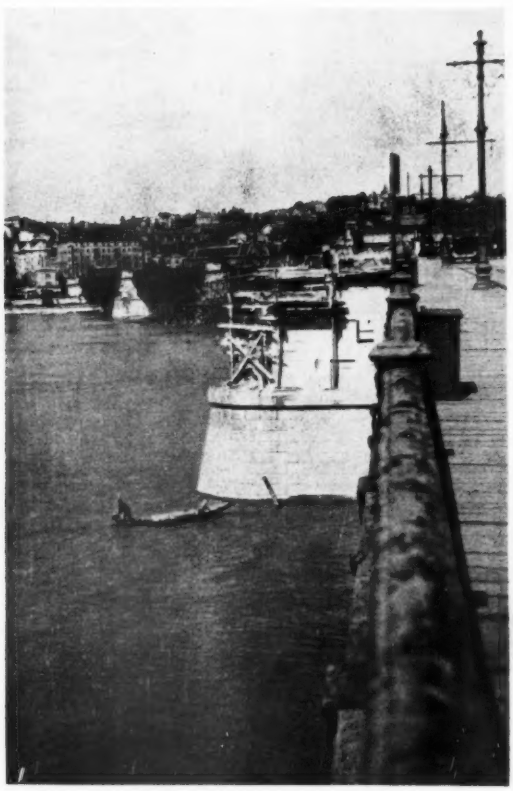
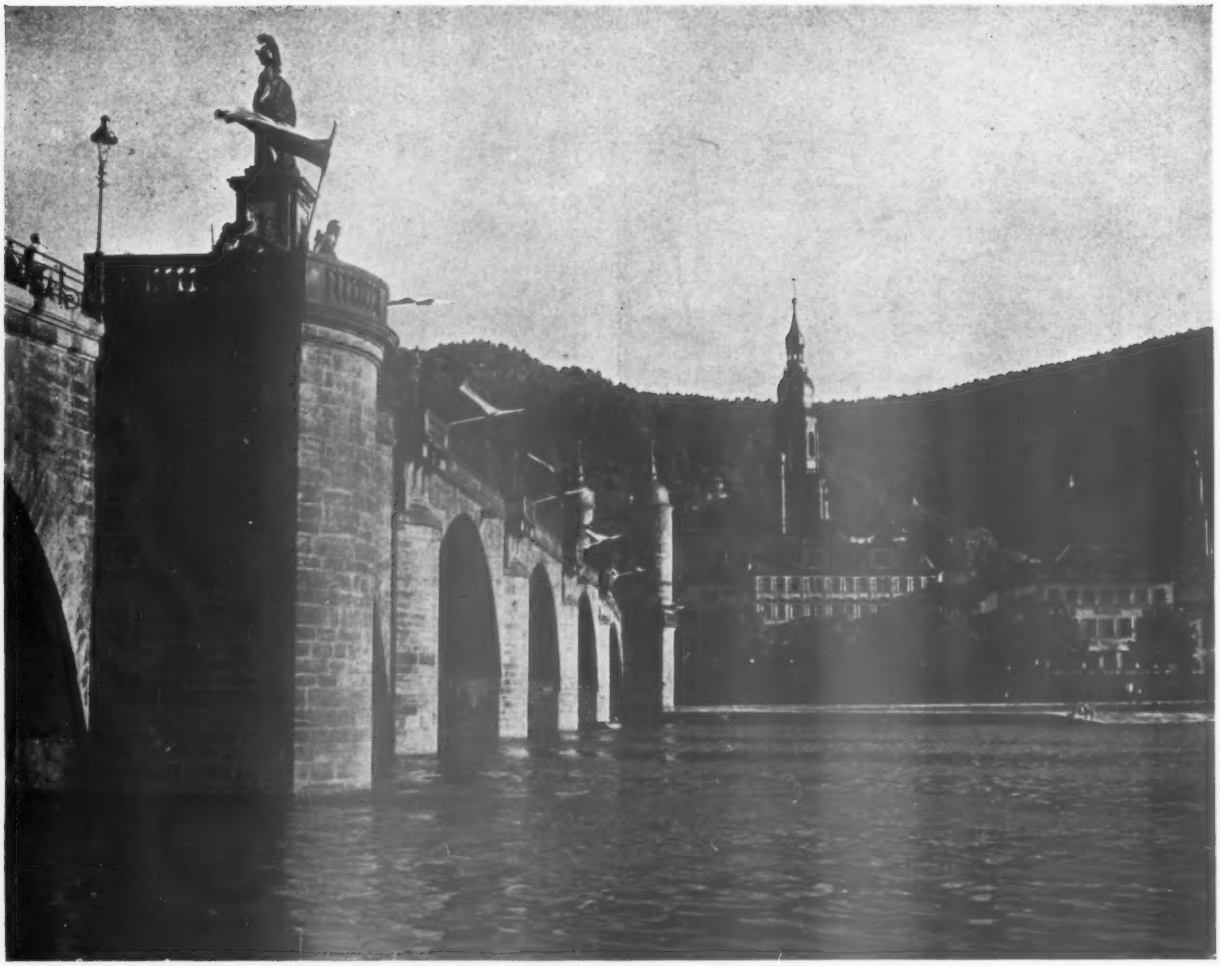
DANUBE BRIDGES

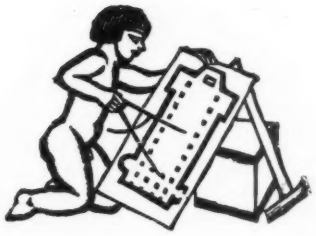


A NEW steel bridge over the Danube at Vienna (left), and a widening of the famous Margit bridge at Budapest which, like our old Waterloo Bridge, is too narrow to deal with modern traffic. Its peculiar cranked shape on plan is due to its linking both banks with the Margit island in the centre of the river.



BRIDGE AT HEIDELBERG

The old bridge over the Neckar at Heidelberg which, together with the castle, is built of a warm red sandstone which contrasts with the light stucco of the majority of the town's buildings.



CAMBRIDGE POSSIBILITIES

THE JOURNAL stated in its issue of October 8 that a time when the position of Director of the Cambridge University School of Architecture was still unfilled seemed specially opportune for the listing of some of the school's peculiar problems and difficulties.

In that and the following issue we suggested that Cambridge, being different from other schools, should make a contribution to architectural knowledge which was also different, and much needed; the choice of a field of study lying probably, in the final summary, between historical development and the larger contemporary architectural problems to which neither the student in other schools nor the practising architect can now devote sufficient time.

This we put forward as the first problem. The second lay in the responsibility of the University for seeing that once the school's policy was decided, the staff and the encouragement necessary for its success were also forthcoming. The third problem was the attraction to the school of undergraduates of ability.

It is possible that some of those who read this list of difficulties which Cambridge University now faces, and who are aware that the school's annual contribution to the practice of architecture is only about fifteen persons, and those technically only half-trained, may wonder whether a venture so seemingly frowned on by fate will ever justify its continuation.

The JOURNAL not only believes that the school can so justify itself, but it believes with a profound sincerity that if the Cambridge school were to be discontinued both general architectural progress and the development of better public standards of architectural criticism would suffer a setback of which the effects would be felt by all architects, and for a long time.

Such a statement may appear exaggerated, but we feel that its truth can be unassailably demonstrated.

That the Cambridge school has encountered difficulties in its early years was no more than was to be expected from its position. The University of Cambridge has tremendous virtues; but an uproarious readiness to welcome new schools of learning has never been one of them. Every new faculty has had to fight strenuously for its rights, and by the sheer strength of will of its personnel bring conviction that it is an asset to the University. In such a struggle fifteen years is only a moment, and architecture being "related to" art has perhaps had to combat in Cambridge (we say it with regret) something of that suspicious indifference towards art which is a characteristic of the whole British public. Only one force can overcome these difficulties and suspicions triumphantly—the personality of a determined director at the head of a determined school.

If such a collective character and ambition cannot be obtained for the school, we think that very little reflection is needed to realize the loss that will be suffered by architecture. That the undergraduates of Oxford and Cambridge should pass their whole university careers without ever hearing of such a thing as a school of architecture, that their thoughts of architecture should be confined to some guide-book goggling at the most ancient of the buildings that surround them—this would be tragic enough. But it would not be all of architecture's loss.

It is now a jaded truism that the practice of architecture is becoming daily more strenuous and more complex. But, just because of its obvious truth, architects have all too little time to think about its implications. In the midst of concentration on day-to-day detail, they realize that the individual architect is becoming less and less able to be personally responsible for all aspects of a modern practice; that he is compelled to rely upon partners, or upon assistants who become more and more in the nature of partners. But few have time to follow much further the probable course of events.

The JOURNAL believes that architectural practice in the future will demand higher standards of ability in individuals, and more and more firms consisting of several specialists in the different aspects of architecture closely co-operating with each other. But it feels that these things alone will not ensure that architects will in the future be able to exert a proper influence upon society's surroundings. Because of their absorption in detail, architects are being compelled to work within a framework provided by others that yearly grows narrower. Site values, building and fire regulations, housing densities and town-planning regulations—in the drawing up of which architectural influence is still too small—all are restricting the sphere of the architect in a way that is potentially very dangerous. We feel that it is very necessary for some body, or some school, to devote its energies to obtaining a wider view and a deeper understanding of these tendencies in contemporary architecture. For this purpose the Cambridge school seems, under a suitable Director, to be pre-eminently fitted. As a preliminary to more strictly technical training it could give its students a broad view of all of contemporary architecture which they might never be able to gain in later years. As a centre for post-graduate research, it could make certain that architecture in the wide was not forgotten amongst the detail of individual practice.

Whether Cambridge University and its school are capable of so ambitious an attempt remains to be seen. But the loss to architecture caused by the school's closing, or by its becoming a refuge for undergraduates wanting a pass degree on the easiest possible terms, should not be taken lightly either by the University—or by architects.

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

"IN AND OUT"

THE announcement last week that the Minister of Transport had issued an order calling upon the L.C.C. to exercise after November 1 certain powers under the Restriction of Ribbon Development Act (1935) seems to have caused surprisingly little press comment.

*

Briefly, these powers entitle the L.C.C. to insist on provision being made for traffic to set down outside "places of public resort" without interfering with general through traffic.

*

This means that in congested areas the L.C.C. can demand "in and out" arrangements for traffic setting down people or delivering goods to any building of public resort, including garages, petrol stations, railway or bus stations, and presumably restaurants, cafés, and hotels.

*

It remains to be seen to what extent the authorities will exercise these powers. As they apply to rebuilt old premises as well as to new, the strict interpretation of the powers may do one of two things—help to solve traffic congestion by a gradual process of surgery, or help to prevent progress by creating nervousness among building owners who would otherwise rebuild.

*

Or it may influence development in one other way—as the Order applies to any building of over a quarter-of-a-million cube capacity, it may encourage a building unit in London with a capacity below that figure.

*

Whatever the final interpretation of the Order, it is likely to have in the future a profound influence over city architecture, if the question of traffic interference is to be seriously examined.

MODERN AMENITY

Air-raid shelters are fast becoming "news." The Home Office has for a long time had a section working on the wider problem of possible precautions against the probable dangers from air raids, and the provision of shelters is only one alternative of its many recommendations up to date.

*

It is true that security against direct hits by high explosive bombs and their immediate blasting effects is almost impossibly expensive to obtain. But I am told that a great deal of useful and inexpensive work can be done to avoid serious damage by splinters, gas, more remote blasting, possible subsequent pilfering and so on.

*

Knowledge of the whole subject is as yet very small indeed; and one would be well advised not to rush blindly into foolish experiments before the final building recommendations are published.

*

Research work is of course continuing and two architects of energy and authority are helping the Home Office in its deliberations.

*

In the meantime the H.O. has issued a note disclaiming responsibility for materials advertised as bomb-proof. It might well extend this disclaimer to all the "bomb-proof shelters" advertised as part of the "amenities" of modern buildings—unless such shelters have been inspected and approved by a responsible authority.

YOUNG SCOTTISH DESIGNERS

For more years than I like to recall, I've been looking now and then at exhibitions of arts and crafts; but at Edinburgh last week, where by good fortune I was able to spend a day, I saw the best exhibition I have known for the last fifteen years.

*

Edinburgh is always stimulating, although the jaded Londoner finds the absence of Belisha beacons and traffic lights (at least in and around Princes Street) a little too stimulating at times. But this exhibition, and the excellence of the window displays in Princes Street, and the fact that there are more things in good taste to be seen in those windows than in any London street I know, made Edinburgh's stimulative powers exceptionally potent.

*

The exhibition is of school crafts, and has been chosen from the whole of Scotland by the Scottish Committee of the Council of Art and Industry. Every Lancashire textile manufacturer ought to see it, for there is something new and alive and vital there in patterns. The woodwork is poor in design, excellent in finish; but some of the textile patterns are inspired.

*

The high light of the show is provided by the Buckhaven High School. The first and second year patterns, by students of 12 and 13 years of age, and the lino block patterns by older students (15 to 17) are memorable. Nobody is afraid of colour: nobody is tangled up in tradition; and freshness and the breath of life and freedom are in such schools as these.

*

Most regrettably, the illustrations chosen for the catalogue omit the best patterns. Never mind; if the crowd I saw at ten in the morning represents the quality and quantity of attendance for the duration of the show, then Scotland is giving enthusiastic interest to this event.

*

I came away with the feeling that the aching need of the modern movement in design, which is pattern, may be met by a renaissance of decoration coming, as many other good

Mrs. Acland, winner of the A.A. School Competition for Coronation Designs for Bond Street.

things have come, from the north. If anybody asks what, I will just remind them of the life and new meaning the brothers Adam gave to pattern and decoration and architectural design a century and a-half ago.

THE NEW BYELAWS

After my last week's note a correspondent calls attention to the fact that the "seven-foot opening window" clause is an old and established one.

*

Of course this is so, and my note was not intended to convey the impression that the clause was new, but that it was again appearing in the new Byelaws. The old clause does not appear to have been enforced for years, if one may judge from the number of flats and houses (including L.C.C. work) which do not comply with it, as well as from a brief check through one's own working drawings.

*

The clause has died so thorough and natural a death that even the regular waiver system has ceased to operate in its connection. Yet the clause is now included in the new Byelaws.

BOND STREET

A private view of the Coronation decoration schemes for Bond Street shows that at last we may expect something of that subtle mixture of dignity and gaiety which make for major street decoration success.

*

The winning scheme starts quite rightly by obliterating the Bond Street architecture, gives each tenant opportunity for the private decoration of his building without upsetting the main scheme, uses ample area of light-toned fabric and relieves any possible monotony by the introduction of high spots of colour, suitably crowned.

Architects' schemes for street decoration have been praised in the past and proved dismal in execution—Bond Street, I think, has now a chance of being the first street to avoid this depressing result.

EXHIBITION TOUR

I all too seldom manage to get to all the art exhibitions I would wish to; so, after seeing the admirable one in Edinburgh, I have made quite a week of exhibitions. (Why do they always close at 5.30 or 6.0, Saturdays 1 p.m.?)

*

I have been to no fewer than *four*, having started out to see the much-discussed one at the New Burlington Galleries.

*

This exhibition, of 19th century French masters, needs no recommendation from me. As Mr. Clive Bell asserts in his preface to the catalogue (and with a touch of justifiable pride, seeing that he and the late Roger Fry were this period's champions in the days when it was considered revolutionary, if not heretical) the 19th century in France now, in historical perspective, stands on a level with Renaissance Italy. And the display of the period at the New Burlington Galleries is as fine a one as we have had a chance to see in this country (not excepting the R.A. Exhibition of French Art several years ago).

*

My impressions: first that the rather faded air that the whole collection has (notwithstanding superlative individual qualities and notwithstanding the presence of such masterpieces as Cézanne's *Boy in the Red Waistcoat*) must be due to the fact that these were nearly all *painters'* painters. Shall we ever again achieve *popular* art in the best sense?

*

Second, that Gauguin, whom we had long suspected of being really only a second-rate painter, is now proved certainly to be so. Third, that I had no idea there were so many unworthy Van Goghs in existence. Fourth, that (rather oddly) the relatively academic Corot is, in his early phases, responsible for some of the most interesting work.

*

I haven't space to say much about the other three shows. More impressions: the Burlington House Exhibition of work of the British School of Archæology at Athens—serious, important, overcrowded, rather poorly displayed.

*

A second French exhibition at the Bruton Street galleries (an excellent sequel to the first)—Picasso now an old master, his astonishing versatility magnificently represented; Braque and Matisse less so. The Memorial Exhibition of Felicia Browne's work (the young English artist recently killed while fighting for the Spanish Government) to be found at 46 Frith Street: tremendous vitality in her drawings (perhaps because of her vividly topical subject-matter in contrast to the customarily unrealistic subject-matter already referred to)—also, an unexpected surprise at this show, a large number of first-rate *architectural* sketches, showing an interesting appreciation of architecture's sculptural aspect. A brilliantly promising artist and a great loss. Definitely recommended.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

"*If the Cambridge school were to be discontinued both general architectural progress and the development of better public standards of architectural criticism would suffer a setback of which the effects would be felt by all architects, and for a long time.*" 549

"*After November 1 . . . . the L.C.C. will have powers to insist on provision being made for traffic to set down outside 'places of public resort' without interfering with general through traffic*" .. 550

"*There seems a very strong case for the design of all such (bomb-proof) shelters to be vigorously controlled by the Home Office*" .. 552

IRISH SLUMS

The *Irish Press* in a series of articles of a most pointed kind, has started a campaign to deal with the slums of Dublin.

Twenty thousand new dwellings are the minimum which have been decided as necessary to remedy the worst cases, and the expenditure needed is put at £10,000,000.

How such a sum is to be provided during the Free State's present economic difficulties is now being discussed. And since Mr. de Valera's Government has shown that it can take very strong measures to carry out a desired programme, a financial scheme will no doubt be quickly prepared —if the slums are not allowed to be forgotten again.

EXHIBITION

An exhibition entitled "Forbidden Houses" is to be opened by Major-General Sir Frederick Maurice at the Housing Centre, 13 Suffolk Street, S.W., today, at 3 p.m. The exhibition has been arranged by the Ex-Service Men's Group of the Hundred New Towns Association.

BOMB-PROOF SHELTERS

On the flyleaf of a recent booklet published by the Air Raid Precautions Department of the Home Office there was a statement that the Department did not hold itself responsible for claims made by advertisers as to the efficiency of the various products advertised in the booklet.

With quite a number of bomb-proof shelters being built in connection with new buildings and receiving notice in the Press, it would seem to be very much in the public interest if some extension could be made in this Home Office declaration.

The shelters being built at present may be rather in the nature of stunts which gain the building concerned a momentary public interest, or they may in the case of flat blocks have an amenity value for exceptionally nervous people. But in any case, there seems a very strong case for the design of all such shelters to be vigorously controlled by the Home Office.

The descriptions published of the construction of several recent shelters seem to call their efficiency very seriously in question, and a continuance of amateur experimentation will be as generally harmful as carefully controlled and designed structures could be nationally useful.

THE ARCHITECTS' DIARY

Thursday, October 22

THE ARTISTS' INTERNATIONAL ASSOCIATION. *Exhibition of Drawings. By Felicia Brown. At 46 Frith Street, Soho, W.C.1. Until October 29. 11 a.m. to 9 p.m.*

Friday, October 23

HASTINGS SCHOOL OF ART. *Mr. R. Goulburn Lovell on "Architectural Travel: Through Thuringia to Berlin." 8 p.m.*

INSTITUTION OF MECHANICAL ENGINEERS. *Presidential Address by Sir Nigel Gresley. 6 p.m.*

Tuesday, October 27

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

Thursday, October 29

ASSOCIATION OF ARCHITECTS, SURVEYORS AND TECHNICAL ASSISTANTS. *Maxwell Fry on "The Work of the Salaried Assistant." Caxton Hall, Westminster, 7 p.m. Public meeting, admission free.*

Monday, November 2

ROYAL INSTITUTE OF BRITISH ARCHITECTS. *President's Inaugural Address. Presentation of the London Architecture Bronze Medal, 1935, to R. H. Wren. 8.30 p.m.*

TUBE EXTENSION FOR SOUTH LONDON?

On Monday next Lord Ashfield, Chairman of the London Passenger Transport Board, will receive a deputation from the Camberwell and Southwark Councils to discuss a proposal for tube extensions from the Elephant and Castle to Camberwell.

A.A.S.T.A.

A public meeting, the first of a series to be arranged by the Association of Architects, Surveyors and Technical Assistants, will be held at the Caxton Hall, Westminster, S.W.1, on Thursday, October next, October 29, at 7 p.m., when Mr. E. Maxwell Fry, B.Arch. A.R.I.B.A., will be the principal speaker in a discussion on "The Work of the Salaried Assistant."

ON THE AIR

We are informed by the B.B.C., that, in connection with the series "Your Home and Mine" which is being broadcast on Thursdays at 2.5 p.m., the subjects with which Mr. Boumphrey will deal next month are as follows :—

November 5 : The Earliest English Homes. Houses on crutches; basket-and-mud houses; how straight walls were invented; the manor house and the peasants' houses.

November 12 : Where our Homes are and why. After the Saxon manor and the mediæval castle or monastery—country towns and villages. Pack-horse and wagon; river and road, what the railways did and how the motor is changing things.

November 19 : The Story of the Road (1).

November 26 : The Story of the Road (2).

From the Northern Ireland Station an important series of winter talks begins on November 2. Mr. E. Maxwell Fry has recently made a tour of Northern Ireland at the invitation of the British Broadcasting Corporation, and on November 2 he will give his first talk on Town Planning. The Government of Northern Ireland is taking a keen interest in this series of talks, and the first talk will be introduced by the Rt. Hon. Sir Dawson Bates, Minister of Home Affairs. Mr. Fry will begin by discussing "What Planning Means"; he will explain how it is primarily a matter of economics, and show that no country can afford not to plan its towns and its country. Failure to look into the future results in enormous waste, and houses—like food—go bad if they are unplanned or conceived anti-socially. These talks, which will be given each week, will be progressive. Mr. Fry will begin by analysing the situation in Northern Ireland, and will follow this up with criticisms and a constructive outline for the future. Six talks will be given weekly from November 2.

OBITUARY

C. McARTHUR BUTLER

It is with deep regret we record the death of Mr. Charles McArthur Butler, who was secretary of the Society of Architects for 27 years—from 1898 until its amalgamation with the R.I.B.A. in 1925. He also held the position of Registrar of the Architects' Registration Council of the United Kingdom from January, 1932, until March, 1934.

Mr. Butler was articled to the late Clapton C. Rolfe, of Oxford, worked as an assistant for other architects in various provincial centres, and was elected a member of the Society of Architects in 1894, when he

began to practise. In 1898 he was appointed secretary of the Society. Mr. Butler, who numbered amongst his qualifications that of a chartered secretary, was an original member and for many years honorary secretary of the Beaux Arts Committee, the programme of which was strongly supported by the Society, and he was active in promoting other education objects such as the founding of architectural scholarships. For 24 years he edited the Society's journal.

During the war period (1914–1918) Mr. Butler, in addition to carrying on and extending the work of the Society under the difficulties and restrictions imposed by war conditions, also served on the Executive Committee of the Architects' War Committee, the Architects' Committee of the Professional Classes War Relief Council, the Joint Conference on Civic Surveys, and was joint honorary secretary of the Architects' Re-organization Committee and a member of the Architects' Demobilization Committee. At the same time, he served in the London 43rd V.A.D., with the London Ambulance Column, and later commanded a Company in a Voluntary Battalion which did useful work on the defences of London.

The most important work carried out by Mr. Butler was in connection with the statutory registration of architects, the main object for which the Society of Architects was founded. He took a prominent part in the Unification and Registration Committee, and at the request of the chairman prepared the "federation" as an alternative to the "absorption" scheme. Amalgamation with the R.I.B.A. was at length effected in 1925, and Mr. Butler became secretary of the R.I.B.A. Registration Committee and of the Institute of Arbitrators. Shortly after the formation of the Architects' Registration Council of the United Kingdom, in 1932, Mr. Butler was appointed Registrar of that body. He resigned from that position in March, 1934.

Mr. Butler took a great interest in the work of county societies in London, and was for some years secretary of the Association of the Men of Kent and Kentish Men, and was afterwards a member of the council and served on the committee of the Cumberland and Westmorland Association. He was a founder, the first Senior Warden, a Past Master, and then secretary of the Society of Architects' Lodge of Freemasons. He was a frequent contributor to the architectural and lay press, and was elected a Licentiate of the R.I.B.A. in 1925.

MORE AND MORE FLETTONS

The Marston Valley Brick Co. gave a luncheon last week to mark the opening of their new works at Ridgmont, the output of which will finally reach about 150 million bricks a year. Nearly all the work is done mechanically, an aerial ropeway bringing the rough clay to the grinding mills, distribution to the presses being by conveyor. Since the presses are moved to the door of the kiln, as required, the only handling necessary is from press to kiln and finally from kiln to lorry or truck. Further details of these works will be published next week.

ADDENDA

We regret that the name of Messrs. M. Cockburn & Co., Ltd., who supplied the specially designed bath in the principal guest's bedroom, was omitted from the list of contractors for the King's House which was illustrated in our issue of October 15. The expanded metal lathing for the suspended plaster ceilings was supplied by The Expanded Metal Company, Ltd.

Certain floors and the service staircase are finished with "Eldorado" Cork Tile Flooring and Staircase Finishing supplied by the Cork Insulation Company, Ltd.

The general contractors for the house at Beaconsfield, illustrated on pages 503 and 504 of our issue for October 8, were Messrs. Hartley, of Wrexham.

R. I. B. A.

SESSIONAL MEETINGS

Following is a list of the Sessional Meetings for 1936-1937. The meetings will be held at 8 p.m., except where otherwise stated :—

1936 : November 2.—8.30 p.m. President's Inaugural Address. Presentation of the London Architecture Bronze Medal, 1935, to Mr. R. H. Uren (A).

November 16.—"Rehousing from the Slum-dweller's Point of View," by Miss Elizabeth Denby.

November 30.—"Architectural and Planning Developments at the Seaside," by Mr. Wesley Dougill, M.A., B.Arch. Liverpool (A).

December 14.—Musical Evening, arranged by the Social Committee.

1937 : January 11.—Award of Prizes and Studentships. Criticism by Mr. H. Austen Hall (F), on works submitted for Prizes and Studentships. Announcement of the Council's nomination for the Royal Gold Medal, 1937.

January 25.—8.30 p.m. Presentation of Medals and Prizes by the President. Address to Students, by Mr. T. A. D'arcy Braddell (F), chairman of the Board of Architectural Education.

February 8.—Social Evening, arranged by the Social Committee.

February 22.—"Building Finance and Architecture," by Mr. T. P. Bennett (F).

March 8.—"Town and Country Planning under the Act," by Mr. G. L. Pepler, F.S.I., and "The Working of the Advisory Panels System," by Mr. G. H. Jack, M.Inst.C.E., F.S.A. (F).

March 22.—"The British School at Rome," by Professor W. G. Holford, B.Arch. Liverpool (A), and Mr. A. G. S. Fidler, B.Arch. Liverpool (A).

April 12.—8.30 p.m. Presentation of the Royal Gold Medal.

April 26.—"Recent Architecture in France," by Professor H. S. Goodhart-Rendel (F).

May 10.—One Hundred and Third Annual General Meeting. Discussion of Annual Report.

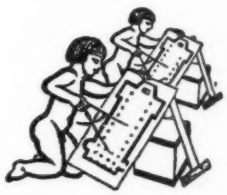
June 21.—Announcement of Results of Annual Elections of Council and Standing Committees. Informal discussion on matters of professional interest.

EXAMINATIONS

At the R.I.B.A. Statutory Examination for the office of District Surveyor in London, held on October 7, 8, and 9, 1936, two candidates presented themselves, and the following candidate was successful in the examination : Mr. Alan R. Herring.

At the R.I.B.A. examination for the office of Building Surveyor under local authorities, held on October 7, 8, and 9, 1936, three candidates presented themselves and the following were successful : Mr. John Hellon, Mr. Daniel B. Southworth.

COMPETITION



NEWS

COMPETITION BANNED

The following notice has been issued by the R.I.B.A. :—

"The Competitions Committee desires to call the attention of members to the fact that the conditions of the competition for the re-erection of the Theatre Royal, King's Lynn, are not in accordance with the regulations of the R.I.B.A. The Competitions Committee is in negotiation with the promoters in the hope of securing an amendment. In the meantime members should not take part in the competition."

DECORATIONS FOR BOND STREET

The students of the Architectural Association were invited by the Bond Street Traders' Association to submit schemes in competition for the decoration of Bond Street on the occasion of the Coronation next May. Prizes to the total value of £60 were offered by the Bond Street traders, and the competition attracted considerable attention, Gaumont British making a documentary film of the work in the studios, etc.

About 150 schemes were submitted in sketch form in the preliminary round, and from these a dozen finalists were chosen, who worked out their ideas in greater detail. These designs were then judged by a jury consisting of Mr. L. H. Bucknell, F.R.I.B.A. (President of the A.A.), Mr. Grey Wornum, F.R.I.B.A., four members of the Bond Street Traders' Association, one member of the Royal Warrant Holders' Association, and four members of the School staff.

The jury was unanimously agreed on its choice of the winning schemes. It awarded the first prize to the scheme submitted by Mrs. Richard Acland, and the second and third prizes were combined and were awarded to the scheme submitted in partnership by Messrs. Kadleigh and Penoyre and the one submitted by Messrs. Sturrock and Wheeler.

The Bond Street Traders' Association, on the recommendation of the Architectural Association, is asking all the traders to restrict their own decorations to the use of flowers in window boxes. It was also thought that flowers might be used in the horizontal trays on the masts. The Traders' Association will also issue a request that all

advertising flags and other easily removable signs should be taken down for as long as the decorations are in position.

The winning designs are illustrated on pages 567 and 568 of this issue, and are now on show at the Building Centre until October 31.

Competitions Open

A mental hospital for 1,000 patients, and a new institution for 2,000 mental defectives, proposed to be erected on a site at Lathom Park, near Orkskirk, Lancashire, for the Lancashire Mental Hospitals Board. (Open to chartered and/or registered British architects and Irish architects.) Assessors: Charles E. Elcock, John Kirkland and Patrick L. Abercrombie. Premiums: £500, £400 and £300. The time within which applications for a copy of the conditions and other particulars must be made to the Clerk to the Mental Hospitals Board, County Hall, Preston, has been extended to October 31. (Deposit £3 3s.) The sending-in day has not yet been decided.

OCTOBER 26.—Sending-in Day. Layout and individual design of a group of camp buildings for a holiday camp, in timber, for the Timber Development Association. Assessors: E. Guy Dawber, R.A., F.S.A., F.R.I.B.A., G. A. Jellicoe, F.R.I.B.A., G. Langley Taylor, F.R.I.B.A., and John Gloag. Premiums: £150, £50, £25 and three special mention awards of £10 each. Conditions may be obtained on application to The Timber Development Association, 69-73 Cannon Street, London, E.C.4.

OCTOBER 29.—Sending-in Day. Central Baths, Leeds. (Open to architects of British nationality.) Assessor: Kenneth M. B. Cross, F.R.I.B.A. Premiums: £350, £200 and £100. Conditions of the competition and instructions with a plan of the site can be obtained on application to Thos. Thornton, Town Clerk, at Room 57, Civic Hall, Leeds, 1. (Deposit £1 1s.)

OCTOBER 31.—Sending-in Day. Shops and offices, Newcastle-under-Lyme, for the Newcastle-under-Lyme Borough Council. (Open to architects of British nationality.) Assessor: Harry S. Fairhurst, F.R.I.B.A. Premiums: £300, £200 and £100. Conditions of the competition may be obtained from the Town Clerk, Town Clerk's Office, Newcastle-under-Lyme. (Deposit £2 2s.)

OCTOBER 31.—Sending-in Day. Council offices, Farnham, for the Farnham U.D.C. (Open to architects practising in the United Kingdom.) Assessor: E. Vincent Harris, A.R.A., F.R.I.B.A. Premiums: £250, £150 and £100. The last day for questions was August 31. Conditions of the competition may be obtained on application to A. A. Minns, Clerk of the Council, Council Offices, Farnham, Surrey. (Deposit £1 1s.)

OCTOBER 31.—Sending-in Day. New hospital at Llandudno, for the Committee of the Llandudno and District Hospital. (Open to registered architects of British nationality.) Assessor: R. Norman Mackellar, F.R.I.B.A. Premiums: £250, £150 and £75. The last day for questions was August 28. Conditions of the competition may be obtained on application to the Honorary Secretary, New Hospital Scheme, Town Hall, Llandudno. (Deposit £1 1s.)

NOVEMBER 7. — Sending-in Day. The four main railway companies (L.N.E.R., L.M.S., G.W.R. and Southern) invite British-born architects to submit in competition designs for Joint Receiving Offices. Assessors: L. H. Bucknell, C. Grasemann, W. H. Hamlyn, and Charles Holden. Premiums: £300, £125, £50 and £25. Last day for questions: September 17, 1936. Conditions of the competition may be obtained on application to W. H. Hamlyn (F.R.I.B.A.), Chief Architect, L.M.S. Railway, St. Pancras Chambers, London, N.W.1. (Deposit £1 1s.)

NOVEMBER 30.—Sending-in Day. New civic buildings, which include a town hall, municipal offices, law courts and police station, Newport (Mon.), for the Newport Corporation. (Open to architects of British nationality.) Assessors: E. Berry Webber, A.R.I.B.A., and C. F. Ward, F.R.I.B.A. Premiums: £750, £500, £300 and £200. The last day for questions was September 1. The conditions are obtainable from O. Treharne Morgan, Town Clerk, Town Hall, Newport (Mon.). (Deposit £2 2s.)

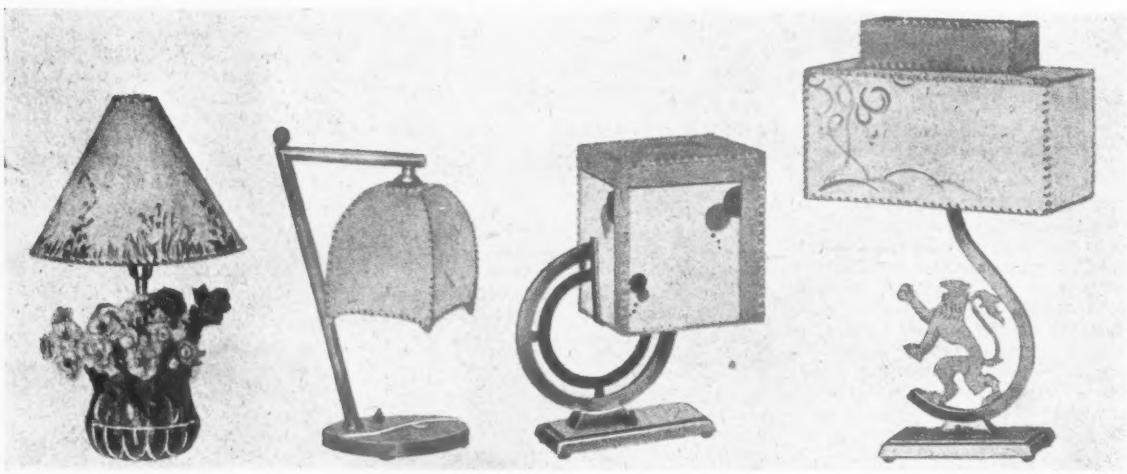
DECEMBER 15.—Sending-in Day. Technical College and Junior Technical School, Gloucester, for the County Borough of Gloucester and the Gloucester Education Committee. Assessor: Henry V. Ashley. Premiums: £350, £250, and £150. Cost not exceeding £85,000. The last day for questions was September 26, and conditions, etc., are obtainable from the Education Officer, Belsize House, Brunswick Square, Gloucester. (Deposit £2 2s.)

DECEMBER 31. — Sending-in Day. The Metropolitan Borough of Holborn invites architects to submit in open competition designs for new public baths, etc., to be erected in Broad Street and Endell Street. Assessor: Kenneth M. B. Cross. Premiums: £300, £200 and £100. Last day for questions was October 1, 1936. Conditions of the competition may be obtained on application to Lionel J. Walford, Town Clerk, Town Hall, High Holborn, London, W.C.1. (Deposit £2 2s.)

FEBRUARY 28, 1937. — Sending-in Day. Extension of St. Andrew's Cathedral, George Street, Sydney, for the Authority in the Diocese of Sydney of the Church of England. (Open to architects who are British subjects, and members of the Royal Australian Institute of Architects, the R.I.B.A., or the Allied and Associated Societies.) Assessors: His Grace the Archbishop of Sydney, Sir Giles Gilbert Scott, R.A., F.R.I.B.A., and Bertrand J. Waterhouse, F.R.I.B.A. Premiums: £500, £300 and £200. The last day for submitting designs (which must be forwarded direct to Sydney) is February 28, 1937. The last day for questions was August 11.

MARCH 12, 1937.—Sending-in Day. Technical College, Commercial College and College of Art and Crafts, Birmingham, for the Corporation of the City of Birmingham. Assessor: James R. Adamson (of the firm of Bradshaw, Gass and Hope). Premiums: £750, £500, and £250. Cost: Not exceeding £560,000 for the portion to be built as a result of this competition. The last day for questions was October 19, and the conditions, etc., are obtainable from the Chief Education Officer, Margaret Street, Birmingham, 3. (Deposit £3 3s.)

T H I S A R S H E T E C T U R E



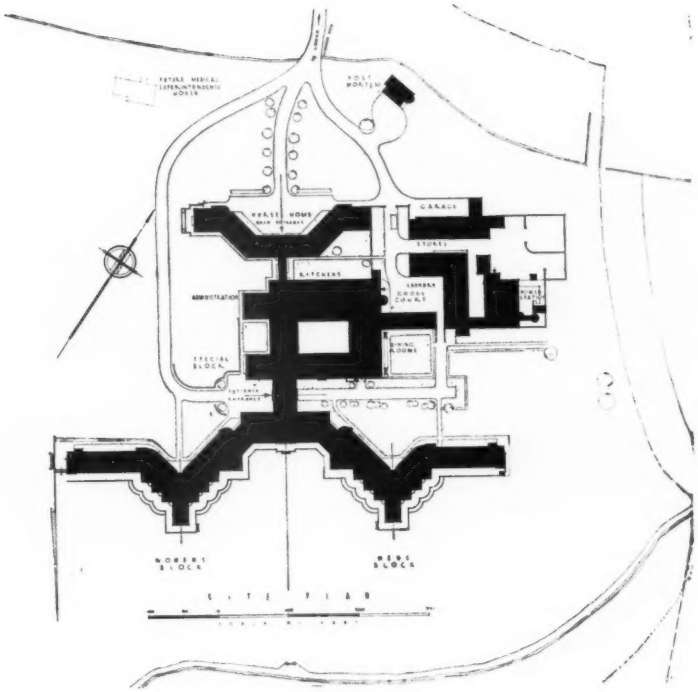
"... *from the illustration it will be appreciated that considerable novelty has been introduced without making the fittings appear grotesque.*" *From "The Electrician" for October 16.*

SULLY TUBERCULOSIS HOSPITAL, CARDIFF

DESIGNED BY WILLIAM A. PITE SON AND FAIRWEATHER

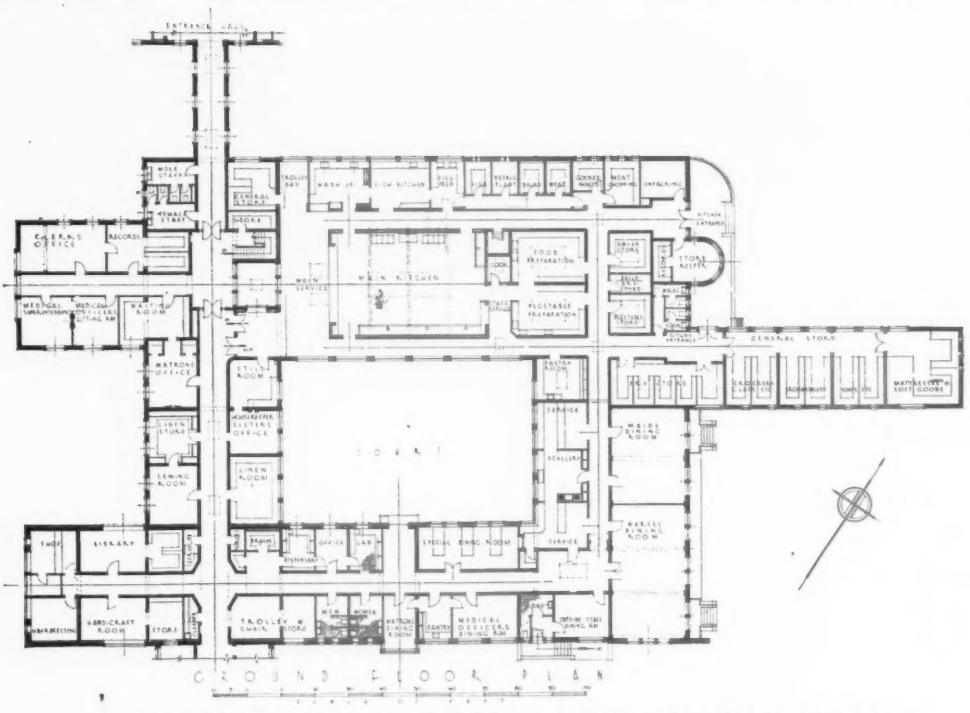
GENERAL PROBLEM—*Tuberculosis hospital for the King Edward VII Welsh National Memorial Association. It accommodates 300 patients' beds in six identical ward units of 50 beds each; three in the east wing for men and three in the west wing for women. The design won first place in an open competition held in 1931.*

The photograph is of the nurses' home, taken from the approach road.



BLOCK PLAN

SULLY TUBERCULOSIS HOSPITAL, CARDIFF:



MAIN FLOOR PLAN OF CENTRAL ADMINISTRATION BLOCK

SITE—*On the shore of the Bristol Channel and sheltered on the three landward sides by a deep belt of trees, penetrated only by the approach drive.*

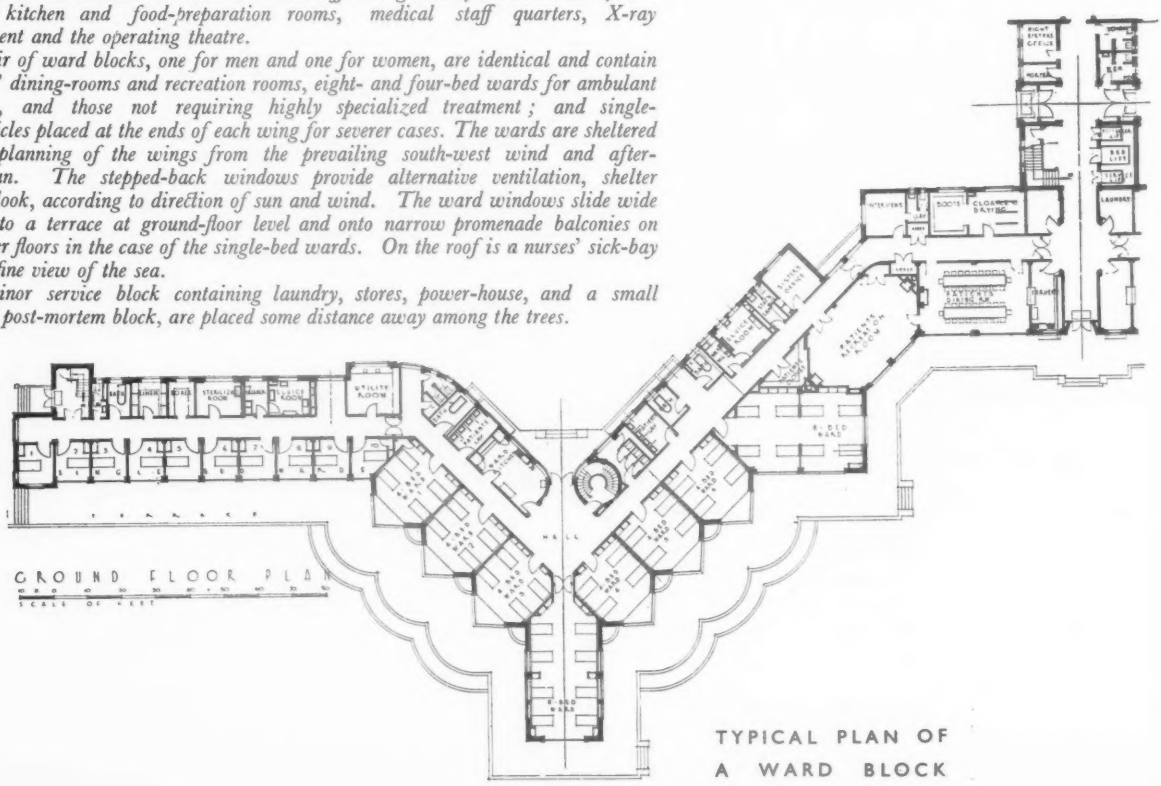
PLAN—*There are the following three main buildings: the nurses' home, the administration block, and the ward blocks.*

The nurses' home is four storeys high and contains a library, lecture and demonstration rooms, common rooms and bedrooms for thirty-six sisters and staff nurses, fifty nurses and forty-four maids.

The administration block contains also the staff dining-rooms, central services, such as the kitchen and food-preparation rooms, medical staff quarters, X-ray department and the operating theatre.

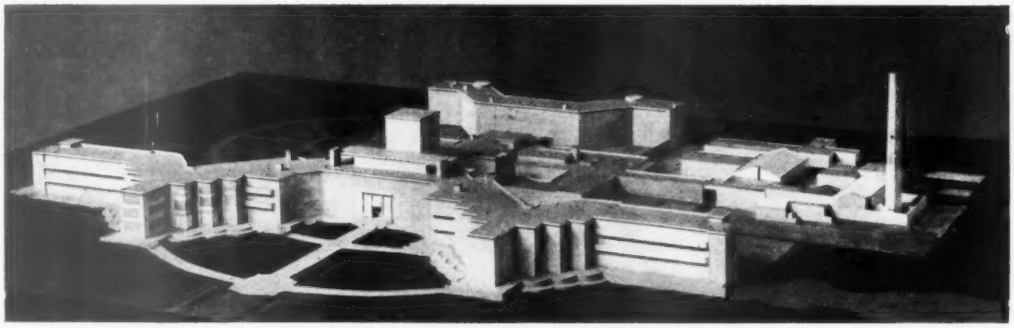
The pair of ward blocks, one for men and one for women, are identical and contain patients' dining-rooms and recreation rooms, eight- and four-bed wards for ambulant patients, and those not requiring highly specialized treatment; and single-bed cubicles placed at the ends of each wing for severer cases. The wards are sheltered by the planning of the wings from the prevailing south-west wind and afternoon sun. The stepped-back windows provide alternative ventilation, shelter and outlook, according to direction of sun and wind. The ward windows slide wide open onto a terrace at ground-floor level and onto narrow promenade balconies on the upper floors in the case of the single-bed wards. On the roof is a nurses' sick-bay with a fine view of the sea.

The minor service block containing laundry, stores, power-house, and a small isolated post-mortem block, are placed some distance away among the trees.



TYPICAL PLAN OF A WARD BLOCK

BY WILLIAM A. PITE, SON AND FAIRWEATHER

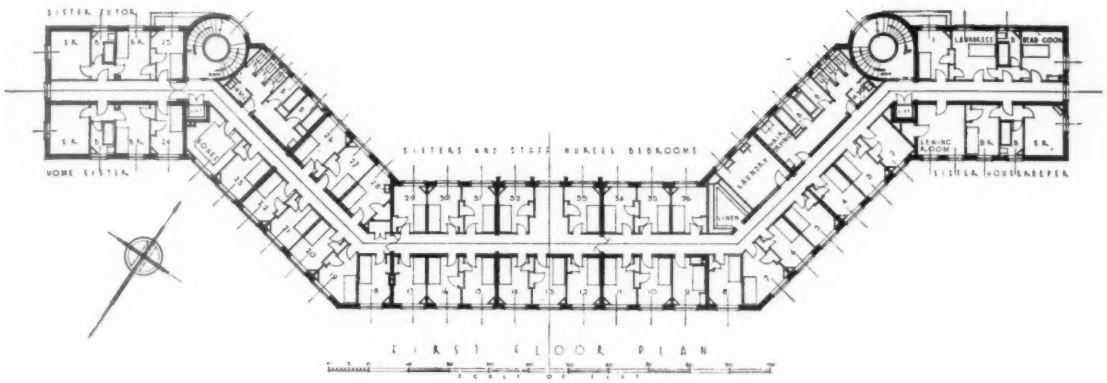


MODEL OF COMPLETE SCHEME

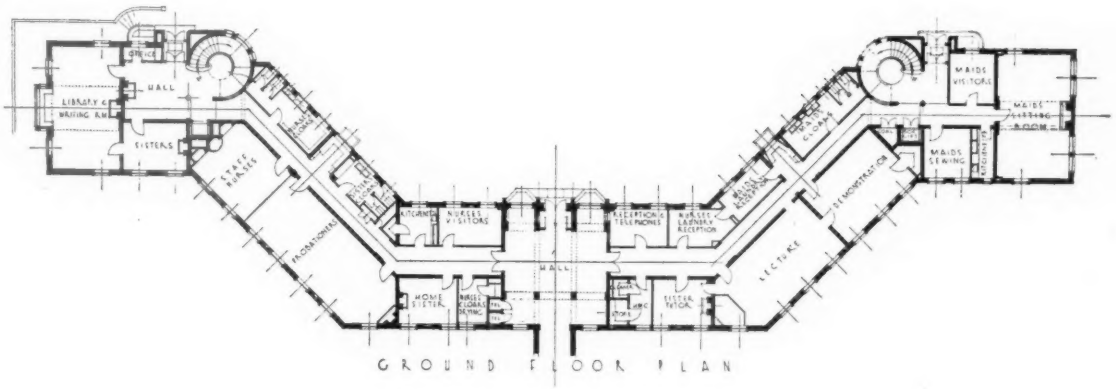
CONSTRUCTION—*13½ or 18-in. mass brick walling, except for the ward blocks, which are steel-framed with brick-panel walls. In these two blocks all constructional units are exactly duplicated. Externally the brick walls are finished with a ¾ in. water-repellent cement rendering in a light cream colour.*

Floors and roofs are hollow tile and concrete, and internal walls in the ward blocks are hollow partition blocks. The flat, hollow-tile roof is protected by an insulating blanket of broken brick finished with bituminous felt and tar macadam. Windows are of heavy steel section, cadmium-zinc sprayed throughout as a protection against the corrosive action of seaside air.

The foundations are carried down to solid rock, the stanchions in the wards having solid concrete bases 2 ft. 6 ins. square.



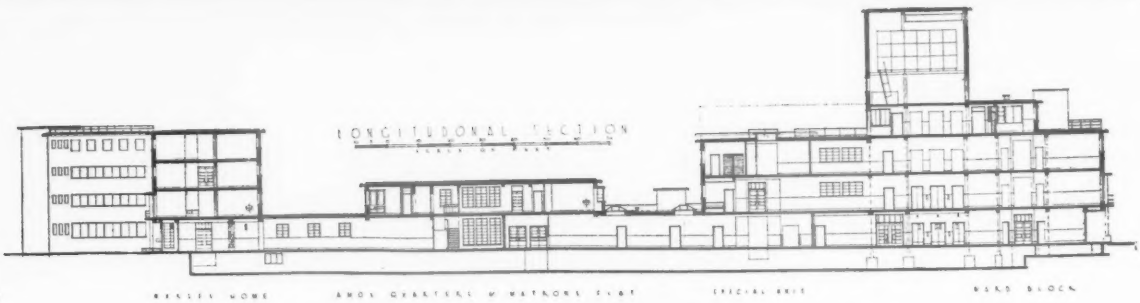
UPPER FLOOR PLAN



THE NURSES' HOME: GROUND FLOOR PLAN

SULLY TUBERCULOSIS HOSPITAL, CARDIFF:

The photograph shows: left, one of the nurses' entrances beneath a circular staircase; below, looking along the ward balconies towards the stepped-back windows of the four-bed wards.



LONGITUDINAL SECTION THROUGH HOSPITAL

BY WILLIAM A. PITE, SON AND FAIRWEATHER

INTERNAL FINISHES—*Each ward unit has a colour-scheme of its own, and all the internal doors are in bright primary colours, all the colour schemes being cheerful.*

The architects designed a large proportion of the furniture.

The photographs show: above, a typical ward; right, the kitchen, which serves the whole hospital.

SULLY TUBERCULOSIS HOSPITAL, CARDIFF

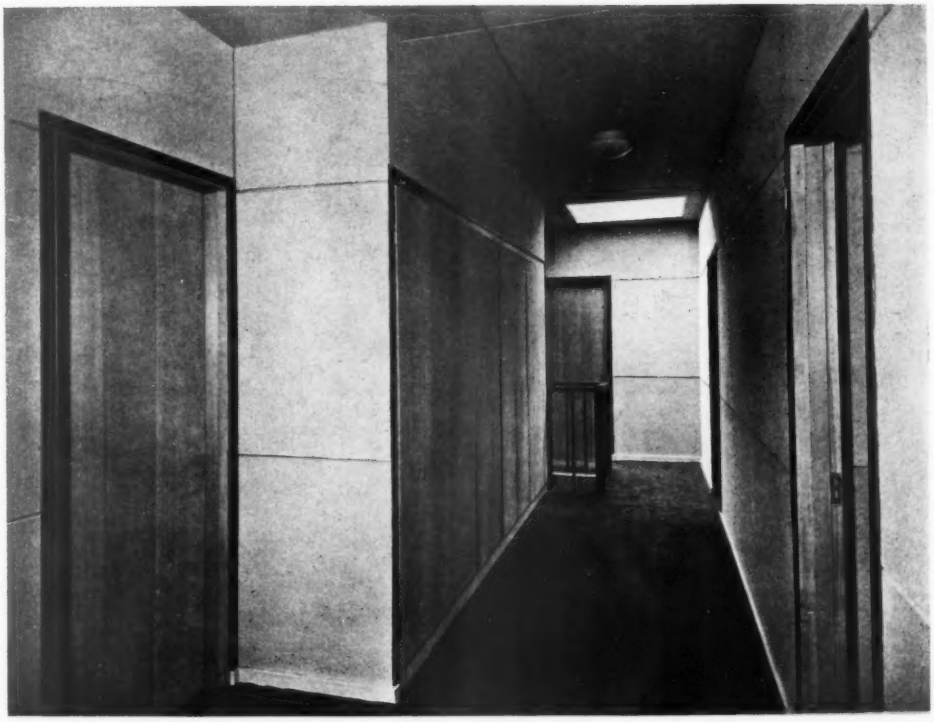
SERVICES — *Heating is by low-pressure radiators, with steam radiators in the special service unit and hot-water ceiling panels in the operating theatre. The air in the operating theatre is capable, for certain chest operations, of being raised to as high a temperature as 90 degrees. There is also a fan exhaust system in the theatre. The kitchen and laundry machinery is electrically-driven; a dish-washing machine in each servery for the sterilization of crockery and cutlery; and hygienic collection and sterilizing systems for sputum and foul linen. A boiler-house containing two 30-ft. Lancashire boilers provides the steam for all heating purposes.*

For list of general and sub-contractors see page 578.

The photographs show two views in the nurses' home: above, the main staircase; below, the library.

DESIGNED BY WILLIAM A. PITE SON AND FAIRWEATHER

ALTERATIONS, 32 HOCROFT ROAD, N.W.



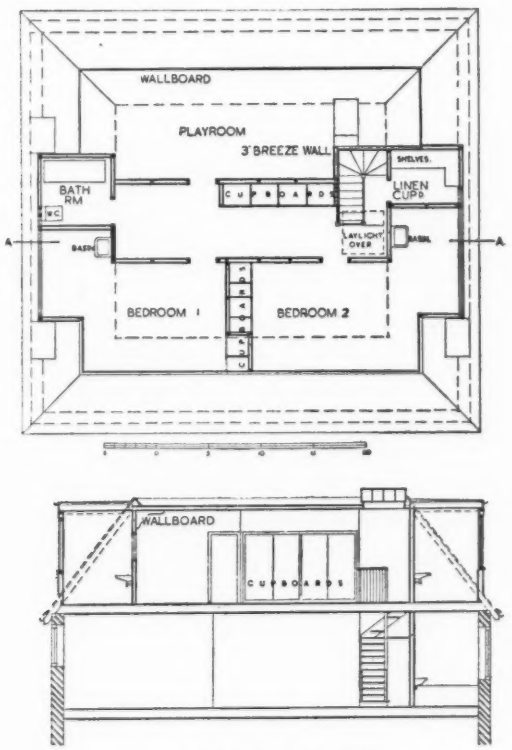
BY R. ELISABETH BENJAMIN

DECORATIONS BY E. ALBU

GENERAL PROBLEM—*Reconstruction of the roof space in a house to provide two extra bedrooms, bathroom, linen cupboard, store-room and out-of-season hanging cupboards.*

PLAN—*Dictated by the shape of the roof and the position of the existing chimneys and roof supports.*

The photographs show : above, the passage after, and below, before reconstruction.



PLAN AND SECTION

ALTERATIONS, 32 HOCROFT ROAD, N.W.

BY R. ELISABETH BENJAMIN

DECORATIONS BY E. ALBU

CONSTRUCTION—*The roof timbers formed the studding for the wallboard, which was used throughout in its natural form, undecorated, except in the bathroom. The wallboard is secured with panel pins, well punched in, the edges of the wallboard being bevelled to form a V-joint. The staircase runs up beside the wall of the best bedroom. To avoid noise penetrating this wall was lined with 1 in. cork under the plaster, the stair string being kept ½ in. away from the wall. Risers were omitted where possible, and the treads were covered with carpet. Joinery is of cedar.*

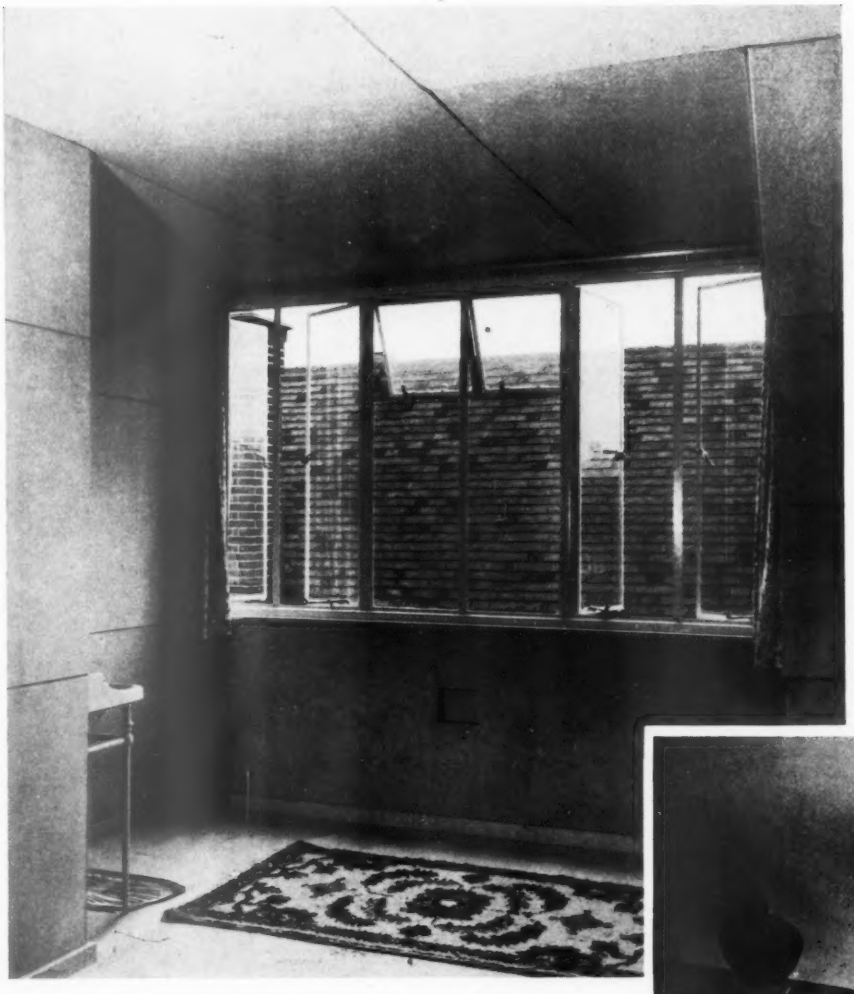
DECORATION—*This consists of the colouring in the reconstruction of the roof space and the redecoration of the child's bedroom and nursery on the floor below. In the roof space colour was introduced in simple units only. On the staircase the walls are light blue, the handrails burnt sienna, the carpet nigger-brown.*

For list of general and sub-contractors see page 578.

The photographs show : a typical bedroom; left, the roof space before reconstruction.

WORKING · DETAILS : 511

ALTERATIONS • HOUSE IN HOCROFT ROAD, N.W. • R. E. BENJAMIN



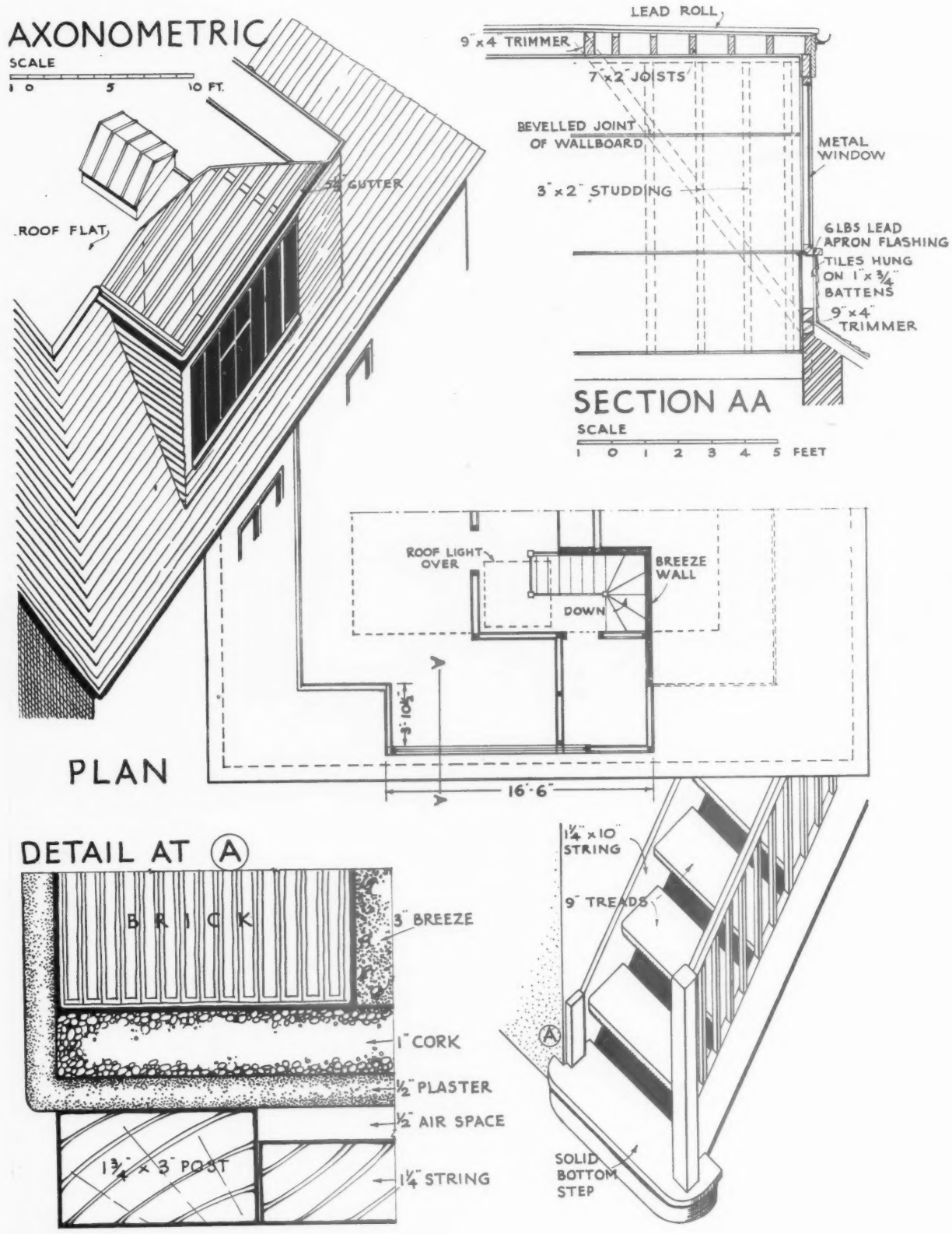
The upper photograph shows the new dormer window thrown out from the existing roof ; walls and ceilings are lined with wall-board.

The lower photograph shows the staircase which has been constructed so that no noise penetrates to the room adjoining. The wall is lined with 1-in. cork, the string is set ½-in. away from the wall, risers have been omitted and the treads covered round with carpeting.

Details for both these features are given overleaf.

WORKING DETAILS : 512

ALTERATIONS • HOUSE IN HOCROFT ROAD, N.W. • R. E. BENJAMIN



WORKING·DETAILS : 513

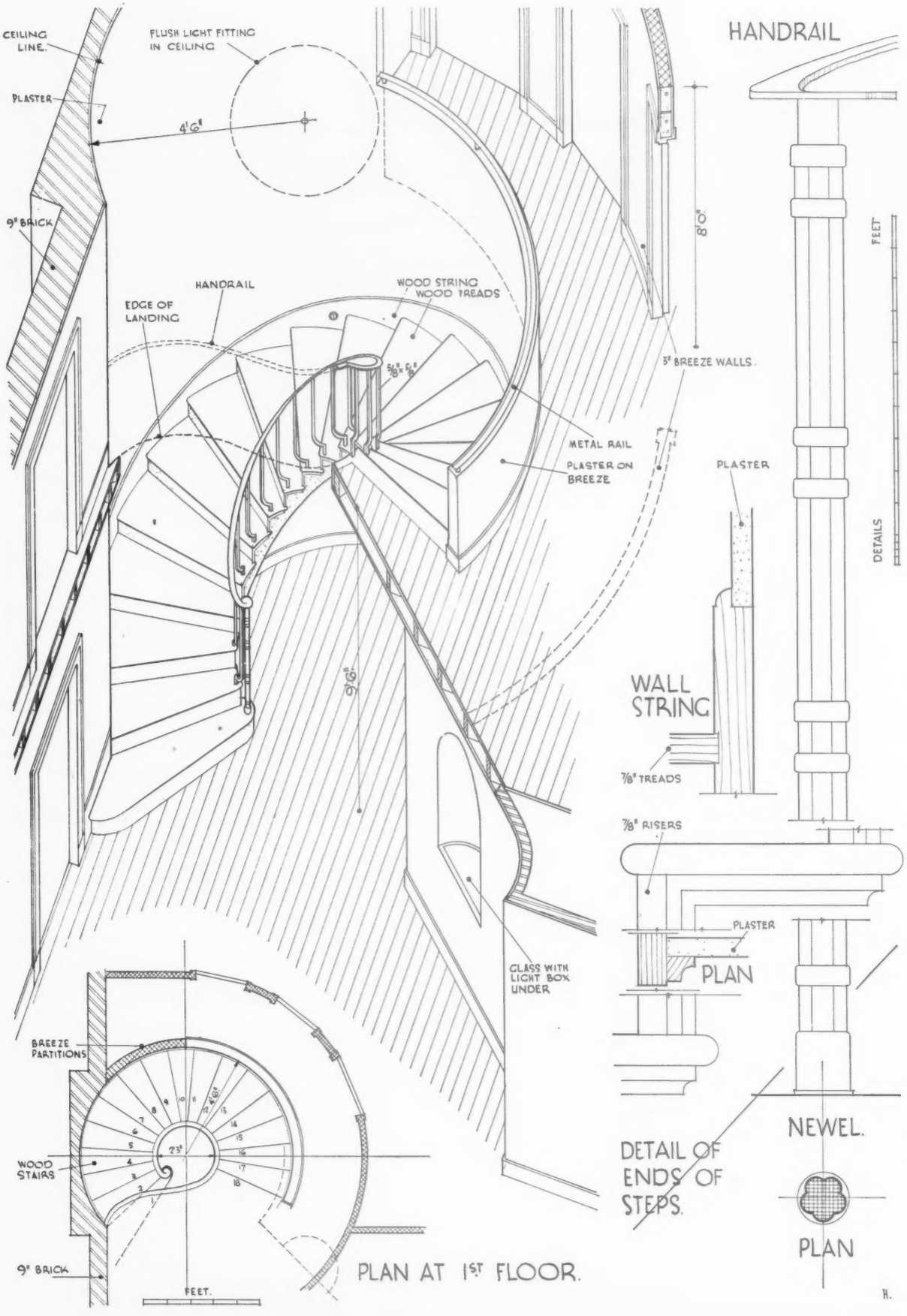
STAIRCASE • HOUSE AT STANMORE, MIDDLESEX • PAGE & JELLICOE

The photograph above shows the top of the spiral staircase on the first floor, and to the left is shown the ground floor. Details are given overleaf.

FILING REFERENCE:

WORKING DETAILS : 514

STAIRCASE • HOUSE AT STANMORE, MIDDLESEX • PAGE & JELLICOE



Dunkery Hill. From "Shell Guide to Somerset."

LITERATURE

SOMERSET

Somerset (Shell Guide Series). By C. H. B. and Peter Quennell. London: The Architectural Press. 2s. 6d.

ANOTHER of the Shell Guides: Somerset. That means Stogumber (let us say) as well as Bath, Wells as well as Culbone, Sedgmoor (or Sedgemoor) as well as Dunkery Beacon (height variously given as 1,564, 1,707 and 1,708 feet)—a county rich in contrasts, and very old.

Old Stone Age men in the caves at Wookey Hole, Glastonbury Lake villagers, King Alfred and his followers on the Isle of Athelney: of these, their intermediates and successors, the glimpses given are all too brief. On the other hand, room is found for two writers to mention geology in different places. We may be thankful that half-a-dozen pages were allotted to Bath; here the authors become lyrical, and history and humanity (and consequently architecture) come vividly to life.

This is, as before, largely a picture-book, and Somerset's contrasts have been splendidly searched for these beautiful photographs. There is an illustrated note about the county's perpendicular church-towers, besides the usual features—Major K. Dawson writes about sport and Miss F. Dunchidcock about flowers—including the excellent, contoured maps.

The gazetteer, if not exhaustive—Sedgmoor has no line in it—has edifying personal touches unexpected in such a place. Thus, of Cheddar in summer, even when "the whole gorge and the more accessible parts of the cliff face are speckled dark with human beings . . . the gorge preserves a certain inviolate dignity." If this guide succeeds in fostering among a very few a response to the influence of the spirit of place, particularly potent in the West Country, it will not have been compiled in vain.

H. F.

STEELWORK ANALYSIS

The Analysis of Engineering Structures. By A. J. S. Pippard and J. F. Baker. London: Edward Arnold & Co. Price 30s.

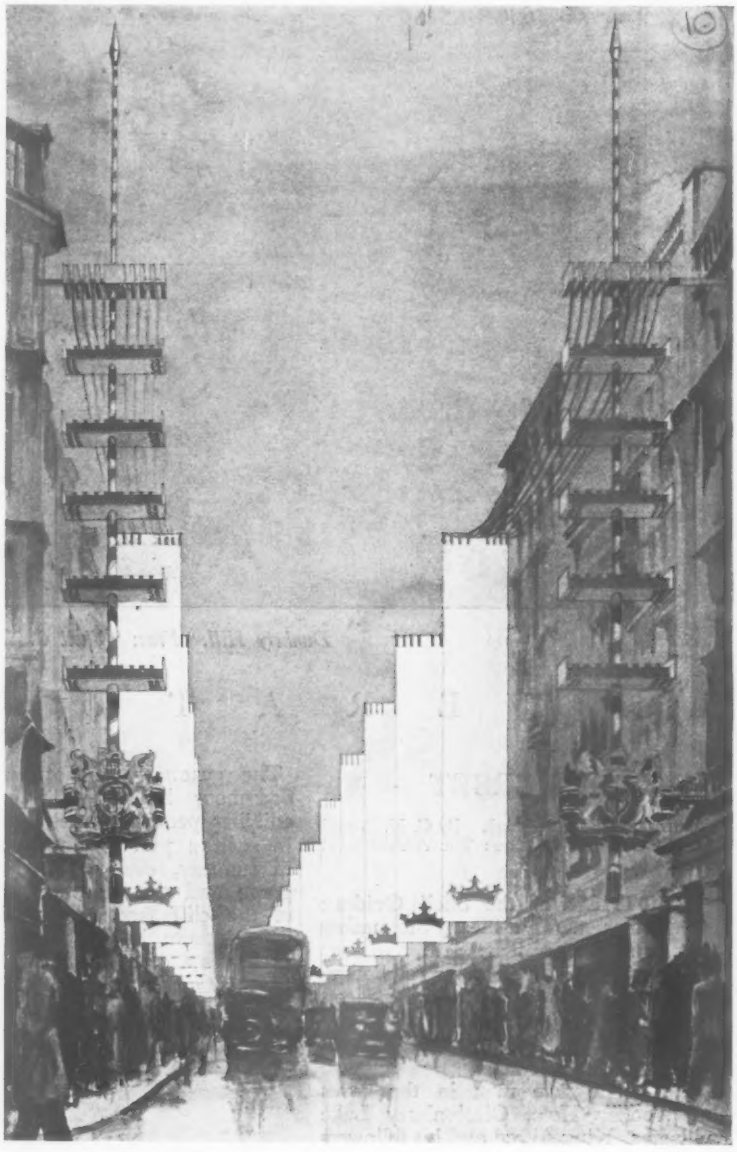
THE design of any structure consists essentially of two parts—the analysis, to determine the forces acting on the various portions, and the design proper, to determine the proportions of the parts to resist these forces. It is with the first part that this book deals.

To an expert mathematician this part is comparatively simple because by making certain assumptions he can always produce equations which, while appearing formidable to the uninitiated, can be solved, given time and patience. In most practical cases many of the assumptions are so wildly far from the truth that the really difficult part follows, when the engineer has to make up his mind how far the mathematician's results apply to the actual structure. To make his problem more difficult if the structure be "indeterminate" the mathematician must assume certain finished sizes for the members in his analysis. Again, the engineer must determine how far he can alter these without affecting the mathematician's results. This often necessitates a second and possibly a third design. For certain structures, such as airships, this elaborate procedure is practicable. Consequently, the analysis side has been developed enormously in the past few years. Papers have been read giving, what the mathematician calls "elegant" solutions, to various problems. They have, however, been widely scattered, and the authors have done valuable service by collecting these methods of analysis in one volume. For example, the chapter on steel frame buildings contains a summary of the reports of the Steel Structures Research Committee. Other subjects dealt with include, curved beams, redundant frames, continuous beams, moment distribution method of stress analysis, arches, influence lines for determinate and indeterminate structures, suspension bridges, earth pressure and mechanical methods of stress analysis.

The book is clearly written and well produced. It is not a book for the average architect, but the mathematically minded engineer who is attracted to modern methods of analysis will find it a gold mine of information.

W. E. J. B.

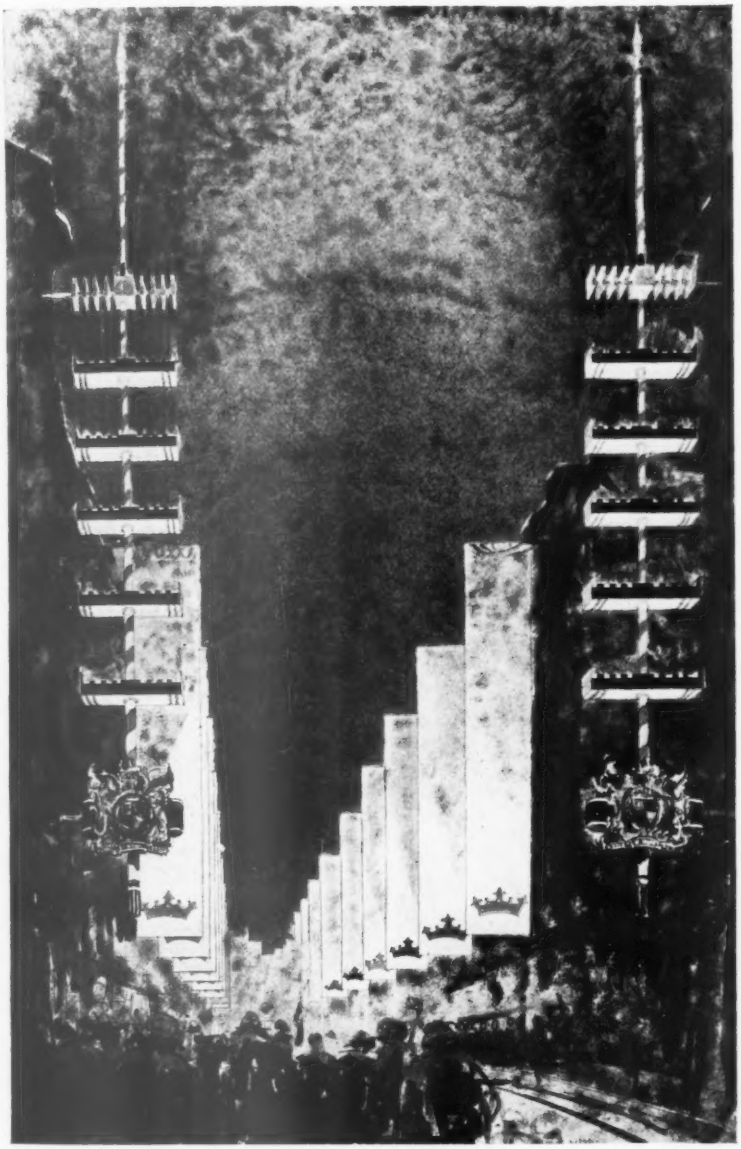
A. A. SCHOOL COMPETITION: CORONATION DESIGNS



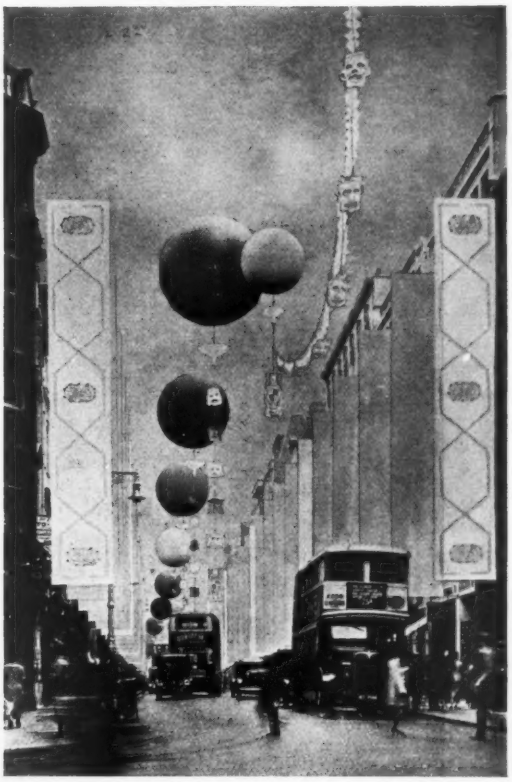
Above : day view of the winning scheme by Mrs. Richard Acland.

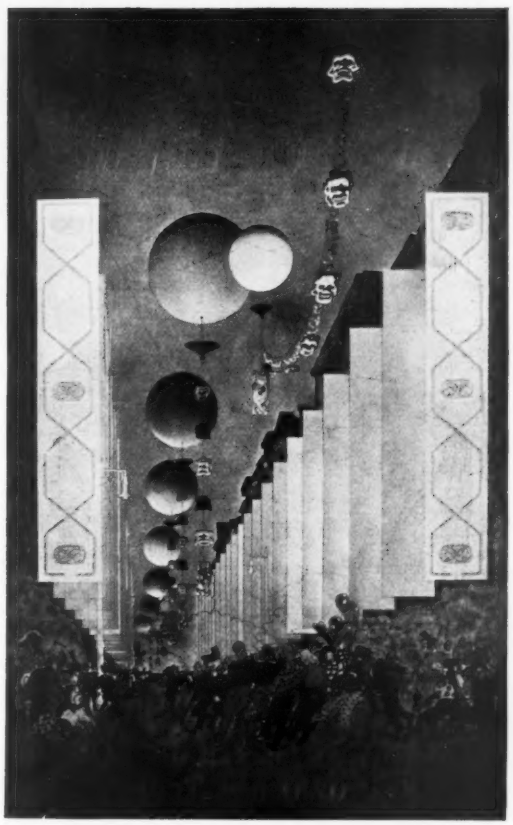
Left : day and night views of the design by Kadleigh and Penoyre, placed equal second.

FOR BOND STREET, W.: PREMIATED SCHEMES



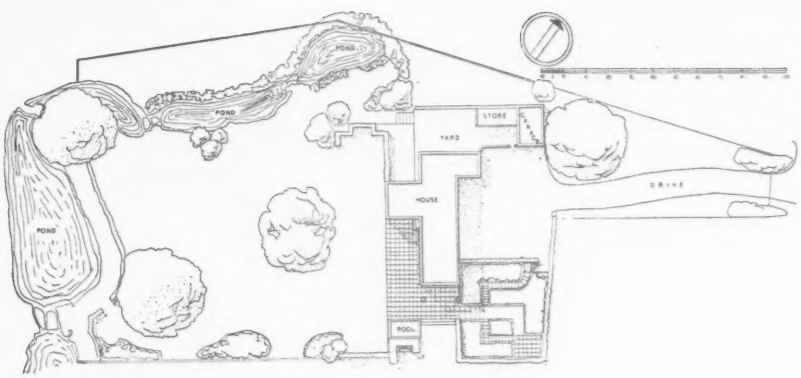
Above: night view of the winning scheme by Mrs. Richard Acland.





Right: day and night views of the design by ***Sturrock and Wheeler****, placed equal second.*

HOUSE AT STANMORE, MIDDLESEX:



SITE PLAN

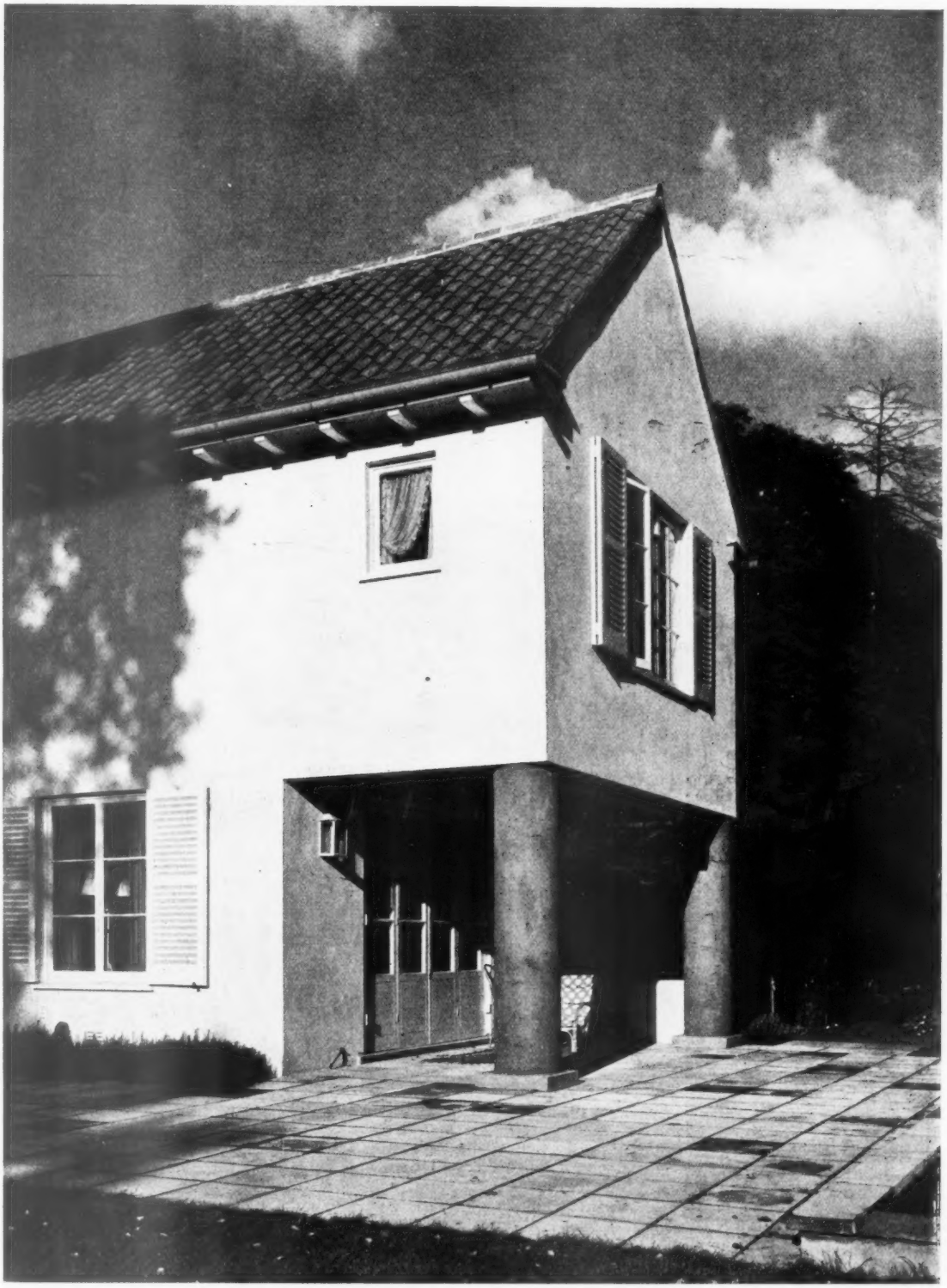
GENERAL PROBLEM—*The client desired that the house should have a pitched roof, and that the accommodation, as a whole, should give a sense of space and ease in planning, with provision for outdoor living. Freedom of plan was obtained by using continuous floors to support the first floor partitions independently of the ground floor cross walls. This resulted in the uniform width of the house, 17 ft.; and extra deep joists.*

SITE—*In Dennis Lane, Stanmore, on an old tennis court, with the garden sloping down on the S.W. side to an existing pond. Connections to the road sewer necessitated raising the house above the tennis court level.*

CONSTRUCTION—*Walls are 9 in. reinforced brickwork, rendered; internal walls are 4½ in. brick, and partitions are breeze. The window frames and shutters are of wood; the balcony is of wrot-iron. The roof is finished with red tiles.*

The photograph is of the south-west front.

RUSSELL PAGE AND G. A. JELLICOE, ASSOCIATED ARCHITECTS



The loggia, at the south-east end, with folding doors to the drawing-room. The columns are of rendered brick.

HOUSE AT STANMORE, MIDDLESEX:

PLAN—*The house has been planned to secure length and simplicity and to take advantage of views to south and south-west.*

INTERNAL FINISHES—*Walls of principal rooms are finished in a cream-coloured sandstone compound paint; those of the bathrooms and kitchen in gloss paint. Floors are: main rooms on ground floor, Victorian oak; bathroom and kitchen floors, tile.*

SERVICES—*Heating is by electric and coal fires; hot water from an independent boiler.*

CUBE PRICE—*1s. 4d. approximately.*

The photograph is taken from the south-east.

GROUND AND FIRST FLOOR PLANS

RUSSELL PAGE AND G. A. JELLICOE, ASSOCIATED ARCHITECTS

Bedroom No. 3, showing on the right the doors leading to the flat roof over the maids' bedroom on the north-east front.

HOUSE AT STANMORE, MIDDLESEX

RUSSELL PAGE AND G. A. JELLICOE, ASSOCIATED ARCHITECTS

The photographs show : above, the dining-room ; left, the drawing-room.

For list of general and sub-contractors see page 578.

IN THAT CONTINGENCY

The following abstracts of inquiries represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for general application to all similar problems. [Crown copyright reserved.]

Black Discoloration of Plywood Panelling

¶ AN architect desired information as to the causes of black patches which had appeared on oak-faced plywood panelling in two of the principal public rooms of a private hotel.

The following reply was furnished by the Forest Products Research Laboratory, Princes Risborough, Aylesbury, Bucks:

"With the steadily increasing use of plywood in interior decorating, this type of enquiry is frequently received at the Forest Products Research Laboratory. In practically every case there is no difficulty in establishing that the prime cause of the trouble is dampness. The plywood is fixed to a new wall of brick or other material by means of battens. In the case quoted, 2 ins. by 1 in. battens were used, and at the time of fixing it is stated that the masonry *appeared* to be quite dry, but such an appearance may be quite delusive unless there has been a prolonged period of drying assisted by fires or central heating. If appreciable moisture remains in the wall, some of it will diffuse towards the veneered face of the plywood panels fixed to the interior surfaces of the walls. The high moisture content favours the growth of moulds, especially in the glue line between veneer and core. In due course, black stains begin to appear on the surface veneer itself. The actual cause of the stain is at present unknown, but there are indications that it may be caused by the interaction of traces of iron in the glue and the tannins in woods like oak or else by the infiltration into the surface veneer of certain by-products of mould action on the glue. The immediate practical question is how can the above difficulty be overcome.

"It is suggested that before fixing plywood to new walls the latter should be given as long as is conveniently possible to dry out, preferably with the assistance of fires or radiators. As an additional precaution, it is suggested that the backs of panels be given a coating of waterproof paint. A few of such paints will readily suggest themselves, but research has shown that certain aluminium paints provide a very efficient moisture-proof coating on wood."

Distempering on New Plaster

¶ A CLERK of Works in charge of the erection of an important building reported that the decoration was unsatisfactory in spite of every precaution to ensure that the plastered surfaces were finished smooth and regular to receive distemper. When the distemper was applied and had dried the marks of the plasterer's trowel and fingers, previously invisible, became quite conspicuous, completely ruining the work. He stated that the plastering was executed in lime mortar throughout, and that an exceptionally long time had been allowed to elapse between plastering and decorating. The Building Research Station was asked to give an opinion as to the cause of the trouble and to say whether any surface treatment could be recommended which would prevent the marks showing.

Even slight variations of pressure applied to a plaster which has not entirely hardened may cause differences in the suction of the surface. Ungauged lime finishing coats take a considerable time to harden, and the risk of variable suction when this material is used is therefore greater than in the case of plasters which harden more rapidly. Slight inequalities in trowelling or the pressure of the hands of workmen or others may therefore result in patches of different suction which will affect the finished distemper. One or two coats of size may be sufficient to give uniform results, though a coat of one of the so-called "petrifying liquids" or of "sharp" paint may be more satisfactory. No impervious decoration should be applied, however, until the process of drying out has reached an advanced stage.

Cement Concrete Floor

¶ A FIRM of metal manufacturers had found that concrete floors in their factory usually cracked and "dusted" badly. They inquired whether information was available which would enable them to lay floors which would withstand hard wear and be free from dusting and cracking.

It may be said that one of the most suitable concrete floors is one which is topped with a very dense concrete finish containing granite chippings as an aggregate.

There have, however, been many cases of failure in this type of floor finish, due either to the formation of cracks in the granite concrete finish, or to dusting but these may be largely overcome if care is taken in the composition and laying of the flooring, and in this connection the following notes may be of assistance.

Sub-Floor. The sub-floor should be of good, dense concrete, of sufficient strength to withstand any settlement. When the concrete has hardened sufficiently to withstand the weight of a man, a steel wire broom should be used to remove the laitance and fine material from the surface of the slab, leaving the aggregate exposed. It is preferable to use a non-porous aggregate. A porous aggregate such as clinker may endanger the adhesion of the granite concrete finish due to excessive suction. This can be avoided by watering the base concrete before applying the finish, but there is a danger of over-watering, which may result in poor adhesion and in excessive shrinkage on drying.

Finish. The granite concrete finish may, if desired, be laid before the sub-floor has dried out, and may be done immediately after the process above mentioned has been completed. The following method should be observed. In order to form a strong layer to resist the stresses due to differential shrinkage between the finish and the sub-floor, it is necessary to apply a cement grout to the surface of the base concrete. This grout should be of 1 : 1 sand and cement, and should be brushed well into the roughened surface of the floor slab. If the base concrete has dried, it should be sprinkled (not flooded) with water before the grout is applied. A very thin layer of grout will suffice, and a thickness of $\frac{1}{16}$ in. should be aimed at. The granite concrete finish, 1 in. in thickness, should be laid before this grout has set (say, four hours after application of the grout). The granite concrete finish should be composed of 1 part of cement to $2\frac{1}{2}$ parts of granite chippings graded from $\frac{1}{4}$ in. down, with all dust removed. In this finish the minimum amount of water should be used that will allow the straight edge to be drawn across the surface without tearing. The surface may then be smoothed and consolidated with the trowel, some carborundum powder being sprinkled on in the finishing process if a non-slip surface is required. When the floor has hardened and dried somewhat, it should be given one or more coats of a solution of a suitable grade of sodium silicate. This gives a very much harder surface, and helps to prevent "dusting" where floors are subject to abrasion.

It is advisable to keep the floor covered with damp sacking or sawdust to prevent drying out until the concrete has attained a good strength.

It is assumed that the wearing conditions to which this floor is to be subjected will be normal, as, although the resistance of this type of flooring to abrasion and dusting is good, yet should either of these be anticipated in excess, a special type of finish would be required. It may be stated that the resistance to wear appears to be increased as the density of the concrete finish increases.

Effect of Creepers on Structures

¶ AN inquirer was desirous of improving the somewhat displeasing appearance of some large buildings and asked whether creepers trained on the walls would be likely to cause any deterioration of the masonry or have other harmful effects.

Ivy can cause serious damage to masonry. Its harmful effects occur most prominently in ancient masonry and it is possible that it is not seriously injurious to new and sound walls; but, because it depends for support on aerial roots which penetrate into fissures or open joints, it is a plant which, on the whole, should be avoided.

Judging from observations on buildings the common clinging Virginia creeper (Ampelopsis Veitchii) cannot be regarded as harmful, provided it is regularly cut back to prevent its reaching roof gutters and tiles. The suckers adhere very tenaciously, to such an extent indeed that when the

creeper is removed from a sound surface, many of the suckers remain adhering to the wall. From a friable surface fragments of stone may become detached, but this is hardly a serious objection to the creeper. There is something to be said for the view that the creeper may tend to restrict evaporation, but it may be said with equal force that in summer the leaves prevent rain from reaching the wall.

Another common creeper (Vitis quinquefolia) needs mechanical support, and some damage may be caused in providing it. This applies also to other climbing plants such as roses, honeysuckle and clematis, but should not necessarily preclude their use.

It appears then that harmful effects on the masonry are not to be expected from creepers other than ivy, provided attention is given to prevent choking of gutters, etc.

The Use of Black Mortar for Plastering

¶ *A BUILDER stated that he had experienced a great deal of trouble with the cracking of plastered ceilings, and was anxious that a thorough investigation should be made with a view to avoiding this in future work.*

He pointed out that although the use of black mortar which had been purchased ready mixed had been the suspected cause of the cracking, in some cases finished ceilings were perfectly sound. One instance was quoted where the ceilings of all rooms of a house had cracked badly, except in the kitchen. On the other hand there were occasions when all ceilings were satisfactory, with exceptional cases of failure. The undercoats were generally allowed to dry for about a fortnight before finishing.

An examination of the information furnished makes it clear that the finishing coats were applied to the undercoats before drying and shrinkage had reached a stage making the application safe.

Two points should be noted in regard to this. First, in cases where evaporation is more rapid than the flow of water to the surface, a false impression of absolute dryness may easily be obtained. Secondly, the greater part of the shrinkage of lime mortars takes place in the later stages of drying after the greater part of the moisture has been lost. It will be seen, therefore, that though an undercoat has reached such a stage in drying that it gives an appearance of complete dryness, it may still be too early for application of a further coat of plastering. It is agreed that the time allowed for drying of the undercoats, in this instance, would generally be considered adequate, but, as mentioned later, it appears that black mill mortars require an exceptionally long drying period.

The fact that in several instances there was no cracking in certain rooms in the houses is illuminating, for in each case there is a possible reason for better drying than usual, e.g. it is quite likely that the kitchens were used by the men for meals and these rooms would naturally be drier.

The advantage of black mill mortars over ordinary lime mortars (non-hydraulic) is that many coal clinkers have pozzolanic properties and produce a slow hydraulic set. There are, however, several difficulties inherent in the use of black mortars for plastering. The water content of the mortar will be high owing to the moisture held in the pores of the particles of clinker, so that a long drying period will be required for undercoats. Furthermore, as there may be an undue proportion of fine material the shrinkage will tend to be high. In addition, the properties of clinker will vary from batch to batch, for, being a waste product, no attention is paid to the maintenance of any standard of composition or properties. It must also not be overlooked that many batches of clinker may be devoid of pozzolanic properties and there is then nothing to give a true hydraulic hardening and produce sound keys on lathing.

When black mortar is made by operatives who have experience of the behaviour of the various kinds of clinker, and the dangers involved in the use of common ashes containing unburnt carbonaceous matter, its use can be justified, particularly in those districts where good sands are costly and difficult to obtain. Elsewhere the greater assurance of satisfaction when good sand is used will strongly favour the use of sand.

In the present instance it is recommended that lime-sand mortar gauged with gypsum plaster or Portland cement should be used for undercoats.

Alternatively, plaster boards might be considered. They should be $\frac{3}{8}$-in. thick, finished with one coat work in retarded plaster, and the joints covered with scrim.

TRADE NOTES

[*EDITED BY PHILIP SCHOLBERG*]

Collapsible Ladders

AN ingenious type of loft ladder, new to me, has been evolved by Stephens and Carter, and is shown, open and closed, in the line drawings at the foot of this page.

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The method of operation is ingenious but simple : the ordinary trap door is used and after the frame carrying the ladder has been fixed, only one hole in the ceiling is necessary to take the operating cord. When the cord is pulled the trap is raised and a further pull releases the ladder, which can then be lowered gently to the floor. The ladder extends on the lazy-tongs principle, and seems quite firm under test, while it folds into a compact unit only 12 ins. square.

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As the price is only £2 19s. 6d., and as fitting could not be simpler, it seems worth considering when extra storage space is needed in a small house.

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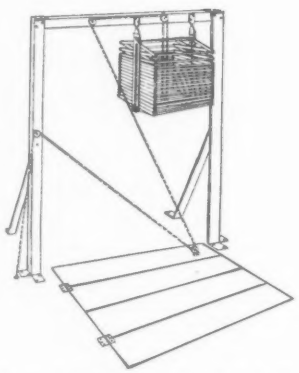
The same type of ladder can be used as a fire-escape, when it is fitted beneath the window cill, and can be instantly lowered, self-adjusting struts holding it away from the wall to give toe room. The standard 11-ft. ladder is £2 17s. 6d., further 2-ft. lengths costing 4s. 6d.



A new type of collapsible loft ladder evolved by Stephens & Carter. The ladder extends on the lazy-tongs principle, and is hung above the trap-door in the roof space on a 4 ft. high frame.

Facts About Plymax—

This is the title of a new booklet which Venestas have just published, running to nearly 70 pages about the size of this JOURNAL. It lives up well to its title, for it is concerned only with *facts* about Plymax, its physical properties, the sizes, weights, thicknesses and finishes in which it is obtainable, comparative costs, design data and methods of working, including the best ways of sealing unprotected edges.

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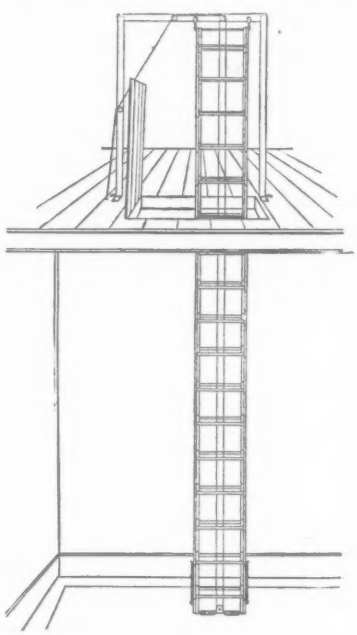
It is, in fact, an excellent example of the sort of thing that the more intelligent manufacturers are doing nowadays, fortunately in increasing numbers. And as such



it is in marked contrast to another booklet I remember only too well: this last spent nearly as many pages as the Venesta one in explaining that its particular product didn't look *nearly* as unpleasant as it used to, "put across" in a series of utterly improbable conversations between an alert Anzora-like salesman and a middle-aged architect with a face like an uncooked muffin. Cannot manufacturers realize that a useful reference book will be kept and *used*, while the "best in the world" unsurpassed for whatever it is nonsense will leave behind only a faint nausea in its rapid journey to the rubbish bin?

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From the Venesta booklet I have extracted a typical dressing cubicle, originally evolved by Mr. M. W. Lashmar for Sittingbourne baths, but of course equally applicable to other types of job. The table of comparative costs for partitions also seems useful, and these two examples are typical of the whole book, which keeps to facts and says only what is necessary.

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Just what architects want from everybody, but get from about one manufacturer in ten.

—and Glass

Much the same bouquet may be handed to Pilkingtons, who have been as intelligent as Venestas, but about Armourplate and Toughened glass generally. Weights, sizes, thicknesses, what *can* be done and what cannot and why.

Sewage Distribution

For sewage distribution the one essential need is reliability, and it seems to me that Messrs. Jones and Attwood have taken a great deal of trouble to secure it, for they have been doing the same job for thirty years or so and have discovered how to do it economically and efficiently.

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The distributor orifices, for instance, are 2½ ins. by 1¼ in. slots instead of the usual ½ in. circular hole, thereby reducing the possibility of choking and its resultant poor distribution. The firm has now introduced a new "Tractum" drive in which there is a caterpillar chain drive which gives a positive drive from the unprepared surface of the wall or filter, no rail track being necessary.

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The water-wheel is brass, and the distributor is made in all sizes from 20 to 120 ft. diameter. This particular type is intended for small villages or large institutions, but the firm makes other types suitable for all purposes.

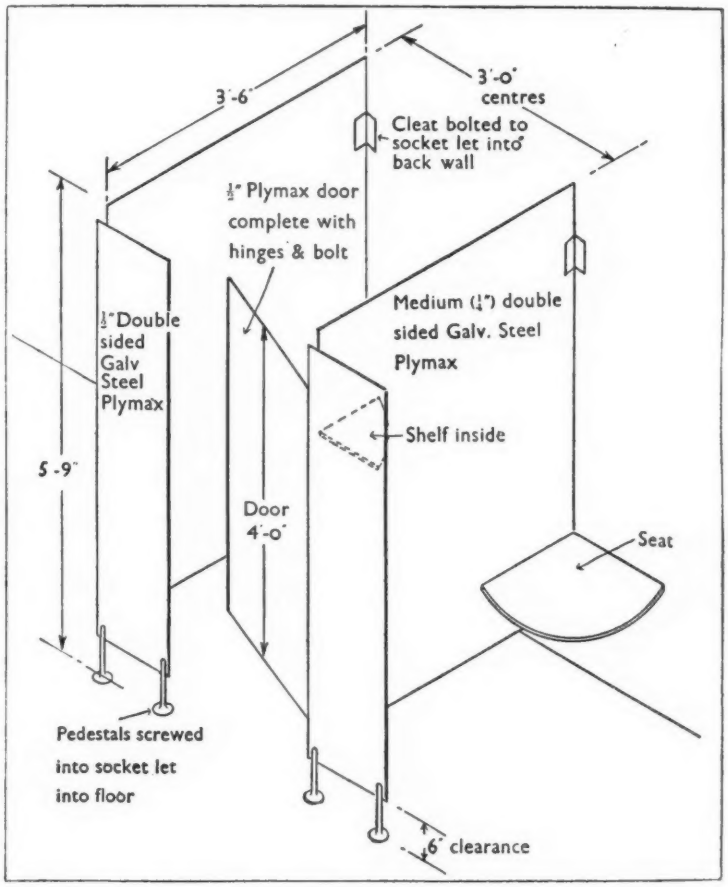
Addresses:

Stephens and Carter, Green Street, Paddington Green, W.

Venesta, Ltd., Vintry House, Queen Street Place, E.C.4.

Pilkington Bros., Ltd., St. Helens, Lancs.

Jones and Attwood, Ltd., Stourbridge.



A collapsible cubicle in Plymax, designed by M. W. Lashmar. From the Venesta booklet reviewed on this page.

COMPARATIVE COSTS

Lavatory partitions, 6 ft. by 5 ft., built 6 in. off the floor: including cost of materials, erection and builders' profit of 5 per cent. :—

		Approximate price per sq. yard of partition material	Approximate price per sq. yard of finished partition
1 (*a*)	Medium ¼ in. Plymax, unpainted ..	10/–	30/4
(*b*)	„ painted both sides 3 coats	14/–	26/2
(*c*)	„ Cellulosed both sides	27/6	39/8
2	Glazed brick, glazed both sides	43/10	49/6
3	Glazed tiles (p.c. 12/– per square yard supplied) on both sides 2 ins. breeze ..	38/–	48/7
4 (*a*)	Breeze block partition	3/–	8/–
(*b*)	„ plastered both sides	8/–	13/3
(*c*)	plastered and painted 3 coats ..	12/–	18/–
5 (*a*)	1¼ in. Matchboarding	6/–	13/6
(*b*)	„ „ painted 4 coats ..	11/6	20/6
6	1 in. White Sicilian marble sheets ..	70/–	85/–
7.	1 in. Enamelled Slate	62/–	73/–
8	Teak panelling, oiled	36/–	50/–
9	Hollow sheet metal partitions, unpainted	—	20/–
10	Hollow sheet metal, wood filled, unpainted	—	63/–
11	¼ in. Opaque glass, black, polished both sides	57/6	72/–

LAW REPORT

BUILDING SOCIETY'S MORTGAGES—TERMS OF REDEMPTION

Hayes Bridge Estate, Ltd. v. *Portman Building Society.—Chancery Division. Before Mr. Justice Clauson*

IN this action the Hayes Bridge Estate, Ltd., sued the Portman Building Society for a declaration that they were entitled to redeem mortgages of October, 1932, and January, 1933, together with two collateral charges of the same dates, without their being subject to consolidation with any other security.

The issue was a legal one, and the facts are fully given in his lordship's judgment.

His lordship said in 1931 the plaintiffs were developing a building estate at Hayes, Middlesex, and they arranged that the defendants should provide the finance. What was intended, was that the defendants should provide moneys on standing mortgage. Here the transaction took the form of treating the plaintiffs as being ordinary members of a society, and mortgages were executed in the usual form of building society mortgage. It appeared that what was contemplated, was that the advances should be made with reference to particular plots of building land on which the houses were to be built, and that the purchasers would be brought in upon the houses being sold. When this had been done, it was contemplated that the particular houses should be released from the defendants' charge, so that the purchaser should have a clear title. In the document, however, he found no reference to any arrangement of that kind. In this case the trouble arose over houses mortgaged in 1932 and 1933. There had been a series of mortgages. For the plaintiffs, it was argued that they were entitled to redeem the mortgages of 1932 and 1933, without regard to the other mortgages that had been granted. For the defendants, it was contended that the plaintiffs had not the right they now claimed. Proceeding, his lordship said the case rested upon the documents, and in his view they were not very apt to meet the situation. The plaintiffs claimed to be released of two collateral charges, under a rule and section of the Building Societies Act, but in his opinion they failed in their contention.

Now he had to consider the position upon the face of the documents themselves. The mortgagor was treated as L.T. Ltd., an advance in respect of shares in the Society to whom the property was conveyed in the usual way. Until the whole of the money with interest was paid by monthly instalments or the security was redeemed under the rules, the mortgagor covenanted to pay sums calculated to repay the principal and interest. Further, there was also a consolidation clause in both mortgages. In his view he had to read these mortgages together with the agreement to release as sold, upon payment of the sum of £400 per house. He did not think that there was here anything which contradicted the provision for consolidation. The point for the Court was the right to redeem the legal charge given by way of collateral security in support of the mortgages. The mortgages contained a provision which said that all the powers of the principal mortgage should apply to the property charged. It followed that the provision against redeeming the mortgaged property without redeeming other charges must be treated as being in it also.

The result was that the plaintiffs succeeded in the action to the extent that there would be a declaration that they were entitled to the release of one house under the October mortgage and six under the January mortgage upon the payment of £400 per house. He also granted a declaration that the plaintiffs were not entitled to have a release or reconveyance of the legal charges of October or January without at the same time redeeming a third block of mortgages held by the defendants. He directed an inquiry as to the loss, if any, the plaintiffs had sustained, at the risk of the plaintiffs, and he ordered plaintiffs to pay half the defendants' costs.

Manufacturers' Items

The Rugby Portland Cement Co., Ltd., notify us that their head office address is: Crown House, Rugby, and that their telephone number has been altered to Rugby 2233 (10 lines). The company's works are situated at New Bilton, Rugby; Southam, near Rugby; and Halling, near Rochester.

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A new factory at Shieldhall is to be built by Gyproc Products, Ltd., and a start is to be made within the next week or two. The cost to build and equip it with plant and machinery is likely to be between £80,000 and £100,000, and, if successful, the factory may be doubled in size within the first year.

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The Scottish office of the company will be in Glasgow, where sales of all products from the new works will be controlled by a Scottish sales organization, with Mr. J. K. Paterson, of the Scottish Speedwell Co., Ltd., acting in an advisory capacity.

BUILDINGS ILLUSTRATED

TUBERCULOSIS HOSPITAL AT SULLY, NEAR CARDIFF (pages 555-560). The general contractors were Messrs. E. D. Winn & Co., Ltd. Amongst the subcontractors and craftsmen were the following: H. N. Barnes, Ltd., metal architraves; Beer and Warren, plumbing; Best and Lloyd, Ltd., external light fittings; Bratt Colbran & Co., Ltd., sunk fires and gas fires; R. W. Brooke & Co., Ltd., wood block floors; Caxton Floors, Ltd., fireproof floors, flat roofs and stairs; Cellactite and British Uralite Co., Ltd., Cellactite roofing; Cork Insulation Co., Ltd., insulation to mortuary; Dawnays, Ltd., constructional steelwork; Diespeker & Co., Ltd., terrazzo flooring and skirtings; Empire Stone Co., Ltd., cast concrete lamp-posts; Ferranti, Ltd., electric fires; Thomas Foster and Son, Ltd., "Vitunda" stair nosings; George Farmiloe and Son, Ltd., glass dome lights; James Gibbons, Ltd., ironmongery, balustrading, mortuary racks, instrument cupboards, sterilizing hood, etc.; Hallett Flooring Co., floor tiling; Haskins, rolling shutters; P. C. Henderson, Ltd., sliding door gear; Hitchins Flush Woodwork, Ltd., flush doors and cupboard doors; James Howell & Co., Ltd., cork carpets and linoleum, chairs designed by the architects, and standard articles of furniture and furnishing, also ward bedside lockers, designed by the architects in collaboration with the doctors; Leeds Fireclay Co., Ltd., sanitary fittings; Leyland and Birmingham Rubber Co., Ltd., rubber flooring; Mellowes & Co., Ltd., metal roof and lantern lights, greenhouse; Permanite, Ltd., Permanite roofing; W. B. Simpson and Sons, Ltd., wall tiling; Topping and Leggat, main chimney shaft; John Williams and Sons (Cardiff), Ltd., metal windows, operating theatre window, patent glazing, metal screens, cast-iron rainwater heads, iron staircases and balustrading, wrought iron balcony and other general ironwork; J. G. Proger and Sons, Ltd., cold water, domestic hot water, heating, steam and condensing and gas installations; T. Clarke & Co., main low tension switch board; Keighley Electrical Engineering Co., Ltd., electric cages and lifts; J. and E. Hall, Ltd., refrigerating plant with cold storage rooms; McWhirter and Sons, Ltd., ward refrigerating cabinets; Grant Engineering Co., laundry equipment; Brightside Foundry and Engineering Co., Ltd., kitchen equipment and steam sterilizing equipment; Telephone Rentals (South Wales), Ltd., internal telephone system; Brynmawr and Cludach Valley Industries, chairs, bookcases, etc., designed by the architects; Hoskins and Sewell, Ltd., beds designed by the architects; Waring and Gillow, Ltd., chairs and settees; David Morgan, Ltd., chairs and standard articles of furniture and furnishing; Silverdale Manufacturing Co., ward bedside lockers designed by the architects in collaboration with the doctors; White Wilson & Co., Ltd., tables, chests, etc.

ALTERATION AT 32 HOCROFT ROAD (pages 561–562). General contractors: J. Kinnimont. Sub-contractors: Williams and Williams, metal windows; Paragon Glazing Co., skylight; James Combe and Son, Ltd., heating; Oscar Canter, door handles.

THE GARDEN HOUSE, STANMORE (pages 570–574). General contractors were H. Kentish and Son. Sub-contractors include: Atlas Stone Co., artificial stone; Roberts, Adlard & Co., slates; Wm. Mallinson and Sons, flooring and joinery; Cellulin "Lintile" Flooring Co., Ltd., patent flooring; Gas Light and Coke Co., gas fixtures and fittings; Ideal Boilers and Radiators, Ltd., boilers; Chance Brothers & Co., Ltd., glass; Ferranti, Ltd., electric fires; Shanks & Co., Ltd., sanitary fittings, bathroom cabinets; Dryad Metal Works, door furniture; Comyn Ching, window furniture; Adam, Ltd., sunblinds; Cement Marketing Co., Ltd., plaster "Cullamix" external rendering; Walpamur Co., Ltd., decorative plaster; Palmer & Co., Ltd., metal work; Austin Veneer and Panel Co., Ltd., joinery; Betty Joel, Ltd., joinery; Peerless Kitchen Cabinets, joinery; Duncan Tucker, Ltd., joinery; Fortnum and Mason, textiles, furniture; Sherards Studion, garden furniture and sculpture; T. Hilling & Co., shrubs and trees.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 Miles Radius)

EPSOM. *School.* The Board of Education has approved plans for the erection of new buildings for the Epsom County School for boys, estimated to cost £48,385, by the Surrey C.C.

FULHAM. *Public baths.* Fulham B.C. now recommends the tender of Messrs. Moss and Sons, Ltd., £56,342 2s. 5d. for the reconstruction of the public baths.

HARROW. *Welfare Centres.* The U.D.C. has purchased sites in Honeypot Lane and near Kenmore Park Estate for the proposed erection of welfare centres.

HARROW. *Houses.* In connection with the erection of houses in the district, the U.D.C. has now accepted the following tenders: P. Gallacher for 68 houses on the Berridge Estate, £27,514: H. Brown, 48 houses on the Glebe Estate, £18,440 5s.: and P. Gallacher, 18 bungalows at King's Road, South Harrow, £3,980; Mr. R. Phillips, 16 firemen's cottages at Pinner Road, £6,633: Messrs. Duncan Tucker (Tottenham), Ltd., for plant nursery at Cannon Lane, £4,432.

ISLINGTON. *Dwellings.* Islington B.C. recommends the tender of Messrs. E. S. Moss, Ltd., £24,600, for the erection of dwellings at Crouch Hill.

KNAPHILL. *Rebuilding.* The Council Schools are to be rebuilt by the Surrey C.C. at an estimated cost of £21,794.

MIDDLESEX. *Extensions.* Middlesex Education Committee has purchased land at a cost of £25,100 for extensions at the Hendon technical institute and the provision of playing fields.

MIDDLESEX. *Schools.* Middlesex Education Committee has obtained sanction to borrow sums of £31,845 for the erection of a school at Wealdstone and £28,826 for a school at Stanmore.

ROMFORD. *Isolation Hospital.* Romford Joint Hospital Board is to extend the isolation hospital at a cost of £27,233.

WESTMINSTER. *Flats.* Westminster City Council is to acquire a site in Glasgow Terrace capable of providing between 300 and 400 flats and possibly even more.

SOUTHERN COUNTIES

BRIGHTON. *A Home.* Brighton Corporation has approved plans submitted by Sir John Burnet, Tait and Lorne for a home to be erected for St. Dunstan's at Greenways, Ovingdean.

COOKHAM. *Houses and bungalows.* The R.D.C., who are to erect 18 cottages and bungalows at Cookham Rise, has accepted the tender of Messrs. J. W. Slatter and Son of Maidenhead, at £5,596.

EASTBOURNE. *Extensions.* Eastbourne Corporation is seeking sanction to borrow £54,000 for extensions at the town hall.

EASTBOURNE. *Houses.* Eastbourne Corporation recommends the tender, £12,491 18s. 9d., of Messrs. Eames and Calverley for the erection of 34 houses at Lottbridge Drive.

EASTBOURNE. *Extensions.* Eastbourne Corporation has approved revised plans for alterations and extensions at the poor law institution at a cost of £15,300.

GORING. *Flats, etc.* Mr. A. T. W. Goldsmith, architect, on behalf of Messrs. High and Sons, is to erect a block of 16 flats of two stories in height, a caretaker's cottage and lock-up garages on land forming part of the old vicarage site at Goring, Sussex.

GUILDFORD. *Houses.* Owing to a previously accepted tender having been withdrawn, the Town Council has now accepted that of W. A. Harding, Ltd., at £52,892.

GUILDFORD. *Estate Development.* Negotiations are preceeding between the Council and Messrs. Osenton and Co., Surveyors, etc., of 137A High Street, Epsom (Acting on behalf of Mr. A. B. Johnston) in connection with the proposed development of the Tilehouse Farm Estate, where it is proposed to erect between 600 and 700 houses.

HASTINGS. *Houses.* Hastings Corporation has approved plans by the borough engineer for the erection of 52 houses at Broomgrove, at a cost of £16,640.

HASTINGS. *Houses, etc.* Plans passed by Hastings Corporation: Four houses, Parker Road, Mr. Reeks; motor stores and flat, Braybrooke Road, Messrs. J. Hollingsworth, Ltd.: block of flats and shops, Tivoli Estate, Battle Road, St. Leonards, Messrs. Fryer and Sons.

ISLE OF WIGHT. *County Offices.* Isle of Wight C.C. has accepted the following tenders for the erection of new County offices: Messrs. H. Stevens & Co., Ltd., building, £33,675; Messrs. E. C. and J. Keay, Ltd., steelwork, £5,074 8s. 6d.; Messrs. G. N. Haden and Sons, Ltd., heating, etc., £3,885: Messrs. Diespeker & Co., Ltd., concrete, £5,803 8s. 9d.: Messrs. Grierson, Ltd., electrical equipment, £2,310.

MAIDENHEAD. *Fire Station.* The T.C. has now accepted the tender of Messrs. Creed & Co., for the erection of the proposed fire and ambulance station of the Wilderness site. The contract price is £3,749.

READING. *Abattoir.* A report and plans have now been submitted to the Estates Committee by Mr. J. Castley, L.R.I.B.A., of the Abattoir proposed to be erected by the T.C. The estimated cost of the scheme is £62,750.

WALTON-ON-THAMES. *School.* The Surrey C.C. are to erect a new Central School at a cost of £19,856, and are also to convert the existing mixed Central School at a cost of £3,340.

WORTHING. *Flats.* At Worthing Corporation the borough engineer submitted preliminary plans from Mr. A. T. W. Goldsmith, Architect, on behalf of Mr. L. W. Macer, for the erection of a block of 40 flats of 4 stories in height, a caretaker's cottage and lock-up garages on the site at the corner of Brighton Road and Seamill Park Avenue. The plans were disapproved and the applicant is to be informed that the Council is prepared to permit the erection of a block of not more than 24 flats.

SOUTH-WESTERN COUNTIES

CHELTENHAM. *Houses.* Cheltenham Corporation has instructed the borough surveyor to proceed with the plans and completion of the layout of the Whaddon Farm Estate to provide for 100 houses, and to negotiate for the acquisition of a suitable site or sites for the erection of 188 houses, and obtain tenders for the erection of the 288 houses on the Whaddon Farm Estate.

CHELTENHAM. *Houses.* Plans passed by Cheltenham Corporation: Five houses, Hatherley Road, Messrs. Rogers and Davies; nine houses, Alstone Croft, Mr. E. T. Stinchcombe; motor generating house, Ormond Place, Regent Motors; eight houses, Brooklyn Road, Mr. E. W. Cook; cinema, High Street, Mr. A. Walters; four houses, off Corndean Lane, Winchcomb, Mr. P. Drummond.

HEREFORD. *Church.* Hereford Corporation has leased a site on the Hinton Court Estate to the Baptist Church Trustees, for the erection of a church.

HEREFORD. *Flats.* Hereford Corporation has approved plans by Messrs. Nicholson and Scriven for the erection of 16 flats at the clearance area.

HEREFORD. *Schools.* Hereford Education Committee recommends the tender of Messrs. Jas. Hiles and Son, £21,897, for the erection of the school at Hinton Court.

HEREFORD. *Housing Scheme.* Hereford Corporation has purchased 35½ acres at Broad Meadow for a housing scheme.

SWINDON. *Public Library, etc.* Swindon Corporation has considered as to the use of the existing town hall and the site for the extension of that building on the completion of the new municipal offices and recommends that the ground floor of the building be reserved for the accommodation of the museum, and that the borough surveyor proceed with the preparation of a draft scheme for extending the existing building ultimately to provide accommodation for a museum, an art gallery, a public library and assembly halls with the requisite appurtenant accommodation.

EASTERN COUNTIES

ESSEX. *County High School.* Essex Education Committee has approved plans for the erection of a county high school at Chingford at a cost of £43,100.

ESSEX. *Hospital.* Essex C.C. has purchased a site of 48 acres on the Purfleet-Tilbury Arterial Road, near Chadwell St. Mary, for the erection of a hospital of 500 beds.

ESSEX. *Council Senior School.* Essex Education Committee has obtained part of the Broomfield Hall Farm for a site for the Broomfield proposed council senior school.

HERTS. *Extensions.* Herts. C.C. is to enlarge the Barnet Isolation Hospital at a cost of £28,410.

IPSWICH. *School.* Ipswich Education Committee has obtained sanction to borrow £20,096 for the erection of a school on the Stoke site.

MIDLAND COUNTIES

LEICESTER. *School.* Leicester Education Committee is to erect a senior girls' school on the Tailby estate at a cost of £25,314.

MARKET HARBOROUGH. *Houses.* Plans passed by Market Harborough U.D.C.: 16 houses King's Road to Roman Way, Messrs. G. Jarman and Sons.

NOTTINGHAM. *Elementary School.* Nottingham Education Committee is to erect an elementary school at Mapperley at a cost of £19,933.

NORTHERN COUNTIES

BARROW-IN-FURNESS. *Extensions.* Barrow-in-Furness Corporation is to prepare revised plans for extensions at Devonshire Road Hospital.

BARROW-IN-FURNESS. *Flats.* Barrow-in-Furness Corporation has asked the borough engineer to prepare plans for the erection of 100 flats in Salthouse Road.

BARROW. *Houses.* Plans passed by Barrow-in-Furness Corporation: 18 houses Gantley Road, for Mr. A. Peet; six houses, Rating Lane, for Messrs. J. Whittaker, Ltd.

BIRKENHEAD. *Houses.* Messrs. Brown and Saunders are to erect 69 houses on the Woodcote Estate, Old Chester Road, Birkenhead.

BLACKPOOL. *Practical Block.* Blackpool Education Committee is seeking sanction to borrow £15,252, for the erection of a practical block at Tyldesley School.

BLACKPOOL. *Houses.* Plans passed by Blackpoo Corporation: 20 houses, Whinney Heys Lane, etc., Mr. W. H. Airey; six houses, Bideford Avenue, Messrs. J. Bain & Co.; six houses, Kingscote Drive, Mr. V. Hague; nine houses, Fleetwood Road and North Drive, Mr. A. A. Holt; 32 houses, Drakelowe Avenue, etc., Messrs. Staunton & Co.; 109 houses, Holyoake Avenue, etc., Messrs. R. Fielding & Son.

BLACKPOOL. *Houses.* Blackpool Corporation is to erect 250 houses for purposes of slum clearance.

BOLTON. *Houses.* Bolton Corporation is to erect 196 houses on the Hulton Lane site.

FLAXTON. *Houses.* Plans passed by Flaxton R.D.C.: Five houses, Rawcliffe Lane, for Mr. W. E. Metcalfe; eight houses, Osbaldwick Lane, for Mr. G. W. Smith; two houses, Stockton Lane, for Mr. W. Stoker.

LANCASHIRE. *School.* Lancashire Education Committee has obtained sanction to borrow £25,893 for the erection of an elementary school at Ormskirk.

WARRINGTON. *Building site.* Warrington Corporation has leased a building site in Horsemarket Street to Messrs. Montague Burton, Ltd.

WARRINGTON. *Abattoir.* Warrington Corporation is to discuss the proposal for the provision of an abattoir.

RATES OF WAGES

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

			I s. d.	II s. d.
A_1	ABERDARE ...	S. Wales & M.	1 5½	1 1½
A	Aberdeen ...	Scotland	1 6½	1 2
A_1	Abergavenny ...	S. Wales & M.	1 6	1 1½
A_2	Abingdon ...	S. Counties	1 5	1 0¾
A	Accrington ...	N.W. Counties	1 6½	1 2
A_2	Addlestone ...	S. Counties	1 5	1 0¾
A	Adlington ...	N.W. Counties	1 6½	1 2
A	Airdrie ...	Scotland	*1 6½	1 2
C	Aldeburgh ...	E. Counties	1 2½	11
A	Altrincham ...	N.W. Counties	1 6½	1 2
B_2	Appleby ...	N.W. Counties	1 3	11½
A	Ashton-under-Lyne	N.W. Counties	1 6½	1 2
B_1	Aylesbury ...	S. Counties	1 4	1 0
B_1	BANBURY ...	S. Counties	1 4	1 0
B_1	Bangor ...	N.W. Counties	1 4	1 0
A_2	Barnard Castle	N.E. Coast	1 5	1 0¾
A	Barnsley ...	Yorkshire	1 6½	1 2
B	Barnstaple ...	S.W. Counties	1 4½	1 0½
A	Barrow ...	N.W. Counties	1 6½	1 2
A	Barry	S. Wales & M.	1 6½	1 2
B_1	Basingstoke ...	S.W. Counties	1 4	1 0
A_2	Bath	S.W. Counties	1 5½	1 1¼
A	Batley ...	Yorkshire	1 6½	1 2
A_2	Bedford ...	E. Counties	1 5½	1 1¼
A_2	Berwick-on-Tweed	N.E. Coast	1 5½	1 1¼
A_2	Bewdley ...	Mid. Counties	1 5½	1 1¼
B_2	Bicester ...	S. Counties	1 3	11½
	Birkenhead ...	N.W. Counties	*1 7½	1 2¾
A	Birmingham ...	Mid. Counties	1 6½	1 2
A_1	Bishop Auckland	N.E. Coast	1 6	1 1½
A	Blackburn ...	N.W. Counties	1 6½	1 2
A	Blackpool ...	N.W. Counties	1 6½	1 2
A	Blyth	N.E. Coast	1 6½	1 [illegible]
B_1	Bognor ...	S. Counties	1 4	1 0
A	Bolton ...	N.W. Counties	1 6½	1 2
A_2	Boston ...	Mid. Counties	1 5	1 0¾
A_2	Bournemouth...	S. Counties	1 5½	1 1¼
B_2	Bovey Tracey	S.W. Counties	1 3½	11¾
A	Bradford ...	Yorkshire	1 6½	1 2
A_1	Brentwood ...	E. Counties	1 6	1 1½
A	Bridgend ...	S. Wales & M.	1 6½	1 2
B	Bridgwater ...	S.W. Counties	1 4½	1 0½
A_1	Bridlington ...	Yorkshire	1 6	1 1½
A	Brighouse ...	Yorkshire	1 6½	1 2
A_2	Brighton ...	S. Counties	1 5½	1 1¼
A	Bristol ...	S.W. Counties	1 6½	1 2
B	Brixham ...	S.W. Counties	1 3½	11¾
A	Bromsgrove ...	Mid. Counties	1 5½	1 1¼
B	Bromyard ...	Mid. Counties	1 3	11½
A	Burnley ...	N.W. Counties	1 6½	1 2
A	Burslem ...	Mid. Counties	1 6½	1 2
A	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury	N.W. Counties	1 6½	1 2
A	Buxton ...	N.W. Counties	1 6	1 1½
A_1	CAMBRIDGE...	E. Counties	1 6	1 1½
B_1	Canterbury ...	S. Counties	1 4	1 0
A	Cardiff ...	S. Wales & M.	1 6½	1 2
A	Carlisle ...	N.W. Counties	1 6½	1 2
B	Carmarthen ...	S. Wales & M.	1 4½	1 0½
B	Carnarvon ...	N.W. Counties	1 4½	1 0½
A	Carnforth ...	N.W. Counties	1 6½	1 2
A	Castleford ...	Yorkshire	1 6½	1 2
A_2	Chatham ...	S. Counties	1 5	1 0¾
A	Chelmsford ...	E. Counties	1 5	1 0¾
A	Cheltenham ...	S.W. Counties	1 5	1 0¾
A	Chester ...	N.W. Counties	1 6½	1 2
A	Chesterfield ...	Mid. Counties	1 6½	1 2
B_1	Chichester ...	S. Counties	1 4	1 0
A	Chorley ...	N.W. Counties	1 6½	1 2
B_1	Cirencester ...	S. Counties	1 4	1 0
A_1	Clitheroe ...	N.W. Counties	1 6½	1 2
A	Clydebank ...	Scotland	1 6½	1 2
A	Coalville ...	Mid. Counties	1 6½	1 2
A_2	Colchester ...	E. Counties	1 5½	1 1¼
A	Colne	N.W. Counties	1 6	1 1½
A_2	Colwyn Bay ...	N.W. Counties	1 5½	1 1¼
A_1	Consett ...	N.E. Coast	1 6	1 1½
A_2	Conway ...	N.W. Counties	1 5½	1 1¼
A	Coventry ...	Mid. Counties	1 6½	1 2
A_2	Crewe	N.W. Counties	1 5½	1 1¼
A	Cumberland ...	N.W. Counties	1 5	1 0¾
A	DARLINGTON ...	N.E. Coast	1 6½	1 2
A	Darwen ...	N.W. Counties	1 6½	1 2
B	Deal	S. Counties	1 4	1 0
A_2	Denbigh ...	N.W. Counties	1 5	1 0¾
A	Derby	Mid. Counties	1 6½	1 2
A	Dewsbury ...	Yorkshire	1 6½	1 2
B	Didcot ...	S. Counties	1 4½	1 0½
A	Doncaster ...	Yorkshire	1 6½	1 2
B_1	Dorchester ...	S.W. Counties	1 4	1 0
A	Driffield ...	Yorkshire	1 5	1 0¾
A_2	Droitwich ...	Mid. Counties	1 5½	1 1¼
A	Dudley ...	Mid. Counties	1 6½	1 2
A_2	Dumfries ...	Scotland	1 6	1 1½
A	Dundee ...	Scotland	1 6½	1 2
A	Durham ...	N.E. Coast	1 6½	1 2
A_2	EASTBOURNE ...	S. Counties	1 5½	1 1¼
A_1	Ebbw Vale ...	S. Wales & M.	1 6	1 1½
A	Edinburgh ...	Scotland	1 6½	1 2
A_2	Exeter ...	S.W. Counties	*1 5½	1 1¼
B	Exmouth ...	S.W. Counties	1 4½	1 0½
A_2	FELIXSTOWE ...	E. Counties	1 5	1 0¾
A	Filey	Yorkshire	1 5	1 0¾
A	Fleetwood ...	N.W. Counties	1 6½	1 2
B_1	Folkestone ...	S. Counties	1 4	1 0
A	Frodsham ...	N.W. Counties	1 6½	1 2
B_2	Frome	S.W. Counties	1 3½	11¾
A	GATESHEAD ...	N.E. Coast	1 6½	1 2
B	Gillingham ...	S. Counties	1 4½	1 0½
A_1	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6	1 1½
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 5½	1 1¼
A_2	Goole	Yorkshire	1 5½	1 1¼
A_2	Gosport ...	S. Counties	1 5½	1 1¼
A_2	Grantham ...	Mid. Counties	1 5	1 0¾
A_1	Gravesend ...	S. Counties	1 6	1 1½
A	Greenock ...	Scotland	*1 6½	1 2
A	Grimsby ...	Mid. Counties	1 6½	1 2
B	Guildford ...	S. Counties	1 4½	1 0½
A	HALIFAX ...	Yorkshire	1 6½	1 2
A	Hanley ...	Mid. Counties	1 6½	1 2
A	Harrogate ...	Yorkshire	1 6½	1 2
A	Hartlepools ...	N.E. Coast	1 6½	1 2
B	Harwich ...	E. Counties	1 4½	1 0½
B_1	Hastings ...	S. Counties	1 4	1 0
A_2	Hatfield ...	S. Counties	1 5½	1 1¼
B	Hereford ...	S.W. Counties	1 4½	1 0½
A_2	Hertford ...	E. Counties	1 5½	1 1¼
A	Heysham ...	N.W. Counties	1 6½	1 2
A	Howden ...	N.E. Coast	1 6½	1 2
A	Huddersfield ...	Yorkshire	1 6½	1 2
A	Hull	Yorkshire	1 6½	1 2
A	ILKLEY ...	Yorkshire	1 6½	1 2
A	Immingham ...	Mid. Counties	1 6½	1 2
A	Ipswich ...	E. Counties	1 5½	1 1¼
B_2	Isle of Wight ...	S. Counties	1 4½	1 0½
A	JARROW ...	N.E. Coast	1 6½	1 2
*A	KEIGHLEY ...	Yorkshire	1 6½	1 2
A_2	Kendal ...	N.W. Counties	1 5	1 0¾
A_2	Keswick ...	N.W. Counties	1 5	1 0¾
A_1	Kettering ...	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 5½	1 1¼
B_1	King's Lynn ...	E. Counties	1 4	1 0
A	LANCASTER ...	N.W. Counties	1 6½	1 2
A_1	Leamington ...	Mid. Counties	1 6	1 1½
A	Leeds	Yorkshire	1 6½	1 2
A	Leek	Mid. Counties	1 6½	1 2
A	Leicester ...	Mid. Counties	1 6½	1 2
A	Leigh	N.W. Counties	1 6½	1 2
B	Lewes	S. Counties	1 3	11½
A_2	Lichfield ...	Mid. Counties	1 5½	1 1¼
A	Lincoln ...	Mid. Counties	1 6½	1 2
	Liverpool ...	N.W. Counties	*1 8	1 3
A_2	Llandudno ...	N.W. Counties	1 5½	1 1¼
A	Llanelly ...	S. Wales & M.	1 6½	1 2
	London (12-miles radius)		1 8	1 3
	Do. (12-15 miles radius)		1 7½	1 2¾
A	Long Eaton ...	Mid. Counties	1 6½	1 2
A	Loughborough ...	Mid. Counties	1 6½	1 2
A_1	Luton	E. Counties	1 6	1 1½
A	Lytham ...	N.W. Counties	1 6½	1 2
A_1	MACCLESFIELD	N.W. Counties	1 6	1 1½
A	Maidstone ...	S. Counties	1 5	1 0¾
A_3	Malvern ...	Mid. Counties	1 5	1 0¾
A	Manchester ...	N.W. Counties	1 6½	1 2
A	Mansfield ...	Mid. Counties	1 6½	1 2
B_1	Margate ...	S. Counties	1 4	1 0
A	Matlock ...	Mid. Counties	1 5	1 0¾
A_1	Merthyr ...	S. Wales & M.	1 6	1 1½
A	Middlesbrough	N.E. Coast	1 6½	1 2
A_2	Middlewich ...	N.W. Counties	1 5½	1 1¼
B_2	Minehead ...	S.W. Counties	1 3½	11¾
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 3½	11¾
A	Morecambe ...	N.W. Counties	1 6½	1 2
A_2	NANTWICH ...	N.W. Counties	1 5½	1 1¼
A	Neath	S. Wales & M.	1 6½	1 2
A	Nelson ...	N.W. Counties	1 6½	1 2
A	Newcastle ...	N.E. Coast	1 6½	1 2
A	Newport ...	S. Wales & M.	1 6½	1 2
A	Normanton ...	Yorkshire	1 6½	1 2
A	Northampton...	Mid. Counties	1 6½	1 2
A	North Shields...	N.E. Coast	1 6½	1 2
A	North Staffs ...	Mid. Counties	1 6½	1 2
A_1	Norwich ...	E. Counties	1 6	1 1½
A	Nottingham ...	Mid. Counties	1 6½	1 2
A	Nuneaton ...	Mid. Counties	1 6½	1 2
A	OAKHAM ...	Mid. Counties	1 5	1 0¾
A	Oldham ...	N.W. Counties	1 6½	1 2
A_2	Oswestry ...	N.W. Counties	1 5	1 0¾
A_1	Oxford ...	S. Counties	1 6	1 1½
A	PAISLEY ...	Scotland	*1 6½	1 2
B_2	Pembroke ...	S. Wales & M.	1 3	11½
A	Perth	Scotland	*1 6½	1 2
A_1	Peterborough	E. Counties	1 6	1 1½
A	Plymouth ...	S.W. Counties	*1 6½	1 2
A	Pontefract ...	Yorkshire	1 6½	1 2
A_1	Pontypridd ...	S. Wales & M.	1 6	1 1½
A_2	Portsmouth ...	S. Counties	1 5½	1 1¼
A	Preston ...	N.W. Counties	1 6½	1 2
A	QUEENSFERRY	N.W. Counties	1 6½	1 2
A_2	READING ...	S. Counties	1 5½	1 1¼
B	Reigate ...	S. Counties	1 4½	1 0½
A	Retford ...	Mid. Counties	1 5	1 0¾
A_1	Rhondda Valley	S. Wales & M.	1 6	1 1½
A	Ripon	Yorkshire	1 5	1 0¾
A	Rochdale ...	N.W. Counties	1 6½	1 2
B	Rochester ...	S. Counties	1 4½	1 0½
A_1	Ruabon ...	N.W. Counties	1 6	1 1½
A	Rugby ...	Mid. Counties	1 6½	1 2
A_2	Rugeley ...	Mid. Counties	1 5½	1 1¼
A	Runcorn ...	N.W. Counties	1 6½	1 2
A_1	ST. ALBANS ...	E. Counties	1 6	1 1½
A	St. Helens ...	N.W. Counties	1 6½	1 2
B_2	Salisbury ...	S.W. Counties	1 3½	11¾
A_1	Scarborough ...	Yorkshire	1 6	1 1½
A	Scunthorpe ...	Mid. Counties	1 6½	1 2
A	Sheffield ...	Yorkshire	1 6½	1 2
A	Shipley ...	Yorkshire	1 6½	1 2
A_2	Shrewsbury ...	Mid. Counties	1 5½	1 1¼
A_2	Skipton ...	Yorkshire	1 5½	1 1¼
A_2	Slough ...	S. Counties	1 5½	1 1¼
A_1	Solihull ...	Mid. Counties	1 6	1 1½
A_2	Southampton	S. Counties	1 5½	1 1¼
A_1	Southend-on-Sea	E. Counties	1 6	1 1½
A	Southport ...	N.W. Counties	1 6½	1 2
A	S. Shields ...	N.E. Coast	1 6½	1 2
A_1	Stafford ...	Mid. Counties	1 6	1 1½
A	Stirling ...	Scotland	1 7	1 2½
A	Stockport ...	N.W. Counties	1 6½	1 2
A	Stockton-on-Tees	N.E. Coast	1 6½	1 2
A	Stoke-on-Trent	Mid. Counties	1 6½	1 2
B	Stroud ...	S.W. Counties	1 4½	1 0½
A	Sunderland ...	N.E. Coast	1 6½	1 2
A	Swansea ...	S. Wales & M.	1 6½	1 2
A	Swindon ...	S.W. Counties	1 5	1 0¾
A_1	TAMWORTH ...	N.W. Counties	1 6	1 1½
B	Taunton ...	S.W. Counties	1 4½	1 0½
A	Teeside Dist. ...	N.E. Counties	1 6½	1 2
A_2	Teignmouth ...	S.W. Coast	1 5½	1 1¼
A	Todmorden ...	Yorkshire	1 6½	1 2
A_1	Torquay ...	S.W. Counties	1 6	1 1½
B_2	Truro	S.W. Counties	1 3½	11¾
A_2	Tunbridge Wells	S. Counties	1 5	1 0¾
A	Tunstall ...	Mid. Counties	1 6½	1 2
A	Tyne District	N.E. Coast	1 6½	1 2
A	WAKEFIELD ...	Yorkshire	1 6½	1 2
A	Walsall ...	Mid. Counties	1 6½	1 2
A	Warrington ...	N.W. Counties	1 6½	1 2
A_1	Warwick ...	Mid. Counties	1 6	1 1½
A_1	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 6½	1 2
A_2	Weston-s.-Mare	W. Counties	1 5½	1 1¼
A_2	Whitby ...	Yorkshire	1 5½	1 1¼
A	Widnes ...	N.W. Counties	1 6½	1 2
A	Wigan ...	N.W. Counties	1 6½	1 2
B	Winchester ...	S. Counties	1 4½	1 0½
A_2	Windsor ...	S. Counties	1 5½	1 0¾
A	Wolverhampton	Mid. Counties	1 6½	1 2
A_2	Worcester ...	Mid. Counties	1 5½	1 1¼
A_3	Worksop ...	Yorkshire	1 5	1 0¾
A_1	Wrexham ...	N.W. Counties	1 6	1 1½
A	Wycombe ...	S. Counties	1 5	1 0¾
E	YARMOUTH ...	E. Counties	1 4½	1 0½
B	Yeovil ...	S.W. Counties	1 4½	1 0½
A	York	Yorkshire	1 6½	1 2

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

The rates for every trade in any given area will be sent on request.

CURRENT PRICES

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

WAGES

		s.	d.
Bricklayer	per hour	1	8
Carpenter	"	1	8
Joiner	"	1	8
Machinist	"	1	8
Mason (Banker)	"	1	8
" (Fixer)	"	1	9
Plumber	"	1	8
Painter	"	1	7
Paperhanger	"	1	7
Glazier	"	1	7
Slater	"	1	8
Scaffolder	"	1	4
Timberman	"	1	4
Navvy	"	1	3
General Labourer	"	1	3
Lorryman	"	1	5½
Crane Driver	"	1	7
Watchman	per week	2	10	0

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	18	6
Hydrated Lime	"	3	0	9
Portland Cement, in 4-ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	"	2	5	0
White Portland Cement, in 1-ton lots	"	8	15	0
Thames Ballast	per Y.C.		6	6
¾" Crushed Ballast	"		7	0
Building Sand	"		7	6
Washed Sand	"		8	6
2" Broken Brick	"		8	0
¾" " "	"		10	3
Pan Breeze	"		6	6
Coke Breeze	"		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	d.	6" s.	d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	0
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS :					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6	—	
Gaskin	"		5	—	

BRICKLAYER

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

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" " 2nds	" "			4
Mahogany, Honduras	" "		1	3
" African	" "		1	1
" Cuban	" "		2	6
Oak, plain American	" "		1	0
" Figured "	" "		1	3
" plain Japanese	" "		1	2
" Figured "	" "		1	5
" Austrian wainscot	" "		1	6
" English	" "		1	11
Pine, Yellow	" "		1	0
" Oregon	" "			4
" British Columbian	" "			4
Teak, Moulmein	" "		1	3
" Burma	" "		1	2
Walnut, American	" "		2	3
" French	" "		2	3
Whitewood, American	" "		1	1
Deal floorings, ⅝"	Sq.		18	6
" ¾"	"	1	1	6
" 1"	"	1	2	0
" 1¼"	"	1	5	0
" 1½"	"	1	10	0
Deal matchings, ⅝"	"		14	0
" ¾"	"		15	6
" 1"	"	1	4	0
Rough boarding, ¾"	"		16	0
" 1"	"		18	0
" 1½"	"	1	6	0

Plywood, per ft. sup.

Thickness	⅜"			½"			¾"			1"		
Qualities	A	B	BB	A	B	BB	A	B	BB	A	B	BB
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2¾	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2¾	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3¼	–	5	4½	–	7	6¼	–	8	7	–
Figured Oak	6½	5	–	7½	5¾	–	10	8	–	1/-	9	–

		d.
Scotch glue	lb.	8

SMITH AND FOUNDER

Tubes and Fittings

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

		½"	¾"	1"	1¼"	2"
Tubes, 2'–14' long	per ft. run	4	5½	9¼	1/1	1/10
Pieces, 12"–23" long	each	10	1/1	1/11	2/8	4/9
" 3"–11½" long	"	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long	"	11	1/3	2/2	2/10	5/3
" " 3" M–½" long	"	8	10	1/5	1/11	3/6
Bends	"	8	11	1/7½	2/7½	5/2
Springs not socketed	"	5	7	1/1½	1/11½	3/11
Socket unions	"	2/–	3/–	5/6	6/9	10/–
Elbows, square	"	10	1/1	1/6	2/2	4/3
Tees	"	1/–	1/3	1/10	2/6	5/1
Crosses	"	2/2	2/9	4/1	5/5	10/6
Plain sockets and nipples	"	3	4	6	8	1/3
Diminished sockets	"	4	6	9	1/–	2/–
Flanges	"	9	1/–	1/4	1/9	2/9
Caps	"	3½	5	8	1/–	2/–
Backnuts	"	2	3	5	6	1/1
Iron main cocks	"	1/6	2/3	4/2	5/4	11/6
" with brass plugs	"	—	4/–	7/6	10/–	21/–

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

FITTINGS.

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

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ⅜"	"	10	6
" " ½"	"	10	3
" " ⅝"	"	10	0

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ¾"	cwt.	9	6
" " ⅞"	"	9	6
" " 1"	"	9	6
" " 1¼"	"	9	6
" " 1½"	"	9	6

		¾" s.	d.	4" s.	d.
Cast-iron rain-water pipes of ordinary thickness metal	F.R.	8		10	
Shoes	each	2	0	3	0
Anti-splash shoes	"	4	6	8	0
Boots	"	3	0	4	0
Bends	"	2	7	3	9
" with access door	"	—		6	3
Heads	"	4	0	5	0
Swan-necks up to 9" offsets	"	3	9	6	0
Plinth bends, 4½" to 6"	"	3	9	5	3
Half-round rain-water gutters of ordinary thickness metal	F.R.	5		6	
Stop ends	each	6		6	
Angles	"	1	7	1	11
Obtuse angles	"	2	0	2	6
Outlets	"	1	9	2	3

PLUMBER

		£	s.	d.
Lead, milled sheets	cwt.	26	3	
" drawn pipes	"	25	9	
" soil pipe	"	28	9	
" scrap	"	16	9	
Solder, plumbers'	lb.		9½	
" fine do.	"	1	0	
Copper, sheet	"		8½	
" tubes	"		11	

L.C.C. soil and waste pipes :		3"		4"		6"	
Plain cast	F.R.	1	0	1	2	2	6
Coated	"	1	1	1	3	2	8
Galvanized	"	2	0	2	6	4	6
Holderbats	each	3	10	4	0	4	9
Bends	"	3	9	5	3	10	3
Shoes	"	2	10	4	4	9	6
Heads	"	4	8	8	5	12	9

PLASTERER

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

GLAZIER

		s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.	s. F.S.				2½
" " 26 oz. " "	"				3
Flemish, Arctic, Figures (white)*	"				7
Blazoned glasses	"			2	6
Reeded : Cross Reeded	"				11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"				6
Crown sheet glass (n/e 12" × 10")	"			2	0
Flashed opals (white and coloured)	"	1	0 and	2	0
¼" rough cast; rolled plate	"				5½
¼" wired cast; wired rolled	"				9½
¼" Georgian wired cast	"				11
¼" Polished plate, n/e 1 ft.	"		†10 to	‡1	1
" " 2	"	†1	2 "	‡1	4
" " 4	"	†2	3 "	‡2	6
" " 8	"	†2	9 "	‡3	2
" " 20	"	†3	1 "	‡3	9
" " 45	"	†3	3 "	‡4	0
" " 100	"	†4	0 "	‡4	10
Vita glass, sheet, n/e 1 ft.	"			1	0
" " 2 ft.	"			1	3
" " over 2 ft.	"			1	9
" " plate, n/e 1 ft.	"			1	6
" " 2 ft.	"			3	0
" " 5 ft.	"			4	0
" " 7 ft.	"			5	0
" " 15 ft.	"			6	0
" " over 15 ft.	"			7	6
"Calorex" sheet 21 oz., and 32 oz.	"	2	6 and	3	6
" rough cast ¼" and ½"	"		8¾ "	1	0
Putty, linseed oil	lb.				3

* *Colours, 1d. F.S. extra.*

† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	"		2	9
Turpentine	"		4	1½
Patent knotting	"		14	0
Distemper washable	cwt.	2	6	0
" ordinary	"	2	0	0
Whitening	"		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	0
Flat varnish	"		14	0
Outside varnish	"		16	0
White enamel	"	1	15	0
Ready mixed paint	"		13	6
Brunswick black	"		7	6

CURRENT PRICES FOR MEASURED WORK

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

EXCAVATOR AND CONCRETOR

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

DRAINLAYER

		4" s. d.	6" s. d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1 6	2 3
Extra, only for bends	Each	2 8	3 9
" junctions	"	3 9	4 6
Gullies and gratings	"	16 6	18 0
Cast iron drains, and laying and jointing	F.R.	4 9	6 9
Extra, only for bends	Each	10 6	15 6

BRICKLAYER

		£ s. d.
Brickwork, Flettons in lime mortar	Per Rod	26 10 0
" " in cement	"	27 12 6
" Stocks in cement	"	34 0 0
" Blues in cement	"	50 0 0
Extra only for circular on plan	"	2 0 0
" backing to masonry	"	1 10 0
" raising on old walls	"	2 0 0
" underpinning	"	5 10 0½
Fair Face and pointing internally	F.S.	1½
Extra over fletton brickwork for picked stock facings and pointing	"	8
" " " red brick facings and pointing	"	11
" " " blue brick facings and pointing	"	1 4
" " " glazed brick facings and pointing	"	3 6
Tuck pointing	"	7½
Weather pointing in cement	"	3
Slate dampcourse	"	10
Vertical dampcourse	"	1 1

ASPHALTER

		s. d.
½" Horizontal dampcourse	Y.S.	4 9
½" Vertical dampcourse	"	7 9
¾" paving or flat	"	6 3
1" paving or flat	"	7 6
1" × 6" skirting	F.R.	1 0
Angle fillet	"	2½
Rounded angle	"	2½
Cesspools	Each	5 6

MASON

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

SLATER AND TILER

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

CARPENTER AND JOINER

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

CARPENTER AND JOINER—*continued*

		d.
1½" deal moulded sashes of average size	F.S.	1 9½
2" " " " "	"	1 11½
1½" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ⅞" parting beads, and with brass faced axle pulleys, etc., fixed complete	"	3 7
2" " " " " "	"	3 10
Extra only for moulded horns	Each	6
1½" deal four-panel square, both sides, door	F.S.	2 0
2" " " " "	"	2 8
1½" " but moulded both sides	"	2 4
2" " " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " " " "	"	1 4
1½" deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1¼" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages	"	2 6
1½" deal moulded wall strings	"	2 1
1½" " outer strings	"	2 4
Ends of treads and risers housed to string	Each	1 9
3" × 2" deal moulded handrail	F.R.	1 3
1" × 1" deal balusters and housing each end	Each	2 0
1½" × 1½" " " "	"	2 9
3" × 3" deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	"	6 0

SMITH AND FOUNDER

		£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt.	16 6
Riveted plate or compound girders, and hoisting and fixing in position	"	1 0 6
Do., stanchions with riveted caps and bases and do.	"	19 0
Mild steel bar reinforcement, ½" and up, bent and fixed complete	"	17 6
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g.	F.S.	11
Wrot-iron caulked and cambered chimney bars	Per cwt.	1 10 0

PLUMBER

		£ s. d.
Milled lead and labour in flats	cwt.	2 0 3
Do. in flashings	"	2 3 9
Do. in covering to turrets	"	2 9 3
Do. in soakers	"	1 14 9
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

		½" s. d.	¾" s. d.	1" s. d.	1¼" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks	F.R.	10	1 0	1 3	2 0	2 10	—
Do. soil pipe and fixing with cast lead tacks	"	—	—	—	—	—	5 6
Extra, only to bends	Each	—	—	—	—	2 0	6 9
Do. to stop ends	"	6½	8	9	11	1 0	—
Boiler screws and unions	"	3 3	3 9	5 0	8 0	—	—
Lead traps	"	—	—	—	6 3	8 9	—
Screw down bib valves	"	6 9	9 6	11 0	—	—	—
Do. stop cocks	"	7 0	9 6	12 6	—	—	—

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

PLASTERER AND TILING

		£ s. d.
Expanded metal lathing, small mesh	Y.S.	2 0
Do. in n/w to beams, stanchions, etc.	"	2 9
Lathing with sawn laths to ceilings	"	1 3
½" screeding in Portland cement and sand or tiling, wood block floor, etc.	"	1 5
Do. vertical	"	1 7
Rough render on walls	"	1 2½
Render, float and set in lime and hair	"	1 9
Render and set in Sirapite	"	1 11
Render, backing in cement and sand, and set in Keene's cement	"	2 9
Extra, only if on lathing	"	4
Keene's cement, angle and arris	F.R.	6
Arris	"	1½
Rounded angle, small	"	3
Plain cornices in plaster, including dubbing out, per 1" girth	"	1½
1" granolithic pavings	Y.S.	3 6
1½" " "	"	4 6
6" × 6" white glazed wall tiling and fixing on prepared screed	"	17 6
9" × 3" " " " " "	"	1 2 6
Extra, only for small quadrant angle	F.R.	8

GLAZIER

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

PAINTER

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

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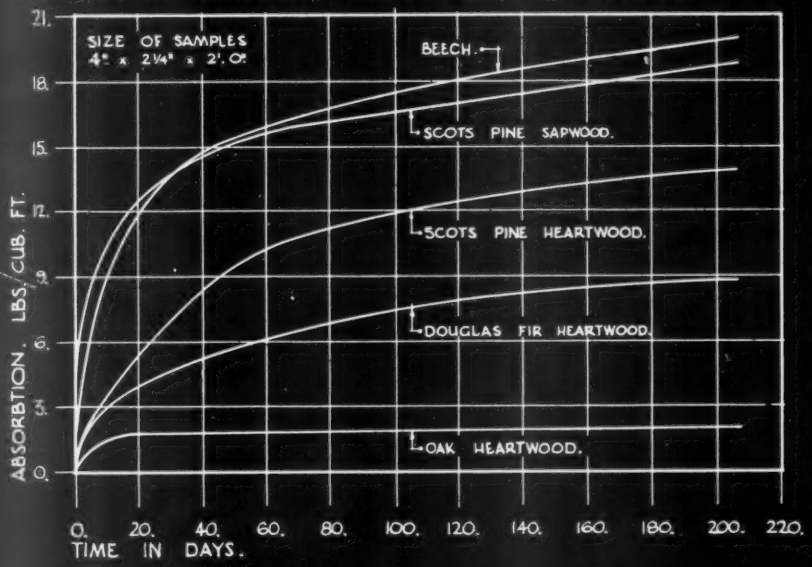
Data from Forest Products Research Records - No. 9, by permission of the Controller, H.M. Stationery Office.

CURVES SHEWING THE ABSORPTION OF CREOSOTE DURING STEEPING AT CONSTANT TEMPERATURE, APPROXIMATELY 70° F.

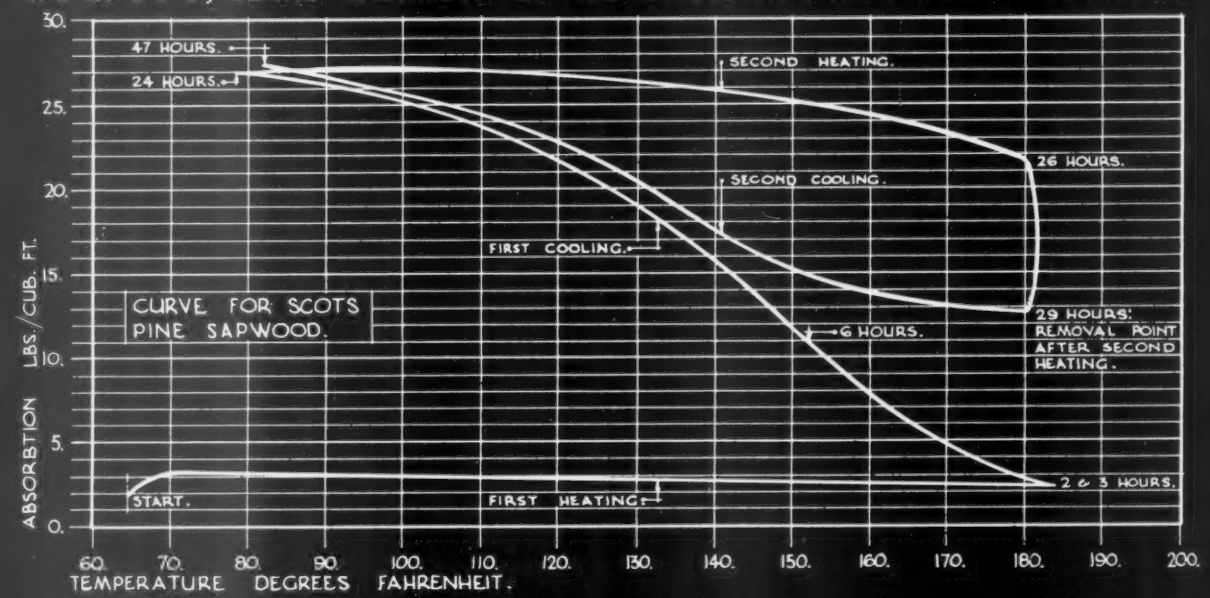
NOTE:

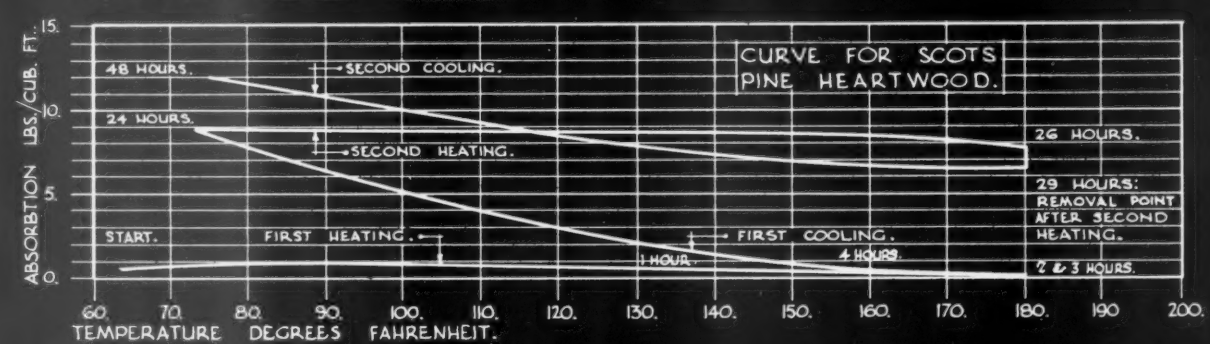
The diagrams show the absorption of preservative which has been applied to timber by methods of non-pressure impregnation.



It will be noticed that the absorption by steeping is not as rapid as by the heating process shewn below. 10 - 12 lbs absorption per cub. ft. is considered sufficient for either process.

CURVES SHEWING ABSORPTION OF CREOSOTE BY SAMPLES OF SCOTS PINE, SIZE 4" x 2¼" x 3'- 0", DURING TREATMENT BY THE DOUBLE HEATING OPEN TANK PROCESS.





INFORMATION SHEET: THE APPLICATION OF PRESERVATIVE (CREOSOTE) TO TIMBERS.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC • Oscar A. Barnett

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INFORMATION SHEET

• 421 •

WOOD PRESERVATIVES

Subject : Wood Preservatives

General :

On the face of this Sheet are set out graphs showing the absorption of preservative (creosote) by various timbers treated by non-pressure methods of impregnation. The upper graph shows the results obtained by the prolonged dipping or steeping method of applying the preservative, while the lower graphs give the absorption figures of Scots Pine sap and heart wood using the double-heating open tank process of impregnation. (See British Standard Specification No. 144 for creosote suitable for use as wood preservative).

Methods of Application :

(*a*) *Surface Treatments.*

The preservative may be applied to the surface of the timber by means of a long-handled tar-brush. Spraying or dipping may also be resorted to, although in all these surface treatments the protection afforded to timber left continually under conditions favourable to decay is negligible.

(*b*) *Steeping.*

Although impregnating the timber with the preservative, this method requires a considerable duration to obtain sufficient protection for resistant or heart woods.

(*c*) *Open Tank Treatment.*

By this method the timber is rapidly impregnated by means of total immersion in an open tank containing the preservative. This is heated and allowed to cool, the procedure being repeated if required. Absorption of the preservative takes place during the cooling period. As shown on the graphs, a saving of time is effected by reheating the creosote after the first cooling, and then removing the timber after it has been left in the hot creosote for 1-3 hours, without a second cooling. Thus, in consignments of timber containing both heart wood and sap wood, most of the preservative is recovered from the saturated sap wood and very little lost from the more resistant heart wood. For the open tank process it is desirable that timber should be seasoned before treatment.

Treatment of Joist Ends :

In practical work the treatment of joist ends by the open tank heating method is readily carried out by stacking them on end in a suitable small tank or bin, with an open fire beneath, which can be raked out when cooling is necessary.

Note.—The material given herewith is a summary only of the methods of applying wood preservatives. For a full description see the Department of Scientific and Industrial Research Publication "Forest Products Research Records—No. 9" (Wood Preservation Series No. 2), issued by His Majesty's Stationery Office.

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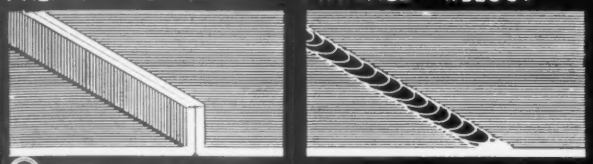
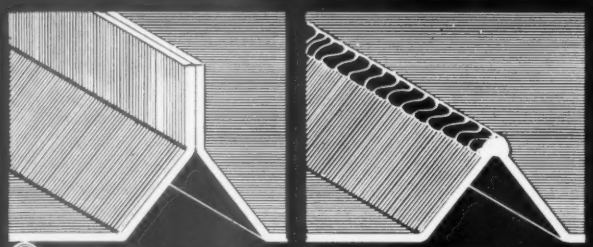
TYPES OF WELDED JOINTS IN SHEET COPPER
DETAILS TWICE FULL SIZE.

PREPARATION. FINISHED WELDS.

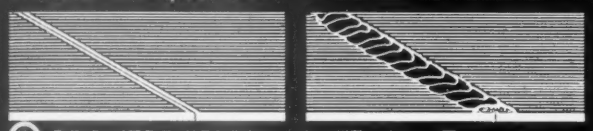


① AUTOGENOUS FLASH WELDED JOINT.

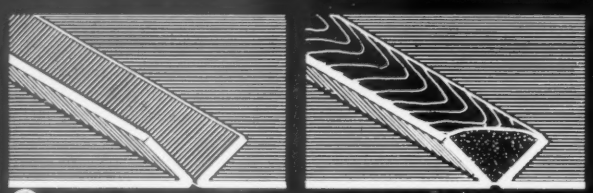


② AUTOGENOUS FLASH WELDED EXPANSION JOINT.

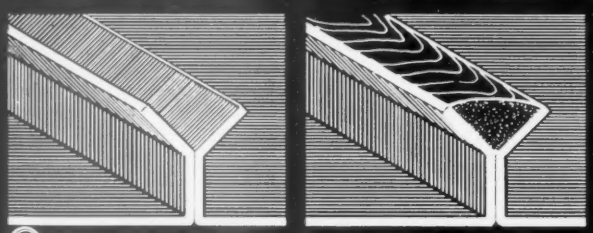
Note: The four joints detailed below are all made with a bronze filler rod.



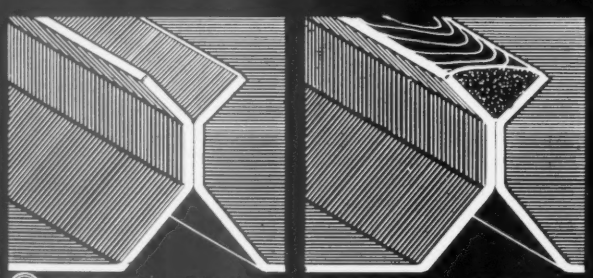
③ BRONZE WELDED BUTT JOINT.



④ BRONZE WELDED VEE JOINT.



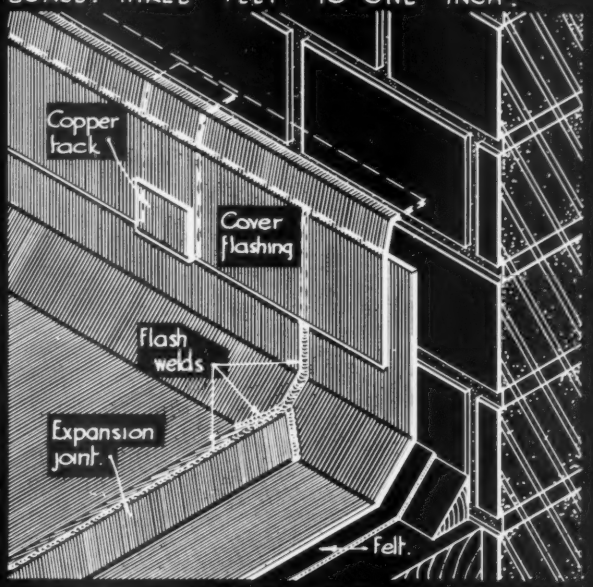
⑤ BRONZE WELDED VEE JOINT.



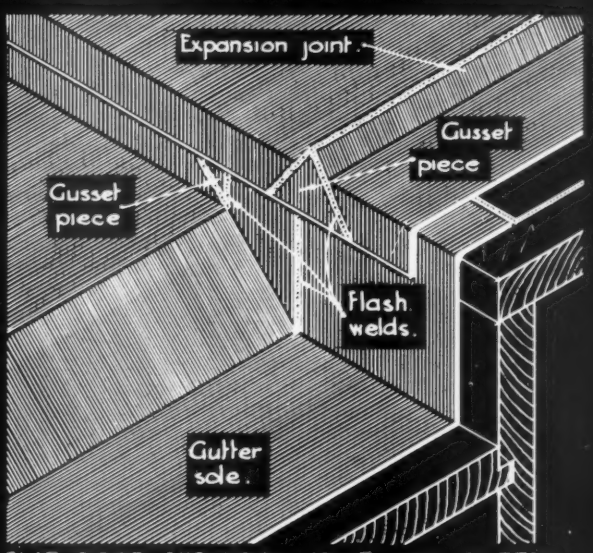
⑥ BRONZE WELDED EXPANSION JOINT.

DETAILS OF WELDED FLAT COPPER ROOFING WITH EXPANSION JOINT AND COVER FLASHING.

SCALE: THREE FEET TO ONE INCH.



FLAT ROOF, EXPANSION JOINT, AND FLASHING.



FLAT ROOF, EXPANSION JOINT AND GUTTER.

Deoxidised copper is recommended for autogenous welding, but it is not essential where bronze welding is used.

It is necessary to substitute asbestos sheeting for the roofing paper or felt in the vicinity of the weld, in order to resist the heat of the blowpipe flame.

Where nailing is necessary, copper nails are essential or electrolytic action may occur, with eventual perforation of the roof sheets. Under no circumstances should zinc nails be used.

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

INFORMATION SHEET: COPPER AND BRONZE WELDING TO SHEET COPPER WORK. No.1

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

INFORMATION SHEET • 422 • WELDING OF SHEET COPPER WORK

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INFORMATION SHEET
• 422 •
THE WELDING OF SHEET COPPER WORK

Equipment :

The equipment required for the welding of copper consists primarily of two steel cylinders, one containing compressed oxygen and the other compressed acetylene, together with the necessary high pressure rubber tubing, connectors, valves, gauges, and blow-pipes.

For roofing work, small-size cylinders are used so that the equipment can be readily moved as required on the job.

Copper for Welded Work :

De-oxidized copper should always be used for work which is to be welded. De-oxidized copper has been available for some time and is especially recommended because it is practically free from oxide and therefore contains insufficient cuprous oxides to interfere with the welding process ; de-oxidized copper has as great a tensile strength as commercial copper and its resistance to corrosion is equally great.

Types of Weld :

The three types of weld suitable for this work are :—

(*a*) The flash weld.
(*b*) The copper weld.
(*c*) The bronze weld.

The Flash Weld :

The flash weld is formed by flanging up the edges of adjoining sheets of copper, butting them together and applying the oxy-acetylene flame until the flange is melted right down to the plate surface.

Component parts are temporarily tack welded together and the flanges pinched together with a pair of pliers as the weld proceeds.

In flash welding, a filler rod may be used occasionally if a drop from the filler rod is required to prevent the weld getting pasty or hollow.

The Copper Weld :

The copper weld, as commonly used, consists of butting together the edges of two sheets of copper and welding them by the application of the welding flame and suitable copper filler rod.

The Bronze Weld :

A bronze weld is obtained by applying to the joint the welding flame and a bronze filler rod. The metal of the sheets is not fused. The bronze penetrates to the underside of the copper sheets in the line of the weld and the further deposit of bronze from the filler rod is added to reinforce the joint.

Joints made with the bronze weld are stronger than any other type of joint, reliable execution is more readily obtained, and the joint can be made in any position *in situ*.

It is not essential that de-oxidized copper should be used with bronze welded work, since the parent metal is not brought to fusion point when making the weld.

Roofing Work :

Copper sheets are obtainable in sizes 5′ 0″ to 8′ 0″ in length by 3′ 0″ wide ; 20, 23 or 24 S.W.G. being generally used for roof work. 23 S.W. gauge copper weighs 19 oz. per square foot, and 24 gauge weighs 16 oz. per foot (nominal weight).

Two details are given on this Sheet of the application of welding to roofing work, and further details will be given in a second Sheet devoted to this work.

Previous Sheets :

Sheets already published are :—

No.	225	Details of joints.
,,	234	,, ,,
,,	243	,, ,,
,,	251	,, ,,
,,	259	Weldable fittings.
,,	268	,, ,,
,,	321	,, ,,
,,	413	,, ,,
,,	418	,, ,,

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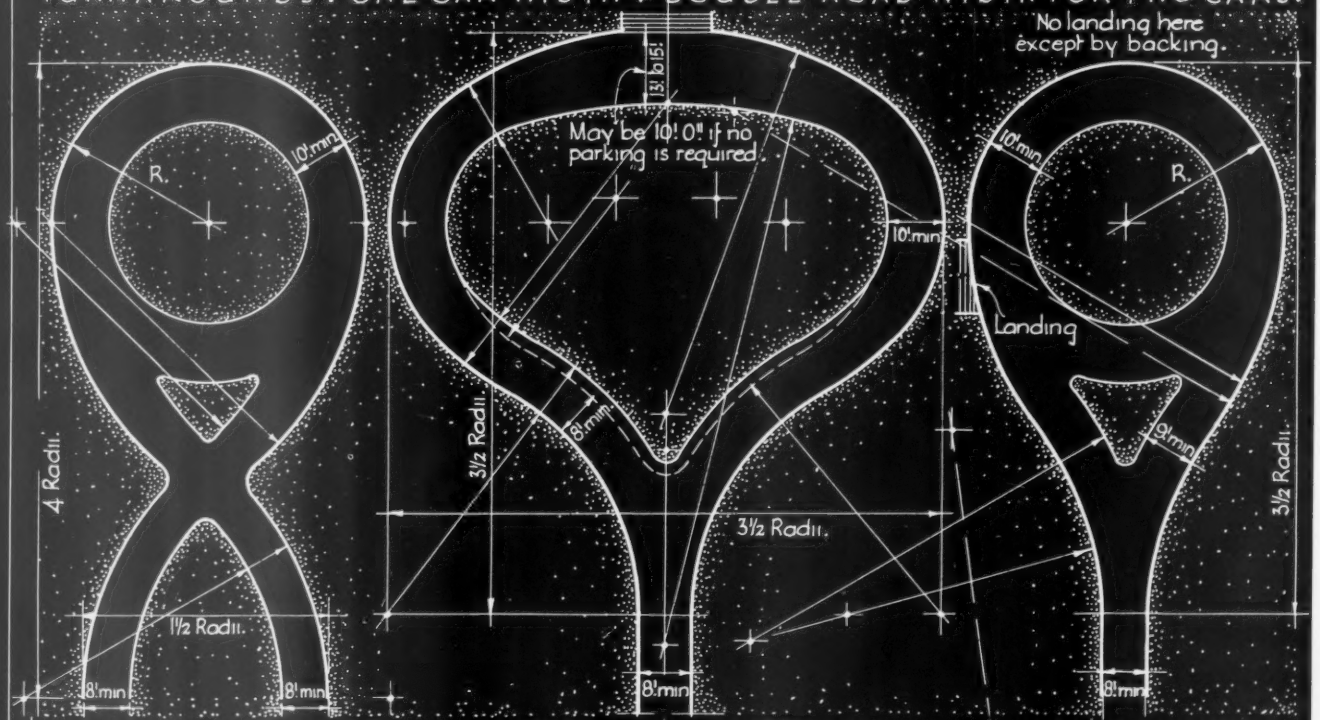
PRIVATE ENTRANCE ROADS INTERSECTING PUBLIC THOROUGHFARES:

TWO CAR WIDE ROAD: ONE CAR WIDE ROAD: DIAGONAL ENTRANCE:

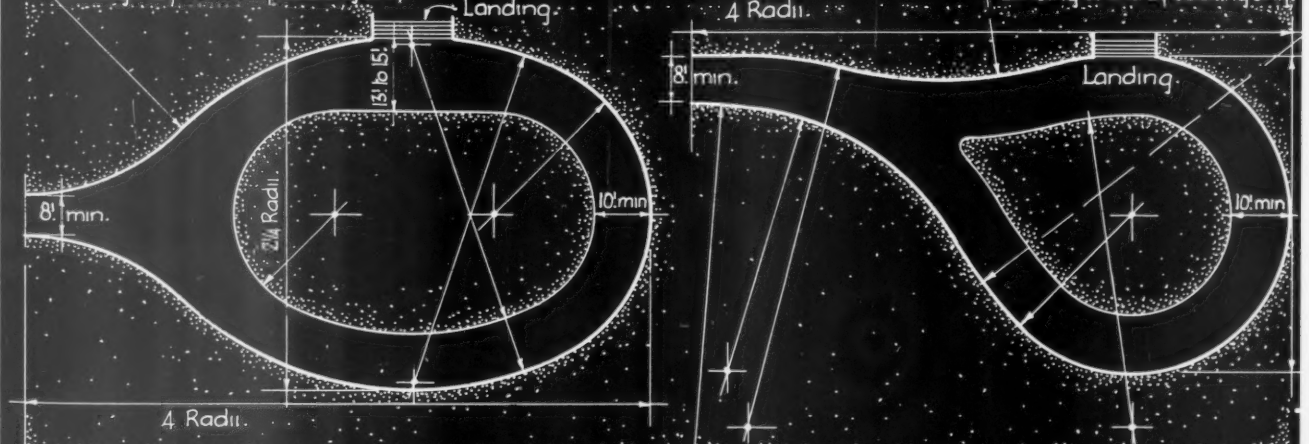
TURNAROUNDS: ONE CAR WIDTH: DOUBLE ROAD WIDTH FOR TWO CARS:



NO LANDING - CROSSOVER: Landing may be had by backing only.

LANDING OPPOSITE APPROACH:

LANDING ON SIDE: Landing at end by backing only.



Types & sizes shown are for easy driving at a moderate rate. Overall sizes are shown in terms of radii for preliminary assumptions. Any decrease in radii will decrease speed of driving. See Sheet No. 154 for turning radii of cars.

Diagrams from "Architectural Graphic Standards."

INFORMATION SHEET: PRIVATE ROADS, DRIVES & TURNAROUNDS:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar P. Boyce.

Supplement to THE ARCHITECTS' JOURNAL for October 22, 1936

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INFORMATION SHEET

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GARAGES AND DRIVES—II

The lay-outs shown on the front of this sheet give various arrangements for car turn-rounds, private roads, drives, etc., and junctions of private entrance roads with public thoroughfares.

The tracks shown are for one car width only, double-road width being required for two cars.

Lay-outs are worked out on a basis of radius "R," which is governed by the minimum turning radius of cars for which the drive is designed.

For turning circles and general dimensions of cars in general use see Sheet No. 154.