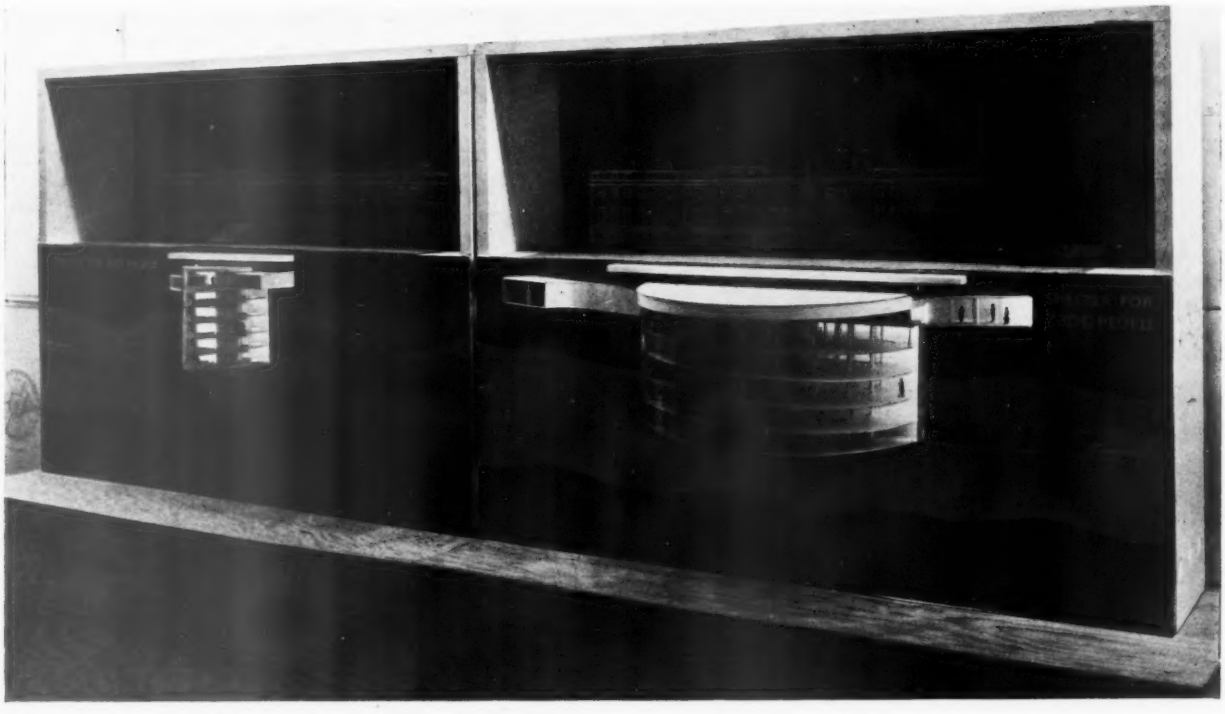
THE FINSBURY A.R.P. EXHIBITION



THREE photographs of the Finsbury A.R.P. exhibition illustrating the scheme prepared for the Borough by Messrs. Tecton, Mr. A. L. Downey (Borough Engineer) and Mr. Arup (Structural Engineer).

The method of construction suggested for the "full-protection" shelters is of great interest. The chief item of cost in such shelters is the protective slab at the top: therefore, the more floors under one such slab, the smaller the cost per person sheltered. If, however, a "pit" is excavated before constructing a deep shelter, the cost of strutting and timbering is high.

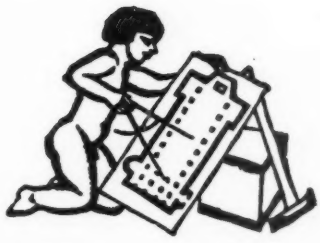
The Finsbury shelters would avoid these disadvantages by the following suggested method: (1) The site is excavated to soffite of protective slab. (2) Piles are driven to full depth of shelter in concentric rings. (3) The protective slab (save for a central shaft) is laid on building paper on the rammed topsoil of site. (4) Through the central shaft the first spiral of the ramp shelter is excavated under the protective slab and concrete is again laid on building paper on the rammed earth. (5) Subsequent spirals are similarly excavated; outside walls between piles being concreted as each spiral is completed and interior piles becoming columns.

Decontamination rooms, lavatories, ventilation plant, etc., are grouped round the central shaft.

The top photograph shows two types of shelter: the larger, for 7,300, is suitable for use as a car park in peace time. Below, left, is the map showing the proposed distribution of shelters in the Borough; and, right, general view of the exhibition.

THE FIRST PRESS PHOTOGRAPH

In January, 1839, MM. Niépce and L. M. J. Daguerre announced the first real success in the process of photography. To celebrate the centenary of these daguerreotypes the Victoria and Albert Museum has assembled a small exhibition of early photographs. This includes examples of daguerreotypes, Talbot's improvement, the "Calotype," the "Collodion" method used from 1851-71, and various photographs of historical interest taken after Dr. R. L. Maddox's invention in 1871 of the dry "ready-for-use" glass plate which made possible the photography of moving objects in any weather. Above is the opening of the Crystal Palace at Sydenham by Queen Victoria and the Prince Consort on June 10, 1854. It is not known who took this first "Press photograph."



LORD DERWENT

"Inertia and indifference are more responsible for our inferior architecture than ignorance. There must be very few Londoners who do not feel faintly disgusted by the way in which their city is now being rebuilt, but no effective protest is made. . . .

"Yet, perhaps, it is not fair to put our misfortunes down to public inertia, since a great deal of energetic protest is always roused by the proposal to destroy a building that in any sense is historic. . . . If our darling old building is taken from us—boo hoo!—we don't care twopence what they give us instead. No, I am afraid that our trouble is not inertia, but indifference. We value the historic associations of architecture, but we have not yet learnt as a nation to put much value upon architecture itself. . . . An architectural vigilance committee made up of competent persons outside the profession could do an enormous amount of good by securing the early publication of designs for prominent buildings and their exposure to public criticism. Much of this criticism would, no doubt, be vexatious and ill-advised, but some of it would be valuable and all of it would be better heard early than late. . . . the excellent nineteenth-century practice of letting people know what was coming to them by means of published engravings has yielded in general to the photographing of what has already come, and is past all possibility of modification."

THE PRESIDENT, R.I.B.A.

LORD DERWENT and *Astragal* have now been carrying on an argument in the JOURNAL for several weeks. It has been, unfortunately, an intermittent argument, as Lord Derwent has been moving rapidly about Europe; and *Astragal* has had, as it were, to wait for his opponent to settle between each blow. In consequence, the assistance given to either protagonist by thrilled spectators has been hampered, here and there, by forgetfulness of how the argument arose. Last week, indeed, even the JOURNAL was not too sure—though being quite certain that it was a matter of outstanding importance.

On refreshing its memory, it has found, as it expected, that it is quite right. The core of disagreement in the *Astragal* v. Derwent case is a burning question for every architect—so burning that those who missed it the first time should not do so now.

The whole matter began with some paragraphs in Mr. Goodhart-Rendel's Inaugural Address on November 7 last year. These paragraphs are reprinted above, and everyone will agree that they justify anything that *Astragal* and Lord Derwent have said to each other and a good deal besides.

In 1938 the profession had almost got it into the heads of laymen that only an architect is fit to judge what kind of a building half a million people should look at almost daily for a hundred years; and then their President gave the game away. He asked for a vigilance committee of *laymen* which could secure early publication of designs for prominent buildings and expose them to public criticism. *Astragal* could not let this kind of thing pass. Nor did he.

A man of quick imagination, he saw at once the frightful potential consequences of the suggestion. He saw that ugly affrays in the R.I.B.A. Council Chamber would be mere incidents in the professional rioting that would follow. And then another thought occurred to him.

In the JOURNAL for November 10 he asked, in the tones of a gentle dispassionate enquirer, where suitable members for this Laymen's Vigilance Committee could be found. On November 17, on the same question, he regretted that the high-ups in the Georgian Group, who represent the kind of distinguished laymen who might be expected to become members of vigilance committees—people like Lord Derwent, Baroness D'Erlanger, Mr. Robert Byron and Mr. Christopher Hussey—did not show more signs of wanting a contemporary style of architecture, quite apart from admitting that one might already exist.

Lord Derwent, Chairman of the Georgian Group, did not take this lying down. In a letter published on December 8, he illustrated his own views on modern architecture in the most helpful possible way. He said that he did *not* like the new Air Ministry building in Berkeley Square: he *did* like

The new R.A.F. aerodromes and barrack buildings; Battersea Power Station; the B.B.C. building; Radio City, New York; Scarborough Hospital; the Underground building; the nearly-completed Imperial Airways Headquarters.

To this, on December 15, *Astragal* replied by asking (1) Would a laymen's vigilance committee compounded of members who would accept this list as a standard meet with general approval? (2) If so, should the kind of opinion which Lord Derwent so ably represents be represented on it?

Lord Derwent retorted that he had been expressing his own personal views about modern buildings. *Astragal's* answer was that he was looking for cultured, architecturally responsive individuals for an architectural vigilance committee; that one would naturally begin such a search among the members of the Georgian Group; and the private views of the Chairman of that group were therefore very relevant.

And there the matter stood until last week.

Lord Derwent then subtly asked the JOURNAL to do something constructive—to hold a plebiscite among its readers in order that intelligent laymen might know which were the good modern buildings of London.

The JOURNAL refused to fight *Astragal's* battles and handed the suggestion to him. *Astragal* shrewdly pointed out that the JOURNAL's readers, being architects, were not eligible to criticize each other's work; that what was wanted was to discover laymen who already were good judges of modern buildings. He asked readers to suggest possible names for the Mr. Goodhart-Rendel's hypothetical Laymen's Vigilance Committee.

This is, as yet, a hypothetical committee. But it could easily become real; and if real could do so much good provided its views were really constructive, that the readers of this JOURNAL might do worse than respond to *Astragal's* development of Lord Derwent's suggestions: which is in brief to compile a *register of laymen* from whom it would be safe to draw a vigilance committee.

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

NOTES & TOPICS

FINSBURY'S A.R.P.

THE path of those officials still in doubt about how to start an A.R.P. scheme has now been smoothed. The Metropolitan Borough of Finsbury took A.R.P. seriously six months ago. What it has done, and how it did it, is now to be seen in an exhibition at Finsbury Town Hall.*

*

Finsbury commissioned Messrs. Tecton and Mr. Arup to prepare in collaboration with the Borough Engineer a scheme for the *complete protection* of the Borough's population against aerial attack. And to those who still think of A.R.P. as first-aid posts, enlarged fire-brigades and gas-proofed rooms, the completed scheme must come as rather a shock.

*

It is based to begin with on statistics which are, as regards many Boroughs, unobtainable: on day and night-time populations; water, gas and electricity mains; sewers; subsoil conditions; type and height of buildings; and on what the Borough looks like from 12,000 feet.

*

It then examined trenches, protected basements, and the light steel shelters which are officially advocated, and found them—as far as Finsbury is concerned—wanting.

*

Instead, it recommends large "full-protection" bomb-proof shelters distributed throughout the Borough, every inhabitant being able to reach his or her shelter within five to ten minutes.

*

The methods by which the disadvantages of the bomb-proof surface shelter have been surmounted are described, I am told, elsewhere in this issue. They are of great interest.

*

Only two disadvantages of this centralized shelter scheme occur to me. First, it is possible, if not probable, that the first intimation of some air raids may be the bombs beginning to fall. Secondly, air-raids are much more likely to consist of small formations at, say, hourly intervals, than of one mass formation each day. Here again the danger of people being caught in the streets is very real.

*

But, apart altogether from type of shelter, what Finsbury has shown beyond all question is the right way, *the only way*, to prepare an A.R.P. scheme.

THE VIGILANCE COMMITTEE

The register of (architecturally) discriminating laymen is taking shape. I have now got the official backing of this JOURNAL,† whose editor, I am glad to find, takes the matter as seriously as I do, and there has been a response from readers, too.

*

The list stands at present as follows: (1) My own suggestions (given last week): Dr. Julian Huxley, Sir Kenneth Clark, Mr. Frank Pick, Lord Horder, Mr. J. M. Keynes, Lord Beaverbrook and Mr. Herbert Morrison; (2) suggestions from readers, received in response to my request: Mr. Spedan Lewis (head of John Lewis and Peter Jones), Lord De La Warr (Cabinet Minister and, more important, Mayor of Bexhill during a great moment in its history), Mr. Augustus John and Mr. Constant Lambert (representing Art and Music), Mr. Joseph Peter Thorp (typographer and late "T" of *Punch*), Lord Harewood (fistful puncher for modern architecture on several remarkable occasions), Mr. Edward James (a patron of the old-fashioned kind), Mr. Jack Beddington (ditto new-fashioned ditto), Mr. Anthony ("fitness-for-purpose") Bertram, Mr. William (*Daily Express* these-names-make-news, and, these-notes-make-sense) Hickey, Dean Dwelly (of Liverpool Cathedral), Mr. Charles Laughton, Sir Archie Flower of Stratford-on-Avon, Sir Wilfrid Greene (Master of the Rolls and of at least one modern house), and Mr. Alexander Korda.

*

A promising list. Will readers please continue to help in this great task? When all the votes are in, the next step will be to appeal to the public spirit of these important people, and try to find out what kind of modern architecture they like.

QUICK BUILDING

I asked last week who was responsible for the factory which "man of enterprise" Cunliffe-Owen has just had built in sixty-four days.

*

The answer is W. H. Saunders and Son, of Southampton (architects), and the contractors were Sir Robert McAlpine and Sons. Thank you.

A.A. PUTS CLOCK BACK

With the passing of the student vote I can't help feeling that something has died at the A.A. Last week it was announced that out of 1,343 voting papers received, 358 were in favour of retaining the existing bye-laws, by which all students were made full associate members with the privilege of voting for members of Council; and 976 votes were in favour of changing the bye-laws to provide a new class of probationary membership for students, without the privilege of voting. The majority in favour of the change was thus well over the two-thirds required by the A.A. constitution.

* The Exhibition is open at Finsbury Town Hall until Feb. 11 from 2 to 9.30 p.m. A fully illustrated review of the methods used and the conclusions reached in the Finsbury Survey will be published by the Architectural Press at the end of this month under the title "Planned A.R.P." Price 5s.

† See this week's leading article.

Mr. Howard Robertson (left) Joint Architect to the British Pavilion at the New York World's Fair, with Sir Louis Beale, British Commissioner to the Fair, and Lady Beale, at Waterloo Station, en route for New York.

Naturally, 976 voters can't be wrong; but it would be interesting to find out how many were influenced by the well-advertised " ultimatum " of the Board of Education, who are supposed to have refused to continue their grant unless the " influence of the students on educational policy " were removed.

*

In the first place, it is obvious that the B. of E., being an enlightened body and having at least as much faith in the A.A. as Astragal, would probably have been content to abide by the result of a professional plebiscite. In the second place . . . oh well, this is neither the time nor (speaking from past experience) the place to discuss the significance of the student vote.

*

Let it be said (last words) that I, Astragal, bewail this first backward step from the educational fellowship idea for which the A.A. has long been renowned.

*

One reassuring event, coming so soon after the result of the ballot, was Mr. Furneaux Jordan's speech at the R.I.B.A. Junior Members' meeting, centred on " the competitive element in education." It was as beautifully reasoned and convincing as anything I have heard—and I heard Mr. Chamberlain and Herr Hitler. Mr. Jordan, of course, is senior lecturer in design at the A.A.

MR. GLOAG AND GERMANY

In the exciting days at the end of last September, Mr. Gloag performed some quick changes in attitude of mind. So did we all.

*

The difference between Mr. Gloag and the rest of us lies in what he did next. Professionally involved in propaganda, he did not feel satisfied with merely noting how near a part of his mind had come to " war mentality," to unreasoned emotional surges of hate and patriotism and hero worship. He decided that when an expert can come near to *thinking with one's blood*, something needs to be done. Mr. G. went to Germany ; for a fortnight, at once.

*

*Word Warfare** tells you where he went and what he saw. Primarily he went to study propaganda ; Nazi cultural achievements and aims were all examined with a view to estimating the value of their propaganda ; and some of Mr. Gloag's opinions on them have already been published in the JOURNAL.

*

But it is not films, window displays and labour service which are the most interesting part of *Word Warfare*—it is the tentative examination of propaganda's possibilities as an intelligently used defensive measure by democracies.

*

Mr. Gloag understands the chief reasons for the poor propaganda value of Britain's political methods. So did Sydney Smith from whom he quotes these paragraphs :—

> It is the easiest of all things . . . in this country, to make Englishmen believe that those who oppose the Government wish to ruin the country. . . . In fact, when a nation has become free, it is extremely difficult to persuade them that their freedom is only to be preserved by perpetual and minute jealousy. They do not observe that there is a constant, perhaps an unconscious, effort on the part of their governors to diminish, and so ultimately to destroy, that freedom. They stupidly imagine that what is, will always be ; and, contented with the good they have already gained, are easily persuaded to suspect and vilify those friends—the object of whose life is to preserve that good, and to increase it.

*

Word Warfare looks at Germany and her propaganda to see if democracy can produce something as good without forgetting Sydney Smith. Mr. Gloag's conclusions you must read for yourselves.

PONT DU GARE DU NORD

Of all buildings in France, the most familiar to Englishmen must be the Gare du Nord in Paris. It is surprising, therefore, that nobody (not even Mr. Harold Falkner) seemed to notice or bothered to point out the printer's error in Professor Reilly's description of it (in his recent Review of the Year) as having a top row of arches eccentrically spaced. What Professor Reilly meant to describe was—well, guess.

BALLET FOR THE HOUSING CENTRE

The *Sleeping Princess* at Sadlers Wells last Thursday was in aid of the Housing Centre—and, very rare among shows " in aid of," it seemed to give everyone rather more than value for money.

*

The house was full. Queen Mary and the Princesses Helena Victoria and Marie Louise were there for those with a weakness for social occasions ; and Ninette de Valois, Constant Lambert, the Vic-Wells Ballet and some of the Opera Company presented the rest with a difficult ballet in settings by Nadia Benois.

*

An evening so well organized must have been a financial success—apart from any new members roped in by Mr. Christopher Stone's curtain-raising appeal. The Housing Centre is to be congratulated.

A DANCE FOR SPAIN

The Westminster and City of London Foodship Committee is organizing a dance on Wednesday, February 15, at 20 Grosvenor Place, S.W.1, from 9 p.m. till 2 a.m. Attractions are Debroy Somers' Band, a cabaret and refreshments. Double tickets cost 15s., from Mr. John Arrow, 58 Warwick Square, S.W.1.

*

At the particular moment food is needed in Spain rather more than ever before, so I hope those readers who live in the Home Counties and also dance will attend in large numbers.

ASTRAGAL

* *Word Warfare : Some Aspects of German Propaganda and English Liberty.* By John Gloag. Ivor Nicholson and Watson. Price 3s. 6d. net.

NEWS

POINTS FROM THIS ISSUE

ARCHITECTS AND NATIONAL SERVICE

The following statement has been issued by the R.I.B.A. Emergency Panel :—

The following notes are issued for the guidance of those members of the profession who have completed the (blue and white) duplicate index cards sent out in connection with National Service.

The white index cards are included in the Central Register at the Ministry of Labour.—Architects are included in the schedule of reserved occupations (provisional).

The Position of Persons included on the Central Register in relation to other forms of National Service.

(1) Enrolment on the Central Register has no effect whatever on offers of, or acceptances for, any alternative forms of National Service. The position with regard to such offers and acceptances is regulated entirely by *the Schedule of Reserved Occupations* which is subject to periodical revision.

(2) *Persons included in the provisional Schedule of Reserved Occupations and in the Central Register.*

Such persons should not accept service, otherwise than in their professional or trade capacity, which will be whole-time in war but not in peace. They are not restricted, however, at present from :—

(*a*) acceptance for service which is whole-time in peace (e.g. service in the regular armed forces, the regular police forces or the regular fire brigades).

(*b*) Re-engagement for the same service of a person already engaged in a service.

(*c*) Acceptance for whole-time service in war in the volunteer's trade or professional capacity.

(*d*) Acceptance for A.R.P. service at the volunteer's place of employment.

(*e*) Acceptance for service which will be only part-time in war, subject to the clear understanding that in the case of persons covered by the schedule work in the occupation listed in the schedule will have first claim on them in war time.

(*f*) Acceptance of women for nursing and first-aid services.

(3) *Persons who are not included in the Schedule of Reserved Occupations but are included in the Central Register.*

Such persons may apply for any alternative form of National Service, including service which will be whole-time in war but not in peace. In the event of their selecting a form of National Service which involves whole-time employment in war, *they should notify their professional institution on taking up any such obligation* so that the Central Register may be informed.

(4) Copies of the current Schedule of Reserved Occupations may be consulted at :—

(*a*) Any office of a National Service Committee.

(*b*) Any Employment Exchange of the Ministry of Labour.

(*c*) The headquarters of their professional institution.

Or obtained from H.M. Stationery Office, York House, Kingsway, London, W.C.2, or through any bookseller.

THE ARCHITECTS' DIARY

Thursday, February 9

INSTITUTION OF STRUCTURAL ENGINEERS, 11 *Upper Belgrave Street, S.W.1. Joint meeting with British Section of Société des Ingénieurs Civils de France. "Recent Developments in Deep Ground Testing." By Gower B. R. Pimm.* 6.30 *p.m.*

INSTITUTION OF CIVIL ENGINEERS. *Birmingham and District Association. At the James Watt Memorial Institute, Birmingham. "Flood Problems of the Midlands." By W. H. Haile.* 6 *p.m.*

ARTISTS' INTERNATIONAL ASSOCIATION. *Fourth Annual Exhibition. At the Whitechapel Art Gallery. Until March* 7. 12 *noon to* 9 *p.m. Sundays :* 2 *p.m. to* 9 *p.m.*

Friday, February 10

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

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS. *London and Home Counties Branch. Annual Dinner. At the Park Lane Hotel, W.1.* 7.30 *p.m.*

INSTITUTION OF SANITARY ENGINEERS, 296 *Vauxhall Bridge Road, S.W.1. "The Work of the Chemist in Relation to Sewage Purification and Disposal." By J. M. Wishart.* 6.30 *p.m.*

REIMANN SCHOOL, 4–10 *Regency Street, S.W.1. "Design Factors and the Modern Display." By A. J. Symes.* 6.15 *p.m.*

TOWN PLANNING INSTITUTE. *At Caxton Hall, Caxton Street, S.W.1. "The Location and Design of Roads with Special Reference to 'Standard Widths'." By D. H. Brown.* 6 *p.m.*

BIRMINGHAM AND FIVE COUNTIES ARCHITECTURAL ASSOCIATION. *At* 8 *Newhall Street, Birmingham. "Prevention of Noise in Buildings." By C. J. Morreau.*

Saturday, February 11

ST. PAUL'S ECCLESIOLOGICAL SOCIETY. *Visit to the Tower of London.* 2.30 *p.m.*

Tuesday, February 14

AIR RAID PROTECTION INSTITUTE. *At the Royal Society of Arts, John Street, W.C.2. "Air Raid Shelters in France." By M. Partridge.* 8 *p.m.*

Wednesday, February 15

INSTITUTION OF STRUCTURAL ENGINEERS. *Scottish Branch. At* 129 *Bath Street, Glasgow. "Asphaltic Waterproofing of Structures." By James M. Kesson.* 7.15 *p.m.*

BUILDING CENTRE, 158 *New Bond Street, W.1. "Floor and Wall Coverings." By D. J. M. Davidson.* 5.30 *p.m.*

ILLUMINATING ENGINEERING SOCIETY, 32 *Victoria Street, S.W.1. "Maintenance of a Lighting Installation."*

ESSEX, CAMBRIDGE AND HERTS SOCIETY OF ARCHITECTS. *Southend-on-Sea Chapter. At School of Arts and Crafts, Dowsett Avenue, Southend-on-Sea. Lecture by Raymond Walker.* 8 *p.m.*

THE ARCHITECTURAL ASSOCIATION : APPROVAL OF NEW BY-LAWS

At the last ordinary general meeting of the Architectural Association, the scrutineers who had been appointed to count the votes given in the postal ballot on the proposed new by-laws reported that 1,343 voting papers were received, of which 9 were invalid. 976 votes were cast in favour of the proposed new by-laws, framed to include a probationary class of membership, and 358 against, the total number of votes cast being 1,334. The 976 votes cast for the new by-laws constituted more than the required two-thirds majority of the members voting.

L.C.C.

At Tuesday's meeting of the L.C.C. the Housing and Public Health Committee asked the Council to approve an estimate of £363,800 for the erection of flats on a site of 13¼ acres at Hilldrop Road, Islington. 574 dwellings will be provided which will house 2,925 people.

The Parks Committee reported that a further 12,070 acres are to be added to the Green Belt. The Council was asked to agree to make a contribution which will not exceed £55,500 towards the cost of the eventual purchase by the Hertfordshire County Council under an option already acquired, of about 1,200 acres of land forming the major part of the Wall Hall Estate, Aldenham, Herts, and a contribution of £2,607 towards the cost of acquiring about 70 acres of land forming a further part of the High Elms Estate, Farnborough, Kent.

NEW SCOTTISH COMMITTEE

The Scottish Committee of the Council for Art and Industry has appointed a sub-committee on housing to follow up the work done by the Council at the Empire Exhibition. The members of the sub-committee are :—Lady MacGregor of MacGregor (convener), Edinchip, Lochearnhead ; Sir Steven Bissland, Bt., Garden Buchlyvie ; Mr. J. M. Colville, Arngomery, Kippen ; Mr. A. O. Curle, LL.D., Ormsacre, Barnton Avenue, Edinburgh ; Mr. R. F. Fairlie, LL.D., R.S.A., Ainslie Place, Edinburgh ; Mr. D. M. Grassie, 287 Paisley Road, West Glasgow ; The Lady Victoria Wemyss, Wemyss Castle, Fife ; Mr. G. H. Henderson, Department of Health, Edinburgh ; Mr. W. Johnstone, Viewfield Factory, Lochwinnoch ; Mr. E. J. MacRae, City Architect, Edinburgh ; Sir John Stirling Maxwell, Bt., K.T., Pollok House, Glasgow ; Mr. R. Mervyn Noad, A.R.I.B.A., 220 West Regent Street, Glasgow ; Bailie George Smith, 11 Florida Crescent, Glasgow.

OBITUARY

The death occurred last week of Mr. Oliver Essex, F.R.I.B.A., of Messrs. Essex and Goodman, the Birmingham architects. In 1883 he commenced private practice, and early in 1887 Mr. J. C. Nicholl entered into a partnership with him that lasted for eighteen years and during that period Mr. John Goodman also joined. Since Mr. Nicholl's retirement the firm has continued under the style of Essex and Goodman. The firm has been responsible for designing buildings of the most varied character —theatres, cinemas, restaurants, insurance offices, schools, branch banks, post offices and numerous commercial buildings.

In 1883 Mr. Essex was elected an Associate of the R.I.B.A. and became a Fellow in June, 1892. At the time of his death he was one of the oldest members of the R.I.B.A. and of the Birmingham Architectural Association.

The death took place at York on February 4 of Mr. Reginald Dann, O.B.E., F.R.I.B.A., M.T.P.I., late director of town planning and consulting architect to the Government of Madras. He was 56 years of age, and had been in ill-health since his return from India in 1937. The two chief buildings for which he was responsible were the chapel of the Women's Christian College, Madras, and a large church in Hyderabad. He was elected a Fellow of the R.I.B.A. in 1934.

NEWS IN BRIEF

● Mr. E. Stanley Hall has been nominated by the President of the R.I.B.A. to act as assessor in connection with the competition for the new isolation hospital, Harrow.

● New Competition. May 31. Sending-in Day. New offices to be erected on a site in Park Road, Blackpool, for the Fylde Water Board. Open to architects practising in and having a professional address in Lancashire. Assessor : Professor A. C. Dickie, A.R.I.B.A. Premiums : £300, £200, and £100. Last day for questions : March 25. Conditions of the competition may be obtained (deposit, £1 1s.) from the head office of the Board, Sefton Street, Blackpool, Lancs.

● The conditions of the Margate and Consett Competitions are reviewed on pages 258–259 of this issue. Conditions for the former are obtainable from Mr. P. T. Grove, Town Clerk, Margate (deposit £1 1s. od.), and conditions for the latter may be obtained from Mr. T. W. Bell, Clerk, Council Offices, Durham (deposit £1 1s. od.).

The A.R.P. Exhibition at the Finsbury Town Hall was opened on Monday last by Mr. Herbert Morrison, M.P., Leader of the L.C.C. Above, a photograph of Mr. Morrison (right) and Alderman Dr. Katial, taken immediately after the opening ceremony.

● The Department of Overseas Trade announces that His Majesty's Government in the United Kingdom has accepted the invitation of the Italian Government to participate in the Rome Universal Exhibition, 1942.

● Messrs. Norman and Dawbarn have moved to Universal House, 60 Buckingham Palace Road, London, S.W.1. Telephone No. : Sloane 5161 (as before).

● Mr. James W. Hindle, F.I.A.A., and Mr. Harry Smith, M.INST.R.A., have commenced practice in partnership as Messrs. Hindle and Smith, Registered Architects, at 16A High Skellgate, Ripon (Telephone : Ripon 508), and will be pleased to receive trade catalogues, etc., at that address.

● Mr. W. Edleston, A.R.I.B.A., is taking into partnership Mr. G. Cadell, A.R.I.B.A. The practice will be continued under the style W. E. Edleston and G. L. Cadell, AA.R.I.B.A., at 46 Old Bond Street (Telephone No. : Regent 3930). The Potters Bar and Brookman's Park addresses will remain unchanged.

R.I.B.A. LECTURE

Extracts from a paper entitled "Some Legal Aspects of an Architect's Practice" read by Captain Sydney E. Redfern at Monday's meeting of the R.I.B.A. are printed on pages 252-253. In moving the vote of thanks Mr. H. P. Hallett. K.C., said that he would not answer any of the moot points mentioned in the paper, but with regard to the present or any future contract he would suggest that the proper place for contractual terms and obligations in connection with building work was in the contract itself and nowhere else. Many troubles arose because people included what were intended to be contractual terms and obligations in documents other than the contract. He had found special conditions in bills of quantities and specifications. In one case on which he had advised there were form of tender, bills of quantities, special conditions, general conditions of tender and articles of agreement and the conditions referred to therein. On one particular point in this case there were three different and quite irreconcilable provisions dealing with that point scattered among the documents. Architects should set their faces against including contract terms and conditions in documents other than the proper contract document.

THE CLEVER CLEVER LAND

My straight lines, they are round . . .
And my roof gardens underground . . .
My windows are mostly walls,
My asphalt is laid to Niagara Falls.
As for my whitewash . . . it's eyewash.

My clients, when they're not bothered by fevers
Or by cantilevers,
Are bothered by Receivers . . .
Witness my Wealth Centre in Belgravia
No front door could be wavier . . .

When I've run out of tricks
I'll never say "No" to some nice glass bricks
Or to a Caryatid
Vapid as vapid
Pining for Erechtheion . . .

Talking of the Parthenon,
Have you visited my latest block of Flats
Known as Hampstead in Spats
Or Highbrow Number One ?
It's frightful fun . . .
Or Highbrow Number Two ?
And when I say "Two" I mean it too,
Just too too too . . .

My balconies
We must consider next . . .
They are among my more unromantic antics . . .
They'd have loathed them in Verona . . .
He'd have had to phone her.

Changing the subject,
Do not forget that now I'm News
I have to mind my ARPs and Qs . . .
I mustn't go with my secretaries down sewers
And revel in the OOH-ers !
My plan to win a war is bold as bold . . .
I simply disguise the hot mains as the cold . . .
Think, my pet, of the shock the nasty bombs will get.

This song
Is going on too long . . .
I want to be alone
With a piece of artificial stone . . .
And I crave . . . how I crave
For the taste of a shaving
Of crazy paving . . .

Besides, Comrades, I must away
To kneel at the feet of The Little Brother,
My Master . . .

Over the Vodka and the Violets
He has sworn to reveal to me deep secrets
Of another Livre
On the Machine à Vivre. EROS

LETTERS

ANONYMOUS
A WELSH STUDENT
REGINALD CRAFT
G. V. DOWNER

National Service

SIR,—The Ministry of Labour's list of reserved occupations has made many students ask one question to which they have not been able to find an answer. Perhaps you can supply one.

What is the position of the student, and particularly the advanced student with only a few years to registration, in relation to National Service? Is he a member of one of the reserved classes—architect or draughtsman? If not, what happens to a student who, registering, finds himself on the list of reserved occupations before his period of service has expired? Will all students be placed in that difficult position should a compulsory register be introduced in March?

You will realize, of course, that an average student must join a service from which withdrawal is not allowed before a certain time has expired because his age precludes him from the others. ANONYMOUS (HULL)

Incomes

SIR,—I have been a student in a school of architecture for just over a year and have taken your JOURNAL for that time, also.

I have noticed with great approval that you have devoted the power at your disposal to bringing the outstanding faults of the profession to its notice and for encouraging architects to improve their declining status.

Seeing that I am just beginning my course I am naturally anxious to be fully aware of my financial prospects, and the head of the school has endeavoured to persuade me that it is a fine job, etc., but has given me no actual example of the money I may earn!

I have done quite well so far and I like the work, but your articles have sometimes led me to think that I may find the other professions much more lucrative and worth while.

I wondered if it would be possible for you to indicate how much I would earn, say, when I was 25 and when I was 35, assuming that I leave college as an A.R.I.B.A. at 22 and am quite clever at my work. It is by far most probable that I should not be in practice at either of these ages, I should imagine.

A WELSH STUDENT

[The JOURNAL has no special knowledge with which to answer *Welsh Student's* extremely important questions. The approved salary scale of the R.I.B.A. and the A.A.S.T.A. suggest that an assistant of ability ought to earn in the provinces £260 at 25, and £350 or more at 35 years of age; whether he does so or not still depends on good fortune or influence.

If readers would care to supplement this answer by quoting actual salaries or incomes now being received in various parts of the country by architects of 25 and 35, the JOURNAL would be glad to publish them.—Ed. A.J.]

Functional Architecture

SIR,—May I heartily support the sentiments expressed by your correspondent, Mr. G. Maxwell Aylwin, and assure him that I am sure he is right in saying that there are very many architects who agree with him; who see with horror many of the nightmares of so-called functional architecture fairly frequently reproduced in THE ARCHITECTS' JOURNAL?

Also, if I am ever privileged to meet the gentleman, I would like to pat on the back estate surveyor Mr. Harold Faulkner in having obtained a far nicer house than might have been the case for his estate, and I feel that all concerned with this house will ultimately derive far greater satisfaction than they would have, had the first design been adopted.

If we re-name "Functional Architecture" "Flat Roof Architecture" (the term "functional" being a wrong description, as it is the result of failing to understand the functions houses are normally called upon to fulfil which results in flat-roofed houses being built), its sphere of usefulness certainly exists for factory and commercial buildings, where in towns these buildings allow more sunshine and light to get to the streets, but for domestic work few owners can afford the constant yearly expenditure in decorating and waterproofing to prevent these constructions from going green by growth of vegetation from the top downwards, which only an absolutely impervious facing such as faience can prevent in this climate, and I can foresee in years to come the formation of syndicates to buy cheaply, add sloping roofs, and re-sell some of these abortive creations of nightmare designers.

REGINALD CRAFT (BEACONSFIELD)

Competitive Estimates

SIR,—May I support Mr. Boissevain's complaint, in your issue for January 26, regarding the practice among architects of inviting competitive estimates on competitors' designs?

An equally undesirable and analogous practice is that of inviting competitive estimates for equipment for carrying out a lighting scheme already worked out by a competing firm, who may have spent much time and thought and incurred considerable expense in working out the scheme, including the number and position of the points, type of fittings or equipment and wattage required, only to have this information presented free to competitors, who have no costs beyond that of supplying the indicated equipment.

I suggest that the only fair method is for all competitors to be asked to submit their own schemes for providing a given result, without knowledge of the proposals of the other competitors, the selected scheme, of course, to be carried out by the firm submitting it.

G. V. DOWNER
G.V.D. Illuminators, Ltd. (London).

EXHIBITIONS

[*By D. COSENS*]

THE Burlington Fine Arts Club exhibition is always worth a visit, consisting as it does of paintings which are usually hidden away in private collections. This year it is notable for the three paintings by Cranach, and in spite of many other fine works this undoubtedly is their show.

Lucas Cranach's work is rare, and seldom seen except in reproduction. He painted at a moment when German art was beginning to become internationalized, and when Germany, on the important trade route from the Flemish art centres of Bruges and Antwerp to Venice, had her one moment of ascendancy in art. During the first fifty years of the sixteenth century, her mediævalism, which had largely survived the Renaissance, is transformed into a distinctive national art by this fusion with the influences of the Low Countries and the fully-developed Venetian painting of such artists as Giovanni Bellini. In the hands of Dürer, Cranach, Baldung, Holbein, and a few others, this reached a level that is never again approached in Germany, and which was only sustained for half a century before it was obscured by the Thirty Years War and religious dissensions. Cranach, as a painter, is perhaps the high light of this brief ascendancy. His wholly individual mixture of Northern Gothic conventionalization and classic paganism, and his grasp of formal values and linear rhythms has produced some of the world's most charming nudes, and he uses this art form, new to Northern Europe, with extreme simplicity and mastery. It is for his almost indistinguishable Venuses and Eves that he is chiefly remarkable.

At this exhibition, Lord Aberconway's "Adam and Eve" (20) is not quite equal perhaps to Cranach's very similar version of the same subject in the Antwerp Museum, but it is a very fine and typical specimen. "Judith" (22) is outstanding as a portrait; and the "Portrait of a Nobleman" (29), though less fluent in design, is of very great interest.

There are many other interesting works, fifteenth-century Flemish and Provençal paintings, two lovely Chinese Wei dynasty terra-cotta figures (42), a Zoffany portrait (58), a considerable collection of paintings by Etty, a rather astonishing self-portrait by Watts (63) of himself in mediæval armour against a romantic background, which would be ridiculous were it not so pathetic a wish-fulfilment; Rachel Ruysch's "Still Life with Lizards and Thistles" (72), painted in 1690, which is pure Ernst; and, above all, Wilson's landscape (7).

Burlington Fine Arts Club, 17 Savile Row. Until the end of February. (Admission on application to the Secretary.)

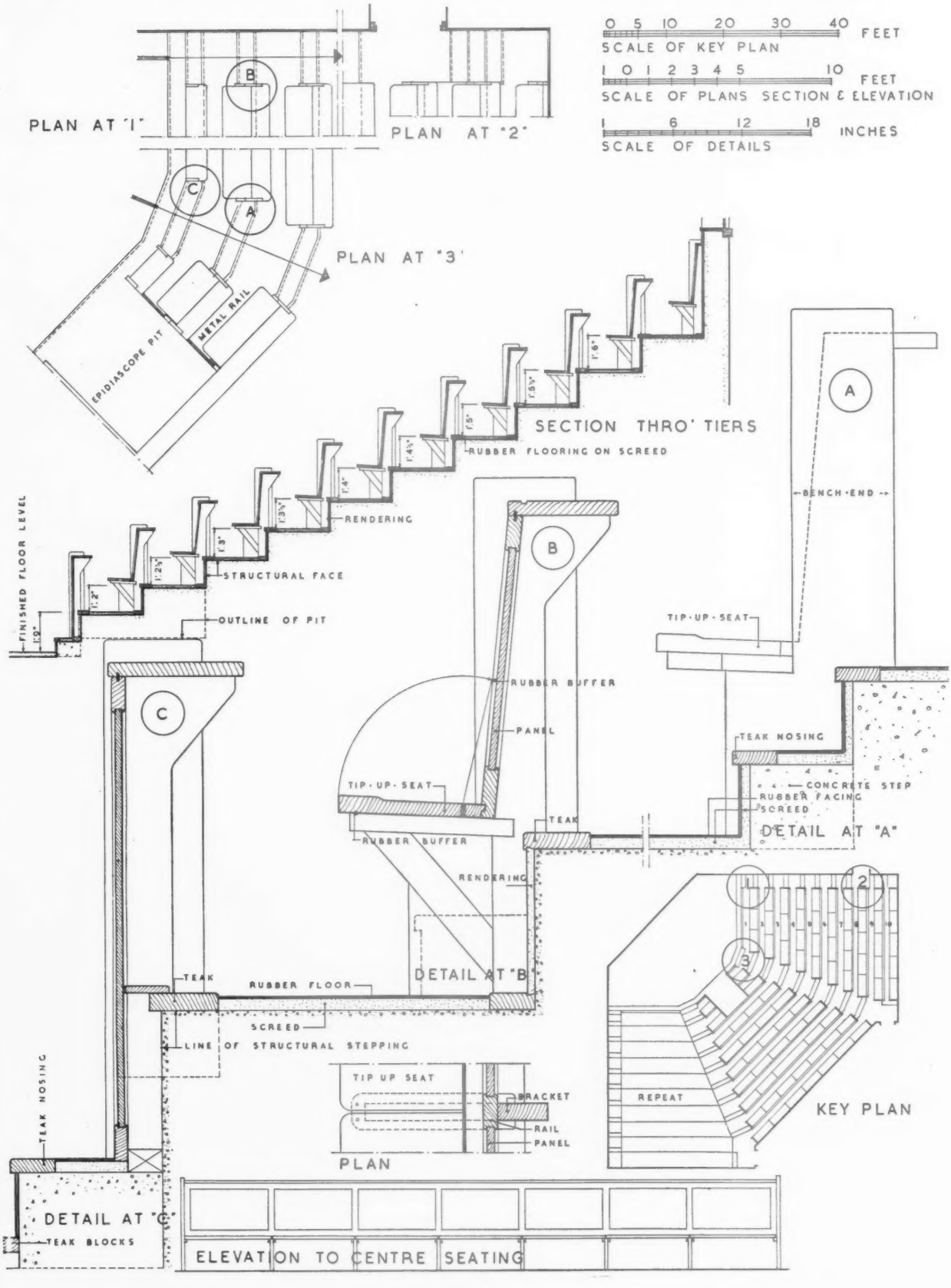
WORKING DETAILS : 723

LECTURE THEATRE SEATING • SCHOOL OF ANATOMY, CAMBRIDGE • STANLEY HALL & EASTON & ROBERTSON

The lecture theatre seating is constructed in teak, each row of seating having a continuous shelf fixed to the back of the row in front. The seats tip up in sections of 2 on to a rubber buffer.
The stepping is constructed in concrete with screed and rubber finish, with teak nosings to the risers.
Details are shown overleaf.

WORKING DETAILS : 724

LECTURE THEATRE SEATING • SCHOOL OF ANATOMY, CAMBRIDGE • STANLEY HALL & EASTON & ROBERTSON



Details of the lecture theatre seating illustrated overleaf.

The Architects' Journal Library of Planned Information

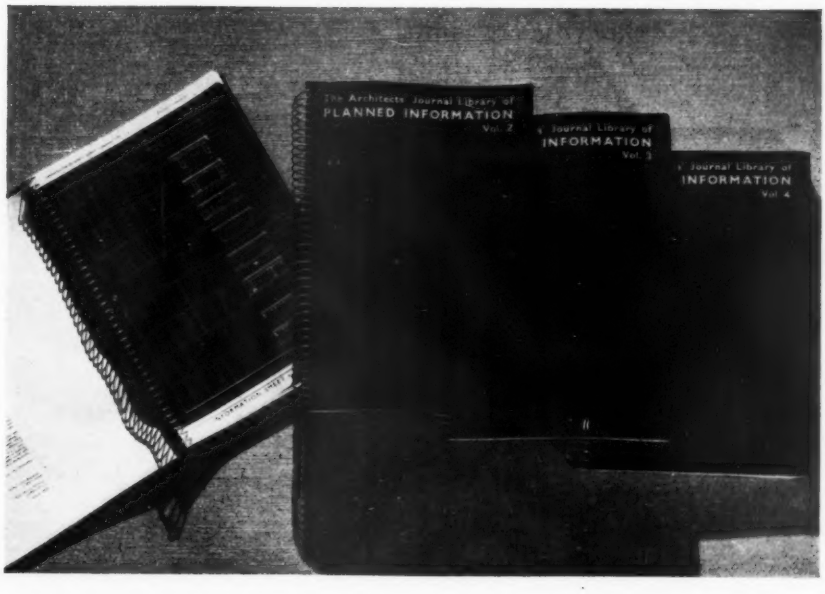
INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

703 Sheet Metals

704 Plan Elements



All the Information Sheets published in The Architects' Journal Library of Planned Information since the inception of the series to the end of 1937, have been reprinted and are available in the four volumes illustrated here. Price 21s. each.

Sheets issued since index :

601 : Sanitary Equipment
602 : Enamel Paints
603 : Hot Water Boilers—III
604 : Gas Cookers
605 : Insulation and Protection of Buildings
606 : Heating Equipment
607 : The Equipment of Buildings
608 : Water Heating
609 : Fireplaces
610 : Weatherings—I
611 : Fire Protection and Insulation
612 : Glass Masonry
613 : Roofing
614 : Central Heating
615 : Heating : Open Fires
616 : External Renderings
617 : Kitchen Equipment
618 : Roof and Pavement Lights
619 : Glass Walls, Windows, Screens, and Partitions
620 : Weatherings—II
621 : Sanitary Equipment
622 : The Insulation of Boiler Bases
623 : Brickwork
624 : Metal Trim
625 : Kitchen Equipment
626 : Weatherings—III
627 : Sound Insulation
628 : Fireclay Sinks
629 : Plumbing
630 : Central Heating
631 : Kitchen Equipment
632 : Doors and Door Gear
633 : Sanitary Equipment
634 : Weatherings—IV
635 : Kitchen Equipment
636 : Doors and Door Gear
637 : Electrical Equipment, Lighting
638 : Elementary Schools—VII
639 : Electrical Equipment, Lighting
640 : Roofing
641 : Sliding Gear
642 : Glazing
643 : Glazing
644 : Elementary Schools—VIII
645 : Metal Curtain Rails
646 : Plumbing
647 : Veneers
648 : U.S.A. Plumbing—V
649 : U.S.A. Plumbing—VI
650 : Ventilation of Factories and Workshops—I
651 : School Cloakrooms (Boys)
652 : U.S.A. Plumbing—VII
653 : Plumbing
654 : U.S.A. Plumbing—VIII
655 : School Cloakrooms (Girls)
656 : Ventilation of Factories and Workshops—II
657 : Floor Construction
658 : Partitions
659 : Equipment
660 : Asbestos-Cement Decorated Sheets
661 : Aluminium
662 : Sound Resistance
663 : Adjustable Steel Shelving
664 : Sheet Lead Work
665 : Adjustable Steel Shelving
666 : Sound Insulation
667 : A.R.P.
668 : Aerodromes
669 : Aluminium
670 : Metal Trim
671 : Rainwater Gutters
672 : Waterproofing
673 : Aluminium
674 : Roof Insulation
675 : Furniture
676 : Ventilation of Factories and Workshops—III
677 : Oil Paint
678 : Ventilation of Factories and Workshops—IV
679 : Plumbing
680 : Aluminium
681 : Corded Curtain Rails
682 : Sound Insulation
683 : Roofing Tiles
684 : Sheet Metals
685 : Partitions
686 : Aluminium
687 : Plumbing
688 (81 revised) : Bricks (Standard Specials)
689 : Suspended Ceilings
690 : Acoustics
691 : Fuel Storage
692 (84 revised) : Bricks (Standard Specials)
693 : Fuel Storage
694 : Kitchen Equipment
695 : Wallboard Fixing
696 : Waterproofing and Damp-proofing
697 : Electrical Equipment
698 : Tile Hanging
699 : Tile Hanging
700 (266 revised) : Floor Construction
701 : Tile Hanging
702 (420 revised) : Fixing Insulating Board

855.

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TABLE OF GAUGES WITH DECIMAL AND FRACTIONAL INCH EQUIVALENTS.

GAUGE (S.W.G.) Nº	GRAPHIC SIZE	THICKNESS OR DIAMETER.		WEIGHTS OF VARIOUS SHEET METALS (lbs. per sq. ft.)					
		decimal.	fraction.	STEEL.	STAINLESS STEEL.	COPPER.	ALUMINIUM.	ZINC. *	LEAD. †
23		.024	1/32−	.979	1.07	1.116	.338	0.936 (12)	•
24		.022	1/64+	.897	0.905	1.023	.310	0.824 (11)	•
25		.020	1/64+	.816	0.825	0.930	.282	0.712 (10)	•
26		.018	1/64+	.734	0.74	0.837	.254	•	•
27		.0164	1/64+	.669	0.68	0.762	.231	0.637 (9)	•
28		.0148	1/64−	.604	0.62	0.688	.209	0.562 (8)	0.875 (14oz.)
29		.0136	1/73−	.555	0.569	0.632	.192	0.487 (7)	•
30		.0124	1/80−	.506	0.516	0.576	.175	•	0.750 (12oz.)
31		.0116	1/86−	.473		0.539	.164	•	•
32		.0108	1/92−	.440		0.502	.152	0.412 (6)	0.625 (10oz.)
33		.0100	1/100	.428		0.465	.148	0.374 (5)	•
34		.0092	1/108−	.375		0.427	.130	•	•
35		.0084	1/119−	.343		0.390	.118	0.299 (4)	0.500 (8oz.)
36		.0076	1/131−	.310		0.353	.107	•	•
37		.0068	1/147−	.277		0.316	.096	0.263 (3)	•
38		.0060	1/166−	.245		0.279	.085	0.225 (2)	•
39		.0052	1/192−	.212		0.241	.073	•	0.313 (5oz.)
40		.0048	1/208−	.196		0.223	.068	•	•
41		.0044	1/227−	.179		0.204	.062	•	•
42		.0040	1/250	.163		0.186	.056	0.150 (1)	0.250 (4oz.)
43		.0036	1/277−	.147		•	.050	•	•
44		.0032	1/312−	.131		•	.045	•	•
45		.0028	1/357−	.114		•	.040	•	•
46		.0024	1/416−	.098		•	.034	•	•
47		.0020	1/500	.082		•	.028	•	0.125 (2oz.)
48		.0016	1/625	.063		•	.023	•	•
49		.0012	1/833−	.049		•	.017	•	•
50		.0010	1/1000	.040		•	.014	•	0.070 (1½oz.)
•		•	•	•		•	•	•	•

The figures given here are for "Staybrite" steel sheets.

* Zinc sheets are rolled to a Zinc gauge which rises in number with thickness.

Note: Above Nº 28 gauge, fractions are given to nearest hundredth or thousandth.

† Laminated lead sheet is quoted by weight and not by gauge thickness.

INFORMATION SHEET: STANDARD WIRE GAUGES AND SHEET METAL DATA: Nº 2.

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INFORMATION SHEET

• 703 •

SHEET METALS

Lead :

This is the second of two Sheets dealing with sheet metal data.

Lead sheet is known and specified by its weight per square foot thus : three-pound lead, four-pound lead and so on, the weight given always indicating the weight of one square foot of the sheet.

The weights of milled sheet lead most used in building work are given in the following table : heavier weights (up to 60 lbs.) are used mainly in electrical and chemical work.

Weight in lbs. per sq. foot	Thickness in inches	Nearest Imperial Standard Wire Gauge	Thickness in mm.
2½	0·042	19	1·07
3	0·051	18	1·3
3½	0·059	17	1·5
4	0·068	16	1·73
4½	0·076	15	1·93
5	0·085	14	2·16
6	0·101	12	2·57
7	0·118	11	3·00
8	0·135	10	3·43
10	0·169	7	4·29

Sizes of Sheet Lead :

The usual commercial size for milled sheet is from 15 feet to 40 feet in length and from 7 feet to 9 feet in width, but sheets up to 60 feet long or 12 feet wide can be obtained if required.

Sheet lead is obtainable cut to special shape or size, or in stock sizes suitable for cutting afterwards.

The thickness of sheet used for various purposes depends upon a number of varying factors which make it difficult to give any general rules. Generally speaking, the thinnest sheets will outlast almost any building so far as corrosion alone is concerned. Additional thickness is required for protection against mechanical damage and to provide enough metal to allow the plumber to dress or boss the sheet into the shapes required. The following table, while suggesting somewhat lighter weights than are included in many of the older text-books, is a reasonably safe general guide. Naturally the greater weights are required for the best quality work.

Table of Suggested Weights for Lead Sheet for Various Uses :

	lbs. per sq. ft.
Flat roofing (small or with no traffic) ...	4–6
,, ,, (large or with traffic) ...	6–7
Apron flashings to above	5
Soakers	3–4
General roofing flashings	4–5
Damp courses	3–5
Waterproof lining (flower boxes, shower stalls, etc.)	4
Water storage tanks	6
Coverings to exposed surfaces (cornices, etc.)	6

Cast Sheet Lead :

Cast lead, considered by some to be the most durable form of sheet, is not now used to any great extent. Certain firms specialize in its production and it is also made in small quantities by lead workers from waste materials. Cast sheet lead is produced by running molten lead over a bed of prepared sand on a casting bench. The size of the sheet is therefore determined by the size of the casting table, the average being approximately 12 feet by 5 feet.

Laminated Lead :

Laminated lead, used largely for protection and water-proofing purposes, is manufactured and marketed in rolls or in sheets.

The usual weights in which it is produced are : 1, 1½, 2, 4, 5, 8, 10, 12 and 14 ounces per square foot. Most commonly used for the prevention of damp penetration in the building trade in 4 and 5 ounce substance. The sizes of laminated lead sheets are 22 in. by 18 in. for all weights and up to 6 feet by 2 feet for weights above 4 ounces per square foot.

It is also possible to obtain :

1 to 1½ oz. in sizes up to 22″ × 22″
2 to 2½ oz. ,, ,, 72″ × 22″
3 oz. ,, ,, 90″ × 22″
3½ oz. and upward regularly supplied in 84″ × 22″ and, exceptionally, 90″ × 24″.

Copper :

Sheet : The term "sheet" is generally applied to material which is over 15 in. wide and cut to exact lengths, and the thickness ranges from ⅜ in. down to about 0·010 in. Width and length vary within very wide limits and may be up to 4 feet wide by 12 feet long.

The basis price is for sheets of an area of 14 sq. ft. and not thinner than 24 S.W.G. The area may be made up of any dimensions such as 4′ 0″ × 3′ 6″ and 5′ 3″ × 2′ 8″ which are common sizes used in building work for roofing and similar purposes. Extras to a definite scale are charged for sheets larger than the basis area and/or thinner than 24 S.W.G. Sheets are manufactured by both hot and cold rolling. Hot-rolled sheets are of dead soft temper and are usually employed for all work in building in which the copper is supported on an understructure of boarding, concrete, etc. Cold-rolled sheets can be supplied in annealed (soft), half hard, or hard temper and have a better surface finish than hot-rolled sheets. They are therefore more suitable for decorative work in which a toned or polished finish is desired.

Strip : Strip is sheet material cold rolled in long lengths and in comparatively narrow widths. It is supplied in coils and may be of annealed, half-hard or hard temper. The width of strip varies according to the thickness. When of 0·010 in. thickness or more, widths as great as 24 in. can be obtained and the length may be 50 ft. or more according to requirements. For such items as damp-proof courses in which ductility is necessary, the strip should be of annealed temper, while for semi-self-supporting work such as rain-water gutters and down pipes, half-hard temper is employed.

Foil : When strip is thinner than 0·0006 in. it is usually called foil. When manufactured by rolling the width of foil is limited to about 12 in. for thicknesses down to 0·004 in. In thinner gauges the maximum width is about 6 in.

THICKNESSES OF COPPER SHEET AND STRIP USED IN BUILDING

Use	Thickness S.W.G.
Roofing, dormer tops and cheeks, flashings, soakers, weatherings, etc.	23–24
Eaves, gutters and downpipes (normal sizes)	20–22
Damp-proof courses, cavity wall flashings	24–33
Lining of water storage tanks ...	20–24

Zinc :

The zinc gauge rises in number with thickness, and must not be confused with the Imperial standard wire gauge.

For roofing and external building work, it is not advisable to use zinc thinner than No. 14 gauge, and for special work, zinc of a heavier gauge should be used.

Sheets: The English stock or standard size of sheets for general purposes are 3 feet wide and the lengths are 7 feet and 8 feet. Sheets of other dimensions are obtainable, but as these are made to special order the cost is materially increased.

Commercial zinc sheets contain anything up to 1·5 per cent. of impurities. It is therefore advisable to specify the use to which the sheets will be put so that a suitable grade of sheet can be supplied.

Strip : Zinc strip is usually rolled from metal of high purity. The maximum length into which any particular gauge of the metal is rolled is dependent on the width of the strip, as a standard casting is generally employed. The maximum width obtainable is approximately 2 feet.

Aluminium :

Sheets : Aluminium sheets in all tempers are supplied either bright, frosted or satin finished, and specially polished sheets of mirror finish can also be supplied at extra cost. Standard sizes of sheet for various gauges range from about 6′ × 3′ to 12′ × 4′, although larger dimensions may be specially ordered.

Strip : Aluminium strip is supplied in coils in widths varying with the gauge and in lengths corresponding with the maximum weight per coil of approximately 180 lbs. for widths of 14 in. and over. Below this width the weight per coil ranges between 90 lbs. and 60 lbs.

Temper : Aluminium can be hardened by cold working or softened by annealing, and for certain purposes, varying grades of temper may be considered necessary, the usual being hard, medium hard, medium, medium soft, and soft.

Stainless Steel :

Sheets : Stainless steel sheets may be supplied in a number of different finishes, examples of which are the following :

Dull polish on one side only.
Bright polish on one side only.
Dull polish on both sides.
Bright polish on one side, dull polish on the other.
Bright polish on both sides.

Strip : Stainless steel strip, dull or bright polished as for sheet, is supplied in thicknesses ranging from 10-gauge (0·128 in.) down to 40-gauge (0·0048 in.). Widths of 8 in., 9 in. and 10 in. are standard, narrower strips being slit to size. Lengths up to 15 feet are supplied flat, but longer lengths in coil up to a maximum length varying between 60 and 200 feet for different gauges.

Previous Sheet :

The first Sheet dealing with standard wire gauges and sheet metal data is No. 684.

836

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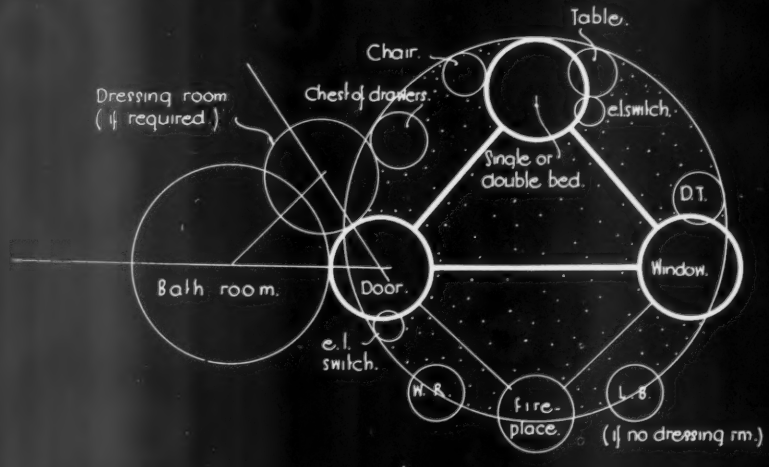
DIAGRAMMATIC SCHEDULE OF ELEMENTS OF A TYPICAL DOMESTIC BEDROOM (Not to scale)



The position of the circles does not necessarily indicate the location of the elements in relation to each other. Where the circles interlock, however, it is considered desirable that the different items should be in close proximity. eg, e.l. switch should be near door.

PLAN OF BEDROOM SHOWING A WORKABLE ARRANGEMENT OF ESSENTIAL FURNITURE & EQUIPMENT.

BED : draughts across bed from door or window should be avoided

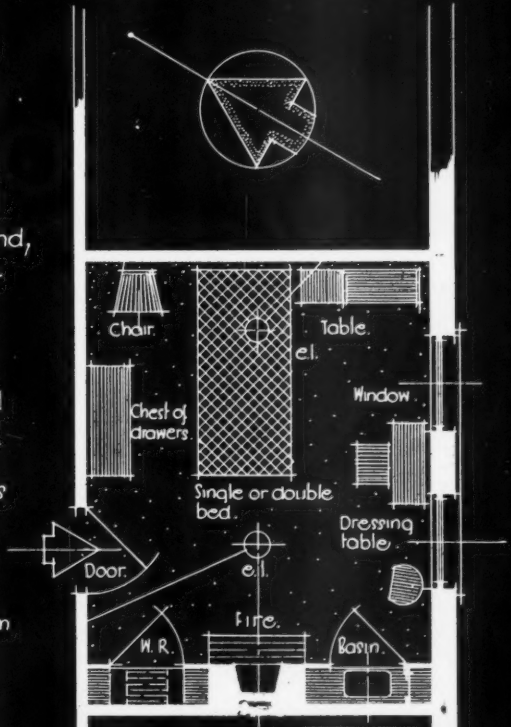
Head of bed should not face light. There should be walking clearance all around, and space at sides for bed-side table and chair.

For making-up and cleaning purposes, bed should not have long side against a wall.

Space between twin beds should be at least six inches.

DOOR : should preferably screen the room ; it should not be on the same wall as the bed head.

WARDROBE CUPD : should be lined & be preferably 21" deep. Door should be hung so that light from the window can enter.



FIREPLACE : should have sitting space around it, be centrally placed, and able to throw its heat across the direction of draughts.

SIZE & SHAPE : space sufficient for both sleeping and dressing must be allowed in bedrooms without separate dressing rooms. Otherwise, size & shape depend upon space allotted to equipment.

DRESSING TABLE : is best not placed directly in front of windows, as this blocks light and interferes with operation of sashes and curtains.

It should have ample working space without obstructing bed, and be placed so as to receive left hand light (or L.H. & R.H.)

WINDOW : minimum extent of opening height, 6'6" or 7'0". Glass line should be about 3'6" above floor.

LAVATORY BASIN : requires about 3'0" of wall space and good light for mirror over. It should be placed so that splashes are not liable to touch bed or furniture.

INFORMATION SHEET : ANALYSIS OF PLAN REQUIREMENTS : N°1 : DOMESTIC BEDROOMS.

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INFORMATION SHEET

• 704 •

PLAN ELEMENTS

Subject : Domestic Bedrooms

General :

This is the first of a series of Sheets analysing the plan requirements of various buildings or departments, and deals with domestic bedrooms. For the purpose of illustration, the essential furniture and equipment of a medium sized house is indicated, but it should be borne in mind that the principles governing the grouping and placing of the elements apply in some degree to all bedrooms. Although domestic work is envisaged here, similar requirements may suit certain types of rehousing, tenement, hostel, hotel or flat work. Some of the less essential equipment, such as bookcases or writing desks, lavatory basins and fires, may be omitted in less liberally planned units. Conversely, larger suites may include more or larger wardrobes, central or local heating equipment, lobby and attached dressing and bathrooms, balconies, etc.

Orientation :

Daylight is normally needed most in bedrooms during the early morning hours. For this reason, therefore, a south-easterly aspect is desirable.

Essential Equipment :

Bedrooms without dressing rooms require space for both sleeping and dressing. Equipment for bedrooms in average houses includes the bed (single or double), wardrobe or cupboard, chest of drawers and dressing table, bedside table and chairs, and facilities for heating.

Sizes :

The size and shape of the room depend largely upon the space allotted to the equipment. Working clearances around such elements as the dressing table and fireplace are particularly necessary.

Planning :

The relative positions of the bed, door, window and fireplace are important, for the prevention of draughts. Various other points are enumerated on the typical plan overleaf.

The position of each plan unit is determined largely by its use, but it is desirable to preserve as large an open space as possible immediately at the entrance. If a lavatory basin is installed, it should not project into this area, nor into any working aisle between main fitments. It is best placed near the dressing table and heating elements.

Common Sizes of Furniture

	Length	Width	Height	Depth
Bed { Single	6′ 6″—6′ 10″	2′ 6″—3′ 6″	1′ 6″ over springs	—
Bed { Double	6′ 6″—6′ 10″	4′ 0″—5′ 0″		
W.R. { Cabinet ...	—	21″ units	about 7′	21″ min. as required
W.R. { Built-in ...	—	3′ min.	5′ 6″ min.	
Dressing table ...	—	3′ 0″—3′ 8″	1′ 6″—2′ 6″	1′ 6″—1′ 10″
Chest drawers ...	—	2′ 10″—3′ 4″	3′ 8″—4′ 8″	1′ 6″—1′ 9″
Bedside table or chair	—	1′ 6″ min.	—	1′ 6″ min.

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

ONE-ROOM FLATLETS

Mr. Rostron Duckworth asked the Minister of Health whether he could state the number of one-room flatlets suitable either for the working class or middle classes which had been built with State subsidy in the last five years.

Mr. Elliot said that in the five years ended December 31 last, the erection of some 27,000 subsidized small dwelling-houses, having only one bedroom, was approved. The statistics did not in every case specify the type of dwelling, but it was known that at least 5,600 were flats.

SLUM CLEARANCE STATISTICS

Sir Charles Cayzer asked the Minister of Health if he would state the number of towns which now considered they had cleared out all previously existing slums and had no further present need for slum clearance orders.

Mr. Elliot said that approximately 400 local authorities had completed the programme which they had adopted. Some of them would no doubt find it necessary to extend these programmes, but he had no precise information on this point at present.

Mr. Craven-Ellis asked the Minister of Health whether he would give favourable consideration to relieving local authorities of their statutory obligation to build houses to replace those demolished under slum clearance schemes and overcrowding in districts where the percentage of houses of the appropriate type was in excess of 5 per cent. of the total.

Mr. Bernays said that the Minister was not clear precisely what his hon. Friend had in mind, but he did not think there was any sufficient reason for altering the existing practice in this matter.

A.R.P.

Miss Wilkinson asked the Lord Privy Seal whether, in view of the fact that the cost of steel in Britain was still well above the world price, he had made or proposed to make any special arrangements with the iron and steel firms by which the British Government had not to pay a price for the steel air-raid shelters on a high profit-bearing basis.

Sir John Anderson said that special arrangements had been made with a view to meeting this point.

Mr. Simmonds asked the Lord Privy Seal if he would state to whom the steel shelters of which he has made substantial purchases would be issued for use.

Sir John Anderson said that a circular on this matter would be issued to local authorities next week.

Mr. Simmonds asked the Lord Privy Seal if he was giving any encouragement to local authorities to construct shelters which would withstand direct hits by medium-sized explosive bombs.

Sir John Anderson said that this very important question had been under continuous examination by his Department, but he was not yet in a position to make a fully considered and complete statement on the subject.

Miss Ward asked the Lord Privy Seal if he would state a date on which the handbook incorporating the recommendations of the Government's advisory committee of architects and engineers on structural precautions in buildings against air-raid attack would be made available to the public.

Sir John Anderson said he assumed that his hon. Friend was referring to the revised version of Handbook No. 5. The revised text was virtually completed and there would be no delay in publication.

Mr. Joel asked the Lord Privy Seal what steps had been taken up to date to initiate schemes for constructing underground car-parks which would be available also as deep-air-raid shelters.

Sir J. Anderson said that possibilities of constructing underground car-parks which would also give some shelter protection had received his careful consideration, in consultation with his Rt. Hon. Friend the Minister of Transport, and he was now arranging for immediate expert examination of certain technical problems involved.

BUILDING TRADES AND UNEMPLOYMENT PAY

Mr. Joel asked the Minister of Labour what progress had been made with the evolution of an improved scheme for providing building trade operatives with unemployment pay during bad weather when work was not possible.

Mr. E. Brown said that the National Joint Council for the Building Industry in England and Wales recently submitted for his consideration, under section 72 (2) (*c*) of the Unemployment Insurance Act, 1935, a scheme for insuring insured persons in the building industry against unemployment due to inclement weather. Notice of the receipt of this scheme was given in the *London Gazette* on December 2, and in the daily and trade Press on the nearest subsequent date, and observations were invited from persons affected, who were able to obtain copies of the scheme from the Department on request. Numerous observations had been received which he was now considering in order that he might arrive at a decision as to whether the introduction of the proposed scheme was practicable and expedient. To assist him in arriving at a decision on this point he hoped shortly to arrange for an informal enquiry to be held. It might be necessary to extend the provisions of section 72 of the 1935 Act before the scheme submitted could be brought into operation.

FLATS

Following are extracts from a paper by Mr. C. Harman-Hunt, F.S.I., at the meeting last Thursday of the Auctioneers' and Estate Agents' Institute :

FLATS—PAST, PRESENT AND FUTURE

The aspect of the subject that is probably of greatest interest to us all is : " Has the demand for flats been satisfied ? Has saturation point been reached ? " This is a subject about which one hears views expressed by laymen in many walks of life, and the general cry is that far too many flats have been built. I am, however, not prepared to accept any such general statement without a great deal of qualification.

My view is that the demand for well-planned and well-built flats in suitable situations, to be let at reasonable rentals, still exists and is likely to continue. The fact that there are at the present time a great number of bad and indifferent flats vacant does not affect this view in any way, as, in my experience, in the majority of blocks with an abnormal percentage of voids, there is some fundamental reason for this unhappy state of affairs, such as poor planning, inferior construction and finish, ugly exteriors, unattractive entrance halls and, very often, an inability on the part of the owner to reduce the rents to such a figure that the flats must attract tenants.

Let me say at once, however, that I do not consider that the question of rent is of necessity a fundamental key to the letting of a bad flat, as the commodity being offered may be such that there is virtually no market at any price, although this is of course an extreme example. My point is, however, that, given a good position, then with good construction and planning and proper financing it is still possible to erect flats that will let readily and provide a reasonable return to the promoters.

The flat-building boom created opportunities for speculators, many of whom had little, if any, capital and no previous experience of property, to take advantage of the very favourable circumstances that had arisen to exploit the position from a purely money-making point of view. At the outset there was very little competition, vacant sites were obtainable at moderate figures, builders were anxious for contracts at cut rates, and tenants in plenty were waiting. The result of this combination of circumstances was that many blocks of flats were built in great haste and sold at substantial profits, in the majority of cases to newly-formed property companies.

There must be a great many owners of flats, particularly those holding the leasehold interest subject to an inflated ground rent, who feel very apprehensive about the future. In my view, however, except in extreme cases they may take some comfort in the present situation, provided that their financial resources are sufficient to weather the storm, as I feel that, in the existing lull in building that has occurred and must continue for some time, the demand will be sufficient to fill a large proportion of the existing flats.

My reasons for thinking that the speculative building of flats will stop for the present are as follows :—

(1) The high cost of building.
(2) The high cost of sites.
(3) The restricting effects of the Town and Country Planning Act, 1932.
(4) Difficulty in obtaining building finance.
(5) Difficulty in obtaining permanent mortgages, particularly on leaseholds.
(6) Difficulty in obtaining a purchaser.
(7) Fear of air-raids in central areas.
(8) The present impossibility of obtaining insurance against damage by air attacks.
(9) Increased cost of services.
(10) Increasing Local Government expenditure.

The rating question, which apparently was a serious matter in 1900, is just as serious today. In my experience rating authorities almost invariably value flats on the basis of the actual rents if these are fixed at or about the time of assessment, making of course the proper deductions for the cost of the services rendered by the landlord, including, in the case of flats let at inclusive rentals, the tenant's liability for rates.

Assessments on this basis are, in my experience, generally supported by Assessment Committees, and, in view of the decision in the *Ladies' Hosiery* case, there is little argument to support an assessment on a lower basis where there is clear and uncontradicted evidence as to rental value.

If the basis laid down in this case—which merely confirms the law as it has existed since 1601, and is clearly stated in the definition of gross value contained in the Rating and Valuation Act, 1925—were properly applied to all classes of property, no hardship would arise. In fact, however, the definition of gross value is not strictly applied by rating authorities, and, outside the Metropolis, assessments of all classes of property are, generally speaking, on a lower basis than can be strictly maintained. Let us, however, confine ourselves to a direct comparison between newly-erected flats where there is clear and uncontradicted evidence of rental value, and houses with comparable accommodation.

I have no hesitation in saying that, for the most part, flats are assessed up to the hilt on the rents, while houses, if occupied by their owners, are assessed at varying percentages—from 10 to 25 per cent.—below their true gross value. The reason for this discrepancy is apparent, namely, that as the flats are let, there is direct evidence of value, whereas with regard to houses which are owner-occupied, there may be little or no evidence as to their rental value.

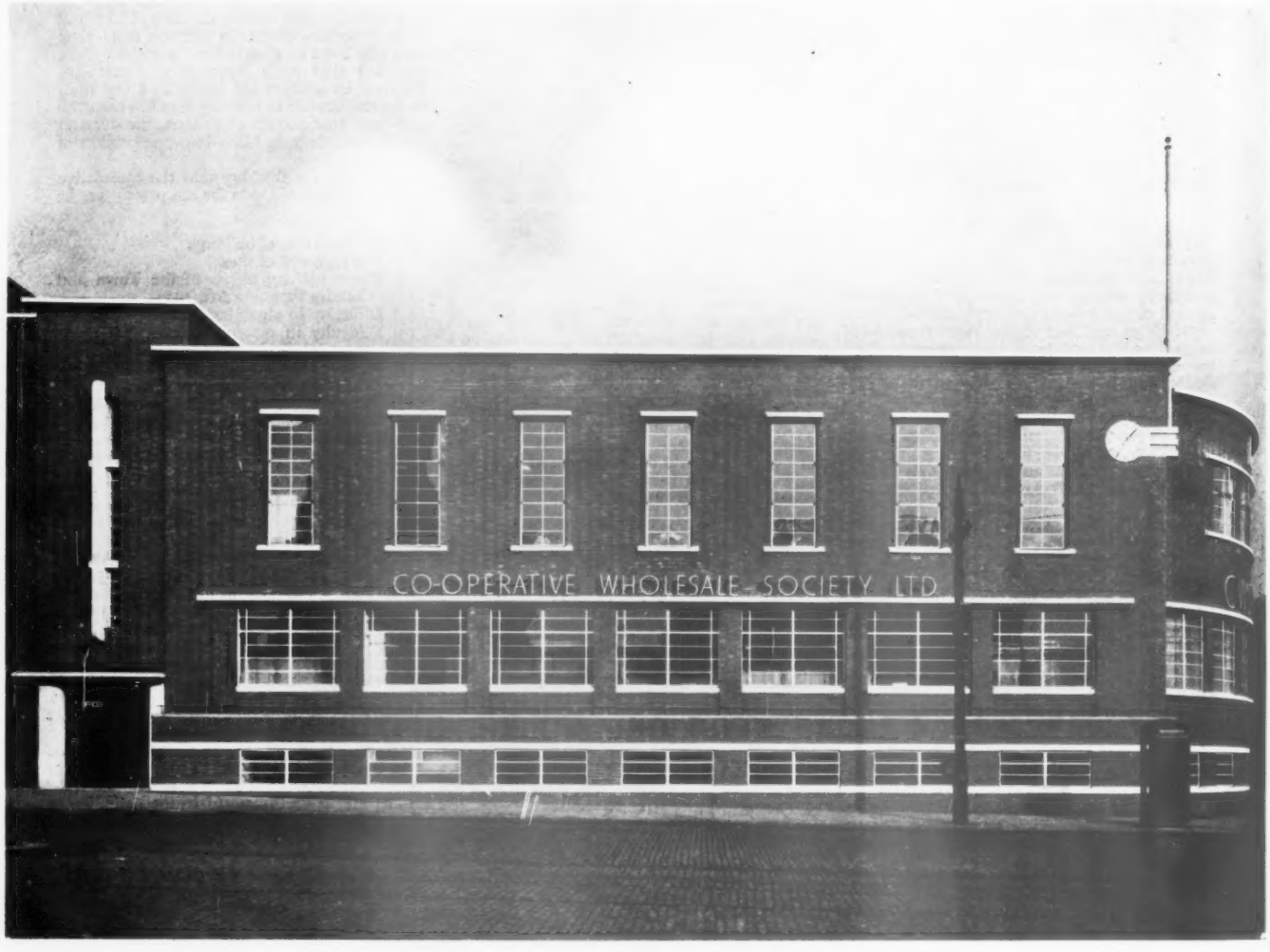
As you are no doubt aware the Government have thought fit to pass the Rating and Valuation (Postponement of Valuations) Act, 1938, which provides that the operation of the third valuation lists to be prepared under the Rating and Valuation Act, 1925, shall not come into force until the first day of April, 1941. In other words, they have postponed the operation of these new lists for a period of two years.

I am sure that the reason for such postponement was the fear of the result of the operation of these new lists if rating authorities throughout the country put in their lists the proper gross values for every class of property. Such a valuation would undoubtedly seriously affect the occupiers of residential property, although if my contention is right it would relieve the burden of the owners and occupiers of flats.

D

NEW DEPARTMENTS, C.W.S., MANCHESTER

ARCHITECT: W. A. JOHNSON: ASSISTANT, J. CROPPER



PROBLEM—*The function of the building is to serve the dual purposes of warehousing and distribution of green fruits, and of fish, game, poultry, and eggs—a part of the ground floor being devoted to the fish, game, poultry and egg business and the remainder of the building allocated to the purposes of the green fruit department.*

SITE AND SITE PLAN—*The site is at the junction of Rochdale Road and Swan Street. The plan of the building was to some extent dominated by the necessity of providing commodious loading-docks to accommodate 22 motor lorries simultaneously—a loaded vehicle leaving the loading-docks every 1½ minutes at peak periods.*

PLAN—*Entrance to the main offices is on the Rochdale Road corner—the Cable Street frontage, being the longest, was utilized for the loading-docks. The basement is used as a warehouse for green fruit and is provided with three large cold rooms for the storage of soft fruits during hot weather; a portion of the basement is utilized for the storage and sorting and return of hampers, baskets, sacks, etc. On the ground floor are situated the salerooms of the fish, game, etc., department, with egg-testing rooms fitted with the appropriate appliances, poultry-dressing rooms, and a large refrigerator for game, etc., is provided. The salerooms of the green fruit department are also situated on this floor. On the first floor are the banana-maturing rooms; these rooms are gas-heated, thermostatically controlled, and a continuous conveyor carries the fruit from the loading-docks to the banana-houses.*

Two large electrical hoists serve the warehouse, running from basement to first floor.

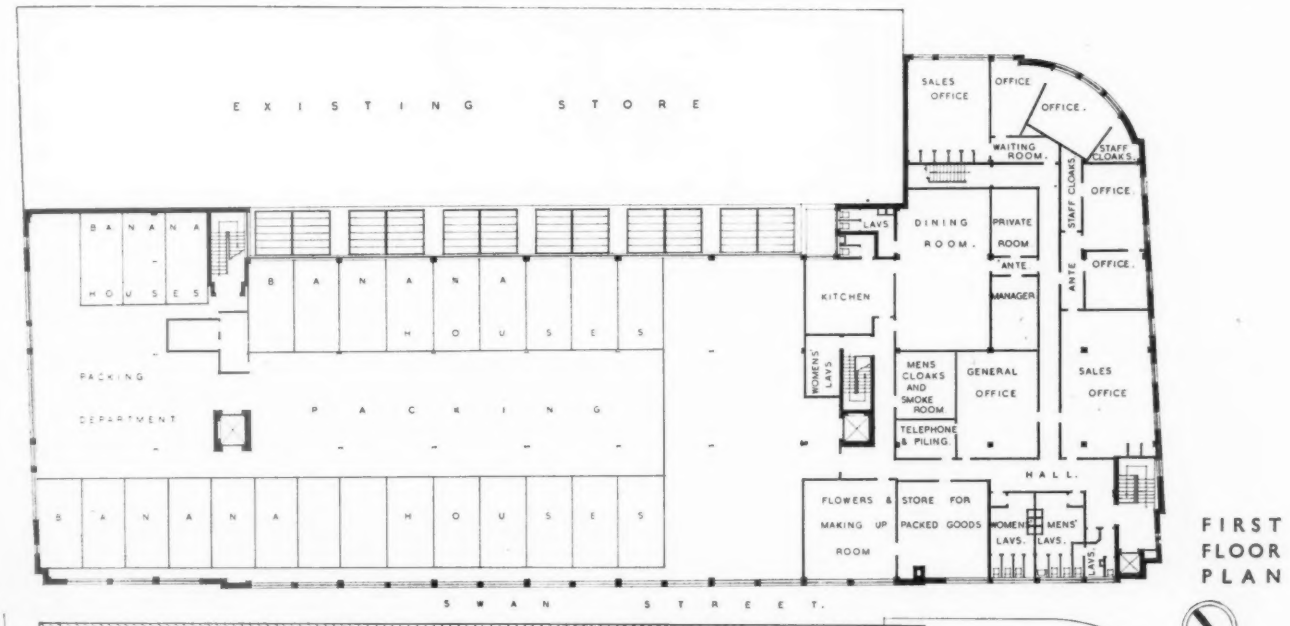
On the first floor is a florist's department.

General and private offices for both green fruit and fish, etc., departments are on the first floor, and a dining-room, with fully-equipped kitchen, is provided for the use of the staff and buyers.

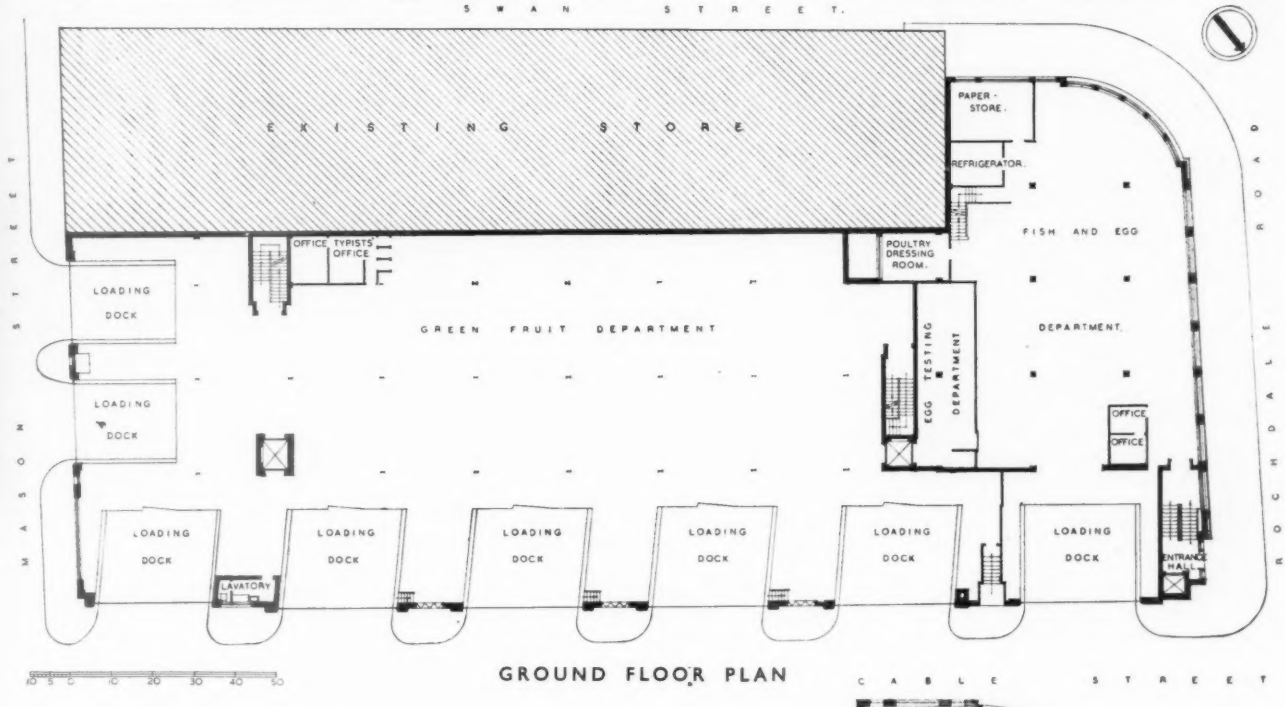
CONSTRUCTION AND FINISHES—*Steel-framed construction, with reinforced concrete floors. The external walls are faced with Accrington facing bricks, the elevation to Rochdale Road being relieved by reconstructed stone dressings; to Cable Street and Mason Street the dock openings are relieved by blue brick plinth. The flat roofs over the office portion are in reinforced concrete; over the warehouse portion the roofs are pitched, boarded and slated, with large opening roof-lights. Internally the walls are of common brick, pointed and limewashed, and in the offices and salerooms there are brick partition walls cement rendered and finished with Keen's cement. The floors of the warehouse are of reinforced concrete with granolithic finish; floors to offices and salerooms are screeded and covered with ¼-in. cork carpet.*

SERVICES—*Dining-room and fully-equipped kitchen are provided for the use of staff and buyers. Two electric goods lifts are installed, and one passenger lift from ground to first floor serving the offices and salerooms. The goods lifts serve all floors. Heating is by low-pressure hot water pipes and radiators; the banana-house is heated by thermoliers; the banana maturing-houses are heated by gas, thermostatically controlled.*

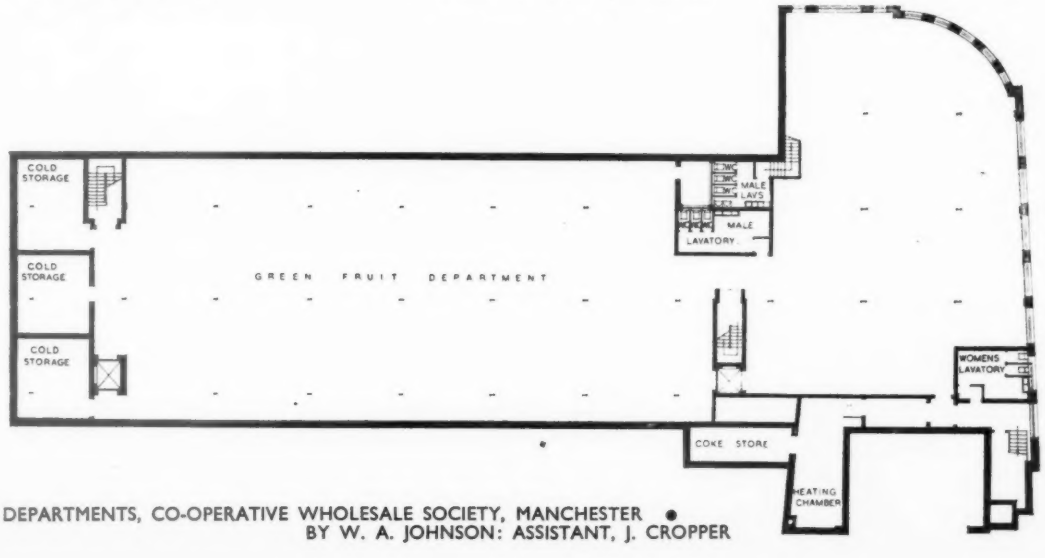
CONTRACT—*The whole of the building work was carried out by the Co-operative Wholesale Society, Ltd., Building Department, Vere Street, Salford, 5.* *For list of sub-contractors, see page 261.*



FIRST FLOOR PLAN



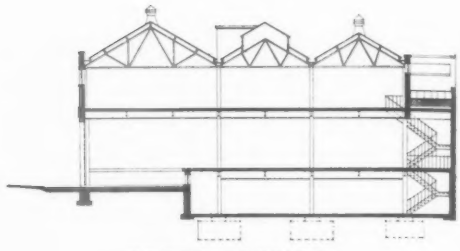
GROUND FLOOR PLAN



BASEMENT PLAN

NEW DEPARTMENTS, CO-OPERATIVE WHOLESALE SOCIETY, MANCHESTER
BY W. A. JOHNSON: ASSISTANT, J. CROPPER

Left, the north-west front, showing the main entrance; below, a view from the north showing the elevation to Rochdale Road (right) and the return front to Cable Street; bottom, the fronts to Swan Street (left) and Cable Street, which are mainly devoted to loading docks.



CROSS SECTION

NEW DEPARTMENTS, CO-OPERATIVE WHOLESALE SOCIETY, MANCHESTER
BY W. A. JOHNSON: ASSISTANT, J. CROPPER

Cambridgeshire County Council

Applications are invited by the above Council for the appointment of County Architect for the Administrative County of Cambridge. The person appointed will be required to perform all such duties as may from time to time be assigned to him by the County Council, the Court of Quarter Sessions, the Standing Joint Committee of the Council and the Court, and Committees appointed by them. He will be required to devote his whole time to the duties of the office. Salary £700 per annum, rising by annual increments of £50 to £850 per annum. The Council will provide staff, office accommodation, and travelling. The appointment will be subject to superannuation, and the selected candidate must pass a medical examination. The appointment will be determinable by three months notice on either side.

A form of application may be obtained from Mr. Ashley Tabrum, Clerk of the County Council, Shire Hall, Castle Hill, Cambridge, by sending to him a stamped addressed foolscap envelope. Applications on this form, accompanied by copies of not more than three recent testimonials, must reach the Clerk to the Council not later than Monday, the 27th February, 1939.

Appointment

The High Commissioner for New Zealand, Mr. W. W. Jordan, has appointed Mr. Gilbert McAllister as Executive Officer in charge of a completely new department designed to make New Zealand and its achievements known throughout the United Kingdom.

Mr. McAllister has, since 1936, occupied the dual position of Secretary of the Garden Cities and Town Planning Association and Editor of *Town and Country Planning*. During that period the Association has greatly developed in strength and in membership and in its impact on public opinion. At the request of the executive of the Association, Mr. McAllister has accepted the position of Honorary Publicity Secretary of the Association and will continue to work for the town-planning movement in that voluntary capacity.

Obituary

The death occurred, on January 17, at the age of sixty-one, of Mr. J. A. Shchuko, the Russian architect. In 1927 he planned the building of the first big hydro-electric power station at Volkhov. Among Academician Shchuko's important works are a big theatre at Rostov, and the new building for the Lenin Library in Moscow. In 1931, together with the architects Jofan and Helfreich, he undertook the designing of the building for the Palace of Soviets, now being constructed in Moscow.

L I T E R A T U R E

SPANISH ARCHITECTURE

[*By J. LEES-MILNE*]

History of Spanish Architecture. By Bernard Bevan. Batsford. Price 21s.

MR. BEVAN makes the surprising revelation that no general account of Spanish architecture has appeared for nearly a hundred years. In his *History of Spanish Architecture* we have a fairly comprehensive survey of Spanish buildings from the earliest times down to the eighteenth century. The author acknowledges his attempt to "present a condensed evolutionary study" in 170 pages, and within this limitation he has succeeded admirably. Such confidence is inspired by this book in the author's scholarly and first-hand researches that we are tempted to wish its scope could have been extended so that it might have become the standard work on Spanish architecture for our generation. The book by reason of its brevity falls short of this, yet at the same time it is not a collection of discursive essays that can be read from beginning to end in a comfortable sitting.

To the elementary student of Iberian architecture the styles fall more or less under the four categories of Romanesque, Gothic, Renaissance and Baroque, punctuated by a recurrent Moorish flavour. Mr. Bevan introduces to us subtler and variegated distinctions, for he shows that we can too easily become academic in our generalizations over the predominating styles in Spain. Like the Irish, the Spanish are and have ever been profoundly illogical and profusely mystic. Nowhere is this better illustrated than in their architecture, where, for instance, we may at one period see pure Mohammedan work overlapping Mudéjar, as well as Catalan Romanesque in its heyday, and again elsewhere quite mature Cistercian Gothic.

Mr. Bevan is evidently more in sympathy with the pre-Renaissance work in Spain. Three-quarters of his book is devoted to the Visigothic down to the Gothic periods, which means almost exclusive concentration upon ecclesiastical work. Until the sixteenth century, the student of Spanish "domestic" has only the ruinous early fortifications of Andalusia and the late mediæval castles of Castile upon which to ponder. Spain happily provides an abundance of romantic castles chiefly remarkable for their pictorial qualities. But the Gothic in Spain, it must be remembered, was always something of an alien style. Spanish soil never really took kindly towards it, in spite of its long reign. We notice this in the reluctance with which the Romanesque was discarded in Spain compared to other European nations, and in the eagerness with which the Gothic was transformed—purists will say deformed—by the Plateresque in the sixteenth century. The great Gothic masterpieces in Spain, and they were immeasurably great, such as the Cistercian cathedrals of Lérida, Tarragona and Léon, to name a few, do not epitomise the Spanish spirit. We feel that it is only their environment that differentiates them from their great counterparts in the land of their origin, France.

With the Plateresque, on the other hand, we first perceive an awakening of the Spanish vernacular genius, provoked as it was by the humanism of Renaissant Rome. The Plateresque can best be compared in the evolutionary cycle of architecture in England with the Jacobean a hundred years later. Whereas the latter is at best a bastard style, the Plateresque is not an architectural style at all. It is governed by no basic principles whatever; but its interest and at times singular beauty lie in the applied sculptural richness, often representing the highest technical ability in the vernacular art, that is its inseparable and characteristic feature. For this reason, the Plateresque cannot be dismissed merely as an anomalous interlude between the Gothic and the pure Renaissance work in Spain.

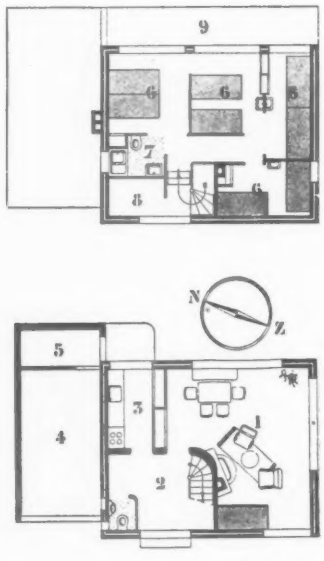
Pure Renaissance work in Spain merits in fact far less serious attention. It is inspired with little originality of design and characterized by no depth of feeling. With the Baroque, on the other hand, we enter a vast and still comparatively unexplored field. Here again we recognize the Spanish genius released from austere trammels, often chaotic, always turbulent, and seldom dull. What a departure we find in the Churrigueresque, say, of the Hospicio Provincial at Madrid from the pedantry of Herrera's Escorial. We may be shocked, but at least we are entertained. In buildings of the standard of El Obrodoiro (*c.* 1738) tacked on to the Romanesque Cathedral at Santiago, we recognize the greatness of an architectural phase that can adapt itself to a pre-existing style, wisely and without losing its supreme individuality. In short, we cannot ignore the Baroque which so fundamentally epitomises the whole inconsequential spirit of Spain. Everywhere we will meet it, whether in the façade of a provincial palacio, in the delightful wrought-iron "rejas," or in the vine-wreathed "salomonicas" (by the way, a glossary is lacking to this book) of the ubiquitous "retablos" so familiar in nearly every Spanish church, large or small. Spanish Baroque with its dramatic qualities is a force to be reckoned with, whether we admire or despise it, and in the New World it supplies the only architectural justification of our European civilization.

SMALL DUTCH HOUSES

Kleine Landhuizen in Holland. Edited by F. Hausbrand. "Kosmos." Amsterdam. Price 4.90 guilders.

IN an English preface to this book the author writes that he has produced it in order to draw attention to contemporary small house design in Holland. There are some fifty

House at Hattem. By A. Komter. From "Kleine Landhuizen in Holland"



General view, ground and first floor plan of a summer house at Nunspeet. Architect : S. van Woerden.

houses illustrated, most of them of the 3-5 bedroom class, and they make an impressive show. Even after making allowances for the romantic attraction of " foreign-ness," and the flattery of photography, they remain a more distinguished set than is usually found in an English symposium of this kind.

Over two-thirds of them are designed in the traditional style of the country, with steep pantile roofs, white gables, and stout battened chimneys. This does not mean that sacrifices have been made to attain picturesque grouping or a romantic silhouette—faults of which many so-called " functionalists " are often guilty. At the same time, these traditional houses are on the whole more successful than those designed in the strictly modern manner. The latter have the ingenious, brittle quality of a complicated box of tricks without the compensation of simple surfaces and crisp outlines. Some of the tricks incidentally are so clever and new that they deserve to be copied, and no doubt will be.

But it is within the house that these designers excel—the Dutch have always been masters of the interior. In the days when the English house was little more than a hotch-potch of smoke-blackened cells, Dutch architects were creating those high, cool rooms, white-walled, black and white floored, which are so familiar in the backgrounds of contemporary paintings. This tradition has been brilliantly preserved, and the photographs show a series of rooms which are a delight in their considered handling of surface, light and texture. The planning throughout is of very high standard, and the staircases are particularly well designed, even in the smallest house. Their elegant curving strings and open treads are treated as decorative features, instead of being tucked away between cramping walls as if the architect had only avoided forgetting the staircase in order to conceal it.

The book is handsomely produced, and (with the exception of the preface) clearly printed. All the plans are drawn to the same scale, and prices are given which, I hope, are less misleading than those given in English books of this kind. As they are in Fls. I have no means of judging.

R.I.B.A.

Following are extracts from a paper entitled " Some Legal Aspects of An Architect's Practice " read by Captain Sydney E. Redfern at Monday's meeting of the R.I.B.A.

ARCHITECT AND CLIENT

First let us examine for a few moments the legal position existing between an architect and his client. What is the nature of the contract between client and architect? It is a contract whereby the client is entitled to the professional services of the architect in return for a fee.

The services to be rendered by the architect may, of course, be limited by the express terms of his engagement, but normally call for the preparation of plans and specifications and the supervision of the work. To all these duties the architect must bring to bear a reasonable degree of skill and diligence. If he fails to do so, he is liable to be attacked by his client for what is commonly called " negligence," but what is perhaps better described as " breach of contract," because, as has been said, the architect *contracts* to render skill and diligence. In so far as the architect delegates any of his duties to assistants, their lack of skill and diligence is from the legal standpoint the architect's responsibility.

One word on the rights of the client may be said in regard to the vexed or perhaps I should rather say in this hall, " vexing " question of the ownership of drawings. To whom do drawings prepared by an architect for a client who pays for them belong? Put quite shortly the actual plans and drawings regarded as chattels—as pieces of linen or paper—belong to the client who has paid for them. It has been said by a learned authority that the client is probably entitled not merely to a set of printed drawings or plans, but also to all drafts or copies of them produced for the purpose of carrying out the contract. There is, of course, nothing to prevent the architect from retaining a copy of the plans for his own use, provided that this copy is not paid for by the client. This question of the ownership of plans as chattels in no way affects the copyright in them, that is the right to reproduce them. In the absence of specific agreement to the contrary the copyright belongs to the architect.

The question sometimes arises as to whether and, if so, to what extent the architect is relieved of responsibility either for design or supervision by the employment of which I may call " outside assistance." I refer to—

(*a*) Consulting engineers ;
(*b*) Specialist contractors ;
(*c*) Clerks of works ; and

(*d*) Quantity surveyors.

These may conveniently be dealt with in the above order.

(*a*) *Consultants.*—If a consultant is employed with the consent and approval of the client who pays his fees—or even part of them—then the architect is, *prima facie*, not responsible for the mistakes of the consultant, whether in design or supervision, unless he has in some way contributed to such mistakes. If the engagement of the consultant is personal to the architect—as it sometimes is—the latter is, of course, responsible for the consultant's remuneration, and in my view is responsible to the client for the mistakes or "negligence" of the consultant, but he can call upon the latter to indemnify him against any claim so arising.

(*b*) *Specialists.*—This is delicate ground! I will try to tread warily. Speaking entirely "without prejudice," and with apprehension of the "wrath to come," I feel bound to say that within my experience it is by no means uncommon for architects to invite, or, to say the least, to make use of the drawings and specifications of specialist sub-contractors—for instance, in relation to reinforced concrete and steel work. The specialist's drawings and specification accompany and form part of his tender. The architect's fee is based on the cost of the work, including, of course, the cost of reinforced concrete or steel. In the case I have taken, in my view the architect is liable to his client for errors in any such design or specification and supervision. My example is not far-fetched—it has recently occurred in practice, and a claim for many thousands of pounds has been made against an architect who relied upon the skill and efficiency of a reinforced concrete contractor. In my opinion, any attempt by the architect to escape liability on that ground would be unsuccessful.

(*c*) *Clerk of Works.*—The extent (if any) to which the employment of a clerk of works minimises the supervisory obligations of the architect is—to me, at any rate—a somewhat moot point. The clerk of works is the servant of the client and is obviously employed for the purpose of daily and constant supervision of the work. He reports to the architect and not direct to the client. He is (except in the case of some public works contracts) usually selected or recommended by the architect. This does not make him the employee or servant of the architect. It has been said that the architect may be responsible for the negligence of the clerk of works. With respect I do not think that is well said. Rather should it be put that the architect may be held liable to the client for failing to discover that the clerk of works has been guilty of default in his duties. Be that as it may, it is obvious that to some as yet undefined degree the employment of the clerk of works whittles down the responsibility of the architect in respect of matters of detailed supervision.

(*d*) *Quantity Surveyors.*—It has been whispered that not infrequently the quantity surveyor prepares the specification (which duty, according to the R.I.B.A. scale, is one of those for which the architect is paid). In such a case, as between the client and architect, the latter is responsible for errors in the specification whatever observations he may have to make to his friend, the quantity surveyor.

Generally.—The foregoing remarks are an attempt to sketch the rights and liabilities of an architect in private practice *vis-a-vis* his client. They have no application to an official architect in whole-time employment. Such an architect, if he be merely a servant or employee, cannot, I think, be sued for "negligence" by his employers. Before leaving this branch of the subject, it is appropriate to remind architects that when engaging themselves to perform professional work for municipal corporations, it is in many cases essential for their protection that the engagement should be recorded by a contract under the seal of the corporation.

THE ARCHITECT AND THIRD PARTIES

By the expression "third parties" is meant persons who are not—like the client—in direct contractual relationship with the architect. They include (*a*) contractors, (*b*) quantity surveyors and (*c*) unrelated parties—that is, complete strangers to the matter in hand.

(*a*) *Contractor.*—As between himself and a contractor, the position of the architect may vary from time to time. We are all familiar with what is known as the "quasi-judicial" position of the architect when dealing, for instance, with the question of the issue of a certificate. That is one aspect. The architect is under a duty to the contractor to act in good faith and to submit to no pressure or duress at the hands of the client to the detriment of the contractor. But if he acts in good faith, then he cannot be made responsible to the contractor for a mistake, even though the contractor suffers. Nor can an architect be sued by a contractor for failure or refusal to issue a certificate, unless he is acting in fraudulent collusion with his client, the employer. Apart and to be distinguished from the architect's quasi-judicial position, is his normal position as agent for his client, in which capacity he has implied, and, in many cases, express authority to bind his client by orders or instructions or approvals given to the contractor.

(*b*) *Quantity Surveyor.*—It is a common thing to hear an architect refer to the quantity surveyor as "my quantity surveyor" (in very much the same way as a solicitor may refer to "my Counsel"). Now this rather loose expression does not accurately describe the position of the quantity surveyor, who is nothing more nor less than an independent professional man engaged by and performing duties for a client who is common to both architect and quantity surveyor. It is true that in the vast majority of cases the quantity surveyor is selected and his employment recommended by architect to client. In this connection is should be emphasized that before the quantity surveyor embarks upon any duties in relation to the client's work, both he and the architect should make it their business to satisfy themselves that the client knows and approves of the engagement of the quantity surveyor, and, moreover, is aware that he, the client, will be responsible for the payment of the quantity surveyor's fees. It is a fact that many clients are in complete ignorance of the functions of a quantity surveyor and therefore cannot be said to know that his employment of necessity follows the engagement of the architect.

An architect when instructing a quantity surveyor by implication warrants that he, the architect, is duly authorized by the client to employ a quantity surveyor and to pledge the credit of the client in respect of the quantity surveyor's fees. So that in any case in which the architect has neither express nor implied authority to employ a quantity surveyor, the latter—failing to obtain payment from his client—has recourse to the architect, not for the fees as such, but for a sum of money equal to those fees and his claim is described as "a claim for damages for breach of warranty of authority."

(*c*) *Strangers.*—Obligations or liabilities on the part of an architect to strangers may arise in a variety of circumstances. For instance, an architect who on behalf of a client does something or causes something to be done which constitutes a breach of the rights of a third party, such as an excavation which results in subsidence of neighbouring land. If the architect specifies the particular work without due consideration of its probable consequences and takes an active part in procuring the work to be done, he may well find himself in company with his client and the contractor exposed to an action for trespass at the instance of the injured party, and he may, as between himself and his client, be called upon to indemnify the latter against the consequences of such lack of skill.

THE R.I.B.A. FORM OF CONTRACT

I have endeavoured to show how desirable it is for the architect to inform himself of some general principles of the law of contract and agency. Equally important is it for him to be familiar with the working of what may be called one of the tools of his trade—"The 1931 Form of Contract." A few days ago a member of this Institute was telling me of his troubles with a certain building and complained bitterly that the builder knew nothing of the R.I.B.A. contract which he had signed and that he had not even read it. I observed that it went without saying that the client also had abstained from burdening his mind with the contents of the document which he had signed on the "dotted line." "Oh, of course," says the architect, "the client relied on me that the form was all right." There you have it in a nutshell. The ordinary private client signs the form which is placed in front of him by his adviser, and it is right that he should do so provided that the adviser himself really understands the effect of the document, or at any rate its important provisions.

Of course, it may be said that lawyers can argue for hours or days as to the exact meaning of this or that clause, and I confess that many a time I have breathed a silent and sometimes an audible curse at some more than usually difficult ambiguity. None the less, a good working knowledge of the form can be acquired by anyone really making up his mind to do so.

REGISTRATION

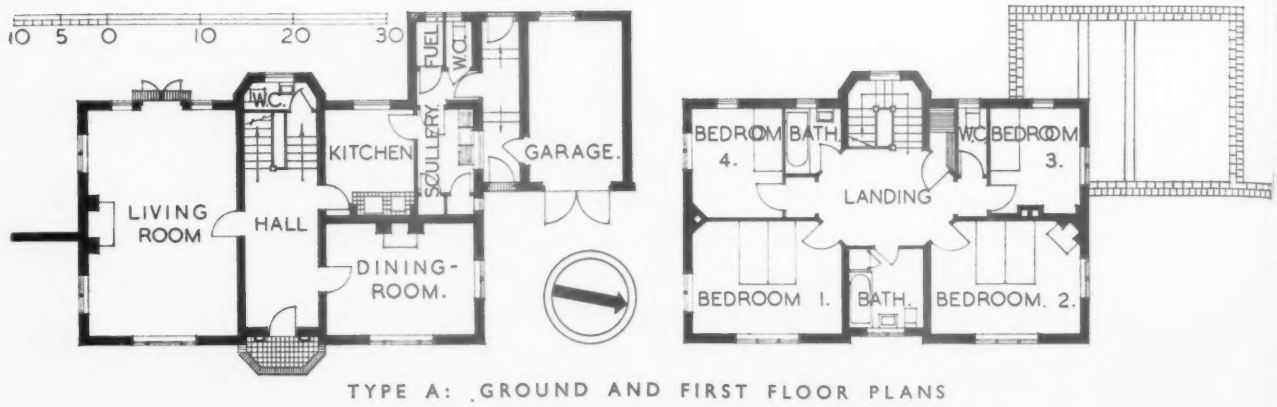
May I, in conclusion, devote a few moments to the discussion of an aspect of the architectural profession which does not directly touch upon daily practice, namely, the professional status of an architect? How does recent legislation affect that status?

Prior to the passing of the Architects (Registration) Act of 1931, I suppose it can be fairly said that the only real register or roll of architects was to be found in the R.I.B.A. Kalendar. Anyone practising as an architect whose name did not appear in the Kalendar was regarded *prima facie* as being unqualified. Of course, there were notable exceptions, but I think I have stated the position fairly so far as regards the ordinary workaday practitioner.

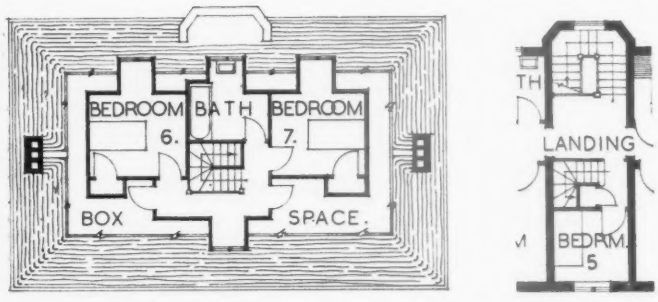
Then came the 1931 Act, which provided for a voluntary register under the control of the newly created Registration Council upon which the Royal Institute is represented. Any member of the Royal Institute who so desired could have his name placed on the Register, and any person (irrespective of educational qualification) who could satisfy the Council that in January, 1932, he was or had been practising as an architect in the United Kingdom was entitled to be placed on the Register if he applied prior to the end of 1934. After that date admission was to be by examination only. An architect on the Register became entitled to call himself a registered architect. Moreover, limited companies can call themselves registered architects, provided that the "Architectural Department" is controlled by a registered architect. The comes the Act of 1938, which, while abolishing the use of the word "registered," creates a monopoly in the use of the word "architect" as a professional description in favour of persons whose names are on the Register. Until August, 1940, the Register, which on December 31, 1934, was closed to all except successful examinees, is re-opened, and anyone who can show that on July 29, 1938, he was or had been practising as an architect is entitled to be placed upon the Register and to share in the monopoly of the use of the word "architect." And remember that, in order to entitle you to call yourself an architect after August, 1940, it is essential that your name shall be on the Register.

This legislation has obviously brought about a fundamental change in the status of architects, and all those interested in the profession, whether members of it or not, will watch with great interest the working of the new law.

THREE HOUSES IN TRAPS LANE



TYPE A: GROUND AND FIRST FLOOR PLANS



TYPE B: SECOND FLOOR PLAN AND PART PLAN OF FIRST FLOOR

PROBLEM—*The architects were asked to design in a free Georgian manner three houses to be built for sale.*
SITE—*A rectangular plot with an average depth of about 172 ft. and a road frontage of some 228 ft.*
PLAN—*The three houses are planned with Type A in the centre and Type B on either side. The ground-floor accommodation is similar in both types. Type A: First floor comprises four bedrooms, two bathrooms, linen cupboard, and w.c. Type B has first and second floors, which contain seven bed or dressing rooms, two bathrooms, linen cupboard, and w.c. The three houses have identical plans with the exception of Type B, which has a second floor; also, the centre portion on the first floor of this type is slightly different on plan, as shown above.*
CONSTRUCTION AND EXTERNAL FINISHES—*Brick cavity walls and a tile roof. Type A has north and south gables with a stone coped parapet, and Type B has hips with eaves. The elevations are faced with 2⅝ in. hand-made, sand-faced, multi-coloured bricks with a cream flush joint. The wooden windows which are painted off-white are double-hung sashes to the ground floor and staircase, and side-hung casements on the first and second floors, garage, etc.*
Right, back elevation of type B and back elevation of type A. Facing page, front elevation of types A (top) and B.
The general contractors were T. H. Adamson & Son.

DESIGNED BY TATCHELL AND WILSON

LAW REPORTS

BUILDERS AND CONTRACTORS' CLAIM

McManus & Co., Ltd. v. *Hendon Borough Council.—King's Bench Division. Before Mr. Justice Wrottesley*

AN action brought against the Hendon Borough Council by Messrs. McManus & Co., Ltd., builders and contractors, of 338 Regent's Park Road, Finchley, was dismissed by Mr. Justice Wrottesley after a five-days' hearing.

Messrs. McManus & Co. claimed damages which they alleged they had suffered because of the breach of contract, negligence, and breach of statutory duty of the Council in connection with the fixing of a "saddle" for the drains of premises known as Greenbanks, Mill Hill.

The case for the company was that in March, 1937, they agreed with Mr. Arthur Beresford Bloomfield to erect a block of twelve flats and twelve garages on the latter's land at Green Avenue, Mill Hill. Subsequently the company made an application to the Council who, it was alleged, by accepting payment in advance agreed to supply or fix a "saddle" on to the appropriate sewer in Green Avenue so that the company could properly and lawfully connect the drainage of the flats. In June, 1937, an employee of the Council fixed a "saddle" in Green Avenue, but by mistake it was fixed to the wrong pipe—the surface water sewer pipe—which lay about 3 ft. below the pipe to which the "saddle" should have been fixed. On discovering what had been done the Council served the company with a notice calling upon them to "amend" the work as it did not conform to the bylaws and provisions contained in the Public Health Acts. In due course the company "amended" the work by relaying the drains so as to connect with the pipe to which the "saddle" should have originally been fixed.

Messrs. McManus & Co. now sought to recover from the Council the expense they had incurred in "amending" the work, alleging that it was the Council's fault that the work had to be "amended."

[Continued on page 256]

COOMBE HOUSE ESTATE, SURREY

ONE PLAN, TWO TYPES OF ELEVATION

The Hendon Borough Council, in their defence to the action, denied liability.

On May 31, 1937, it was pleaded, the company wrote to the Council asking them to arrange to have a "saddle" fixed to the sewer in Green Avenue for the drain connection to the flats and enclosing 12s. 6d. to "cover your charges in this matter."

Any agreement or breach of contract, as alleged by the company, was denied by the Council.

On June 6, 1937, the Council sent one of their employees to Green Avenue and the company's foreman showed him a trench and two pipes the lower of which had already been cleaned for the fitting of a "saddle." It was alleged that the foreman told the Council's employee that the "saddle" was to be fitted to the lower of the two pipes. The Council agreed that the pipe to which their employee fixed the "saddle" was a surface water sewer to which it was not proper or lawful for the soil drains of the flats to be fitted, but denied there was any negligence or breach of statutory duty on their part.

It was alleged that Messrs. McManus & Co. were negligent because the road had been excavated so as to expose the surface water sewer and because their foreman had requested the Council's employee to fix the "saddle" to it.

Mr. Eric Sachs, K.C., and Mr. Gordon Alchin were counsel for Messrs. McManus and Co., and Mr. P. E. Sandlands, K.C., and Mr. H. G. Robertson represented the Council.

The evidence in the action and speeches by counsel extended over several days.

Giving judgment, Mr. Justice Wrottesley reviewed the evidence that had been given and referred to sections of the Public Health Acts which affected the respective rights of the parties. He found that Messrs. McManus & Co. took no reasonable steps to check or make use of information given to them by the Council.

It was not the duty, said his lordship, of a borough council, district council, or sanitary authority, towards a builder to so co-ordinate their various departments and sources of information as to save the building-owner the trouble of locating a sewer.

The judge added that on the evidence he found there had been no breach of duty or negligence by the Hendon Borough Council, and there must be judgment in their favour.

Judgment was accordingly entered for the Council, with costs against Messrs. McManus & Co., Ltd.

LIABILITY UNDER A CONTRACT

Bigny v. *Corporation of the City of London.—F. H. Wheeler & Co., Ltd. (third parties).—Court of Appeal. Before Lords Justices Slesser, Clauson and du Parcq.*

THIS was an appeal by F. H. Wheeler & Co., Ltd., electrical contractors, of Victoria Street, S.W., from the judgment of Mr. Justice Hawke, in the King's Bench Division, holding them liable to indemnify the City Corporation for the damages of £1,500 which it had agreed to pay the plaintiff, Mr. Alfred H. Bigny, an electrician, for personal injuries he sustained in September, 1936, while working for the appellants at the Central Criminal Court, and £105 agreed costs.

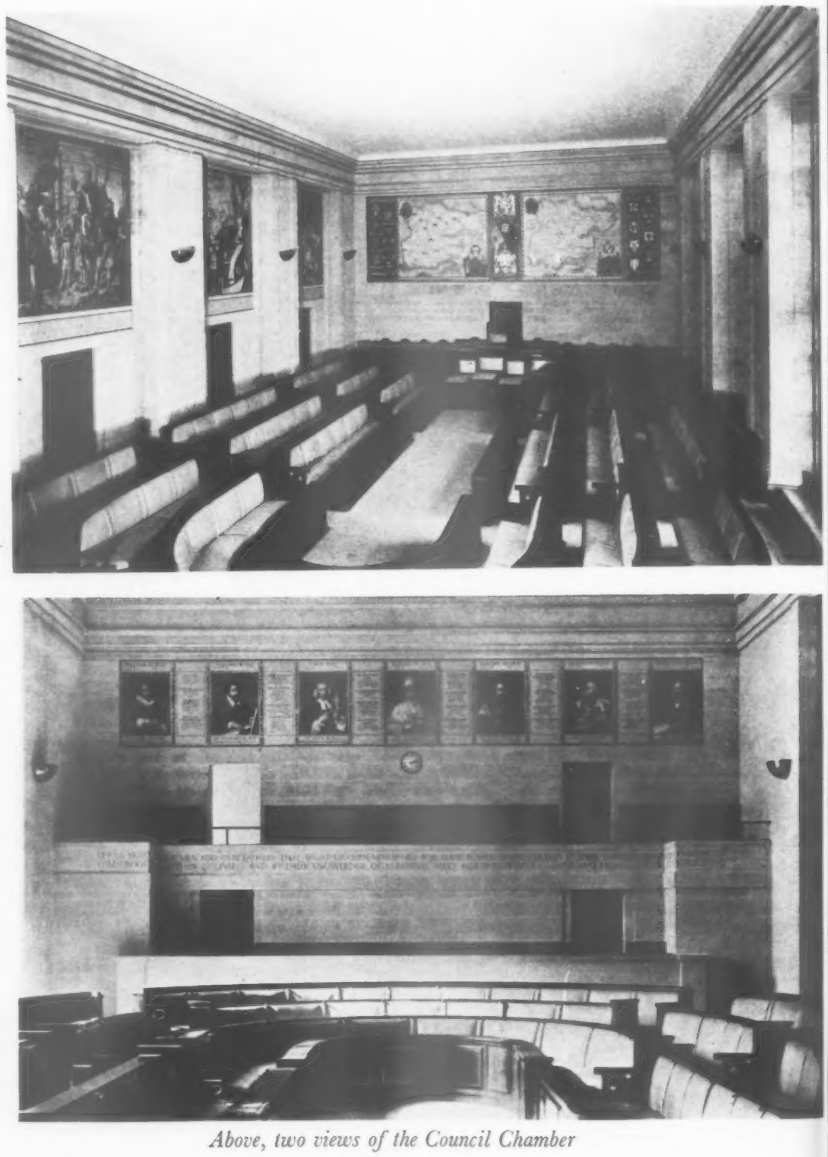
It appeared that on the day in question Mr. Bigny fell 72 ft. from a ventilating shaft in the building, and sustained very severe personal injuries. Messrs. Wheeler & Co. at the time were engaged in completing for the Corporation an installation which another firm of electrical contractors had commenced under a contract with the Corporation, but which the Corporation had, under the powers of the contract, cancelled owing to those contractors having failed to complete the work within the specified or contract time. At the time of the accident no formal contract under seal had been entered into between the Corporation and Messrs. Wheeler & Co., and the latter, while admitting that most of the terms and conditions contained in the contract between the Corporation and the former contractors could be implied into the new or interim contract, alleged that in the circumstances the one as to indemnification could not. They further contended that the Corporation ought not to have compromised the claim with Mr. Bigny, whom they alleged had been guilty of contributory negligence in going where he was warned not to go.

Mr. Justice Hawke held that the general conditions contained in the contract between the Corporation and the former contractors formed part of the contract between the Corporation and Messrs. Wheeler & Co., and although at the time of the accident there was no contract under seal, there was such an agreement between the parties. The contract provided that the contractors should keep the proprietors, viz. the Corporation, insured against all liability and there was an express contract of indemnity under the contract. He found that the terms of settlement, which the Corporation had made with Mr. Bigny, were in the circumstances reasonable, and that it was entitled to be indemnified in regard to the agreed damages and costs by Wheeler & Co. Wheeler & Co. now appealed from that result.

At the conclusion of the arguments of counsel, the Lords Justices decided to send the case to a Referee and set aside the order of Mr. Justice Hawke, awarding the appellants the costs of the appeal and leaving the costs of the inquiry before the Referee to him.

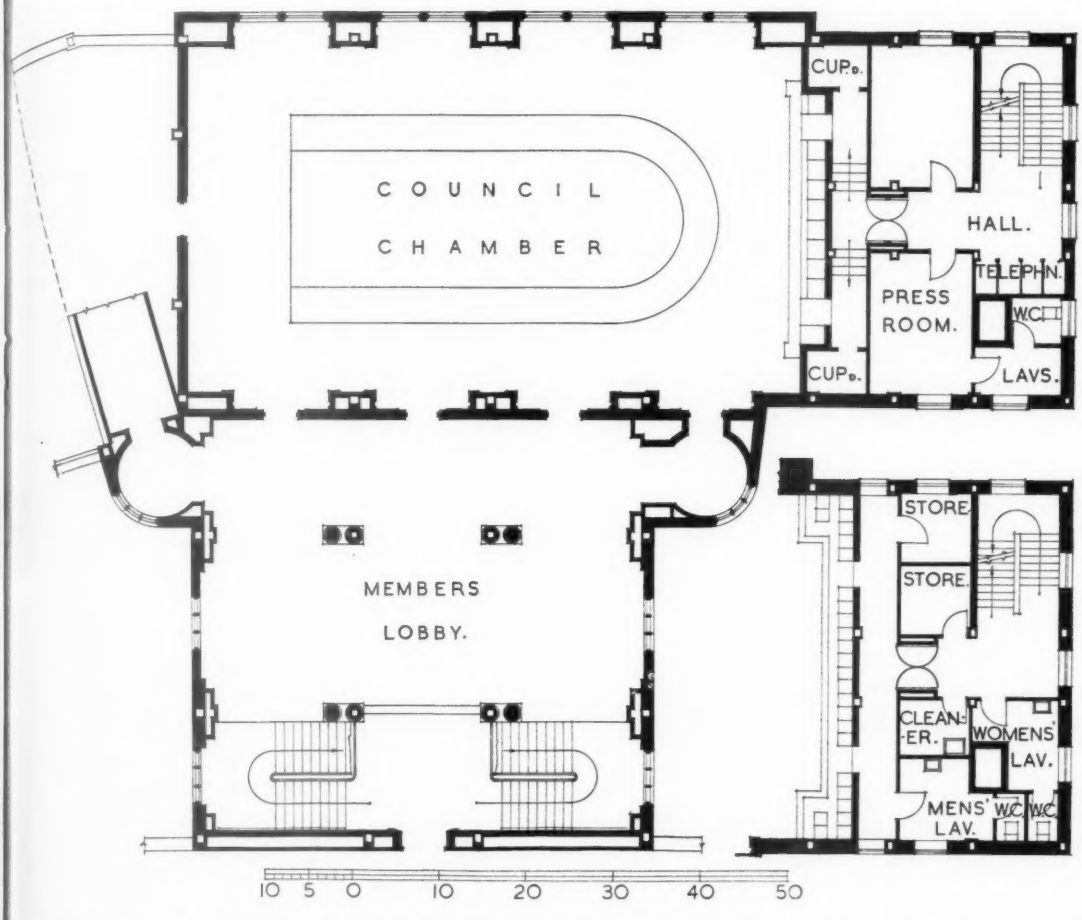
On behalf of the City Corporation, leave to appeal to the House of Lords was granted.

COUNCIL CHAMBER,



Above, two views of the Council Chamber

ESSEX COUNTY HALL



ARCHITECT: E. VINCENT HARRIS IN COLLABORATION WITH J. STUART (COUNTY ARCHITECT)

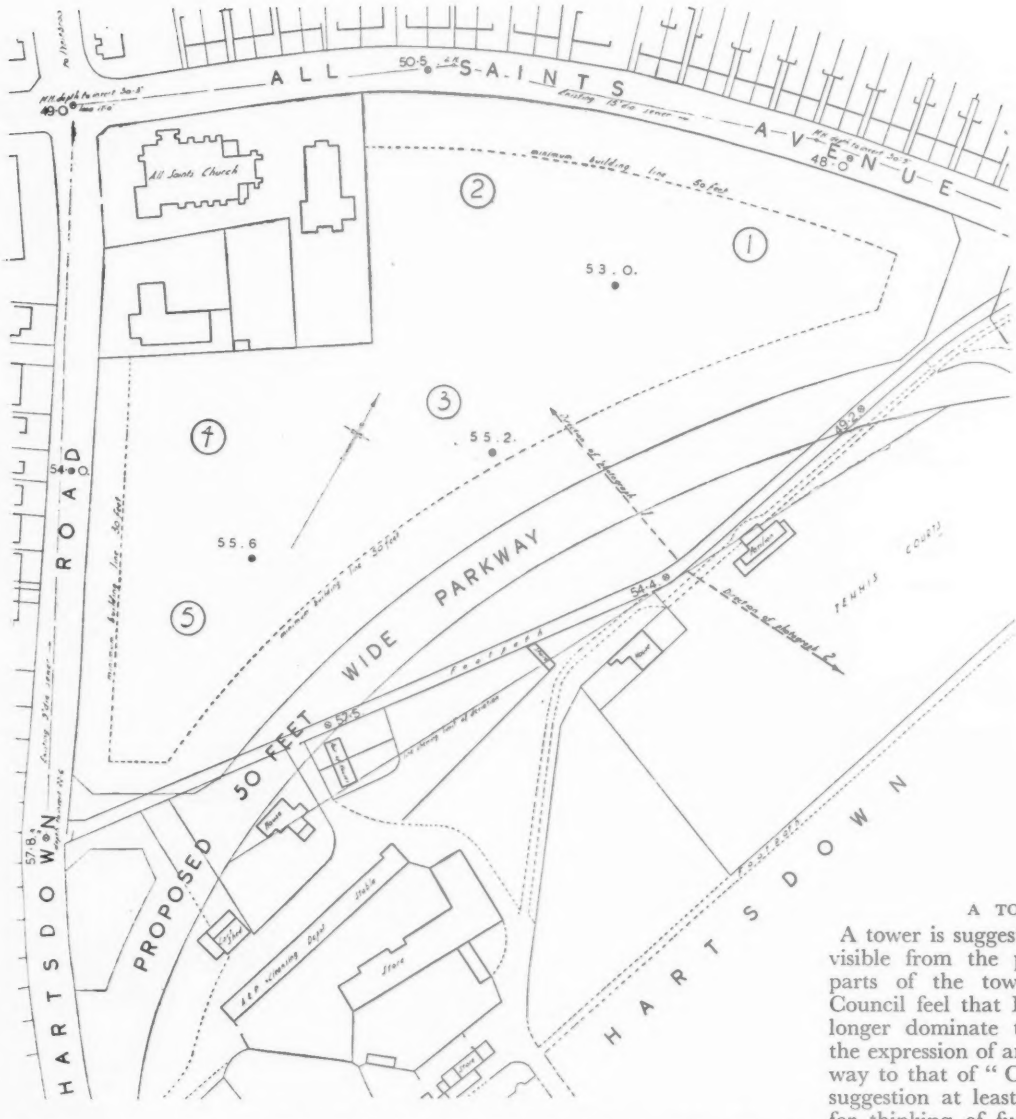
PROBLEM—*During the erection of this County Office building, by Mr. J. Stuart, F.R.I.B.A., County Architect for Essex, £30,000 was received from Mr. Councillor W. J. Courtauld, of Halstead, to be spent on providing a Council Chamber and the necessary accommodation with furnishings, etc., the cost and character of which were in excess of those proposed by the County. This necessitated certain modifications in the planning of these apartments. These were arranged by Mr. Vincent Harris, A.R.A., in collaboration with the County Architect. After consideration, it was decided the motif of the decorative scheme should be the "Story of the Essex People."*

PLAN AND FINISHES—*The Council Chamber is 72 ft. 6 in. by 44 ft., and is lighted by four windows each 20 ft. by 10 ft. Axial and opposite each window, mural panels, each 10 ft. by 10 ft., depicting important events in the life of the county, have been carried out by Colin Gill, B. Fleetwood-Walker, A. R. Thomson, A.R.A., and Robert Lyon, and on the north and south walls of the Chamber portraits of famous Essex men and maps of the county today and in the sixteenth century have been painted by Henry Rushbury, R.A. The paintings in the anteroom, recalling acts of two famous English Queens in war and peace, Queen Elizabeth and Queen Victoria, are by A. K. Lawrence, and Neville Lewis. The walls of the Council Chamber, anteroom and staircase are faced with Doulting stone Chelynch bed, whilst the windows and their mullions are carried out in Portland stone. Two of the windows, by Kruger Gray, are filled with the arms of founders of the ancient schools and of the Abbeys and Priories of Essex.*

The joinery of the Council Chamber is carried out in black oak, inlaid with brass, having pig-skin upholstery.

Left, the mural painting in the members' lobby.

The general contractors were T. J. Bailey and Son; for list of sub-contractors, see page 262.



The Margate competition : site plan

TWO COMPETITIONS

THE CONDITIONS REVIEWED

MARGATE CIVIC CENTRE

Assessor : A. F. B. ANDERSON.
Premiums : £500, £300, and £200.
Sending-in day : AUGUST 31.
Last day for questions : MARCH 31.
Conditions from : P. T. GROVE, Esq., Town Clerk, 40 Grosvenor Place, Margate.

THE site is in a magnificent position overlooking Hartsdown Park adjoining the railway station.

In the absence of any information about the town-planning scheme, one does not know if the park is to be a permanent open space ; should this be so, the Council are to be congratulated on an excellent choice.

The principal approach will be from All Saints' Road, but a considerable amount of traffic will use All Saints' Avenue and Westfield Road. The municipal offices will have access from the new parkway, the position of which is variable by about 70 ft.

Planning for defence, of which we *hear* so much, is one problem that faces the competitor. The provision of an A.R.P. section with shelter rooms for staff calls for special knowledge, and attention is drawn to the changes in the working of municipal departments due to the recent emergency regulations.

With the exception that the positions of the various elements of the scheme have been decided, the competitor is given the greatest possible freedom to develop his plans.

No restrictions are made as to " style " and use of materials, but to quote the conditions " elevations should be simple and in keeping with local traditions." One wonders what tradition worth preserving exists in our seaside towns. " Elaborate decoration is not required," a suggestion which should prove popular.

A TOWER

A tower is suggested which would be visible from the promenade and all parts of the town. Obviously the Council feel that Dreamland must no longer dominate the front, but that the expression of amusement must give way to that of " Civic dignity." This suggestion at least saves the necessity for thinking of functional reasons for a tower.

The relation of the new tower with the existing one of All Saints' Church, on the corner of the site, when seen from All Saints' Avenue, should prove an interesting problem.

ACCOMMODATION

The layout is to provide for a complete civic centre including :—

Municipal offices.

Fire station and twenty firemen's houses.

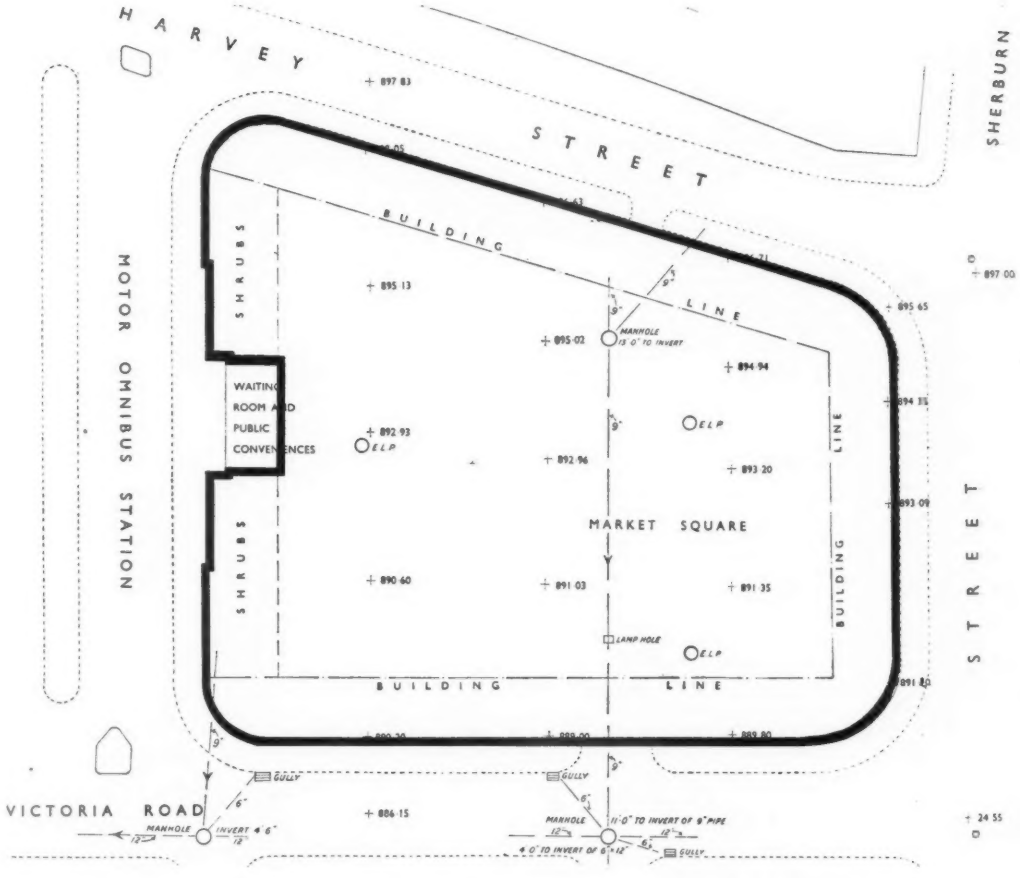
Police headquarters, A.R.P. headquarters and cleansing station.

Competitors are asked to bear in mind the importance of economy in the layout and design of their buildings, and the possibility of future extensions.

DRAWINGS

The main block plan is to be drawn to a scale of $\frac{1}{500}$.

Other drawings are to include : ground plans of all sections of the scheme to a scale of $\frac{1}{16}$ ft. to 1 in., and the first floor and basement plans to a reduced scale on the same sheet in outline only. The principal elevations of police



The Consett competition: site plan

station and municipal offices are to be drawn to $\frac{1}{8}$th scale. No perspectives are allowed.

A local guide book accompanies the conditions, presumably to enable competitors to form an idea of the local "amenities and traditions."

CONSETT COUNCIL OFFICES

Assessor: Mr. R. NORMAN MACKELLAR.

Premiums: £150, £100, and £50.

(If the work is not commenced within 12 months, the winner is to be paid $1\frac{1}{2}$ per cent. on his estimate of cost in addition to the premium, to merge into the commission when the work is eventually executed.)

Sending-in day: JUNE 15, 1939.

Last day for questions: MARCH 4, 1939.

THE Council invite registered architects of British nationality to submit designs for new Council offices.

SITE

An island site has been selected, with a fall of about 4 ft. to Victoria Road. An undefined circle at the junction of Victoria Road and Front Street marked + 24·55 and a reading of + 891·50 on the adjoining corner of the site appear to indicate a fall of 865 ft. in a distance of 35 ft. This seems a little precipitous.

The existing waiting room and public conveniences on the Princes Street side is somewhat unfortunate, but is apparently screened by shrubs.

The only indication of the nature of the buildings near the site is given by naming the properties along Victoria Road, and the competitor is left to judge for himself which is the major road. No photographs accompany the conditions.

COST

Competitors are advised that the contemplated cost is £23,500, and that their rates per foot cube will be "closely scrutinised." Provision is to be made on the site for a covered market of 23,000 sq. ft. in addition to the offices. A.R.P. again becomes an architect's problem, as an air raid shelter is anticipated under the Market. This is to be borne in mind, although the Council do not bind themselves to employ the successful architect for this part of the scheme.

ELEVATIONS

No restrictions or suggestions are made as to treatment of elevations. Elevations and sections are to be uncoloured, except the main elevation, which may be rendered.

Liberty is given competitors to make any variations on the schedule of accommodation, provided that they can be justified by a compensating advantage.

ACCOMMODATION

Accommodation required:

Council Offices:

Council Chamber for 36 members, 12 officers, 6 Press, and public space for 50.

Clerk's Department.
Accounts ,,
Highways ,,
Costing ,,
Property ,,
Health ,,
Rating ,,
Housing ,,

Public Library: which is to be planned on the open-access system, with separate entrance.

Caretaker's House: is to be planned in the building to contain:
Living-room.
2 Bedrooms.
Scullery.
Larder.
Bathroom and w.c.

Car shelter for 15 cars.

DRAWINGS

Drawings required:

Block plan of the whole site, to same scale as that accompanying the conditions, showing the buildings, lay-out of approaches and planting.

All floors of the building to $\frac{1}{16}$th scale.

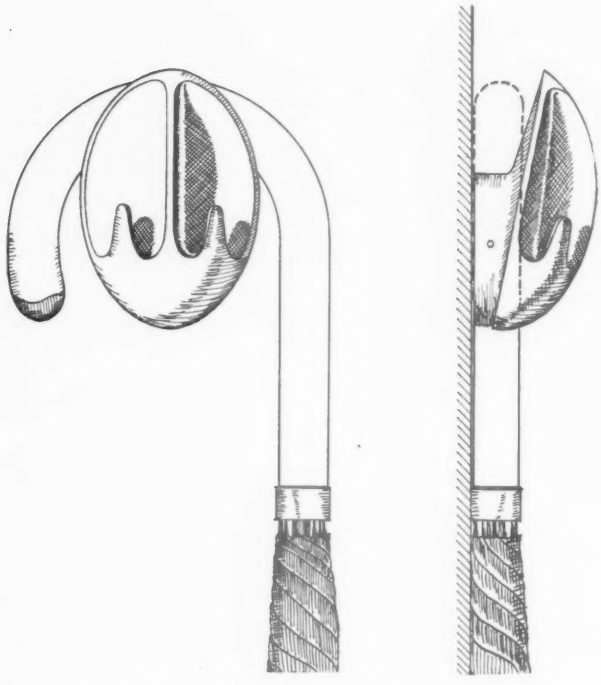
Elevations of all fronts. The main elevation to $\frac{1}{8}$th scale.

All necessary sections to explain the scheme.

REPORT

A concise typewritten report is required; also a brief specification of the method of construction, materials to be used, and the method of heating and ventilation.

E. R. C.



TRADE NOTES

[*By PHILIP SCHOLBERG*]

Coathangers

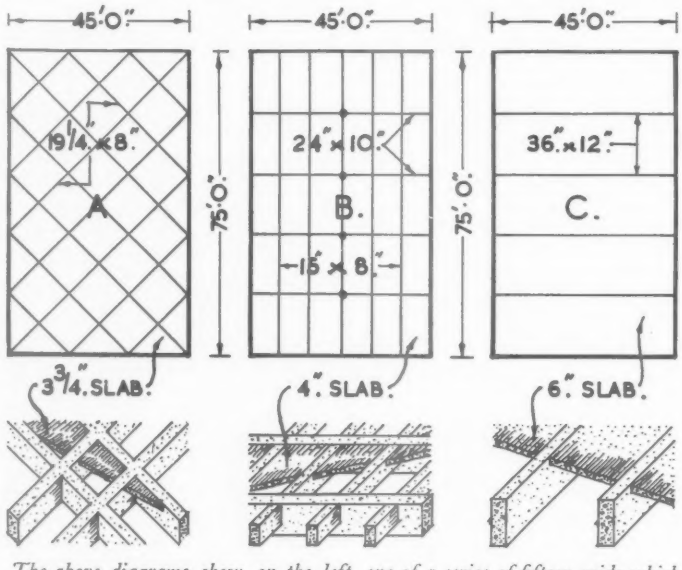
ONE would have thought that there was little scope for originality in the design of a coathanger, but Hawkes, of Birmingham, have apparently given a certain amount of time to the problem, with the result which you see at the head of these notes. The overall dimensions are comparatively small, only 3¾ ins. by 2¾ ins. wide, and fixing is by means of a small circular block which is screwed to the wall, the hook fitting being fixed to it afterwards by a pair of screws going in sideways. Your umbrella, if any, goes over the back of the fitting, hat on the nob at the top, coat on one of the two smaller projections at the bottom. Symmetry appears to be the only excuse for the two coat hooks, unless one of them is intended to take those office coats which some people wear. The only other snag is that if you hang your hat up first then you will almost certainly knock it off again when you hang up your coat, but maybe you don't do things in that order. Anyway this fault is also present in almost every other hanger on the market, with the possible exception of one of the Dryad models, which has an exceptionally long hat spike. I first saw these fittings in the office block of a Lancashire factory, and they look very well in a long row. Prices are quite reasonable and three colours are available. The material is one of the urea group of plastics, and this is doubtless one of the reasons for the somewhat peculiar shape, for most plastics are rather brittle in use and thin unsupported sections are always liable to break off under rough treatment.

•

Messrs. Hawkes also make a series of bathroom splashbacks in Vitrolite and mirror, cupboards which incorporate a sensible form of adjustment for the height of the shelf, and I also notice a plastic bath tray which sells at the low price of 15s. retail.—(*O. C. Hawkes, Ltd., Bromsgrove Street, Birmingham, 5.*)

Diagonal Beam Structures

Research both in this country and abroad has led to the development of a system of diagonal beams which is known in this country under the name of Diagrid. Floors and roofs constructed on this system consist essentially of a diagonal arrangement of beams or ribs arranged in two parallel sets equally spaced, intersecting at approximately 90 degrees and rigidly connected at the junctions of the various members. This layout gives in all cases beams of different lengths, and therefore of varying stiffness, the shorter and more rigid beams acting as elastic supports for the longer beams and producing a considerable reduction in the bending moments of the latter. In addition to this, the negative moments which arise in the corners give a high degree of fixity, calculations showing that, in a single flat square grid with the sides divided into three, the maximum bending moment amounts to only $^{WL}/_{2\frac{2}{3}}$ as against $^{WL}/_{8}$ for simply supported beam construction applied to the same area. Other refinements, including the provision of a structural slab at beam soffit level in the triangular corner panels, give the corner beams a Z-shaped section and convert a large part of the moments in the diagonal beams into couples acting inwards and outwards in the top and bottom slabs, further reducing the bending moments and deflections. This reduction in bending moments allows the structural depth required for flat roofs and floors to be reduced to as little as one-thirtieth of the span. The diagrams on this page show, on the left, one of a series of fifteen grids which form the floors and roof of a multi-storey warehouse in Clerkenwell. The grids, which were designed to support a distributed superimposed load of 200 lb. per sq. ft., have clear spans of 45 ft. in the shorter direction, but with a beam and slab depth of only 19¼ ins., little more than half the depth which would have been necessary for orthodox design and construction applied to the same conditions. Two other typical forms of construction are also shown in the centre and on the right of the diagram, with the structural depth which would be necessary. In the Diagrid design, the reinforced concrete floor slabs, which span 10 ft. between beams, are only 3¾ ins. thick, as the panels are square with the reinforcement arranged to run in both directions



The above diagrams show, on the left, one of a series of fifteen grids which form the floors and roof of a multi-storey warehouse in Clerkenwell. Two other typical forms of construction are also shown in the centre and on the right of the diagram.

A new canteen and instruction room have been built at the Ascot Gas Water Heaters works at Neasden from the designs of Mr. Rodney Thomas. The canteen is on the first floor and provides accommodation for 400 persons. The instruction room is situated immediately below the canteen and is built for the purpose of giving technical instruction to the new members of the staff and to plumbers and gas engineers. Above, the instruction room; left, a general view of the canteen; and the service counters.

so that the four grid beams supporting each slab are equally loaded.

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The strength of this form of construction, however, is not dependent on the floor slab or roof covering, both of which may be carried out in any of the usual methods of construction. Floor and roof slabs can be of reinforced concrete in precast units or cast *in situ*, or hollow tiles with secondary ribs. Alternatively, timber joists and boarding may be used, and pitched or curved roofs can be covered with any of the usual roofing materials. Individual panels can be left open for light wells, lift shafts and skylights. The interlacing pattern of Diagrid design gives great rigidity against all external influences and provides so many paths by which loads can be conveyed to the supports that, except in the areas of the rigid corners, almost any member of the grid can be removed without materially weakening the structure. This form of design is therefore particularly suitable for carrying point loads, and it also gives a great measure of latitude in the alteration of completed structures. A level soffit, if necessary, can be obtained by filling in the panels with hollow tiles or by providing a false ceiling suspended from the beams and slabs; the enclosed air spaces would give a good degree of heat and sound insulation, and the voids could, of course, be used for service pipes and conduits.

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So far we have only been considering reinforced concrete, but the same advantages apply if the building is steel-framed, where the structural depth for roofs and floors can be reduced to one-fortieth of the span, while, if a pitched type of factory roof is used, this depth may be as little as $\frac{1}{150}$ of the span, added to which the usual "forest of steelwork" is eliminated, since there are no trusses or lattice girders to interrupt the light and tall machinery units may be installed without interference. This type of construction is also extremely suitable for welding.—(*Diagrid Structures, Ltd., Horseferry House, Westminster, London, S.W.1.*)

More About Elm

Further to my note last week about the use of elm for furniture, I am glad to see, in the latest report of the Forestry Commission, that elm disease, which in the last ten years has ruined thousands of trees, is now on the decrease. It has been discovered that different varieties of elm have different degrees of resistance to the disease, so that the disease may reasonably be expected to decrease as the supply of particularly susceptible trees diminishes. A slowing up of the disease in Essex and Hertfordshire has already been noticed, and it was formerly very severe, killing more than half the elms in certain parts of these counties. The immunity of different varieties of tree can be tested by inoculation with the fungus spores, and it has been found that the Jersey elm is the best of the varieties common in this country. So, in spite of their tendency to shed branches in windy weather, elms may once more become popular for roadside planting.

Who Makes What

Electrical Trading, a journal intended for electrical retailers and contractors, has just issued a very useful directory and year book which contains not only a full list of manufacturers, but a list of wholesalers grouped in districts, a list of all types of appliances from accumulators to wrought-iron fittings with the names of the firms which make them and an alphabetical list of trade names and the manufacturers responsible for them. To the architect this last seems the most useful. Anyone who knows the electrical industry really well can often guess who is the maker of some outrageously named appliance, but the industry is rather off the average architect's beat, and clients often have nothing more than a trade name when they are trying to describe the fittings they want. The price of this publication is 2s. 6d., and since fully half of its space is taken up by a diary it might be better to cut the diary out and knock the price down somewhat. Nearly everyone gets given a diary at this time of the year, and, although the propaganda value would be less from the point of view of the publishers, it might be better to give the information in a smaller and more convenient form.—(*Electrical Trading, 29 Bedford Street, Strand, London, W.C.2.*)

THE BUILDINGS ILLUSTRATED

EXTENSIONS TO THE CO-OPERATIVE WHOLESALE SOCIETY, LIMITED, MANCHESTER (pages 248-250). Architect: W. A. Johnson. Assistant: J. W. Cropper. General contractors, Co-operative Wholesale Society, Limited, Building Dept., Salford, 5, who were also responsible for the demolition, excavation, foundations, dampcourses (grip steel bar), reinforced concrete, bricks, fireproof construction, slates, partitions, gasfitting, plumbing, sanitary fittings, stairtreads, door furniture, bells, plaster, metalwork, joinery and stonework, central heating, boilers, electric wiring, electric light fixtures, electric heating, ventilation, telephones, lifts and clocks, furniture and office fittings. Sub-contractors and suppliers included: Limmer and Trinidad Lake Asphalte Co., Ltd., asphalt; Constone, Ltd., artificial stone and stonework; Banister, Walton & Co., structural steel; Pilkington Bros., glass; J. A. King & Co., Ltd., patent glazing; Doultons, Ltd., sanitary fittings; W. and R. Leggatt,

Ltd., door furniture; Crittall Manufacturing Co., Ltd., casements; Haskins, Ltd., rolling shutters; Safety Tread Syndicate, Ltd., iron staircases; Conway Grate and Tile Co., Ltd., tiling; Manchester Corporation Water Mains, water supply; S. Newton & Co., Ltd., signs.

COUNCIL CHAMBER AND ANTE-ROOMS, ESSEX COUNTY HALL, CHELMSFORD (pages 256-7). Architect: E. Vincent Harris. General contractors, T. J. Bailey and Son. Sub-contractors and suppliers included: Dorman Long & Co., Ltd., steelwork; Kleine Co., Ltd., fireproof roof; Bath and Portland Stone Firms, Ltd., Doulting and Portland stone; Fenning & Co., marble pavings; J. P. White and Son, Ltd., flooring, seating, doors and carpet; G. Jackson and Sons, Ltd., fibrous plaster and gilding; May Acoustics, Ltd., acoustic plaster; Luxfer, Ltd., bronze windows and glazing; R. B. Studios, iron balustrading and bronze guard rails; H. H. Martyn & Co., Ltd., bronze grilles; Barry Hart, stone carving; Chapman Bros., Ltd., fixing paintings; Essex Electric Installations, Ltd., lighting; General Electric Co., Ltd., electric light fittings.

THE WEEK'S BUILDING NEWS

LONDON

BROMLEY-BY-BOW. The L.C.C. is to modernize the Bromley House Institution, Bromley-by-Bow, at a cost of £15,700.

CROYDON. *Hospital Extensions.* The Croydon Corporation is to extend the nurses' home at Mayday Hospital at a cost of £16,000.

DEPTFORD. *Rebuilding, etc.* Plans passed by Deptford B.C.: Rebuilding 334 and 336 New Cross Road and 33-35 Lewisham High Road, Mr. H. A. Scrase; alterations and extension, 264 and 265 Arklow Road, L. Stone & Co., Ltd.; additions, J. Stone & Co., Ltd., Arklow Road, Mr. M. S. Ward.

EDMONTON. *Houses.* The Corporation is to erect 354 houses in Hoe Lane.

ENFIELD. *School.* The Education Committee has approved plans for the provision of a new Roman Catholic senior school for 200 children at Southbury Avenue, at an estimated cost of £16,010.

ENFIELD. *Showroom, etc.* Plans passed by the U.D.C.: Showroom, Main Avenue, Mr. J. Neilson; extensions, Enfield, Edmonton and Potters Bar Hospital, Worlds End Lane, Mr. H. R. Crabb; house, 68 Old Park View, R. H. Builders, Ltd.; sub-station building, Lonsdale Drive, J. N. Donaldson. North Met. E.P.S. Co.; factory, off Alexander Road, Mr. T. G. Fields; four shops and two flats, 211-221 Chase Side, White, Son and Pill; alterations and additions to factory, Progress Way, Commercial Structures, Ltd.; factory, off Alexandra Road, J. Henderson & Co.; shops with maisonettes over, adjoining 413 Hertford Road, Mr. J. E. M. Macgregor; cinema, Hertford Road, Marshall and Tweedy; lay-out Hillview Estate, Ordnance Road, Hilbery Chaplin & Co.; extension to factory, 34-6 Queensway, L. Farmer and Sons; 60 flats, Baker Street, Mr. H. A. Nash; six shops, Baker Street, Wates, Ltd.

FINCHLEY. *Flats.* The Finchley Corporation is to erect 220 flats on the Red Lion Hill Estate.

HACKNEY. *Reconstruction.* Messrs. Charrington & Co., Ltd., are to reconstruct licensed premises in Mead Place areas, Hackney.

HARROW. *Housing Scheme.* The U.D.C. has purchased 38 acres at Rayners Lane for a housing scheme.

HONOR OAK. *Library.* The Camberwell and Deptford B.C.'s are considering the provision of a joint library at Honor Oak.

KINGSBURY. *School.* The Middlesex Education Committee has obtained sanction for a loan of £78,600 for the erection of a senior school at Roe Green, Kingsbury.

L.C.C. *Club, etc.* Plans passed by L.C.C.: Residential club and guest-house, 48 Earl's Court Square, Kensington; offices and residential purposes, 22 Ashburn Place, Kensington; nurses' hostel and employment agency, 94 Portsdown Road, Paddington; flats, 89 King's Avenue, Clapham Park.

LEE. *Shops.* Mr. R. Ward is to erect 16 shops with flats over in Baring Road, Lee.

LEWISHAM. *School.* The L.C.C. has made a grant of £12,603 to the managers to enable them to proceed with the erection of a new Church of England school in East Lewisham for senior pupils.

LEWISHAM. *Flats, etc.* Plans passed by Lewisham B.C.: Flats, rear of 93 Bromley Road, Catford, Mr. R. G. Pearce; houses, 33 Mayow Road, Forest Hill, Mr. R. G. Covell; bungalows and maisonettes, Somertrees Avenue, Mr. J. C. Anderson; block of flats, Bromley Road, Catford, Wates, Ltd.; block of six flats, Kirtley Road, Sydenham, Mr. G. T. Harman; block of eight flats, 97-99 Perry Vale, Forest Hill, Mr. R. Carroll; cinema and shops, junction of Bromley Road, Catford, D. Smith, Oakley and Garrard; five blocks of flats, Conington Road, Mr. R. H. Brine; houses, Meadow View Road, Catford, T. Spencer Bright & Co.; flats, Grierson Road, Brockley, Mr. J. Giles; additions, "Tiger's Head" p.h., Bromley Road, Whitbread & Co., Ltd.

SOUTHWARK. *Shops, etc.* Plans passed by the B.C.: Addition, Bullivant's premises, Thurlow Street, Mr. R. Astley; lock-up shops, flats and maisonettes, 177-197, Old Kent Road, Wates, Ltd.; factory, 4-12 Bittern Street, G. Lansdown and Devereux; extension to offices, 10-14 Stamford Street, J. Sainsbury, Ltd.

TOTTENHAM. *Enlargement of County Offices.* The Middlesex C.C. is to enlarge the local county offices, Tottenham, at a cost of £24,000.

WIMBLEDON. *Maisonettes.* Plans passed by the Wimbledon Corporation: 60 maisonettes, Copse Close, Coombe Lane; 40 maisonettes, 30-34 Merton Hall Road.

PROVINCES

BASINGSTOKE. *School.* The Hampshire Education Committee is to erect a senior school for boys to accommodate 480 children and a junior school for 388 children at Basingstoke.

BIRKENHEAD. *Hotel.* Messrs. W. M. and M. W. Shennan, on behalf of Higsons' Brewery Co., Ltd., are to erect an hotel in Woodchurch Road, Birkenhead.

BOLTON. *Lodging-house.* Bolton Corporation is to consider the desirability of providing a municipal lodging-house.

BOLTON. *Reconstruction.* The Corporation is to reconstruct and enlarge the institution at a cost of £78,900.

BOLTON. *School.* The Education Committee has approved plans for the proposed Thicketford Bridge senior school for 440 children.

BOLTON. *Paper Store, etc.* Plans passed by the Corporation: Paper store, Shipgates, Tillotson and Son, Ltd.; six houses, Abersorn Road, Mr. J. Reddy; house, Junction Road, Mr. S. H. Winter; alterations, 5 Newport Street, Freeman, Hardy and Willis; extension to weaving shed, Deane Shed, Kirkebrok Road, Joseph Johnson (Bolton), Ltd.; 14 houses, Hexham Avenue, Mr. H. Critchley: house, Somerdale Avenue, Mr. C. Metcalf; two houses, Mosley Street, A. T. Reynolds & Co. (Estates), Ltd.; two houses, Sunnymeade Avenue, Mr. W. E. Yates; mission hall, Maxwell Street, Mr. J. E. Jones.

BRIERLEY HILL. *Houses.* The U.D.C. is to erect 148 houses on three estates at a cost of £48,260.

BRIGHOUSE. *Houses.* The Corporation is to erect 96 houses on the Lillilands estate, at a cost of £34,820.

BRIGHTON. *Houses.* The Brighton Corporation is to erect 67 houses on the Carlton Hill area at a cost of £31,659.

BRIGHTON. *School.* The Brighton Education Committee is to erect new school buildings at East Moulsecoomb, at a cost of £10,532.

BRIGHTON. *School Extensions.* The Brighton Education Committee is to extend the Balfour Road senior girls' school at a cost of £6,986, Coombe Road senior boys' school at a cost of £1,050, the Moulsecoomb senior girls' school at a cost of £1,645, and the Whitehawk senior school at a cost of £2,800.

CHESTER. *Houses.* Plans passed by the Chester Corporation: 102 houses, Blacon, Mr. A. Bernstein.

COLESHILL. *Police Station.* The Warwickshire C.C. is to erect a police station at Coleshill, at a cost of £22,195.

CONSETT. *Houses.* The Consett U.D.C. is to erect 72 houses on the Pont Head estate, at a cost of £33,280.

COSELEY. *Houses.* The Coseley U.D.C. is to erect 108 houses on the Chad Row estate, at a cost of £39,200.

COWPLAIN. *School.* The Hampshire Education Committee is to erect an infants' school for about 80 children at Cowplain.

CROFTON. *School.* The Hampshire Education Committee is to obtain a site at Crofton for the erection of a school.

CROSBY. *School.* The Lancashire Education Committee is to obtain a site for the proposed secondary school at Crosby.

ESTON. *Electricity Showrooms.* The U.D.C. is to negotiate for the purchase of premises in Middlesbrough Road, South Bank, for electricity showrooms.

ESTON. *Cinema.* The U.D.C. is considering plans for a cinema proposed to be erected in Normanby Road, Normanby.

ESTON. *School.* The North Riding Education Committee is to erect a school at Flatts Lane, Eston.

EXETER. *Aerodrome Building.* The Exeter Corporation is to erect a control and meteorological station at the aerodrome at a cost of £7,000.

EXETER. *Enlargement of Institution.* The Exeter Corporation has prepared a scheme for the enlargement of the institution at a cost of £67,970.

FLEETWOOD. *School.* The Lancashire Education Committee has purchased a site at Fleetwood for a senior school.

GORTON. *School.* Mr. Wilfrid C. Mangan has been appointed architect for a senior mixed department at St. Francis' R.C. School, Gorton.

GRANGETOWN. *Offices.* The North Riding Education Committee is to erect relief offices at Grangetown.

GREAT HARWOOD, ETC. *Branch Libraries.* The Lancashire C.C. has purchased sites at Great Harwood, Kearsley, Ramsbottom and Irlam for the erection of branch libraries.

GUILDFORD. *Shop, Houses, etc.* Plans passed by the Corporation: Shop, 129-130 High Street, Messrs. Dolcis; 28 houses, Tilehouse Farm Estate, Worplesdon Road, Hamillard & Co.; seven houses, 109-111 and 115-118 Tilehouse Farm Estate, C. C. Yeates & Co.; 14 houses, Tilehouse Farm Estate, Mr. J. McNulty; shop front and alterations, 18 and 18A North Street, E. Pascall, Ltd.; shop front and alterations, 131-132 High Street, J. Barrington, Ltd.; two houses, 54 and 55 Pewley Way, Mr. R. G. Bowers.

GUILDFORD. *Baptist Chapel.* Messrs. Dixon and Quick, architects, have prepared plans of the proposed new Baptist Chapel and Sunday School, Tuns Gate, Guildford.

HASTINGS. *Schools.* The Hastings Education Committee has obtained sanction to borrow £24,128 for the erection of elementary and open-air schools at Ore.

HAVANT. *School.* The Hampshire Education Committee is to erect a senior school for 480 children at Havant at a cost of £29,000.

HULL. *Camp School.* The Hull Education Committee has requested the city architect to prepare plans for the erection of a camp school for children.

HULL. *Swimming Baths.* The Corporation is to erect swimming baths on the Endike Lane Estate.

HULL. *School.* The Education Committee has obtained a site on the Bilton Grange Estate for the proposed new Riley High School.

LEEDS. *Church Hall.* The Corporation has approved plans by the trustees of Leeds Catholic Diocese of a church hall and presbytery to be erected on the Gipton Housing Estate.

PRICES

On the following pages appear *(a)* Prices for Measured Work, Part II; *(b)* Prices for Approximate Estimates.

★ *ANSWERS TO QUESTIONS*

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

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

1. Current Market Prices of Materials, Part I.
2. Current Market Prices of Materials, Part II.
3. Current Prices for Measured Work, Part I.
4. A.—Current Prices for Measured Work, Part II.
   B.—Prices for Approximate Estimates.

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

PART 4

CURRENT PRICES FOR MEASURED WORK—II

BY DAVIS AND BELFIELD

JOINER

Deal Flooring

		1″	1¼″
Plain edge flooring in batten widths ..	per square	38/–	46/5
Ditto tongued and grooved ditto ..	per square	41/9	50/6
●T. & G. B.C. Pine rift flooring in narrow widths	per square	52/3	—

Wood Block Flooring, laid herringbone, 100 *yards and up*

D.G. and T.G. kiln dried, 2 block border, laid in hot mastic composition on cement screed, including 2 feet run of straight cutting per yard super, and wax polishing at time of laying.

		1″ nominal	1¼″ nominal
Burma teak	per yard super	12/4	16/10
Canadian Maple	per yard super	10/6	12/1
25–30 per cent. quart Austrian Oak	per yard super	12/1	14/11
Plain American Oak (no selection made for sap) ..	per yard super	11/6	—
Gurjun	per yard super	12/2	14/9
Pitch Pine (50% rift sawn)	per yard super	11/10	13/8
Ditto (100% ditto)	per yard super	13/1½	15/6
British Columbian Pine ..	per yard super	8/5	9/2
Deal, 100 per cent. rift sawn	per yard super	9/5	10/9
Jarrah	per yard super	11/–	15/9
Additional straight cutting..	5½d. per foot run		

JOINER—(*continued*)

Secret Nailed Tongued and Grooved Strip Flooring, fully Desiccated, including Polishing

		1″ nominal £ s. d.	1¼″ nominal £ s. d.
Austrian Wainscot Oak ..	per square	8 18 6	10 12 7
Plain Japanese Oak ..	per square	7 10 8	9 2 2
Plain American Oak ..	per square	7 7 0	9 3 9
Pitch Pine..	per square	7 0 6	8 15 7
British Columbian Pine ..	per square	4 14 6	5 7 7
Canadian Maple	per square	6 19 1	8 10 7
Burma Teak	per square	8 18 6	10 17 4
English Oak	per square	10 4 9	12 15 11
Gurjun	per square	6 19 1	8 10 7
Jarrah	per square	6 13 10	8 6 5

Wall Linings

● ⅝″ Deal tongued and grooved V-jointed Matching in narrow widths	per square	31/7
¼″ (6 mm.) Birch (B) Plywood and fixing to walls	per square	35/7
3/16″ Asbestos cement sheets butt jointed	per foot super	–/3¼
¼″ Fibre board and fixing to walls ..	per yard super	2/11
Deal battens as ground plugged to brickwork	per foot super	–/1½
1½″ × ⅝″ wrot and chamfered fillets	per foot run	–/1½
2″ × ½″ wrot and moulded ditto	per foot run	–/1¾

● **Items marked thus have risen since January 5.**

CURRENT PRICES

BY DAVIS AND BELFIELD

JOINER, IRONMONGER AND STEEL AND IRONWORKER

JOINER—(*continued*)

Skirtings

	Deal	Austrian Oak
1″ chamfered or moulded 4″ high, fixed to and including grounds and backings planted on per foot run	–/3½	–/7¾
Add for plugging to brickwork .. per foot run	–/0½	–/0¾

Fitted ends on hardwood price as 4″ of skirtings, mitres as 6″.
Fitted ends, etc., on deal skirting included in price per foot run.

Casements and Fanlights

	1½″	2″
Deal moulded sashes divided into squares with glazing bars .. .. ..per foot super	1/4½	1/5½
Add for hanging casements (butts measured separately) .. .. each	1/9	2/–

Cased Frames and Sashes

Deal cased sashed frame, including 2″ double hung sashes, with 6″×3″ Oak cill and brass axle pulleys, sash line and weights, average 15 feet super .. per foot super 3/9

Doors in Deal

	¾″	1″	1¼″
Matchboarded, ledged and braced door per foot super	1/–	1/2	1/4
	1½″	1¾″	2″
Framed, ledged and braced door, filled in with matchboarding .. per foot super	1/5	1/9	1/10
Ditto garage doors .. .. per foot super			1/7
			4-panel
1½″ square framed, both sides .. .. per foot super			1/7
2″ ditto .. .. per foot super			1/9
1½″ ditto bead butt panels one side, but square the other per foot super			1/9
2″ ditto, ditto .. .. per foot super			1/11
1½″ moulded both sides .. .. .. per foot super			1/10
2″ ditto .. .. per foot super			2/–
For fixing only p.c. doors allow .. .. per foot super			–/2½

Hardwood doors two-and-a-half times as much as deal.

Deal glazing beads, mitred and bradded per foot run	–/1½
Ditto and fixed with brass cups and screws per foot run	–/3

Window and Door Linings

	1″	1¼″	1½″
Deal linings, 6″ wide, tongued at angles and planted on including backings per foot run	–/6½	–/7	–/8
Add for plugging to wall .. per foot run	–/0½	–/0½	–/0½
Add for rebating .. .. .. per foot run	–/0½	–/0½	–/0½
Add for ½″ × 2″ Deal stop planted on per foot run	–/1½	–/1½	–/1½
Deal window board 9″ wide, with rounded nosing, tongued at back and on and including bearers plugged to brickwork .. per foot run	–/10	–/11	1/1
¾″ Deal scotia mould .. .. per foot run		–/1½	
Oak linings 6″ wide tongued at angles and planted on including backings per foot run	1/2½	1/4½	1/7½
Add for plugging to brickwork .. per foot run	–/1	–/1	–/1
Add for rebating .. .. .. per foot run	–/1	–/1	–/1
Add for ½″ × 2″ Oak stop planted on per foot run	–/3½	–/3½	–/3½
Oak window board 9″ wide, with rounded nosing tongued at back and on and including bearers plugged to brickwork .. per foot run	1/10	2/1	
¾″ Oak scotia mould .. .. per foot run		–/3½	

Window and Door Frames

	Deal	Austrian Oak
4″ × 3″ door frames .. .. per foot run	–/10	2/0½
4″ × 3″ window frames .. .. per foot run	1/–	2/4½
4″ × 3″ transomes and mullions .. per foot run	1/3½	2/11½
6″ × 3″ door cill, sunk weathered twice throated and grooved for water bar (measured separately) per foot run	—	3/9
6″ × 3″ window ditto .. .. per foot run	—	3/1
Add or deduct for variation in sectional area per square inch .. .. .. per foot run	–/0½	–/1½
Add for each labour, for chamfer, bead or rebate, etc. .. .. per foot run	–/0½	–/1
Add for each moulding .. .. per foot run	–/0¾	–/1½

Architraves

	Deal	Oak
1″ × 3″ chamfered or moulded architraves, including mitres on softwood, planted on per foot run	–/3	–/7½
Mitred angles on oak price as 6″ of architrave.		
Add for plugging to brickwork .. per foot run	–/0½	–/0¾
Add for narrow splayed grounds .. per foot run	–/1½	–/1½

JOINER—(*continued*)

Shelving

	Deal	Oak
Slat shelving of 1″ × 2″ spaced ¾″ apart per foot super	–/9	—
1″ shelving .. .. per foot super	–/10	2/2
1¼″ ditto .. .. per foot super	–/11½	2/6
1″ cross-tongued shelving .. per foot super	1/–	2/6
1¼″ ditto .. .. per foot super	1/1½	2/10
1″ × 2″ chamfered bearers planted on per foot run	–/2¼	–/5¼
Add if bearers plugged to brickwork per foot run	–/0½	–/0¾

Teak Draining Boards and Twice Oiling

1¼″ Moulmein cross-tongued fluted draining board fixed to slight falls .. .. per foot super	3/9
½″ × 2″ rounded rim bedded in white lead and screwed to edge of draining board .. .. .. per foot run	–/5
½″ × 4″ rounded skirting fillet ditto .. per foot run	–/9

Staircases

	Deal	Oak
1¼″ treads and 1″ risers .. .. per foot super	2/–	5/–
2″ strings, fixed .. .. .. per foot run	1/10	4/7
Housing treads and risers to strings .. each	–/9	1/6
3″ × 2½″ French polished moulded handrail per foot run	—	2/6
1¼″ × 1¼″ square balusters 2′ 6″ long .. each	–/10	2/–
4″ × 4″ Newels with chamfered edges and fixing per foot run	1/4	3/4

IRONMONGER

Fixing only

4″ Butt hinges to softwood .. .. .. per pair	1/–
4″ ditto to hardwood .. .. per pair	1/4
16″ T. hinges to softwood .. .. .. per pair	1/6
48″ Collinges patent gate hinges to softwood .. per pair	7/6

	Softwood	Hardwood
6″ Cabin hooks .. .. .. each	–/7½	–/10
Hat and coat hooks .. .. .. each	–/3	–/4
Cupboard knobs .. .. .. each	–/3	–/4
Night latches .. .. each	1/6	2/–
Thumb latches .. .. .. each	1/6	2/–
Letter plate and knocker, including perforation in door.. .. .. .. each	2/6	3/4
Barrel or tower bolts.. .. .. each	–/10	1/1
Flush bolts .. .. each	1/6	2/–
Rim locks and furniture .. .. each	2/–	2/8
Mortice ditto .. .. each	3/–	4/–
Rebated ditto.. .. .. .. each	3/6	4/8
Grip handles .. .. each	–/6	–/8
Cupboard locks .. .. .. each	1/–	1/4
Spring catches .. .. .. each	–/10½	1/1½
Casement fastener .. .. .. each	1/–	1/4
Ditto stays .. .. each	–/10	1/1
Sash fastener .. .. each	–/8	–/11

STEEL AND IRONWORKER

(For Rainwater Goods—*see* "Plumber.")

Steelwork

	£	s.	d.
✱Basis for plain rolled steel joists .. .. per ton	15	16	6

Fabricated Steelwork

	£	s.	d.
✱Joists cut and fitted .. .. .. per ton	20	0	6
Stanchions, ordinary sections with riveted caps and bases .. .. per ton	23	10	6
Stanchions, compound .. .. .. per ton	25	11	6
✱Plate girders .. .. per ton	27	19	6
Framed roof trusses, 25′ 0″ span .. .. per ton	30	4	6
Ditto ditto 60′ 0″ span .. .. per ton	28	5	0

The above prices are ex mills ordered well in advance of delivery.
Prices ex London stocks are considerably higher, and definite quotations should be obtained.

Wrot Iron Work

Simple balusters and handrail fixed (excluding mortices, etc.) .. .. per cwt.	56/–
Bolts and nuts fitted .. .. per cwt.	45/–

Galvanized Corrugated Sheeting

	20 B.G.	22 B.G.
✱Sheeting in 3″ corrugations and fixing on wood framing with screws and galvanized embossed curved washers including laps .. per square	53/5	46/5
✱Ditto fixed to steel framing .. per square	60/6	54/1

✱ Items marked thus have fallen since January 5.

CURRENT PRICES

BY DAVIS AND BELFIELD

PLASTERER, EXTERNAL AND INTERNAL PLUMBER

PLASTERER

Lime and Sirapite Plastering

	Per yard super	In narrow widths per foot super
Expanded metal lathing	1/8	–/3
1″ × $\frac{3}{16}$″ sawn laths	–/9	–/1½
Render and set in lime and hair	1/8	–/3½
Render, float and set in lime and hair	2/–	–/3¾
Plaster, float and set ditto on lathing (measured separately)	2/1½	–/4
Render and set with Sirapite	1/9½	–/3½
Plaster, float and set ditto on lathing (measured separately)	2/3	–/4
Skimming coat Sirapite	1/5½	
⅜″ thick plaster board fixed including covering joints with scrim cloth	2/–	

Keenes

	Per yard super	In narrow widths per foot super
Cement plain face on and including a backing of Portland cement and sand	2/6	–/5

Mouldings and Labours

		Lime and Sirapite	Keenes
Plain cornices and mouldings 6″ girth	per foot run	–/9½	–/11
Labour arris, quirk or throat	per foot run	–/1½	–/1½
Ditto rounded angle	per foot run	–/2	–/2
Ditto staff bead	per foot run	—	–/7½

Mitres price as 12″ of moulding, stopped ends as 6″, and rounded angles as 18″.

Portland Cement and Sand (1 : 3)

		½″	¾″
Screeds to floors for wood or tiles	per yard super	1/2½	1/4
Screeds for tiling, etc., on walls	per yard super	1/4	1/6
Renderings to walls—one coat float finish	per yard super	1/6	1/8
Plainface	per yard super	1/10	2/–

Coloured Cement Plainface

Cullamix No. 2 or 3 cream, on and including water repellent cement and sand backing	per yard super	3/10
Snowcrete mixture on and including ditto	per yard super	3/10
Snowcrete and white silica sand on and including ditto	per yard super	3/6

For raking out joints of brickwork, keyed bricks or hacking face of concrete, to form key for plastering, see "Bricklayer."

Wall Tiles, Commercial Quality

6″ × 6″ × ⅜″ ivory or white	per yard super	16/–
Extra for rounded edge tiles	per yard run	1/5
6″ × 6″ × ⅜″ coloured enamel bright glazed	per yard super	21/3
Extra for rounded edge tiles	per yard run	–/7¾
6″ × 6″ × ⅜″ eggshell gloss enamelled	per yard super	22/1
Extra for rounded edge tiles	per yard run	–/6¾

EXTERNAL PLUMBER

Lead

	Flats	Gutters, Flashings, etc.	Stepped Flashings	Soakers cut to size
Milled sheet lead and labour per cwt.	40/–	41/1	42/2½	34/10
Bedding edges in white lead			per foot run	–/2
Lead wedgings to flashings			per foot run	–/1½
Ditto to stepped flashings			per foot run	–/2
Dressing 6-lb. lead over glass and glazing bars			per foot run	–/3½
Copper nailing			per foot run	–/1½
Close ditto			per foot run	–/2
Bossed ends to rolls			each	–/7½
Extra labour dressing through shoots and into rainwater heads			each	3/–
Ditto to cesspools, including extra solder			each	5/3

Cast Iron Rainwater Goods

Rainwater Pipes fixed to brickwork.

		3″	4″
Round pipes	per foot run	1/5½	1/9
Extra for bends	each	2/2	2/10
Ditto 6″ offset	each	2/4	2/10
Ditto single branches	each	2/7	3/1
Ditto shoes	each	1/7	2/2
		3½″ × 3½″	4″ × 3″
Square and rectangular pipes	per foot run	3/2	2/10
Extra for elbows	each	4/11	3/6
Ditto single branches	each	5/9	5/4
Ditto shoes	each	4/8	4/3

EXTERNAL PLUMBER—(*continued*)

Gutters fixed to fascia.

		4″	5″	6″
Half-round gutters	per foot run	1/–	1/2½	1/8½
Extra for angles	each	1/9	2/–	2/3
Ditto nozzles	each	1/7	1/10	2/5
Ditto stop ends	each	1/–	1/3	1/4½
Ogee gutters	per foot run	1/1½	1/4	1/9½
Extra for angles	each	1/9½	2/3	2/4
Ditto nozzles	each	1/8	2/3	2/8
Ditto stop ends	each	1/1½	1/4½	1/7½

INTERNAL PLUMBER

Lead Pipes

Service.

		½″	¾″	1″	1¼″
Pipes laid in trenches	per foot run	–/10¾	1/2½	1/9½	2/5
Add if fixed on walls	per foot run	–/2	–/3	–/4	–/5
Ditto if in short lengths	per foot run	–/1	–/1	–/1½	–/2
		1½″	2″	2½″	3″
Pipes laid in trenches	per foot run	3/0½	4/0¾	—	—
Add if fixed on walls	per foot run	–/6	–/8	—	—
Ditto if in short lengths	per foot run	–/3	–/4	—	—

Distributing.

		½″	¾″	1″	1¼″
Cold water pipes fixed to walls	per foot run	–/10¾	1/3	1/8½	2/3
Add if in short lengths	per foot run	–/1	–/1	–/1½	–/2
Cold water pipes fixed to walls	per foot run	1½″ 2/9¾	2″ 3/7¾	2½″ —	3″ —
Add if in short lengths	per foot run	–/3	–/4	—	—

Flushing and Warning.

		½″	¾″	1″	1¼″
Waste and overflow pipes fixed in short lengths	per foot run	–/9	–/11	1/2½	1/5½
Waste and overflow pipes fixed in short lengths	per foot run	1½″ 1/10½	2″ 2/6	2½″ —	3″ —

Soil and Ventilating

				3½″	4″	4½″
Pipes fixed, including lead tacks	per foot run			5/3½	5/10¾	6/9½
	1½″	2″	2½″	3″	3½″	4″	4½″
Bends each	1/6	2/–	2/9	3/9	4/3	4/6	5/6

	½″	¾″	1″	1¼″	1½″	2″
Soldered joints to fittings each	2/1½	2/4	2/7	2/9	3/–	3/5

	½″	¾″	1″	1¼″	1½″
Soldered branch joints (price as largest branch) each	2/3½	2/6	2/9	3/–	3/3

	2″	2½″	3″	4″	4½″
Soldered branch joints (price as largest branch) each	3/8	4/–	4/6	5/–	6/6

Wrap small pipes with hair felt per foot run –/6

Drawn Lead Traps

	1¼″	1¼″ 3″ deep seal	1½″	1½″ 3″ deep seal	2″	2″ 3″ deep seal
P. Traps 6 lb. with cleaning eye and two soldered joints each	7/1	7/7½	8/3	8/9½	9/8	10/2½
S. ditto each	7/6	8/0½	8/8	9/2½	10/4	10/10½

Brasswork (*Best Quality*)

	½″	¾″	1″
Brass screwdown stop cocks including two soldered joints each	7/10	10/4	13/11
Ditto, including two red lead joints for iron each	6/–	8/5	11/10
Ditto, including one soldered and one red lead joint each	6/4	8/7	11/11
High pressure Portsmouth pattern ball valve with flynut and union and one soldered joint each	8/7	11/2	19/5
Ditto, including red lead joint for iron each	6/6	9/1	16/7

	2″	4″
Brass thimble and soldered and cement joints each	5/–	9/6
Ditto, with solder and caulked lead joints each	6/–	11/3

Fixing Only (*Connections to Pipes measured separately*)

24″ × 18″ × 6″ sinks including taps, etc., and pair of brackets cut and pinned to brickwork each	6/–
24″ × 18″ lavatory basins ditto each	6/6
W.C. suite comprising pan and trap, seat, W.W.P. and brackets each	10/6
Baths, including taps, etc., and setting in position each	10/6

CURRENT PRICES

BY DAVIS AND BELFIELD

INTERNAL PLUMBER, GLAZIER AND PAINTER

INTERNAL PLUMBER—(*continued*)

Screwed and Socketed Galvanized Steam Quality Steel Tubes and Fittings

Pipes up to and including 1½″ include short running lengths, sockets, connectors, elbows, bends, fire bends; Tees and Diminishing Pieces enumerated.

Distributing.

	½″	¾″	1″	1¼″	1½″	2″
Pipes fixed to walls per foot run	–/10	1/–	1/4	1/10	2/4	3/–
Ditto in short lengths, fittings, etc., measured separately per foot run	–/10	1/–	1/4	1/10	2/4	3/–
Extra for						
Firebends .. .. each	–/4	–/6	–/9	1/3	1/6	2/–
Bends .. .. each	1/2	1/5	1/9	2/6	3/1	4/9
Round elbows .. each	1/5	1/8	2/–	2/4	2/10	4/4
Square ditto .. each	1/5	1/8	1/11	2/3	2/8	4/1
Tees .. .. each	1/6	1/10	2/1	2/9	3/1	4/8
Crosses .. .. each	2/9	3/2	3/10	5/–	6/–	9/1
Diminishing pieces each	–/10	–/11	1/2	1/6	1/11	2/8
Caps .. .. each	–/7	–/8	–/10	1/–	1/5	1/9
Plugs .. .. each	–/6	–/6	–/8	–/11	1/4	1/8

Cast Iron Waste, Soil and Vent Pipes

	2″	3″	4″	5″	6″
L.C.C. pipes in 6′ 0″ lengths fixed to brickwork .. .. per foot run	1/10	2/–	2/5	4/5	5/4
Extra for bends .. .. each	5/3	6/1	7/10	11/–	14/9
Ditto single branches .. each	6/5	8/2	11/–	17/6	23/6
Ditto swannecks 6″ projection each	6/1	8/9	11/1	16/1	22/–
Extra for access door or any fitting .. .. .. each	6/9	6/9	7/3	8/6	8/6

Zincworker

	13 G.	14 G.	15 G.	16 G.
Rolled sheet zinc on flats per foot super ..	–/7¾	–/8½	–/9½	–/10
Ditto in gutters, cover flashings, etc. per foot super	–/8½	–/9	–/10	–/10½
Ditto in stepped flashings per foot super	–/10½	–/11	1/–	1/0½
Labour and risk dressing over glass per foot run	–/4½	–/4½	–/4½	–/4½
Capped ends to rolls .. .. each	–/2¼	–/2¼	–/2¼	–/2¼
Extra labour to cesspools .. each	2/7½	2/7½	3/2	3/2

Copperworker

Distributing.

	½″	¾″	1″	1¼″	1½″	2″
Solid drawn copper tube fixed to walls per foot run	–/9	1/–	1/5½	1/10	2/3	3/3
Add if in short lengths per foot run	–/0¾	–/0¾	–/1	–/1½	–/2	–/2¼

Fittings for copper tubes

Compression type						
Straight couplings .. each	1/10	2/2	3/–	3/9	5/1	7/3
Obtuse elbows .. „	2/8	3/2	4/5	5/6	8/10	12/7
Tees .. .. .. „	3/1	3/6½	5/4	7/4½	11/3	15/7
Crosses .. .. .. „	4/1½	4/8	5/8½	8/–	13/2	18/–
Reducing coupling .. „	—	2/2	3/–	3/9	5/1	7/3
Bends .. .. „	2/5	2/10½	3/1	5/–	8/3	11/11
Brass stopcocks .. „	5/6	7/10	11/–	19/3	26/6	43/6
Capillary type						
Straight coupling .. each	1/6	1/11	2/7	3/3	4/1	5/4½
45° Elbow .. .. „	2/4	2/11½	3/10½	4/11	6/10	9/7
Tees .. .. .. „	2/7	3/–	4/3	5/10	7/10	11/–
Crosses .. .. „	3/1	3/6	5/1½	6/10	9/8	13/5
Reducing coupling .. „	—	1/7	2/–	2/6	3/3	4/8
Bends .. .. „	2/8	3/2	4/3	5/7	8/1	10/11
Pillar tap connections „	1/11	2/6				

	24 G.	23 G.
✱Rolled sheet copper on flats .. per foot super	1/5	1/7
✱Ditto in gutters, cover flashings, etc. per foot super	1/6	1/8
Ditto in stepped flashings .. per foot super	2/1½	2/4½
Labour and risk dressing over glass per foot run	–/4½	–/4½
Capped ends to rolls .. .. each	–/3¼	–/3¼
Extra labour to cesspools .. .. .. each	3/8	3/8

GLAZIER

Sheet Glass (Ordinary Glazing Quality)

18 oz. clear sheet and glazing to wood, sprigged and with back and front putties, to all normal sizes not exceeding 60″ in length or 40″ wide .. .. per foot super	–/6½
24 oz. ditto .. .. per foot super	–/7½
32 oz. ditto .. .. per foot super	–/11½

GLAZIER—(*continued*)

Obscured ground sheet glass, net extra to above prices per foot super	–/1¾
⅛″ figured rolled white glass and glazing to wood with beads (measured separately) .. per foot super	–/10½
Ditto, normal tints, ditto .. .. per foot super	1/2¾
Hammered double rolled cathedral white ditto per foot super	–/10
Ditto, normal tints, ditto .. .. per foot super	1/1¾
Add for glazing into metal frames (ordinary rebates) per foot super	–/1½
Ditto, metal sashes with ferroput .. per foot super	–/2¼
Ditto, solid metal casements and screw beads per foot super	–/2¼
Wash leather strip or similar material and bedding edge of glass .. .. per foot run	–/3¼

Glazing only thick drawn sheet glass, polished plate or wire polished plate for all normal sizes. (For prices of glass see materials section and add profit, say 10 per cent.) per foot super 6¼d.

PAINTER

Painting, Whitening and Distempering (on new Plastered Walls)

Twice distempering white .. .. per yard super	–/5
Ditto, in common colours .. .. per yard super	–/7
Add for stippling .. .. .. per yard super	–/2
Preparing and painting three coats of paint per yard super	1/9

Preparing and Painting Two Coats of Oil Colour on Ironwork after fixing

General surfaces .. .. .. per yard super	1/1½
Perforated landings and staircases both sides (one side measured) .. .. per yard super	2/6
Pipes, bars, balusters, etc., not exceeding 3″ girth per yard run	–/1¾
Metal Window Frames .. .. .. per yard run	–/2¾
Eaves gutters .. .. per yard run	–/7½
2″ Rainwater pipes .. .. per yard run	–/3
4″ ditto .. .. per yard run	–/6
Squares one side .. .. per dozen	1/9
Large ditto .. .. per dozen	2/3
Extra large ditto .. .. per dozen	3/–
Edges of casements .. .. each	–/3

Painting on New Woodwork

	Knot, prime, stop and paint three coats oil colour	Add or deduct for each coat more or less
General surfaces .. per yard super	2/–	–/6
Fascias and soffites per yard super	2/6	–/7½
Fillets, skirtings, etc., not exceeding 3″ girth .. .. .. per yard run	–/3	–/0¾
Ditto, not exceeding 6″ .. „ „ „	–/5½	–/1½
Ditto, not exceeding 9″ .. „ „ „	–/7	–/1¾
Ditto, not exceeding 12″ .. „ „ „	–/9	–/2
Squares one side .. .. per dozen	3/6	–/9
Large ditto .. .. .. „ „	4/6	1/–
Extra large ditto .. .. „ „	6/–	1/4
Edges of casements .. .. each	–/6	–/1½

Sundries

Twice creosoting woodwork .. .. per yard super	–/6
Twice limewhiting brickwork .. .. per yard super	–/4

	Sizing	Staining	Once Varnish
General surfaces .. per yard super	–/2	–/4½	–/6
Wax polishing .. .. per foot super			–/4½
Body in and French polish on hardwood surfaces per foot super			1/–

Writing

Plain letters or figures, two coats, 2″ to 12″ letters per dozen inches in height	1/10½
Ditto, shaded .. .. .. „ „ „ „ „	2/6
Plain gold, 2″ to 12″ letters .. „ „ „ „ „	2/6
Ditto, 12″ to 24″ .. .. „ „ „ „ „	3/9

Gilding

	Single Gold	Double Gold
Preparing and gilding in best oil gold per foot super	5/3	8/4
Ditto in matt or burnished gold per foot super	7/4	11/6

Paperhanging

Pasting and hanging only.

	On walls	On ceilings
Preparing new plastered walls for papering per piece (60 feet super)	1/4	1/5½
Plain lining paper .. „ „ „ „	1/4	1/8
Common printed papers „ „ „ „	2/–	2/6

✱ **Items marked thus have fallen since January 5.**

APPROXIMATE ESTIMATES

★ON this and the three following pages the JOURNAL's section of Approximate Estimates is published for the thirteenth time.

There is nothing revolutionary about the idea—its usefulness lies in its efficiency as a time-saver in calculating the approximate price of work to which the cubing system cannot be applied.

In brief, an Approximate Estimate in considering a roof, converts the several units of pricing involved into a common unit of price per square yard, and then adjusts the price to cover sundry labours. By this means several stages of calculation are saved by the estimator in a hurry.

• ***The following composite prices are for work executed complete and should be used for the preparation of Approximate Estimates only.***

FOUNDATIONS

		Thickness of walls 9″	11″ Hollow	13½″
• Excavation in clay soil for foundations 2′ 6″ deep to walls, including stock brickwork in second stocks cement mortar 1 : 3 up to 6″ above ground and horizontal double slate damp-proof course with external facings p.c. 100/– and pointing	*per yard run*	25/1	28/3	35/4
• Ditto, in ordinary soil ditto	*per yard run*	23/10	27/1	33/9

EXTERNAL WALLS

• External walls in Fletton brickwork in cement mortar 1 : 3 including three coat lime plaster and twice distempering one side and facings p.c. 100/– in Flemish bond, joints raked out and pointed with a neat struck weathered joint, the other	*per yard super*	19/4	19/1	24/9
• Ditto, including Keenes cement plain-face and three coats oil colour one side and ditto	*per yard super*	21/–	20/9	26/5
• Ditto, including internal fair face, flush jointed one side and ditto	*per yard super*	17/7½	17/4½	23/0½
• For variation of 10/– per m. in p.c. of facings in Flemish bond (stretcher in cavity work)	*per yard super*	–/9	–/6¾	–/9

APPROXIMATE ESTIMATES—(*continued*)

INTERNAL WALLS AND PARTITIONS

		2″	3″	4½″	9″
• Breeze partitions set in cement mortar or Fletton brick walls and including three coat lime plaster and twice distempering both sides	*per yard super*	9/11	11/1	11/1	16/7
• Ditto, built fair and flush jointed both sides	*per yard super*	—	—	7/8½	13/2
• Ditto, including Keenes cement plain-face and three coats oil colour both sides	*per yard super*	13/3	14/5	14/6	19/11

GROUND FLOORS

• Solid ground floor construction including 9″ excavation, 4″ bed of hardcore, 6″ concrete 6 : 1 surface bed, finished with 1½″ granolithic paving trowelled smooth	*per yard super*	9/10
• Ditto, finished with ¾″ cement and sand 1 : 3 screed and wood block flooring or paving p.c. 10/– yard	*per yard super*	18/2
• Ditto, finished with 2″ × 2″ sawn floor fillets and floor clips and 1″ deal tongued and grooved flooring, batten widths	*per yard super*	12/11½
• Ditto, finished with floor fillets as before and 1″ (nominal) oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	25/2½
• Sleeper wall ground floor construction, including 15″ excavation, 4″ bed of hardcore, 6″ concrete 6 : 1 surface bed, sleeper walls 12″ high, built honeycomb, 4½″ slate damp-proof course 4½″ × 3″ fir plate, and 4″ × 2″ sleeper joists and 1″ deal tongued and grooved flooring in batten widths	*per yard super*	15/3
• Ditto, with 1″ nominal oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	27/6

UPPER FLOORS

		With 7″ Joists	With 9″ Joists	With 11″ Joists
• Wood construction including 2″ fir joists on 4″ × 3″ fir plates and herring-bone strutting with three coat lime plaster and twice distempering white to soffite and 1″ deal tongued and grooved flooring in batten widths	*per yard super*	12/–	13/2	14/3
• Ditto, with 1″ nominal oak tongued and grooved narrow widths strip flooring polished at time of laying	*per yard super*	24/3	25/5	26/6
• 5″ thick concrete 4 : 2 : 1 reinforced with fabric suitable at 13′ 0″ spans for carrying ¾ cwt. per ft. super, with two coat lime plaster and twice distempering white to soffite and 1″ Kara Sea deal 100 per cent. rift sawn block flooring wax polished at time of laying ...	*per yard super*			25/7
• Ditto, with 1″ nominal 25/30 per cent. quartered Austrian oak block flooring polished at time of laying	*per yard super*			28/8

APPROXIMATE ESTIMATES—(*continued*)

FLAT ROOFS

		Using 7″ Joists	Using 9″ Joists	Using 11″ Joists
• Wood construction including 2″ fir joists on 4″ × 3″ fir plates and herring-bone strutting with three coat lime plaster and twice distempering white to soffite and best natural rock asphalt roof finish ...	*per yard super*	18/5	19/5	20/6
• 5″ Thick concrete 4 : 2 : 1 reinforced with fabric (suitable at 13′ 0″ span for carrying 40 lbs. per ft. super) with two coat lime plaster and twice distempering white ditto	*per yard super*			22/7

PITCHED ROOFS

• Bangor Countess 20″ × 10″ slating, laid to 3″ lap fixed with zinc nails, including 2″ × 1″ battens, ¾″ roof boarding and 4″ × 2″ rafters (measured on slope)	*per yard super*	13/1
• Westmorland Random green slates No. 1 best 24″ to 12″ long proportionate widths ditto	*per yard super*	17/2
• Machine-made tiles 10½″ × 6½″ laid to a 4″ gauge, fourth course nailed with galvanized nails ditto	*per yard super*	11/6
• Hand-made sand faced tiles ditto ditto	*per yard super*	12/3
• Slate ridges, including cuttings and 1½″ × 9″ deal ridge	*per yard run*	9/10½
• Half-round ridge tile ditto	*per yard run*	7/7
• Slate hips, including cuttings, lead soakers, and 1½″ × 11″ deal hips	*per yard run*	12/5½
• Hip tiles, including cuttings and 1½″ × 11″ deal hips	*per yard run*	14/–
• Lead valley gutter to slated roof, including cuttings and 1½″ × 11″ deal hips	*per yard run*	18/5
• Purpose-made valley tiles, including cuttings and 1½″ × 11″ deal hips	*per yard run*	13/7

DOORS

		Partitions or Walls				
		2″	3″	4½″	9″	13½″
• 2″ flush door p.c. 29/– 2′ 6″ × 6′ 6″, including deal frames or linings, ironmongery p.c. 15/– and simple architraves both sides, all painted	each	100/–	101/5	96/3	100/10½	106/10½

WINDOWS

Prices are for normal size, including suitable ironmongery, glazing with clear sheet glass and painting.

• Standard metal casements with fixed lights	*per foot super*	2/5
• Ditto, with average proportion of opening lights	*per foot super*	3/10
• Standard metal casements in wood frames with fixed lights	*per foot super*	4/–
• Ditto, with average proportion of opening lights	*per foot super*	4/11
• Standard industrial type sashes with fixed lights	*per foot super*	2/2
• Ditto, with average proportion of opening lights	*per foot super*	3/6
• Solid deal frames and 2″ casements	*per foot super*	5/0½
• Deal cased frames and double hung sashes	*per foot super*	4/10½

NOTE.—Standard wood surrounds to metal windows can be obtained at a cheaper price than that given for wood frames above.

APPROXIMATE ESTIMATES—*(continued)*

STAIRCASES

• Deal 9′ 0″ high, including half space landing, newels, balusters and handrail	*each*	£23	10 0
• Austrian oak ditto	*each*	£44	5 0
• Precast concrete ditto	*each*	£32	15 0

DRAINS

		Ordinary Soil	*Clay Soil*
• Manhole, 2′ 3″ × 1′ 6″ × 2′ 0″ deep, including excavation, 6″ (6 : 1) concrete bottom, one brick sides 3rd stocks in cement mortar with brown glazed half-round straight main channel and one brown glazed branch channel, including benching, sides rendered in cement and sand (1 : 3) and a 24″ × 18″ black single seal cast iron manhole cover and frame, weight 0 cwts. 3 qrs. 0 lbs.	*each*	£3 12 6	£3 15 6
• Manhole 2′ 3″ × 3′ 9″ × 4′ 0″ deep ditto including six branches	*each*	£7 2 0	£7 6 6

		Clay Soil		*Ordinary Soil*	
		4″	*6″*	*4″*	*6″*
• British standard quality stoneware drain pipes laid on and including 6″ thick concrete bed flaunched up both sides of pipe and excavating average 2′ 6″ deep	*per foot run*	2/5	3/0½	2/3	2/10½
• Ditto, but excavating 4′ 0″ deep	*per foot run*	4/1½	4/9	3/7½	4/3
• Cast iron drain pipes in 9′ lengths and laying in trench including 6″ concrete bed and excavating average 2′ 6″ deep	*per foot run*	4/8	6/6½	4/6	6/4½
• Ditto, average 4′ 0″ deep	*per foot run*	6/4½	8/3	5/10½	7/9

PATHS AND DRIVES

• 2″ finished gravel paths, including 6″ excavation and 4″ bed of hardcore and edging boards	*per yard super*	5/3
• 7½″ finished gravel drive, including 6″ excavation, 6″ bed of hardcore and edging boards	*per yard super*	6/9
• 2½″ Tarmacadam drive including ditto	*per yard super*	7/10

FENCES

• Cleft chestnut pale fence 4′ 0″ high	*per foot run*	–/10
• Deal weather boards, including posts, arris rails and gravel boards creosoted, 5′ 0″ high	*per foot run*	2/9½
• Ditto, in English oak throughout	*per foot run*	3/10½

The four sections on PRICES published in the issues of Jan. 12, 26, Feb. 2 and this week together complete the PRICES SUPPLEMENT. Next week the FIRST SECTION—PRICES OF MATERIALS, PART 1—will be repeated with items revised according to market quotations.