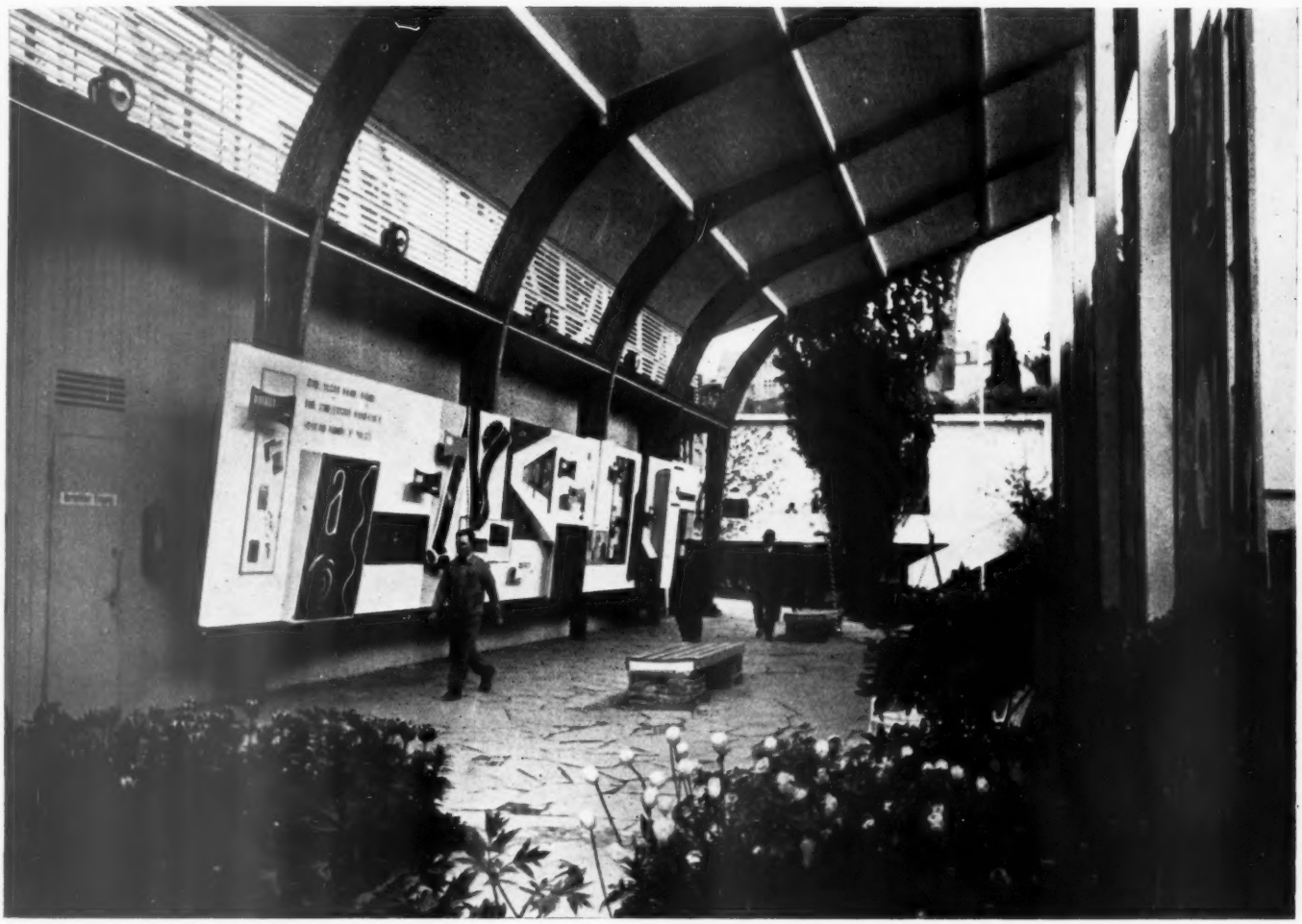
THE ZURICH EXHIBITION



The Swiss National Exhibition at Zurich opened on May 6 and will close on October 29. Its aim is to illustrate all sides of the life and work of Switzerland.
Above is a photograph of the covered courtyard in front of the Trade and Finance Pavilion by E. and A. Roth. The laminated wood trusses are varnished, and stand out against the painted woodwork.

BAY WINDOWS

An awkward bay window makes an awkward room as well as an awkward roof. Well designed it will add useful space within and be attractive from without. It should not be allowed to predominate over the main portion of the house.

GOLDERS GREEN

CUL-DE-SAC ROADS

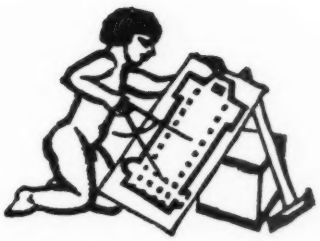
Cul-de-sac development is a method of providing freedom from traffic danger, as well as variety of planning. Besides allowing for attractive and varied lay-out, it is an economy in road building.

WELWYN GARDEN CITY

"HOUSES WE LIVE IN"

A book with this title has just been published by the Ministry of Health at a price of 1s. (H.M. Stationery Office). The book is meant for the general public. It describes good and bad aspects of contemporary housing and illustrates its suggestions with contrasting photographs on facing pages. Two sets of these facing pages are reproduced above.

"Houses We Live In" is the subject of the article on the opposite page.



OPPORTUNITY FOR MR. ELLIOT

A REMARKABLE book has just been published by the Ministry of Health. It is called *Houses We Live In*,* and has no resemblance to the Government publications to which everyone is accustomed. It is of quarto size, on art paper, with a glossy blue cover.

It is a book of contrasts—two of which are reproduced on the opposite page. On one page are shown houses, or parts of houses, which can be seen everywhere ; on the facing page are shown the same things as they have been done when a little thought has been devoted to them and a few simple conclusions have been acted on. Streets, layout, walls, roofs, chimneys and fences, shops and open spaces are some of the attributes of housing which are dealt with.

The text, admirably short, carries on the story from page to page with a friendly persuasiveness that revives a cause which for years has been drearily lost.

This success is due to the attitude of the authors. They assume, rightly, that the public does appreciate, and would like to regain, those qualities in its housing which up to 1830 were almost universal in England. From that starting-point *Houses We Live In* takes the reader by the hand and shows him that there is nothing darkly mysterious about those qualities—nothing that needs for their recovery a millionaire's income or the social framework of the Napoleonic Wars. It says : " *Chimneys*. Now what do you notice about *their* chimneys ; and about *our* chimneys." At the end the reader cannot help but be persuaded by arguments so simple and sensible.

The Ministry of Health and the Central Housing Advisory Committee have probably done much by this book to get the plain man on the side of good housing ; and praise is also due to the woman architect who spent many months collecting the basic material. Sent to all housing committees, presented to all clients by all architects, *Houses We Live In* may begin to check the blight which envelopes most of the four million houses built since the War.

But it can only begin. If left to stand by itself, its influence cannot be effective on any measurable scale against the huge vested interest in doing things wrong which has now grown up around housing. It is easy to see, *now*, how a wrong attitude arose. The demand for houses was so great in the early 'twenties that within half a decade a mountain of legal and administrative precedent had arisen for letting things slide.

* H.M. Stationery Office. Price 1s.

Houses We Live In shows two main causes of our present situation. The first is absence of any constructive town planning measures which apply to all land-developers. The failure to insist on comprehensive large-scale planning of new housing development is more than anything else the cause of the appalling mess of our streets, coasts, roads and traffic. The Ministry of Health know this, *Houses We Live In* shows it clearly : for every example of good development shown in the book is the result of strictly controlled, carefully planned development by a local authority or private corporation. It is futile to suppose that good housing can be obtained by any other method. The Government know it. We all know it. And there is immortality going begging for a Minister of Health who has the courage to make a statutory obligation of what we all know to be the only cure.

The second evil of our present housing—the faults in appearance, construction, materials and colour—is much more difficult to remedy. Its cause was snobbery, and originated in the detached villa of the prosperous nineteenth century industrialist. This villa, built in every variation of stylistic whimsy, became a symbol of success to millions, and the train of evil consequence was laid. Those who could not afford a detached villa demanded a semi-detached villa ; and after the War, when building societies extended the possibility of house ownership to millions, the words " semi-detached " and " distinctive " came to mean superior social status ; while a plain house in a terrace or a row was low-class. The consequences of this colossal aberration are found in every aspect of housing. Bad plans, bad construction and all the dreary ugliness in *Houses We Live In* come from the attempts of the builder to provide " detachment " and " distinction " at lower and lower purchase prices.

A Minister of Health who was determined to improve our housing need be in no doubt what to do. He must, first, see to it that new housing development near a town is laid out according to plans and not wherever a single landowner and a single purchaser can strike a bargain over a thirty-foot plot. Secondly, he must use all the arts of propaganda which the G.P.O. has made famous to convince the plain man that simplicity in a house—inside and out—is cheaper, healthier, more traditional, more upper-class, nicer for the wife and kiddies, better for the car and easier on the feet. Both could be done. Both only need a *minister of health*.

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

NOTES & TOPICS

H. S. GOODHART-RENDEL

LAST week Mr. Goodhart-Rendel completed his term of office as President of the R.I.B.A. Though his standing as a scholar and his ability as a speaker were well known to the public before his election, many suspected that this quality would be cramped and stifled in an official post. But from his inaugural address when he started the famous "stale chocolate" controversy, it was clear that we had for a president no puppet jerking obediently on wires manipulated by the council.

*

His public utterances have all been brilliant, wittily expressed, and free from the unexceptionable commonplaces which haunt like a stale smell the British after-dinner table. They have also been candid and controversial enough to arouse once more in the profession a lively interest in the profession. Little of consequence has escaped his deadly, unprejudiced observation.

*

His term of office will be renowned for the Registration Act and for the placing of architects on the schedule of reserved occupations; it will be *remembered*—and this is possibly unique—for the speeches of the office-holder.

BEAUTY IN BUILDING

The difficulty of education, to say nothing of propaganda, is considerably increased by the fact that both have to be put through the fine sieve of the British popular Press. Observe the result in a leading article in the *East Anglian Daily Times*, inspired by the Ministry of Health book discussed elsewhere in this issue.

*

The leader writer in question has performed the astonishing feat of reading into the book an attack on the work of modern architects. He must have read *Houses We Live In*—or at least seen it, and so ably is it produced that no more than a glimpse of its pages is required to make clear the contrast it sets before the reader: that between the shoddy and pretentious period nastiness of by-pass Tudor and the clean lines of the good small houses of all kinds. But this leader writer sees it all as a *reflection* on modern architecture, and complains of "new school buildings, costing many thousands of pounds, which but for their captions might be mistaken for soap factories or warehouses. They may be splendid from the purely utilitarian point of view . . . etc., etc."

*

The Press, when it is at the same time sententious and ignorant, makes one despair of a great deal more than the future of suburban house design.

LOEWY-LY TO LOOK AT

There are no assistants over thirty-five in the office of dapper, forty-five-year-old Menjou-moustached American industrial designer Raymond Loewy, who is now on a visit to England. Only youth, he says, can provide the ideas which are the life blood of "styling," as designing of this sort is called.

*

To American designers this process apparently means no more than the transformation of everything, whether it be a fountain pen, a weighing-machine, or a ferry-boat, into a series of meringues, heavily and horizontally incised. Mr. Loewy, who claims that he "takes the guesswork out of design," tries a bit harder than this, and his success is shown by the reported fact that last year over £60,000,000 worth of "Loewy-styled" products were placed upon the market.

*

Mr. Loewy was welcomed to England by the announcement that he had last week been awarded the degree of R.D.I.—a distinction given by the Royal Society of Arts—for services to the art of industrial design.

*

Another recipient of this honour, which is limited to forty persons, was our own Mr. Brian O'Rorke, and well he has deserved it. The interiors he and his team of collaborating artists created in the "Orion" and "Orcades" set a completely new standard for ship architecture. The simple shapes of these rooms, their cool, clear colours, the complete absence of vulgarity or platitude, are a remarkable step forward from the usual facetious juggling with Empire woods, touched here and there by the distinctive hand of Lalique, and the white-rope playfulness of the Mayfair decorator which have superseded in fashion the Tudor smoke-room and brass-bedstead-Gainsborough reproduction styles of the "Aquitania" period.

*

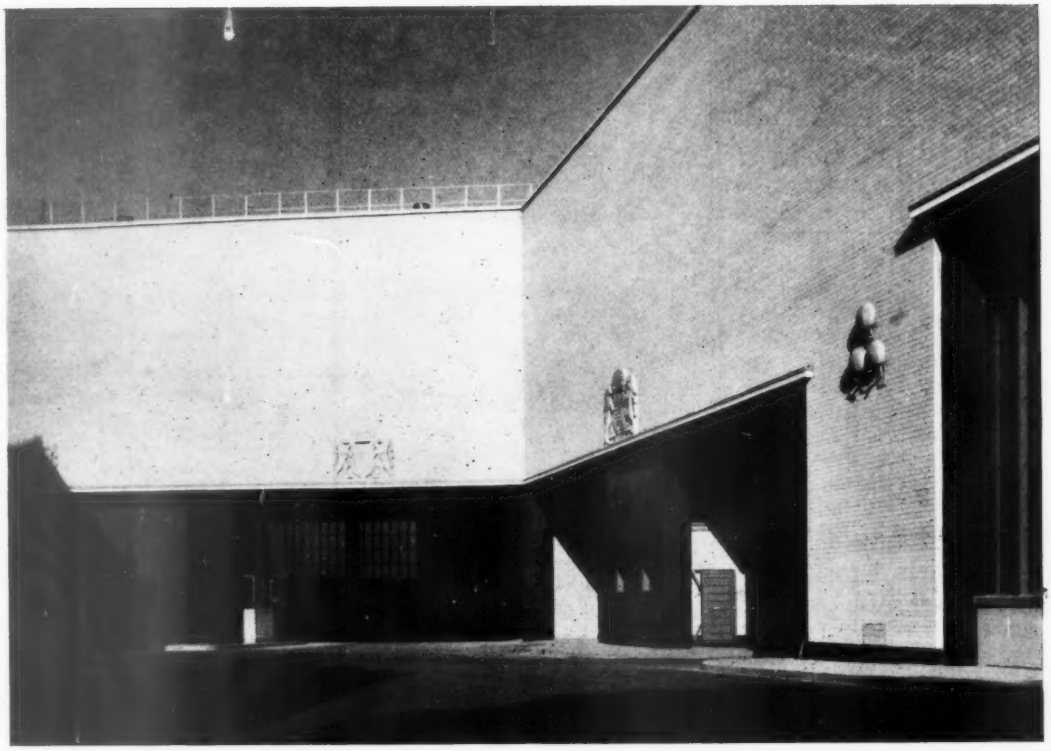
It is a pity that the directors of other shipping lines do not travel more often by the O'Rorke Line—even though it does go to Australia.

GEORGIAN BALL

Lord Jersey has lent Osterley Park, his magnificent Robert Adam house in Isleworth, to the Georgian Group for their annual ball and *fête champêtre* which takes place on July 13. The house, with its fine collection of pictures, will be thrown open to the guests, guides will be available for those in search of instruction, and there will be fireworks by the lake to the sound of Handel's water music. Possibly you may even see Mr. Robert Byron in eighteenth-century costume.

*

Most of us have visited some of those big country houses which are now untenanted, and experienced the melancholy of their echoing empty corridors and shrouded chandeliers. Interiors on this scale need a throng of people to bring them to life. Here is a chance, which no architect should miss, of seeing an eighteenth-century mansion in full swing.



Tickets are 25s. each, including buffet, and are obtainable from the Georgian Group, 28 Cork Street, W.1.

THE R.I.B.A. MEDAL

Nobody will quarrel with the decision of the jury which has unanimously awarded this year's London Architecture Medal to Mr. G. Grey Wornum for the Central Cleansing and Transport Depot of the City of Westminster.*

★

Like most of London's better buildings it is not easy to find, being tucked away by a railway line and alongside a dock not far from Chelsea Bridge (another potential Medal winner, incidentally). It is designed to deal with the organization of refuse disposal—a problem which has been solved by ingenious and direct planning. Lorries enter on the ground floor, discharge their loads into barges, are cleaned, and mount by ramps to the first-floor garage for servicing. A system of canopies and screens prevents the nuisance of dust and blowing paper during the transfer of refuse. Externally, the building is unpretentious, urbane and dignified. There are none of the lumpy brutish shapes of the *moderne* school.

★

The Bronze Medal (which is awarded annually for the best building built in the three previous years within eight miles of Charing Cross) may have been given to buildings of a greater nobility of purpose, but surely to few of such distinction and simplicity of design. A photograph is shown above.

"TOLD TO THE CHILDREN" SERIES

Our old friend the *News Chronicle*, that conscientious daily, has started a series of back-page simple photo-lessons on English domestic architecture through the ages. We have already had medieval and early renaissance, and this week it is the Wren period.

★

It looks as if we are going to be taken right up to modern times. So far, the photographs have been well chosen, the captions short, easily digestible, and very competent—

★

—Written by an architect? I wonder. "The windows of this building (Wren's Morden College, Blackheath) are standard Georgian sash windows, which lasted with variations in proportion right through the eighteenth century—and are being copied again today, quite inappropriately, in our mammoth blocks of luxury flats."

TEMPERANCE FESTIVAL

Race Week at Newcastle-upon-Tyne has another attraction besides the races—the Temperance Festival on the Town Moor, generally known as the Hoppings.

★

I am told this institution began in the pious '70's when the races (then also held on the Town Moor) were no place for the youthful and innocent. What its original attractions were I do not know. It is a Fair four rows deep and about half a mile long. I went to it a fortnight ago.

★

It is a great event. From Madame Zigana and the Best Pies in the North, diversions run through the Headless Woman ("Science's Unbelievable Marvel"), Why Go to Paris ("The Girls Without . . .") all the way up to the Moonlight Racer and the Waltzing Glide.

★

Not even the Hoppings have avoided progress. The smoke drifting to leeward from a thousand engines has given way to Diesels, the steam organs that fascinated my youth are replaced by amplifiers, everywhere and anywhere the barkers use loud speakers. Worse still, light-hearted gilt rococo is fading into Coney Island modernism.

★

If the world's showmen study public trends they should have noticed at Newcastle that (barring fruit machines) it was the old-timers—in swings *and* settings—which drew the crowds.

ASTRAGAL

* Mention of this building would have won a place on my Vigilance Committee for any aspiring layman.

NEWS

POINTS FROM THIS ISSUE

THE ARCHITECTS' DIARY

Thursday, July 6

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. An Exhibition specially designed to be of interest to School Children visiting the Centre. Until July 29.*

ROYAL SANITARY INSTITUTE. *Health Congress at Scarborough. Until July 8.*

LIVERPOOL SCHOOL OF ARCHITECTURE. *At the Walker Art Gallery. Annual Exhibition. Until July 22.* (10 *a.m. to 6 p.m. Sundays, 2 p.m. to 5 p.m.*)

Friday, July 7

LONDON SOCIETY. *Informal Dinner and Midsummer Garden Party at the Zoological Gardens, Regent's Park, N.W. 7.30 p.m.*

Saturday, July 8

INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. *Seventeenth Annual Congress at Stockholm. Until July 15.*

Monday, July 10

SOCIETY OF CHEMICAL INDUSTRY. *Annual Conference. At Exeter.*

Tuesday, July 11

HOUSING CENTRE LUNCH: "*The Housing Centre: A Year's Progress.*" *By A. M. Lupton.* 1 *p.m.*

Friday, July 14

ROYAL COLLEGE OF ART, *Exhibition Road, South Kensington, S.W.7. Annual Exhibition of Students' Work. Until July 29.* 10 *a.m. to 5 p.m.*

Mr. John F. Ashton, winner of the Leverhulme Scholarship. See Note below.

TWO COMPETITION RESULTS

The award of the assessor, Professor Archibald C. Dickie, M.A., A.R.I.B.A., of Long Crendon, Bucks, in the competition for new offices for the Fylde Water Board, has been announced. The design placed first was that of Mr. Charles Button, of Bank Chambers, King Street, Farnworth, to whom a premium of £300 has been paid. The second premium of £200 has been paid to Messrs. Gornall and Wainwright, of Britannic House, 8 Hardshaw Street, St. Helens. The third premium of £100 has been paid to Messrs. John Swarbrick and Partner, of 66 Mosley Street, Manchester, 2. An exhibition of the whole of the competitors' designs is now being held at the Grundy Art Gallery, Queen Street, Blackpool. The exhibition is open until to-day July 6, between the hours of 10 a.m. and 7 p.m.

The award of the Assessors has now been made in the competition recently held by the Air Raid Protection Institute, at the suggestion of the Lord Privy Seal, for the design of an above-ground air raid shelter for fifty persons, providing protection against blast, splinters and light incendiary bombs.

The premium of 100 guineas has been awarded to the design submitted by Mr. G. Kilner and Mr. Clifford Smith, of 173 Kingston Road, New Malden, Surrey. The presentation of the cheque to the winning competitors will be made at the general meeting of the Institute on Tuesday, July 11, at 8 p.m., in the Lecture Hall of the Royal Society of Arts, Adelphi.

The designs submitted by the following have been commended :—

Mr. W. E. Edleston, A.R.I.B.A., and Mr. G. L. Cadell, A.R.I.B.A., 46 Old Bond Street, London, W.1.

Dr. Anant Pandya, D.SC., A.M.I.STRUCT.E., and Mr. Frank W. Dark, c/o Diagrid Structures, Ltd., Horseferry House, London, S.W.1.

Mr. Martin Hunter Briggs, B.SC.(ENG.), A.C.G.I., 63 Woodcote Grove Road, Coulsdon, Surrey.

Mr. A. C. V. Orrell, 25 Hillcrest Road, Purley, Surrey.

The designs submitted in the competition will be on exhibition at the Headquarters of the Air Raid Protection Institute, 2 Millbank House, Wood Street, S.W.1, from Monday, July 10, to Saturday, July 15, between the hours of 10 a.m. and 5.30 p.m. (Saturday, 10 a.m. to 12.30 p.m.).

R.I.B.A. v. A.A. CRICKET MATCH

The annual cricket match between the R.I.B.A. and the A.A. will be held on the A.A. ground, Furzehill Road, Boreham Wood, on Thursday, July 20, beginning at 11.30 a.m. All members of the profession and their friends are cordially invited to attend. Lunches, refreshments and drinks can be obtained on the ground.

The ground can be reached by train from St. Pancras to Elstree, Green Line from Victoria, or Underground to Edgware, and thence by bus to Boreham Wood.

The match will be followed by the annual dinner of the A.A. Cricket Club, at 34 and 36 Bedford Square, W.C.1, at 8 p.m., when the Club will entertain the R.I.B.A. team. For further particulars apply to the Honorary Secretary of the A.A.C.C. Tel. Museum 4957.

B.R.S. ANNUAL REPORT

Progress towards the solution of many building problems is recorded in the latest annual report of the Building Research Board issued by the Department of Scientific and Industrial Research (published by H.M. Stationery Office, 3s. 6d. net).

The report states, for example, that "it can be said without any doubt that the position of the investigations into sound transmission in buildings has been very much advanced during the past year." A review is made of the experiments in the small steel frame building at the Building Research Station where various types of construction were tried out in which floors, walls and ceilings of rooms were separated to different degrees from the main structure, by sound insulating pads and other means. The results indicate that practical suggestions for construction to cut down sound transmission can now be advanced, and examples of the application of the ideas to the problems presented by flats, hospitals and semi-detached houses have been worked out. A report presenting these worked out examples is in preparation for publication.

Another new branch of the work deals with ventilation problems. These arise, for example, in connection with the methods of circulating the air used in the mechanically ventilated or completely air-conditioned buildings of today. There are such questions as whether with upward ventilation the air breathed is more impure than with downward ventilation on account of dust collected from floor coverings.

Work in hand is primarily directed to the efficiency of different types of filter.

One of the methods studied by the Building Research Station in the continental survey of external surface renderings has been employed by an architect in decorating an old London building. This is the "spatter dash" method in which a mixture of cement and sand is thrown on the surfaces of the walls and ceilings to provide a key for ensuring the adhesion of a plaster finish. The results were very successful and the cost worked out at 6d. per square yard, including materials, as against 3s. 6d. to 5s. a yard which thorough application of methods more usually used would have cost.

LEVERHULME SCHOLAR

The Leverhulme Scholarship at the Architectural Association School of Architecture has been awarded this year to Mr. John F. Ashton of Bournemouth. The scholarship provides for payment of A.A. fees and also a maintenance allowance for five years.

I.C.W.A. SUMMER OUTING

On June 24, 230 members and friends attended the annual summer outing of the Incorporated Clerks of Works Association. The party went from Paddington Station by train to Henley, where they boarded a steam-launch and made a trip down the River Thames to Windsor. Lunch was served on the steam launch. At Windsor the party were conducted over the Castle, and afterwards had dinner at the White Hart Hotel. Captain Barry proposed the Incorporated Clerks of Works Association, to which the President, Mr. W. J. Gibbins, responded. The toast of "The Visitors" was proposed by the President and responded to by Mr. A. E. T. Elliott (see photograph on facing page).

NEW RAILWAY STATION

The reconstructed Southern Railway station at Horsham, Sussex, will be completed by Sunday in time for the summer season electric services. The work, which has been carried out at a cost of £132,000, was caused by the greatly increased number of trains following the electrification of the Mid-Sussex line to Bognor Regis, Littlehampton, and Portsmouth last year.

The station now has two island platforms, each 820 ft. long and capable of accommodating 12-car electric corridor expresses. An additional

up line has been constructed to take the place of the old up bay, thereby giving two up and two down lines through the station. On the up side new platform buildings, comprising booking office and hall, parcels office, and other staff rooms, have been erected on the site of the old bay platform. The subway connecting the platforms has been displaced by a reinforced concrete bridge with electric lifts for milk and parcels traffic. The opportunity has also been taken to remodel the signalling in the Horsham area and the semaphore arms have been displaced by colour-light signals.

NEWS IN BRIEF

When the Minister of Health (Mr. Walter Elliot) visited Manchester on June 30, he unveiled a tablet to commemorate the completion of 30,000 houses under the post-war housing schemes of Manchester Corporation.

The tablet was attached to the 30,000th house, which is built on the White Moss estate at Blackley.

● Ninety schemes have been submitted in the Competition for new Council Offices at Consett, of which the Assessor is Mr. R. Norman Mackellar, of the Newcastle firm of Cackett, Burns, Dick and MacKellar. The adjudication is expected to take about a month.

● Mr. Andrew Mather, the cinema architect, who died last November at the age of forty-seven, left £74,156.

● 25,000 houses of the total of 43,000 in Salford are without any means of hot water supply.

● In order to alleviate the acute housing shortage, Dundee is in need of 10,000 houses immediately but, in the return submitted to the Department of Health for Scotland, the number of houses likely to be erected by the local authority this year is given as 300.

In his annual report, the Chief Sanitary Inspector of Dundee gives the following reason for this modest programme :—

"While it cannot be visualized that this number of houses will, by a long way, solve our problem of house shortage, the difficulty of finding the necessary qualified labour to undertake a more ambitious programme is, in the opinion of those responsible for the erection, insurmountable."

● An offer by the Scottish Special Housing Association to erect in Glasgow 1750 houses for the accommodation of working-class tenants was placed before the Housing Committee of the Corporation last week.

The Association, which operates under the 1935 Housing Act, has been offering to give similar assistance to a number of other local authorities in Scotland. Their undertaking is to provide houses for tenants displaced from condemned properties and for families who are living in overcrowded conditions.

An important aspect of the proposal is that the building is to be done not in brick or stone but in other materials—by the alternative methods of construction that will save encroachment on the supply of skilled labour available for the regular practice in building.

These alternative methods include mainly concrete and timber construction.

LETTERS

STANLEY RIPLEY, A.R.I.B.A.

JOHN GLOAG

Elections

SIR,—"The new canvassing is not for a policy—it is merely official *v.* private or private *v.* official."

The above statement by your JOURNAL of June 29 seems very misinformed.

At the outset, the function of the R.I.B.A. should be to further the public interest in good architecture whether its source be private or official, and not to single out what method should be thrust on the public.

The new canvassing is to enforce recognition of official architecture. This was made urgently necessary by the R.I.B.A. President's inaugural address, in which he publicly belittled work done by architects in an official capacity. At least official assistants are paid a living salary and are not displaced by students anxious for office practice, who will do the work gratis. This I know to have been the case.

Finally, is the JOURNAL so short of real news that it must twice publish the same set of statistics of the elections on adjacent pages ? STANLEY RIPLEY,
Hastings.

New York Fair

SIR,—Upon my return from the U.S.A. this week I read Astragal's comments about my article on the New York World's Fair, which you published on June 15. Astragal has the advantage of me, because he has seen the Fair from photographs, and has looked at them through the eyes of what in America would be called "a streamlined sophisticate."

I know what I should have done about the Fair, what indeed Astragal would have done : I should have used several thousand words to describe in detail the Russian Pavilion, giving it full marks (perhaps I should say "full Marx") ; I should then have said something crisply anti-Fascist about the Italian Pavilion (which happens to be one of the best of the European pavilions) and have been offensively superior about the British Pavilion. I should have leered about American commercialism, and have been costive and inhuman in the approved left-wing, uplift manner, and should have fought a battle of de-bunkers hill, in which I was as insulting as possible to everything American.

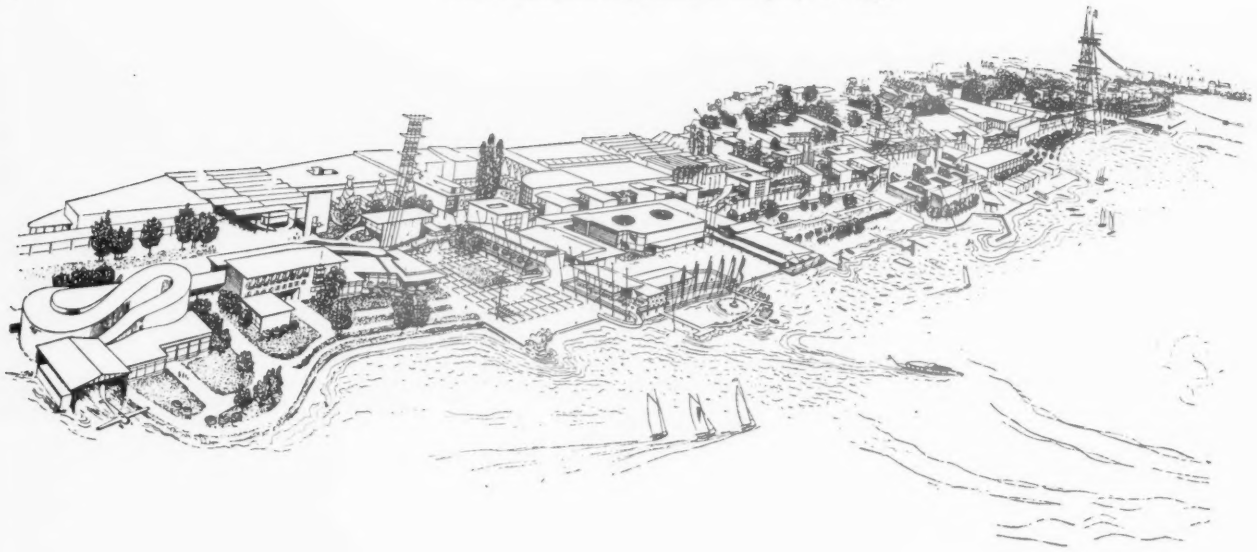
If Astragal, before drawing a bead on me, had read my article as well as looking at the pictures, he would have detected a reference to one of the features of the General Motors exhibit, namely, The Street of Tomorrow ; and on page 1046 he would have seen it illustrated. The interior of that exhibit, which shows the America of 21 years hence, is not nearly so impressive as it sounds. Astragal has dropped into the common error of judging things from photographs. The photographer, who has been bolstering up dull architecture for years by making it look interesting when the sun is out and the shadows are dramatic, has not only led Astragal astray, but many other people who ought to know better. Really, it's time Astragal changed his name. The architectural term "astragal" means "a small semi-circular moulding or bead," something anyway that is nice and rounded. Now he (or she, for I sometimes suspect the hand of an embittered spinster in those notes that consistently disapprove of everything) has gone flat—rather like the old-fashioned functionalist movement which some young men, now verging on middle age, persist in calling "modern."

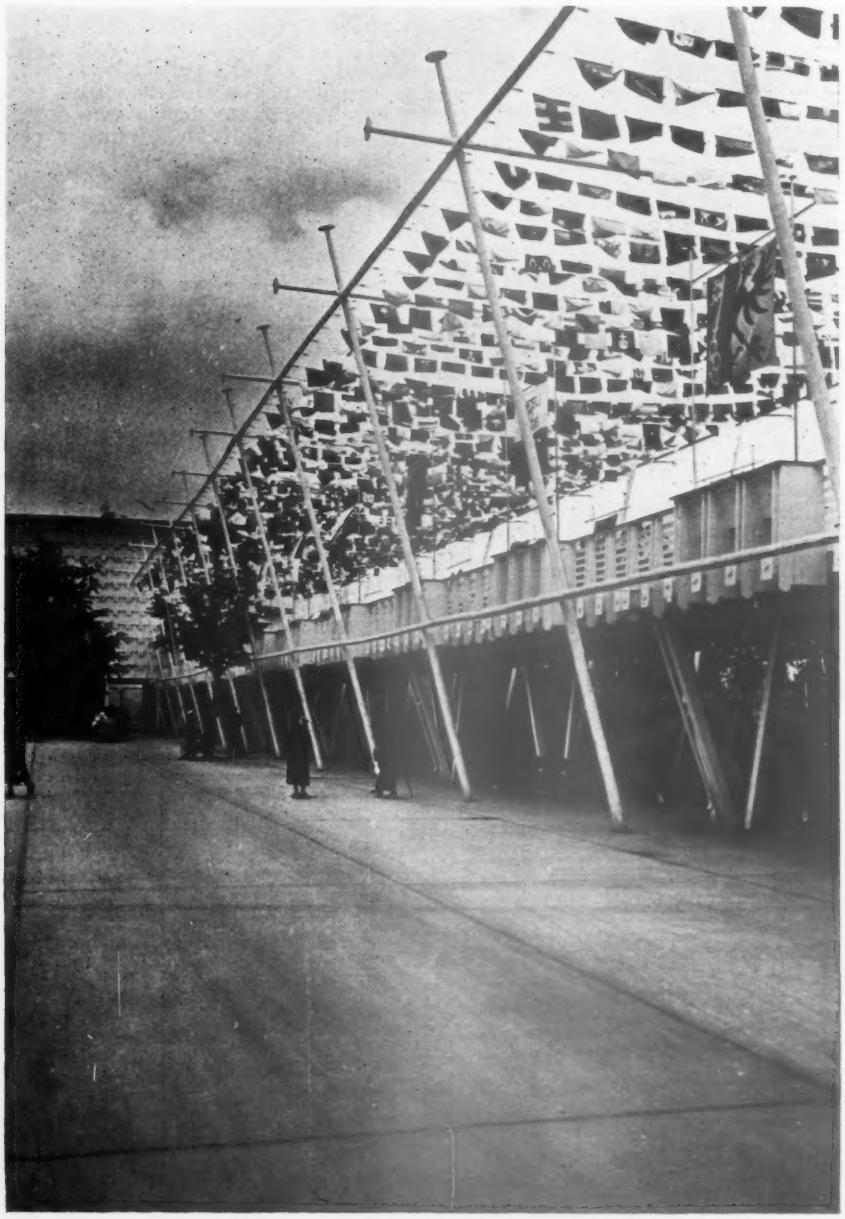
A visit to the New York World's Fair would be a nice dose of opening medicine for your mind, dear Astragal.

JOHN GLOAG

[Astragal writes : My grievance with Mr. Gloag lay in the belief, quite an erroneous one no doubt, that he was supporting "the old-fashioned functionalist movement" as exhibited by streamlined bel-geddesism at the World's Fair.—Bolstering up dull architecture, in fact.]

At the Summer Outing of the Incorporated Clerks of Works Association of Great Britain. From left to right : G. H. Lee, Committee-man ; G. W. Harris, Editor of I.C.W.A. Journal and Past President ; C. D. Angier, Vice-President ; W. J. Gibbins, President ; W. Y. Allison, Secretary and Past President ; and W. C. Hacking, Committee-man and Past President.





ZURICH

The Swiss National Exhibition, held this year in Zurich between May 6 and October 29, has as its aim the portrayal of the life of the Swiss Nation whose people, speaking four different languages, co-operate in all fields of learning and industry to form a national unity. This unity is exemplified in the Exhibition in which the pavilions have been very carefully related to form a continuous and balanced display.

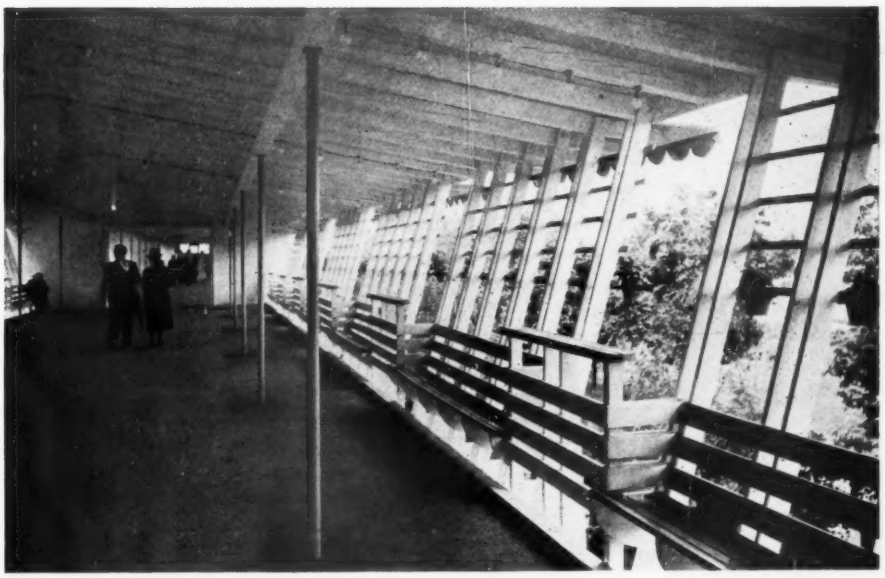
A group of young architects under the direction of Armin Meili, with Hans Hofmann as chief architect, were responsible for the planning and layout of the scheme on two sides of the lake, on land that formerly was parks and gardens. Great care has been taken not to destroy any of the trees.

The photograph shows the two main avenues of circulation: the main one on the ground level, and a high level bypass constructed of wood which connects some of the smaller pavilions.

LAYOUT

The exhibition is divided into two parts : the north side of the lake is devoted to pavilions of agricultural and rural occupations with some replicas of traditional work, carefully grouped amongst the trees, while the south side deals with the industrial, educational and other aspects of Swiss life. On the opposite page is a perspective of the south, and principal, section of the Exhibition.

(Left) An aerial view of the north side, showing traditional work in the foreground and the large Festival Hall in the centre. To the left of it and reaching to the tower are the pavilions showing the use of the scientist in agriculture. The two terminal towers of the cable railway spanning the lake can be seen in this photograph and in the drawing on the facing page.

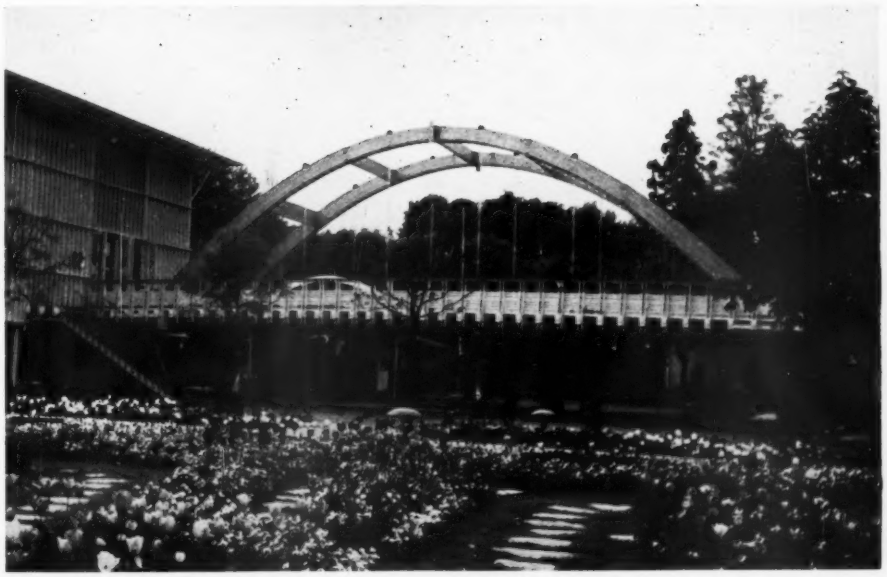


CIRCULATION

From the main entrance the elevated by-pass leads through to the other end of the Exhibition. From there a return can be made through the principal pavilions back to the entrance. The cable railway carries passengers high above the lake to the other side, where there is a similar circulation.

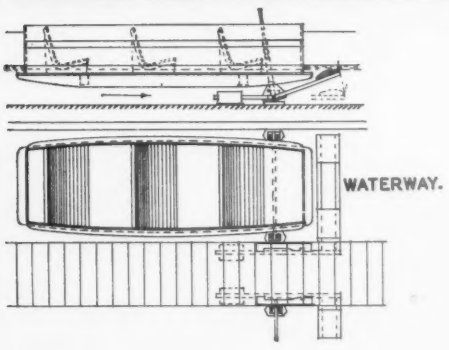
(Right ; top) The elevated way constructed in wood with steel supports, with wooden seats recessed in the railings, and covered with green canvas.

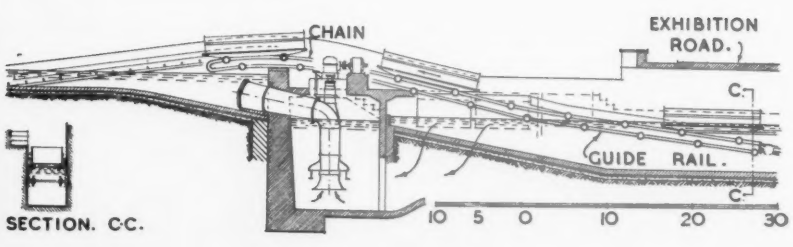
(Right; below) The elevated way on the south side spanning from pavilion to pavilion. The arch is constructed of laminated boards glued and bolted together.

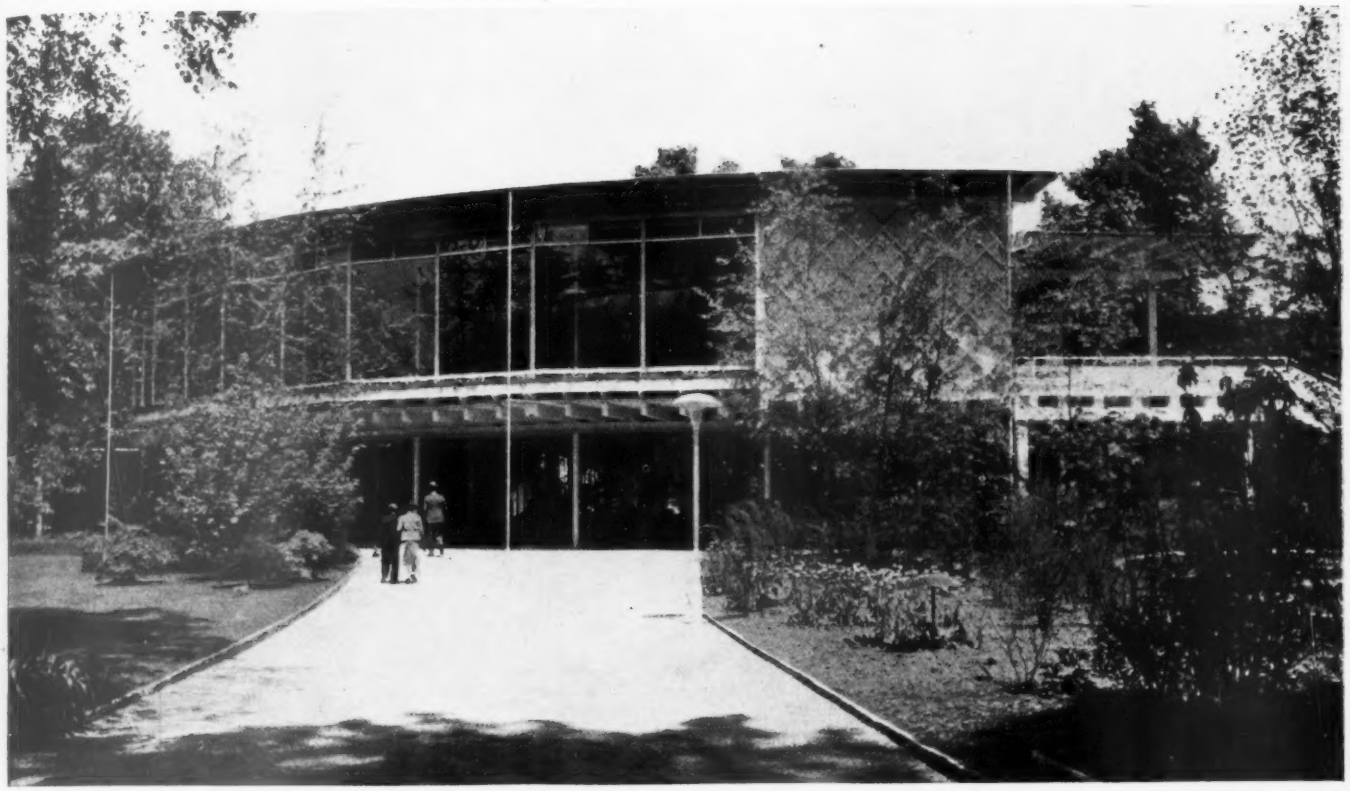


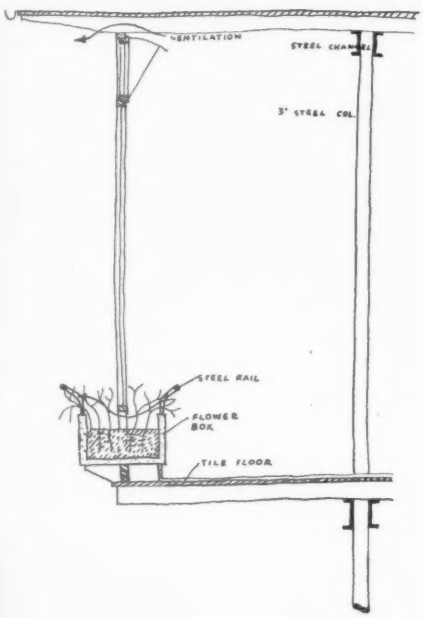
CIRCULATION—*cont.:*

A novel way of travelling round the Exhibition is by means of small boats which are propelled along a canal by the current of the water, which is driven electrically. Where the level of the water changes, the boats are drawn up to the new level by the chain, as shown in the drawings on the left. The water is boosted up by pump by a different route—the whole forming an ingenious "non-stop lock." The canal runs through the centre of many of the pavilions. (Below) The canal, showing the construction of the prefabricated concrete slabs with bitumen joints. (Above) One tower of the cable railway which spans the lake. On the south side it has a restaurant half-way up.





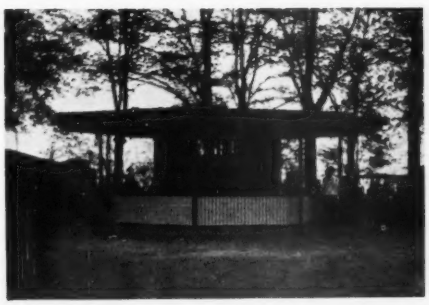




REFRESHMENT

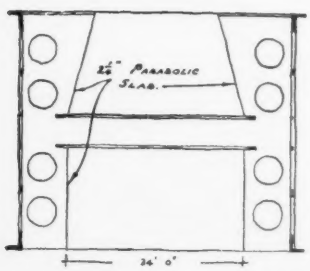
There are groups of restaurants on both sides of the lake. The illustration above is the Terrace Restaurant, one side of which projects over the lake. The woodwork is painted dark green with white wood balustrade and panels of bamboo.

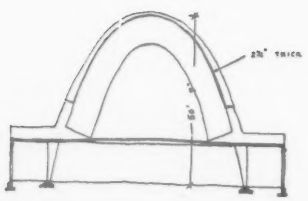
The top photograph is the wine sampling room, designed by A. Oeschger, which leads off the section dealing with the wine production of Switzerland. The sketch shows the window detail in this room. The ventilating space over the top of the windows is typical of many other pavilions —and in this case is supplemented by the open space immediately above the flower-boxes.



FURNISHINGS

A kiosk built in wood painted white with cover moulds and facia in blue. An amusing shoeblack's stand, on the principle of a wheelbarrow.

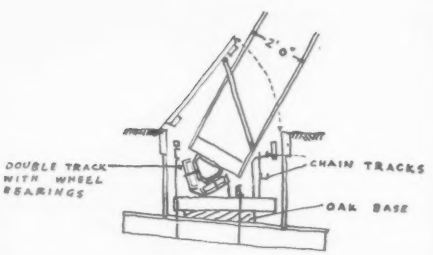




THE CONCRETE EXHIBIT

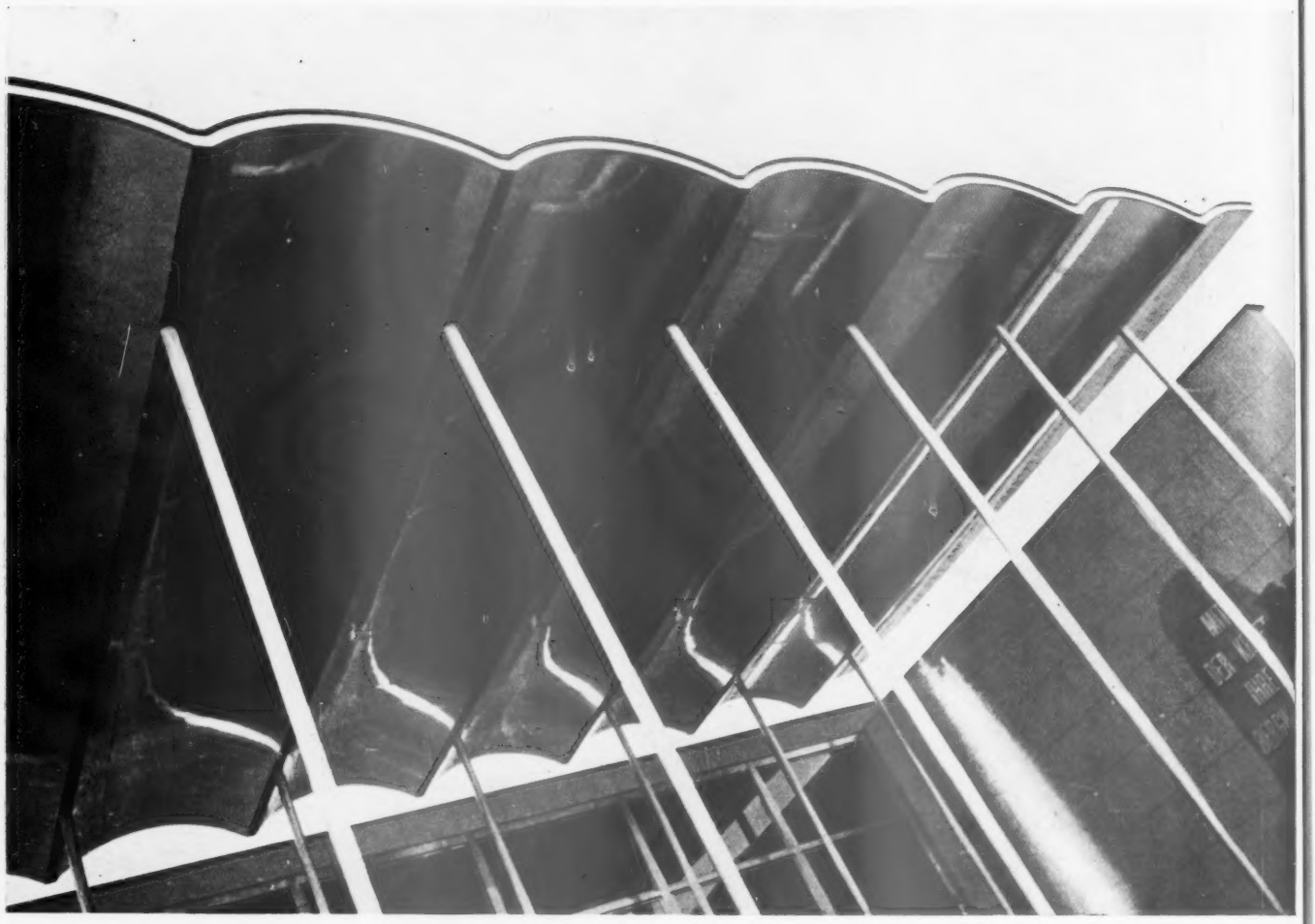
One of the most interesting exhibits is the parabolic reinforced concrete arch designed by Robert Maillart, the famous Swiss bridge engineer. Although over 50 ft. high, the shell of the arch is never more than 2½ ins. thick.

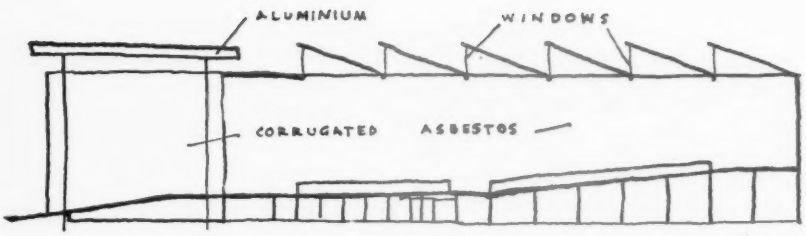
THE FESTIVAL HALL

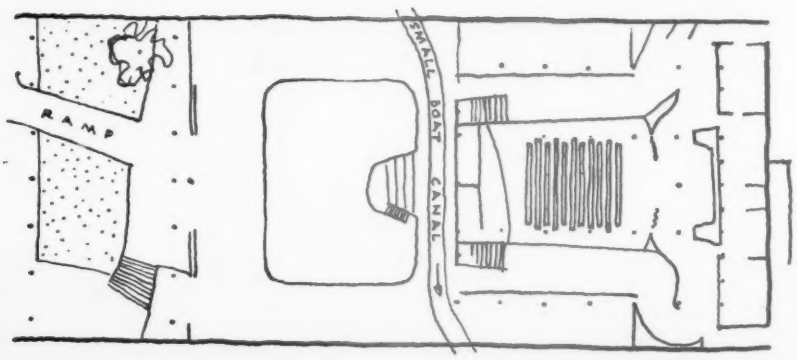


THE FESTIVAL HALL

The large Festival Hall, engineer R. Dick, 343 ft. by 180 ft., and seating 5,000 persons, is built of steel portal trusses covered with canvas. It consists of four sections; the end ones are fixed, but the middle two can slide back over the end ones, leaving the auditorium open to the sky. The photograph above shows the channel, covered with wooden boards which houses the sliding track. The sides of the Hall are formed of screens which can be raised, as shown in the photograph on the opposite page. A sketch showing the roller bearings at the feet of the trusses is also reproduced.







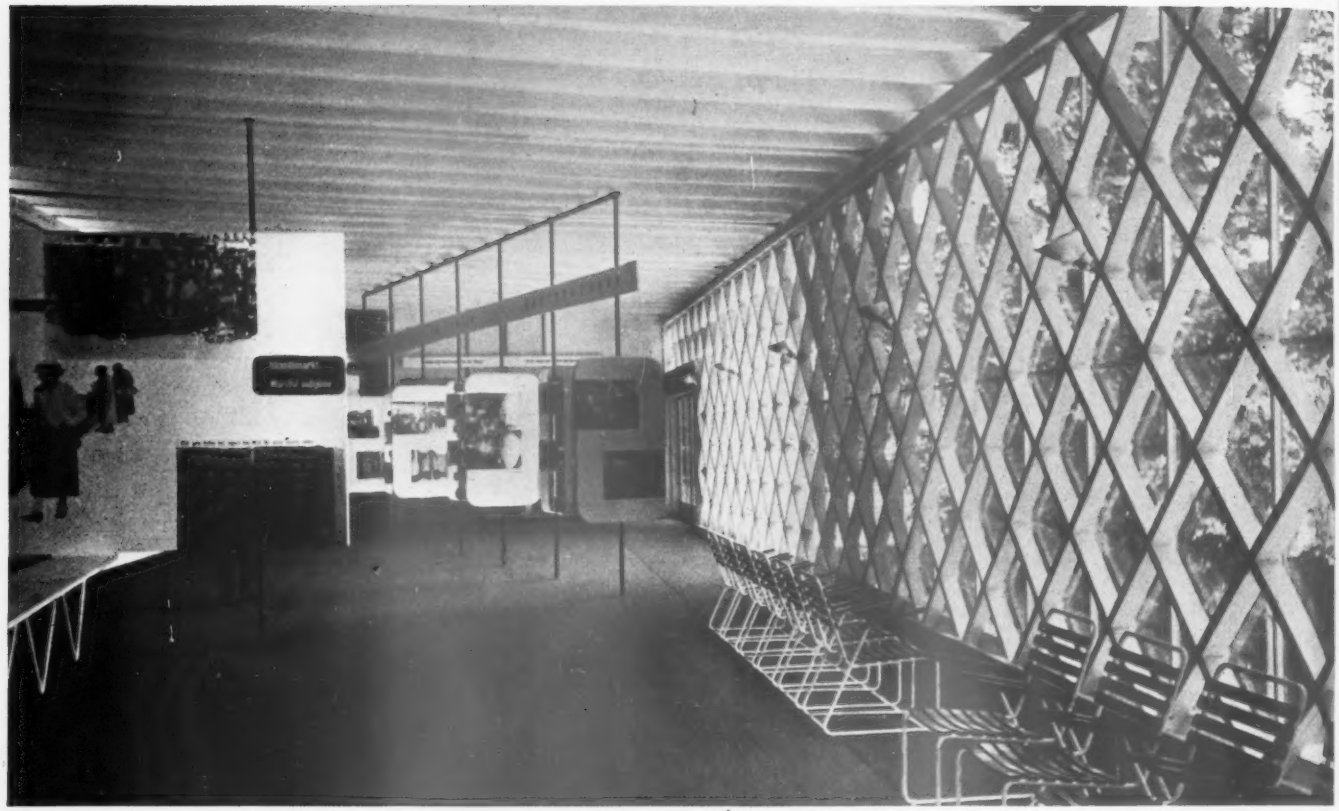
THE ALUMINIUM PAVILION

This is one of the larger pavilions arranged to exhibit the uses of aluminium, Switzerland's chief metal. The canopy illustrated above is made of sheet aluminium on a wooden frame and supported on aluminium columns. The walls of the pavilion are lined with corrugated asbestos sheets and painted white, making a good background to the aluminium castings and extrusions which are exhibited inside. The roof is made of large wooden trusses glazed to let in north light. Variations on this are the commonest methods of top lighting the larger pavilions. The architect was R. Winkler.

DETAILS

The standard of design is extraordinarily high throughout the whole exhibition, and there is a pleasant relief from the usual shoddiness of cracking renderings. Nearly all the pavilions are built on the wooden post-and-beam principle, and usually painted white with bright colours used here and there as accents. There are also many patterns in light and shade made by light wood trellises or boxings fixed to the wall surfaces.

The Swiss must be the most natural designers of furniture in Europe, whether they are using wood, rubber or aluminium. The illustration above shows the standard exhibition chair. The seat and back are stamped from an aluminium sheet.



DETAILS—*cont.:*

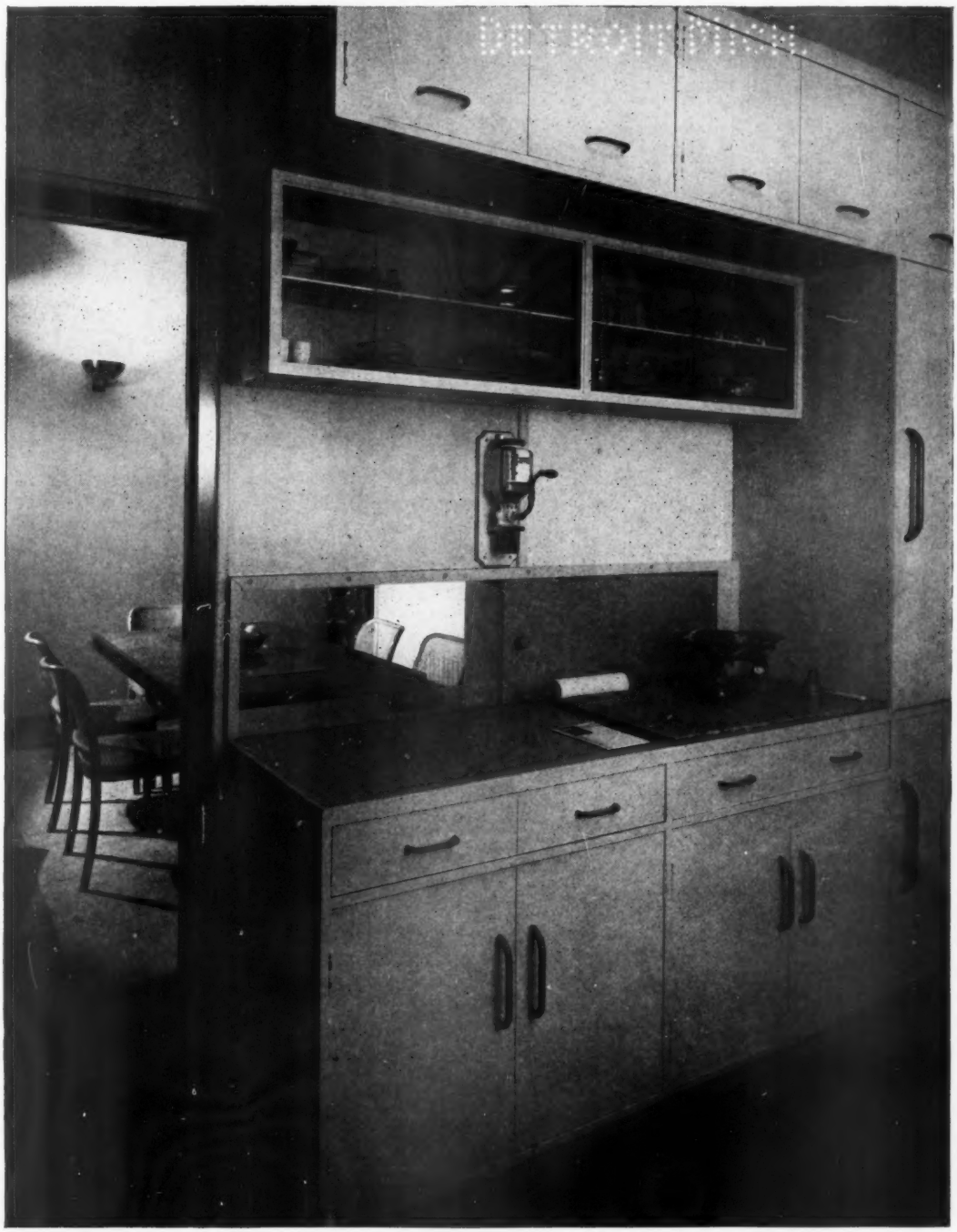
(Above) The interior of the fruit pavilion designed by A. Oeschger showing the lattice wall, which is weight bearing. The glazing is kept independent of the wall. Note also the ventilation between the ceiling joists above the window. A most stimulating variety of methods of natural lighting has been achieved in the pavilions.

(Left) Standard light fitting in vitreous enamel.

(Below) Detail of wall at the side of the ramp leading up to the elevated roadway. It is made from boards painted blue with white cover moulds to the joints. The circular lights are blue with white reflecting discs.

WORKING DETAILS : 761

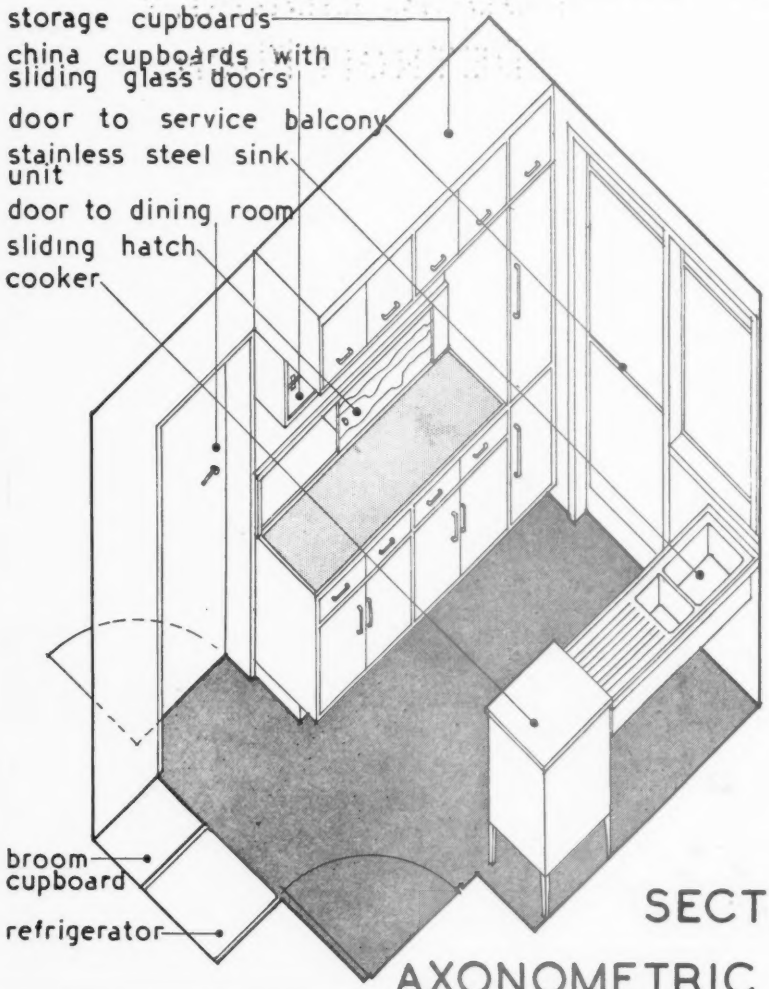
KITCHEN • HOUSE AT HADLEIGH, ESSEX • WELLS COATES



The kitchen is planned on the first floor of the house, next to the living-dining room, and is served by an outside staircase and balcony. It has a range of built-in cupboards and drawers and a sliding hatch fitment on the one side, with stainless steel sink unit, cooker and refrigerator on the other. All cupboard fittings have a cream-painted finish, with red plastic bow handles to drawers and cupboards.
Details are shown overleaf.

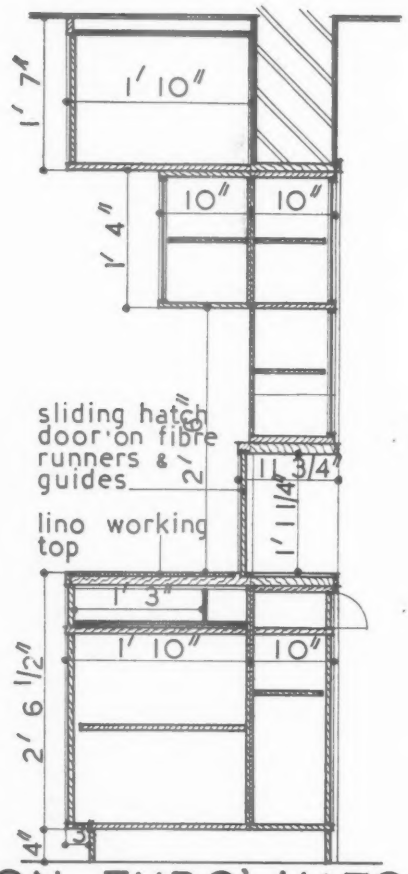
WORKING DETAILS : 762

KITCHEN : : HOUSE AT HADLEIGH, ESSEX • WELLS COATES



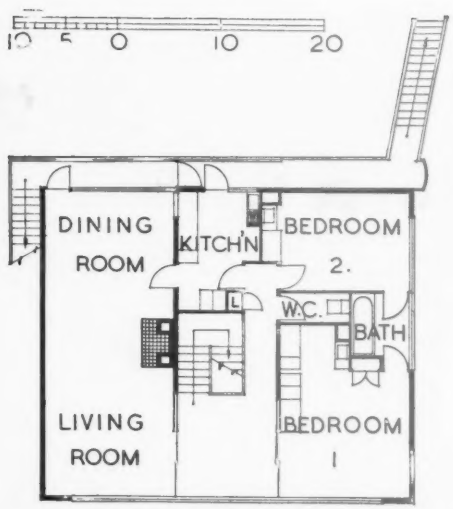
AXONOMETRIC

1 0 1 2 3 4 5 10 ft

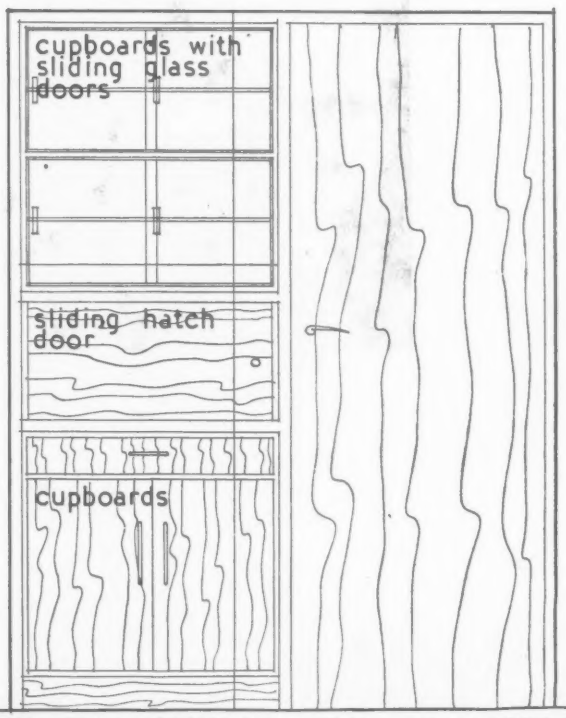


SECTION THRO' HATCH

1 0 1 2 3 ft



1ST. FLOOR KEY PLAN



ELEVATION TO DINING ROOM

Details of the kitchen illustrated overleaf.

The Architects' Journal Library of Planned Information

INFORMATION SHEET
SUPPLEMENT

SHEETS IN THIS ISSUE

743 Wall Finishes

744 Waterproofing and Damp-proofing

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 five volumes. 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
727 : Waterproof Jointing and Bedding
728 : Timber Construction
729 : Steelwork
730 : Wall Facing Materials and Wallboards
731 : Metalwork
732 : Concrete Construction
733 : Structural Steelwork
734 : Metalwork
735 : Plumbing
736 : Structural Steelwork
737 : Structural Steelwork
738 : Metalwork
739 : Plan Elements
740 : Timber Construction
741 : Structural Steelwork
742 : Metalwork

·ELLICEM· TENACIOUS CEMENT COATING:

DESCRIPTION:

·Ellicem· is a non-inflammable tenacious cement coating for exterior and interior use consisting primarily of ·Atlas White· cement with an admixture of several other ingredients containing neither oils, spirits nor lead.
It will adhere firmly and permanently to any clean surface without the necessity for roughing or priming.
It has elastic properties and is unaffected by temperature changes and contraction or expansion of the surface to which it is applied.
Setting is rapid, giving a surface which increases in hardness with age, particularly when used on exteriors. It will not blister, peel nor wash off and may be cleaned by scrubbing down.
When used externally it tends to keep out rain and internally helps to eliminate sweating and discolouration due to moisture.

PREPARATION OF SURFACES:

All surfaces should be firm and in good condition prior to treatment. All surfaces to be treated should be free from the materials enumerated in the next column.

APPLICATION OF ·ELLICEM·:

·Ellicem· should be applied in two coats at intervals of not less than four hours.
It may be applied as a screed by mixing with sand as a key for a decorative finish and should be left to set for at least three days.

(For detailed specifications of the application of ·Ellicem· to various surfaces, see the material on the reverse side of this Information Sheet.)

USES:

The uses of ·Ellicem· fall into three main divisions.
It may be applied either externally or internally as:
(1) a paint (decorative finish.)
(2) a paint-sand mix (applied as a spray to give texture or form a base for another finish.)
(3) a screed.

All three finishes have decorative and protective values (against rain, corrosion etc.) and/or serve as a base for another finish which the surface to be treated would not otherwise take without some special preparation such as roughing or priming.

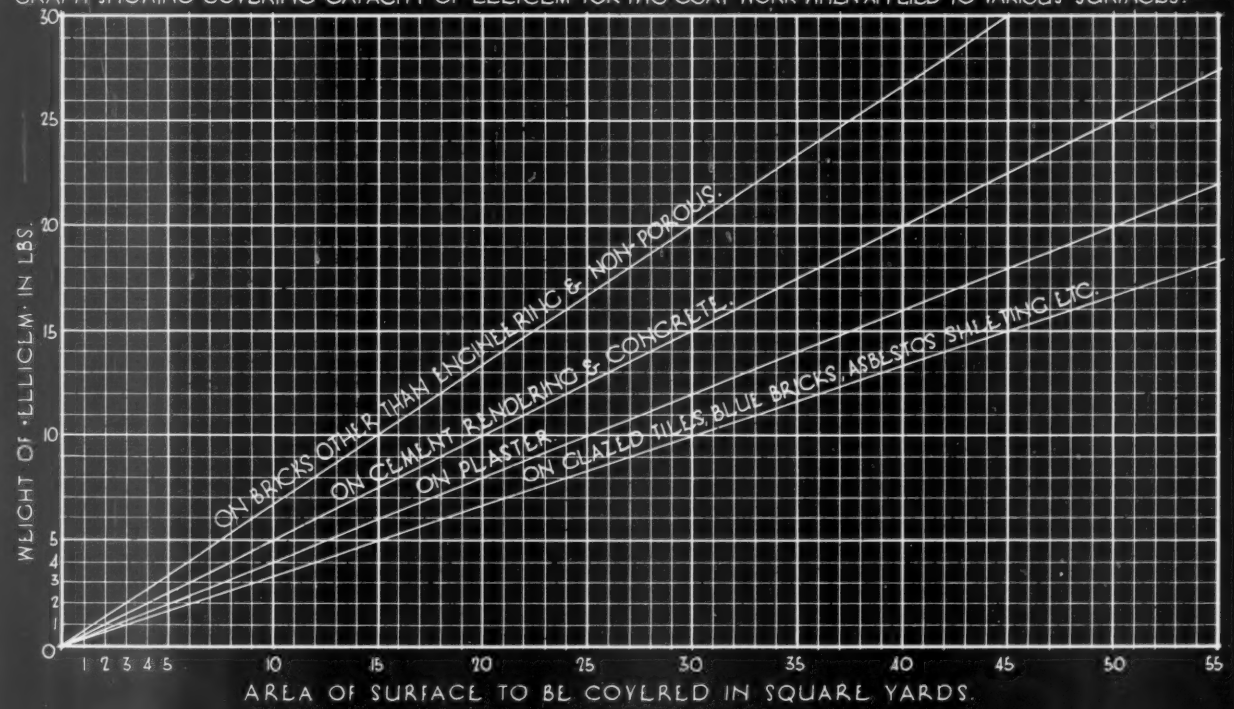
MATERIALS TO BE CLEANED OFF PRIOR TO TREATMENT:

(1) Dust and loose material.
(2) Grease, oil and rust.
(3) Surface wetness as distinct from dampness & saturation.
(4) Limewash, whitewash, distemper etc.
(5) Any other paints or materials that have blistered, flaked off or appear to be unsound.

RANGE:

·Ellicem· is supplied in natural white (E.A.100), strong white (E.A.101.) and ten tints (for interior use only) in powder form, ready for mixing with clean cold water, prior to application by brush or spray. The various tints are obtained by the addition of inorganic colours during manufacture and are therefore fast to light.
Special tints can be made up to requirements although this involves additional cost.

GRAPH SHOWING COVERING CAPACITY OF ·ELLICEM· FOR TWO COAT WORK WHEN APPLIED TO VARIOUS SURFACES.



Information from The Adamite Company Limited.

INFORMATION SHEET: TENACIOUS & RAPID-HARDENING CEMENT COATING.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 743 •

WALL FINISHES

Product : Ellicem Tenacious Cement Coating

General :

Ellicem is a rapid-hardening cement paint consisting of Atlas white cement and other ingredients containing neither oils, spirits nor lead. It may be used either externally or internally :—

(i) A paint.
(ii) A paint-sand mix (applied by spray).
(iii) A screed.

Range of Tints :

E.A. 100 natural white
E.A. 101 strong white
E.A. 55 light cream
E.A. 56 cream
E.A. 63 yellow
E.A. 33 stone
E.A. 31 tan
E.A. 42 pink
E.A. 41 terra cotta
E.A. 23 light green
E.A. 21 green
E.A. 13 light blue
E.A. 12 blue

(Standard tints.)

E.A. 100 (natural white) and E.A. 101 (strong white) may be used either externally or internally, but the remaining tints should only be used on interiors.

Adding New Colour :

It is not advisable to add colours to either natural white or strong white Ellicem in order to obtain tints without previously seeking the manufacturers' advice, since such additions might affect the hardening and colour value of this product. Further, it is extremely difficult to mix in pigments evenly by hand.

Fading :

Should tints be used externally, they will not fade, although there may be a certain amount of bloom if rain falls upon the surface within a few weeks of application. The bloom, however, does not harm the Ellicem but causes a patchy appearance, though the bloom may be removed.

Matching :

No difficulty should be experienced in matching, but very slight variation may occur where small quantities are ordered.

Preparation of Surfaces :

In general Ellicem can be applied to any surface which is firm and clean before treatment, although such treatment should not take place in damp or frosty conditions.

Mixing :

(1) As a paint—brushing or spraying. Mix thoroughly in the proportion of three parts of Ellicem with a maximum of two parts of clean cold water by volume. Never exceed this water content and aim at obtaining a thin cream or full-bodied paint mix. If Ellicem is to be used on non-porous surfaces such as glass, glazed tile, etc., use less water. Firstly place Ellicem in a clean, dry bucket, gradually adding the water to the Ellicem (never add Ellicem to the water), first mixing into a paste and then gradually thinning down by adding the remainder of the gauged water, stirring all the time. After mixing, allow to stand without disturbing for at least ten minutes. Immediately before use stir well, scraping up all sediment from the bottom of the bucket. Continue stirring and scraping up sediment during use, but do not add additional water.

(2) As a paint-sand mix (three-quarters to one of medium fine sharp washed sand to two parts of Ellicem). Mix thoroughly in the above proportion adding water very gradually, stirring all the time until a light cream mix is obtained. Finally, stir the mixture vigorously and allow to stand without disturbing for at least ten minutes. Immediately before use stir and pour into container fitted with an agitator and having its feed from a conical bottom.

(3) As a screed. Mix thoroughly two parts of medium fine, sharp, washed, dry sand with one part of Ellicem. Add only enough water to obtain a dry stiff mix. Allow to stand at least ten minutes before use and immediately before application the mix should be turned over and the turning continued at short intervals during use.

All mixes must be used up within two hours of making up. In hot weather, the screed should be used up within one hour. A new mix should not be added to the remainder of an old mix.

It is suggested that only the quantities and proportions of water here stated should be used, since an excess of water will cause poor coverage, running down, lack of hardness and an excessive deposit of sediment in the mixing bucket.

Application :

General (1) By Brush. Brush on evenly and thinly as a paint—not as a distemper—well brushing in, finish quickly and do not go back over work. Use a first quality bristle brush such as is used for water paints. A 2-in. to 4½-in. brush should be used according to the type of work. Whitewash and distemper brushes are unsuitable.

(2) By Spray. Prepare as for painting and use a gun fitted with a cement nozzle, feeding from a gravity feed container having a conical bottom. In all paint and spray work at least four hours should elapse before applying second coat which should, for all normal work, be mixed and applied as the first.

(3) As a screed. The mixture should be applied with steel trowel and pressed on hard as thinly as possible (maximum $\frac{1}{16}$ in.) and finished immediately. It cannot be successfully trowelled up.

Cleaning and Renovating :

This should not be done until at least three months have elapsed after application. A floor scrubbing brush with plenty of water and a little soft soap should be used. Corrosives should on no account be employed.

Cost per lb. :

E.A. 100 natural white and E.A. 101 strong white :—

Size	Quantity	Price per lb.
7 and 14 lb. tins	1 tin	1s. 3d.
7 and 14 lb. tins	1 cwt.	1s. 3d.
7 and 14 lb. tins	1 ton	1s. 3d.
56 lb. tins	1 tin	1s. 2d.
56 lb. tins	1 cwt.	1s. 1d.
56 lb. tins	1 ton	1s. 0d.

Standard tints ½d. per lb. extra over and above foregoing prices.

Special tints 3d. per lb. extra over and above price of E.A. 100 up to and including 28 lb. ; 2d. per lb. extra over 28 lb.

Cost per Yard Super :

Material only : (*a*) As a paint, two-coat work 5d. to 9d., according to the porosity and texture of the surface to be treated.

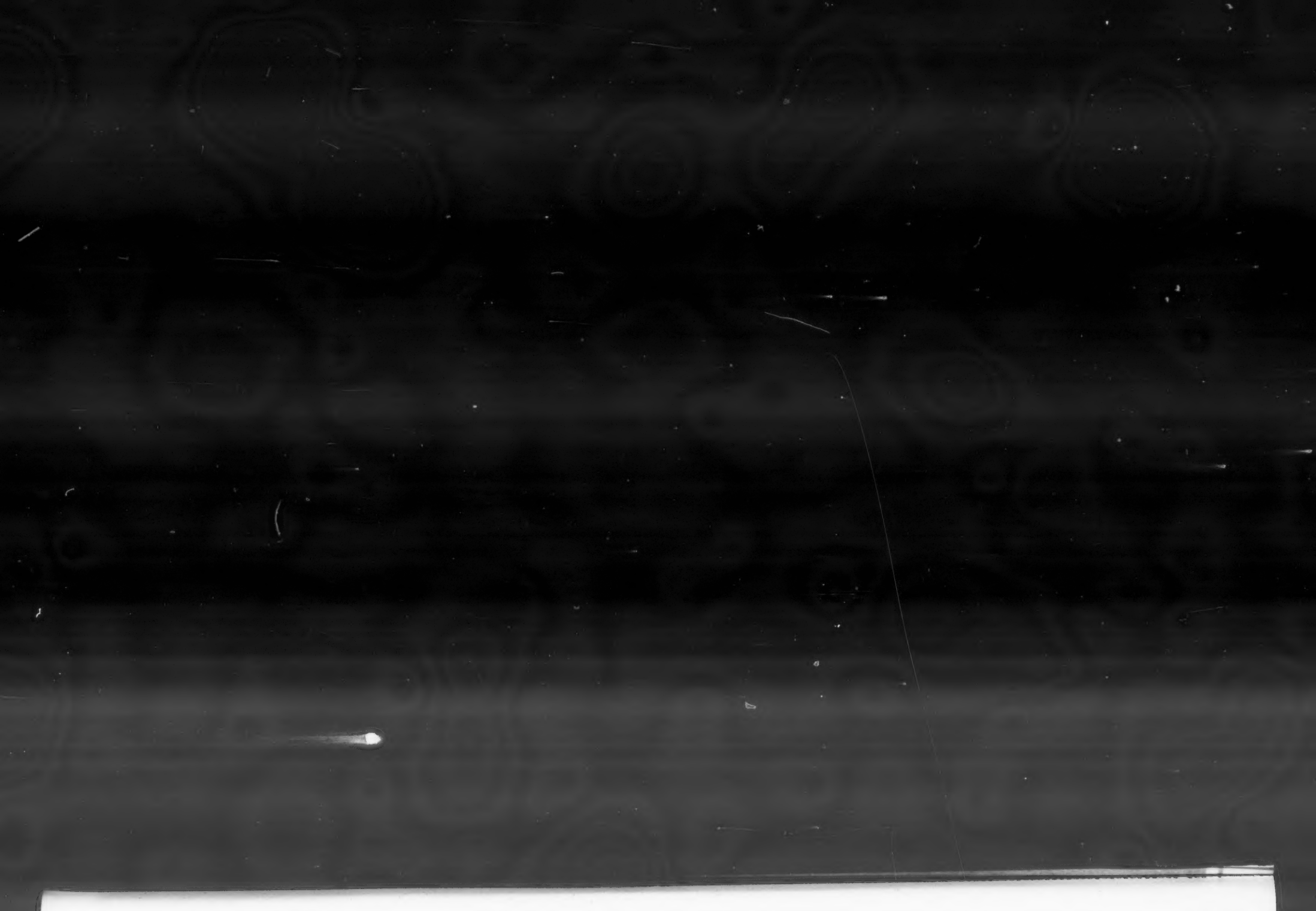
(*b*) As a paint-sand mix, 10d. exclusive of sand, depending upon surface to be treated.

(*c*) As a screed, 1s. 10d. approximately exclusive of sand, depending upon the surface to be treated.

Issued by : The Adamite Company Limited

Address : Manfield House, Strand, W.C.2

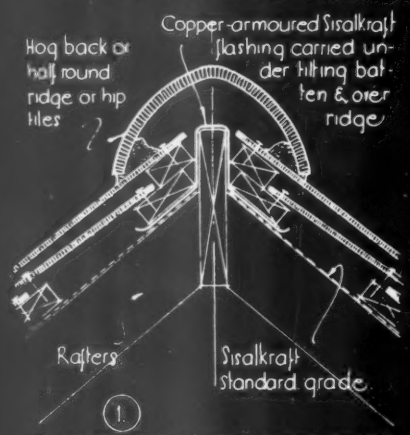
Telephone : Temple Bar 6233



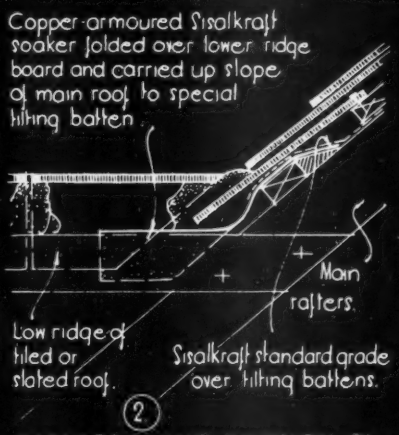
901.

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

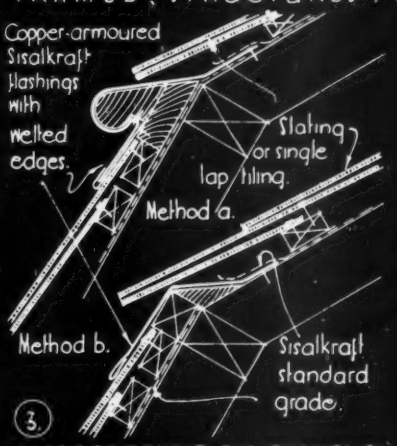
COPPER-ARMOURED SISALKRAFT BUILDING PAPER TYPICAL DETAILS SHOWING APPLICATION TO TIMBER FRAMED STRUCTURES:



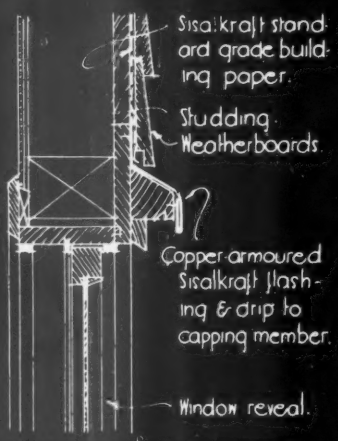
1. WATERPROOFING RAISED RIDGE BOARD OF A SLATED OR TILED ROOF



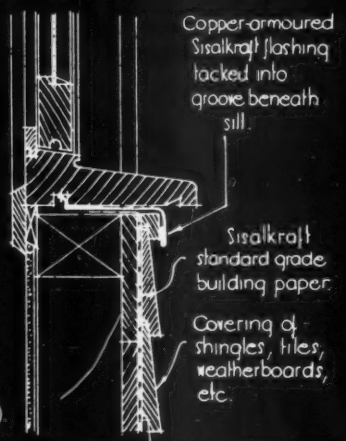
2. WATERPROOFING JUNCTION OF RIDGE WITH MAIN ROOF.



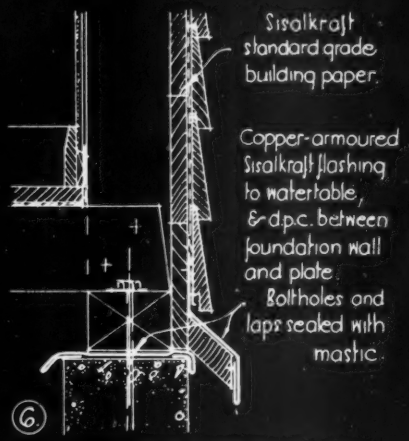
3. WATERPROOFING THE CHANGE OF PITCH IN A MANSARD ROOF.



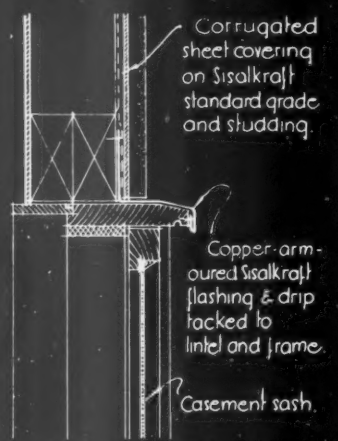
4. WATERPROOFING AT HEAD OF OPENING.



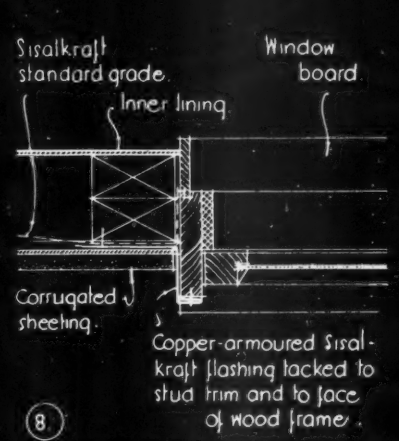
5. WATERPROOFING AT SILL AT OPENING.



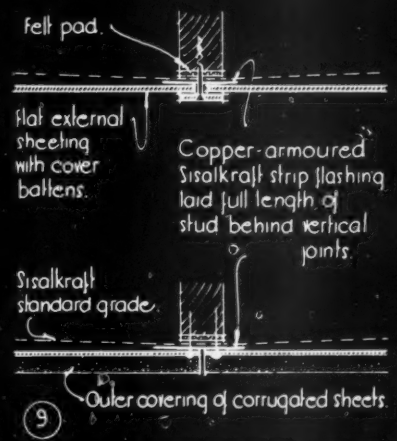
6. WATERPROOFING AT FLOOR PLATE LEVEL



7. WATERPROOFING AT HEAD OF OPENING.



8. WATERPROOFING AT JAMB OF OPENING.



9. WATERPROOFING AT VERTICAL JOINTS.

Information from J. H. Sankey & Son Ltd.

INFORMATION SHEET: WATERPROOFING: COPPER-FACED LAMINATED BUILDING PAPER, No. 1
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET
• 744 •
WATERPROOFING AND DAMP-PROOFING

Product : Copper-Armoured Sisalkraft Building Paper

Description :

The application of the ordinary grades of Sisalkraft waterproof and airtight building paper to timber framed structures is shown on Sheet 605. The details given here illustrate typical uses of the copper-armoured grade in similar buildings.

This material consists of light gauge copper sheeting, bonded under pressure with special bitumen to a 30 lb. creped kraft paper. The thin copper, although as protective against the penetration of moisture as heavier gauged copper sheets used alone, needs reinforcement to facilitate handling and application in the soft annealed state without its being damaged.

The reinforcement is provided by 24 crossed sisal fibres per square inch, placed between the copper and the kraft paper, and it maintains in the finished product flexibility and ease of handling without the danger of kinks, cracks or tears.

Application :

As shown, the material may be used for many built-in and exposed flashings, as well as damp-proof coursing. Joints, where necessary, should be made with a lap of 6 ins., mopped-in with hot bitumen or pitch. Joints in upstands should be treated similarly.

When Sisalkraft is used directly beneath linoleum to prevent rising damp, a smooth finish is obtained at the joints by butting the edges and sealing with a pre-tinned copper strip soldered on.

When the material is used as a horizontal dampproof course in an external wall, its thinness and flexibility ensure its conforming to any slight irregularities in the mortar bed. The bedding, however, should be as level as possible, as this helps to protect the Copper-Armoured Sisalkraft against physical damage. The material is unaffected by ordinary lime or cement mortars or concrete.

Grades :

The heavier grades of Copper-Armoured Sisalkraft should be used for exposed positions, such as are illustrated in diagrams 4, 6, 7 and 8, and in situations where there is risk of mechanical damage due to the slight continual movement of surrounding members, such as shown in diagram 3. Care should be taken to see that the back edge of welted drips is securely tacked down with copper nails. Nails or screws of other material should not be used under any circumstances.

Prices :

Ex. stock—Carriage forward or paid for 1,000 sq. ft. and over.

1 oz. Copper-Armoured Sisalkraft at **3d.** per sq. ft.

Width	Length	Area	s.	d.
4½-in. ...	120 ft.	45 sq. ft.	11	3
9-in. ...	120 ft.	90 sq. ft.	22	6
13½-in. ...	120 ft.	135 sq. ft.	33	9
20-in. ...	120 ft.	200 sq. ft.	50	0
31-in. ...	120 ft.	310 sq. ft.	77	6
40-in. ...	120 ft.	400 sq. ft.	100	0
60-in. ...	120 ft.	600 sq. ft.	150	0

2 oz. Copper-Armoured Sisalkraft at **5d.** per sq. ft.

Width	Length	Area	s.	d.
4½-in. ...	120 ft.	45 sq. ft.	18	9
9-in. ...	120 ft.	90 sq. ft.	37	6
13½-in. ...	120 ft.	135 sq. ft.	56	3
20-in. ...	120 ft.	200 sq. ft.	83	4
31-in. ...	120 ft.	310 sq. ft.	129	2
40-in. ...	120 ft.	400 sq. ft.	166	8
60-in. ...	120 ft.	600 sq. ft.	250	0

3 oz. Copper-Armoured Sisalkraft at **7d.** per sq. ft.

Width	Length	Area	s.	d.
4½-in. ...	120 ft.	45 sq. ft.	26	3
9-in. ...	120 ft.	90 sq. ft.	52	6
13½-in. ...	120 ft.	135 sq. ft.	78	9
20-in. ...	120 ft.	200 sq. ft.	116	8
31-in. ...	120 ft.	310 sq. ft.	180	10
40-in. ...	120 ft.	400 sq. ft.	233	4
60-in. ...	120 ft.	600 sq. ft.	350	0

Issued by : J. H. Sankey and Son, Ltd.

Address : Sisalkraft Dept., Aldwych House, Aldwych, London, W.C.2

Telephone : Holborn 6949

Notes from the Building Research Station on*

CONCRETE IN SULPHATE-BEARING CLAYS AND GROUND WATERS

PART II†

PRECAUTIONARY MEASURES

INFORMATION on the durability of concretes of different types in sulphate-bearing grounds is at present far from adequate. It is therefore not possible for any particular case to state with any precision the least costly measures which can be relied on to ensure durability. Despite the uncertainty attaching to the problem it is desirable to attempt to formulate some recommendations, realizing that, as these are based on knowledge which is very incomplete, they must be subject to revision as more knowledge becomes available, and that they should tend to err on the side of excessive rather than insufficient precautions. The recommendations should, moreover, be regarded only as a general guide and not as an invariable set of rules.

The least severe condition of exposure is probably that of concrete completely buried under conditions such that the excavation does not form a channel along which a flow of ground water is likely to occur. Foundations to buildings will usually fall into this class.

For concretes subjected to severer conditions of exposure, e.g. a one-sided water pressure, increased protective measures will be required.

It will be convenient to classify soil conditions and consider the protective measures needed.

* Crown Copyright Reserved.

† Part I was published in last week's issue.

Methods for sampling clay sub-soils and ground waters are given later and at this stage only the results of the examination will be considered. It must, however, be mentioned here that both clays and ground waters often vary very widely in the amount of sulphate salts they contain over even a small area of ground : further, in the case of water samples the concentration found in dry weather may, in extreme cases, be several times as large as that found in wet weather. The results of tests on selected samples must, therefore, only be taken as a general indication of the site conditions and not of the highest concentrations of sulphate salts that may occur.

Sulphate salts are found in very small amounts in most clays and ground waters from clay sub-soils, and it is necessary to formulate limits, however tentative, for the amounts where protective measures become necessary.

The various limits must be placed on the low side since, as mentioned above, the amount of sulphate salts present may rise above the values found in test samples. Though the results of ground water analyses may be preferred to those of the clay as a criterion, it is desirable to give limits for both since ground water samples cannot always be obtained. Thus a clay may not yield any water in a trial excavation or borehole, though later, under other seasonal conditions, for instance, it may become water-bearing. In some cases it may be found that the results of the ground water and clay analyses lead to different classifications of the site in terms of the limits suggested below, and in such cases the more severe classification should be adopted.

1. *Sites with Low Sulphate Content*

The limits suggested are :—

Ground water below about thirty parts sulphur trioxide per 100,000.

Clay‡ below about 0.2 per cent. sulphur trioxide.

2. *Sites of Moderate Severity in Regard to Risk of Sulphate Attack*

The limits suggested are :—

Ground water about thirty to one hundred parts sulphur trioxide per 100,000.

Clay‡ 0·2 to 0·5 per cent. sulphur trioxide.

3. *Sites with High Risk of Sulphate Attack*

The limits suggested are :—

Ground water above one hundred parts sulphur trioxide per 100,000.

Clay‡ above 0·5 per cent. sulphur trioxide.

In this classification no attempt is made to differentiate between the various sulphate salts. It will often be found that in classes (1) and (2) the main salt present is calcium sulphate, while in class (3) either magnesium or sodium sulphate, or both, will be present in addition.

For sites falling in class (1) no special measures will usually be needed, except that for conditions near the upper limit, e.g. above say twenty parts SO_3 per 100,000 in the ground water, the use of lean Portland cement concrete (e.g. 1 to 7-9 ballast) cast *in situ* involves some risk, and richer mixes, e.g. 1 : 2 : 4, may be desirable in positions where normally the leaner mix would be used.

For class (2) the protective measures advisable will depend on the nature of the concrete work concerned. Precast Portland cement concrete products of high quality made with a rich mix (e.g. 1 : 1½ : 3) and of low permeability are only likely to suffer any serious attack over a period of very many years if completely buried. Similar rich dense Portland cement concretes placed *in situ* are also unlikely to suffer seriously over, at any rate, a short term of years provided particular care is taken to

‡ Calculated on weight of clay in air dry state.

TABLE I

Classification of Sulphate Soil Conditions and Precautionary Measures

Classification of soil conditions	Sulphur Trioxide in ground water Parts SO_3 per 100,000	Sulphur Trioxide in clay Per cent. SO_3	Precautionary Measures		
			Precast concrete products	Cast *in situ* Concrete	
				Buried concrete surrounded by clay	Concrete exposed to one-sided water pressure
1	Less than 30	Less than 0.2	No special measures.	No special measures except that use of lean concretes (e.g. 1 : 7 or leaner ballast concrete) is inadvisable if SO_3 in water exceeds about 20 parts per 100,000. In such cases use Portland cement mixes not leaner than 1 : 2 : 4, or, if special precautions desired, pozzolanic cement mixes not leaner than 1 : 2 : 4.	No special measures except that when SO_3 in water is above 20 parts per 100,000 special care should be taken to ensure high quality of Portland cement concrete, using, if necessary, 1 : 1½ : 3 mixes. Alternatively pozzolanic cements may be used in mixes not leaner than 1 : 2 : 4.
2	30 to 100	0·2 to 0·5	Rich Portland cement concretes, e.g. 1 : 1½ : 3 not likely to suffer seriously except over a very long period of years. Otherwise use pozzolanic or aluminous cement.	Rich Portland cement concretes, e.g. 1 : 1½ : 3 unlikely to suffer seriously over a short period of years provided care is taken to ensure that a very dense and homogeneous mass is obtained. For most work, and particularly if the predominant salts are magnesium or sodium sulphates, pozzolanic cement concrete (not leaner than 1 : 2 : 4) or high alumina cement concrete (1 : 2 : 4) advisable.	Use of Portland cement concrete not advisable. Pozzolanic cement or, preferably, high alumina cement recommended.
3	Above 100	Above 0·5	The densest Portland cement concrete products obtainable not likely to suffer seriously over periods up to say 10-20 years unless conditions are very severe. Otherwise use high alumina cement concretes.	High alumina cement concrete recommended.	High alumina cement concrete recommended.

Notes.—(1) Where " 1 : 2 : 4 " concrete mentioned other mixes of equivalent weight ratio of cement to total aggregate, but with somewhat increased ratio of sand to coarse aggregate (e.g. 1 : 2¼ : 3¾ or even 1 : 2½ : 3½) may, of course, be used, sometimes with advantage.

(2) With Portland cements of unusually high sulphate resistance rather more latitude could be allowed, but it would be necessary to obtain adequate assurance that the cements were of this type.

ensure homogeneity of the mass. For most cast *in situ* work the use of a cement, such as a pozzolanic cement, which is more resistant to sulphate attack, even though not entirely immune, is, however, desirable. In any case, concrete mixes leaner than 1 : 2 : 4 should not be used, and particular care should be paid that the aggregates are satisfactorily graded, and that the water content is not higher than is required for proper placing. The use of high alumina cement concrete, similarly made and in a similar mix, should afford complete protection and will also give high strengths should these be needed. For the most severe case, as in a retaining wall, where one side of the concrete is exposed to water pressure and the other to air, the use of high alumina cement may be advisable. It may be noted that for cast *in situ* concrete some increase in the ratio of sand to coarse aggregate is of assistance in obtaining concrete of low permeability and one which is more readily placed as a homogeneous mass. Thus, in place of the common 1 : 2 : 4 cement-sand-coarse aggregate proportions, a mix of 1 : 2¼ : 3¾ or even 1 : 2½ : 3½ ratio may be suggested, unless the aggregate is unusually well rounded in shape.

It is assumed in this discussion of class (2) sites that the main sulphate salt present is gypsum. When magnesium or sodium sulphate is the main constituent, rather more precautions are probably needed and the use of any cast *in situ* Portland cement concrete is better avoided.

For class (3) the use of any Portland cement concrete involves serious risk of severe deterioration, though it is again true that the densest precast products, as, for example, some types of concrete pipes, may only suffer to a serious extent over a long period of years. It is also questionable if pozzolanic cements can under these conditions be regarded as sufficiently immune from attack. For most types of work the use of high alumina cement concrete is to be recommended. Reliance under these conditions should not be placed on bituminous paint coatings to Portland cement concrete, but thick asphalt coatings (i.e. ⅛-¼ in. thick) applied hot to Portland cement concrete can be regarded as satisfactory provided the joints between units are properly protected when placing by running hot bitumen around them. This practice has been used in the case of concrete pipes.

The various suggestions made above are summarized in Table I.

The precautions to be taken in any particular work must, of course, depend not only on the factors outlined above, but also on the effective life desired from the work. In cases where a life of only a small number of years (say 5-10) is required, the precautions could be relaxed, while in structures for which a life of a very long period of years is required and it is desired to eliminate, as far as can be foreseen, any risk of deterioration more stringent precautions can be taken.

THE SAMPLING OF CLAYS AND GROUND WATERS

Information may often be available whether sulphate salts are known to occur in a particular locality or clay formation. When this is known to be the case an examination of the site should be made. Useful information also can often be obtained by visual examination of the sides of an excavation and of the clay dug out.

Calcium sulphate (gypsum or selenite) crystals occur occasionally as rounded agglomerations of radiating colourless crystals, which may be up to 1 or 2 in. in diameter. More frequently they occur as separate crystals which may vary from microscopic size up to several inches in length scattered in the clay; such crystals can very often be recognized by their shiny appearance when a piece of clay is held up in the light. Other minerals of similar appearance are not likely to occur in clay, but the softness of gypsum crystals (they may be scratched by the finger nail) affords an additional method of identification when they are not too small.

The occurrence of the crystals is usually sporadic and they may be found in isolated patches or seams in the clay, whilst elsewhere none is visible. Their presence, even in small amount, indicates the necessity for a laboratory examination of the samples of the subsoil.

When no crystals are observable an indication of the presence of sulphates is sometimes found in the formation of a white scum or efflorescence on the surface of the excavated clay as it dries. Such an efflorescence is again indicative of the need for laboratory examination.

(Concluded on page 28.

PUBLIC HOUSE, EAST SHEEN

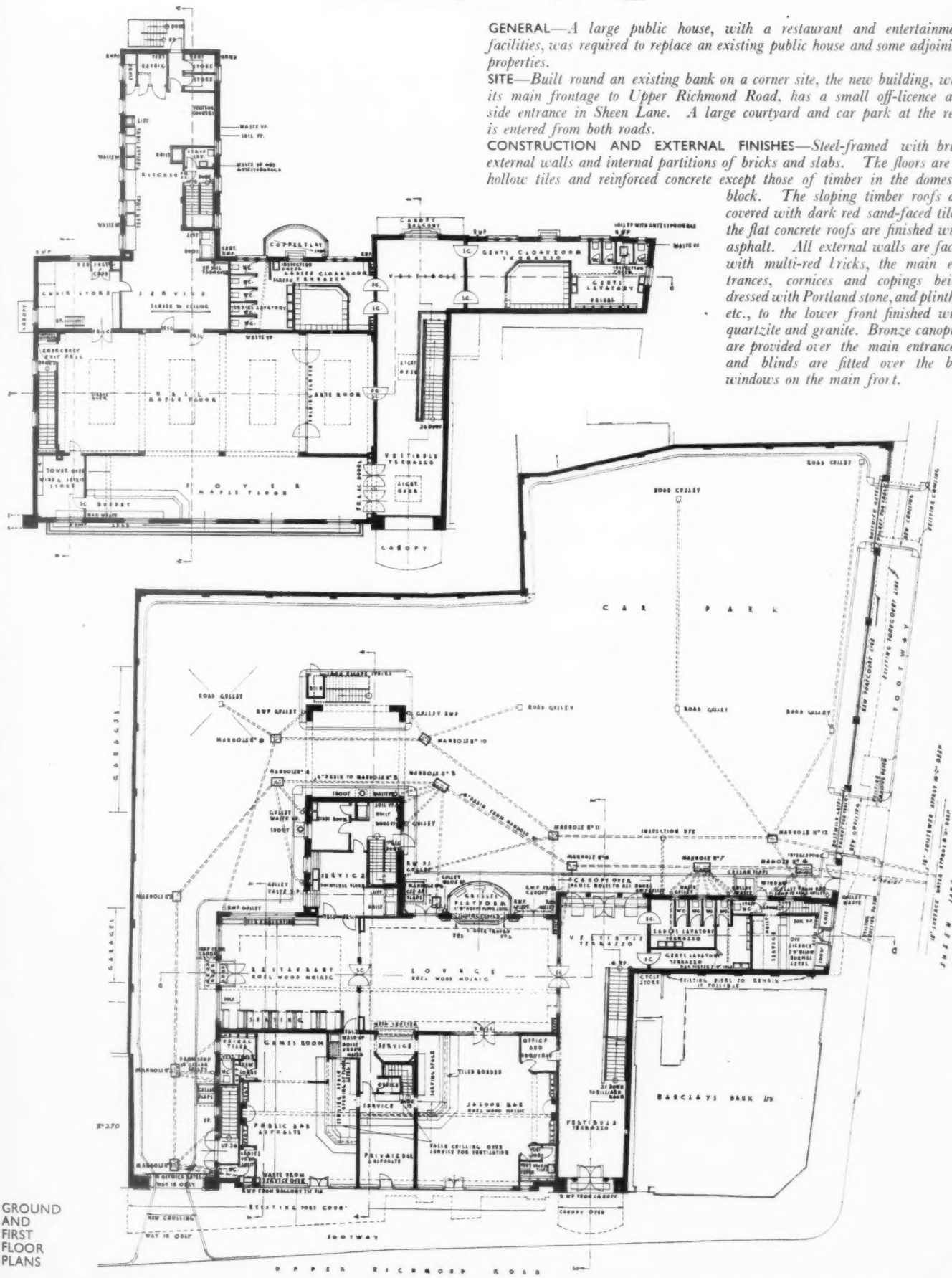
DESIGNED BY A. W. BLOMFIELD

THE FRONT TO UPPER RICHMOND ROAD

GENERAL—*A large public house, with a restaurant and entertainment facilities, was required to replace an existing public house and some adjoining properties.*

SITE—*Built round an existing bank on a corner site, the new building, with its main frontage to Upper Richmond Road, has a small off-licence and side entrance in Sheen Lane. A large courtyard and car park at the rear is entered from both roads.*

CONSTRUCTION AND EXTERNAL FINISHES—*Steel-framed with brick external walls and internal partitions of bricks and slabs. The floors are of hollow tiles and reinforced concrete except those of timber in the domestic block. The sloping timber roofs are covered with dark red sand-faced tiles, the flat concrete roofs are finished with asphalt. All external walls are faced with multi-red bricks, the main entrances, cornices and copings being dressed with Portland stone, and plinths, etc., to the lower front finished with quartzite and granite. Bronze canopies are provided over the main entrances, and blinds are fitted over the bar windows on the main front.*



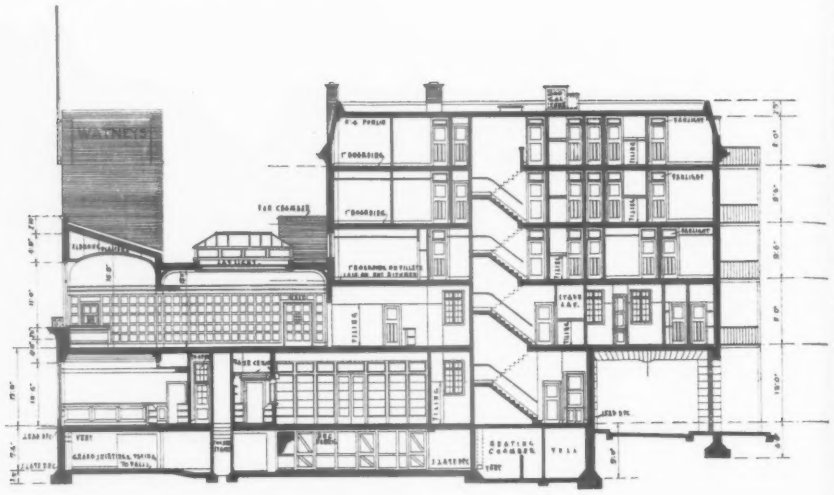
GROUND AND FIRST FLOOR PLANS

PUBLIC HOUSE, EAST SHEEN, SURREY • BY A. W. BLOMFIELD

VESTIBULE, FIRST FLOOR

FOYER AND HALL, FIRST FLOOR

SALOON BAR



SECTION

INTERNAL FINISHES—*The public and private bars and the games room are flush panelled to a height of 5 ft. in oak with walnut bandings. All wall surfaces are plain, and the enriched ceilings are treated with graduated plastic paints, the floors being asphalted to receive linoleum. The saloon bar, panelled to a height of 7 ft. 6 in. in small oak squares, also has a decorative treatment to the cornice and ceiling. The lounge and restaurant are panelled to a height of 7 ft. 6 in. with silver grey elm from the piles of Waterloo Bridge, and the floors are of teak and Jarrow blocks. Vestibules to ground and first floors are also panelled in silver grey elm to dado height, with decorative plaster treatment above, and the floors and staircase are in terrazzo divided with ebonite strips, the staircase having a coloured wrought metal balustrade. The hall and foyer, panelled with silver grey elm, surmounted with coloured fibrous plaster bands, have coffered and panelled plaster ceilings. A maple dance-floor is provided for both these rooms. Cloakrooms, lavatories, kitchens, larders, etc., are tiled.*

SERVICES—*Central heated throughout with a thermostatically controlled automatic stoker, augmented in public and saloon bars and manager's living-room with gas-coke fires. There is also a separate hot-water installation. All bars have an extract ventilation system (four changes per hour), whilst the beer cellars, larders and bottle shelves are cooled. The car park and courtyard are floodlit, and neon signs indicate the principal entrances.*

The general contractors were Messrs. F. G. Minter, Ltd. For list of sub-contractors, see page 35.

PUBLIC HOUSE, EAST SHEEN, SURREY • BY A. W. BLOMFIELD

Concluded from page 26.)

The absence of any of the above indications cannot be taken as proof that sulphate salts are not present, and in cases where the site is in a region in which sulphates are known to occur, an examination by a consultant chemist may still be advisable. The number of samples required will depend in part upon the variations which are apparent in the nature of the sub-soil and upon the nature of the concreting work in question. Thus samples of clay should be taken at different points from the sides of an excavation and at different levels down to the maximum depth at which the concrete will be laid. Each sample should consist of clay taken from a number of points covering the particular small area of which it is intended to be representative and should amount in all to several pounds in weight. It should then be thoroughly mixed by battering down and breaking up repeatedly with a spade or small shovel until it is apparently uniform, and finally reduced in amount by cutting a cross upon it with a spade and retaining the alternate quarters. The mixing and quartering may be repeated if necessary until a suitable amount (1-2 lb.) for laboratory examination is obtained.

Water samples should be taken from water actually draining from the surrounding sub-soil into the excavation under examination, fresh rainwater which has fallen directly into the excavation or run in from the surface is of no value as a sample. All samples should be collected in thoroughly clean bottles which have been thoroughly rinsed out with distilled water, and a rinsing with the water to be examined should be given if possible before filling. At least 1 pint of water should be collected. The depths of the excavation from which the water is collected should, if possible, correspond roughly with the base of the concrete that is to be placed.

The position and depth from which all samples are taken should be carefully recorded and the samples sent for analysis.

LITERATURE

INDUSTRY AND PLANNING

[*By A. G. LING*]

P.E.P. Report on the Location of Industry. P.E.P. Price 10s. 6d.

WORK is the first essential of a town, whether it be agriculture, commerce, mining, distribution, or any other branch of industry. It is with this first need that this Report mainly deals, but inevitably the next essentials of a town — housing, leisure and transport—are introduced: for the location of work means the location of people whose living requirements must be satisfied.

The Report's main purpose is to state the case for the appointment of an industrial development commission to advise the Government on the location of industry. Industrialists and factory owners would do well to read it, for it goes a long way to show that private enterprise and national planning can be profitably reconciled, and dispels the current idea that planning is an unwarranted interference with private objectives.

After defining the problem, the Report discusses the factors affecting the location of industry from the point of view of the producer, the consumer, and the nation, in peace and war. As in all branches of Town Planning, the

necessity for defence measures can act as a stimulant to the planning of industry: for individuals cannot, or should not, be allowed to erect factories in such a way and position that they would become an easy target in time of war. Defence considerations for the most part point the same way as purely peace time economic and town planning considerations, so that most of the restrictions made for defence reasons would have a long term peace value as well. The evacuation of London is a case in point, for if people are removed from London in peace time the number of industries dependent on a vulnerable population at once decreases.

Later in the Report regional development is emphasized, and it is shown that independent regional planning is insufficient; there must be a simultaneous national plan. The suggested commission would only deal with the nation's industrial policy, but if it forms, as recommended by the Town Planning Institute, part of a national planning commission, its results could be co-ordinated with other forms of land development.

The question of redistribution of population for industry would be examined as part of the national scheme. At the moment the individual is allowed to choose a particular location for his industry because it will be the most economic in the short run for him or the small group which he represents; or he can choose it for any other reason or no reason. Such a location may be the most uneconomic for the community as a whole, in the long run, and may even result in the community paying for the maintenance in idleness of workers who have been left stranded by the collapse of an industry wrongly placed.

The Report also suggests proposals for remedying the consequences of the Government's present illogical industrial policy. It suggests that the people of such towns as Merthyr, which are being subsidized by doles to the extent of £1 a week per average family, should be evacuated to newly erected towns complete with industry and social amenities, and situated in such a way as to attract and give confidence to industrialists seeking sites.

Four out of five of our people live in towns—a remarkable fact in view of the deplorable lack of Government research that has been undertaken to see how our towns should be organized. The new towns proposed in the Report would give a lead to the general reorganization of which our towns are in urgent need.

BOOKS RECEIVED

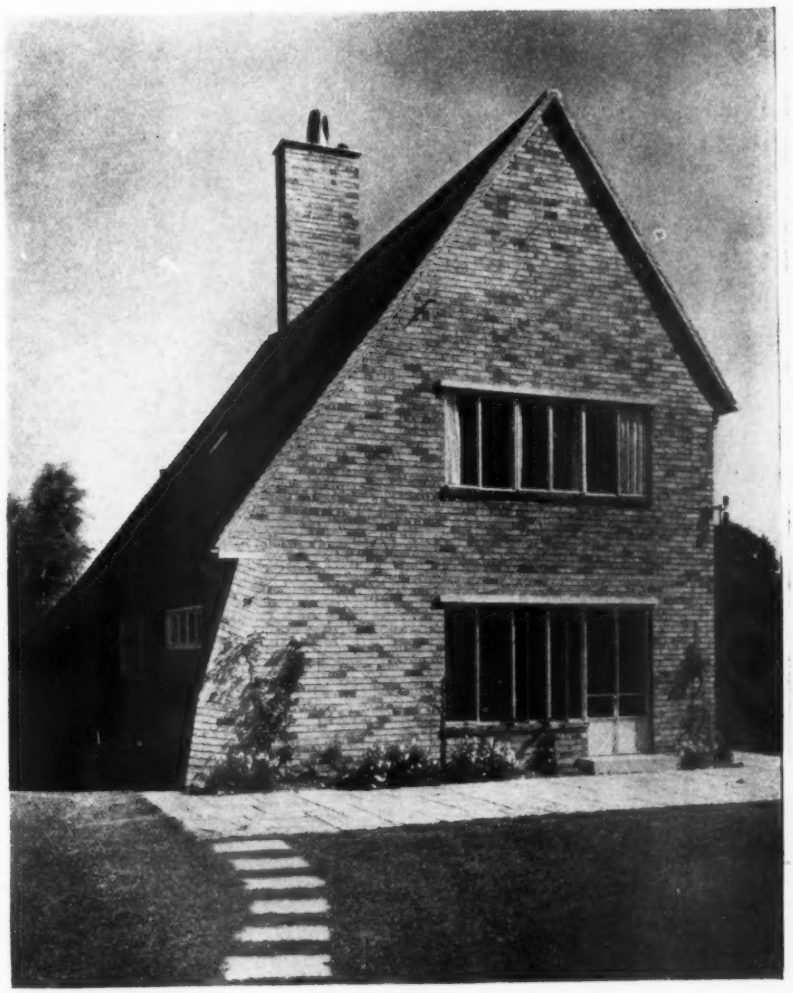
Scotland Under Trust. By Robert Hurd. A. & C. Black. Price 6s.

Model Building Byelaws Illustrated. By G. Eric Mitchell. Batsford. Price 10s. 6d.

Planning the Little House. By Alice Waugh. McGraw-Hill Publishing Co. Price 15s.

HOUSE, JORDANS, BUCKS

BY CRICKMAY AND SONS



SOUTH FRONT

MAIN FRONT

THE LIVING ROOM

FIRST AND GROUND FLOOR PLANS

GENERAL—*The client desired that the house should be moulded on conventional "English cottage lines," hence the pitched roof and separate dining and living rooms.*

SITE—*Situated on the highest point of the site, furthest from the approach road, the house is placed diagonally to lie along the contours and to obtain a south aspect and a pleasant prospect for the living room.*

CONSTRUCTION AND EXTERNAL FINISHES—*External walls of 11 in. cavity brickwork, faced with Burnham yellow stocks, and internal partitions of brick and 3 in. patent blocks. The pitched timber roof is covered with rust-red Maidenhead plain tiles on feather-edge boarding, and all windows have metal casements.*

INTERNAL FINISHES—*All walls and ceilings generally are plastered and distempered, those to the living rooms and stairs being finished with a wood float. The deal floors are slightly stained and wax polished, and the flush birch doors are also wax polished. Built-in furniture consists of bookshelves in the living room, dresser in the kitchen, cupboard in the cloakroom, and wardrobe cupboards in various bedrooms.*

SERVICES—*Heating and hot water is by means of an independent boiler in the kitchen and radiators in the hall and dining room. There is also a serving hatch between the kitchen and dining room.*

COST—*Contract price, £1,043 3s. Price per cubic foot, 1s. 1⅛d.*

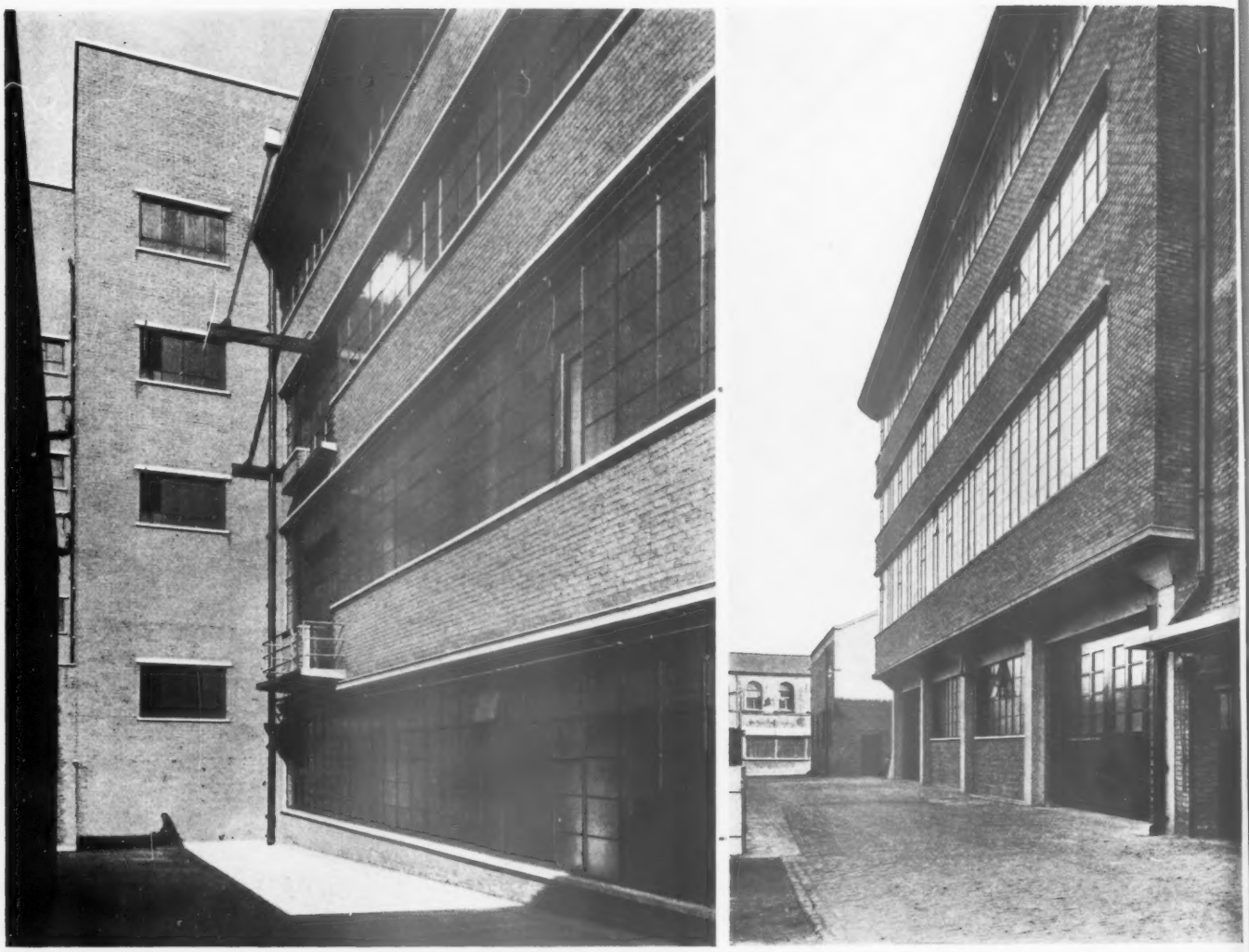
General Contractors: Messrs. H. E. Ryan.
For Sub-contractors see p. 35.

HOUSE, JORDANS, BUCKS • BY CRICKMAY AND SONS

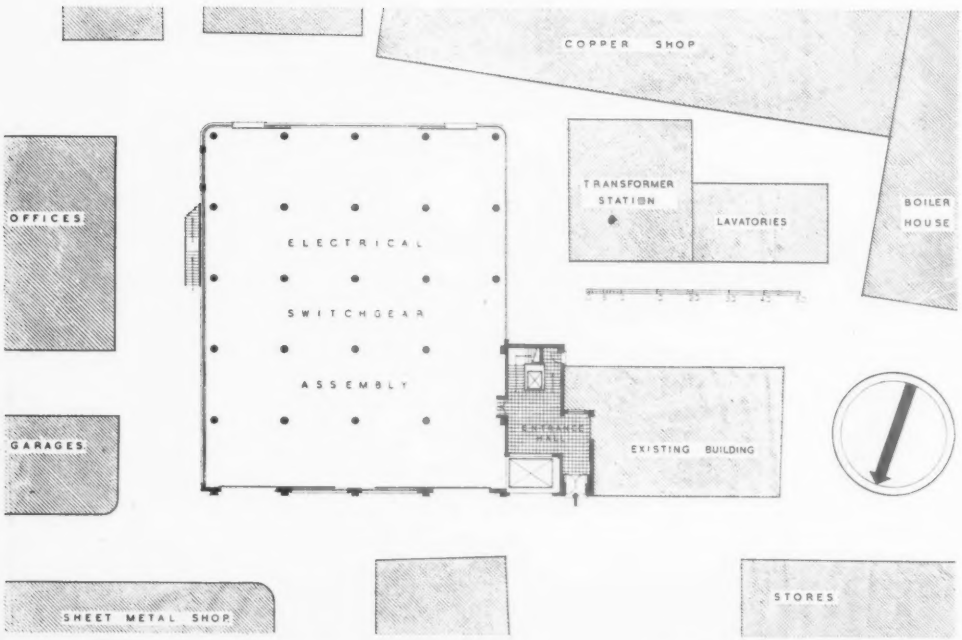
FACTORY EXTENSION, CHARLTON

DESIGNED BY SIR JOHN BROWN AND A. E. HENSON

VIEW FROM EAST



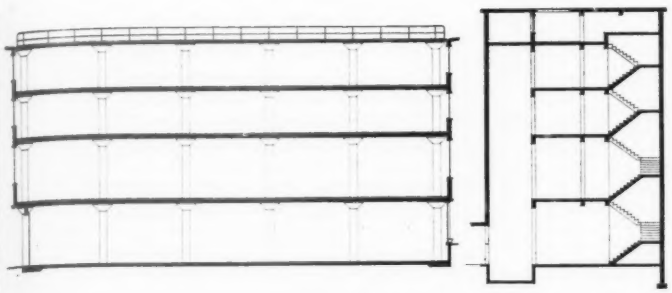
VIEWS FROM THE SOUTH (LEFT) AND WEST



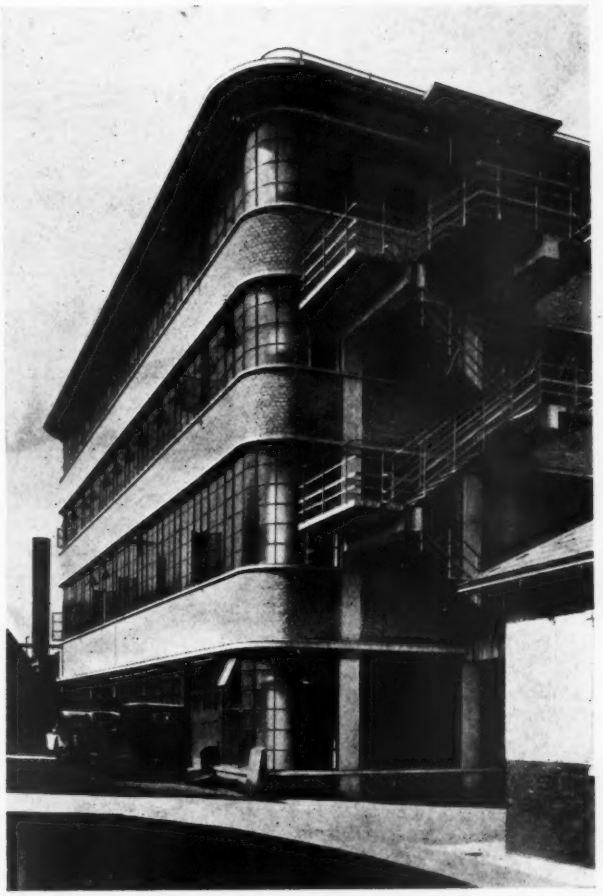
PROBLEM—*A factory block to be used for assembling electrical switchgear for Messrs. Johnson and Phillips, and provided with the maximum lighting and unobstructed floor space. The building is an extension to an existing electrical factory at Charlton, S.E.*

SITE—*Owing to the congested site, accommodation was arranged on four floors. The three upper floors and escape staircase on the east side are cantilevered to obtain the maximum road width.*

FACTORY EXTENSION, CHARLTON • BY SIR JOHN BROWN AND A. E. HENSON



SECTIONS



ANOTHER VIEW FROM THE EAST

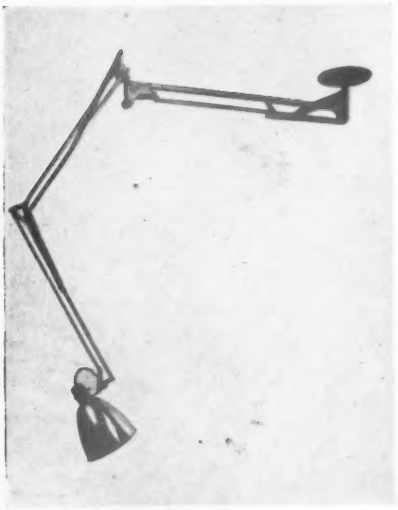
CONSTRUCTION AND EXTERNAL FINISHES—*Reinforced concrete mushroom columns and R.C. panel walls monolithic with the floor, faced externally with a 4½-in. brick skin. This form of frame enabled the use of continuous steel windows and allowed shafting to be "run" close to the ceiling slab. The reinforced concrete frame to the lift and lavatory block has 11-in. brick cavity panel walls.*

INTERNAL FINISHES—*Internal walls are of fair-faced brickwork painted to dado height in colour, and treated with factory white above. The floors of the main block are of maple blocks, laid direct on to the structural slab; those of the staircases, lavatories, etc. are paved with terrazzo tiles.*

SERVICES—*Heating is by high-pressure hot water, fed from the existing boiler-house. Separate goods and passenger lifts are provided.*

The general contractors were Bowles and Sons; for list of sub-contractors and suppliers, see page 35.

FACTORY EXTENSION, CHARLTON • BY SIR JOHN BROWN AND A. E. HENSON



TRADE NOTES

[*By PHILIP SCHOLBERG*]

Long-Arm Lighting

EIGHT or nine weeks ago there appeared in these notes a reference to a Swedish-designed lighting fitting intended to be fitted to the wall or ceiling and giving an exceptionally large radius of operation. It was a good design, in spite of the fact that the adjustments were frictional, but Herbert Terry and Sons remind me that they have been making for some time a model of their Anglepoise which does very much the same thing. The illustration at the head of these notes shows what it looks like. Instead of the two arms of the models which most of us know, this type has three, and its radius of operation thus goes up to 5 ft. 3 in. Price is six guineas chromium or five guineas in black.

Some architects, I know, feel that the Terry design is almost too mechanical, and it must be admitted that there are quite a lot of linkages and exposed springs, but the whole fitting is logical and honest, and it is difficult to see how it could be altered for the better. American industrial stylists would doubtless cover it all in with ribbed and streamlined casings, and the result would be frightful, so frightful that one can only hope Messrs. Terry will continue their present policy of leaving things alone and merely finding new uses for the same basic unit. The model illustrated here is known as the surgery lamp, but there is no reason why it should not be used over the ordinary desk or drawing-board.—(*Herbert Terry and Sons, Ltd., Redditch.*)

Ceiling Switches

A new range of ceiling switches has just been introduced by the General Electric Company. The switches are known as the Landor, and they are available in two different sizes and a number of different finishes. The internal mechanism is a patent see-saw oscillating movement giving rapid make and break, and this can be supplied with a rubber buffer for quietness. The smaller model has a base diameter of 2 in. and fixing centres of 1½, prices running from 30s. to 42s. 8d. a dozen. The larger model is standard size with a base diameter of 2¼ in. and 1⅝ fixing centres, and for this the prices start at 31s. and go up to 49s. a dozen, the higher figure including the buffer for quietness. All the switches are available with metal or all-insulated covers, the former being supplied in polished brass, bronze, oxidized silver or chromium plate.

These switches are meant to be fitted on the ceiling, and are probably the best type for use in bathrooms. Admittedly, with present-day all-insulated switches there is not very much risk of bathers getting a shock, but it is generally forbidden to place any switch so that it can be reached from the bath, and this ceiling type really seems the most sensible answer, for it is bound to be out of the way. I have also seen it used in garages, with the cord hanging down just inside the door and a little way out from the wall so that it is easy to reach without getting out of the car.—(*The General Electric Company, Ltd., Magnet House, Kingsway, London, W.C.2.*)

Casehardening of Wood

I see that the Timber Commissioner for Eastern Canada is a little worried over the casehardening of wood, and, since the architect only sees the results of it in the form of severely cupped boards, it is perhaps worth explaining how it happens.

Steamed wood is plastic, in that it can be bent round corners, and will retain its bent shape provided that it is restrained while it is drying. Casehardening occurs in a somewhat similar way, and is due to too quick drying, which causes rapid evaporation from the outer layers of wood. This rate of evaporation may be so rapid that the moisture imprisoned in the interior of the plank has no time to transfuse outwards, and the tendency of the outer shell to shrink is resisted by the wet interior, so that the outside of the wood is in tension while the inside is in compression. The outer surface is thus made rigid by the tension and tends to harden in its expanded condition. In the meantime the interior is slowly drying, but the hardened outer shell tends to prevent natural shrinkage, so that the stresses in the plank are reversed—compression in the outer and tension in the inner portion. Casehardening is thus a state of unequal stress caused by uneven drying, and when a piece is resawn the inner faces of the planks become concave because of the released tension, while the outer faces become convex because of the released compression. Both boards are thus severely cupped.

These internal stresses can be removed by softening the outer shell with steam, but they should never occur if the drying rate is kept reasonably low in the first instance.

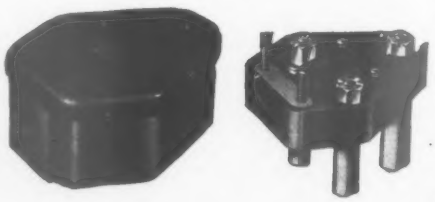
Rubber Clad Plugs . . .

The illustrations at the foot of this page show a new type of rubber-covered plug which has recently been introduced by M.K. Electric. Some time last summer I referred to a rubber-bodied plug which had been introduced by Sanders of Wednesbury, the object of both these types being to reduce breakages in factories, or for that matter anywhere else. The Sanders plug could be run over by a car (I even did this experimentally) and suffer no apparent harm. M.K.'s work on the opposite line of thought and make the body of their plug in the more usual bakelite and then cover it with rubber. Their reasoning is as follows:—"A plug with contact pins liable to deflection would, of course, be extremely dangerous, for it could conceivably be inserted into sockets of incorrect rating, or even inserted one pin at a time into sockets designed normally to prevent overhang." Whether Sanders or M.K. are right I do not pretend to know, but there seems to be a certain amount to be said in favour of both schools of thought, and I do not see why I should step off my comfortable fence and make a decision.

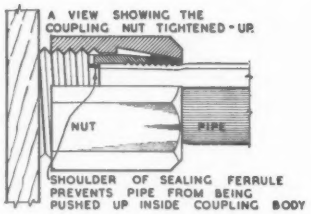
The M.K. plugs cost 22s. a dozen in 5-amp. and 26s. 8d. in the 15-amp. size. Wiring is normal and there is an easily adjustable grip for the flex, which may be any size of cab tyre or braided. The bridge is moulded in non-track material, and has deep channels for isolating and locating each conductor.—(*M.K. Electric, Ltd., Wakefield Street, Edmonton, London, N.18.*)

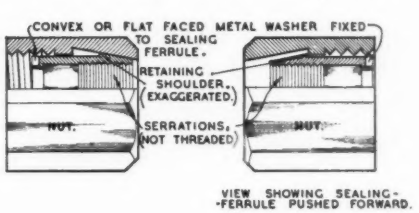
. . . and Shallow Switch Units

The same firm has also produced some ultra shallow switch units fitted in a new kind of pressed steel box. These boxes are only about ½ in. deep, so that there is



M.K. plug body and rubber cover.





no need to cut away brickwork to accommodate them. Three types are made, one with a rubber grommet where conduit is not used, and two others with cleats to take oval or round conduit ; all boxes can be fitted with levelling pillars for the switches. Price is low, and the fact that the boxes are made of pressed steel means that there are none of the imperfections which are almost inevitable with the cast-iron type. Switches are also made, and the price of switch and box is 20s. a dozen for a one-way switch in the rubber grommet box, other boxes and white switches are slightly more. Address as above.

Couplings for Copper Pipe Services

Weldable fittings are tending to displace the cone- and nut-type of joint for copper pipes, largely on the grounds of cost. There is something to be said, however, in favour of some system which will allow the pipe to be easily disconnected, but many of these fittings suffer from the disadvantage that the small cone is a loose fitting and therefore tends to be lost, not only by the householder but by the fitter who does the job in the first place. The Crownall joint, shown at the top of this page, is an attempt to overcome this failing. In this design the ferrule has a small retaining collar which engages on a shoulder on the inside of the nut, and is thus prevented from falling out. When the nut is screwed up to make the joint the serrations on the inside of the ferrule make a series of indentations on the outside of the pipe, and the squeeze on the ferrule reduces its diameter enough for it to be released from the coupling nut, so that it becomes easier to break the joint. Tests by the National Physical Laboratory showed this joint to be stronger than both 17- and 18-gauge copper pipe in ½-in. bore, the pipes bursting at 8,000 and 6,000 lb. odd pressure while the joints were apparently unaffected.

I have only one complaint to make, and that is over the name of this joint. There is already on the market a Brownall joint made by another manufacturer, and it seems to me that the two will inevitably be confused. Not so very long ago I described in these notes a simple and well-designed ventilator which was marketed under the name of Everite, which most people think of as a roofing sheet made by Turners. And there is, I believe, an Evertite window, not to mention Evertaut steel furniture. Trade names are hard enough for the architect as it is, but when names are very nearly the same I suspect that quite a few orders must go to the wrong firms.—(*Tube Patents, Ltd., 17 The Broadway, London, S.W.19.*)

A Code for Zinc Sheet Roofing

"The committee consider that a satisfactory zinc roof depends as much on the manner in which the zinc is laid as upon the use of a satisfactory quality of material." Quite. And as a result the new British Standard Specification for plain sheet zinc roofing (No. 849-1939) contains a proper code of practice as well as the specification clauses. The Zinc Development Association, which proposed in the first instance that the specification should be prepared, take the view that any prejudices against zinc roofing are not due to any faults in the material itself, but to the use of too light a gauge of metal, and to faulty methods of laying. The inclusion of a code of practice therefore seems an excellent idea, and it has been thoroughly done, for it includes such details as boarding and roof fittings, as well as the laying of zinc on flat and pitched roofs. The price of the specification is 2s., but the association has purchased a number of copies which they are prepared to send without charge to architects.—(*The Zinc Development Association, Great Westminster House, Horseferry Road, London, S.W.1.*)

MANUFACTURERS' ITEMS

Mr. James Bussey, M.I.STRUCT.E., has been appointed a director of Thos. W. Ward, Ltd., Sheffield. For 37 years he has been connected with the structural steel department and has been responsible for the steelwork in many important buildings, both in Sheffield and in various parts of the country. Mr. C. A. Lee, who for nearly 30 years has been connected with the locomotive and crane department, has been appointed a local director of the company.

•

We have received from Edward Johns & Co., Ltd., of Armitage, near Rugeley, Staffs, copies of their "UniVersia" leaflet and "Unique" Poster, which illustrate and describe Armitage ware sanitary fixtures.

•

Britco and Comet flush doors are fully illustrated and described in a booklet just published by the Merchant Trading Co., of Columbia House, 69 Aldwych, W.C.2.

•

That modern piling methods are becoming speedier and more adaptable is the inference to be drawn from the reports of two foundation contracts recently completed. The Franki Compressed Pile Company were responsible in each case. The Franki system of cast *in situ* piling—a system which generally may be said to employ shorter, stouter piles placed at wider intervals—is now being very widely employed. The new Royal Ordnance factory at Chorley, Lancs, built under H.M. Office of Works contract by Sir Lindsay Parkinson & Co., Ltd., needed no fewer than 20,000 piles. Franki were able to drive these piles at the rate of a thousand piles a month for 20 consecutive months. The second case illustrates the value of the Franki Diesel motor piling plant which is specially built for congested sites. Foundations for three new boiler installations had to be laid down alongside, and underneath an existing generating station. 59 piles were required, and the only area available was an existing basement 16 ft. below street level ; steel stanchions and other girder work restricted headroom to 16 ft. Thus the height of the pile frame—32 ft.—necessitated the mast being lowered whilst the frame was manœuvred into each position for piling.

We regret to record the death of Mr. David Macmillan, who was prominent in business circles in Glasgow and the West of Scotland, and who was acting as general manager at the Eclipse Works in Springburn of Frederick Braby & Co., Ltd. All his interests were centred in the firm of Braby & Co., Ltd., with whom he would have completed 60 years' service in January of next year.

THE BUILDINGS ILLUSTRATED

"THE BULL," EAST SHEEN (pages 26-28). Architect : A. W. Blomfield. General contractor, F. G. Minter, Ltd. Sub-contractors and suppliers included : Lawford Asphalte Co., Ltd., asphalt ; E. J. Elgood, Ltd., concrete stairs ; S. A. Hunter, Ltd., bricks ; Allied Guilds, Ltd., artificial stone ; Dorman, Long & Co., Ltd., structural steel ; Roberts, Adlard & Co., Ltd., roof tiles ; H. W. Dutton, Ltd., central heating, ventilation ; G. W. Day & Co., Ltd., electric wiring and floodlighting ; Dent and Hellyer, Ltd., sanitary fittings ; Carter and Aynsley, Ltd., window and door furniture ; Crittall Manufacturing Co., Ltd., casements ; H. N. Barnes, Ltd., sunblinds ; A. Glover, decorative plaster ; W. W. Howard Bros. & Co., panels in elm only ; John Stubbs, Ltd., Quarzite and granite ; Aldous and Campbell, Ltd., lifts ; Jas. Moffat and Son, copperwork ; Lightfoot Refrigeration Co., Ltd., refrigerators and cellar cooling ; National Flooring Co., Ltd., maple and woodblock flooring ; Art Pavements and Decorations, Ltd., terrazzo flooring ; Bratt, Colbran, Ltd., mantels ; Arthur L. Gibson, Ltd., rolling shutters ; D. Siebel & Co., Ltd., iron staircases ; Kingsmill Metal Co., Ltd., flag mast ; Tudor Art Metal Co., Ltd., canopies and grilles ; J. R. Pearson (Birmingham), Ltd., balustrades and lay lights, and tower clock, bronze lanterns, and stallboard panels; Roberts, Adlard & Co., Ltd., wall and floor tiling ; Benham and Sons, Ltd., kitchen equipment ; Gaskell and Chambers, Ltd., bar fittings ; Electric Sign Co., Ltd., neon signs ; A. Arnold, cellulose work on wood ; R. Fox and Sons, Ltd., cellulose work on metal ; Constable, Hart & Co., Ltd., car park pavings ; Hume, Atkins, Ltd., electric fittings ; Stic B. Paint, Ltd., plastic paint decorations ; Marconiphone Co., Ltd., loud speakers and mikes ; Dale's, lettering ; J. Carter, screens ; Luxfer Co., upper glazing ; Gent & Co., Ltd., electric clock movements.

HOUSE AT JORDANS, BUCKS (pages 29-30). Architects : Crickmay and Sons. General contractor : H. E. Ryan. Sub-contractors and suppliers included : G. M. Callender & Co., Ltd., Ledkore dampcourses ; Maidenhead Brick and Tile Co., tiles ; "Devon" Fireplace Co., grates ; Ideal Boilers and Radiators, Ltd., boilers ; George Jennings (Lambeth), Ltd., sanitary fittings ; J. D. Beardmore & Co., Ltd., door furniture ; Crittall Manufacturing Co., casements.

EXTENSION TO MESSRS. JOHNSON & PHILLIPS' FACTORY, CHARLTON (pages 31-33). Architects : Sir John Brown and A. E. Henson. General contractors, Bowles and Sons, who were also responsible for the joinery. Sub-contractors and suppliers included : Trussed Concrete Steel Co., Ltd., reinforced concrete ; Crittall Manufacturing Co., Ltd., windows ; Atlas Stone Co., Ltd., artificial stone ; D. Anderson and Son, Ltd., Macasphalt roofing ; Travis and Arnold, wood block flooring ; Jaconello, Ltd., tile flooring ; J. and E. Hall, Ltd., lifts ; Mather and Platt, Ltd., sprinklers, drenchers and fireproof doors and shutters ; F. A. Norris & Co., Ltd., iron stairs ; Parker, Winder and Achurch, cloakroom fittings ; Baldwins (Birmingham), Ltd., sanitary fittings ; Dryad Metal Works, door furniture ; Hill, Aldam & Co., Ltd., sliding door gear ; T. Clarke & Co., Ltd., electrical installation ; Herbert Morris, Ltd., travelling window cleaning cradle ; Pilkington Bros., Ltd., Georgian wired glass ; Potter Rax Gate Co., folding gates.

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

PRICES

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

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

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

NOTES ON PRICE CHANGES

Timber prices are particularly unstable. The prices given are the latest obtainable before going to press, but they should be verified by actual quotation.

O. A. DAVIS, F.S.I.

PART 2

Prices vary according to quality and quantity ordered.

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

CURRENT MARKET PRICES OF MATERIALS

BY DAVIS AND BELFIELD

JOINER

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

Joinery Timber

			Per standard £ s. d.	Per foot cube s. d.
● 3″×9″	Scantling	2nd Archangel	43 0 0	5 2½
● 3″×9″	,,	3rd ,, ...	30 0 0	3 7¾
2″×9″	,,	2nd ,, ...	50 0 0	6 0¾
● 2″×9″	,,	3rd ,, ...	30 10 0	3 8½
3″×8″	,,	2nd ,, ...	36 10 0	4 5½
● 3″×8″	,,	3rd ,, ...	25 10 0	3 1½
2″×8″	,,	2nd ,, ...	40 0 0	4 10½
● 2″×8″	,,	3rd ,, ...	25 10 0	3 1½
● 3″×7″	,,	2nd ,, ...	37 10 0	4 6¾
● 3″×7″	,,	3rd ,, ...	25 0 0	3 0½
2″×7″	,,	2nd ,, ...	39 10 0	4 9½
● 2″×7″	,,	3rd ,, ...	24 0 0	2 11
2″×6″	,,	u/s ,, ...	23 0 0	2 9½
1½″×11″	,,	3rd ,, ...	38 10 0	4 8¼
1½″×9″	,,	u/s ,, ...	35 0 0	4 3
1″×9″	,,	2nd ,, ...	47 10 0	5 9½
1″×9″	,,	3rd ,, ...	35 0 0	4 3
1″×11″	,,	2nd ,, ...	53 0 0	6 5½
● 1″×11″	,,	3rd ,, ...	40 0 0	4 10¾
1½″×9″	,,	2nd ,, ...	47 10 0	5 9½
● 1½″×9″	,,	3rd ,, ...	36 0 0	4 4½
● 1½″×11″	,,	2nd ,, ...	51 0 0	6 2¼
1½″×11″	,,	3rd ,, ...	41 0 0	4 11¾

JOINER—(*continued*)

Flooring

		⅞″	1″	1¼″
Yellow deal, plain edge in batten widths ..	per square	● 20/6	● 24/–	30/6
Ditto, T. & G.	per square	● 21/–	● 24 6	31/–
Ditto, T. & G. narrow widths	per square		● 23/6	28/–
T. & G rift sawn B.C. pine in 4″ widths ..	per square		● 32 6	42/6
T. & G. random grain, in 4″ widths	per square		● 19/6	

Wall Linings

Deal Match Boarding :—		
● 1″ × 6″ T.G.B.	per square	26 6
● 1″ × 4½″ T.G.V.	per square	25/–
● ¾″ × 6″ T.G.B.	per square	19/–
● ¾″ × 4½″ T.G.V.	per square	18/6
● ⅝″ × 6″ T.G.B.	per square	15 9
● ⅝″ × 4½″ T.G.V.	per square	15 6
● ½″ × 4½″ T.G.V.	per square	12 –
Asbestos-Cement :—		
5/16″ Semi-compressed flat building sheets, grey	per yard super	1/3½
3/16″ Ditto	per yard super	1/4
¼″ Ditto	per yard super	1/11
¼″ Metal reinforced flat building sheets	per yard super	3/2¾

Prices are for orders of two tons and over and are subject to 5% trade discount.

● **Items marked thus have risen since May 18.**

CURRENT PRICES

BY DAVIS AND BELFIELD

JOINER AND STEEL AND IRONWORKER

JOINER—(*continued*)

Wall Boards :—

¼″ Asbestos wallboard (in sheets 8′ 0″ × 4′ 0″, 10′ 0″ × 4′ 0″ and 12′ 0″ × 4′ 0″) under 5,000 feet super	per foot super	–/2¾
3/16″ Ditto	per foot super	–/2¼

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

Asbestos-cement stipple glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) ..	per yard super	6/6
Ditto, plain white glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″)	per yard super	8/6
Marble glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) ..	per yard super	7/–

	300 yards	300–1,000 yards	1,000–2,000 yards	Over 2,000 yards
½″ Fibre board ..	2/–	1/10	1/8	1/6

	Over 25-75 yards	150–300 yards	600 yards
¾″ Fireproof plaster board per yard super	2/2	1/10	1/6
½″ Ditto .. .. .. per yard super	2/–	1/8	1/4
Joint tape (approx. 250 feet run) per roll	..	..	1/6
Joint filler .. .. per lb.	..	..	–/4

Plywoods :—

	4 m/m	5 m/m	6 m/m	9 m/m	15 m/m
Birch (A) per square	18/9	23/6	—	37/–	—
„ (B) per square	15/6	—	21/–	30/6	43/–
Japanese figured oak (A.A.) per square	33/6	—	39/3	65/–	—
Austrian oak, figured one side, plain oak reverse (A.A.) per square	—	—	86/3	92/6	—
Australian walnut, finely figuredoneside(boards 72″ × 36″) per square			¼″ 67/6	¾″ 85/–	
Sycamore, figured one side (ditto) per square			75/–	85/–	
Honduras mahogany, figured one side (ditto) per square			75/–	—	
Honduras mahogany, finely figured (boards 84″ × 36″) per square			125/–	—	

Prices are for complete bundles.

Blockboards :—

Alder :—

Thickness			Boards 60″ × 183″	Boards 72″ × 183″
½″	.. ..	per square	59/3	59/3
5/8″	.. ..	per square	66/3	66/3
¾″	.. ..	per square	72/6	72/6
7/8″	.. ..	per square	79/–	79/–
1″	.. ..	per square	85/6	85/6
1¼″	.. ..	per square	99/6	99/6
1½″	.. ..	per square	114/6	114/6
1¾″	.. ..	per square	128/–	128/–

Birch :—

Thickness			Boards 60″ × 84″ & 54″ × 72″	Boards 60″ × 140″
½″	.. ..	per square	43/9	47/3
5/8″	.. ..	per square	50/–	54/–
¾″	.. ..	per square	55/3	59/6
7/8″	.. ..	per square	60/–	64/–
1″	.. ..	per square	67/6	72/3

Prices are for complete bundles.

Hardwoods

Joinery Quality.

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

JOINER—(*continued*)

Mahogany, Honduras	per foot cube	13/6
„ „ Cuban	per foot cube	18/–
American whitewood	per foot cube	9/–
Birch	per foot cube	8/–
Cedar (aromatic)	per foot cube	16/–
Japanese oak (plain)	per foot cube	10/–
„ „ (quartered)	per foot cube	12/–
Austrian oak (plain)	per foot cube	10/6
„ „ (quartered)	per foot cube	14/–

Sundries

Slaters or sarking felt	per yard run	–/6
Roofing felt	per yard run	–/8
Bituminous hair felt	per roll	33/–

All rolls 25 yards long by 32″ wide.

Cork slabs, 1″ thick (3′ 0″ × 1′ 0″)	per foot super	–/4½
„ 2″ thick (3′ 0″ × 1′ 0″)	per foot super	–/8
Slagwool	per cwt. (approx.)	12/–
Building paper in rolls of 100 yards, 1-ply, 60″ wide (B.I.80 and L.G.I.80)	per roll	67/6
Ditto, 2-ply, 60″ wide (B.I.80)	per roll	135/–
Ditto, 2-ply, 60″ wide (B.I.20)	per roll	202/6

" Cabots " Quilt :—(Ex Works Twelve roll lots delivered carr. free.

Double ply ..	per roll	42/–	per half roll	23/6

All rolls 28 yards long by 36″ wide. Special terms for quantities.

Cut steel clasp nails, 1″	per cwt.	29/9	4″ per cwt.	20/9
„ „ floor brads, 2″	„	20/–	3″ per cwt.	19/6
Bright oval wire nails 1″	„	29/3	4″ per cwt.	21/3
Galvanised wire staples with slice cut points		1″ × 12 gauge	per cwt.	31/–
Scotch glue			per cwt.	65/–

Floor Clips :—

		£ s. d.
One leg floor clip	per 1,000	7 10 0
2″ short leg floor clip	per 1,000	7 10 0
2″ Regular floor clip	per 1,000	7 15 0
3″ „ „	per 1,000	8 8 0
2″ Regular ceiling clip	per 1,000	7 15 0
Single leg ceiling clip (7½″)	per 1,000	10 10 0

Special terms for quantities.

STEEL AND IRONWORKER

Steelwork

		£ s. d.
Basis price for rolled steel joists sections 5″ × 3″ to 16″ × 6″, in 10 ft. to 50 ft. lengths	per ton	12 10 0
Extras on above for :—		
9″ × 7″ Section	per ton	0 5 0
4″ × 3″, 5″ × 2½″, 10″ × 8″, 12″ × 8″, 14″ × 8″ and 16″ × 8″ to 20″ × 7½″ sections inclusive	per ton	0 10 0
3″ × 1½″, 3″ × 3″, 4″ × 1½″, 4½″ × 1½″ and 24″ × 7½″ sections	per ton	1 0 0
Channels, angles and tees	per ton	13 10 0
Mild steel plates	per ton	13 10 0
Screw bolts	per ton	31 0 0

Fabricated Steelwork

		£ s. d.
Joists cut and fitted	per ton	16 10 0
Stanchions, ordinary sections with riveted caps and bases	per ton	20 0 0
Stanchions, compound	per ton	28 0 0
Plate girders	per ton	24 10 0
Framed roof trusses, 25′ 0″ span	per ton	25 0 0
„ „ „ 60′ 0″ span	per ton	28 0 0

These prices are approximate, and definite quotations should be obtained.

Prime Galvanized Corrugated Iron Sheets
(Ex London Stocks)

	10 cwt. lots £ s. d.	Less quantity £ s. d.
4 to 9 fts. 18 or 20 gauge, 8/3″ corrugations .. .. .. per ton	18 15 0	19 15 0
10 fts. 18 or 20 gauge, 8/3″ corrugations	19 5 0	20 5 0
4 to 9 fts. 22 or 24 gauge, 8/3″ corrugations .. .. .. per ton	19 5 0	20 5 0
10 fts. 22 or 24 gauge, 8/3″ corrugations	19 15 0	20 15 0
4 to 8 fts. 26 gauge, 8/3″ corrugations ..	20 10 0	21 10 0
9 fts. 26 gauge, 8/3″ corrugations ..	21 0 0	22 0 0
10 fts. 26 gauge, 8/3″ corrugations ..	21 10 0	22 0 0
Galvanised roofing nails 2½″	per cwt.	37/6
Galvanised roofing washers	„ „	45/–

CURRENT PRICES

BY DAVIS AND BELFIELD

PLASTERER, PLUMBER AND INTERNAL PLUMBER

PLASTERER

Plaster and Cement

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

1 ton upwards

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

Sundries

Sharp washed sand	per yard cube			8/–
Cow hair	per cwt.			40/–
Goat's hair	per cwt.			55/–
⅜″ laths	per bundle			2/–
½″ laths	per bundle			2/4½
Expanded metal lathing, 9′ 0″ × 2′ 0″ ⅜″ mesh × 26 gauge	per yard super			–/11
Lath nails (galvanized) 1½″ × 14 gauge	per cwt.			48/6
„ (bright wire) „ „	per cwt.			27/–

	Less than 150 yds.	Less than 300 yds.	Over 300 yds.
⅜″ Plaster board per yard super	1/–	–/11	–/10
1½″ Galvanized nails per lb.		–/5	
Scrim cloth in 100-yard rolls per roll		2/8	

Wall Tiles

Commercial quality.	
Ivory, white, etc., glazed 6″ × 6″ × ⅜″ per yard super	9/9
Angle beads (1½″ wide) per yard run	1/2¾
„ „ (1″ „) per yard run	–/10
Rounded edge tiles per yard run	2/6½
Coloured enamelled bright glazed, 6″ × 6″ × ⅜″ per yard super	14/3
Angle beads (1½″ wide) per yard run	1/4¾
„ „ (1″ „) per yard run	–/11¼
Rounded edge tiles per yard run	2/7
Eggshell gloss enamelled, 6″ × 6″ × ⅜″ per yard super	15/–
Angle beads (1½″ wide) per yard run	1/7½
„ „ (1″ „) per yard run	1/0¾
Rounded edge tiles per yard run	2/8½

PLUMBER

Lead

*3½ lbs. and upwards milled sheet lead in quantities of 5 cwts. and upwards per cwt.	22/6
Add if cut to sizes per cwt.	3/–
Lead ternary alloy, No. 2 quality extra over sheet lead per cwt.	7/–
Allowance for old lead delivered to merchant per cwt.	12/9

Cast Iron Rainwater Goods (Painted or Unpainted)

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

Rainwater Pipes

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

PLUMBER—(*continued*)

Square and rectangular pipes.

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

Gutters

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

Mild Steel Rainwater Goods

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

24 Gauge rainwater slip jointed pipes.

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

18 Gauge Gutters.

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

Asbestos-Cement Rainwater Goods

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

Orders over £30 are subject to 17½ per cent. trade discount.

Rainwater pipes.

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

Round pipes.

2″ per yard run	1/10
2½″ per yard run	2/0¾
3″ per yard run	2/5¾
3½″ per yard run	2/11¼
4″ per yard run	3/4¾
4½″ per yard run	4/10½
5″ per yard run	5/9½
6″ per yard run	7/1¾

Gutters.

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

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

INTERNAL PLUMBER

*Lead pipe in coils, 5 cwts. and upwards per cwt.	22/–
*Lead soil pipe per cwt.	25/–
Add if ribbon marked per cwt.	–/3
Lead ternary alloy, No. 2 quality extra over lead pipe per cwt.	7/–
Plumber's solder per cwt.	95/–
Tinman's solder per cwt.	122/–

Drawn lead traps with brass screw eye, 6 lbs.

	1″	1¼″	1½″	2″
S. trap each	1/7	1/10	2/3	3/3
P. trap each	1/5	1/6	1/10	2/8
Extra for 3″ deep seal each	–/6	–/6	–/6	–/6

* Items marked thus have fallen since May 18.

CURRENT PRICES

INTERNAL PLUMBER

BY DAVIS AND BELFIELD

INTERNAL PLUMBER—(*continued*)

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

Tubes.		½″	¾″	1″	1¼″	1½″	2″
Tubes 2 ft. long and over	per ft.	–/5½	–/6¾	–/9½	1/1	1/4½	1/10
Pieces 12″ to 23½″ long	each	1/1	1/5	1/11	2/8	3/4	4/9
Bends	each	–/11	1/2	1/7½	2/7½	3/2	5/2
Fittings.							
Elbows, square ..	each	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round ..	each	1/2	1/5	1/8	2/4	2/10	4/8
Tees	each	1/3	1/7	1/10	2/6	3/1	5/1
Crosses	each	2/9	3/3	4/1	5/6	6/7	10/6
Sockets, plain ..	each	–/4	–/5	–/6	–/8	–/10½	1/3
Sockets, diminished	each	–/6	–/7	–/9	1/–	1/4	2/–
Flanges	each	1/–	1/2	1/4	1/9	2/–	2/9
Caps	each	–/5	–/6	–/8	1/–	1/3	2/–
Plugs	each	–/4	–/5	–/6	–/8	–/10	1/3

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

	Tubes	Fittings	Flanges
Gas	62½%	53½%	57½%
Water	58½%	50%	52½%
Steam	56½%	46½%	47½%
Galvanized gas	58½%	46½%	47½%
,, water.. ..	48½%	42½%	42½%
,, steam ..	43¾%	38¾%	37½%

Brasswork. Best Quality

	½″	¾″	1″
Brass screw-down bibcocks, with crutch top, screwed for iron .. per dozen	33/–	51/–	90/–
Ditto, with screw ferrule .. per dozen	38/–	57/–	99/–
Chromium plated easy clean screw-down bibcocks, with capstan head lettered, screwed for iron .. per dozen	54/–	78/–	153/–
Ditto, with screw ferrule .. per dozen	61/–	88/–	166/–

	Brass Screwdown Stop Cocks with Unions both Ends	Brass Screwdown Stop Cocks with Screwed Ends	Brass Screwdown Stop Cocks with Male Screwed End and Iron Unions
½″ .. .. per dozen	44/–	33/–	41/–
¾″ .. .. per dozen	66/–	51/–	50/–
1″ .. .. per dozen	99/–	83/–	93/–
1¼″ .. .. .. each	13/6	11/9	12/9
1½″ .. .. .. each	21/9	18/6	20/3
2″ .. .. .. each	41/3	38/3	39/–

	½″	¾″	1″
Portsmouth pattern ball valve for low pressure, screwed for iron .. each	4/1	5/11	12/–
Ditto, with flynut and union .. each	4/9	6/9	13/6
High pressure ditto, screwed for iron each	4/1	5/11	12/–
Ditto, with flynut and union .. each	4/9	6/9	13/6

	2″	2½″	3″	4″
Socket thimble sloping shoulder per dozen	10/–	13/–	16/–	22/–

	1½″	2″	2½″	3″
Flanged ferrule thimble .. per dozen	8/–	10/–	14/–	17/5

	½″	¾″	1″	1¼″	1½″	2″
Union joints for lead and iron .. per dozen	8/3	11/3	15/5	28/2	46/9	101/2
Single nut short boiler screws .. per dozen	6/–	9/–	15/–	21/–	33/–	60/–
Double nut boiler screws per dozen	9/–	10/–	16/–	23/–	44/–	69/–
Belfast sink wastes stamped brass with brass plug diameter of outlet 2″ .. .. .. per dozen						19/10

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

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

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

INTERNAL PLUMBER—(*continued*)

Galvanized Hot Water Tanks, fitted with handhole cover.

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

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

Screwed flanges or bosses

½″	¾″	1″	1¼″	1½″	1¾″	2″	2½″	
1/8	2/–	2/4	2/11	3/4	3/9	4/8	6/9	Extra per flange or boss.

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

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

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

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

Cast Iron Soil Pipes and Connections, L.C.C. ⅛″ metal.

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

	2″	2½″	3″	3½″	4″	5″ ¼″ metal	6″ ¼″ metal
Minimum weights in lbs. per 6′ 0″ length	24	30	35	41	46	78	92
Pipes coated or uncoated per yard run	3/10½	4/0½	4/5½	5/–	5/8½	11/8	14/0½
Double sockets extra each	–/11½	–/11½	–/11½	–/11½	–/11½	1/0½	1/0½
Short lengths extra 2′, 3′ and 4′ per yard run	–/3½	–/3½	–/3½	–/3½	–/3½	–/5	–/5
Single spigot branch cast on pipe .. .. each	4/3	4/5	4/7	4/9	4/11	7/6	9/3
Single socket branch cast on pipe .. .. each	10/9	11/–	11/3	11/6	11/9	16/–	19/–
Bends, standard angles each	3/1	3/5	3/9	4/8	5/3	9/4	12/9
Large radius bends each	4/–	4/4	5/–	6/–	7/–	13/–	16/9
Inspection bends raised flange door, 4 gunmetal bolts .. .. each	16/1	16/11	17/9	18/8	19/3	31/10	36/6
Swannecks 4½″ and 6″ projection .. .. each	3/9	4/4	5/11	6/10	7/11	14/11	20/1
9″ ditto .. .. each	5/–	5/7	6/10	7/11	9/4	17/1	22/10
12″ ditto .. .. each	5/11	6/10	7/11	9/8	10/7	19/1	27/1
Single branch with two sockets. T pieces. T pieces diminishing two sockets, inverted two sockets.	3/9	4/8	5/7	6/6	7/6	15/10	21/8
				each			
Parallel branch pieces not exceeding 6″ centres. Y pieces. Anti-syphon branches with curved arm.	4/10	5/11	6/10	7/11	8/11	—	—
				each			
Double branch pieces, three sockets .. .. each	5/11	7/–	7/11	9/–	10/3	20/3	27/3
Inspection branch pieces double oval access door, 2 gunmetal screws each	12/11	14/–	14/11	16/6	17/9	29/2	36/2
Long branch pieces each	5/–	6/–	7/3	8/6	9/9	19/–	25/–

CURRENT PRICES

BY DAVIS AND BELFIELD

COPPERSMITH AND ZINCWORKER, GLAZIER AND PAINTER

COPPERSMITH AND ZINC WORKER

Copper

Hot rolled copper sheeting in 1 cwt. lots, all gauges to 24 wire gauge	per lb.	–/9½
Copper tube, seamless solid drawn	per lb.	–/11½
Copper wire, 10 and 12 gauge	per lb.	–/10¼
Copper nails, 1″ and up	per lb.	–/11

Fittings for Copper Tubes

Compression Type:	½″	¾″	1″	1¼″	1½″	2″	2½″
*Straight coupling each	1/1¼	1/4¼	2/–	2/7	3/8¼	5/5½	13/7
*Obtuse elbow each	1/9½	2/1½	3/2	4/–	7/10	10/1½	—
*Tees .. each	2/0½	2/4½	3/10½	5/7½	8/11	12/8	18/7½
*Crosses .. each	2/11	3/3½	5/0½	6/1½	10/6½	14/8	26/6
*Reducing coupling each	—	1/4½	2/–	2/7	3/8½	5/5½	13/7
*Bends .. each	1/6½	1/10½	2/10	3/7½	6/4½	9/6¾	13/7
*Brass stop cocks each	3/8½	5/6	8/–	14/10	20/3	34/10½	—

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

Capillary Type

• Straight coupling each	–/8	–/11½	1/5½	1/11	2/7	3/9	6/4¾
• 45° elbow each	1/5½	1/11	2/7½	3/6¼	5/3½	7/11	11/5½
• Tees .. each	1/7½	1/10	3/–	4/5	6/3	9/3	14/1
• Crosses .. each	2/0¼	2/3½	3/9	5/3½	8/–	11/8	20/4
• Reducing coupling each	—	–/7	–/9½	1/2	1/9	3/1	4/10
• Bends .. each	1/9	2/1½	3/1	4/2	6/7¼	9/3	13/2
• Pillar tap connection .. each	1/1¼	1/7½					

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

Zinc

		Quantities of less than 3 cwts.	Quantities of more than 3 cwts.	Quantities of more than 5 cwts.
• Sheet zinc, 10 gauge and up ..	per cwt.	33/6	33/–	32/6
			5 sheets and under	12 sheets
8 gauge zinc safe hole perforated sheets, size 8′ 0″ × 3′ 0″ ..	per sheet		4/11½	4/2½
7 gauge ditto	per sheet		4/4½	3/9
6 gauge ditto	per sheet		3/11	3/4¼

GLAZIER

Sheet Glass cut to size (ordinary glazing quality)

		In squares not exceeding 2 ft.	4 ft.	5 ft.	Over 6 ft.
18 oz. clear sheet ..	per foot super	–/2½	–/2¾	–/3	–/3½
24 oz. ditto	per foot super	–/2¾	–/3¾	–/4	–/4¾
32 oz. ditto	per foot super	–/4	–/5⅞	–/6⅞	–/7⅞
Obscured sheet glass net extra	.. ..	–/1½	–/1½	–/1½	–/1½
⅛″ figured rolled glass, white	per foot super	–/6½			
⅛″ ditto, normal tints ..	per foot super	–/9½			
Hammered, double rolled, Cathedral white	per foot super	–/6			
Ditto, normal tints ..	per foot super	–/8½			

Thick Drawn Sheet Glass cut to size

		In squares not exceeding 1 ft.	2 ft.	3 ft.	4 ft.	6 ft.	8 ft.
3/16″ thick ..	per foot super	–/9	–/11	1/–	1/2	1/8	1/5½
¼″ thick ..	per foot super	–/11	1/–	1/3	1/5	1/7	1/9½

		In squares not exceeding 12 ft.	20 ft.	45 ft.	65 ft.	90 ft.	100 ft.
3/16″ thick	per foot super	1/5½	1/8	1/8	—	—	—
¼″ thick	per foot super	1/9½	2/3	2/3	2/6½	2/10½	2/10½

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

British or Foreign Polished Plate Glass cut to size

Ordinary ⅛″ Substance		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
In Plates not exceeding				
1 ft. super ..	per foot super	1/1	1/4	1/7
2 ,, ..	per foot super	1/5	1/7	1/10
3 ,, ..	per foot super	1/10	2/1	2/6
4 ,, ..	per foot super	2/6	2/9	3/2
6 ,, ..	per foot super	2/9	2/10	3/3
12 ,, ..	per foot super	2/11	3/2	3/8
45 ,, ..	per foot super	3/1	3/10	4/2
65 ,, ..	per foot super	3/4	4/3	4/11

• Items marked thus have risen since May 18.

GLAZIER—(*continued*)

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

Ordinary ⅛″ Substance		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
In Plates not exceeding				
90 ft. super ..	per foot super	3/7	4/8	5/1
100 ,, ..	per foot super	3/9	4/10	5/4

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

The usual thickness of polished plate glass is about ⅛″, but if required of special thickness for glazing purposes add to the above for :—

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

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

Silvering

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

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

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

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

Plates over 160 in. long at special rates.

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

Wired Glass Cut to Sizes

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

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

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

PAINTER

White ceiling distemper	per cwt.	11/6
Washable distemper	per cwt.	60/–
Petrifying liquid	per gallon	4/6
Ready mixed white lead paint (best) 5-cwt. lots, in 14 lb. tins	per cwt.	66/–
White enamel	per gallon	25/–
Aluminium paint	per gallon	20/–
Stiff white lead, genuine English stack process, 1-ton lots, in 1-cwt. kegs	per cwt.	49/3
Driers	per cwt.	36/–
Linseed oil raw (5-gallon drums)	per gallon	3/–
,, boiled ,, ,,	per gallon	3/3
French polish	per gallon	11/6
Knotting	per gallon	16/–
Oil stain	per gallon	12/–
Varnish, oak	per gallon	10/–
,, copal	per gallon	16/–
,, flat	per gallon	20/–
Turpentine, genuine American, 5-gallon lots	per gallon	3/3
Creosote, 1-gallon lots	per gallon	1/4
Putty	per cwt.	13/–
Size	per firkin	3/6
Best English quality gold leaf, 23 carat	per book	2/4½
Extra thick, ditto	per book	3/6

* Items marked thus have fallen since May 18.

BUILDING CONTRACTS OPEN

Unless the contrary is expressly stated, all deposits required for bills of quantities, etc., are returned on receipt of bona-fide tenders. The words "Fair Wages Clause," inserted in certain paragraphs, signify that persons tendering must conform to a fair wages clause in the contract, which requires them to pay the rates of wages current in the district. Application for plans and particulars should be made to the address given at the end of each entry.—ED., *A.J.*

BRISTOL: HOUSES

July 8.—106 houses at Filwood Park housing estate, for the T.C. City Architect, Eagle House, Colston Avenue Bristol, 1. Deposit £1.

CROYDON: FLATS

July 10.—24 flats and sundry works on part of the Windmill Road redevelopment area, for the T.C. Borough Engineer, Town Hall, Croydon. Deposit £2 2s.

AYRSHIRE: HOUSES

July 10.—Several works for 170 timber houses at Hurlford, for Scottish Special Housing Association, Ltd. Messrs. Stewart and Paterson, 16 Blythswood Square, Glasgow, Lanarks.

BRIGHTON: SHOPS AND FLATS

July 10.—Erection of four shops and flats on East Moulsecoomb estate, Brighton, for Brighton B.C. Borough Engineer and Surveyor, Town Hall, Brighton. Deposit £2 2s.

HALIFAX: HOUSES

July 10.—Following in connection with 15 houses and shops at Nursery Lane: Excavator, mason and bricklayer; carpenter and joiner; plumber and glazier; plasterer; slater; electrician, for Halifax B.C. Borough Engineer, Crossley St., Halifax, Yorks. Deposit £2 2s. (cheque).

GRIMSBY: ALTERATIONS

July 10.—Alterations and additions to Education Offices, Eleanor Street, Grimsby, for Grimsby B.C. Mr. William Wells, Architect, Prudential Chambers, Victoria Street, Grimsby. Deposit £1 1s.

BREASTON: SCHOOL

July 10.—Erection of a senior mixed school at Breaston, for the Derbyshire C.C. County Architect, County Offices, St. Mary's Gate, Derby. Deposit £2 2s. Cheque payable to the Derbyshire County Council.

NORWICH: ADDITIONS

July 10.—New villa for 60 patients, Hellesdon Mental Hospital, Norwich, for the T.C. City Architect's Office. £2 2s.

OSGODBY: EXTENSIONS

July 11.—The North East Lindsey Joint Hospital Board invites tenders for the erection of proposed extension to the Isolation Hospital, Osgodby, Lincs. J. P. Mason, Caistor, Lincs, or at the office of the Quantity Surveyor, J. J. Fisher, County Buildings, Land of Green Ginger, Hull, and quantities obtained from A. H. Marrows, Clerk to the Board, Council Offices, Caistor, Lincs. Deposit £5 5s.

BOLTON-ON-DEARNE: HOUSES

July 11.—Erection of 16 houses in Highgate Lane, Bolton-upon-Dearne, for the Dearne U.D.C. W. H. Adams, Council Offices, Bolton-upon-Dearne.

ENFIELD: SCHOOL

July 11.—Senior school, for the U.D.C. Sandy and Norris, 134 Newport Road, Stafford. Deposit £2 2s., made payable to E. Pascal.

BRIDLINGTON: HOUSES

July 12.—14 houses in Brookland Road, for the T.C. Borough Architect's Office, Town Hall, Bridlington. Deposit £2 2s., returnable.

BRIGHTON: HOUSES

July 12.—Erection of 28 houses on the sites of Nelson Street and Carlton Street, for the T.C. Borough Engineer, Town Hall, Brighton. Deposit £2 2s.

WANTAGE: HOUSES

July 13.—Erection of 141 houses in 22 parishes, for the R.D.C. Surveyor. Deposit £2 2s., returnable.

SELBY: HOUSES

July 14.—Erection and completion of 32 houses (Camblesforth eight, Cawood 20 and Wistow four), for the R.D.C. R. F. Braithwaite, 22 Park Street, Selby. Deposit £1 1s.

MOULTON: HOUSES

July 15.—Erection of 12 houses in Moulton, Sea's End, for the Spalding R.D.C. F. Bernard Saunders, 8 Herring Lane, Spalding, Lincs. Deposit £2 2s.

WARE: HOUSES

July 18.—43 houses at Vineyard Estate, off Musley Lane, for the U.D.C. R. W. Grantham, Architect, The Priory, Ware. Deposit £2 2s.

YORK: HOUSES

July 19.—Erection of 32 houses and 36 flats in the Regent Street clearance area, for the T.C. C. J. Minter, City Engineer, Guildhall, York. Deposit £1 1s.

GATESHEAD: HOUSES

July 21.—The North-Eastern Housing Association, Ltd., invites tenders for the erection of 136 houses on Blue Quarries site, Gateshead. F. H. Patterson, Borough Surveyor, Municipal Buildings, Swinburne Street, Gateshead. Deposit £3 3s.

TIVERTON: HOUSES

July 22.—Erection of 98 houses at Westexe South and one house at Allers, Tiverton, for the T.C. W. H. Duncan Arthur, Borough Surveyor, Town Hall, Tiverton. Deposit £3 3s.

HORWICH: ALTERATIONS

July 22.—The Horwich Industrial Co-operative Society, Ltd., 86 Lee Lane, Horwich, near Bolton, Lancs., invites tenders for alterations to central premises, Lee Lane. Deposit £2 2s. (cheque).

TENDERS ACCEPTED

Erection and completion of new hangar at Southampton Airport, for the T.C. S. G. Stanton, Borough Engineer, Civic Centre, Southampton: A. E. Jukes and Sons, Paynes Road, Southampton

Construction of reservoir at Digley Valley, Huddersfield, for the T.C.: E. Nuttall, Sons & Co. (London), Ltd., 22 Grosvenor Gardens, S.W.1.

Erection of 34 houses on the Gaywood Estate, King's Lynn, for the T.C.: Jaques and Greeves, Ltd., Balby, Doncaster.

Erection of junior school on the Pheasey Estate, Aldridge, for the Staffordshire E.C.: W. Kendrick and Sons, Ltd., Walsall.

Erection of Green Lanes School, Hatfield, for the Hertfordshire C.C.: Welwyn Builders, Ltd., Welwyn Garden City.

Erection of 57 houses at Aspatria, for the North-Eastern Housing Association, Metrovick House, Northumberland Road, Newcastle-on-Tyne: Builder, J. Atkinson, Brunswick Road, Penrith; roads and sewers, T. Armstrong, Ltd., Saw Mills, Cockermouth.

Erection of Council Offices at Wells (Somerset) and heating installation, for the R.D.C. Accepted provisionally: J. A. Pope, Wells, and G. Applegate, Trowbridge.

Reconstruction of Welwyn Garden City, Parkway School, for the Hertfordshire C.C.: Ekins & Co., Hertford, on the basis of net cost, plus 8 per cent., including specialist work, for profit (estimated at £10,000).