swindon ... | S.W. Counties | 1 5 | 1 0½ |
| $A_1$ | TAMWORTH ... | N.W. Counties | 1 6 | 1 1½ |
| B | Taunton ... | S.W. Counties | 1 4½ | 1 0½ |
| A | Teesside Dist.... | N.E. Counties | 1 6½ | 1 2 |
| $A_2$ | Teignmouth ... | S.W. Coast | 1 5½ | 1 1½ |
| A | Todmorden ... | Yorkshire | 1 6½ | 1 2 |
| $A_1$ | Torquay ... | S.W. Counties | 1 6 | 1 1½ |
| $B_3$ | Truro ... ... | S.W. Counties | 1 3½ | 11½ |
| $A_2$ | Tunbridge Wells | S. Counties | 1 5 | 1 0½ |
| A | Tunstall ... | Mid. Counties | 1 6½ | 1 2 |
| A | Tyne District | N.E. Coast | 1 6½ | 1 2 |
| A | WAKEFIELD | Yorkshire | 1 6½ | 1 2 |
| A | Walsall ... | Mid. Counties | 1 6½ | 1 2 |
| A | Warrington ... | N.W. Counties | 1 6½ | 1 2 |
| $A_1$ | Warwick ... | Mid. Counties | 1 6 | 1 1½ |
| $A_1$ | Wellingborough | Mid. Counties | 1 6 | 1 1½ |
| A | West Bromwich | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Weston-s.-Mare | W. Counties | 1 5½ | 1 1½ |
| $A_2$ | Whitby ... | Yorkshire | 1 5½ | 1 1½ |
| A | Widnes ... | N.W. Counties | 1 6½ | 1 2 |
| A | Wigan ... | N.W. Counties | 1 6½ | 1 2 |
| B | Winchester ... | S. Counties | 1 4½ | 1 0½ |
| $A_2$ | Windsor ... | S. Counties | 1 5½ | 1 0½ |
| A | Wolverhampton | Mid. Counties | 1 6½ | 1 2 |
| $A_2$ | Worcester ... | Mid. Counties | 1 5½ | 1 1½ |
| $A_2$ | Worksop ... | Yorkshire | 1 5 | 1 0½ |
| $A_1$ | Wrexham ... | N.W. Counties | 1 6 | 1 1½ |
| A | Wycombe ... | S. Counties | 1 5 | 1 0½ |
| B | YARMOUTH ... | E. Counties | 1 4½ | 1 0½ |
| B | Yeovil ... | S.W. Counties | 1 4½ | 1 0½ |
| A | York ... ... | Yorkshire | 1 6½ | 1 2 |

* 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.

# 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 | 8 |
| Carpenter | " | 1 | 8 |
| Joiner | " | 1 | 8 |
| Machinist | " | 1 | 8 |
| Mason (Banker) | " | 1 | 8 |
| " (Fixer) | " | 1 | 9 |
| Plumber | " | 1 | 8 |
| Painter | " | 1 | 7 |
| Paperhanger | " | 1 | 7 |
| Glazier | " | 1 | 7 |
| Slater | " | 1 | 8 |
| Scaffolder | " | 1 | 4 |
| Timberman | " | 1 | 4 |
| Navvy | " | 1 | 3 |
| General Labourer | " | 1 | 3 |
| Lorryman | " | 1 | 5½ |
| Crane Driver | " | 1 | 7 |
| Watchman | per week | 2 | 10 |

## MATERIALS

### EXCAVATOR AND CONCRETOR

| | | £ | s. | d. |
|---|---|---|---|---|
| Grey Stone Lime | per ton | 2 | 2 | 0 |
| Blue Lias Lime | " | 1 | 16 | 6 |
| Hydrated Lime | " | 3 | 0 | 9 |
| Portland Cement, in 4-ton lots (d/d site, including Paper Bags) | " | 1 | 19 | 0 |
| Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags) | " | 2 | 5 | 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 |
| ¾" " | " | | 10 | 3 |
| Pan Breeze | " | | 6 | 6 |
| Coke Breeze | " | | 8 | 9 |

### DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

| | | 4" s. | 4" d. | 6" s. | 6" 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 |
| ¼" 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. | 1 | 6 | 2 | 6 |
| Bends | each | 5 | 0 | 10 | 6 |
| Inspection bends | " | 9 | 0 | 15 | 0 |
| Single junctions | " | 8 | 9 | 18 | 0 |
| Double junctions | " | 13 | 6 | 30 | 0 |
| Lead Wool | lb. | | 6 | | — |
| Gaskin | " | | 5 | | — |

### BRICKLAYER

| | | £ | s. | d. |
|---|---|---|---|---|
| Fletton | per M. | 2 | 15 | 0 |
| Grooved do. | " | 2 | 17 | 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 | 17 | 6 |
| " Wirecuts | " | 7 | 17 | 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 | " | 5 | 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 | lb. | | 1 | 4 |
| " copper | " | | 1 | 6 |

### CARPENTER AND JOINER

| | | £ | s. | d. |
|---|---|---|---|---|
| Good carcassing timber | F.C. | | 2 | 2 |
| 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, ¾" | Sq. | | 18 | 6 |
| " ¾" | " | 1 | 1 | 6 |
| " 1" | " | 1 | 2 | 0 |
| " 1¼" | " | 1 | 5 | 0 |
| " 1½" | " | 1 | 10 | 0 |
| Deal matchings, ¾" | " | | 14 | 0 |
| " ¾" | " | | 15 | 6 |
| " 1" | " | 1 | 4 | 0 |
| Rough boarding, ¾" | " | | 16 | 0 |
| " 1" | " | | 18 | 0 |
| " 1½" | " | 1 | 6 | 0 |

Plywood, per ft. sup.

| Thickness | A B BB | ¼" d. d. d. | ⅜" A B BB d. d. d. | ½" A B BB d. d. d. | ¾" A B BB d. d. d. | 1" A B BB d. d. d. |
|---|---|---|---|---|---|---|
| Qualities | | | | | | |
| 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" | ⅜" | ½" | ¾" | 1" |
|---|---|---|---|---|---|---|
| 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

TUBES.

| | Per cent. | | Per cent. |
|---|---|---|---|
| Gas | 65 | Galvanized gas | 52½ |
| Water | 61½ | " water | 47½ |
| Steam | 57½ | " steam | 42½ |

FITTINGS.

| | | | |
|---|---|---|---|
| Gas | 57½ | Galvanized gas | 47½ |
| Water | 52½ | " water | 42½ |
| Steam | 47½ | " steam | 37½ |

| | | s. | d. |
|---|---|---|---|
| Rolled steel joists cut to length | cwt. | 12 | 9 |
| Mild steel reinforcing rods, ¾" | " | 10 | 6 |
| " " ⅝" | " | 10 | 3 |
| " " ½" | " | 10 | 0 |

### SMITH AND FOUNDER—*continued*

| | | s. | d. |
|---|---|---|---|
| Mild steel reinforcing rods, ⅜" | cwt. | 9 | 6 |
| " " ¼" | " | 9 | 6 |
| " " 1" | " | 9 | 6 |
| " " 1¼" | " | 9 | 6 |
| " " 1½" | " | 9 | 6 |

| | | ¼" s. | ¼" d. | 4" s. | 4" d. |
|---|---|---|---|---|---|
| Cast-iron rain-water pipes of ordinary thickness metal | F.R. | | 8 | | 10 |
| Shoes | each | 2 | 0 | 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

| | | s. | d. |
|---|---|---|---|
| Lead, milled sheets | cwt. | 24 | 6 |
| " drawn pipes | " | 24 | 6 |
| " soil pipe | " | 30 | 0 |
| " scrap | " | 16 | 0 |
| Solder, plumbers' | lb. | | 9½ |
| " fine do. | " | 1 | 0 |
| Copper, sheet | " | | 8½ |
| " tubes | " | | 11 |

| L.C.C. soil and waste pipes: | | 3" | 4" | 6" |
|---|---|---|---|---|
| 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 | 5 | 0 |
| Plaster, Coarse | " | 2 | 10 | 0 |
| " fine | " | 4 | 15 | 0 |
| Hydrated lime | " | 3 | 0 | 9 |
| Sirapite | " | 3 | 6 | 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, 21 oz., squares n/e 2 ft. | s. F.S. | | | | 2½ |
| " " 26 oz. " " | " | | | | 3 |
| Flemish, Arctic, Figures (white)* | " | | | | 7 |
| Blazoned glasses | " | | | 2 | 6 |
| Reeded: Cross Reeded | " | | | | 11 |
| Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite | " | | | | 6 |
| Crown sheet glass (n/e 12" × 10") | " | | | 2 | 0 |
| Flashed opals (white and coloured) | " | 1 | 0 and | 2 | 0 |
| ¼" rough cast; rolled plate | " | | | | 5½ |
| ¼" wired cast; wired rolled | " | | | | 9½ |
| ¼" Georgian wired cast | " | | | | 11 |
| ¼" Polished plate, n/e 1 ft. | " | †10 to | ‡1 | 1 | |
| " " 2 " | " | †1 | 2 " | ‡1 | 4 |
| " " 4 " | " | †2 | 3 " | ‡2 | 6 |
| " " 8 " | " | †2 | 9 " | ‡3 | 2 |
| " " 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 ¼" and ½" | " | | 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 | 8 | 6 |
| Linseed oil | gall. | | 2 | 3 |
| Boiled oil | " | | 2 | 9 |
| Turpentine | " | | 4 | 1½ |
| 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. | 4 9 | 6 9 |
| Extra, only for bends | Each | 10 6 | 15 6 |

## 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 |
| " raising on old walls | " 2 0 0 |
| " underpinning | " 5 10 0 |
| Fair Face and pointing internally | F.S. 1½ |
| 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 6 |
| 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 |
| 2" × 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 |
| 1¼" do. | " | 2 17 0 |
| 1" deal moulded skirting fixed on, and including grounds plugged to wall | F.S. | 1 6 |
| 1½" 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 | F.S. | 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 |
| 1½" deal tongued and moulded window board, on and including deal bearers | F.S. | 1 9 |
| 1¼" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages | " | 2 6 |
| 1¼" 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. | 16 6 |
| Riveted plate or compound girders, and hoisting and fixing in position | " | 1 0 6 |
| Do., stanchions with riveted caps and bases and do. | " | 19 0 |
| Mild steel bar reinforcement, ½" and up, bent and fixed complete | " | 17 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 6 |
| Do. in flashings | " | 2 2 0 |
| Do. in covering to turrets | " | 2 7 6 |
| Do. in soakers | " | 1 13 3 |
| 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. | 10 | 1 0 | 1 3 | 2 0 | 2 10 | — |
| Do. soil pipe and fixing with cast lead tacks | " | — | — | — | — | — | 5 6 |
| Extra, only to bends | Each | — | — | — | — | 2 0 | 6 9 |
| Do. to stop ends | " | 6½ | 8 | 9 | 11 | 1 0 | — |
| Boiler screws and unions | " | 3 3 | 3 9 | 5 0 | 8 0 | — | — |
| Lead traps | " | — | — | — | 6 3 | 8 9 | — |
| 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 2 |
| 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 render on walls | " | 1 2½ |
| Render, float 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 | " | 17 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 |

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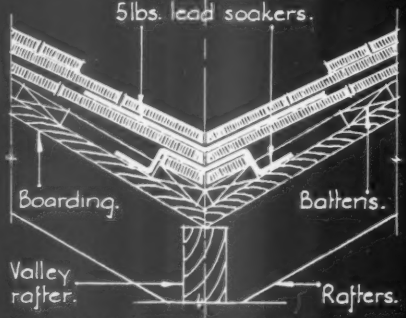
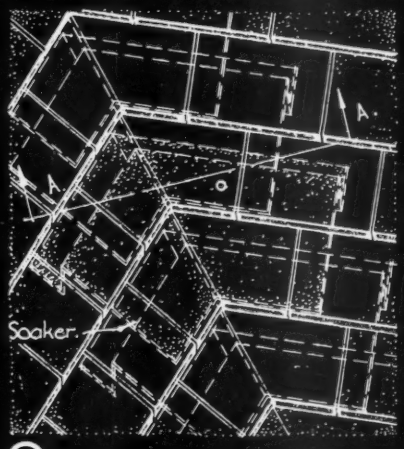
# TYPICAL DETAILS OF LEAD SOAKERS TO TILED OR SLATED ROOF VALLEYS :

The section being taken normal to the slope of the valley, the rafter is in true cross section, but the battens & straight tiles appear distorted.

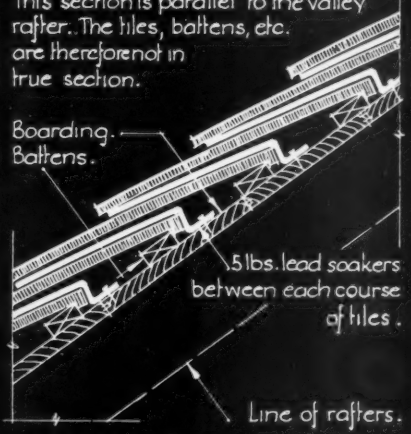



SECTION THRO' VALLEY ON LINE A-A



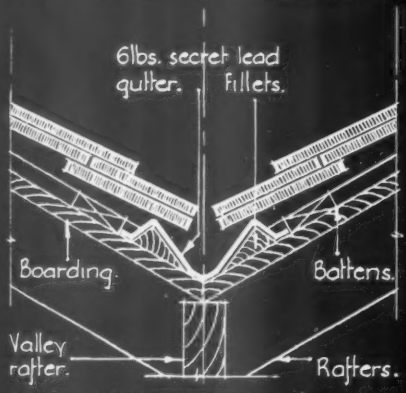

1. CUT, MITRED VALLEY WITH SOAKERS

This section is parallel to the valley rafter. The tiles, battens, etc. are therefore not in true section.




SECTN PARALLEL TO VALLEY RAFTER.

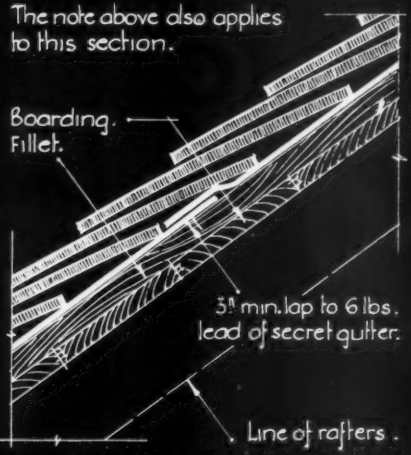
This section is taken normal to the slope of the valley rafter. See note above.




SECTION THRO' VALLEY ON LINE A-A.

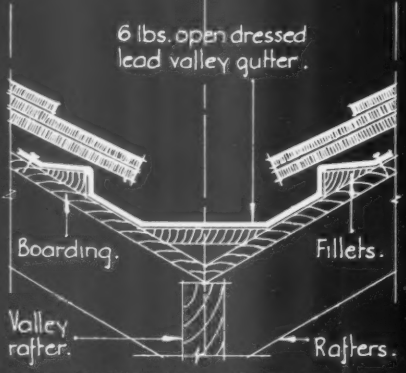

2. VALLEY WITH SECRET LEAD GUTTER:

The note above also applies to this section.

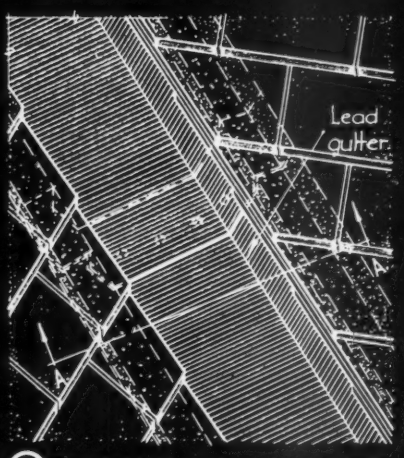



SECTN PARALLEL TO VALLEY RAFTER.

This section is taken normal to the slope of the valley rafter. See note above.




SECTION THRO' VALLEY ON LINE A-A.




3. OPEN DRESSED LEAD VALLEY GUTTER

The section above for valley with secret lead gutter applies also to the open dressed lead valley gutter.

The lead for valley gutters is laid in one width, extending about 1" beyond the fillets. It is close copper nailed at the top and at the sides.

The lead is laid in 7' 0" max. lengths where practicable, & is lapped 3" min. at the joints.

A valley with soakers has the best appearance for slates or tiles.

A secret gutter has a good appearance but is liable to become blocked and is difficult to clean.

The open dressed gutter is less sightly, specially on tiled roofs.

*Information from the Lead Industries Development Council.*

INFORMATION SHEET : LEAD SOAKERS TO TILED OR SLATED VALLEYS·26.

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

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# INFORMATION SHEET

# • 412 •

# LEAD SOAKERS TO VALLEYS

**General:**

On the face of this Sheet are set out three common types of valley in tiled or slated roofs, showing the requisite leadwork in each case.

**Type 1. Cut and Mitred Valley with Soakers:**

In this method the tiles next the valley are all tile-and-a-half splay cut. They are mitred close to cover completely the soakers, which may be of 4 or 5 lb. lead extending at least 4 ins. up from each side of the angle at the bottom, and about 8 ins. in total length for 10½-in. tiles. In all cases the soakers should be of a length sufficient to allow dressing over the thickness of the tile or slate at the head, with about a ¾-in. apron dressed up the roof boarding. They are generally conceded by making them shorter than the tile or slate by the length of the gauge. The type of lead soaker shown need not be nailed, but in exposed situations open copper nailing should be used along the top edges.

A parallel-sided soaker is sometimes used only, and in this case the minimum extension up from the angle should be 4 ins.

**Type 2. Cut and Mitred Valley with Secret Lead Gutter:**

The cutting of the tiles is similar in this method to that previously described, but the mitred edges should be kept an inch or more apart and tilted upwards by small fillets spiked to the roof boarding.

The lead should be 6 lbs. for secret gutters, laid in 7-ft. lengths cut from the normal sheet. The bottom of one strip is lapped 3 ins. over the top of the other. It is customary to close copper nail at the top and sides of each length of lead, leaving the bottom edge free for expansion.

This form of valley is liable to become choked with leaves if in the vicinity of trees.

**Type 3. Open Valley:**

This is the commonest method of forming a valley, and probably the safest, but the appearance, if the valley is wide, is considered objectionable in tiled work. The valley is also liable to act as a wind duct and thus cause loosening of the adjacent tiles unless precautions are taken to prevent movement. The width of valleys varies from 3 ins. to 7 ins. between the mitred tiles.

The preparation for the 6 lb. lead consists in fixing a fillet on either side of the centre and forming a shallow gutter, across which the lead is then dressed in 7-ft. lengths. Close copper nailing is used as for secret gutters, along the 1-in. extension of the lead up the roof boarding.

A sweep may be given to the valley bed by the use of 1-in. T. and G. boarding as shown.

Information from : Lead Industries Development Council
Address : Rex House, 38, King William Street, E.C.4
Telephone : Mansion House 2855

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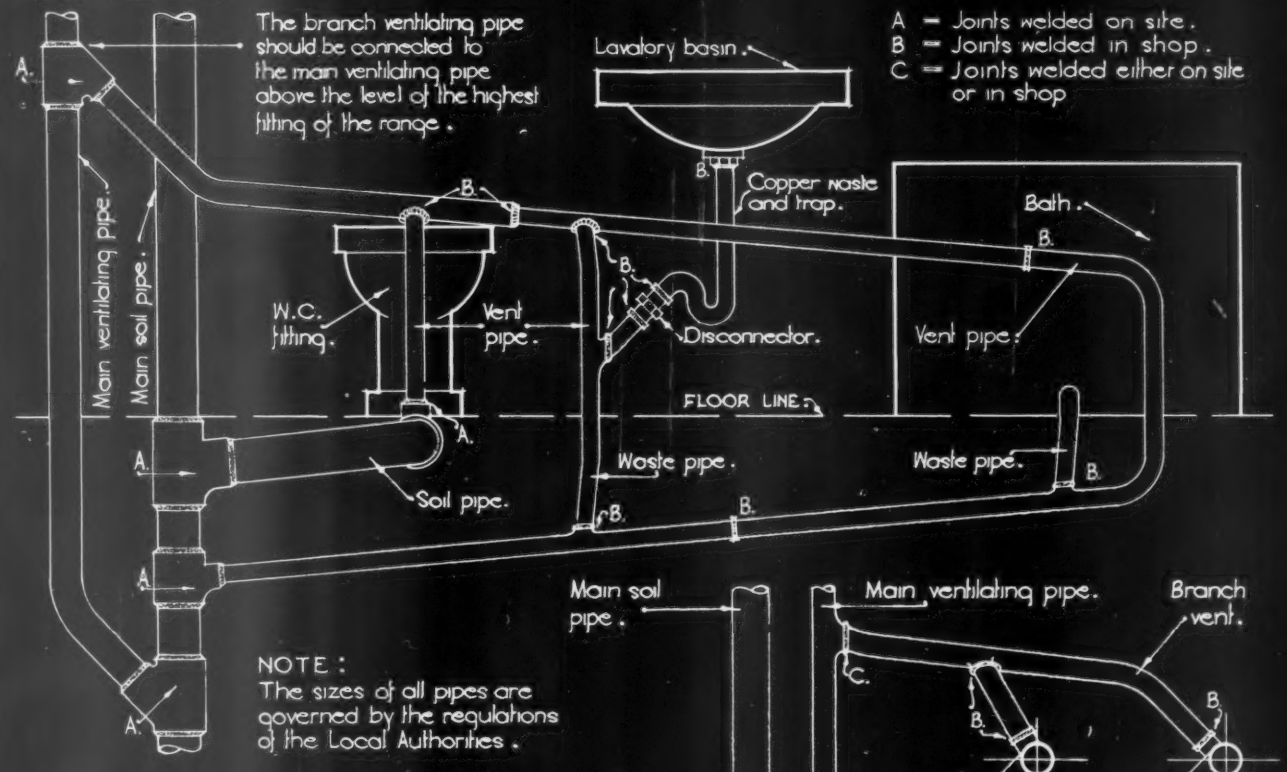
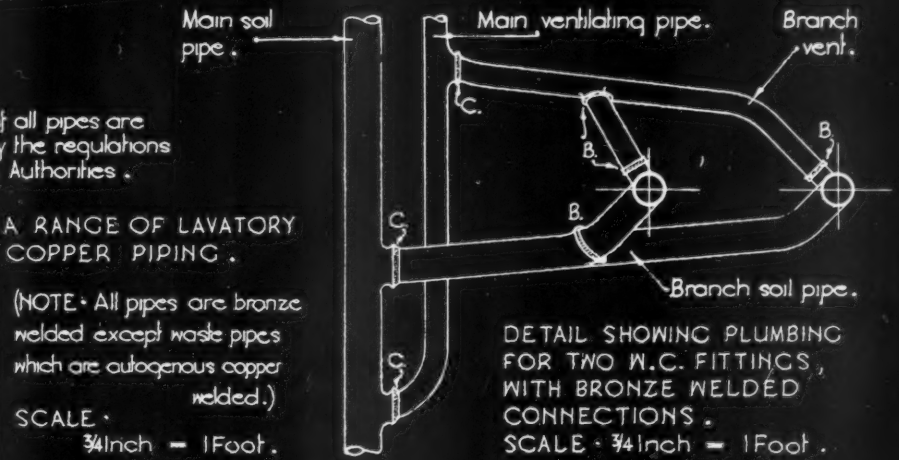
## THE ONE PIPE SYSTEM OF PLUMBING IN BRONZE WELDED COPPER PIPING & WELDABLE COPPER FITTINGS:

SCALE : 3/4" to 1'0"



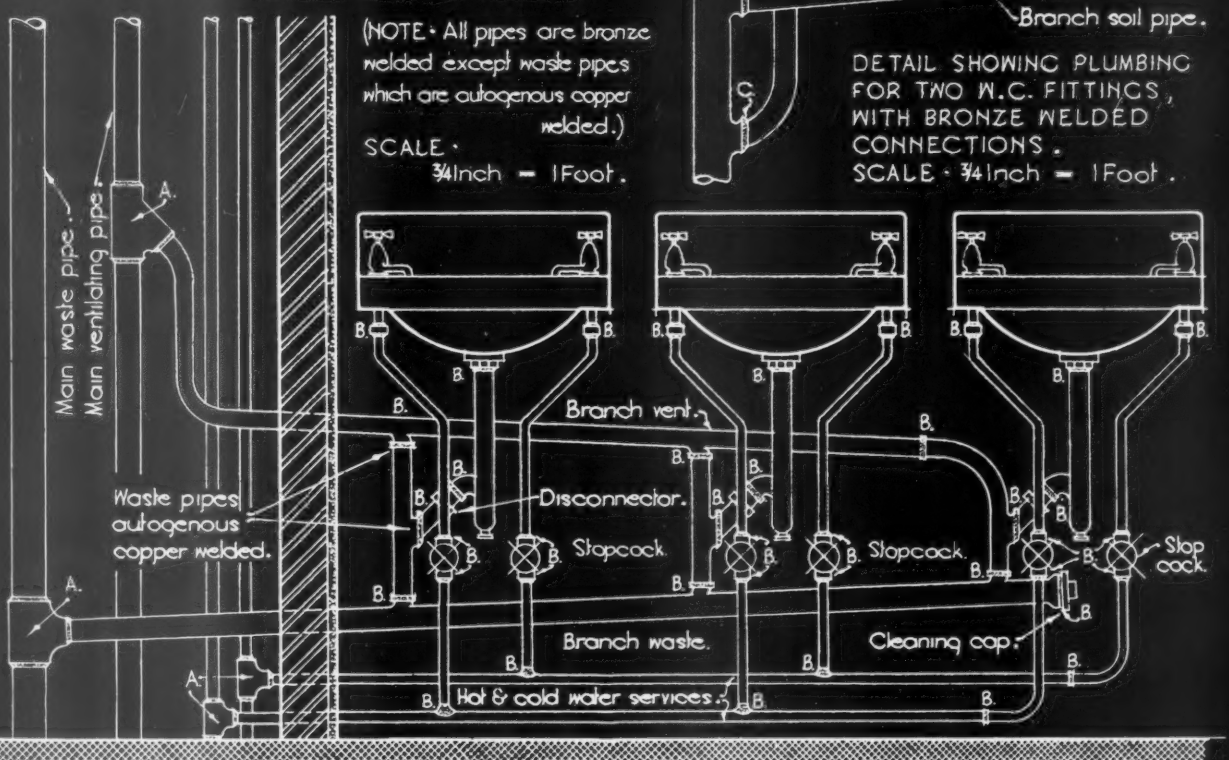

NOTE:
The sizes of all pipes are governed by the regulations of the Local Authorities.

DETAIL OF PLUMBING TO A RANGE OF LAVATORY BASINS IN LIGHT GAUGE COPPER PIPING.




DETAIL SHOWING PLUMBING FOR TWO W.C. FITTINGS, WITH BRONZE WELDED CONNECTIONS.
SCALE · 3/4 Inch = 1 Foot.

(NOTE · All pipes are bronze welded except waste pipes which are autogenous copper welded.)
SCALE · 3/4 Inch = 1 Foot.




*Information from W.L. Kilburn, M.I.W.E., R.P.. Issued by The British Oxygen Co. Ltd.*

INFORMATION SHEET : PLUMBING IN WELDED COPPER PIPING N°1 ·
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 · Ellen C. Bayne.

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# INFORMATION SHEET

## • 413 •

# PLUMBING IN WELDED COPPER PIPE

In a previous series of Sheets issued by the Company, the details of the alternative methods of jointing copper pipe have been set out. In this Sheet the application of certain of these joints to typical plumbing units are shown.

**The Type of Joint :**

Whilst it should be clearly understood that one type of joint may (and often is) used throughout an entire system, the particular characteristics of each type of joint tend to make each suitable for particular conditions, positions or sizes of pipe.

The factors to be considered in determining the joint to be used are :—

(*a*) Whether the joint is to be made *in situ*, or in the workshop under specialized workers adequately supervised.

(*b*) The position of the joint in the work, whether horizontal, vertical or in an inconvenient position for the welder.

(*c*) The size of the pipes to be joined.

These factors have been taken into consideration in the details given on this sheet, and the type of joint considered to be best for the purpose has been shown in each case.

**Plumbing Units for the One-Pipe System :**

The upper detail on this Sheet shows a typical plumbing unit as used in the one-pipe system of plumbing. The unit is shown to be formed up using two types of joint : a bronze welded joint, and a bronze welded joint with weldable fittings.

It will be seen from the key letters A, B and C that all joints which would be carried out in the workshop are shown bronze welded, and all those which must be carried out *in situ* are shown bronze welded with weldable copper fittings.

The particular value of weldable fittings in this connection is that they ensure a perfect joint with a perfectly clear interior bore even if the position of the joint is inconvenient and even if the workmanship of the operator is not of as high a standard as that obtainable in the workshop.

**Connection to Two Water Closets :**

This detail shows all joints bronze-welded, although if desired the unit could be assembled with all joints made with weldable fittings.

In any building in which a large number of such units were required and standardized workshop production was undesirable, the arrangement recommended would be as shown in detail above, i.e. all joints in the unit itself bronze-welded and the connections made on the site made with weldable fittings.

**Waste and Supply Pipes :**

In the detail at the foot of the Sheet, the plumbing shown is for waste water only and is not connected with the soil fittings. The pipes are therefore shown jointed with autogenous copper welding, with weldable fittings for the connections made on the site.

The stronger bronze welded joint is shown only on the hot and cold water supply pipes.

**Previous Sheets :**

Sheets already published are :—

No. 225 Details of joints.
234 ,, ,,
243 ,, ,,
251 ,, ,,
259 Weldable fittings.
268 ,, ,,
321 ,, ,,

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Address : Thames House, Millbank, S.W.1
Telephone : Victoria 9225

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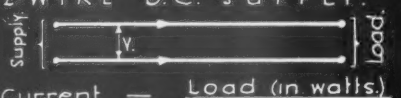
# FORMULAE FOR OBTAINING THE CURRENT (AMPS.) TAKEN BY ANY LOAD ON VARIOUS SYSTEMS OF SUPPLY.

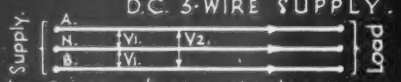
K.W. is a unit of power. On D.C. it is 1000 volt-amperes. On A.C. it is 1000 volt-amperes x power factor. K.V.A. is a unit of apparent (A.C.) power, it is 1000 volt-amperes. The power factor for lamps, heaters and other domestic appliances is 1·0 and the kilo-watt rating of these appliances can be substituted for K.V.A. when the following formulae are used. The power factor for motors is given on the back of this sheet.
The voltage and system of supply should be obtained from the Supply Authority.

## System 1.
### 2-WIRE D.C. SUPPLY.




$$\text{Current} = \frac{\text{Load (in watts.)}}{\text{Voltage.}}$$

## System 2.
### A.C. SINGLE PHASE OR D.C. 3-WIRE SUPPLY.




A & B are outer conductors.
N. is Neutral or Midwire.
Current in A & B if load is connected between A & B, or balanced between A & N and B & N...

$$= \frac{\text{k.V.A.} \times 1000}{\text{Voltage (V2)}}$$

Current in A & N or B & N if load is connected between A & N or B & N...

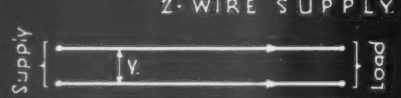
$$= \frac{\text{k.V.A.} \times 1000}{\text{Voltage (V1)}}$$

e.g. Current taken by a 200 k.V.A. load at 220 volts (V1.)

$$= \frac{200 \times 1000}{220.}$$

= 909 amps. at 220 volts.

## System 3.
### A.C. SINGLE PHASE 2-WIRE SUPPLY.




Current in A & B...

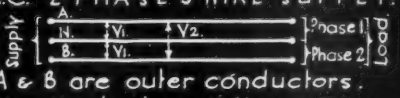
$$= \frac{\text{k.V.A.} \times 1000.}{\text{Line voltage (V.)}}$$

e.g. Current taken by a 200 k.V.A. load at 110 volts (V.)

$$= \frac{200 \times 1000}{110}$$

1818 amps. at 110 volts.

## System 4.
### A.C. 2-PHASE 3-WIRE SUPPLY.




A & B are outer conductors.
N is Neutral or Midwire.
Current in A & B. for balanced 2-phase load connected between A & N or B & N...

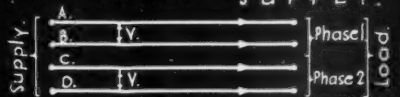
$$= \frac{\text{k.V.A.} \times 1000.}{\text{Line voltage (V1.)} \times 2}$$

Current in N for balanced 2-phase load (connected between A & N and B & N)..
= current in A or B x $\sqrt{2}$.
e.g. Current taken by a 200 k.V.A. load at 110 volts (phase voltage) V1.:

$$\text{Current in A \& B} = \frac{200 \times 1000}{110 \times 2} = 909 \text{ amps}$$

Current in N = 909 x $\sqrt{2}$.
= 1284 amps.

## System 5.
### A.C. 2-PHASE 4-WIRE SUPPLY.




Current in A, B, C & D.
For balanced 2-phase 4-wire load connected between A & B and C & D.

$$= \frac{\text{k.V.A.} \times 1000}{\text{Line voltage (V)} \times 2.}$$

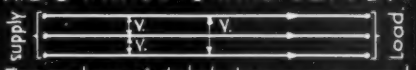
e.g. Current taken by a 200 k.V.A. load at 110 volts (Line voltage.):

$$= \frac{200 \times 1000}{110 \times 2}$$

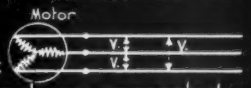
= 909 amps.

See also
Sheet N°1. of this series for general layout and Sheet N°3 for space requirements.

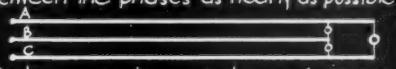
## System 6.
### A.C. 3-PHASE 3-WIRE SUPPLY.




This system of distribution is in general used purely for power loads. If used for mixed power & lighting (or domestic power appliances) the voltage would not exceed 250.
Motors are connected thus:




Lamps, radiators, etc. are connected thus & the load must be made to balance between the phases as nearly as possible



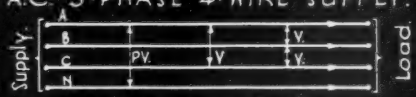

That is : one lamp between A & B, one between B. & C. & one between A. & C.
Current in A, B & C if balanced 3-phase load is connected between A, B & C =

$$\frac{\text{k.V.A.} \times 1000}{\text{voltage (V.)} \times \sqrt{3}}$$

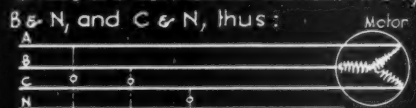
Current in 2 wires if single phase load is connected between any two wires of A, B & C =

$$\frac{\text{k.V.A.} \times 1000}{\text{voltage (V.)}}$$

## System 7.
### A.C. 3-PHASE 4-WIRE SUPPLY.




A, B & C are line conductors
N. is neutral.
This is perhaps the most commonly used 3-phase system for distribution in buildings. Lights & domestic appliances are connected between A & N, B & N, and C & N, thus:




When a load connected in this manner is perfectly balanced between A, B & C the current in the neutral cable is zero.
Lights etc. are connected as just described, but 3-phase motors are connected between the three lines A, B & C.
Current in A, B & C if balanced 3-phase load is connected between A, B & C is

$$= \frac{\text{k.V.A.} \times 1000.}{\text{voltage (V.)} \times \sqrt{3}.}$$

Current phase to neutral if single phase load is connected between A, B or C & N

$$= \frac{\text{k.V.A.} \times 1000}{\text{voltage (PV.)}}$$

*Information from George Ellison Ltd.*

INFORMATION SHEET : ELECTRIC SWITCHGEAR·2· SUPPLY CURRENTS.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON W.C.1. Orca G. Bayne.

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# INFORMATION SHEET
# • 414 •
# ELECTRIC SWITCHGEAR

**Approximate Full Load Current of Motors :**

*Note.*—The power factor for A.C. Induction Motors fully loaded is approximately 0·8.

**Table No. 1**
DIRECT CURRENT MOTORS
See System 1 over

| B.H.P. | Amperes | | | | | |
|---|---|---|---|---|---|---|
| | 110 Volts | 200 Volts | 220 Volts | 460 Volts | 500 Volts | 600 Volts |
| 1 | 10 | 5·5 | 5·0 | 2·4 | 2·2 | 1·8 |
| 2 | 18 | 10 | 9·0 | 4·3 | 4·0 | 3·3 |
| 3 | 26 | 14·5 | 13·0 | 6·2 | 5·7 | 4·8 |
| 4 | 34 | 19 | 17 | 8·1 | 7·5 | 6·2 |
| 5 | 42 | 23 | 21 | 9·6 | 9·2 | 7·7 |
| 7½ | 61 | 33 | 30 | 14·5 | 13 | 11 |
| 10 | 80 | 44 | 40 | 19 | 18 | 15 |
| 12½ | 99 | 54 | 49 | 24 | 22 | 18 |
| 15 | 117 | 65 | 59 | 28 | 26 | 21 |
| 20 | 154 | 85 | 77 | 37 | 34 | 28 |
| 25 | 191 | 105 | 95 | 46 | 42 | 35 |
| 30 | 227 | 126 | 114 | 55 | 50 | 42 |
| 35 | 265 | 145 | 132 | 63 | 58 | 48 |
| 40 | 300 | 165 | 150 | 72 | 66 | 55 |
| 45 | 340 | 187 | 170 | 82 | 75 | 62 |
| 50 | 375 | 206 | 187 | 89 | 82 | 68 |
| 60 | 450 | 248 | 225 | 107 | 99 | 82 |
| 70 | 520 | 286 | 260 | 124 | 115 | 96 |
| 80 | 595 | 329 | 298 | 143 | 131 | 109 |
| 90 | 665 | 367 | 333 | 159 | 146 | 122 |
| 100 | 740 | 408 | 370 | 177 | 163 | 136 |
| 125 | — | — | 460 | 220 | 202 | 168 |
| 150 | — | — | 550 | 265 | 242 | 202 |

Current taken by motors of other horse-power may be calculated thus :

$$\text{Current} = \frac{\text{Horse Power} \times 746}{\text{Voltage} \times \text{Efficiency}}$$

**Table No. 2**
A.C. SINGLE PHASE INDUCTION MOTORS
See Systems 2 & 3 over

| B.H.P. | Amperes | | | |
|---|---|---|---|---|
| | 200 Volts | 240 Volts | 400 Volts | 480 Volts |
| 1 | 9·5 | 8 | 4·75 | 4·0 |
| 2 | 15 | 13 | 7·5 | 6·5 |
| 3 | 22 | 18·5 | 11 | 9·5 |
| 4 | 28·5 | 24 | 14·5 | 12·0 |
| 5 | 34·5 | 29 | 17·5 | 14·5 |
| 6 | 40 | 33·5 | 20 | 17 |
| 7½ | 48 | 40 | 24 | 20 |
| 10 | 62 | 51 | 31 | 26 |
| 12½ | 73 | 61 | 37 | 31 |
| 15 | 88 | 73 | 44 | 37 |
| 20 | 114 | 95 | 57 | 48 |
| 25 | 137 | 115 | 69 | 58 |
| 30 | 159 | 132 | 80 | 66 |
| 35 | 185 | 154 | 93 | 77 |
| 40 | 210 | 175 | 105 | 88 |
| 45 | 230 | 192 | 115 | 96 |
| 50 | 268 | 223 | 134 | 112 |
| 60 | 310 | 250 | 155 | 130 |
| 70 | 362 | 300 | 181 | 150 |
| 75 | 388 | 320 | 194 | 160 |

Current taken by motors of other horse-power may be calculated thus :

$$\text{Single-phase current} = \frac{\text{Horse-power} \times 746}{\text{Voltage} \times \text{P.F.} \times \text{Efficiency}}$$

**Table No. 3**
A.C. 2-PHASE INDUCTION MOTORS
See Systems 4 & 5 over

| Col. 1 | Column 2 | | | | Column 3 | | | |
|---|---|---|---|---|---|---|---|---|
| B.H.P. | Amps. in outer conductors of 3 wire system and all conductors of 4-wire system | | | | Amps. in Mid-wire of 2-phase 3-wire system | | | |
| | 200 Volts | 400 Volts | 440 Volts | 500 Volts | 200 Volts | 400 Volts | 440 Volts | 500 Volts |
| 1 | 3·4 | 1·7 | 1·5 | 1·4 | 4·8 | 2·4 | 2·1 | 2·0 |
| 2 | 6·0 | 3·0 | 2·7 | 2·4 | 8·5 | 4·2 | 3·8 | 3·4 |
| 3 | 8·6 | 4·3 | 3·9 | 3·5 | 12·2 | 6·1 | 5·5 | 5·0 |
| 4 | 11·2 | 5·6 | 5·1 | 4·5 | 15·8 | 7·9 | 7·2 | 6·4 |
| 5 | 13·8 | 6·9 | 6·3 | 5·5 | 19·5 | 9·7 | 8·9 | 7·8 |
| 7½ | 19·8 | 9·9 | 9·0 | 7·9 | 28·0 | 14·0 | 12·7 | 11·2 |
| 10 | 25·6 | 12·8 | 11·7 | 10·3 | 36·2 | 18·1 | 16·5 | 14·6 |
| 12½ | 31·5 | 15·7 | 14·3 | 12·6 | 44·6 | 22·3 | 20·2 | 17·8 |
| 15 | 37·4 | 18·7 | 17·0 | 15·0 | 52·9 | 26·4 | 24·0 | 21·2 |
| 20 | 49·0 | 24·5 | 22·3 | 19·7 | 69·4 | 34·7 | 31·5 | 27·8 |
| 25 | 60·9 | 30·5 | 27·7 | 24·4 | 86·2 | 43·1 | 39·2 | 34·5 |
| 30 | 72·6 | 36·3 | 33·0 | 29·0 | 102·6 | 51·3 | 46·7 | 41·0 |
| 35 | 83·5 | 41·8 | 38·0 | 33·4 | 116·5 | 58·2 | 53·7 | 47·2 |
| 40 | 95·0 | 47·5 | 43·0 | 37·9 | 134·2 | 67·1 | 60·8 | 53·6 |
| 45 | 106·0 | 53·0 | 48·2 | 42·4 | 149·8 | 74·9 | 68·2 | 60·0 |
| 50 | 117·0 | 58·5 | 53·3 | 46·9 | 165·0 | 82·5 | 75·3 | 66·3 |
| 60 | 140 | 70 | 64 | 56 | 198 | 99 | 90 | 79 |
| 70 | 162 | 81 | 74 | 65 | 229 | 114 | 104 | 92 |
| 80 | 185 | 93 | 84 | 74 | 261 | 131 | 109 | 104 |
| 90 | 207 | 104 | 94 | 83 | 292 | 146 | 133 | 117 |
| 100 | 230 | 115 | 105 | 92 | 325 | 163 | 149 | 130 |
| 125 | 286 | 143 | 130 | 114 | 404 | 202 | 184 | 162 |
| 150 | 342 | 171 | 156 | 137 | 484 | 242 | 221 | 194 |

Current taken by motors of other horse-power may be calculated thus :

$$\text{Current (as in Col. 2)} = \frac{\text{Horse-power} \times 746}{\text{Voltage} \times 2 \times \text{P.F.} \times \text{Efficiency}}$$

$$\text{Current (as in Col. 3)} = \text{As col. 2} \times \sqrt{2}$$

**Table No. 4**
A.C. 3-PHASE INDUCTION MOTORS
See Systems 6 & 7 over

| B.H.P. | Amperes | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 240 Volts | 346 Volts | 380 Volts | 400 Volts | 416 Volts | 440 Volts | 500 Volts | 550 Volts | 600 Volts |
| 1 | 3·3 | 2·3 | 2·1 | 2·0 | 1·9 | 1·8 | 1·6 | 1·5 | 1·3 |
| 2 | 5·8 | 4·0 | 3·7 | 3·5 | 3·4 | 3·2 | 2·8 | 2·6 | 2·3 |
| 3 | 8·3 | 5·8 | 5·3 | 5·0 | 4·8 | 4·5 | 4·0 | 3·6 | 3·3 |
| 4 | 10·8 | 7·5 | 6·8 | 6·5 | 6·2 | 5·9 | 5·2 | 4·7 | 4·3 |
| 5 | 13·3 | 9·2 | 8·4 | 8·0 | 7·7 | 7·3 | 6·4 | 5·8 | 5·3 |
| 7½ | 18·9 | 13·2 | 12·0 | 11·4 | 11·0 | 10·4 | 9·1 | 8·3 | 7·6 |
| 10 | 24·6 | 17·1 | 15·5 | 14·8 | 14·2 | 13·4 | 11·8 | 10·7 | 9·9 |
| 12½ | 30·2 | 21·0 | 19·1 | 18·1 | 17·4 | 16·5 | 14·5 | 13·2 | 12·1 |
| 15 | 35·8 | 24·9 | 22·6 | 21·5 | 20·7 | 19·6 | 17·2 | 15·7 | 14·4 |
| 20 | 47·1 | 32·7 | 29·7 | 28·3 | 27·2 | 25·7 | 22·6 | 20·6 | 18·9 |
| 25 | 58·5 | 40·5 | 36·9 | 35·0 | 33·7 | 31·8 | 28·0 | 25·5 | 23·4 |
| 30 | 70·0 | 48·3 | 44·0 | 41·8 | 40·2 | 38·0 | 33·4 | 30·4 | 27·9 |
| 35 | 80·5 | 56·0 | 51·0 | 48·3 | 46·4 | 43·9 | 38·6 | 35·1 | 32·2 |
| 40 | 91·5 | 63·5 | 58·0 | 55·0 | 53·0 | 49·8 | 43·8 | 39·9 | 36·5 |
| 45 | 102 | 71·0 | 64·5 | 61·5 | 59·0 | 56·0 | 49·0 | 44·6 | 40·9 |
| 50 | 113 | 78·5 | 71·5 | 68·0 | 65·5 | 62·0 | 54·5 | 49·3 | 45·5 |
| 60 | 135 | 93·5 | 85·0 | 81·0 | 78·0 | 73·5 | 65·0 | 59·0 | 54·0 |
| 70 | 157 | 109 | 99·0 | 94·0 | 90·5 | 85·5 | 75·0 | 68·5 | 62·5 |
| 80 | 178 | 124 | 113 | 107 | 103 | 97·5 | 85·5 | 78·0 | 71·5 |
| 90 | 200 | 139 | 126 | 120 | 116 | 109 | 96·0 | 87·5 | 80·0 |
| 100 | 222 | 154 | 140 | 133 | 128 | 121 | 107 | 97·0 | 88·5 |
| 125 | 276 | 191 | 174 | 166 | 159 | 151 | 133 | 121 | 111 |
| 150 | 330 | 229 | 209 | 198 | 191 | 180 | 159 | 144 | 132 |

Current taken by motors of other horse-power may be calculated thus :

$$\text{Three-phase current} = \frac{\text{Horse-power} \times 746}{\text{Voltage} \times \text{P.F.} \times \text{Efficiency} \times \sqrt{3}}$$

**Previous Sheets :**

The first Sheet of this series (No. 411) dealt with the general method of distributing electrical energy in buildings.

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