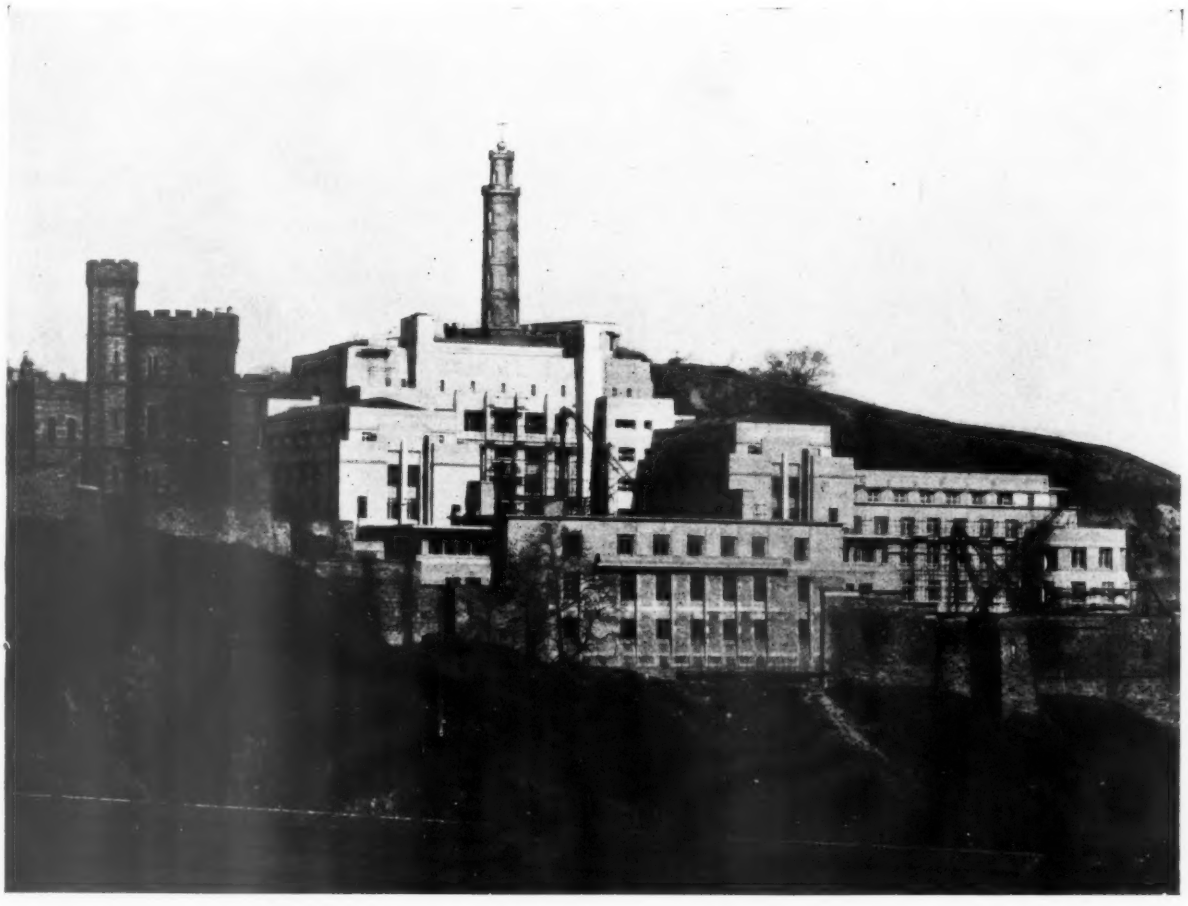

Architect : Thos. S. Tait, F.R.I.B.A., of Sir John Burnet, Tait & Lorne. Contractors : Messrs. Jackson, Brown & Co., Glasgow.

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THE ARCHITECTS' JOURNAL

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

THURSDAY, MAY 4, 1939 NUMBER 2311 : VOLUME 89

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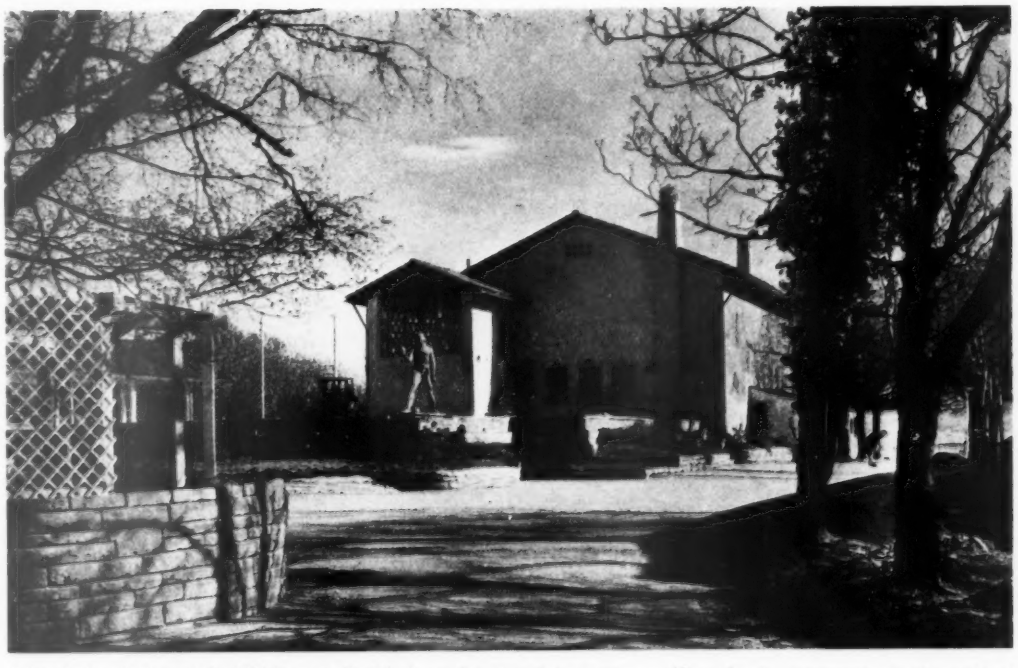
ROYAL ACADEMY EXHIBITION

A model of the proposed King George V Memorial, Westminster, now on view in the Architectural Room at the Royal Academy Exhibition, which opened on Monday last. Architect for the scheme: Sir Giles Gilbert Scott, R.A. Sculptor: Sir William Reid Dick, R.A. (No. 1159.)

SWISS NATIONAL EXHIBITION

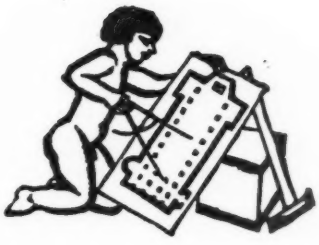


The Swiss National Exhibition at Zurich is to be opened tomorrow. Above is the restaurant in the style of Canton of Tessin.

VULNERABLE AREAS

In a Circular issued a week ago today the A.R.P. Dept. of the Home Office listed those local authorities whose areas are considered specially vulnerable to air attack, and called on them to survey in the near future all buildings occupied by families whose means entitle them to free shelters.

The position of these vulnerable areas is indicated on the map above. Within the areas shown toned are a number of vulnerable local authority areas which cannot be shown individually to the scale of the map. The toning does not mean that the whole of any area so toned has been declared vulnerable.



UNRESERVED FOR WHAT?

SOON after its request to local authorities to give A.R.P. schemes precedence over all other work, the Government issued, a week ago today, Circular A.R.P. Dept. 91/1939. Taken together the two measures go some way towards putting A.R.P. schemes on a reasonable basis, though the apparent passion of the Home Office for doing things backwards is still well in evidence.

The circular names those local authorities whose areas are considered to be specially vulnerable to air attack* and calls on them to survey all buildings occupied by families entitled to free shelters; and adds that designs for shelters for areas without basements and too densely built for steel shelters are being completed. The circular also states that it has been arranged for members of the R.I.B.A. and the engineers' societies to help local authorities in the survey, and it lays down salary scales for the full-time additional staff that will be required.

But then the circular itself lets the cat right out of the bag. "Until a survey has been made it will not be possible for an accurate estimate to be made of the need for public shelters in any area." Exactly.

Until a survey (and a very different one from that suggested) has been made it will not be possible to know how many people there are in any area who will need shelters that are not free, how many people will be evacuated or will evacuate themselves, how public services will affect shelters, whether the day population halves or doubles itself at night time—and a great many other things.

The circular tells local authorities to stop making mere gestures over the problem of A.R.P. It then tells them to carry out about one half of the *last* stage of an A.R.P. scheme. It does not mention the first stage—a general survey of each area. The latter will have to be done, of course, in time and will almost certainly prove that a lot of what local authorities are now asked to do is useless or unwise.

What is more, it is obvious that a not very much greater effort would be needed to complete proper surveys than that which will be expended in the next three months on the partial enquiry now requested. This the Home Office either denies or ignores.

For architects the most depressing aspect of the present display of lopsided energy is the lack of protest from the R.I.B.A.

Since the letters A.R.P. became commonly known, individual architects have stated endlessly that there is only one way to begin the preparation of an efficient A.R.P. scheme for an urban area: to collect accurate data about every aspect of its geography, services, population, type of buildings, income levels and industries. Until that is done and its results presented in a form suitable for constant and easy reference by A.R.P. planners, nothing else can be done *properly*. The results of the survey control fire-fighting, rescue and casualty stations as much as the best type, number and distribution of shelters in each section of the area. Until the data are available no A.R.P. authority can *know* that it has not overlooked some far easier and cheaper way of protecting its section of the population.

To come to this conclusion does not need knowledge confined to architects. Here and there a local authority has not only seen it but acted on it. Sections of the Press and of the House of Commons have constantly asked for it, and there is not a business man in Britain who cannot be converted to supporting it in half an hour. The failure, the lack of responsibility, of the profession lies in its not pressing for it publicly and ceaselessly as the basis of all A.R.P.

It is possible that the Government might not have acted on the profession's advice. That does not excuse its not having been given. By all means let the R.I.B.A. co-operate in preparing a handbook which has never been published, in lectures on structural precautions which are a useful accessory to A.R.P., and in carrying out the present partial survey—but not at the price of silence regarding that central factor of A.R.P. in which architects, and architects only, possess special skill.

Yet this is what has happened. More than anything else A.R.P. is a planning problem. In it planning has so far been almost wholly ignored. From the R.I.B.A. there has come not a word on the subject. All that an illustrious Council, Executive Committee, and several A.R.P. Committees in close touch with the Home Office have done to date is to stake a claim in measuring basements.

The result of this selflessness or modesty is now known to us all. Civil, structural and other engineers, as well as surveyors, are thought by the Home Office to have something to contribute to A.R.P. in peace time. They are all still reserved.

Not so architects. The Home Office and Ministry of Labour (and public opinion which they accurately reflect) cannot think of anything which architects can do before war breaks out. The solution was obvious: architects are no longer reserved.

For this universal impression of its uselessness the profession has only itself to blame.

* The position of those vulnerable areas is shown on the map on the opposite page.

The Architects' Journal
Westminster, S.W.1
Telephones: Whitehall 9212-7
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NOTES & TOPICS

RESERVED FOR WHAT?

TO avoid a repetition of what occurred in 1914 and September, 1938, was believed by architects to be the intention of the National Register. To this end over 10,000 architects have returned cards to Portland Place. The cards have not been used to give any guidance to architects as to what to do in the next three or six months, and apparently it is not intended to give such advice.

*

If this is so, the present suspension of the reservation of architects will lead to injustice and confusion at least equal to that of 1914.

*

Mark this carefully. If war breaks out, architects will once again be reserved, but those who joined Territorial or other services between April 28 last and the outbreak of war *will not be recalled.*

*

Thus, the more able and active members of the profession who want to prepare themselves now for an emergency can (*a*) join a fighting service in which their training will be of little or no use, and from which they will not be recalled in wartime to a job for which they may be better fitted; or (*b*) they can scout around for themselves (without help from the Register) till they find some other job in which their training will be of use.

*

But those *who do nothing at all* are certain of being reserved if war breaks out and of having jobs offered them for which others (who have already joined up) might have been much more fitted. In addition, the Register will have become invalid as regards all those architects who had the initiative to do something before the war actually started. That's the present position.

FRANK LLOYD WRIGHT

After various false starts and cancelled plans, Frank Lloyd Wright is actually in England. By the time these notes are printed the first of the four lectures that he has come here to give will have been delivered. My own contact with him has been limited to the reception given to him on Monday at the American Club in Piccadilly, where he was introduced to the British press.

*

These press affairs are not liable to be very informative, and they must be a bit of an ordeal for their central figure. He must, especially if he is as famous as Wright, be well aware that his architectural guests already know so much about him that cocktail-party conversation will hardly tell them more, while the lay press, in the cocktail-party atmosphere, are sure to garble beyond recognition whatever statements he may make to them.

*

Wright, however, besides looking as leonine as he does in his famous Taliesin portraits, bore the ordeal well. I left him sitting on a sofa beside the President of the Club, answering with confident matter-of-factness the questions about glass walls, air-conditioned buildings and the architecture of the future that the press always puts to great architects on these occasions.

FAREWELL TO IDEAL HOMES

It is an unusual and rather eerie experience to walk, hatted and umbrella in hand, through what might have been the bedroom of the Queen of England. You can do it (as we have all been told) by visiting part of H.M.S. *Repulse* at the Ideal Home Exhibition, now in its last gay week at Earls Court. The decor has been well handled by Gordon Russell, who has made ingenious use of the curious intruding shafts and curving shapes of a modern warship's interior. It must have been a tricky job fitting it all in.

*

The stands, built to a pleasant uniform design, are grouped round a central feature, which this year is a Kaleidakon—a tall tower rising from a pool upon whose sides "colour music" is played with changing lights to the accompaniment of organ music. "The provision," we are told, "of something to look at when listening is so obvious, and the problem of what to look at so great, that some people prefer to shut their eyes."

*

Not so the crowds which gather round this remarkable object when, at stated intervals, it blooms into action.

*

Above and round it stand giant statues (each weighing 4 cwt.) representing the workers of the building industry, headed appropriately by the architect, and a group depicting Motherhood. The best exhibit is the All-Europe house, designed by Elizabeth Denby and possessing a garden by Christopher Tunnard. It is planned to be built on the Swedish system of staggered terraces, and is a really beautifully dimensioned and well-equipped job. Of the other houses—the design for one has been accepted by the Royal Academy—one is Dutch gabled and has a living-room with exposed oak trusses, and the rest are By-Pass Tudor.

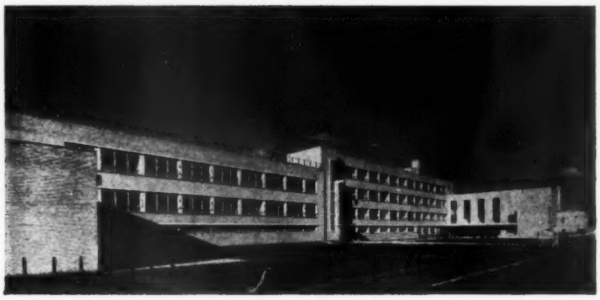
*

One firm showed a doctor's furnished consulting room finely detailed and designed by Brian O'Rorke. This had just been sold complete to a doctor, who discovered afterwards that it would fit within a few inches into his existing room. Or so the salesman said.

*

Upstairs were ranked, ready to advise, the army of modern experts—trained corsetières and knitwear specialists, "advisers on washability," and demonstrators of house-

1



2

3

1: *Chosen by Mrs. Hugh Dalton—Swimming bath at Parliament Hill, Highgate, by H. A. Rowbotham.*

2: *Also chosen by Mrs. Dalton—Burlington School for Girls, by T. S. Tait. (Burnet, Tait & Lorne.)*

3: *Chosen by Lord Esher, R.I.B.A. Building, by G. Grey Wornum.*

hold appliances—every kind of squeezer, cutter, polisher and preserver. Behind them the stands were piled with the indispensables of modern life—inflatable tents and collapsible ladders; teakwood curios of the sea; the "underbed shoe tidy" and tweeds "woven for the country lover," "star-dust for the bath," and "pancake make-ups from Hollywood"; deafness appliances, hand-jellies and arch supports; knitting-needle guards and painted bridge pencils; crazy paving and informal plunge-pools; chimes instead of door bells ("a final touch of refinement") and rugmaking appliances ("my only complaint," writes a satisfied buyer in the manufacturer's leaflet, "is that my wife and self never want to go to bed now").

VIGILANCE COMMITTEE

The Peter Jones building continues its remarkable triumph. Of the four lists of buildings admired by important people that I print this week, three give Peter Jones (and, if this means anything, all of them begin their list with it). It would be interesting to discover why. It is, of course, a first-rate modern building, and thoroughly deserves its success. But why does it apparently occur to everyone as the most obvious building to mention? It seems to have some quality that inspires *confidence*. It is a frankly modern building, but occurs very frequently in lists whose authors seem to feel that otherwise they must play safe and choose buildings that though up-to-date, are still in some way academic: buildings like London University and Battersea Power Station.

*

It also occurs in most of the confidently "modern" lists. The following lists include some of either kind.

*

1, R.I.B.A. President Goodhart-Rendel demanded a vigilance committee to vet designs for important buildings. 2, Astragal said committee consisting of whom? Architects ineligible; live-wire laymen, such as Georgian Group? 3, Georgian Group chairman Lord Derwent said difficult to vet modern buildings until some sort of standard established. He would accept for standard: B.B.C., Imperial Airways, Scarborough Hospital, Radio City, Battersea Power Station, Underground Building, R.A.F. aerodromes. 4, Astragal, puzzled, said: would this standard satisfy other eminent laymen. Decided to find out. Invited readers to nominate for vigilance committee laymen in whom they would have confidence. 5, readers sent in names of 61 men, 2 women. 6, *A.J.* Editor, at Astragal's request, asked above 63 for six recent buildings they approved of.

*

First of all, any enquiry of this sort invariably re
... *haut monde.* Re
...rrespondence

Mrs. Hugh Dalton (chairman of the L.C.C. Parks Committee, and wife of Labour's foreign affairs expert) writes:—

"I have examined six types of building and selected an excellent example of each type. Every building on the list has in my view these merits: good proportion, colour, texture and materials; a design that will 'last,' and will not look out-moded a few years hence; satisfactory lay-out on site; efficient interior planning, detailing and equipment."

She chooses:—

Peter Jones Store (W. Crabtree and others), the circle of shops at Southgate Station, London (Adams, Holden and Pearson), "one of the few good examples of the almost lost art of street design"; Burlington School for Girls, Hammersmith (T. S. Tait); the Swimming-bath at Parliament Hill Lido, Highgate (H. A. Rowbotham); Flats at Loughborough Park, Brixton (E. W. Armstrong); and a group of houses in Frognal, Hampstead (Ernst Freud).

*

Henry Moore (distinguished sculptor) gives:—

Peter Jones Store; Highpoint flats (Tecton); the Giraffe House at Whipsnade (Tecton); Arnos Grove Underground Station (S. A. Heaps and Adams, Holden and Pearson); house in Church Street, Chelsea (Gropius and Fry); the Village College at Impington, Cambridgeshire (Gropius and Fry); and Serge Chermayeff's house in Sussex.

*

Lord Esher gives:—

London University (Adams, Holden and Pearson); the R.I.B.A. Building (G. Grey Wornum); the Guinness Brewery at Park Royal (Sir Alexander Gibb and Sir G. G. Scott); Maxwell Fry's Flats in Ladbroke Grove—not Kensal House: the more recent, middle-class flats; Finsbury Health Centre (Tecton); and Highpoint Flats, Highgate.

*

Osbert Lancaster (author of "Pelvis Bay" and "Pillar to Post") gives:—

Peter Jones Store; the Ministry of Pensions building at Acton (Sir G. Grey West, of H.M.O.W.); Arnos Grove Underground Station; Crawford's Building in Holborn (Frederick Etchells); Gunter's shop-front in Curzon Street (W. Wylton Todd); and the new blocks at Sandhurst (War Office Architects).

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

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Walls, roof and area—these three are the fundamental, indeed the only, principles of shelter design ..	723
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"It must be bewildering for Frank Lloyd Wright to look round European architecture of the last two or three decades on this visit of his . . . and to see, wherever he goes, traces of his own work of thirty and forty years ago . . ."	734

BUILDING INDUSTRIES NATIONAL COUNCIL

The seventh annual meeting of the Building Industries National Council was held at the R.I.B.A. on Friday, April 28, the chair being taken by Mr. John M. Theobald, PP.S.I., President.

At the election of officers, Mr. H. J. C. Johnston was unanimously elected president for the ensuing year.

Mr. George Hicks, M.P., was unanimously elected senior vice-president, and Mr. R. Coppock, L.C.C., Mr. G. H. Parker, Lt.-Col. C. W. D. Rowe, M.B.E., and Mr. Percy Thomas, O.B.E., PP.R.I.B.A., were unanimously elected vice-presidents.

I.A.A.S.

At the annual meeting of the Council of the Incorporated Association of Architects and Surveyors, Sir Edwin Cooper, R.A., asked that he be released from the Presidency on the expiration of his term of office owing mainly to other important engagements. The Council regretfully accepted this request, and Mr. Joseph Eric Swindlehurst, M.A., was elected President in succession to Sir Edwin Cooper.

STRAND TRAFFIC PLAN

On Tuesday last the Highways Committee of the L.C.C. submitted to the Council a scheme for the construction of a large traffic roundabout in the Strand on the Waterloo Bridge Approach.

Recommending that legislative authority should be sought by means of a late Bill in the 1938–39 session of Parliament, the Highways Committee says it is expected that Waterloo Bridge will be opened for traffic in June, 1940.

The central island of the roundabout will be situated on parts of the site of the Lyceum Theatre and Inveresk House and on the intersection of the Strand and Wellington Street. This involves a slight diversion of the Strand towards the south in order to make a satisfactory junction with the southern part of Wellington Street. From the Strand (west) a new street will be provided in a northerly direction crossing the Lyceum Theatre site towards the intersection of Wellington Street and Exeter Street and thence a connection will be provided across the site of Inveresk House to Aldwych near the end of Catherine Street. The direction of traffic at the western end of Aldwych will be reversed, thus forming the completion of the gyratory system by a connection to the diversion of the Strand previously mentioned. This will enable traffic from the Strand (west) and Wellington Street (north) to reach Waterloo Bridge without making the present lengthy detour along Aldwych and the Strand.

The scheme necessitates the closing of the northern end of Savoy Street, which is at present a one-way thoroughfare with entry from the Strand, and as a result there would be no direct communication in the direction Strand–Victoria Embankment between Surrey Street and Craven Street.

The estimated cost is as follows :

	£
Property (gross)	2,200,000
Works	46,000
Estimated gross cost	2,246,000
Estimated value of surplus land ..	317,000
Estimated net cost	1,929,000

THE ARCHITECTS' DIARY

Thursday, May 4

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Camps Exhibition. Until May 6.* 10 *a.m. to 5 p.m.*

IDEAL HOME EXHIBITION. *At Earls Court. Until May 6.*

SULGRAVE MANOR BOARD'S WATSON LECTURES. *At the R.I.B.A., 66 Portland Place, W.1. Second of four lectures on "Organic Architecture: the Idea, the Movement, the Scene at Present and the Future," by Frank Lloyd Wright.* 8.30 *p.m. Other lectures: May 9 and 11, at* 8.30 *p.m.*

BUILDING CENTRE, 158 *New Bond Street, W.1. Novelty Exhibition; also, exhibition of photographs and drawings of the work of Frank Lloyd Wright. Until May 20.*

SCHOOL OF ARTS AND CRAFTS, *Birmingham. At the Museum and Art Gallery. Exhibition of Students' Work. Until May 20.*

Friday, May 5

ENGLISH SPEAKING UNION, *Dartmouth House, 37 Charles Street, S.W.1. Discussion on "The Architectural Beauties of London are in Greater Danger from Builders than Bombers."* 8.30 *p.m.*

Saturday, May 6

A.A.S.T.A. *Visit to Flats at No. 10 Palace Gate, Kensington. Meet outside flats at* 2.30 *p.m.*

Monday, May 8

R.I.B.A., 66 *Portland Place, W.1. Annual General Meeting.* 8 *p.m.*

CHARTERED SURVEYORS' INSTITUTION, *Gt. George Street, S.W.1. "Rights of Way." By W. R. Hornby Steer.* 6.30 *p.m.*

Tuesday, May 9

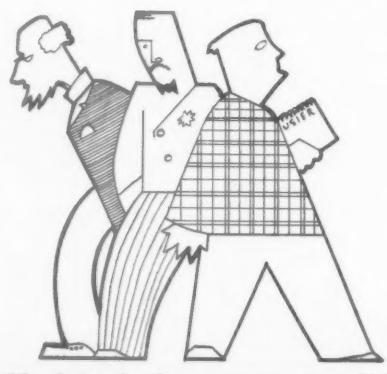
INSTITUTION OF CIVIL ENGINEERS, *Gt. George Street, Westminster, S.W.1. Annual General Meeting.* 6 *p.m.*

ILLUMINATING ENGINEERING SOCIETY. *At the Institution of Mechanical Engineers, Storey's Gate, S.W.1. Annual General Meeting. Presidential Address by Percy Good.* 7 *p.m.*

Wednesday, May 10

BUILDING CENTRE, 158 *New Bond Street, W.1. "Building Materials and Equipment: Drainage, Sewer, Cesspool and Septic Tanks, also Downpipes generally." By W. Topp.* 5.30 *p.m.*

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Opening of the International Federation for Housing and Town Planning Exhibition.* 5.30 p.m.



The design for the programme cover which is being used for Mr. Hope Bagenal's new play "The Three Architects," see page 724.

A.A.S.T.A. AND R.I.B.A.

The following notice has been issued by the Association of Architects, Surveyors and Technical Assistants :

Considerable confusion exists in many minds regarding the present relations between these two bodies. It is sometimes felt that there is undesirable competition between them. To dispel this misunderstanding we want to say that the A.A.S.T.A. recognizes that the R.I.B.A. is the leading body of the profession, and that it has the most power, the widest organization, and the greatest prestige. These qualities have been built up during a century of existence, and—apart from a possible future extension of the scope of the Registration Council, which is at present dominated by the R.I.B.A.—there is no possibility, indeed no desirability, of any other organization rivalling them.

But the A.A.S.T.A. believes that at present the R.I.B.A. is not using its great powers as it might, and that the whole profession suffers in consequence.

The leaders of the Institute have been almost unaffected by the great changes in architectural practice since the war, with the result that the public has never been made aware of the transformation in living conditions which modern building technique could effect. The interests of salaried members, both principals and assistants, are continually overlooked because the Institute has for years been dominated by the representatives of the private practising minority.

These faults the A.A.S.T.A. is working to correct, not only by its independent professional activities, but by influencing the policy of the R.I.B.A. in a normal, democratic way. On the R.I.B.A. Council, the Air Raid Precautions Committee, the Junior Members' Committee, the Salaried Members' Committee, the Town Planning, Housing, and Slum Clearance Committee, and the Board of Architectural Education, our members are working with this end in view.

We do not aim, and shall never aim, at the disruption of the R.I.B.A. On the contrary, an important part of the work of the A.A.S.T.A. is to strengthen and unify the Institute by making it fully responsive to the needs of all members of the profession and of the public which they serve.

By joining the A.A.S.T.A. you are not helping to set up a rival body to the R.I.B.A. You are helping, rather, to develop it, to make it more representative of all its members, and to bring it into touch with the problems of today.

A.A.S.T.A. WHITSUN WEEK-END IN BELGIUM

The latest date for bookings for this tour is May 12. For the Whitsun week-end Mr. M. Frey, a Belgian architect residing in England, has made arrangements with other architects in Belgium for excursions and visits. The group will leave London on Friday night, May 26, and will return Tuesday morning, May 30. Headquarters will be in Brussels, and from there a trip is planned to Liège. Bruges and Ghent are on the list for Monday. The cost, inclusive of fares, hotel, and most meals is £3 19s. 6d. No passports are required. Full particulars are available from the A.A.S.T.A. office, 113 High Holborn, W.C.1.

THE BUILDING CENTRE

A novelty exhibition was opened at the Building Centre on Tuesday last. It will remain open until May 20 between the hours of 10 p.m. and 6 p.m. (Saturdays : 10 p.m. to 5 p.m.).

The exhibition, which is the second of its kind organized by the Building Centre, is for the purpose of bringing to the notice of architects, builders, and those engaged in the industry, recent developments in the manufacture of equipment and materials.

The committee which has been responsible for organizing the exhibition has included certain materials and equipment which, although not of so recent production, are perhaps not well known in the industry.

An exhibition of photographs and drawings of buildings designed by Mr. Frank Lloyd Wright

Vigilance Committee

SCORE BOARD

SOME months ago Mr. Goodhart-Rendel regretted the absence of a Vigilance Committee of laymen who could criticize designs for prominent buildings before they were built.

After an exchange of views between Astragal and Lord Derwent about whether the members of the Georgian Group had the qualifications needed for such a Vigilance Committee, readers of the JOURNAL *were asked to name well-known laymen in whose taste on architecture they would have confidence. Sixty-three people were nominated and were asked, in turn, to list six recent British buildings which they considered of merit. During the last weeks Astragal has quoted a number of the lists sent in.*

Below is shown the present state of the voting as regards the architects of those individual buildings which have received more than one vote :

ARCHITECTS	VOTES
Crabtree and Slater and Moberly ; Prof. C. H. Reilly, consultant ...	18
Sir Giles Gilbert Scott, Dr. S. L. Pierce, Mr. J. T. Halliday and Messrs. C. S. Allott and Son ...	12
Adams, Holden and Pearson ...	11
Mendelsohn and Chermayeff ...	10
Tecton	8
Tecton ; Serge Chermayeff ; Charles Holden	6
G. Grey Wornum	5
Sir John Burnet, Tait and Lorne ; Tecton ; Stanley Hall and Easton and Robertson	4
Tecton ; Denys Lasdun ; Sir Owen Williams ; Scott, Chesterton and Shepherd	3
Helmle and Corbett ; Sir Edwin Lutyens ; Tecton ; Sir Owen Williams ; Serge Chermayeff ; E. Maxwell Fry, Robert Atkinson, C. H. James, G. Grey Wornum, and Miss Elizabeth Denby ; Sir John Burnet, Tait and Lorne ; Messrs. Joseph ; Joseph Emberton ; Gropius and Fry ; Frederick Etchells; E. B. Musman	2

NEW FEATURE IN PRICES

THE JOURNAL *will introduce on May 25 a new development in its PRICES, and one which has not before been attempted in architectural and building journals.*

This innovation affects the " Current Prices for Measured Work " and consists in giving prices for " Materials Only " as well as combined prices for materials and labour.

As in previous issues, prices will be given for work executed complete, including overhead charges and profit (but printed in heavier type), and the new prices (shown in italicised type) will give cost of materials including a proportion of the overhead charges and profit. These " Materials Only " prices are based on the Current Market Prices for Materials (for which new quotations are obtained each month and the prices revised accordingly) with an addition of 10 per cent.

The JOURNAL *believes that architects as well as builders and quantity surveyors will appreciate the importance of the new development. As two prices are given, one for the Labour and Materials and the other for Materials only, the amount allowed for Labour only (including a proportion of overhead charges and profit) can easily be calculated for any item, and the estimator is thus in a position to judge to what extent the measured rate prices given in the* JOURNAL *should be varied to meet the conditions affecting a particular job.*

was opened at the Centre yesterday. It will run until May 20, between the hours mentioned in the first note.

NEWS IN BRIEF

● St. Martin's School of Art and the Technical Institute for the Distributive Trades, Charing Cross Road, W.C., were opened by Mr. Herbert Morrison, M.P., yesterday. Cost of construction of the building was approximately £80,000. It was designed and erected under the direction of Mr. E. P. Wheeler, F.R.I.B.A., former architect to the Council, the assistant architect in charge being Mr. H. F. T. Cooper.

● An exhibition organized by the International Federation for Housing and Town Planning is to be opened by Senator Vinck at the Housing Centre, 13 Suffolk Street, on Wednesday next, May 10.

● The late Mr. Oliver Essex, senior partner in the firm of Essex and Goodman, architects and surveyors, of Birmingham, left £177,174 (net personalty, £172,247).

● Mr. Henry Tanner, F.R.I.B.A., has been elected to the Court of Common Council as a representative of the Ward of Langbourn in succession to the late Mr. H. W. Buckingham.

● Mr. John C. Richardson, A.R.I.B.A., of the City Architect's office, Newcastle-on-Tyne, has been appointed senior assistant in the County Architect's office, Carlisle.

● The Surrey County Council is to proceed shortly with the first section of the scheme for extensions to the Kingston County Hospital. The scheme is estimated to cost £600,000.

● In Parliament last week Mr. Noel Baker asked the Lord Privy Seal whether the conference on air-raid shelters took evidence from the Finsbury Borough Council or its architects. Sir John Anderson said that the conference took evidence from the engineer and a representative of the architects on whose recommendations the Finsbury Borough Council based its shelter proposals.

● The Bolton Corporation Housing Committee has appointed Mr. Thomas P. Rae, L.R.I.B.A., Housing Manager to the Walsall Corporation, to be Housing Director for Bolton at a salary of £700 a year in succession to Mr. V. M. Hughes, who has been appointed Housing Director to the Sheffield Corporation.

● The following have been elected Associate Members of the Royal Society of British Sculptors : Mr. Geoffrey Hampton Deeley, Mr. Andrew Dods, Mr. Wilfred Edgar Dudeney, Miss Charlotte Ellen Gibson and Mr. Herbert William Palliser.

● The Hammersmith Borough Council is to build a new health centre on Westway, Shepherd's Bush, W., and will buy the land for the site from the London County Council at a cost of £2,500.

● The death took place last week of Mr. Walter Harry Smith, architect, surveyor and engineer, of Sheffield. He was fifty-four years of age.

LETTERS

DAVIS AND BELFIELD

A. BERNARD S. FRYER, L.R.I.B.A.

D. A. H. RITCHIE

Prices

SIR,—In the JOURNAL for April 27, Mr. W. G. Lely calls attention to the misuse of the word " Teak," in the Prices Section.

The timber merchants—one of the most efficient firms in the country—from whom we obtain our monthly quotations showing price changes always refer to African Teak, though it is true that the correct name of this timber is Iroko, and we had supposed that most people realised that this timber was not a true Teak.

As the objections of the Burma Teak Shippers are quite understandable we will in future use the name Iroko with " African Teak " in brackets.

DAVIS AND BELFIELD

London

Licentiates v. Associates

SIR,—In reply to the correspondent in your issue for April 20, I would, first

of all, like again to draw his attention to my letter where, in drawing my comparison, I definitely referred to a *School-trained* Associate of the age of 21, and a Licentiate Member of the age of 40.

I was interested to note that he considers there is *no* virtue in holding the Licentiate diploma. By this statement one would come to the conclusion that the R.I.B.A. are extorting money from Licentiates by false pretences.

It would seem to me that in this instance it is the voice of inexperience speaking. He does admit that there are amongst the poor "unqualified" Licentiates a few good designers. If so, why should these men be debarred?

It cannot be denied by anyone in the profession that to dispense with this friction and ill-feeling there is only one method, i.e., Authorities should stipulate that "Applicants must be Members of the R.I.B.A." Result—fair, open competition, and may the best man win, be he Licentiate, Associate or Fellow.

A. BERNARD S. FRYER

Lancashire.

Progress

SIR,—To everyone with a sense of right and a desire for social progress, it must be with infinite regret and sickening dismay that they have watched for the last few years, architects, engineers and technicians diverted from their proper tasks. Diverted not for the advancement of human happiness, but to become the tools and agents of imperialist and capitalist governments, and made to concentrate their energies and skill on such futilities as A.R.P. and National Defence, which are, after all, merely the groundwork of aggressive imperialism.

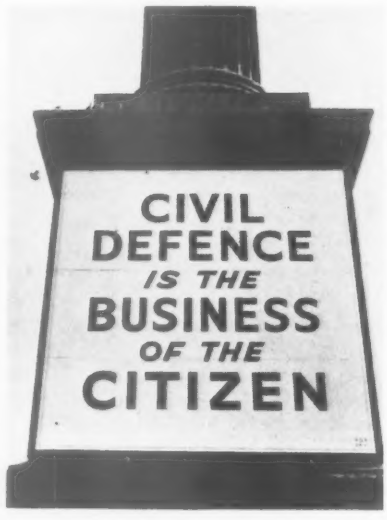
In this age, when that technical knowledge which only architects and engineers possess is so desperately needed to help to abolish those verminous slums, those mean and stinking streets and those ill-lit schools, it is conscripted for works of destruction.

Think of the gross waste of youthful minds and intellects condemned to design munition works, poison-gas factories and bomber sheds. Think of the appalling squandering of talent, time, energy, genius and brain-power; the years of wasted study of beauty and the pleasant wanderings in the field of aesthetics. And worst of all, think of the knowledge gained for the advancement of architecture and civilization now concentrated over details for its destruction.

Even now, although the catastrophe of war seems so near, it is not yet too late to act. Let us therefore not dissipate our energies on futile works of "defence" but rather work together in all countries for the greater happiness of mankind.

D. A. H. RITCHIE

Barnes, S.W.



By B. LUBETKIN

TWO weeks ago the Government asked local authorities to give A.R.P. schemes priority over all other work, and in the near future very many authorities will have to decide quickly what type of shelters to use and how to distribute them.

The JOURNAL *believes that these decisions for any urban district must be preceded by a survey of day and night population, position of services, open spaces and type and density of buildings; and that this data must be related to the probable danger to which area is exposed before any one type of shelter is put in hand. Because of this, we consider the simplification of A.R.P. into "deep shelters" v. "light shelters" to be dangerous.*

In the article below Mr. Lubetkin, of Messrs. Tecton (the firm which prepared the Finsbury scheme after a most exact survey of conditions within that particular area), gives his reasons for holding that the degree of protection *to be provided is the real A.R.P. problem and must be considered separately for each area. When this* degree *is decided,* cost *and* ease of access *determine the form in which it should be provided.*

In his next article Mr. Lubetkin will give his views on Basement Shelters.

NOBODY will disagree with the inscription above, although many people may miss the implied warning that if we do not attend to this business ourselves we cannot rely on anybody else to do it for us. Every citizen must decide what, as an individual, he is best qualified to do. For us architects, this is not a difficult decision, for is it not obvious that the architectural profession has a decisive part to play in the structural side of A.R.P.?

But, surprisingly enough, the profession, as a whole, has shown no initiative. The impression, fostered by official spokesmen, that structural protection is something with which only the high priests of technique, the almost mythical "experts," are qualified to deal is gaining popularity. And the architects remain dumb, not realising apparently, that the problems of structural A.R.P. are to all intents and purposes the same as those with which they have to deal in their everyday work.

How would we regard a statement by a layman, however highly placed, to the effect that the design of a completely waterproof building is a problem of the utmost difficulty and complexity, with which only a few highly-trained experts are capable of dealing? Or a suggestion that to design buildings capable of withstanding wind-pressure requires some special skill and that we ought to stand aside and allow others—the learned specialists—to deal with this aspect of our work for us?

Applied to the old technique of combating the forces of nature, such suggestions appear ridiculous; yet when they are made in connection with the newer problem of *building to withstand the man-made forces of bombardment*, we take them as a matter of course.

In reality, however, there is no essential difference between designing a normal building and designing a bomb-proof shelter, provided that we have at our disposal as many facts about the effects of explosives as we have about the forces of nature. Although the British Government has not yet seen fit to publish full data as to the effects of bombs, enough information is available from foreign sources to make the general principles of structural A.R.P. quite clear. A superficial examination of these data will suffice to show that the problem is, in reality, a very straightforward one, and that the design of bombproof shelters does not require any specialised technical training beyond that which all architects possess.

The fact that the Government has not yet made public information on the subject cannot but slow down the development of a satisfactory national shelter policy. It must entail considerable waste in the actual construction of shelters, for in the absence of very exact knowledge of the forces exerted by bomb explosions, designers have no choice but to allow extravagantly large safety factors. Indeed, this absence of knowledge is so great an obstacle that no serious effort can be expected of the profession until full data are made available. But the lack of such data need not prevent us from laying down the general principles of structural protection; these principles will be seen to be extraordinarily simple.

All bombs, of whatever type, rely for their effect on two functions—first the release, immediately on exploding, of a wave of high air pressure (blast) caused by the expansion of the great volume of gas which the explosion produces, and secondly

the fragmentation of the metal casing (splinters). The blast, which is immediately followed by a negative suction wave, is capable of attaining an extremely high pressure, and may have a very serious destructive effect on buildings, not to mention unprotected people. The splinters may attain an initial velocity many times greater than that of a rifle bullet. The exact radius of blast and splinter effectiveness for each different weight of bomb can only be authoritatively stated by a Government publication, but we do know that this radius is proportionate to the weight of the bomb, and that death can only be caused by these two effects,* directly or consequentially.

Bearing this in mind, it will be seen that the classification of shelters in two categories—" bombproof " and " blast and splinter proof " — which has often been used recently by Government spokesmen, is a most misleading one.

Since the only direct effects of bomb explosions are blast and splinters, any shelter which is really *proof* against these will, in effect, be bombproof. Yet the phrase " blast and splinter proof " is now being used to describe shelters which are very far from giving bombproof protection. Sir John Anderson referred in the House of Commons not long ago, to " the Government's blast and splinter proof policy," and this policy appears to include " Anderson " shelters, strutted basements, and other types of definitely non-bombproof protection. Such a designation of these shelters is most inaccurate ; they are, in fact, proof only against the blast and splinter effects of bombs exploding at a great distance. It would perhaps be more correct to call these shelters " debris proof," since it appears that their primary purpose is to protect the occupants from falling masonry and flying debris from the surrounding buildings. For this purpose they may, with certain reservations, be considered adequate.

Having established that the main danger from bombs is that caused by their splinter and blast effects, we may now examine the fundamental characteristics of shelters designed to resist these.

A shelter consists, in essence, of an area surrounded by walls and covered by a roof. It may be entirely overground, sunk into the ground, or placed at a certain depth below the surface ; its position and shape, however, are immaterial, since it can always be reduced to these components.

The stronger the walls, the nearer to them bombs may explode without causing any damage by their blast and splinter effects. For instance, if we imagine a pill-box standing on the ground, with 4½-in. brick walls, a bomb exploding at a distance as great as 100 feet might well demolish the walls and kill the occupants by its blast and splinters. If the walls are of 12-in. reinforced concrete, only bombs exploding within, say, 50 feet would have this effect, and so on. Finally, if the walls are, say of 5-ft. thick reinforced concrete, no bombs exploding outside would affect the occupants (the same of course, would apply if the pill-box were buried in the ground, since blast also takes the form of shock waves which travel through the earth). Here, then, is the first principle of bombproof protection ; *the stronger the walls, the smaller the danger area round the shelter within which bomb explosions may be fatal, and therefore the safer the shelter*. The second principle concerns the strength of the roof.

It is clear that however strong the side walls of the shelter may be, there will still be a certain danger of bombs penetrating the roof, and killing the occupants. Against this danger the roof can of course be strengthened in exactly the same way as the walls, so as to render the shelter completely bombproof. It is important to note that, if the shelter is very small the strength of the roof is relatively unimportant, since the possibility of a bomb actually striking it is remote ; in fact, *the importance of the roof increases with the size of the shelter*. THESE THREE THEN ARE THE FUNDAMENTAL, AND INDEED THE ONLY PRINCIPLES OF SHELTER DESIGN —WALLS, ROOF AND AREA.

In small shelters, the most important factor is the walls, the stronger the walls the greater the safety—the roof plays a comparatively unimportant role. In large shelters, it becomes increasingly important to provide, in addition, a strongly-protected roof. By varying the thickness of the walls and roof, and the area, it is possible to give any degree of safety, from 0 per cent. to 100 per cent.† As far as structural protection is concerned, there is simply nothing else to learn. It will be appreciated, then, that all the references which have recently been made in high quarters to the necessity for extraordinary qualifications in those who deal with problems of A.R.P. are, to say the least, exaggerated. Indeed, it is difficult to understand what object has been served by the creation of such an impression unless it is intended to provide an excuse for inactivity. It is also puzzling, in view of the extreme simplicity of the problem, that the architectural profession has as yet played so small a part.

Perhaps one of the main reasons is the fact that almost all public discussion has centred, not on the primary aspect of *protection*, but rather on what is really a secondary aspect, the question of *accommodation*. Both in professional and Government circles the problem still appears to be regarded as consisting of a choice between different architectural types of shelter—" Anderson " shelters or trenches, basements or surface shelters, large bombproof shelters or tunnels, round or square shelters.

If the problem is approached from this point of view, regardless of its most important aspect, *protection*, it is doubtful whether a solution will ever be reached. One might just as well attempt to solve our national housing problem by a protracted discussion of the respective merits of the *Styles*—Georgian versus Tudor, Tudor versus Modern—there is simply no way out of that particular blind alley. In the same way, in A.R.P. if the whole matter is reduced to a choice between differently shaped shelters, the thing becomes a farce. It is up to us architects to bring home to the authorities the fact that we are quite capable of designing shelters in any form they may choose, to conform to any standard of safety they may desire, simply by varying the strength of the walls and roof and the area ; after all, how can we expect the laymen who are in charge of the country's A.R.P. to understand this simple fact if we do not explain it to them?

But if we are to have a comprehensive policy for A.R.P., and if the architectural profession is to play, within that policy, the role which it is fitted to play, let us first have the whole country divided into zones of greater or lesser relative danger, and establish a minimum standard of safety for each zone. With this minimum standard every shelter in the zone would have to comply.‡

It could then be left to the architects to select the forms of shelter which would be best suited to each district, both from the point of view of local conditions and from that of economy. That this is perfectly possible will be understood if it is realised that, in the light of the simple fundamental principles of shelter design, any type of shelter can be made just as safe (or as unsafe) as may be thought desirable. For example, if an " Anderson " steel shelter is surrounded on all sides with 5 ft. of concrete, it will be rendered, to all intents and purposes, bombproof ; whether this expedient would be economically sound we may leave out of account for the moment. Equally, a trench could be rendered considerably safer than is usual if it were provided with stout reinforced concrete side walls. The same applies to basements, although the various outside circumstances which are bound to arise where an adaptation of an existing building has to be undertaken combine to make this a very unsatisfactory form of shelter. Where a high degree of safety is required, large bombproof shelters have been shown to provide the most economic means of securing it, provided of course that the district is sufficiently densely populated to permit centralisation. Indeed, in crowded London areas, the density of buildings is such that there is simply not enough space for any other type and nothing like the same degree of safety can be provided except at enormous expense.

* It has often been stated that another possible cause of death is concussion. This will be dealt with later, but it may be pointed out here that there is ample experience, both from Spain and from the last war, to show that this cannot, under normal conditions, be considered as a serious danger.

† This degree of safety can be measured and expressed as a danger coefficient, see " Planned A.R.P.," Tecton.

‡ Mr. Lubetkin's article was written before the Government published its list of vulnerable areas last week.

THE FINSBURY SCHEME

The Finsbury Borough Council at a meeting specially convened last week to consider the criticisms of the Government experts upon the Council's scheme for the provision of 15 underground air-raid shelters distributed throughout the borough, unanimously resolved to submit a further scheme to the Lord Privy Seal amended solely in respect of means of access and accessibility of the shelters.

Alderman H. Riley, the Chairman of the Special (Air Raid Precautions) Committee, in moving the resolution, dealt with the observations of the Council's architects upon these criticisms.

In addition, Alderman H. Riley moved and it was unanimously resolved :

(*a*) That, in order to impress upon H.M. Government the urgent desire on the part of the residents of Finsbury for bomb-proof shelters, a plebiscite of the electors of the Borough be immediately undertaken, and reported to the Government.

(*b*) That, in order to assure H.M. Government of the public concern at the lack of

adequate protection and the demand for bomb-proof shelters, a petition be immediately instituted and presented to H.M. Government.

(*c*) That, in view of the considerable number of communications received from business interests in the borough expressing concern at the inadequate proposals made by the Government for protection of workers employed in the borough, and requesting the Council to press forward with its shelter scheme, the views of all business interests in the borough be ascertained.

The Council also decided to apply to the Ministry of Health for sanction to the borrowing of the sum of £86,399, being the estimated cost of construction of one of the underground air raid shelters forming part of the original scheme.

R.I.B.A.

COUNCIL MEETING

Notes from the Minutes of the Council:

British Architects' Conference, 1940.—On the recommendation of the Allied Societies' Conference the Council accepted the invitation of the South-Eastern Society of Architects to hold the British Architects' Conference in the area of the South-Eastern Society in 1940.

Appointments:

R.I.B.A. Architecture Bronze Medals: Liverpool Architectural Society: Appointment of R.I.B.A. Representative on Jury.—Mr. W. A. Johnson (F.), President of the Manchester Society of Architects.

West Yorkshire Society of Architects: Appointment of R.I.B.A. Representative on Jury.—Mr. R. Norman Mackellar (F.).

Modern Roads Movement.—Mr. W. Harding Thompson (F.).

Special Committee on Refugees.—Mr. R. L. Townsend (A.) to represent the A.A.S.T.A.

Junior Members' Committee.—Mr. R. L. Davies (Student) and Mr. E. C. Scherrer (A.), in place of Mr. D. R. Harper (A.) and Mr. F. L. Sturrock (A.), who have resigned from the Committee as they have left to take up posts in South Africa.

Sub-Committee on Architectural Education of the Junior Members Committee.—Mr. R. L. Davies (Student) and Mr. R. F. Jordan (F.).

Slum Clearance, Replanning of Blighted Areas and Housing Standards Sub-Committee of the Town Planning, Housing and Slum Clearance Committee.—Mr. S. C. Ramsey (F.).

Preservation of Historic or Architecturally Interesting Buildings, Villages, etc., Sub-Committee of the Town Planning, Housing and Slum Clearance Committee.—Miss J. M. Albery (A.).

The Fellowship.—The Council, by a unanimous vote, elected the following architects to the Fellowship under the powers defined in the Supplemental Charter of 1925: Messrs. W. H. Cowlishaw and H. A. N. Medd.

Reinstatements.—The following ex-members were reinstated: As Associates, Messrs. Robert Edwin Hastewell and Leslie Hamilton Kearne.

Resignation.—The following resignation was accepted with regret: Mr. Henry Ralph Crabb, Fellow.

Transfer to the Retired Members Class.—The following members were transferred to the Retired Members Class: As Retired Fellows: Messrs. Thomas William Moore, Ernest Walter Pearson, Ernest James Pomeroy, and John Lewis Redfern.

"*THE THREE ARCHITECTS*"

One can foresee furious arguments over Mr. Bagenal's controversial new play, "The Three Architects." The clash between modernism and classicism takes place over the bewildered head of the second architect, and makes interesting and amusing study. Everyone will remember the R.I.B.A. Dramatic Society's production of this author's last play, "You English"; it is to produce "The Three Architects" at 66 Portland Place at 8.15 on Saturday, May 20, and Monday, May 22. The tickets for this essay in Bagenalian philosophy can be obtained (price 4s. 6d., 3s. 6d. and 1s. 6d.) from the R.I.B.A., or from Miss E. Caldicott, c/o the Architectural Association, 34 Bedford Square, W.C.1.

New County Offices and Council Chambers, Dolgelley. By Sir Giles Gilbert Scott, R.A., in collaboration with Norman L. Jones, County Architect for Merioneth. Perspective by R. Myerscough-Walker. (No. 1090)

ARCHITECTURE AT THE R.A. EXHIBITION

REVIEWED BY R. MYERSCOUGH-WALKER

"I HAVE endeavoured to stimulate the ambition of Artists to tread in this great path of Glory, and, as well as I can, have pointed out the track which leads to it, and have at the same time told them the price at which it may be obtained. It is an ancient saying, that labour is the price which the Gods have set upon everything valuable."

With such words did the first President of the Academy address his students, and the catalogue makers have this year deemed it appropriate to preface their compilation with a quotation of these remarks.

Such a set of words are not easy to come by either in terms of literary ability or artistic experience. They are words which, collectively, reverberate and produce a noise like the music which ennobles, rather than disturbs one and—in a similar way—the general feeling of nobility which the paragraph encourages avoids those questions which disturb one.

Here is the Royal Academy which houses 1,315 potential works of art. The exhibition list begins with Miss Abrahams and ends with Miss Zinkeison. The subject list starts off with "Thunder Locally" and concludes with "Deux Lévriers." To me, over and above all the shades of technical ability, spiritual experience, professional and enthusiastic approaches, is the one stark fact that every person, artist or Philistine, sees Reality in a different light. All, then, that a critic may do is to interpret these different forms as generally as possible. For the rest he must resort to chatter—even though that chatter range from the brilliant to the dull, from the profound to the banal.

Architecture, it is true, is less personal than painting. Brockhurst, we know, sees Reality through young women as flawless in their appearance as they are in their disappearance—yet it would be difficult to say that Sir Reginald Blomfield saw Reality through a Corinthian column. It would be interesting to probe the aesthetics of architects and their work to determine how they related to things real, but I doubt the wisdom—even if it were made possible by the Editor of this JOURNAL—of attempting such an analysis.

Of the 145 works exhibited, which (to continue the A to Z method of description) begin with some Flats at Southgate by Oliver Hall and end, appropriately, with a perspective view of Cottages for Veterans of the Great War by Yates, Cook and Darbyshire, there exists such a range of ambitious and architectural aspirations as to suggest only one form of criticism. That

of conducting an audience round the room and, by means of a pointer and seven days' freedom from outside activities, analysing what it must have been that led to this or that design taking shape.

What I have done is to dictate my opinions within the forbidding walls of Burlington House and append the transcription on to these notes. I am left, therefore, with merely a few generalizations to make by way of introduction.

In the first place, no outside exhibitor or even non-exhibitor can suggest that Academicians have crowded either the wall space or the positions on the "line." Sir Edwin Lutyens exhibits one drawing; so does C. H. James; so do Sir Herbert Baker and Vincent Harris, and they are, of course, entitled to submit six. Whether this altruism is created by that vast, all-embracing alibi—the political situation, or a sudden generosity on the part of the members, is not for me to say. You know the answer as well as I do myself.

There are fewer works in the room than hitherto, and I do know that the submissions were not nearly so great (in proportion to those accepted) as those in the painting section. Very few works by the advanced school were submitted at all, and this is a pity because they would have been well received. That much I know from a member of the Selection Committee, which included Sir Edwin Cooper, Curtis Green and C. H. James.

All the models, with the exception of one, were accepted, and this would appear to have struck at the root of that settee* which adorned the centre of the room and attracted quite 90 per cent. of the visitors to the Architectural Room—for the site of that object is now covered with the much-discussed, and I understand recently relegated, model of the George V Memorial by Scott and Reid Dick. Here the review begins:

The lack of a dominant in the room makes it difficult to pin on to a precise starting point. The R.A.'s, as I have said, display only a slender proportion on the whole, and the outstanding work, even if only because of its controversial nature, is Sir Giles Gilbert Scott's Memorial of King George V in Westminster. The general architectural opinion is that an interior would have been a more proper surrounding to the design than an open square. Suggestions have been made, too, that the idiom is not unlike that adopted for the wooden reredos in Gothic work (1159).

A design by the same architect of Dolgelley Town Hall (1090) is a much sounder, more representative example of Scott's work, and since the drawing is my own there is little left for me to say excepting that it is, naturally, the best drawing in the room.

Sir Edwin Lutyens has submitted a design for the King George V Memorial in New Delhi (1056), and the presentation is in the form of a geometric drawing which has been described to me by the R.A. selectors as being an ideal form of presentation, though I doubt whether such presentation would commend itself to the lay public. Even to an architect the subtleties of Sir Edwin's work do not make themselves clear in two dimensional drawing, and the dome surmounting the figure of King George is bound to encourage chatter about pith helmets.

Edward Maufe, a new Associate, submits a drawing, much in the manner of Sir Edwin Lutyens, of the South Transept of Guildford Cathedral (1101), which I seem to remember as being accepted elsewhere in another form but which, nevertheless, is well known to the readers of architectural journals.

Sir Edwin Cooper, in his drawings of the Extensions to Marylebone Town Hall (1117 and 1118), merely continues that academic style of work curious to Sir Edwin and presented in the form of a perspective which is, more curiously still, the style of Sir Edwin Cooper.

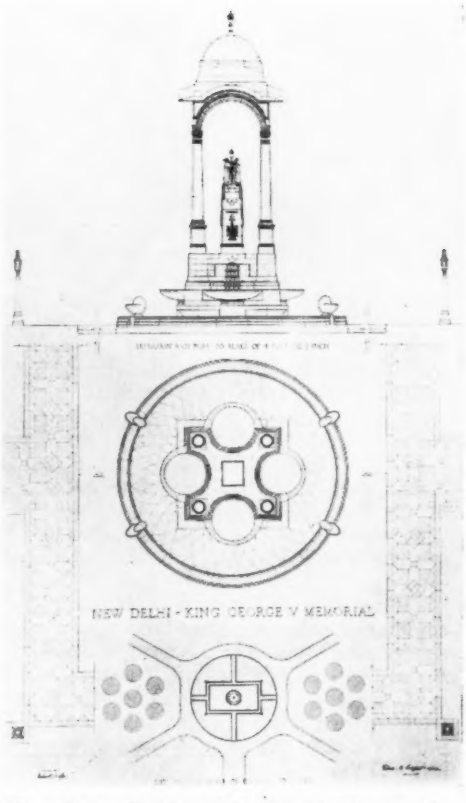
A. E. Richardson submits two designs, one of Russell Square House, London (1126), and another of a Church at Greenford (1129). As an example of the surprising versatility of Academicians these two designs are to be commended as enlightening studies. One falls, in my view, into the group of so-called whimsy-whamsy-Christopher-Robin aspects of architecture. The other, again in my view, comes nearer "commercial" architecture than I would have expected.

One or two designers surprised me by not, as yet, being included in the Members of the Academy. Charles Holden is one, and both the importance and quality of the work he has submitted (1047 — London University) suggest that the voting at Burlington House must have been of a peculiar nature to have omitted his name from the list. In point of fact, he has been voted about on a number of occasions, but the architectural support was sadly lacking in the result of the ballot.

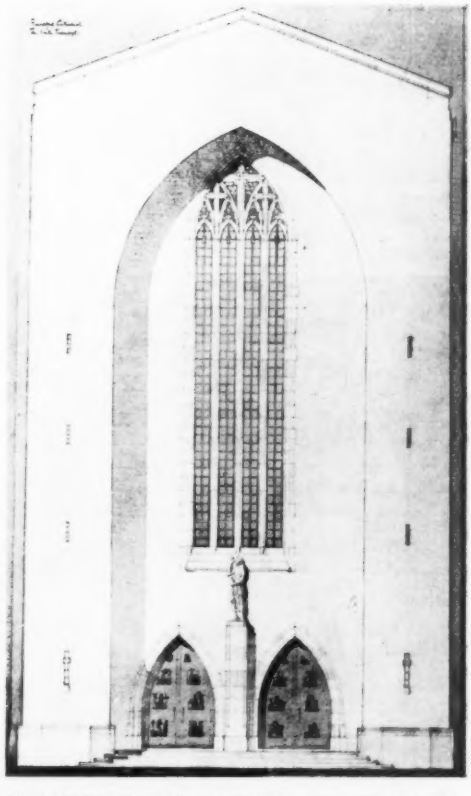
Louis de Soissons is another architect who is surprisingly enough still outside the Academy membership. He has a design of Welwyn Town Centre in the Academy (1063), supplemented by a detail of the Stores at Welwyn (1037) and a large barracks at Regent's Park (1038). According to R.A. standard, his work at Welwyn justifies his admission into the Academy, and in spite of the traditional character of some of his designs his total achievement is one of outstanding merit.

The firm of Stanley Hall and Easton and Robertson is represented by two designs: one of the Metropolitan Water Board Building (1034), which is sound, capable and of a style which, if it cannot be called advanced, is at least a great deal further progressed than the traditional or negative style of work which surrounds the walls. Their New York World's Fair Building (1132) does

* This omission had been righted on private view day.



King George V Memorial, New Delhi. By Sir Edwin Lutyens, P.R.A. Statue by the late C. S. Jagger, R.A. Drawing by H. Wright. (No. 1056)



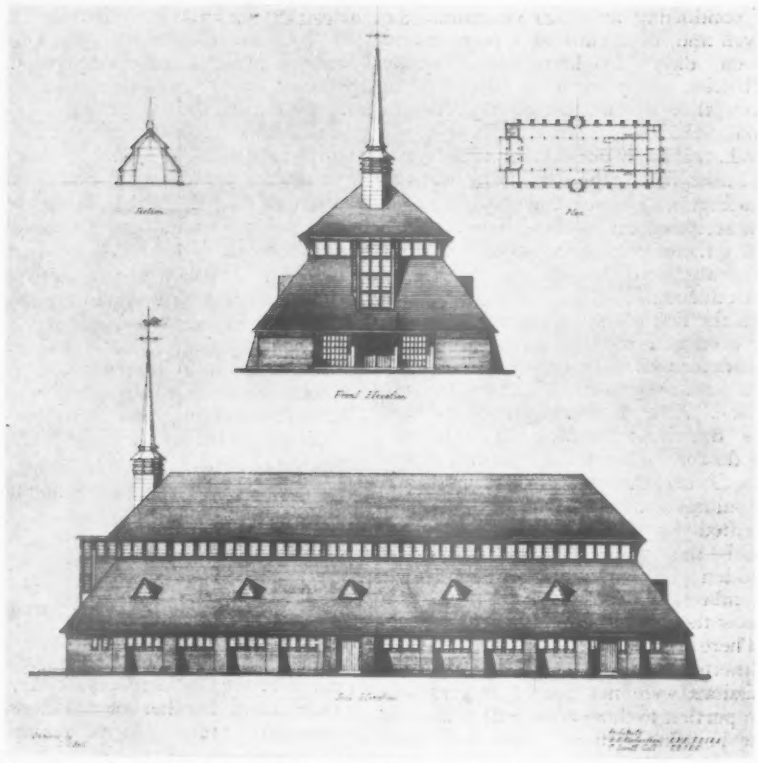
Guildford Cathedral: South Transept. By Edward Maufe, A.R.A. Drawing by E. H. Shires. (No. 1101)

not, in my opinion, share these qualities, and I am not alone in contending that the confusion of motifs on the façade of this pavilion does not tend to harmonious design. In some curious way the band of horizontal lines, irregular-shaped roofs, the annex and the surrounding lay-out, may, if such motifs were taken separately, justify themselves as good design. But collectively they result in a chaos rarely associated with the work of this firm. In view of the fact that the Department of Overseas Trade has so frequently been responsible for confusing the architect, I do not think that the blame can be attached entirely to the designers.

There are three drawings, (S. D. Adshead and H. V. Overfield, 1070, 1115, and 1120) which are projects for architecture of an outdoor nature at Scarborough, and I hope the architects will forgive me if I express profound surprise at their being accepted. Of the drawings there is no question whatever but that they are poor in execution, commonplace in outlook, and this in itself distracts one's vision of the architecture. Apart from this distraction, I still fail to understand the idiom in which they have worked, and were this opinion of mine entirely personal I would be inclined to subdue such thoughts, particularly in writing. But I feel such a criticism may be universal.

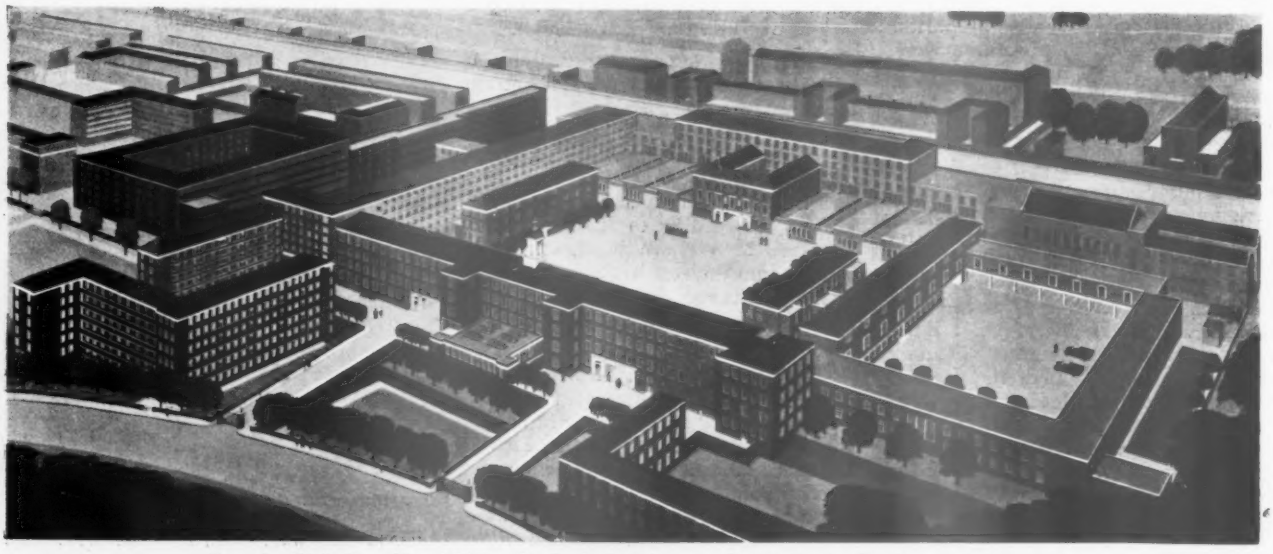
There are a few well-knowns in the shape of the prize-winning design, St. George's Hospital (1031), but for the most part those drawings which I have already mentioned represent the most publicized designs prior to this exhibition.

Percy Thomas goes almost Georgian in the Students' Hostel of Wales (1088); Cyril Farey, as a change, illustrates in

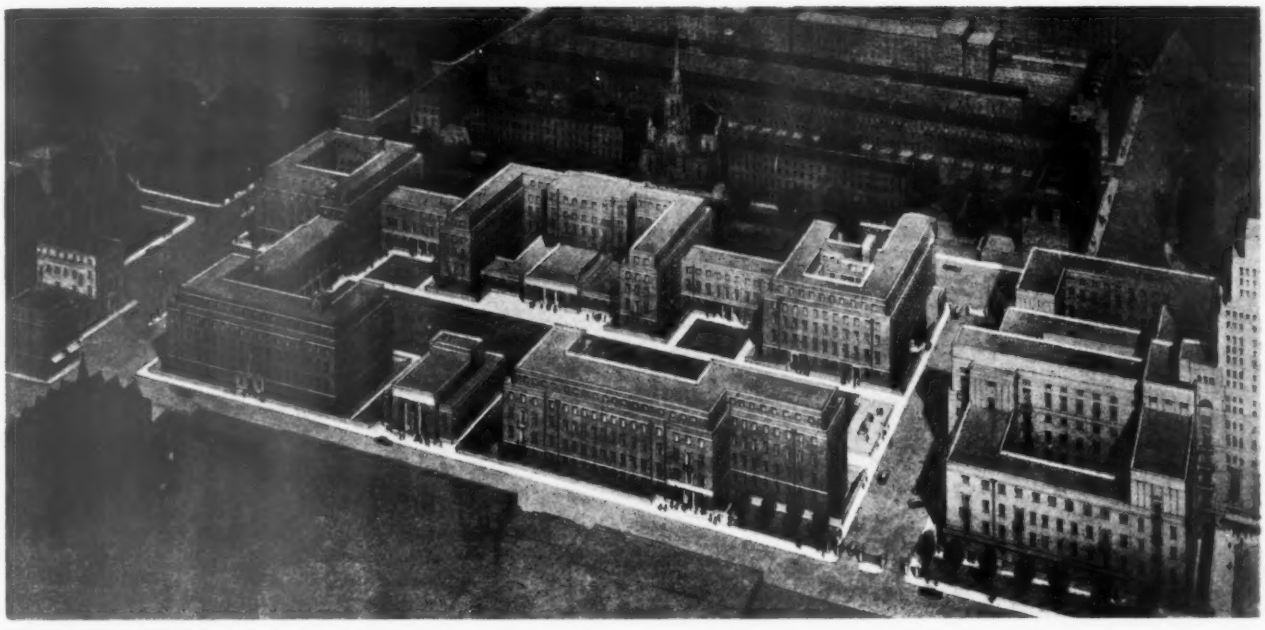


Church of the Holy Cross, Greenford, Middlesex. By A. E. Richardson, A.R.A., and C. Lovett Gill. Drawing by G. M. Bell. (No. 1129)

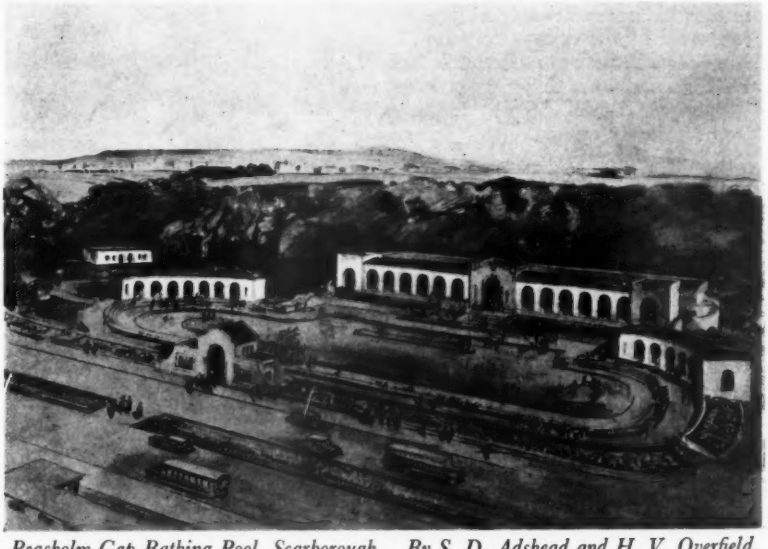
Welwyn Stores, Welwyn Garden City. By Louis de Soissons. Perspective by P. Cornu. (No. 1037)



Regent's Park Barracks, N.W. By Louis de Soissons. Perspective by P. Cornu (No. 1038)

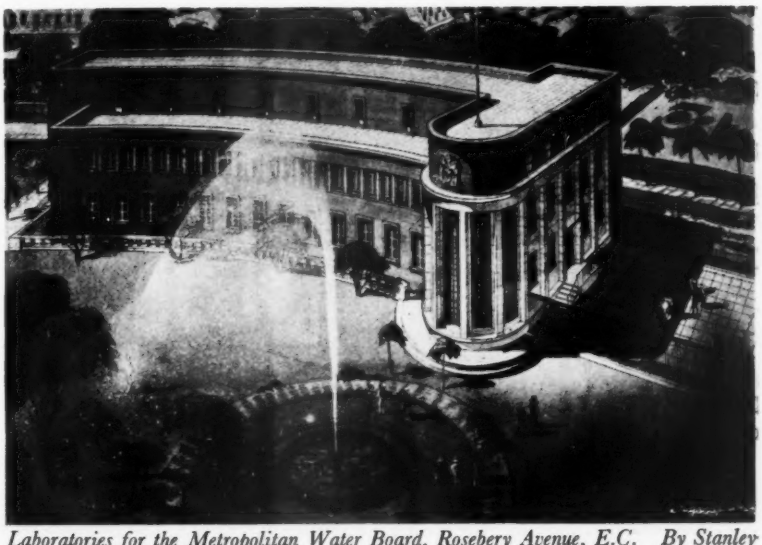


University of London : layout of buildings. By Charles Holden. Perspective by A. Bryett. (No. 1047)



Peasholm Gap Bathing Pool, Scarborough. By S. D. Adshead and H. V. Overfield. Perspective by S. D. Adshead. (No. 1120)

his work (1102) his outlook as a designer in addition to his powers as a perspectivist ; the engineering firm of Sir Alexander Gibb and Partners enter the realm of the arts with an Administrative Factory (1130) ; Wm. G. Newton, in some War Office work (1136), presents architecture as it should be presented, though I doubt whether the drawing will be noticed in the welter of perspective ego with which it is surrounded—the architecture I do not believe is as good as the drawing ; Frank Waddington has taken a leaf out of Farey's technical notebook and almost surpassed his prototype in presenting a design of Stephen Wilkinson's of a School of Art (1033) which is reminiscent of John Russell Pope's American monumentalisms ; there is a design for a bridge by a town planner and an engineer, W. R. Davidge and W. H. Morgan (1048), which is probably one of the most interesting designs in the room and certainly one of the finest drawings, the work of Lawrence Wright ; Vincent Harris, whose name I forgot to mention among the R.A.'s, may thank J. D. M. Harvey for his work on the Shire Hall at Nottingham (1053). If you study this drawing

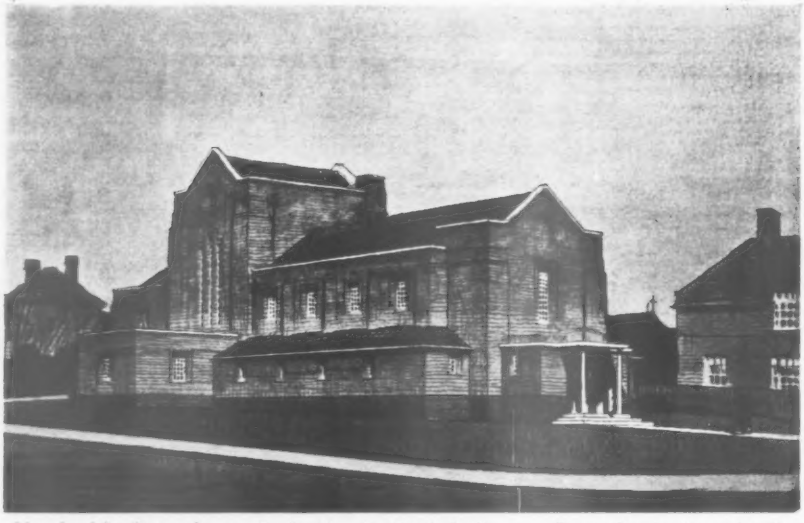


Laboratories for the Metropolitan Water Board, Rosebery Avenue, E.C. By Stanley Hall and Easton and Robertson. Perspective by R. Myerscough-Walker. (No. 1034)

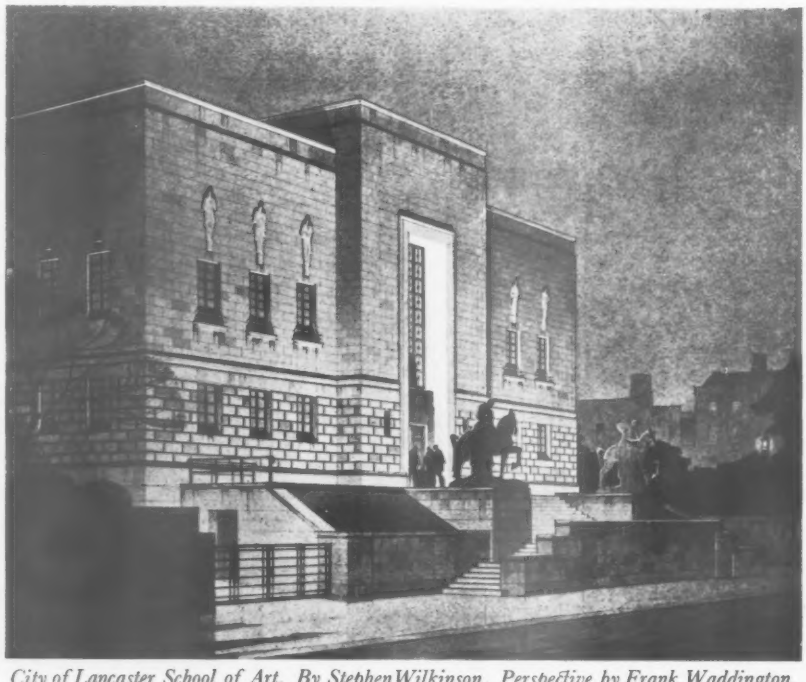
closely, it represents what is probably the most economical form of architectural draughtsmanship that has ever been seen in this country. It is one of those illogical things difficult to understand or account for, which does, in some curious way, give a true portrait of the scene, that is if one allows for a certain amount of romanticism in the background, etc. ; Oliver Hill persists in the style which one might describe as being almost "super-modern" in a School at Rothwell (1054). Whether the aeroplane shape of the plan in some way relates to the modern age, of which the aeroplane is the epitome, I do not know. It is a thing I should like to ask Oliver Hill about one day. This is a Harvey drawing not nearly so good as the one for Harris which I have mentioned, and in turn the Harris drawing is not nearly so good as a rendering of the New Extension to St. John's College, Cambridge (1058), which Harvey has done for Edward Maufe. This is one of the most facile drawings in the Architectural Room ; C. Cowles-Voysey retains his imperturbable outlook, ably expressed by Farey in a drawing of the Municipal Buildings at Bromley (1064). He does the same thing again in more Municipal Buildings at Darlington (appropriately enough—1065) ; while a drawing labelled 1066, which I have been trying to avoid mentioning this last half-hour (a design by Douglas Robinson of a house in Surrey), hardly deserves the number which, to all Englishmen, is a matter of history ; Verner O. Rees is still sound (e.g. 1077) but hardly exciting ; E. Walmsley Lewis still progresses but hangs on to good taste (see 1083) ; Hubert Worthington still perseveres in his architecture for scholars (1082), and C. H. James and Rowland Pierce have not yet forgotten our glorious English tradition (1078).

The Stained Glass is still with us. Every model which was submitted has been accepted, and one in particular (1150) by Maxwell Ayrton is worth study as an ideal form of model presentation ; while two other models by Furneaux, Jordon and Handisyde (1139) suggest one of the liveliest designs in the room, and (1160) stands as an example that the modern architect can submit work without fear of inevitable rejection.

One could continue in this vein for the duration of 145 works, but you would no doubt be as bored in the process of reading such a list or a description of the list as I would be in dictating it. Which leaves nothing further to be said than that this is the Royal Academy Architectural Room, 1939—on the whole no different from 1938, nor more progressive than 1920. It is the architecture, in short, of our great middle class.

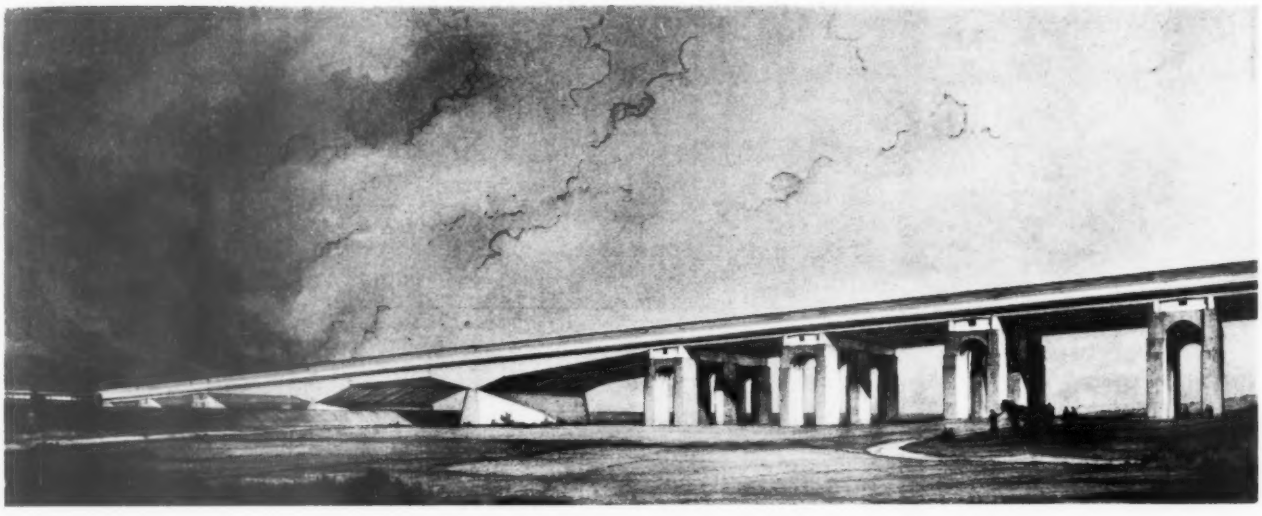


Church of St. Peter, Grange Park, N. By Cyril A. Farey. Perspective by the architect. (No. 1102)

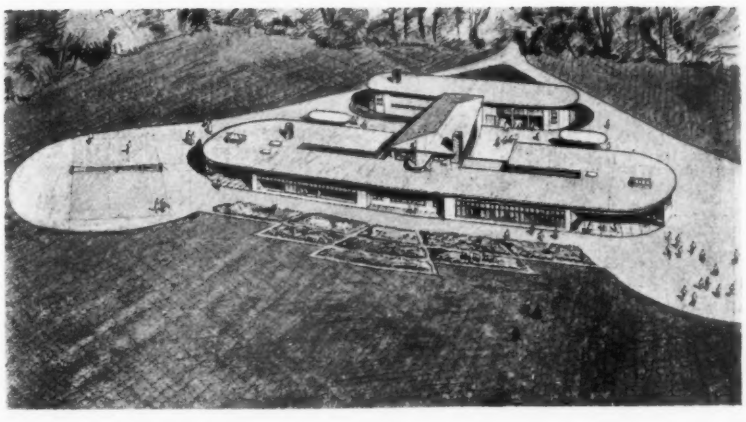


City of Lancaster School of Art. By Stephen Wilkinson. Perspective by Frank Waddington. (No. 1033)

Knapwood House, Surrey. By Douglas Robinson. Perspective by the architect. (No. 1066)



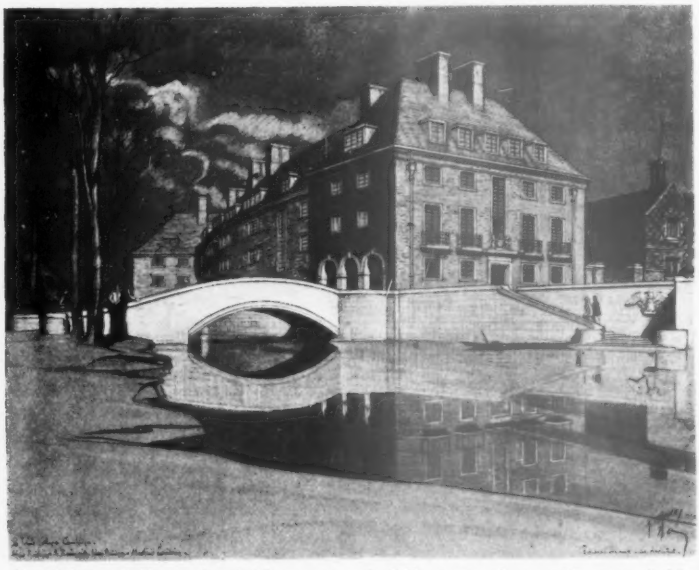
Western Avenue Viaduct. By William R. Davidge. Perspective by Laurence Wright. (No. 1048)



Rothwell Methley Senior School, for West Riding County Council. By Oliver Hill. Perspective by J. D. M. Harvey. (No. 1054)

Below : Shire Hall for the County of Nottingham, Trent Bridge. By E. Vincent Harris, A.R.A. Perspective by J. D. M. Harvey. (No. 1053)

Territorial Army Headquarters, Wood Lane, W. By William G. Newton and Partners. Perspective by Marjorie V. Duffield. (No. 1136)



St. John's College, Cambridge: new buildings to river, with new bridge and Master's landing. By Edward Maufe, A.R.A. Perspective by J. D. M. Harvey. (No. 1058)

Model of proposed Children's Home, Buckinghamshire. By R. F. Jordan and C. C. Handisyde. Model by B. Bickerton. (No. 1139)

EXHIBITIONS

[*By D. COSENS*]

THE Guggenheim Jeune gallery have, as usual, an interesting and provocative exhibition, for both Charles Howard's paintings and Henghes' sculpture are intellectually stimulating and demand discussion and speculation.

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Charles Howard is primarily an abstract painter. In all his work his sense of the formal qualities and exact balance of design come first. But recently surrealism has transformed his paintings so that, while they still maintain the logical and controlled organization of constructive art, they have become dynamic, acquiring another dimension and an added significance. These paintings, combining as they do so much of the best in both the abstract and the surreal idiom, mark a transition. For the conditions that produced the purely constructive idea are already changing, leaving a crystallized and lifeless formula. To this surrealism was the reaction, over-reaching in its violence. Today, whatever the trend of painting, even if as seems probable it is returning to realism, it will develop through those painters who have fully explored abstract and surreal art, and not from the stagnant backwaters of contemporary realism—through the response of such painters as Charles Howard to the age in which they live.

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Henghes, who is showing his carvings at the same gallery, was born in Germany in 1906, has lived and worked in America, France, Italy (with Sartoris), Switzerland, and lately in England. He has attended no art schools and, while he has exhibited in most countries, this

is his first show in England. His work may be called abstract, not in the more usual constructive sense of deliberate synthesis and balance of form, but in imaginative analysis and an extraordinarily sensitive simplification to essentials. I hesitate to say that it has affinities with negro sculpture, for this instantly suggests dreary pastiches and the piratage of superficial qualities without any real comprehension. Yet the highly developed plastic sense and the underlying intensity of feeling are reminiscent of some of the finest negro art.

This small collection, the result of a year's work in England, is sculpture—a rarity in a world largely given over to the works of monumental stonemasons—and it should be seen by all those who are interested in vital art.

Claude Monet's earlier work was traditional, in terms of tone rather than colour relationships, and strongly influenced by Corot. In 1870 he fled from Paris to London with Pissarro, to escape the Franco-Prussian war, and in working with him became an impressionist. Most of his best known work dates from this period, and Messrs. Tooth have organised a remarkably comprehensive and interesting exhibition of paintings by Monet the impressionist. Of these, "Argenteuil," painted in 1876, and "Givre au Bois de Boulogne," painted in 1877, are particularly fine examples. "Cathedral de Rouen, effet de brume," a much later work dated 1894 is, though many may deplore its lack of structure, interesting as a reflection of Monet's admiration for Turner, so apparent in much of his later painting, and as one of his many treatments of the same scene. For to an impressionist the light is the subject, and it doesn't much matter what reflects it. Monet used Rouen cathedral as a handy model, and painted it in endless conditions of light and atmosphere, and in his rendering at Tooth's has carried the impressionist softening of the silhouette to its utmost limits.

Paintings by Charles Howard and Sculpture by Henghes. Guggenheim Jeune, 30 Cork Street. Until May 6.

Paintings by Monet. Tooth's, 155 New Bond Street. Until May 6.

The Location and Design of Housing Estates

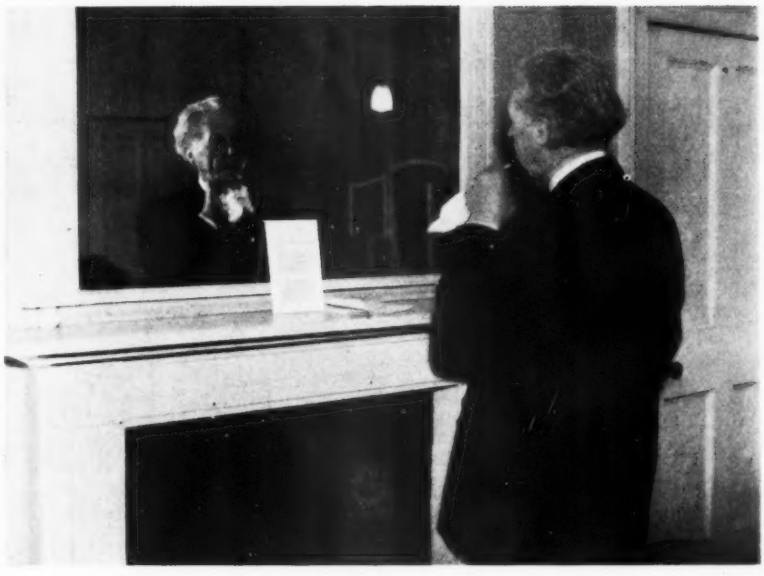
"The Location and Design of Housing Estates" was the subject of a paper read by Mr. S. Pointon Taylor, F.R.I.B.A., at a meeting of the Town Planning Institute, held at Caxton Hall, S.W., last Friday.

Among other matters, Mr. Taylor dealt with the extension of the medium-sized town. He thought a development by putting out spur radials in the most desirable directions, having regard to the social and industrial needs of the town, would prove more acceptable to land owners than the building of satellite towns. It was a method that left the centre of the town in the same relationship to the country as at present, and was the antithesis to ribbon development.

Mr. Taylor preferred a direct attack upon contours by roads parallel with or at right angles to them rather than diagonal roads, unless the roads at right angles to the contours were impossibly steep. Minor roads should be planned to discourage through traffic: he thought culs-de-sac the ideal. It was the aim of good designers to incorporate the maximum of the cheaper roads in a lay-out, with the minimum of roads that would require widening on the occasion of future extension.

A number of interesting lantern slides were shown, illustrating the fact that by a difference in lay-out houses might be more suitably placed, while at the same time there was a saving in expenditure for road construction. In the case of slum clearances and compulsory purchase orders also, where unfit houses at high densities were demolished, there was usually a close network of existing roads; and when the area was re-planned, some of this land might be put to better use.

The Chairman (Mr. J. E. Acfield) said if there was spur development of a town, there should be a park space, playing fields or something of a similar nature between the spur development and arterial roads.



FRANK LLOYD WRIGHT'S
PEACEFUL PENETRATION OF EUROPE

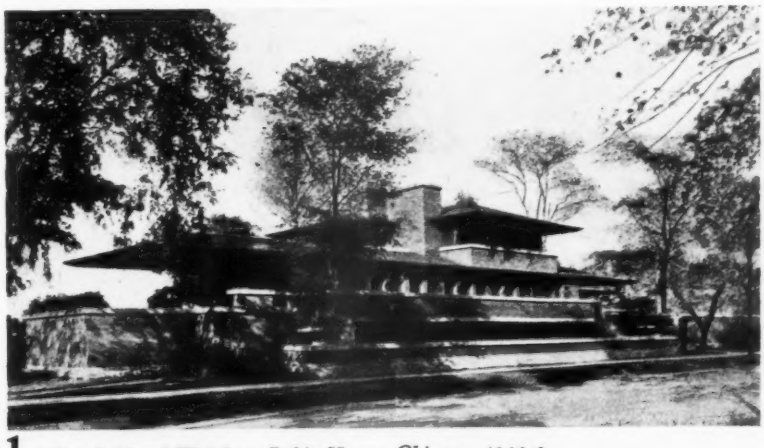
[*By NIKOLAUS PEVSNER*]

Today, at 8.30 p.m., Mr. Frank Lloyd Wright will give his second lecture at the R.I.B.A. as the Sir George Watson Lecturer of the Sulgrave Manor Board for 1939. Other lectures will take place on May 9 and 11. Below we publish an article by Dr. Pevsner on Mr. Frank Lloyd Wright's influence on modern architectural development.

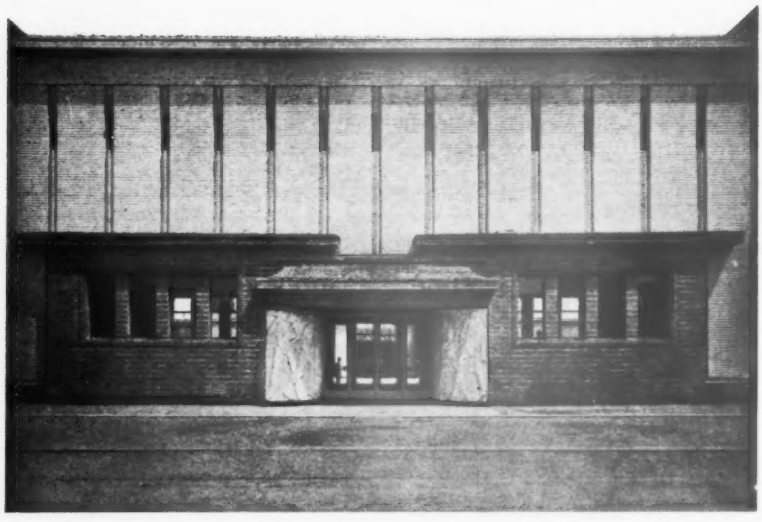
The photograph above was taken on Mr. Wright's arrival in England on April 27.

The following account is based on published as well as unpublished material, the latter consisting of more or less detailed information in writing supplied to Dr. Pevsner by Mr. C. R. Ashbee, Heer H. Th. Wijdeveld, Heer J. J. P. Oud, and Messrs. E. Wasmuth, of Berlin.

THERE lives near London an architect known to many for his adventurous early buildings and designs, his brilliant writings on the social movement of the arts and crafts, his Campden experiment in craftsmanship, husbandry and community life, and his charming personality, Mr. C. R. Ashbee. He is about seventy-five now, and can claim amongst his other titles to fame that of having discovered Frank Lloyd Wright for Europe. They got to know each other when Mr. Ashbee was staying in Chicago in 1900. Correspondence ensued, and when Wright came over to Europe in 1910 he visited Mr. Ashbee at Campden. Some time before this journey, Professor Kuno Francke, a German professor in æsthetics at Harvard, had visited Wright and strongly suggested to him to go to Germany, where his work would be hailed by the progressive architects. Soon after this visit, a proposal came from E. Wasmuth, the best-known German architectural publishers, to bring out a complete monograph of Wright's work. While in Florence,



1 *Frank Lloyd Wright: Robie House, Chicago, 1908-9*



2 *Walter Gropius : Model Factory at the Werkbund Exhibition, Cologne, 1914.*

Wright signed the introduction to this first portfolio, a copy of which is now at the Architectural Association. Immediately afterwards he suggested to Mr. Ashbee to write the text to a second smaller and more popular volume also to be brought out by Wasmuth's. This appeared in 1911, and can now be studied in the library of the Victoria and Albert Museum.

The two books, including all that was most important of Wright's early style from the Winslow to the Robie (Fig. 1) and Martin Houses, must have had an almost instantaneous effect on young German architects. This is most clearly reflected in certain details of Gropius's model factory at the Cologne Exhibition of 1914 (Fig. 2). The brick technique, above all, in the odd long slots of the upper floor windows, the heavy entrance with the two bands of windows on the left and the right, the projecting string courses above and the flat slab roofs, all these motifs prove beyond doubt the impression of Wright's (besides Peter Behrens's) work on Gropius. In the meantime, however, Berlage, the great old man of Dutch architecture, had gone to the United States in 1911, unacquainted in all probability with the Wasmuth volumes. Travelling in America he discovered Wright again independently. In articles published in the *Schweizerische Bauzeitung* of September 14, 21 and 28, 1912, and in a Dutch book of 1913 dealing with his American impressions, Berlage praised Wright as " a master without an equal in Europe." In discussing the Martin House, he stressed its bare ground floor walls, the long bands of windows on the upper floor, the living-rooms leading into each other without separating doors, the lovely vistas across caused by this spatial arrangement, the intimate connection between house and garden, and the widely projecting roofs. It can be assumed that those young Dutch architects who learned their craft or set up in practice just before the war became familiar with a man so sincerely admired by their great example, Berlage, and with the two German publications of 1910 and 1911. One of the first palpable proofs of Wright's influence on building in Holland is a house designed by van 't Hoff in 1915 (Fig. 3).

3 *R. van 't Hoff : " Huis fer Heide," near Utrecht, 1915, built of concrete.*

Similar features can easily be detected in the early work of Jan Wils and H. Th. Wijdeveld (who, incidentally, saw illustrations of some houses by Wright in an American book as early as 1900, when he was only fifteen years old. He says : " I could not sleep the first night I possessed the book ; I was so thrilled "). During the first post-war decade Wright's idiom became one of the chief ingredients of Dutch architectural expression. There was, e.g. the Kijkduin Estate near the Hague, by Bijvoet and Duiker, there were private houses by Wouda (Fig. 4), La Croix (ill. *Nieuw Nederl. Bouwkunst*, 1924, Fig. 21–23), and even by Berlage himself. The centre of Wright enthusiasm, however, was Wijdeveld, not by imitating Wright's style, but by spreading knowledge of it. In 1921 and again in 1925 he published in a magazine, *Wendingen*, then edited by him, illustrated articles on Wright, and collected these in 1925 into a lavishly produced book with English text and contributions by Oud, Mendelsohn, Mallet-Stevens, and others. This book, it seems, opened at last the eyes of young English architects to Wright's genius, although nothing comparable to the Dutch vogue followed. When Wijdeveld splendidly finished his propaganda for Wright by staging an exhibition of his work at the Municipal Museum in Amsterdam, which was then sent round to Berlin, Cologne, Munich, and Antwerp, no arrangements could be made for the exhibition to be shown in London. Paris does not appear to have been interested either, and this came probably from the strangely isolated development of the Modern Movement in France until after the war. To those eager for innovation and a true contemporaneity, Garnier's Cité Industrielle of 1904, and Perret's achievements in ferro-concrete had played the part assumed in Germany to a certain extent by Wright's forms and experiments. However, despite this, it seems unlikely that Mallet-Stevens or Le Corbusier can have been in complete ignorance of Wright when they formed and evolved their styles. Mallet-Stevens, in fact, paid a debt of gratitude to Wright in his article for Heer Wijdeveld's volume. But Le Corbusier, although he had lived in Berlin for about six months just in 1910–11, answered, when asked to contribute to the Wijdeveld book : " I do not know this architect."

Here is a first instance of the difficulties which one meets in trying to follow the course of one man's style in the intricate tissue of European post-war architecture. Wright's influence on early Gropius—a transitory one—or on Dutch buildings of about 1920–1924, is comparatively easy to grasp, but the historian of style finds himself in a much more precarious position directly he tries to analyse certain deeper and wider effects of Wright on Europe. A few examples may illustrate this.

There are, e.g. the so-called Phantasts in Holland, the school of architects recognisable by their odd, deliberately crude, chaotic details, originally, one may surmise, instigated by Indian native temple art. De Klerck is perhaps the best known of them (Eigen Haard 1914 and 1917, Spaarndamerplantoen 1913 and 1917, Amstellaan 1920) ; Kromhoet and, for a time, Piet Kramer were other representatives of this mood which leads back to van der Mey's mad Scheepvaarthuis of 1912–13, and even to certain details in Berlage interiors. When the large estates of tenement houses around Amsterdam were erected immediately after the war and began to impress German town-planners and architects, it was in this fantastic attire that they became known. And as at exactly the same time riotous post-war feelings prevailed in Germany, sometimes of a constructive revolutionary, sometimes of a post-defeat desperado, and sometimes of a jazzy *Après-nous-le-Déluge* character, the Dutch phantasts found response in

5 *Frank Lloyd Wright: Midway Gardens, Chicago, 1913.*

4 *H. Wanda: Country House, "De Luifel," at Wassenaar, near the Hague, 1924.*

more than one school in Germany. Poelzig's and Bruno Taut's most soaring architectural dreams belong to these years, but Mendelsohn also succumbed to such feelings for a short time, and even Gropius's now destroyed War Memorial of 1920 at Weimar re-echoed the strident outbreaks of expressionism.

Now, expressionism was originally a pictorial movement, and the effects on architects of new forms in painting should not be underestimated. Cubism, the French counterpart of German expressionism, has certainly deeply impressed architects, and helped them to develop compositions of bare cubes and façades without any mouldings mediating between different planes. But cubism again could be interpreted decoratively and functionally, and both interpretations can be found in buildings of the first ten years after the war. The Rue Mallet-Stevens of 1927 can serve to illustrate the decorative, J. J. P. Oud's splendid Rotterdam estates the functional exegesis of cubist tenets. Dudok, one may say, stands between the two.

Functionalism, however, is in itself a complex phenomenon. Even without cubist pictures—and pre-war cubism of Picasso and Braque or pre-war abstract art of Kandinsky were far from precise and geometrically rigid — functional architecture would probably have found its own immediate expression, simply by evolving Loos's and Peter Behrens's forms of about 1910. This is what Gropius did. He certainly understood cubist painters or else he would not have appointed them to professorships in the Bauhaus, but while teaching there they probably adopted more from his direct and courageous architectural style than he from their configurations in the flat.

The Dutch and German phantasts, expressionism, cubism, functionalism—an intricate pattern of tendencies in European art between 1920 and 1925, and yet, in fact, not intricate enough, for once more Frank Lloyd Wright's influence must be introduced into it. There was not one of these conflicting schools of thought which has not at one time or other experienced some stimulus from Wright. And as if this were not enough of confusion yet, one has to add that by then—as is known—Wright had changed his own style considerably. Midway Gardens, Chicago (1913, Fig. 5), and the Imperial Hotel, Tokio (1916–20), represent a new Wright, gone all romantic, fantastic, Eastern — far more personal and unimitable now than he had been when Europe first got to hear of him. To copy this new style or even to accept influence from it was bound to be fatal to any but the strongest decorative genius. How far now did the Dutch phantasts find themselves confirmed in Wright's *seconda maniera?* Van der Mey comes before Midway Gardens, but Berlage may have felt the first symptoms of a change, the result of which was naturally just as palatable to him as Wright's earlier style. Wijdeveld's volume of 1925 is certainly an instance of Wrightian phantasm interpreted by a Dutch architect who had gone through a phase of native Dutch phantasm.

It is the same with cubism. An architect grown up in admiration of Wright's genius would find access to cubist painting easy ; an architect ready to translate cubist revelations into building would see his theories corroborated in Wright's practice. Who would be prepared to define what comes from Wright in Dudok's work at Hilversum (Fig. 6), and what from cubism, or what in Mendelsohn's uncouth brick houses of 1922 and 1923 is the outcome of Wright's idiom and what of Dudok's ?

However, these questions seem simple when held against any arising from a consideration of Wright's most profoundly architectural qualities. So far, only forms have been discussed. But what effects of Wright's research into modern building materials can be traced, what effects of his brilliant spacial flexibility, or his revolutionary theories on the social future of art and architecture? It will, in all probability, never be possible to assess correctly the share, in the use of composite walling materials in German post-war experiments (Gropius, Luckhardt, etc.), which belonged to Wright's Unity Temple of 1908, a monolith with walls all of concrete slabs. And how far would Gropius himself be able to remember whether the lovely unity of house and garden in his Bauhaus staff dwellings at Dessau owed something to early impressions gathered from the perusal of the Wasmuth volumes? Or take Miës van der Rohe's ravishing ballets of space, his Barcelona Exhibition Pavilion of 1929 and the famous Tugendhat House at Brünn with rooms rhythmically flowing into each other and no inner divisions. Had Le Corbusier spurred him, or at a much earlier stage Wright, who was the first so boldly to unite room with room? And—to mention one last instance—what of Wright's ideas on art education? Taliesin, his Wisconsin community, is only a few years old. But it was preceded by his plan for what was to be called the Hillside Home School of the Allied Arts. The prospectus of this went out about the end of 1931, and Heer Wijdeveld was mentioned as future principal, Heer Wijdeveld who only a few months before had published his own plan for an international guild of architectural and general artistic training and community life to be built in Holland. Did Wijdeveld know about the Bauhaus? Is the name of guild derived in some roundabout way from Mr. Ashbee's Guild and School of Handicraft at Chipping Campden, which Wright on his part knew? If there is a connection here, it would be a welcome proof of an ultimate derivation of Taliesin as well as Heer Wijdeveld's Elckerlic school from the Arts and Crafts Movement and William Morris. But these relations are, of course, not meant to be in any way direct or conscious. They are subtler, more concealed, and therefore perhaps all the more important. For the deeper the impression an architect of original genius receives from another of equal calibre, the less apparent will the links be.

It must be bewildering for Frank Lloyd Wright to look round European architecture of the last two or three decades on this visit of his, in honour of which these pages appear, and to see, wherever he goes, traces of his own work of thirty and forty years ago, copies sometimes, caricatures sometimes, and sometimes original interpretations pregnant with new issues. Will he enjoy this, will it fill him with satisfaction, or will he keep asking himself where to find the effects of his own more recent conceptions? Who knows of them, who understands them, who follows him on his present path? A strange position, indeed, but one charged with vital energies. The chapter on twentieth-century architecture treating of Frank Lloyd Wright's interrelations with European styles is certainly not closed yet.

6 *W. M. Dudok : School at Hilversum, 1921.*

WORKING DETAILS : 747

ENTRANCE AND STAIRCASE • PRESS CLUB, SALISBURY SQUARE, E.C.4 • JOHN GREY

The entrance and staircase have been re-modelled on an existing service entrance and stairs. The entrance consists of three pairs of double doors, the centre doorway, with canopy over, giving access to the Press Club, and the other two to offices in the same building. The doors are in oak, with bronze and glass illuminated canopy and sign. The floor and surround to the entrance are in buff terrazzo.

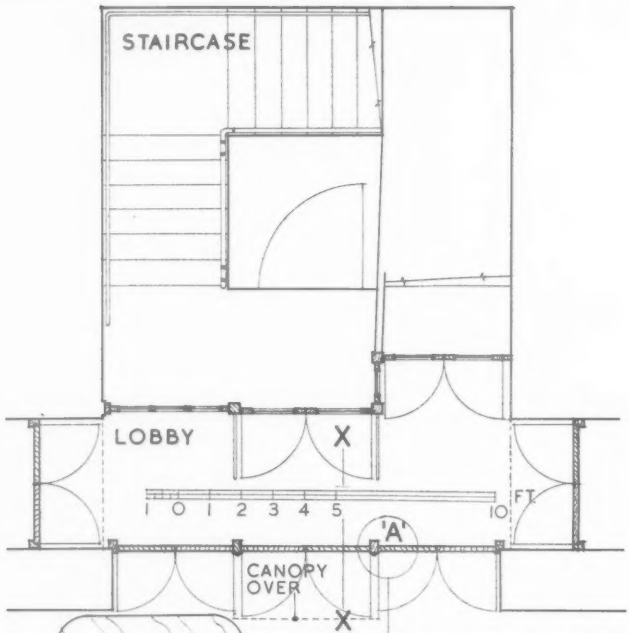
The staircase is in reinforced concrete, with screed and grey-blue rubber finish. The lower half of the staircase walls is panelled in unpolished Burma teak with frames with removable beads to house a collection of old newsprint and cartoons, etc. The exhibits are illuminated by continuous cornice trough lighting. The balustrade to the staircase is in iron, with bronze handrail.

Details are shown overleaf.

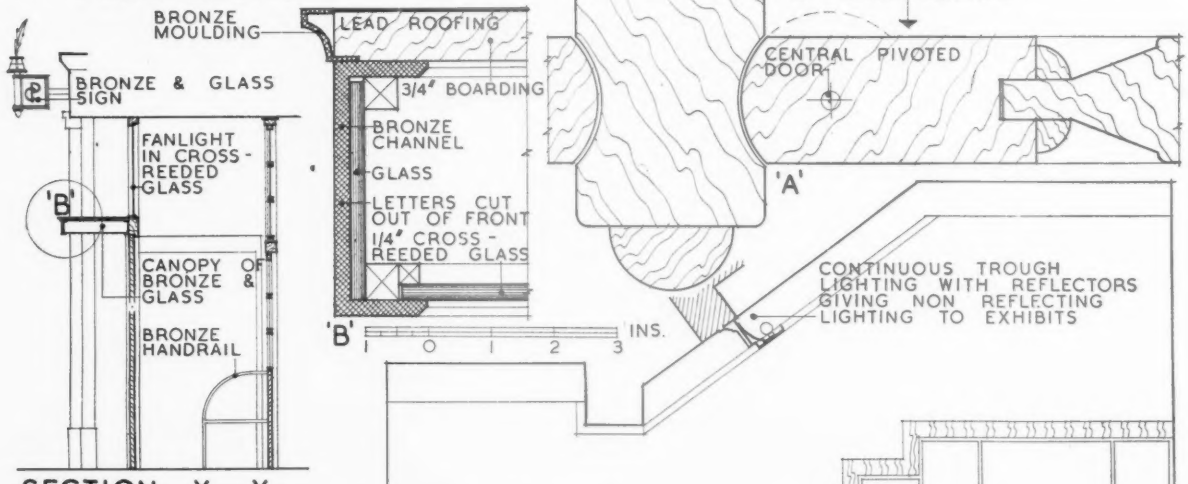
WORKING DETAILS : 748

ENTRANCE AND STAIRCASE • PRESS CLUB, SALISBURY SQUARE, E.C.4 • JOHN GREY

PERSPECTIVE

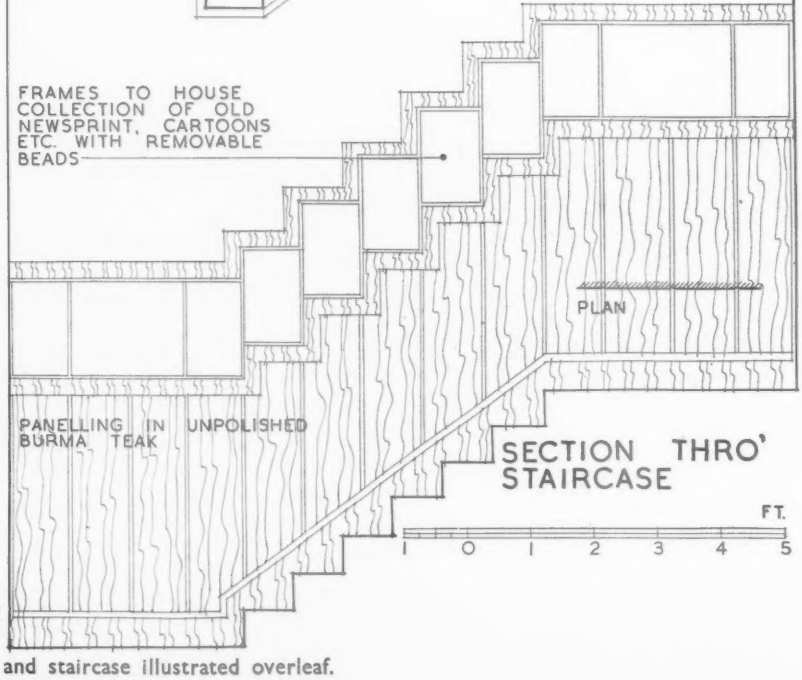


PLAN OF ENTRANCE & STAIRCASE



SECTION X - X

SECTION THROUGH SIGN



SECTION THRO' STAIRCASE

Perspective and details of the entrance and staircase illustrated overleaf.

The Architects' Journal Library of Planned Information

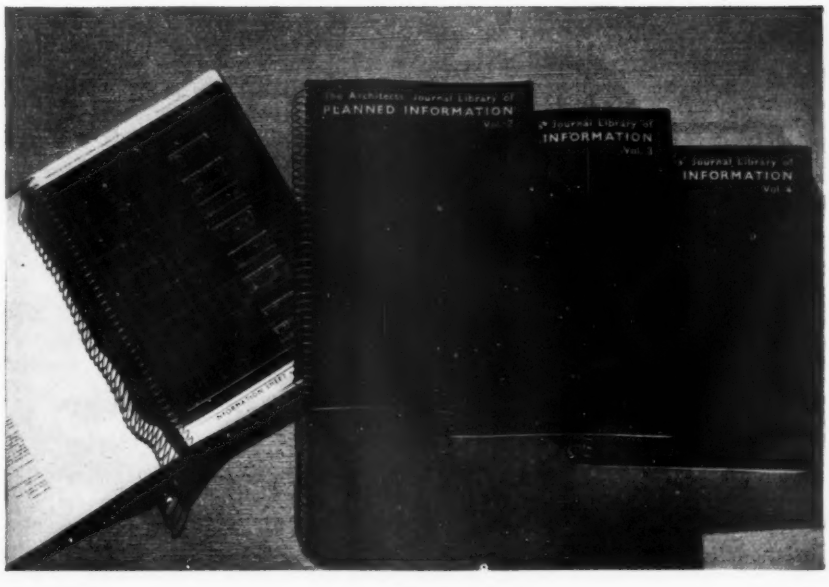
INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

727 Waterproof Jointing and Bedding

728 Timber Construction



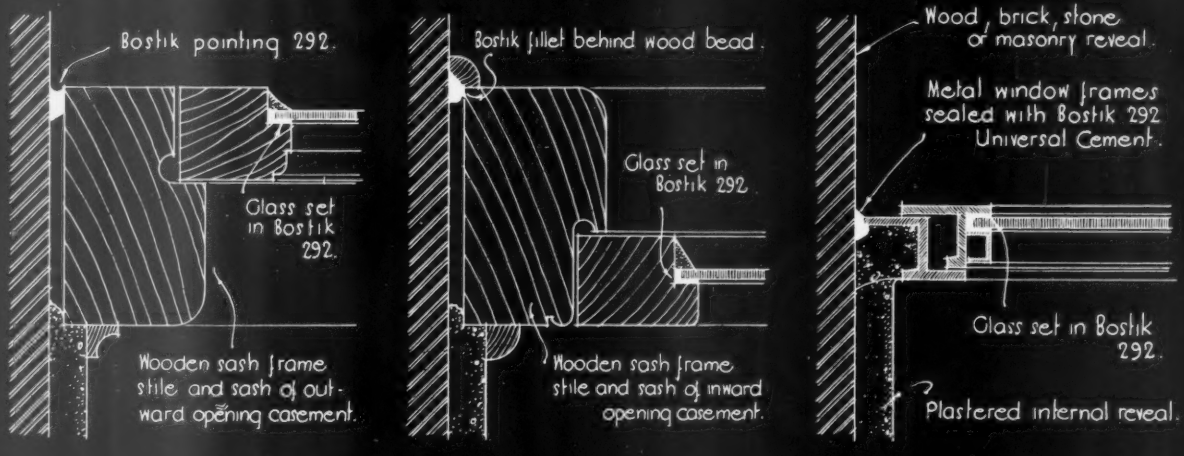
All the Information Sheets published in The Architects' Journal Library of Planned Information since the inception of the series to the end of 1938 have been reprinted and are available in the four volumes illustrated here. Price 21s. each.

Sheets issued since index:

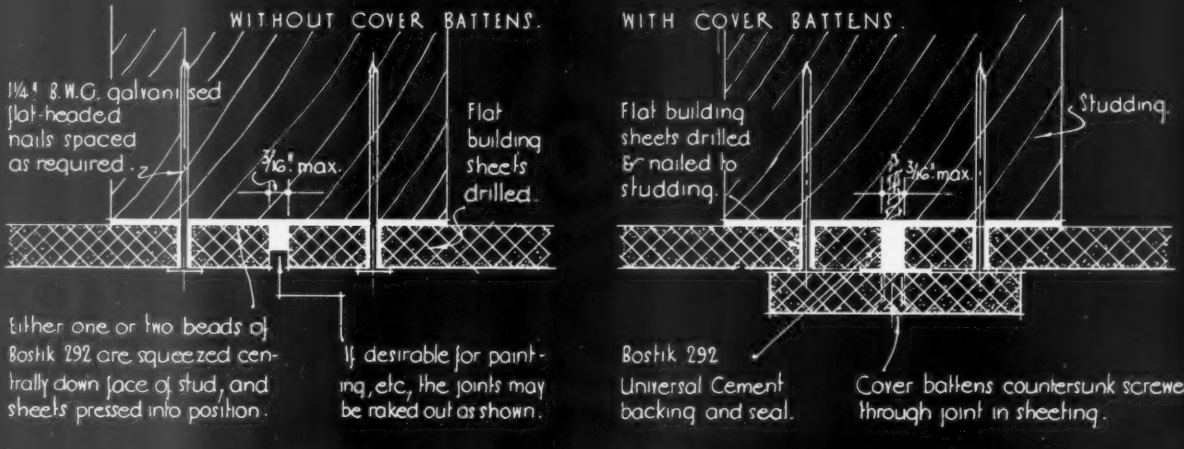
701 : Tile Hanging
702 (420 revised) : Fixing Insulating Board
703 : Sheet Metals
704 : Plan Elements
705 : Metal Work
706 : Plan Elements
707 : Furniture Layout
708 : Plan Elements
709 : Flue Construction
710 : Natural Lighting
711 : Glass and Glazing
712 (109 revised) : Quarry Tiles
713 : Glass and Glazing
714 : Metalwork
715 (106 revised) : Hot Water Radiators (Pressed Steel)
716 : Furniture Layout
717 : Metalwork
718 : Flooring Materials
719 : Plumbing
720 : Water Heating
721 : Wall Facing Materials and Wallboards
722 : Roofing
723 : Metalwork
724 : Timber Construction
725 : Sanitary Fittings
726 : Metalwork

WATERTIGHT JOINTING AND POINTING:

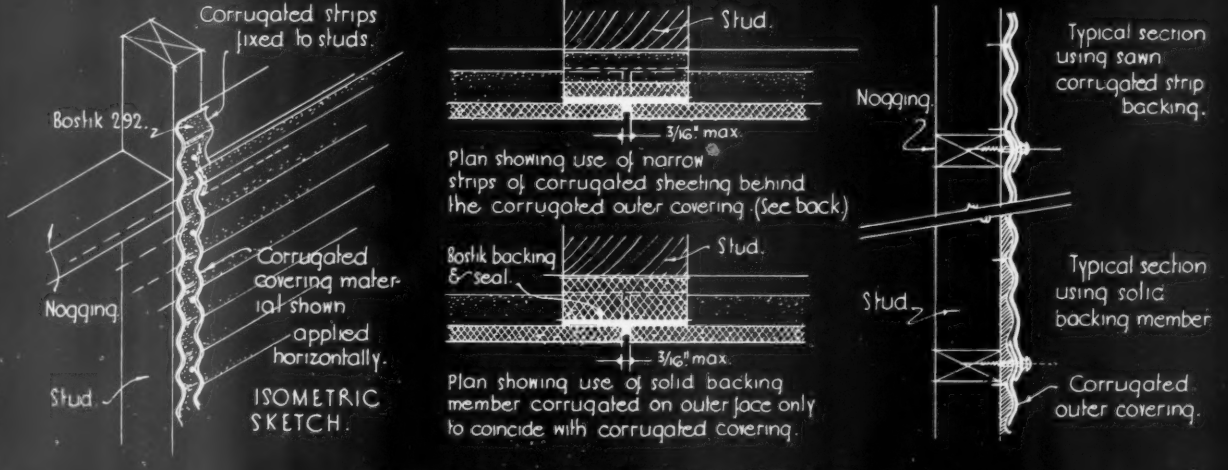
(A.) WINDOW FRAMES AND GLASS.



(B.) FLAT SHEET MATERIALS ON EXTERIOR WALLS.



(C.) CORRUGATED MATERIALS ON EXTERIOR WALLS.



Information from the B.B. Chemical Co. Ltd.

INFORMATION SHEET: WATERPROOFING: METHODS OF POINTING & JOINTING.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 727 •

WATERPROOF JOINTING & BEDDING

Product : No. 292 Bostik Universal Cement

Description :

This Sheet illustrates some of the methods of forming watertight resilient joints between various materials in external walls of buildings. The jointing material consists of an air-drying solvent adhesive compound containing rubber. It is of thick consistency, black in colour, and is supplied in tubes ready for direct application to the cavities or angles to be sealed.

The pointing fillets and backings so formed attain their maximum adhesion after about 48 hours, at which time the Bostik presents a completely dry but resilient surface, similar in density to that of a pneumatic motor tyre. At this stage paint may be applied in the normal manner without risk of " bleeding " or staining.

Uses :

Besides its general use as a sealing compound, the cement is also satisfactory for the setting of all forms of glass and glazing, the pointing of metal window frames against brick, stone, concrete, etc., the sealing of joints in such work as shop fronts and refrigeration plant, and for the direct bonding of internal wallboard or glass lining and panelling, and floor insulating boards.

Properties :

As the dried bond of Bostik is neither hard nor brittle, considerable resistance is offered to shocks and vibration. The material is chemically and electrically inert when dry, non-toxic, and the dried film is no more inflammable than rubber. It is proof against the action of both fresh and salt water, and adheres permanently to metals (including aluminium alloys), rubber, concrete, brickwork, stone, wood, plastics, glass and synthetic glasses.

Application :

(*a*) *Window frames and glass* :—For sealing window frames, a thick bead of Bostik is usually required. For this reason the compound is used direct from the tube without the use of the patent nozzle. A winding key is provided for fitting over the bottom end of the tube to extrude the Bostik; a bead is squeezed into the angle formed by the frame and wall, and either smoothed down by a knife blade or spatch dipped in water, or pressed into the cavity by a wood bead.

For setting glass without a rubber channel, the sash and glass should be cleaned and a ribbon of Bostik then squeezed all round the rebate by the patent nozzle fitted to the tube. The glass is pressed into position immediately, so as to secure an extrusion of the sealing compound over the edges of the sash. A further ribbon of cement should be applied to the glass before the glazing beads (if used) are fixed.

The surplus material may be trimmed off after 24 hours with a sharp knife dipped in water.

If a rubber channel is used, a bead of Bostik should be squeezed into it before the glass is fitted. Procedure is then as described above.

(*b*) *Flat sheet materials on exterior walls* :—Two beads of Bostik are used for sealing the vertical joints, applied centrally down the face of the stud before the sheets are pressed into position. The joint between the sheets may be partially raked if no cover battens are required.

It is recommended that the drilled or punched fixing holes through the sheets should be filled with Bostik before nailing.

If cover battens are fitted, these should be applied directly over the Bostik as shown, without raking back the joints.

An alternative method of sealing is to apply the beads of Bostik to the face of the sheets instead of to the stud.

(*c*) *Corrugated materials on external walls* : When corrugated sheeting is fixed horizontally to exterior walls, the vertical butt joints may be made watertight by either of the methods shown. The first shows the use of narrow strips of sheeting fixed up the length of the stud ; these corrugated strips must be made to fit with the corrugations of the main sheeting. The second shows the use of solid backing pieces corrugated on the outer face only.

Two thick beads of Bostik are squeezed centrally down the face of the backing strip, and the outer sheeting applied by working from the bottom upwards. The vertical butt joints must occur centrally on the prepared backing strip, and the horizontal lapped joints over the nogging provided between the studs at appropriate heights.

The fixings of the outer sheeting do not occur at the studs, but only along the horizontal nogging.

The Bostik may be slightly raked out of the vertical joints if desired.

Prices :

Tubes in 1 gross lots : 1s. 7d. each.
Tubes in 2 gross lots : 1s. 5d. each.

The contents of one tube of Bostik, when applied without the nozzle, produces a bead approximately 20 ft. long ; when applied through the nozzle, a ribbon 25 ft. to 30 ft. in length is obtainable.

Manufacturer : The B.B. Chemical Company, Ltd.

Address : Ulverscroft Road, Leicester

Telephone : Leicester 20175

869

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THE DETERMINATION OF SIZE & SPACING FOR JOISTS, ETC. OF UNGRADED TIMBERS.

The following table & printed clauses are quoted from the L.C.C. regulations for the use of timber & represent the method laid down for determining the size & spacing of joists, etc. of ungraded timber, if full computations are not made. See also clauses given on the back of sheet.

(1) The minimum depth of any such timber for any pre-determined breadth and spacing shall be determined in the following manner :—

(*a*) The spacing factor shall be ascertained by dividing the clear spacing by the breadth of the timber.

(*b*) The spacing factor shall be located in the appropriate column of Table IV or Table V, as the case may be, or, if there be no such spacing factor in the Table, the next higher spacing factor in the Table shall be located. In no case shall the spacing and the breadth be such that the spacing factor exceeds the maximum shown in the Table.

(*c*) The length of the timber shall be divided by the number in the column headed "*l*/*d*" in the Table set opposite the appropriate spacing factor.

The dimension so obtained shall be the minimum depth of such timber permitted under this Section of these by-laws.

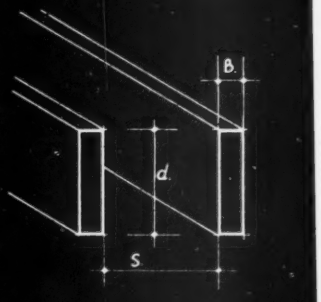
(2) The maximum clear spacing for any such timber of pre-determined dimensions shall be determined in the following manner :—

(*a*) The length of the timber shall be divided by the depth.

(*b*) The number corresponding with the quotient so obtained under (*a*) shall be located in the column headed "*l*/*d*" in Table IV or Table V as the case may be.

(*c*) The breadth of the timber shall be multiplied by the spacing factor set out opposite such number in the appropriate column of the Table.

The dimension so obtained shall be the maximum clear spacing permitted under this Section of these by-laws.



Given thickness (B) and spacing (S) to find the minimum permissible depth :

1. Calculate the spacing factor = S/B.
2. Locate this factor in the appropriate column in the table.
3. Locate the l/d figure opposite this factor.
4. Minimum permissible depth = Length / l/d figure located as above.

TABLE IV. *Spacing in relation to dimensions of non-graded timbers supported at both ends.*

l/d.	SPACING FACTORS. (i) Rafters, purlins and ceiling joists.	(ii) Joists to flat roofs.	(iii) Binders to flat roofs.	(iv) Joists and binders to residential floors.	(v) Joists to offices above entrance floor.	(vi) Binders to offices above entrance floor.	(vii) Joists to offices on and below entrance floor and to retail shops and garages for private cars of not more than 2½ tons net weight.	(viii) Binders to offices on and below entrance floor and to retail shops and garages for private cars of not more than 2½ tons net weight.	(ix) Joists and binders to corridors and landings.	(x) Joists to workshops and factories and garages for motor vehicles other than private cars of not more than 2½ tons net weight.	(xi) Binders to workshops and factories and garages for motor vehicles other than private cars of not more than 2½ tons net weight.	(xii) Joists and binders to warehouses, book stores, stationery stores and the like.	l/d.
5	...	...	...	...	...	...	...	...	...	...	...	15	5
6	—	—	—	—	—	—	—	—	24½	16	20	12	6
7	—	—	45	—	38½	—	—	25	21	13½	17	10	7
8	64	28	39½	22	33½	20	22	18	12	14½	9	8	
9	56	24½	34½	19	29½	17⅓	19	15½	10½	12⅓	7½	9	
10	45	19½	27½	15	23½	14	15	12½	8	10	6	10	
11	37	16	22½	12½	19	11	12½	10	6½	8	4⅓	11	
12	31	13½	19	10	16	9	10	8½	5	6½	3½	12	
13	26	11	16	8½	13½	7⅓	8½	7	4	5½	—	13	
14	22½	9½	13½	7	11½	6⅓	7	6	3½	—	—	14	
15	19½	8	11½	6	10	5½	—	5	—	—	—	15	
16	17	7	10	5	8½	4½	...	...	...	...	...	...	16
17	15	6	9	4½	7½	4	...	—	...	...	...	...	17
18	13	5	7½	—	6½	—	...	—	...	...	...	...	18
19	11½	4½	6½	—	—	—	...	—	...	...	...	...	19
20	10½	4	6	—	—	—	...	—	...	...	...	...	20
21	9	...	5	...	...	...	...	...	...	...	...	...	21
22	7½	...	4	...	...	...	...	...	...	...	...	...	22
23	6½	...	—	...	...	...	...	...	...	...	...	...	23
24	5½	...	—	...	...	...	...	...	...	...	...	...	24
25	4½	...	—	...	...	...	...	...	...	...	...	...	25
26	4	...	...	...	...	...	...	...	...	...	...	...	26

Given thickness (B) and depth (d) to find the maximum permissible spacing :

1. Divide length by depth l/d.
2. Locate this figure in the l/d column.
3. Locate the spacing factor opposite in the appropriate column.
4. Maximum permissible spacing = B × spacing factor located as above.

INFORMATION SHEET : TIMBER CONSTRUCTION : L.C.C. REGULATIONS : No. 2.

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

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INFORMATION SHEET

• 728 •

TIMBER CONSTRUCTION

Subject : The determination of size or spacing of joists, etc.

The table and printed matter on this Sheet, and the quotations given below are taken from the *By-Laws made by the London County Council in pursuance of the London Building Act (Amendment) Act, 1935, for the use of timber in the construction and conversion of buildings*, which came into force in 1938 and to which reference should be made for the full text.

The By-Laws are in four sections and a Schedule.

SECTION I.—Requirements for all timbers.
This section deals mainly with the application of the by-laws, quality of timber, minimum thickness, and joints.

SECTION II.—Rules for calculations when the sizes and spacing of timbers are not determined under Section 3.
This section sets out the loads which must be allowed and the maximum stresses which are permitted when full computations are made.

SECTION III.—Rules for the determination of the size and spacing of timbers when loads and stresses are not calculated under Section 2.
This section, part of which is given on this Sheet, sets out methods of determining sizes and spacing without full calculations of stresses.

SECTION IV.—General.
This section deals mainly with notices and penalties and the duties of the district surveyor.

SCHEDULE.
The Schedule deals mainly with the measurement of grain and knots and with the grading rules for "grade 1,200 lb.f." timber.

SECTION 3

Rules for the determination of the size and spacing of timbers when the loads and stresses are not calculated under Section 2.

The provisions of this Section shall be subject to the following requirements :—

(*a*) Pitched roofs shall be covered with ordinary slates, tiles, asbestos-cement, or other materials of not greater weight.

(*b*) Flat roofs shall be covered with lead, copper, zinc or not more than one inch thickness of asphalt, or other materials of not greater weight.

(*c*) Floors and flat roofs shall be constructed of boarding on joists or firring and shall not be pugged with concrete or otherwise subjected to abnormal dead loading ; but this requirement shall not preclude the use of plastering, parquet or other light ceiling and floor covering. The superimposed loading of floors shall not exceed the number of pounds per square foot indicated by the figures specifying the loading on joists between binders or other supports in Table I of these by-laws. For the purpose of determining superimposed loading, a load which may roll or move on wheels (except motor vehicles in garages) shall be calculated as being equivalent to a static loading which exceeds the weight of the rolling or moving load by not less than 50 per cent.

For the purposes of this Section of these by-laws the dimensions of a piece of timber shall be the actual measurement and shall not be taken as any "nominal" or "scant" size. Where a piece of timber is morticed or notched or its sectional area is in any way reduced in such a manner as materially to impair its strength, the required size shall be so increased as to compensate for any such reduction in sectional area to the satisfaction of the district surveyor.

Every rafter, purlin, joist and binder shall be rectangular in section and shall extend in one piece between its supports, and, except as provided in by-law 19, shall be supported at both ends.

The spacing of rafters, purlins, joists and binders shall be measured in the clear. Where such spacing on one side of any such timber is not equal to that on the other side, the spacing for the purpose of this Section of these by-laws, shall be taken as the average of the two spacings.

Floor boards and boarding to flat roofs shall have a thickness of not less than five-eighths of an inch and shall be properly nailed or otherwise securely attached to every joist, firring or other fixing which determines the span of such boards and they shall be similarly attached at the ends to such support except in the case of the joists or firrings next a wall in which case the ends of the boards may project beyond the joists or firrings to an extent not exceeding three times the thickness of the boards. Where boarding is attached to firring, the firring shall be nailed or otherwise securely attached to the joists.

The span of the boarding of flat roofs and floors shall be taken as the clear dimension between the joists or other supports and shall not exceed twenty-four times the thickness of the boarding.

The following rules with regard to size and spacing shall be observed in the use of timber for the following purposes :—

(i) Rafters, purlins and ceiling joists.

(ii) Joists to flat roofs.

(iii) Binders to flat roofs.

(iv) Joists and binders to residential floors.

(v) Joists to offices above entrance floor.

(vi) Binders to offices above entrance floor.

(vii) Joists to offices on and below entrance floor and to retail shops and the like, and garages for private cars of not more than two-and-one-quarter tons net weight.

(viii) Binders to offices on and below entrance floor and to retail shops and the like, and garages for private cars of not more than two-and-one-quarter tons net weight.

(ix) Joists and binders to corridors and landings.

(x) Joists to workshops and factories and the like, and garages for motor vehicles other than private cars of not more than two-and-one-quarter tons net weight.

(xi) Binders to workshops and factories and the like, and garages for motor vehicles other than private cars of not more than two-and-one-quarter tons net weight.

(xii) Joists and binders to warehouses, book stores, stationery stores and the like.

Where a piece of timber constituting a rafter, purlin, joist or binder is continued beyond a support in such a manner as to form a cantilever, the portion of such timber acting as a cantilever shall be effectually counterbalanced by the other portion of the piece of timber and any other dead loading imposed thereon. The length of such cantilever, which shall not be reduced in section, shall be measured in the clear from the support and shall not exceed one-quarter of the length which would have been permissible under this section if the cantilever had been a beam supported at both ends.

The rules referred to under this clause for ungraded timbers are given on the face of this Sheet and those for "grade 1,200 lb.f." will be given on a succeeding Sheet.

Section II.—The loadings and maximum permissible stresses laid down in Section II for use when full calculations are made have been given on Sheet No. 724.

Table V will be given on the third Sheet of this series.

IN PARLIAMENT

Mr. R. Morgan asked the Lord Privy Seal whether, in view of the different problems in connection with the Civil Defence Bill which affect property owners, he would consider consulting the National Federation of Property Owners and the other property owners' organizations and whether, in that case, he could fix a date before the commencement of the committee stage of the Bill.

Sir J. Anderson said that he had already agreed to receive a deputation from the National Federation of Property Owners and the National Federation of Property Owners and Factors of Scotland.

Mr. Graham White asked the Lord Privy Seal if he was aware of the delay caused in the provision of air-raid shelters in commercial buildings by the fact that owners were unable to proceed with their plans owing to the absence of the code ; and if he could state when the code would be issued in its final form.

Sir J. Anderson said that the code was issued in a provisional form last Monday. It could not be issued in final statutory form until the Bill had passed into law, but he was satisfied that the published draft might safely be taken now as a practical guide.

Mr. Sorensen asked the Lord Privy Seal whether he was considering any further facilities to be offered to householders for the strengthening of cellars and basements by steel supports, or to assist those who could not, or prefer not to utilize steel shelters effectively to improve other partial means of protection.

Sir J. Anderson said that a circular letter was issued last Tuesday to the local authorities in the areas most exposed to risk, setting out the action to be taken for the further development of the Government's shelter programme.

Mr. Day asked the Lord Privy Seal whether his attention had been called to the fact that many landlords of buildings in vulnerable areas who had let off same in suites or floors had not taken the necessary precautions in the event of air raids or a national emergency to safeguard those persons resident or employed in such buildings ; and would he take immediate steps to ensure all such persons being afforded adequate protection.

Sir J. Anderson said that if the residents in these buildings were within the classes entitled to free provision of shelter, they would be covered by the arrangements described in the circular which was issued last Tuesday to local authorities in the more vulnerable areas.

Mr. Noel-Baker asked how many steel shelters had been delivered to householders in the Greater London area up to April 22, 1939.

Sir J. Anderson said he was not in a position to say how many of these shelters had actually been delivered to householders, but the number despatched from contractors' works up to April 22 to areas within the Metropolitan Police District was 138,000.

•

HOUSING : SCOTLAND

During the quarter ended March 31, 4,529 houses were completed by Scottish local authorities, an increase of 749 houses over the number erected in the corresponding quarter of 1938.

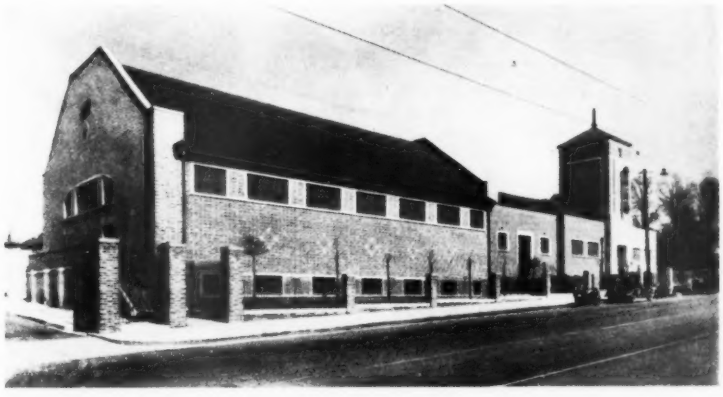
Returns received by the Department of Health show that during March these authorities completed the erection of 1,636 houses, of which 40 were of timber construction, as compared with 1,664 the previous month and 1,487 in March last year.

At the end of March 26,523 houses were under construction, an increase of 145 on the figure at the end of the previous month, while the number of houses contracted for but not begun was 8,888 as compared with 8,752 at the end of February. The respective figures at the end of the first quarter of 1938 were 27,180 and 9,499.

The number of working-class houses erected in Scotland since 1919 by local authorities is 212,866 and by private enterprise 96,454—a total of 309,320.

ELTHAM BATHS

DESIGNED BY W. H. TEE, BOROUGH ENGINEER, SURVEYOR AND ARCHITECT, WOOLWICH



GENERAL — *Accommodation included a large swimming bath 100 ft. by 40 ft., with three tiers of seating for spectators along each side, and a smaller bath 60 ft. by 30 ft. A car park with a capacity for 20 cars and 30 bicycles was arranged on a site adjoining the large bath hall easily accessible both to Carnecke Gardens and Sherard Road.*

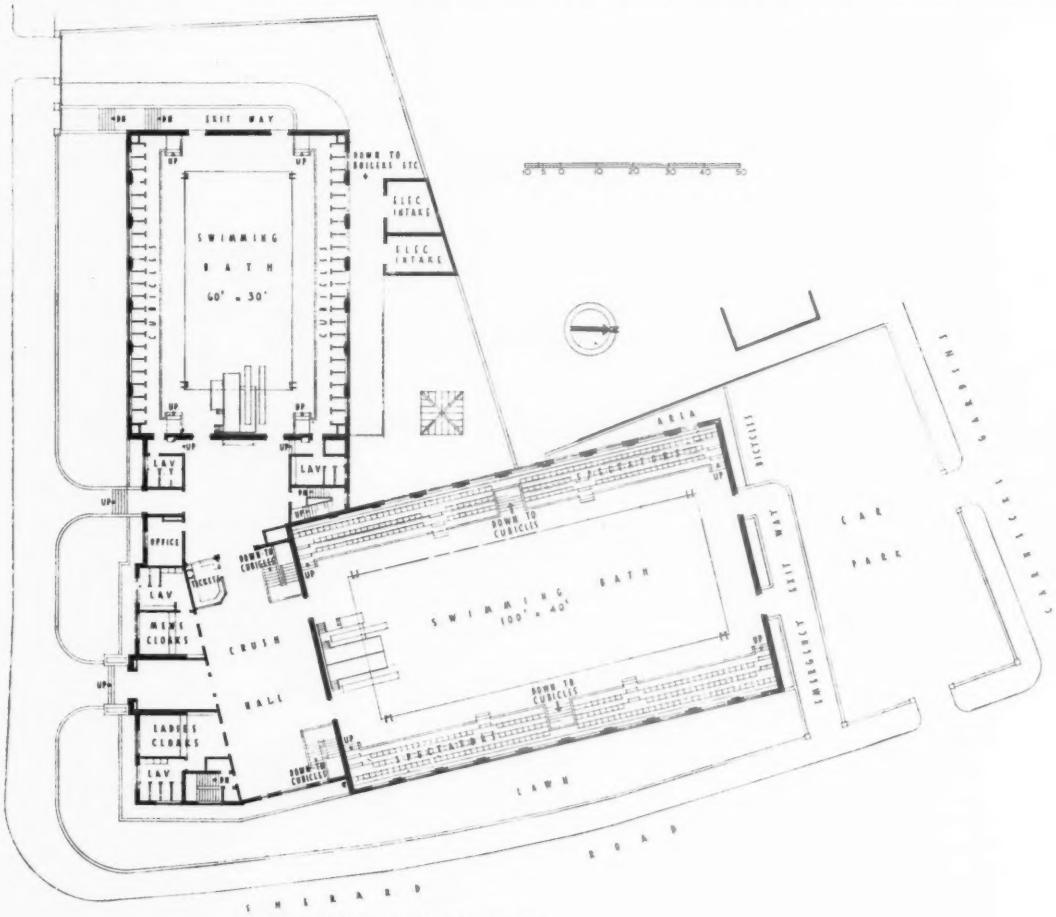
SITE — *The building is situated on an L-shaped site at the junction of Eltham Hill and Sherard Road—the subsoil of which is dry compact gravel, water being only encountered at a depth of 16 ft.*

CONSTRUCTION OF EXTERNAL FINISHES—*The solid walls of hard stock bricks in hydraulic lime-mortar are faced with mulberry facings pointed in cream-coloured cement. All floors, stairs, and flat roofs are of hollow tiles and reinforced concrete supported on steel beams, the sloping sides of the roofs over the baths are of timber carried on steel trusses and finished with double Roman pattern concrete tiles, while the flat reinforced concrete middle portions have continuous lengths of roof-glazing to light the baths below. All flat roofs are finished with patent laminated bitumen and surfaced with waterproofed cement screeding. The windows are rust-proofed metal casements throughout, all window and door openings having cast stone dressings.*

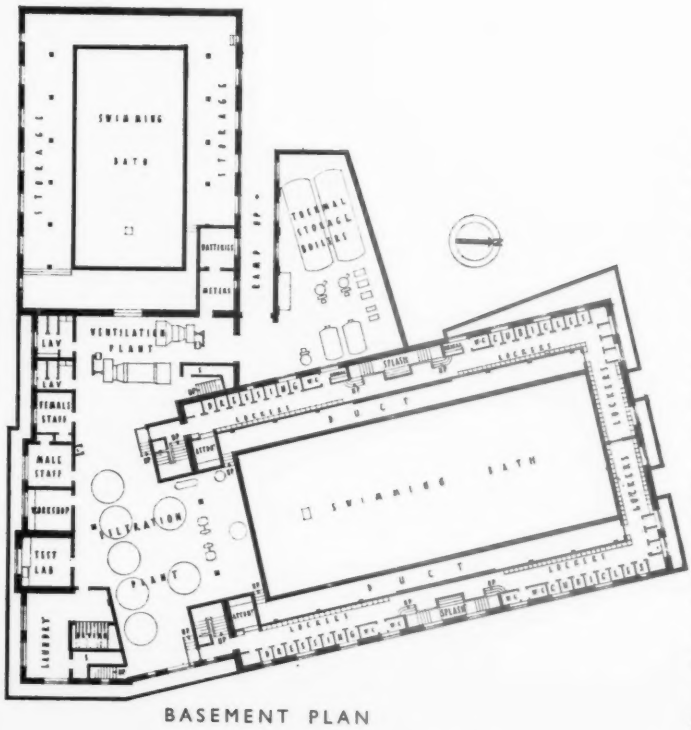
F

SWIMMING BATHS, ELTHAM

BY W. H. TEE, BOROUGH ENGINEER, SURVEYOR AND ARCHITECT, WOOLWICH



GROUND FLOOR PLAN



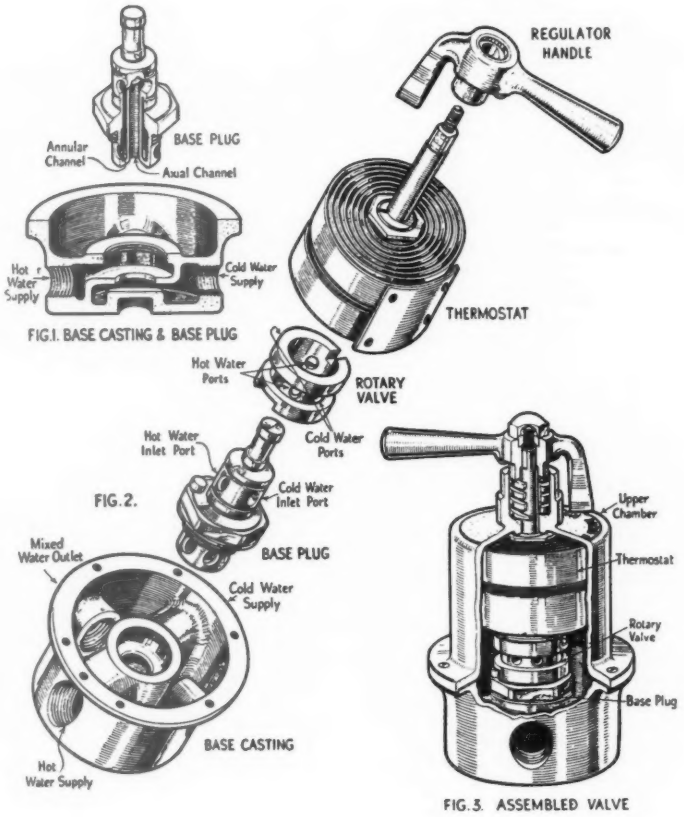
BASEMENT PLAN

INTERNAL FINISHES—*The swimming baths, surrounds and seating tiers are constructed in reinforced concrete, the baths being lined with special 2¼ in. thick glazed fireclay bricks, while the entrance and crush halls, bath halls, lavatories and public staircases have patent tiles on the walls and floors throughout. Dressing cubicle partitions in the large bath are of patent tiles 1½ in. thick, while those in the small bath are of teak framing with metal-faced ply-wood panels, all doors and other joinery being teak with stainless steel fittings.*

SERVICES—*Heating and hot water are provided by the large electric and thermal storage boilers and calorifiers in the basement boiler house. An emergency water-storage tank having a capacity of 4,000 galls. is placed in the tower over the main entrance, this being the estimated quantity of water required for one day's operation. A filtration and sterilizing plant designed to purify and change the water in each of the baths every three hours has been installed, and both halls are provided with a plenum and extract ventilation system. Radiators and heating coils are provided in the crush halls, lavatories and dressing cubicles.*

COST—*1s. per cu. ft. Building work, £50,000. Plant, etc. £24,000. Total, £74,000.*

CONTRACT—*The building was erected by direct labour. For list of sub-contractors and suppliers, see page 746.*



TRADE NOTES

[*By PHILIP SCHOLBERG*]

Thermostatic Mixing Valves

DURING the last two or three years I have referred occasionally to different types of shower head, and on every occasion I have added a tentative suggestion that mixing valves for use with these showers should have some form of thermostatic control to prevent users being scalded by hot water when the pressure of the cold supply suddenly drops. Mixing valves of this kind have been available for many years in America, but any English manufacturers or suppliers of sanitary fittings with whom I have discussed the question have maintained firmly that mixing valves are perfectly all right as they are ("We have been making them for years"), and that thermostatic control is just a tiresome fuss about not very much.

It is therefore interesting to discover that Walker Crosweller & Co., a Cheltenham firm, imported one or two sample thermostatic valves made by the Leonard Company in America and found at once that there was a considerable demand for them, so much so that they took out a licence to manufacture the valves in this country. Prices, owing to import duties, were very high, but since the new factory was started they have been considerably reduced and they now run from £4 15s. to £17, according to the size required, the smallest model being quite large enough to control a single shower provided there is an available head of water of about 10 ft.

The sketches at the head of these notes show the internal construction and the bi-metal thermostat strip, which has a considerable area and is so placed in the water stream that it will be almost instantly affected by any change in temperature. Various different models are made, but the principle remains the same in all of them, and particular care has been taken to arrange the layout so that any cleaning can be done by removing the top cover and without disturbing the service pipes. The thermostat works on the temperature-difference principle, and this must be at least 30° F., that is to say, the hot water supply must be 30° F. above the temperature of the blended water. Check valves are provided to stop any water seeping through from the cold to the hot part of the system or vice versa, and the valve will work when the differences in pressure between the two supplies are quite considerable. There are already many installations in this country working satisfactorily with the cold supply taken straight from the high pressure main and with only the comparatively low head from the tank supply for the hot water. One user quotes 60 lb. pressure for the cold as against 5 lb. for the hot water.

If the cold supply should fail completely, there will still be a small trickle of hot water through the shower owing to the clearances necessary in the ports of the valve itself. The volume of water which these clearances will let through does not amount to more than a pint a minute, and this produces such a small trickle that it will not be enough to injure any ordinary person, though it might conceivably be dangerous for invalids or very small children. The manufacturers go out of their way to make this point perfectly clear, and for institutional purposes they can supply an extra fitting to give a complete shut off of the hot supply. This has already been done in several mental hospital installations.

From the user's point of view the valve is exactly the same as the common non-thermostatic type in that there is a single lever control to vary the temperature from cold to hot, but there is the obvious advantage that the temperature, once adjusted, will remain constant. The larger models can be used to control complete ranges of showers in such jobs as schools or pithead baths, and there are also many industrial processes for which a constant temperature water spray is required, and it would seem that these valves might well be used here.

Since the manufacturers have discovered that the demand is likely to be considerable, they have taken some trouble to arrange a proper spare parts service, and they seem also quite convinced that they have found a real winner. In their own words: "We are conscious we have only been able so far to scratch the surface of the demand." I would like to add that I am privately very glad that some firm has had the enterprise to take these valves up seriously, for it seems obvious to me that they are an enormous improvement over the older type and it is more than likely that they will become standard practice.—(*Walker Crosweller & Co., Ltd., Whaddon Works, Cheltenham, Glos.*)

Electric Incinerators

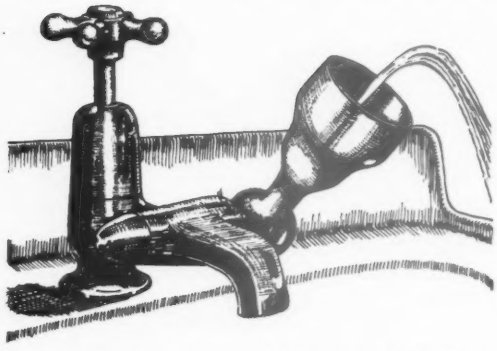
Small gas-fired incinerators have been used for some time in hospitals and nursing homes for the destruction of small dressings and any other unnecessary oddments. A Lanarkshire firm has now introduced an electrically-heated model with a brick-lined furnace. The usual three-heat cooker type switch is provided for control, or alternatively a timing device graduated up to 30 minutes can be fitted. Two models are made, one for floor and the other for wall mounting.—(*Archibald Low Electrics, Ltd., Newarthill, Motherwell, Lanarkshire.*)

Lighting Fittings for Catching Mosquitoes

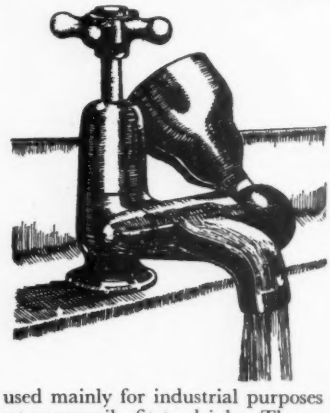
The mosquito problem is admittedly more important in America than it is here, and I have recently discovered that an American firm makes a special lighting fitting which is intended mainly for the destruction of mosquitoes. The bowl of the fitting is a simple cylindrical shape with three funnel-shaped depressions in the sides, these depressions looking rather like the squeezed-in sides of a Haig dimple whisky bottle, with a hole at the bottom of each dimple. The idea is that the mosquitoes are attracted by the light and go rushing through the holes into the interior of the fitting where they are destroyed by the heated air. There is a metal cap at the bottom to catch the corpses, and these are emptied into the dustbin each morning. It is said that when the lamp is used out of doors, flying insects can be seen entering the lamp in a steady stream and that the nightly catch may be as high as 1,500.

A Combined Drinking Fountain and Tap

The Factory Act makes the provision of a drinking water supply compulsory, and



there remains the question of how the supply can best be passed from the mains to the consumer. An ordinary tap is certainly not the best way, for a chipped enamel cup is generally to be found tied to the water pipe with a piece of string and transmitting any epidemics automatically round the works, for even if employees have drinking cups of their own they will not always use them. A drinking fountain is the obvious solution, but it has the disadvantage that it is impossible to fill kettles or cans from it. A possible solution has recently been introduced by Messrs. Glenfield and Kennedy, who are marketing a tap with a fountain outlet at the side. There are sketches of it on this page. The fountain unit is at the side and can be swung forward when anyone wants to drink, the forward swing diverting the water flow from the tap. When swung back the fountain is out of the way and the water supply passes straight through the tap. It may be thought that this is rather a fuss about nothing, since all factories seem to have washing sinks and taps scattered all over the place. It should be remembered, however, that the main water supply may



be used mainly for industrial purposes and is not necessarily fit to drink. The special supply for drinking should go to a fountain, and if a tap is necessary as well why not combine the two? The price is 65s.—(*Glenfield and Kennedy, Ltd., Kilmarnock, Scotland.*)

Casting Concrete Pipes

A system has recently been developed in Italy for casting concrete pipes *in situ* round a rubber core. A vulcanized cloth tube of the same diameter as the inside of the finished pipe is laid on a layer of concrete at the bottom of the trench and inflated with compressed air to a pressure of between 3 and 5 lb. per square inch. The trench is then filled with enough concrete to give the required wall thickness at the top of the tube, and the rubber lining is deflated and removed. Spiral reinforcement can be worked in if necessary, and continuous lengths up to 300 ft. are possible, including curves.

Changes in Water Supply Laws

The second report of the Minister of Health's advisory water committee was published last week, and makes various recommendations that the law covering existing water supplies should be modified and brought up to date. The most important of the recommendations give the water undertakings general powers to protect public water supplies from the risk of pollution, but I can still find no attempt to make any recommendations at all that there should be some uniformity of practice throughout the country. Water boards, as I have frequently complained, are a law unto themselves, and a fitting which would be allowed in one part of the country is forbidden in another. A supplier of flushing cisterns once complained to me that he was compelled to stock about 150 different types simply because he wished to be able to supply, over the counter, fittings which would pass any water board in the country. He claimed that, with reasonable codification, he would be able to reduce his stock of types to as little as a dozen. This state of affairs may not occur with all types of fitting, but things are quite bad enough. If we can have Ministry of Health Model Bye-Laws, why not model water regulations as well?

LAW REPORT

RESTRICTIVE COVENANT: MEANING OF "SCHOOL"

Lawrence v. *South County Freeholds, Ltd., and Another.* — *Chancery Division. Before Mr. Justice Simonds*

THIS was an action by Mr. F. G. Lawrence and Mr. E. R. Lawrence, the owners of No. 14 Montpelier Crescent, Brighton, against The South County Freeholds, Ltd., the Montpelier School of Music, and Miss Elsie Mary Darley, respectively the owners and lessees of No. 13 Montpelier Crescent, for an injunction to restrain the second and third defendants from carrying on the business of teachers of music and dancing in such a manner as to cause a nuisance to the plaintiffs, and as against the first defendants, to restrain them from carrying on or permitting to be carried on the business of teachers of music and dancing or letting out rooms for that purpose in breach of an alleged restrictive covenant not to carry on any business on the premises except that of a school or seminary, surgeon or apothecary.

Mr. Evershed, K.C., and Mr. R. Jennings appeared for the plaintiffs; Mr. A. Grant, K.C., and Mr. R. Turnbull for the first defendant, and Mr. M. Holland for the other two defendants.

His lordship, after hearing the evidence, held that the school of dancing was so conducted by the second defendants as to be a nuisance to the plaintiffs and granted them relief. It appeared, however, that the tenancy had come to an end and therefore it was unnecessary to grant an injunction.

With regard to the claim against the South County Freeholds, Ltd., he held that the company had let the premises for the purpose of a school of music only and for no other purpose, though they were, in fact, used for dancing. There arose the question whether a school of music came within the exception of a school in the covenant of a deed dated July 31, 1845. He thought that the plaintiffs' contention that "school" meant a place where boys and girls received instruction and discipline was the correct one. He came to the conclusion that the plaintiffs were entitled to succeed on the point that defendants had so used the premises as to contravene the covenants and further that the defendants were bound by the covenants.

The final question was: Were the plaintiffs entitled to sue on the covenants? Montpelier Crescent was laid out and built on between 1843 and 1847, and plaintiffs alleged was the subject of a building scheme. In his view this contention broke down. While all the houses were subjected by the original vendor to similar covenants, he could not derive from the deeds a definite intention that the covenants were to ensure for the benefit of the whole estate, so as to enable a purchaser of any house in the Crescent to enforce them against a purchaser of any other house. As a matter of fact, a building scheme in the modern sense, without a separate deed of covenant executed by all the purchasers, absent in the present case, was unknown in 1845. He further held that no sub-scheme relating to the plot on which Nos. 13, 14 and 15 in the crescent had been built, could be proved to exist. Therefore as against the first defendants the action would be dismissed, with costs.

THE BUILDINGS ILLUSTRATED

ELTHAM BATHS, ELTHAM (pages 743-744). By H. W. Tee, Borough Engineer, Surveyor and Architect. Direct labour under Borough Engineer. Sub-contractors and suppliers included: Woolwich Borough Council, excavation, foundations, dampcourses, plumbing, joinery, shrubs and trees; Electricity Dept., electric wiring; Metropolitan Water Board, water supply; Permanite, Ltd., asphalt and special roofings; Helical Bar and Engineering Co., Ltd., reinforcement; Cement Marketing Co., Ltd., facings — mulberry, general walling, second stocks, partitions, sand limes, and Cullamix; Patent Victoria Stone Co., Ltd., artificial stone; Harland and Wolff, Ltd., structural steel; Kleine Co., Ltd., fireproof construction; Marley Tile (Holding) Co., Ltd., tiles; A. Goldstein & Co., glass; Mellowes, Ltd., patent glazing; Acme Flooring and Paving Co., woodblock flooring; A. A. Byrd & Co., Ltd., Tricasol waterproofing material; G. N. Haden and Sons, Ltd., central heating, boilers, and ventilation; General Electric Co., electric light fixtures; Adamsez, Ltd., sanitary fittings; British Art Tile Co., Ltd., stairtreads, tiling; Carter and Aynsley, Ltd., door furniture; Henry Hope and Sons, Ltd., casements; Siemens Bros. & Co., Ltd., telephones; The British Plaster Board, Thistle plaster; Morris Singer Co., metalwork; W. Lusty and Sons, Ltd., furniture (Lloyd Loom); Roneo, Ltd., cloakroom fittings; G. Brady & Co., Ltd., lifts: Smith's English Clocks, Ltd., clocks; Metropolitan Water Board, water supply; Pearce Signs, Ltd., signs; United Filters and Engineering, Ltd., filtration plant; Brown and Tawse, diving stages; H. Lazarus and Son, Ltd., public seating; Bull Super Silent Motors by Bull Motors (branch of E. R. and F. Turner, Ltd.).

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/–	●46/10
Ditto tongued and grooved ditto ..	per square	41/9	●51/–
T. & G. B.C. Pine rift flooring in narrow widths	per square	57/–	—

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	12/1	16/3
Canadian Maple	per yard super	10/4	11/11
25–30 per cent. quart Austrian Oak	per yard super	11/7	●14/8
Plain American Oak (no selection made for sap) ..	per yard super	10/6	—
Gurjun	per yard super	12/2	13/1
Pitch Pine (50% rift sawn) ..	per yard super	10/6	12/4
Ditto (100% ditto) ..	per yard super	12/1	14/2
British Columbian Pine ..	per yard super	8/5	8/11
Deal, 100 per cent. rift sawn	per yard super	8/8	10/1
Jarrah	per yard super	10/9	—
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

⅛″ 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
5/16″ Asbestos cement sheets butt jointed	per foot super	–/3½
½″ 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	–/1½

● **Items marked thus have risen since April 6.**

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	–/7½
Add for plugging to brickwork .. per foot run	–/0½	–/0½

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	–/2½	–/5½
Add if bearers plugged to brickwork per foot run	–/0½	–/0½

Teak Draining Boards and Twice Oiling

1½″ 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
1½″ 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
1½″ × 1½″ 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

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″ × 3/16″ sawn laths	–/9	–/1½
Render and set in lime and hair	1/8	–/3¼
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.	38/10	39/11	41/0½	33/8
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/–	1/2¼	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	–/10½	1/2	1/8¾	2/4¼
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	2/11½	3/11¼	—	—
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	–/10½	1/2¾	1/7¾	2/2¼
Add if in short lengths per foot run	–/1	–/1	–/1½	–/2
	1½″	2″	2½″	3″
Cold water pipes fixed to walls per foot run	2/9	3/6¾	—	—
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	–/8¾	–/10¾	1/2	1/5
	1½″	2″	2½″	3″
Waste and overflow pipes fixed in short lengths per foot run	1/9¾	2/5½	—	—

Soil and Ventilating

	3½″	4″	4½″
Pipes fixed, including lead tacks per foot run	5/2¾	5/10	6/8½

	1½″	2″	2½″	3″	3½″	4″	4½″
Bends each	1/6	2/–	2/9	3/9	4/3	4/6	5/6
Soldered joints to fittings each	½″ 2/1½	¾″ 2/4	1″ 2/7	1¼″ 2/9	1½″ 3/–	2″ 3/5	
Soldered branch joints (price as largest branch) each	½″ 2/3½	¾″ 2/6	1″ 2/9	1¼″ 3/–	1½″ 3/3		
Soldered branch joints (price as largest branch) each	2″ 3/8	2½″ 4/–	3″ 4/6	4″ 5/–	4½″ 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	8/1	10/3	13/11
Ditto, including two red lead joints for iron each	4/9	6/7	9/7
Ditto, including one soldered and one red lead joint each	6/7	7/9	12/–
High pressure Portsmouth pattern ball valve with flynut and union and one soldered joint each	8/8	11/1	18/11
Ditto, including red lead joint for iron each	6/4	9/–	16/1
	2″		4″
Brass thimble and soldered and cement joints each	4/11		9/3
Ditto, with solder and caulked lead joints each	5/11		11/–

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	–/4¼	–/4¼	–/4¼	–/4¼
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	–/2½

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	–/3½	–/3½
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	–/7¾
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	–/3¼
Wash leather strip or similar material and bedding edge of glass .. .. per foot run	–/3½

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 6½d.

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

APPROXIMATE ESTIMATES

★ ON this and the three following pages the JOURNAL's section of Approximate Estimates is published for the sixteenth 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	–/6½	–/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
o 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 April 13, 20, 27 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.