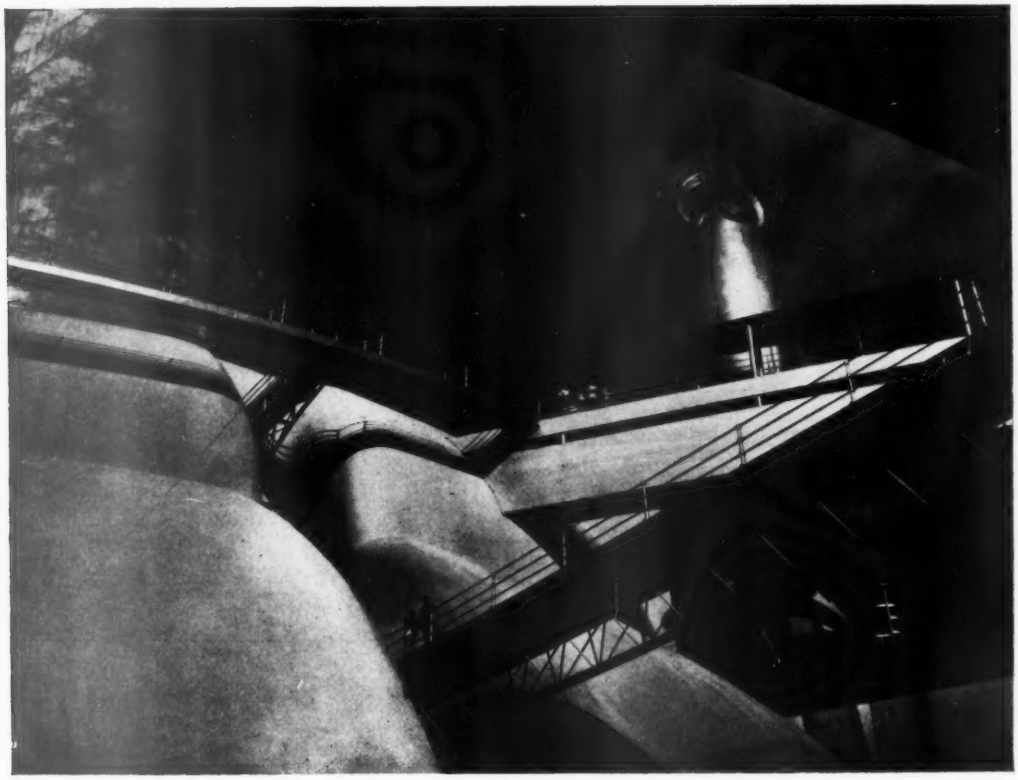
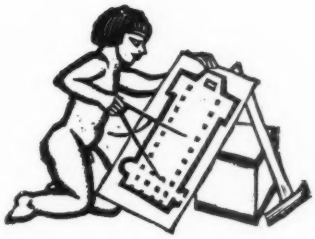
THINGS TO COME:
THE YEAR A.D. 2054



A SHOT from Mr. H. G. Wells's new film, "Things to Come," showing the mounting of the space gun from which two passengers are fired to the moon.

NOVEMBER 8, 1934

His late Majesty King George V, accompanied by the Queen, photographed during his speech at the opening of the new building of the Royal Institute of British Architects.



TWENTY-FIVE YEARS

ON Monday January 20, King George V died at Sandringham in the twenty-sixth year of his reign.

At such a time the first desire of the Empire must be to offer to the Queen and Royal Family a sympathy which, however formal and inexpressive its phrasing, will in its universal sincerity show that no man has lived less in vain. To those who look back, there arise memories of the dangers and difficulties and triumphs, the changes and developments of the years during which King George was always found to lead and represent the feelings of his people.

To those who are middle-aged, who can remember the great Queen who had so great an influence upon the character of her grandson, the change which has now come to Britain may seem less epochal than to those in whose early memories the Coronation stands out as the event which dwarfed all others—to whom the death of King George is not the passing of a King but the passing of an age. But to both old and young and to the whole world the twenty-five years of the reign must always be more than a reign ; they form an epoch complete in itself, which for the social changes it contained will, as far as man can tell, stand for ever unrivalled.

During those years scientific progress has transformed the life of the civilized world. The telephone and cinema, the aeroplane, wireless, and motor cars have grown from the playthings of the few to forces possessing stupendous powers of good and evil for every person in the land.

Yet greater even than science, greater even than mass-production, has been the effect of the change of view concerning the social responsibility of the State. There is now no political party which does not hold that it is the duty of the State to discharge certain fundamental social obligations towards its members: to provide a minimum of decent housing accommodation, of the means of subsistence, of care during childhood, sickness, childbirth and old age to every man and woman in the land.

The forming of this attitude of mind surpasses all the achievements of science, beneficial or satanic. It has changed the face of the land, dominated architectural development and transformed the profession of architecture.

In 1910 the architect as individual artist produced for the few buildings representing only individual eclecticism. In 1936 all except a tiny proportion of architects are working for the many. Communal housing both for rich and poor, business accommodation and buildings for local administration, for pleasure, work and for the sick—but always for the many. This is the work of the architect today.

The changes within the architectural profession itself have been equally great during the reign of King George. Public interest in architecture has been increased infinitely by the energy of the body of which he was patron and whose new building he himself declared open with a full expression of his interest. Registration has come into being, examinations and entry into the profession has been regulated, and the architect has begun his wider task of concentration upon the interests of the many in all the phases of their living.

In structure and plan, economy and order are the greatest of the changes that have come into the practice of architecture. In this, once more, planning for a simple healthiness for the many has grown to dominate architectural expression, the external application of scholarship has given way to the study of internal order.

In the years to come the country and its architects cannot pay a greater compliment to the memory of King George than to bear in mind in their work some of the qualities peculiarly his own : the care for the many and the lives they lead, rather than for the interest of small minorities ; his care for their health and ability to reach the open air, his deep love for the country in which he lived, and his striving for the wise and gracious use of all and every part of it. If these only of his qualities are never forgotten, the memorial will be not unworthy of the King.

The Architects' Journal
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NOTES & TOPICS

DEEP OR SHALLOW WATERS

PORTSMOUTH staggers me. Some two years ago the Council bought the Lumps Fort Site for £25,000. More recently the Council organized an architectural competition for the development of the area.

*

The winning scheme, published in this issue of the JOURNAL, provides a concert hall, a music pavilion, cafés, bathing-pool, shelters, recreation, and many other facilities, the whole estimated to cost about £150,000.

*

I now read that the Beach Committee has recommended "that the City Engineer and the City Architect should be instructed to furnish a composite scheme for developing the site by incorporating into one plan the best features of the various designs submitted."

*

I wonder if the same committee will instruct their director of music to compile a composite symphony from the works of Beethoven, Bach, Ravel and Hindemith for performances in their suggested composite pavilion. I wonder if their chief chef will have to provide a Portsmouth speciality meal out of the novelty dishes of the Empire. Will tennis give way in Portsmouth to a hybrid game made up of "all the best features" of squash, fives, lacrosse, marbles and the Eton wall-game?

*

The winners of this competition are to be congratulated on their scheme, and it is to be hoped that they will more quickly recover than I would from the excruciating thought of the body of their offspring having the limbs of others (no matter how shapely) grafted on to it. But I can scarcely believe that this incredible Portsmouth report is true.

THE GREEN BELT

For some time now I have been expecting to hear grumbles at the small amounts that the L.C.C. can afford from its proposed grant of £2,000,000 towards the creation of a Green Belt round London.

*

The aim is to purchase or preserve from building some 113 square miles of land in a continuous belt 13 miles or so from Charing Cross. Even if the 10,000 acres of existing public open space is included there is still a balance of over 60,000 acres to be purchased.

*

Spread out evenly over 60,000 acres the L.C.C. grant equals just a little more than £30 an acre. This is a very moderate price for agricultural land on the depths of the country, and when it is remembered that a line 13 miles from Charing Cross would pass on the London side of Epsom and Uxbridge, and just beyond Loughton and Chislehurst, it is quite clear that £30 an acre isn't going very far.

*

If we have to depend mainly on the L.C.C. for our Green Belt I am afraid we are going to get a very little one.

R.A. AT SEA

It's beginning to leak out about the *Queen Mary*. What do you think they have thought best to do to her interior, after all our talk about suitable design? Allow a ship's architect to design her interior as a *ship's interior?* Hardly.

*

Fill her up with Art—mural paintings and sculpture, all in the most expensive taste—to show what Britain can do; that's it. And who is to do the Art? In a *really* expensive ship, subsidized by the State, who else but members of the Royal Academy?

*

A long and terrifying list appeared in the *Telegraph* of the art works being provided for her by the Academicians and their kind. One mural painting is being executed by no less a person than Dame Laura Knight. And what do you think its subject is?

*

. . . Right first time. How did you guess?

WHITBY

It is a long time since I was in Whitby and, except for what I have read, I know nothing of the merits or demerits of its slum clearance schemes, which have caused such a pother recently.

*

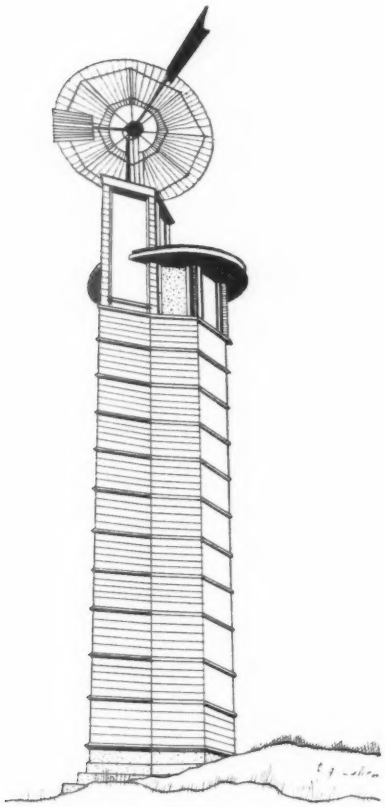
My chief recollection of the place is of pantiled roofs stepping steeply up from the harbour, and I doubt whether I should recognize it without those red roofs. Nevertheless, it seems to me that a lot of needless fuss is perhaps being made about the houses which they cover.

*

If the houses have become unfit for habitation I do not see why the character of the town should not be preserved by rebuilding on the same sites and roofing the new houses with the same coloured pantiles. A rehousing scheme is not necessarily a sort of garden suburb on the outskirts of a town.

KENILWORTH CASTLE

The price which it is likely the local council will pay for Kenilworth Castle after somewhat protracted negotiations will probably be about £40,000. Such a



Romeo and Juliet : an early work by Frank Lloyd Wright.

sum for a ruin on an acre or two of land seems a pretty stiff price, but I gather that the revenue from sightseers makes it well worth while.

*

Never before had I realized that a ruin was so good a commercial proposition, and it opens up all sorts of entrancing possibilities. I foresee syndicates being formed to acquire ruins, and I can imagine far-sighted people buying potential ruins as appreciating investments. A great advantage of this sort of asset is that the more it decays the greater will be its value.

*

Perhaps enterprising contractors will supply ruins in those neighbourhoods which lack them. It may not be long before we see advertised : "Specialists in decay. *You* want the *best* ruins—*we* have them."

TIMBER PERMANENCE

One of the prizewinners in the recent Timber House competition tells me that he is already receiving enquiries from different parts of the country. Many of these enquirers, living in sheltered ignorance of architectural procedure, ask for a copy of his catalogue.

*

Now the catalogues which *I* receive of timber structures are all devoted to light, and sometimes even shoddy, work—portable garden shelters, garages, chicken runs, and so forth.

*

Things are coming to a pretty pass when timber construction suggests temporary construction to laymen in a country which abounds with fine examples of thirteenth-, fourteenth-, and fifteenth-century houses and cottages built of timber, still sound, inhabited, and of marketable value.

*

There is no reason at all why, with sound design, a timber house built today should not be in habitable existence four, five, or six centuries hence. Indeed, with our present knowledge of the material and its preservation, there is every reason to suppose that a modern timber house would have a greater expectation of life.

ANTI-NOISE

It is not often that really useful technical literature is given away without fee, but my attention was called the other day to an example of this rare occurrence.

*

The Anti-Noise League has issued a series of leaflets which bear directly upon an architect's work. I have just read leaflets 6 and 7, dealing with noise problems in hospitals and schools. One night when I am lying awake in bed I shall read leaflet No. 5, which has the intriguing title "The Protection of Night-Workers from Noise during the Day."

*

Architecture is becoming so complicated that we shall soon want a leaflet showing how architects working both day and night may be protected from noise disturbance in between times.

TREND

I am looking forward to the publication in March of the first issue of *Trend*, the new quarterly review of design, which is to be the official organ of the Design and Industries' Association.

*

All three of the publishers—M. L. Anderson, Edward O'Shaughnessy and James Shand—are members of the D.I.A., and give the impression that the standard we may expect from the 50 pages or so of each issue will be high.

*

The standard *must* be high, for what magazine devoted to the quickly-developing art of design in everyday things can reach a mature old age if the design of any single part of it—the text, the printing, the binding, the advertisements, the cover, and the lettering on the cover—is not first rate ?

MUNICIPAL BUILDING

I suppose one should be grateful that it even entered the heads of the Sunderland Councillors that an architectural department was a desirable thing to have, but the idea being there, it makes it all the sadder to report that the General Purposes Committee recommends that all architectural work be carried out by the staff of the Borough Engineer, and under his supervision.

*

I have not the slightest quarrel with engineers, borough or otherwise, but it is surely time more local authorities realized that there is *some* difference between architecture and engineering.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

SCOTTISH HOUSING ADVISORY COMMITTEE

Sir Godfrey Collins, the Secretary of State for Scotland, has appointed Mr. James Cumming, Sanitary Inspector of Aberdeen, to be a member of the Scottish Housing Advisory Committee in place of the late Mr. Robert Mitchell, Sanitary Inspector of Dundee. The Secretary of State has also appointed Mr. Cumming to be a member of the Urban Sub-Committee of the main Committee.

Mr. Cumming, who has been Chief Sanitary Inspector of Aberdeen since 1914, is a member of the Executive Committee of the Royal Sanitary Association of Scotland. He is also a member of the Consultative Council which advises the Department of Health on Local Health Administration and general health questions.

PROFESSOR S. D. ADSHEAD

An informal dinner was held at the P.E.P. Club, Queen Anne's Gate, London, on January 10, when Professor S. D. Adshead was entertained by about twenty-five of his old students as an expression of their appreciation of his twenty-one years' work as Professor of Town-Planning in the University of London.

During the evening a short address, a modern atlas and a complete set of small-scale maps of England and Wales were presented to Professor Adshead. Following are some extracts from the address: "On the occasion of your retirement from the Chair of Town-Planning in the University of London we, your past students, wish to record our sincere appreciation of your work among us both as teacher and as a practical pioneer in the art and science of Town- and Country-Planning. . . . In wishing you health and happiness in your retirement from your work at University College we may conclude with the hope that your wise counsel and enthusiasm may still be available in the wider and more urgent problems of national importance. We ask you to accept the small gift as an expression of our affection. . . ."

THE ARCHITECTS' DIARY

Thursday, January 23

R.I.B.A., 66 *Portland Place, W.1. Exhibition of the drawings submitted for the prizes and studentships. Until January 29. Open daily from 10 a.m. to 8 p.m. (Saturday, January 25, 10 a.m. to 5 p.m.).*

INTERNATIONAL EXHIBITION OF CHINESE ART. *At the Royal Academy, Burlington House, Piccadilly, W.1.*

TIMBER DEVELOPMENT ASSOCIATION. *At the Building Centre, 158 New Bond Street, W.1. Exhibition of the designs submitted in the Association's timber house competition. Until January 25.*

ARCHITECTURE CLUB. *At the Architectural Association, 36 Bedford Square, W.C.1. Supper-Discussion: "Laymen and Architects."* 7.30 *p.m.*

INSTITUTION OF STRUCTURAL ENGINEERS, 10 *Upper Belgrave Street, S.W.1. "Foundations of London Structures." By F. S. Snow.* 6.30 *p.m.*

Friday, January 24

ROYAL SANITARY INSTITUTE. *At the Technical School, Rochdale. "The Housing Act, 1935." By Harry Bann. Also, "Municipal Baths and Water Purification," by S. H. Morgan.* 5 *p.m.*

Saturday, January 25

NORTH WALES ARCHITECTURAL SOCIETY. *At Colwyn Bay. "Plywood and Timber," by P. Morton Shand.*

ST. PAUL'S ECCLESIOLOGICAL SOCIETY. *Visit to St. James', Piccadilly, W.1: and the London Museum, Lancaster House, St. James', S.W.1.* 2.30 *p.m.*

Monday, January 27

R.I.B.A., 66 *Portland Place, W.1. Presentation of medals and prizes by the President. Address to students by the President.* 8.30 *p.m.*

INSTITUTE OF WELDING. *North Eastern (Tees-side) Branch. At the Cleveland Scientific and Technical Institute, Corporation Road, Middlesborough. "Welding for High Stresses on Carbon and Alloy Steels," by W. Andrews.* 7.30 *p.m.*

Tuesday, January 28

SOUTH-EASTERN SOCIETY OF ARCHITECTS. *At the Studio, 1 Eldridge Road, Croydon. "Some Aspects of Town Planning," by Basil Ward.* 8 *p.m.*

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. "Two Heresies: Abstract Painting and Pictorial Architecture." By Charles Marriott.* 8.15 *p.m. Also, annual exhibition of photographs by members. Until February 15.*

Wednesday, January 29

DESIGN AND INDUSTRIES ASSOCIATION. *Annual Dinner. At the Café Royal, Regent Street, W.1.* 7.30 *p.m.*

LIGHTING SERVICE BUREAU, 2 *Savoy Hill, W.C.2. "Effectiveness and Economies of Lighting Systems," by W. J. Jones.* 7.30 *p.m.*

NEW BUILDINGS IN MOSCOW

Preparatory work will be commenced this year on the building programme outlined for the various institutes and buildings of the Academy of Science in Moscow.

On a site of over 77 acres on the Krimski river bank, near the Kamenny Bridge, will be constructed one of the largest buildings in Moscow—the central building of the Academy of Sciences. In this building will be accommodated the praesidium of the Academy, various scientific institutes, the departments of mathematics and natural sciences, the council for the study of the productive forces of the U.S.S.R., a number of auditoriums, all the museums and the central library of the Academy.

The Second Architectural Atelier, under Academician Shchusev, is now working on the plans for this building, as well as on those for blocks of flats to house the academicians and workers of the Academy.

A site for the technical, power and physics institutes of the Academy, on the Bolshaya Kaluzhskaya, will cover 62 acres. An additional 250 acres on Kaluzhskoye Chaussee, beyond the Okruzhnaya Railway, have been set aside for a "science city," to consist of the biology, and chemistry group of institutes, the genetics institutes, the publishing combine of the Academy, dwellings for the scientific workers and a botanical garden.

BUILDING BOOM IN MADRID

A great building boom is going on in Madrid. Two thousand blocks of flats are to be erected in the course of 1936, thus providing some 50,000 new dwellings, states the Madrid correspondent of the *Observer*.

The leading brick-makers in the district have sold out their production for months ahead. This great boom is the result of steps taken by the authorities to solve the unemployment problem, by granting subventions, and by freeing from all dues and taxation buildings on which work was begun before the last day of 1935.

It is estimated that at least £20,000,000 is being invested in these buildings, and that 30,000 men will find work for many months to come.

ABERDEEN SOCIETY OF ARCHITECTS

At the annual general meeting of the Aberdeen Society of Architects Mr. R. L. Rollo, F.R.I.B.A., was re-appointed president of the Society for the ensuing year. Mr. A. B. Gardner was appointed vice-president of the Society and Mr. J. G. Marr past president. The following were appointed as the other members of council: Messrs. W. L. Duncan, F. A. G. Inglis, John Maclennan, A. H. L. Mackinnon, G. A. Mitchell, J. B. Nicol, and T. Scott Sutherland, and also Messrs. D. P. Hall and D. W. Innes as representatives of the associate section.

HOVE'S £150,000 SCHEME

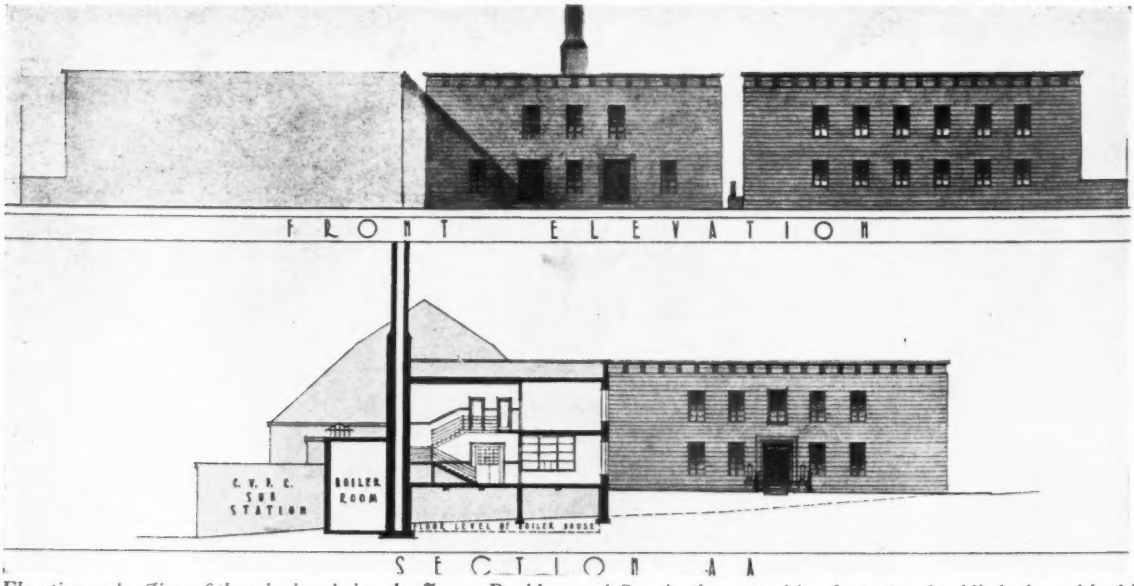
The Hove Town Council is considering a scheme for an amusement centre to include a theatre, restaurant, reading and public rooms, and flats, at an estimated cost of £150,000. The theatre would provide accommodation for 2,000 people.

R. I. B. A.

THE NEXT MEETING

On Monday next, January 27, at 8.30 p.m., Mr. Percy Thomas, O.B.E. (President), will deliver his address to architectural students. The address will be followed by the annual presentation of the prizes and studentships in the award of the R.I.B.A.

The designs and drawings submitted in



Elevation and section of the winning design, by James Davidson and Son, in the competition for proposed public baths and health clinic, Coatbridge. *(See also pages 152-153.)*

competition for the prizes and studentships will remain on exhibition at the R.I.B.A. until January 29, between the hours of 10 a.m. and 8 p.m. (Saturdays 10 a.m. and 5 p.m.).

ELECTION OF MEMBERS

At a recent meeting of the Council of the Institute the following members were elected :—

As HON. ASSOCIATE (1) : Maxwell, Sir John Stirling, Bt., K.T. (Glasgow).

As FELLOWS (13) : R. Briars (Luton) ; D. W. Clark (Colchester) ; G. A. Jellicoe, G. Morgan, C. V. Ponder (London) ; F. Richardson (Rotherham) ; W. Rudman (Chippenham, Wilts.) ; C. C. Ruwald (Sydney, New South Wales) ; E. C. Leach (Liverpool) ; J. H. Stevenson, W. J. Stevenson (Belfast) ; H. A. Ellis (Taunton) ; and W. V. Quilter (Guernsey).

As ASSOCIATES (20) : J. C. Barton (London) ; G. C. Boxall (Chatham) ; J. Brandon-Jones (London) ; T. E. Davies (Birkenhead) ; J. E. Evans (Richmond, Surrey) ; T. Fung (Hong Kong) ; (Miss) F. H. Gibb (London) ; J. E. Hodgson (London) ; W. Kendall (London) ; J. M. Knowles (Halifax) ; E. R. Lewis (London) ; (Miss) M. Low (London) ; P. R. Marsh (London) ; R. M. Messenger (Herne Bay) ; J. H. Napper (Hull) ; (Miss) P. Owen (London) ; E. W. Parker (Leeds) ; V. H. Seymer (London) ; S. C. Swan (Stocksfield, Northumberland) ; and J. P. Worrow (Loughton, Essex).

A perspective of the new Manchester office of the "Daily Express," now in course of construction, from the designs of Sir E. Owen Williams, K.B.E.

COMPETITION NEWS

TWO COMPETITION RESULTS

The winning designs in the competitions for public baths, health clinic, etc., Coatbridge, and the lay-out of the Lumps Fort Site, Portsmouth, are illustrated on pages 152-153, 154-154 respectively.

PROPOSED COMPETITION FOR POLICE BUILDINGS, SCUNTHORPE

At a recent meeting of the Lindsey Standing Joint Committee it was decided not to agree to the suggestion of Scunthorpe Urban District Council that competitive designs should be invited for the erection of police buildings at Scunthorpe in conjunction with the Urban District's scheme for new municipal buildings.

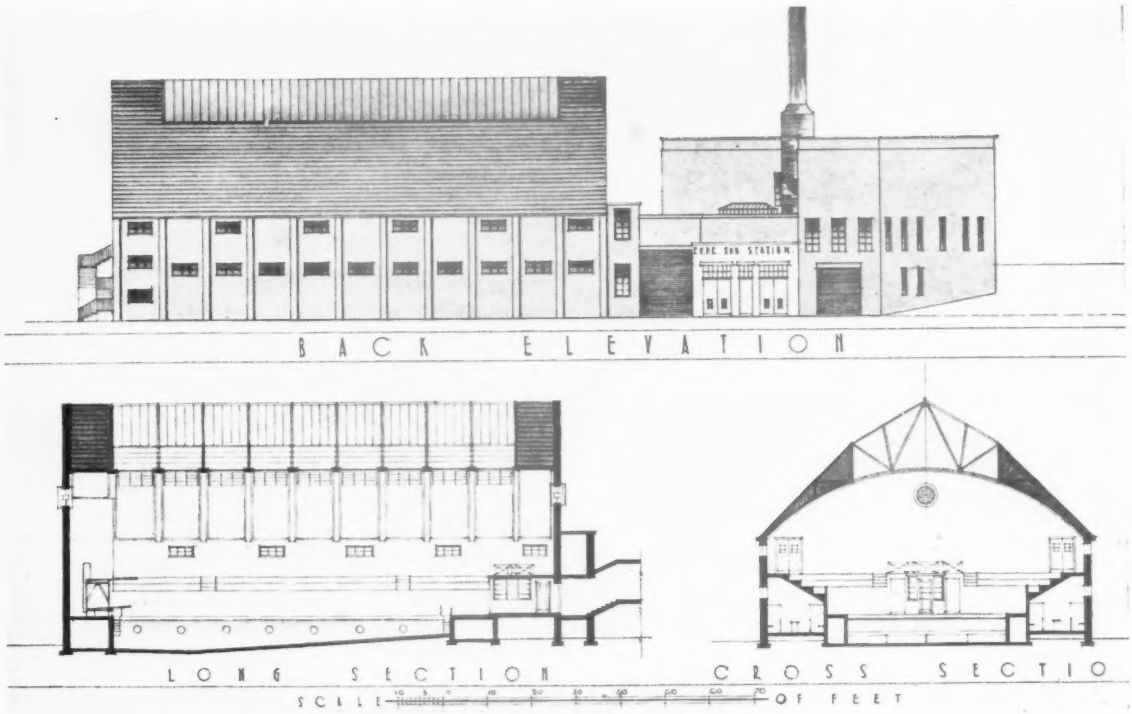
Ald. J. Forrester, proposing that the Standing Joint Committee inform the Urban District Council that it was not prepared to take part in the competition scheme, said that the committee's work could be done by the County Architect, and it could give an assurance that the work would be in harmony with the remainder of the buildings.

CENTRAL BATHS, LEEDS

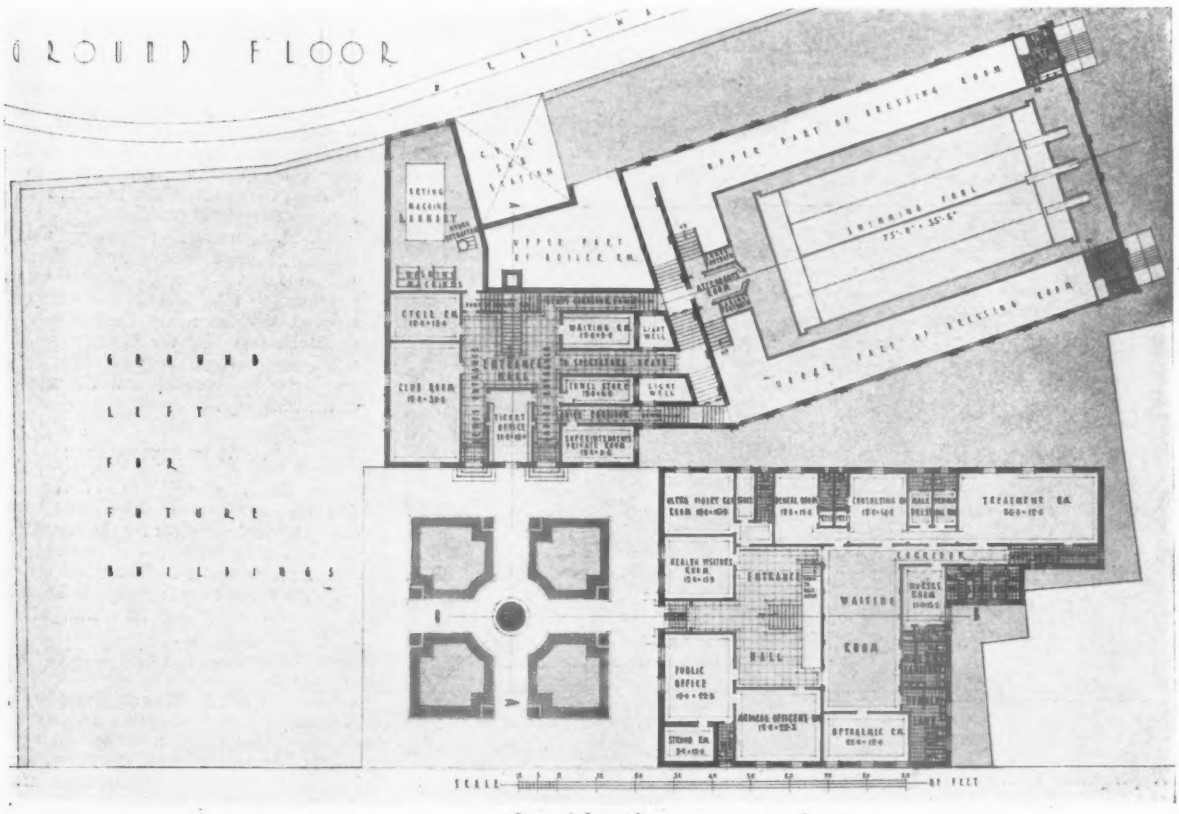
The Baths Committee of the Leeds Corporation has decided to hold a competition for designs for the new Central Baths Establishment, estimated to cost £110,000, which is to be erected on a site with the main long frontage in New York Road and adjoining also Eastgate and Bridge Street, Leeds.

The Committee has also decided to offer premiums for the designs placed first, second and third. It is not expected that the competition will open for at least two months, and in the meantime an assessor will be appointed to draw up the conditions in consultation with the Baths Superintendent (Mr. Charles Burgess).

COMPETITION FOR PUBLIC BATHS AND



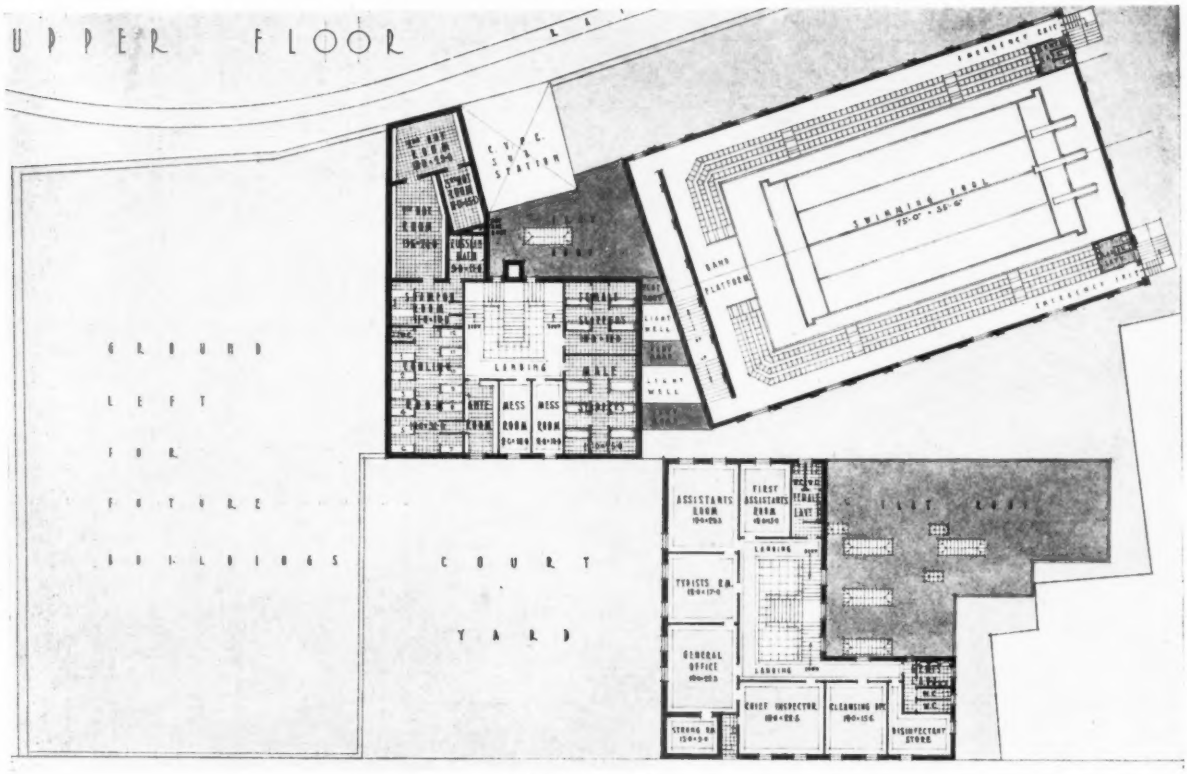
Rear elevation, and longitudinal and cross sections.



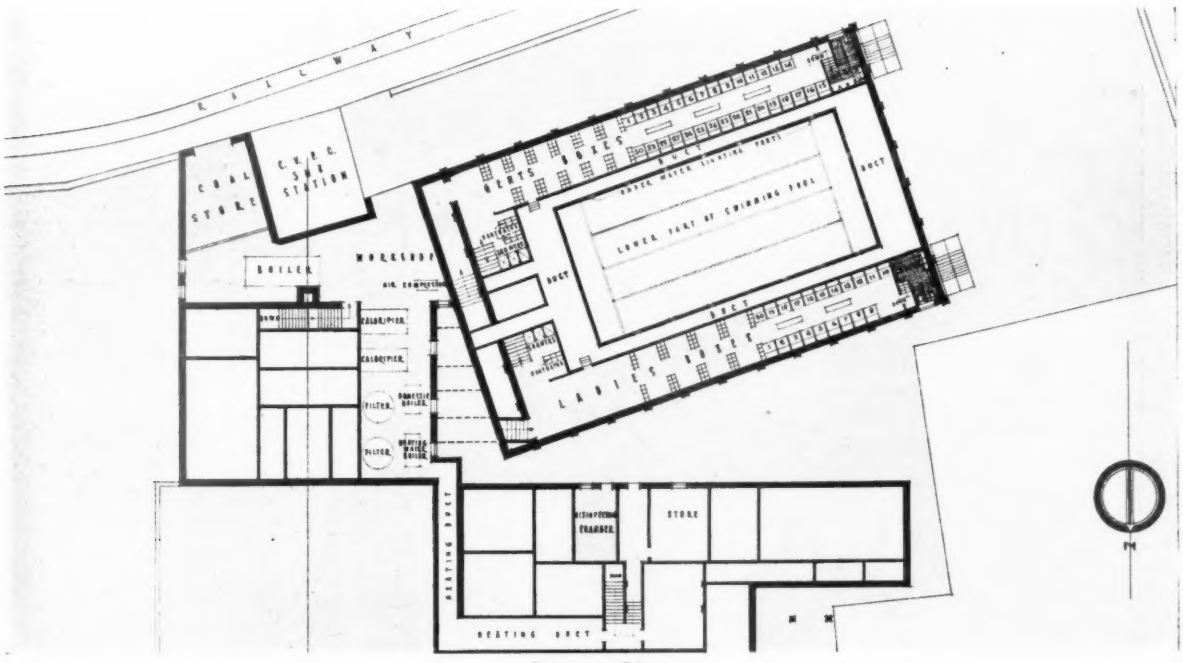
Ground floor plan.

BY JAMES DAVIDSON AND SON

HEALTH OFFICES, COATBRIDGE: WINNING DESIGN



Upper Floor Plan.

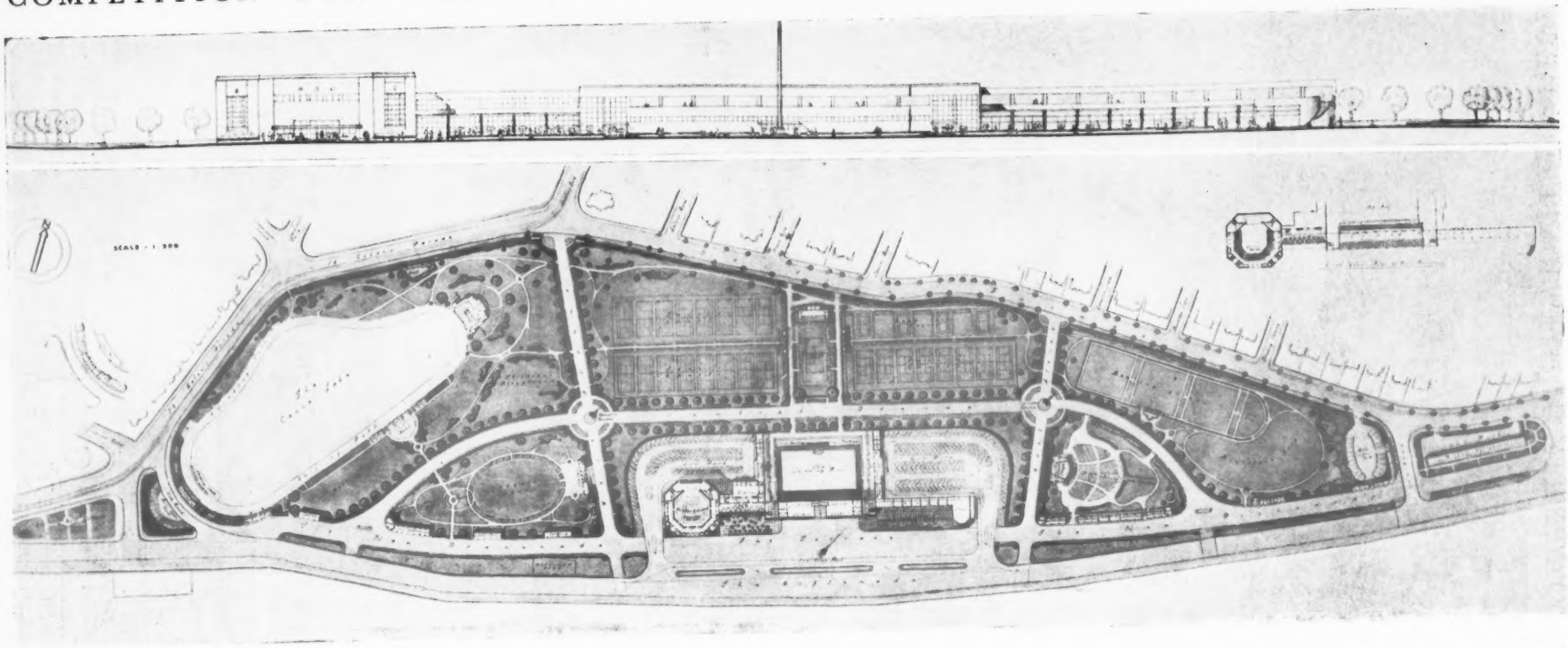


Basement Plan.

On this and the facing page we illustrate the design placed first in the competition (open to architects practising in Scotland) for proposed public baths, swimming pool, health offices and minor ailments clinic at Coatbridge. The full award of the assessor (Mr. W. B. Whitie, F.R.I.B.A.) is as follows: Design placed first (£250): Messrs. James Davidson and Son, L.R.I.B.A., of 6 Academy Street, Coatbridge. Design placed second (£150): Messrs. Walker, Hardy and Smith, A.A.R.I.B.A., of 108 Douglas Street, Glasgow. Design placed third (£75): Mr. James Miller, R.S.A., F.R.I.B.A., of 15 Blythswood Square, Glasgow.

The estimated cost of the scheme is £40,000. The authors of the winning design, in their report, state: "A simple, dignified treatment has been aimed at, and while the buildings have been carefully balanced and grouped as regard main lines and masses, each unit has been designed to express its individual function. The building generally would be constructed of brick faced externally with ashlar stone. The swimming pond building would be constructed of brick rendered with rough cast externally."

COMPETITION FOR THE LAY-OUT OF THE LUMPS FORT SITE, PORTSMOUTH



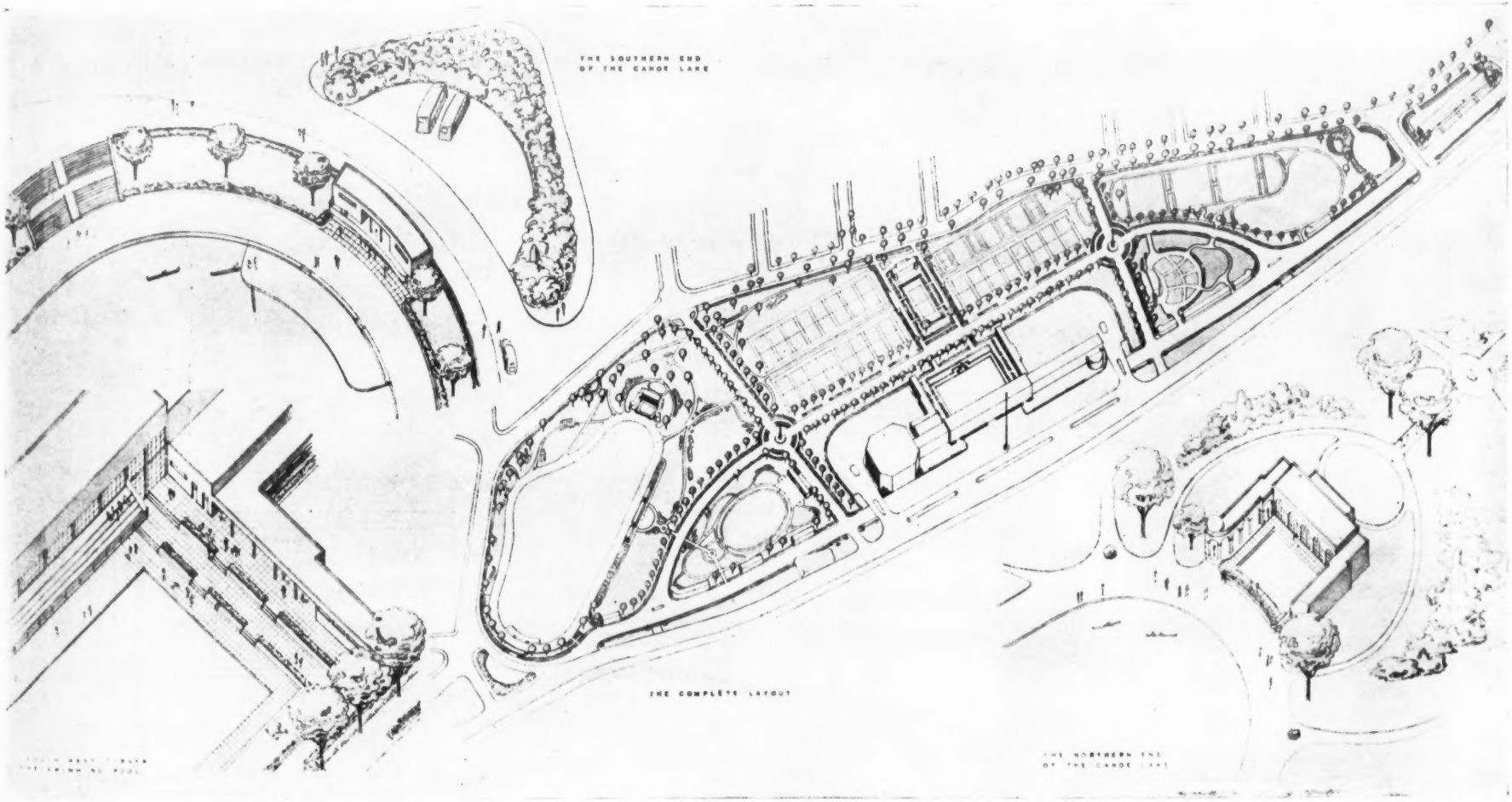
As announced in last week's issue, Mr. E. Prentice Mawson, F.R.I.B.A., the assessor of the competition for the lay-out of the Lumps Fort site, Portsmouth, has made his award as follows: Design placed 1st (£350): Messrs. Wesley Dougill, M.A., B.Arch, A.R.I.B.A., A.M.T.P.I., and E. A. Ferriby, B.Arch., Liverpool. Design placed 2nd (£125): Mr. Gilbert Jenkins, F.R.I.B.A., P.I.L.A., London. Design placed 3rd (£50): Messrs. Reginald Poole, F.S.I., M.T.P.I., and Richard H. Kelly, A.R.I.B.A., Liverpool. Design placed 4th (£25): Mr. Cameron Kirby, F.R.I.B.A., M.R.S.I., London.

Thirty-three designs were submitted; and the winning design is illustrated on this and the facing page.

Our competition critic writes: The problem was a large one and as usual was beset with certain difficulties, more appreciable perhaps to one who has local knowledge that to the average competitor from a distant part of the country. The conditions were drawn up in a very concise manner which left competitors as free as possible, and many hampered themselves by attempting to incorporate certain existing features, the principal being the old Lumps Fort, practically in the centre of the site. The western end of the site is partially developed, in that it has the Canoe Lake and some tennis courts, while at the eastern end there is the Miniature Golf Course, locally rather popular, and, at the rear on Eastern Parade, a number of tennis courts where the local tournament is held every August. The schemes resolve themselves into two main groups: 1, those which have worked with a "free" site, and 2, those which have attempted to incorporate Lumps Fort, and other existing features. Some competitors have grouped their main buildings, others have scattered them; generally speaking the former have scored over the latter. The grouped schemes can be divided into (a) where the buildings have been placed in a central position towards the sea front; and (b) where the buildings have been placed in a more or less central position on the site. The premiated schemes show clearly which is the best position for the main elements: the Winter Garden or Hall, the Bathing Pool and the Main Café. The winning scheme scores on most points by its obvious directness and simplicity. The main buildings occupy a central and forward position, with clear views of the sea. A fine large terrace, slightly raised, provides a generous amount of paved area at the right point. The duplicate promenade helps to keep the horticulture clear of rough seas, and provides a pleasant walk away from traffic. Garden work and sports facilities near to the sea is a point on which a number of competitors with otherwise sound schemes came down badly. The lateral central avenue ties the whole scheme together well, and the traffic requirements seem to be, on the whole, well studied. The Fort, Cumberland House and the Miniature Golf Course have been cleared away. There may be some opposition to the car park proposals at the Eastern end, also to the suppression of the golf course. In their report, the winners have included two alternative methods by which the scheme could be proceeded with in stages.

In the design placed second, the main buildings occupy a similar position and an alternative scheme for the central portion is included. The parkway from the Festing Road corner on the north of the site rather tends to cut up the project and I feel would lead to undue traffic pressure from that point. One of the defects, to my mind, of the lay-out west of the pier, on the Southsea front, is that it is cut up by roads which leads to isolation of parts, and traffic dangers. In this scheme, a long narrow car park behind the pool has rather limited access at the eastern end, and tunnel approach at the other from the Esplanade, which does not seem ideal.

The design placed third is a fairly direct plan, excellently grouped and has many good points; the main buildings are, however, too far from the sea. The road planning rather follows the lines of the winner.



Following are some extracts from the report presented by the authors of the winning scheme :

LAY-OUT.—*In evolving the scheme the main objective has been an attractive co-ordinated lay-out which, without exorbitant first costs, would produce a reasonable maximum of revenue. The main Central Avenue has been devised to unify the whole lay-out and to provide easy access to all parts of it. East and West Avenues converging towards the central group of buildings would give direct access to the latter and to the sea front from Eastern Parade. It is believed they would be used by large numbers of visitors arriving and leaving the area by trams along Festing Road. This would tend to relieve the present congestion near the Rock Gardens.*

MOTOR TRAFFIC AND PARKING.—*The traffic arrangements at the two extremities of the site are improved—at the western end by a new road for motor coaches entering and leaving the suggested parking space, and at the eastern end by adjustments of the site boundary and by the short new road. At both ends of the site, definite areas are allocated to motor coach parks. The main parking spaces for motor cars are situated near the centre of the lay-out.*

THE NEW PROMENADE.—*It has been considered that as the existing promenade is too narrow for present, and more particularly for future, needs, a spacious new promenade should be provided along the whole length of the site on the northern side of the Esplanade.*

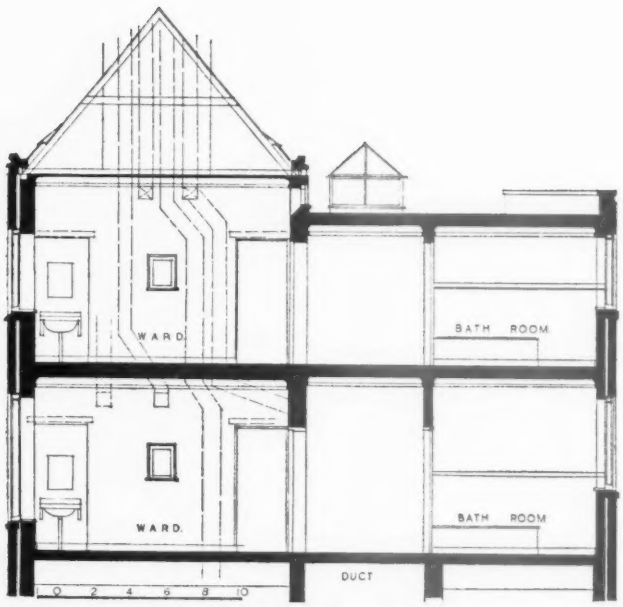
THE MAIN BUILDINGS.—*The Fort is levelled, and the main centre of the lay-out established on its site. None of the suggested buildings would be on made ground, and this arrangement would ensure, also, the whole of the lay-out, rather than one end only, being used by visitors.*

The desirability of providing vantage points seawards, because of the interest in shipping activities, particularly during Naval and other reviews, has not been overlooked. It has led to the provision of a long, low range of buildings with a covered promenade on the top. The latter could be used for staged seating and for additional cafe space as required. Close intercommunication is provided between the major buildings.

COST.—*The estimated cost of the scheme is £146,220.*

DESIGN PLACED FIRST: BY WESLEY DOUGILL AND E. A. FERRIBY

SANATORIUM AT PENRHOS COLLEGE,



SECTION

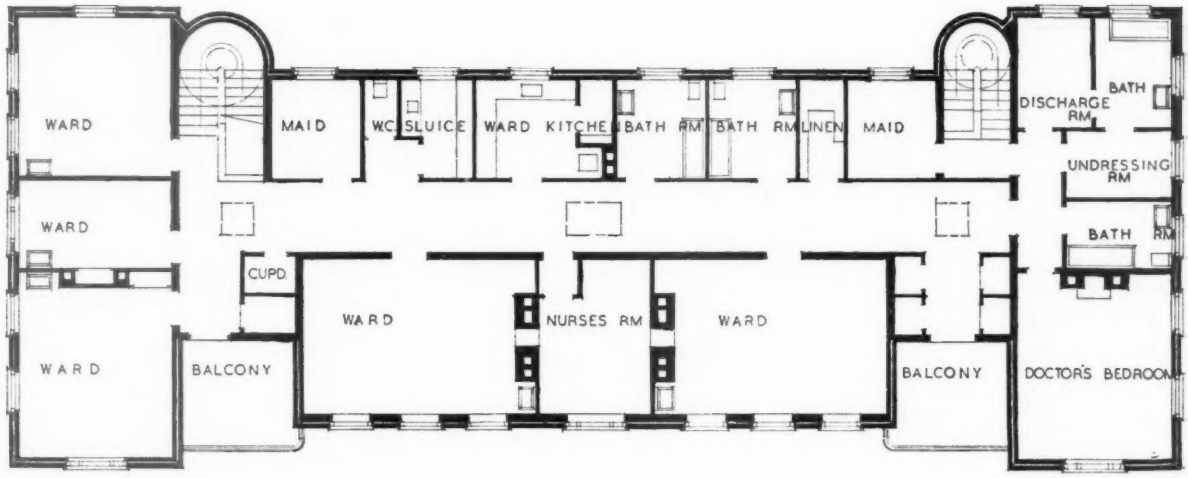
DESIGNED BY

S. COLWYN FOULKES

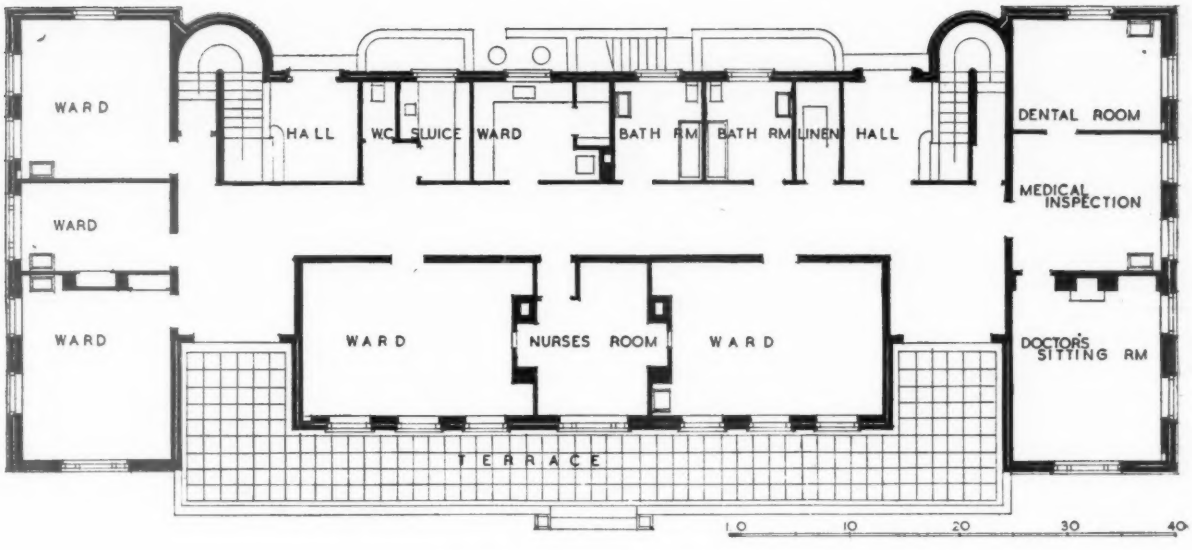
PROBLEM.—*The building is both the sanatorium and the general medical department of a girls' school, the ground floor being occupied by medical accommodation and the first by the isolation wards.*

Above is a view of the south elevation.

COLWYN BAY, NORTH WALES



FIRST FLOOR PLAN



GROUND FLOOR PLAN

PLAN.—*The plan is of the "north corridor" type with wards facing west and south and services north.*

CONSTRUCTION.—*Weight-carrying cavity brick walls, hollow tile floors, and timber tiled roof; flats are finished with asphalt.*

EXTERNAL TREATMENT.—*2¼ in. grey facing bricks, hand-made red plain tiles, and sliding sash windows.*

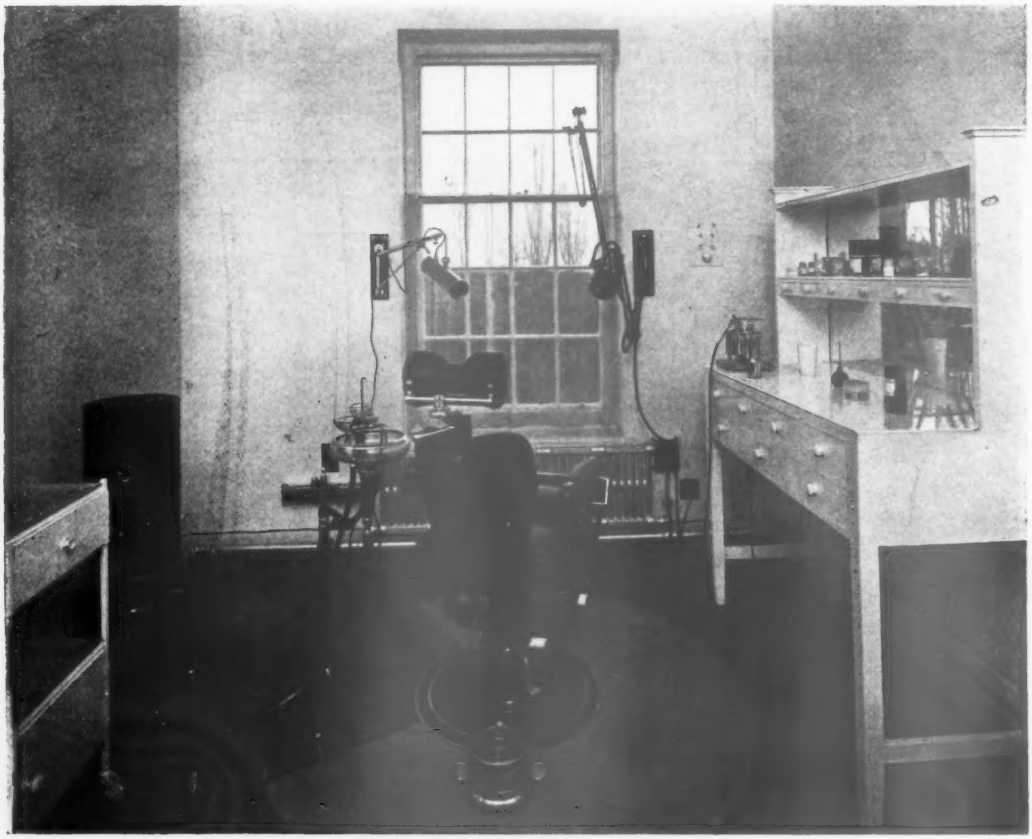
FINISH.—*Ward and sitting room floors are of jarrah blocks, corridors and kitchens of cream and green terrazzo, and stairs of green rubber. Kitchen walls are of terrazzo, and elsewhere water-painted pale yellow, with green enamelled doors. Radiators are green enamelled in corridors and aluminium in wards.*

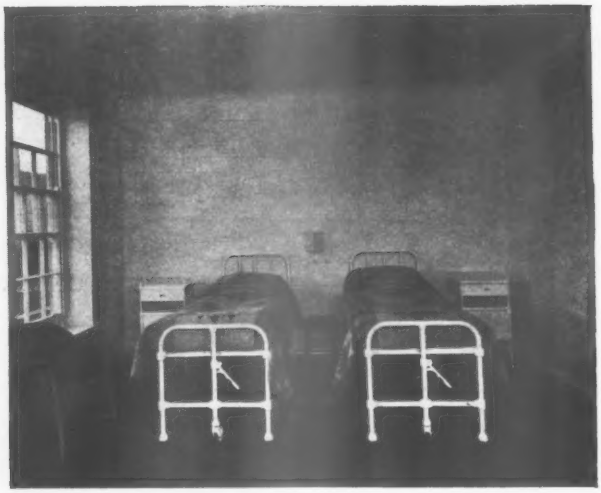
SERVICES.—*The building is centrally heated on the low-pressure system, copper piping is used throughout, and all sinks are of stainless steel.*

COST.—*Total contract price £6,937.*

For a list of the general and sub-contractors see page 176.

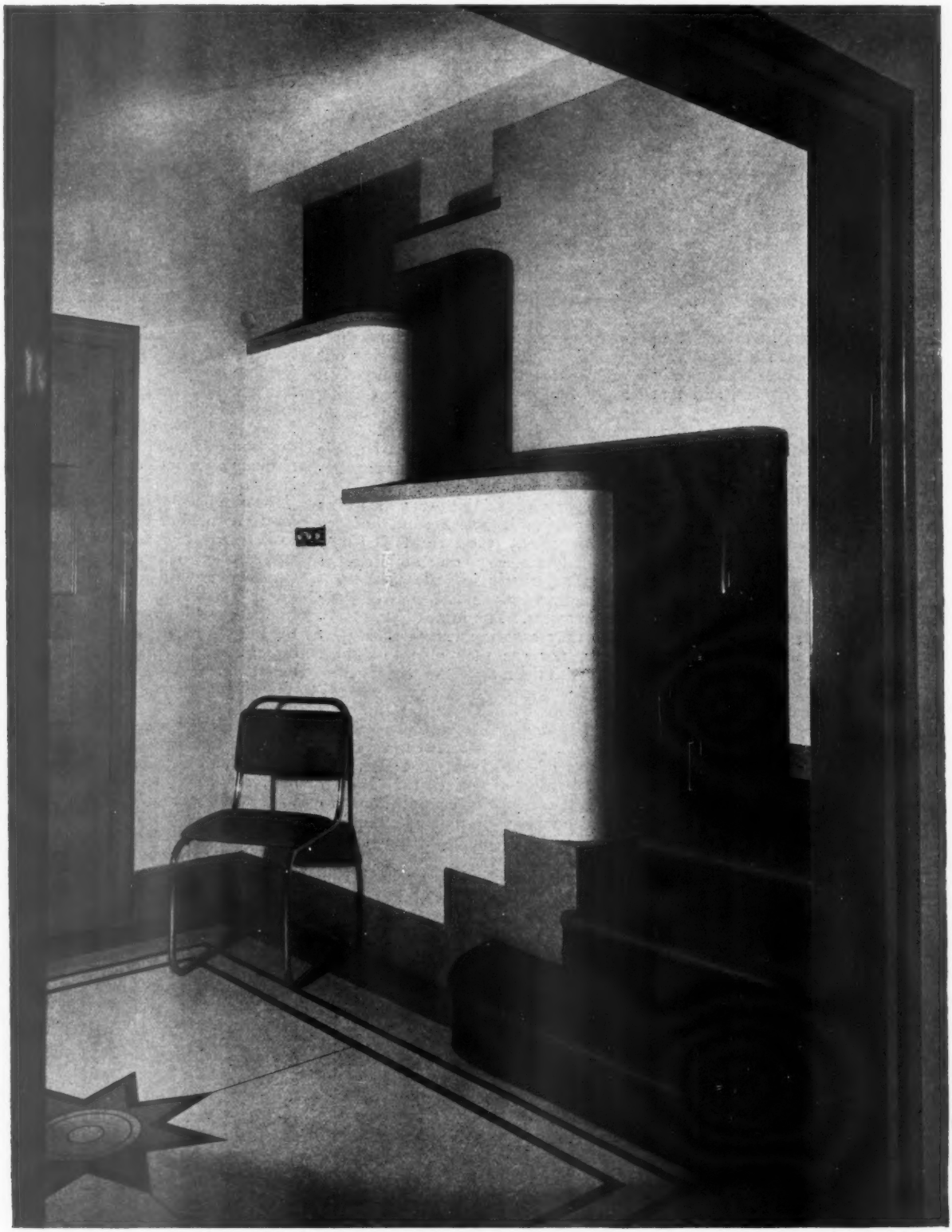
SANATORIUM AT PENRHOS COLLEGE, COLWYN





The photographs show : the dental treatment room, one of the corridors and a two-bed ward.

BAY: DESIGNED BY S. COLWYN FOULKES



A detail of the entrance hall, with pale yellow distempered walls, cream and green terrazzo floor, jade green enamel doors and dark green rubber stair finish.

LETTERS FROM READERS

REGINALD A. KIRBY

F. STURROCK

RICHARD DAVIES

Timber Houses

SIR,—Mr. Heathorn has been over-eager in accepting the competition half-inch details of my timber house as the final working drawings. To one of his apparently profound knowledge (or is it merely literary ambition?) it should hardly be necessary to point out this difference. However, in case I have overestimated him let me repeat that competition half-inch details are merely in the nature of an *esquisse*, and that *esquisse* is French for sketch.

In the question of the west elevation he has overlooked the fact that the large living-room window is divided vertically and horizontally with heavy section hardwood members, thereby distributing the wind load in both directions to the side walls and girder above and not bearing solely on the transom.

His assumption that I believe that timber cannot be efficiently used as columns or as an internal finish is a compound of misinterpretation and misstatement. In the first case, I employed steel columns because it is my firm opinion that they solve the structural and therefore æsthetic problems better than timber in this particular design. In the second case, I avoided a possible monotony by contrasting plywood panelling with painted or plastered wood-fibre board (wood-fibre being a product of timber, Mr. Heathorn).

With regard to the last clause in his letter objecting to the open balcony access to bedrooms, bathroom and w.c., surely Mr. Heathorn is not one of those who blush with shame when they are observed going in a significant direction. REGINALD A. KIRBY

Architectural Education

SIR,—Amongst the recent letters on architectural education, two in my opinion have expressed the immediate necessity (i.e., that, acknowledging our present form of society, concessions must be made within the existing school conditions). The one by A. Cox, the other by John Madge. They write that the students must be able to discuss and determine their requirements amongst themselves.

The range of letters which has appeared in this JOURNAL, and the large attendance at the recent R.I.B.A. informal meeting on architectural education, surely indicate that there are many who are conscious of their requirements. As individuals, however, they cannot advance their proposals, nor are they able to discuss them with the majority of students.

Under the existing conditions the schools in general are split up into "years," and one is virtually isolated throughout the school course from students of other years. Unless this great barrier of isolation is broken down the students cannot hope to organize and produce definite requirements which will have the united support of all students.

Now, most of the larger schools run a Students' Committee, but their activities from all accounts appear to be just "very social." It seems to me that if the students could "clean up" their committees and reorganize them on a more responsible basis, the first step towards unity and definement of purpose would have been taken.

F. STURROCK

SIR,—It is good to see that the subject of architectural education is being discussed in your correspondence columns. It is obvious that without a fine system of education it is impossible for a fine architecture to develop. The only sound way to progress is by enquiry and discussion amongst the students and the staffs; such as should be stimulated by the letters now appearing in the JOURNAL.

Before any criticisms or suggestions for improvement can be useful, it is necessary to have a clear picture of the existing situation. A group of students interested in this question have carried out some research by sending questionnaires to the various schools in England.

The results of this show that, except for three or four schools which claim to be progressive or neutral, the great majority of schools are engaged in fostering classical or neo-classical design. This is not so much to be seen in the elevations, which are often in the Restrained, or Good Taste, Modern Style, as in the planning and general approach.

Leaving the question of æsthetic direction out, everyone will agree that the duty of every school is to provide first, an adequate teaching in construction, both traditional and modern; and, secondly, to present students with the sort of problems which modern society will later call upon them to solve. The few progressive schools do this much, with varying degrees of efficiency. They do not, however, give the students a lead in any particular direction, but attempt a sort of neutrality. This generally results in the various members of the staff giving contradictory advice. This system is very stimulating for the alert student; but tends rather to bewilder the more backward.

However, the important problem is the bringing into line of the really out-of-date schools, which are failing in the fundamental requirements mentioned above. I therefore much regret to see that no letters have yet appeared from students in schools of this type. RICHARD DAVIES

A model of the winning design, by Reginald A. Kirby, in the recent timber house competition.

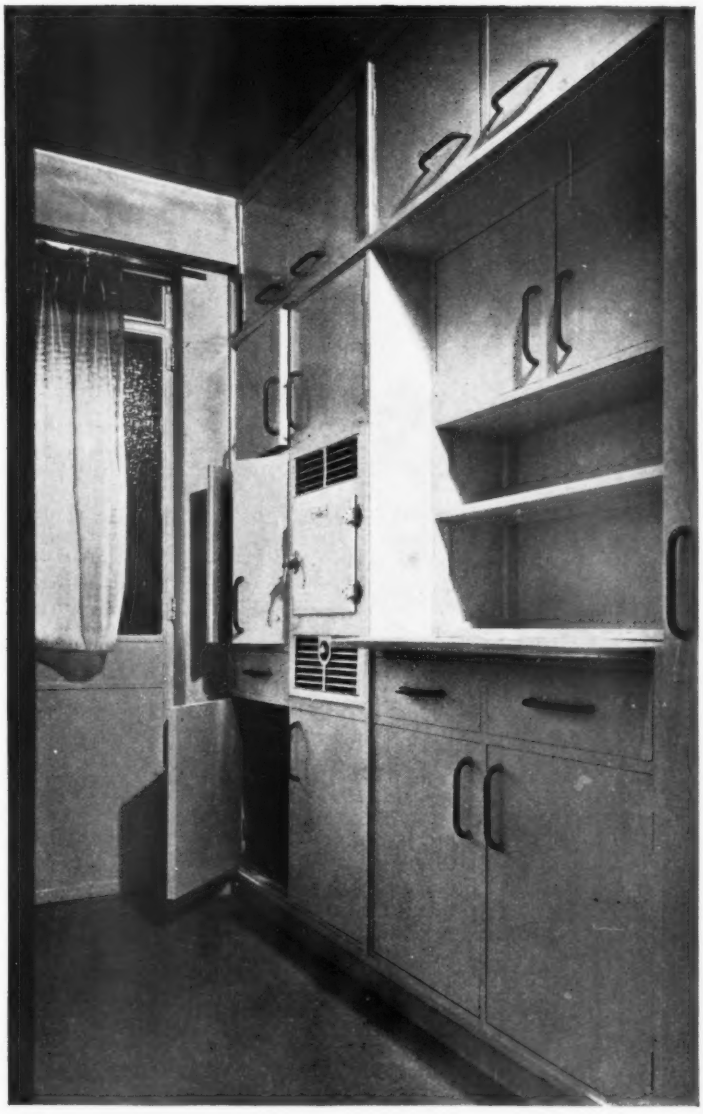
Announcement

Mr. Clive Entwistle has moved his offices to 118 New Bond Street, London, W.1.

FILING REFERENCE:

WORKING DETAILS : 391

KITCHEN • EMBASSY COURT, BRIGHTON • WELLS COATES

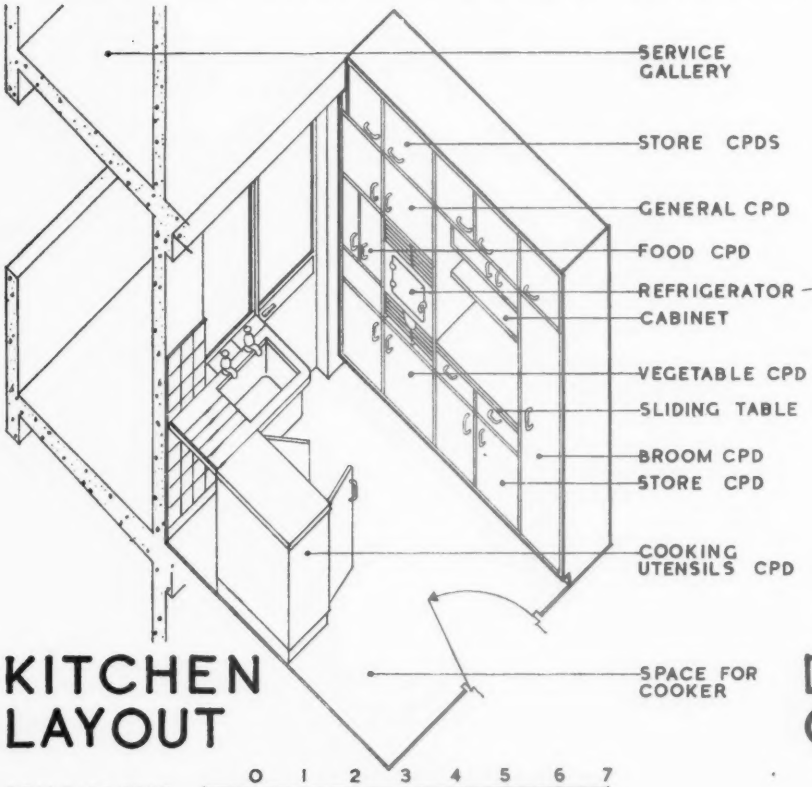


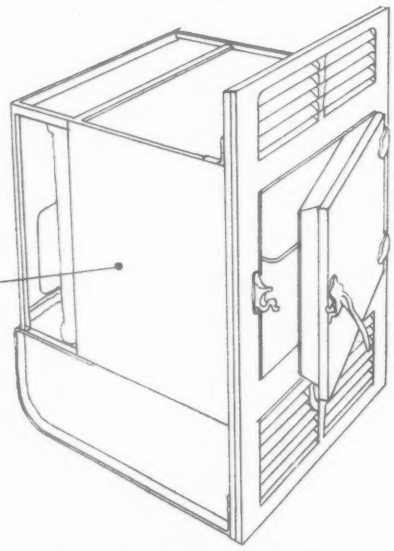
The cupboards illustrated above are built up of deal framing and plywood, painted white. Detail drawings are shown overleaf.

FILING REFERENCE:

WORKING DETAILS : 392

KITCHEN • EMBASSY COURT, BRIGHTON • WELLS COATES



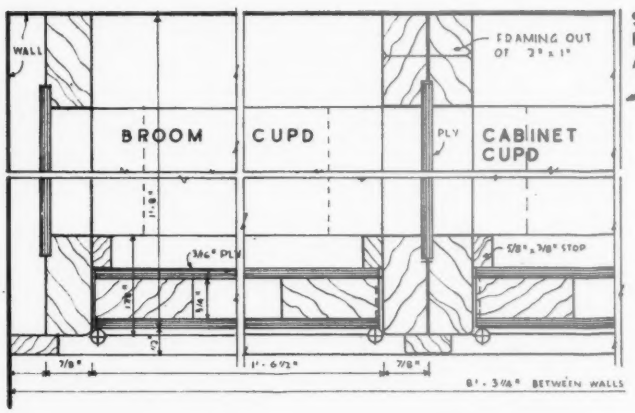


VIEW SHOWING SLEIGH BASE

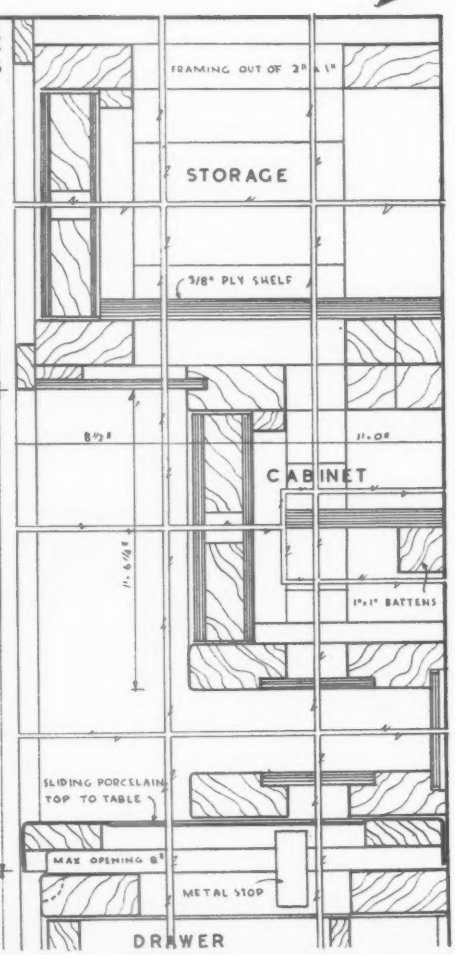
KITCHEN LAYOUT

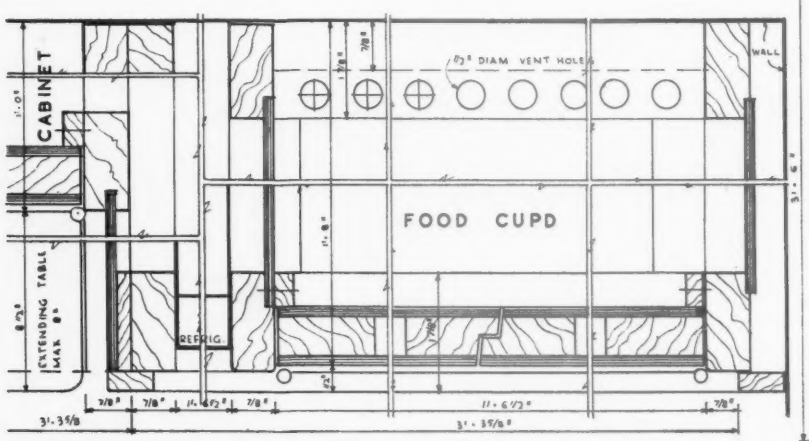
SCALE OF FEET 0 1 2 3 4 5 6 7

DETAILS OF CUPBOARDS



SIMILAR DETAIL FOR VEGETABLE AND STORE CPDS





THE CUPBOARDS ARE OF DEAL FRAMING AND PLYWOOD PAINTED WHITE

Axonometric and details of the kitchen cupboards illustrated overleaf.

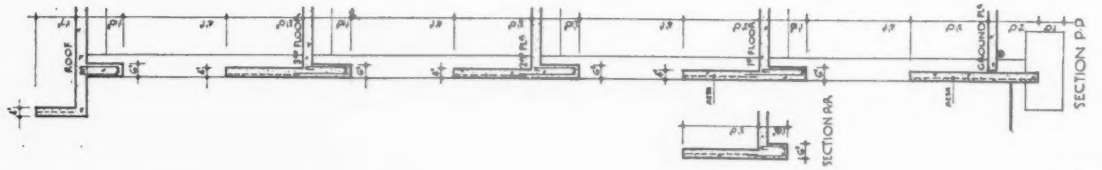
WORKING DETAILS : 393

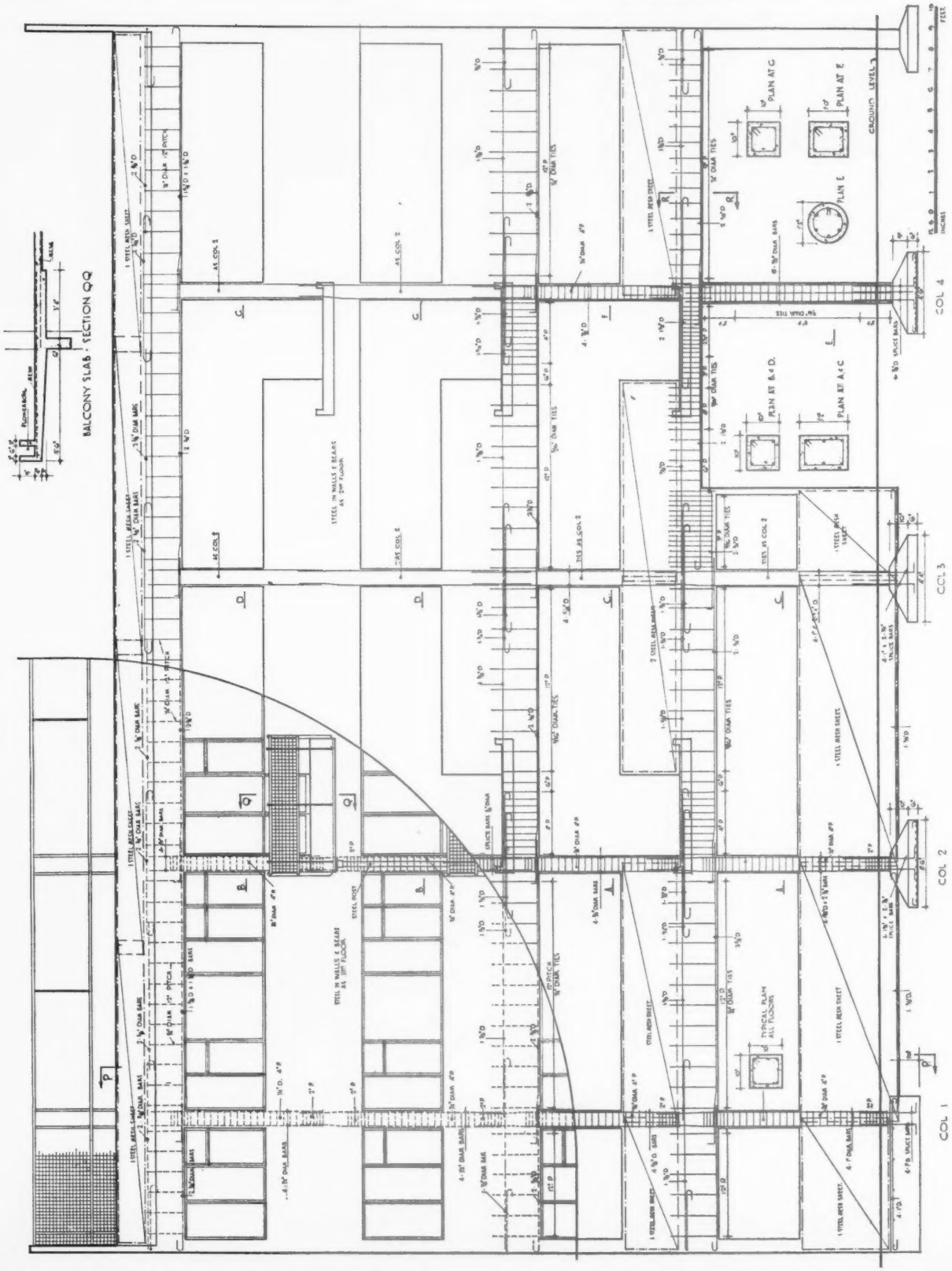
BALCONIES • FLATS IN ST. PANCRAS • CONNELL, WARD AND LUCAS

Above is a photograph of a block of working-class flats, showing the cantilevered living room balconies. The front of each balcony is arranged as a flower-box, hence the omission of the wire mesh on the lower half of the railings. Reinforcement details are shown overleaf.

WORKING DETAILS : 394

BALCONIES • FLATS IN ST. PANCRAS • CONNELL, WARD AND LUCAS





Reinforcement details of the balconies illustrated overleaf.

Stokesay Castle, Shropshire. The south tower (in the centre) dates from c. 1291 ; the hall from c. 1240 ; the timbered gate house and the timber work on the right from c. 1620. The whole group forms the most complete surviving example of the mediæval fortified manor-house in this country. From "The English Country House."

LITERATURE

COUNTRY HOUSES

[*BY J. A. GOTCH*]

The English Country House. By Ralph Dutton. London : Batsfords. Price 7s. 6d.

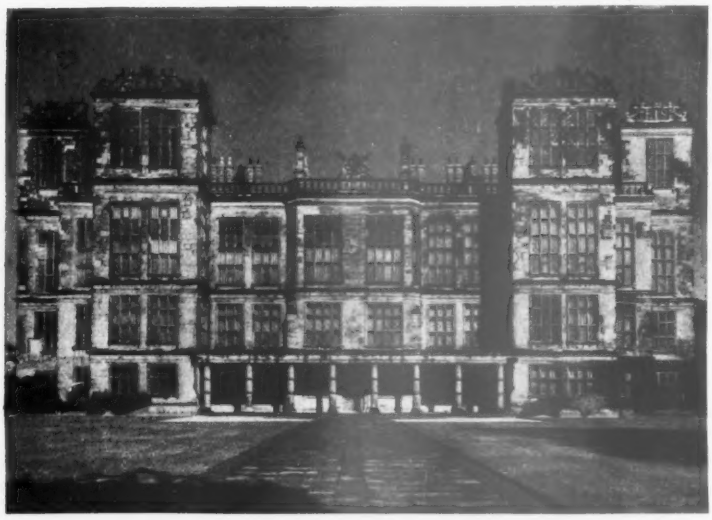
MR. DUTTON'S theme is one of great fascination, for England still possesses a remarkable number of old country houses which illustrate the changes that occurred in domestic architecture from the twelfth century onwards. They are to be found throughout the land, from Northumberland in the north to Cornwall and Kent in the south ; from Shropshire in the west to Suffolk in the east. The smallest county, Rutland, has a dozen or more, not taking into account dwellings of small size, while many of the larger counties can show score upon score.

Mr. Dutton has availed himself of these treasures in a catholic spirit, and illustrates houses of all dates and of all districts, together with the gardens with surround them. He follows on the whole a chronological sequence, and discourses pleasantly upon his examples with a knowledge that enables him not only to deal with the development of the houses themselves but also to connect them with the social life of the times when they were built.

Our ancestors of the twelfth and thirteenth centuries do not appear to have taken account of comfort, as we understand it ; they were satisfied with shelter and safety. Shelter was obtained by stout walls and a good roof and did not trouble itself with a multiplicity of rooms ; there was a great hall, which accommodated the household by day and night ; there was a kitchen department to supply the enormous demand for sustenance, and there was often a private room for the lord and his lady. The need for safety was met by thick walls pierced where necessary with little openings for letting in light and air, such openings being smallest on the ground floor where they were most accessible from the outside. They were at first not glazed but merely closed with shutters which effectually excluded the light, but not so effectually the draughts.

It was in the reign of Henry III that

Houghton Hall, Norfolk (c. 1722). Colin Campbell, architect. A view from the south-east. From "The English Country House."



Hardwick Hall, Derbyshire (completed 1597). The west front. From "The English Country House."

a tendency towards less discomfort manifested itself. That king did much in his own houses to render life more tolerable, and his example was followed in houses of less degree. The improvement spread continuously, if slowly, keeping pace with the increase in the safety of life, until, with the general amelioration of manners and the comparative security which had been established by the time of Elizabeth, it blossomed out into the magnificent mansions of her reign. After her time, more particularly in the early eighteenth century, architecture became recognized by the polite world as an art in itself, and houses were built with a keener eye for architectural display than for the niceties of domestic comfort.

The full tale of this development can be read in Mr. Dutton's pages, illustrated (with Messrs. Batsfords' usual liberality) by plentiful examples of houses of different periods, in stone, brick and half-timber, ranging from Boothby Pagnell Manor-House and Oakham Castle of 1180 down to Toddington Manor of 1829.

This continuous history is introduced by an interesting general survey of the subject from the pen of Mr. Osbert Sitwell, and the illustrations are largely taken from photographs of Mr. Will F. Taylor.

FIRE

[*BY M. A. L. IRELAND*]

Fire Precautions in Schools. Issued by the Home Office. Price 2s. net.

THIS book has been prepared by Lt.-Col. Guy Symonds, D.S.O., as Fire Adviser to the Home Office, and contains many valuable suggestions to architects, headmasters and other responsible authorities.

So far as the buildings are concerned the notes apply more particularly to the older type of building, especially those that are not fire resisting and those used as residential schools. The modern school complies in the main with the suggestions contained in the book.

A record of 76 fires is given, and, it is interesting to note that one of the chief causes of these is the overheating of flues; while the position of a number of the outbreaks originated in kitchens, sitting-rooms, studies, basements and stokeholds, it is important that the majority of these occurred on the ground or lower floors.

Exits are of first importance, and should be carefully placed so as to allow the occupants to get quickly and safely away from the buildings, but not so as to lead into small and congested areas. Mention is made, and rightly, of the danger of an internal staircase (in the event of a fire on any lower floor) becoming a flue. The suggestion of smoke stop doors is a good one, and although in some cases doors are provided between each landing, lobby, corridor or stairs, there are many instances where they do not exist. These doors should be arranged so that they can be closed to prevent, for a time at least, smoke and flames from reaching the stairs. There is nothing worse than smoke to cause a difficult situation. Similar doors could be placed at suitable points in corridors.

Mention is also made of smoke or fire towers, particularly in high buildings, permitting not only escape if necessary but also allowing the fire brigade to use these to fight the fire; incidentally such towers could contain piping with suitable brigade valves ready at the base for connection to brigade pump or probably, if the water pressure is satisfactory, connected to the main water service. Suitable iron gangways join the main building and smoke towers; a section showing this arrangement as well as the suggested position of smoke stop doors is included in the book.

For buildings of more than one storey many forms of emergency escape are mentioned, and a good deal of detail given, but a note of warning at this stage is necessary—great care should be exercised before deciding what is the best and not the cheapest form of escape to instal: so often cost governs the issue. The present writer would, with his experience, hesitate to recommend anything that is hazardous to the person or persons using it, bearing in mind that each case has to be carefully considered on its merits, and also that serious accidents may happen even at fire drill. What, then, would be the result in case of fire? In all cases an experienced person, unbiased by any trade interest, should be consulted.

One type of escape that can be safely recommended is the external iron staircase, and if there is room this may be kept a few feet away from the building and from any windows. The latter, if unavoidable, should be glazed with fire-resisting glass. Needless to say, adequate landings at each floor level will have to be provided.

Under the section of Fire Prevention attention is drawn to electrical installation risks: a very recent disastrous fire in London brings to our notice the necessity of exercising great care so far as electricity is concerned. I had hoped that regular inspection of installations by qualified electricians would have been emphasized in the book.

With regard to fire appliances much could be written here on the merits, and otherwise, of a number of these, but so far as the ordinary school is concerned suitable hydrants or water points should be arranged, mainly for first-aid purposes. I am glad to see that chemical and technical training centres are mentioned, and the writer is entirely in agreement with what is said. It is not enough to instal suitable equipment; it must be regularly inspected by one who understands this specialist subject. Records should also be kept of the inspections.

It might be noted here that before any appliances are installed expert advice should be obtained with regard to the fire risk and what is necessary to combat it.

Altogether it is a most useful memorandum, and Col. Symonds can be congratulated on compiling such valuable information, although I hope that one or two items will be revised in a future issue.

WINCHESTER COURT, KENSINGTON, W

DESIGNED BY D. F. MARTIN-SMITH

PROBLEM.—*The clients desired a building that made the maximum use of the Church Street—Vicarage Gate corner for shops, and which included a large proportion of two-bedroom flats, a certain number of one- and three-bedroom flats, and a few bed-sitting room flats. The block form was additionally controlled by the provision of a drive-in on the Vicarage Gate front.*

CONSTRUCTION.—*The building is steel-framed with R.C. foundations and retaining walls. Infilling is of brick, 9 ins. to internal courts and behind faience, and 14 ins. to external walls. Floors and roofs are hollow tile and partitions are of pumice, with two thicknesses between flats. Acoustic quilting is laid beneath wood floors.*

ELEVATIONAL TREATMENT.—*The ground and first floors are faced with black faience, and upper floors with yellow-brown bricks with raked joints. The balconies are in cream faience, cornice and corner windows in blue faience, and the top floor faced with cream bricks with white flush joints. Windows are of steel, painted blue on the two lower floors and cream elsewhere. Balcony soffit and guard-rails are also blue.*

Above is a general view of the building showing the Vicarage Gate front (right) and the return elevation to Church Street.

WINCHESTER COURT, BLOCK OF FLATS

PLAN.—*Access to the shops is provided by a separate entrance and the turning space needed forms a light court for the service rooms of the flats above. The goods entrance to the flats is placed at the upper end of the Vicarage Gate front, and the main staircase connects with the basement restaurant lobby. A passenger lift is provided at each end of the main corridor.*

INTERNAL FINISH.—*Corridors and lounge are finished in a shaded cream paint, and are close-carpeted. Flat bathrooms and kitchens are floored with linoleum and tiled to a height of 4 ft.*

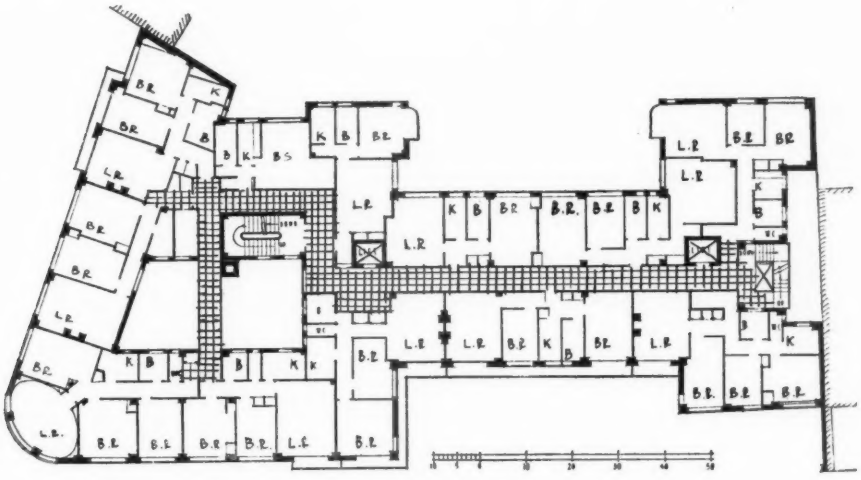
RENTS.—*The rents of the flats range from £120 to £245 per annum.*

Above is a detail of the main entrance.

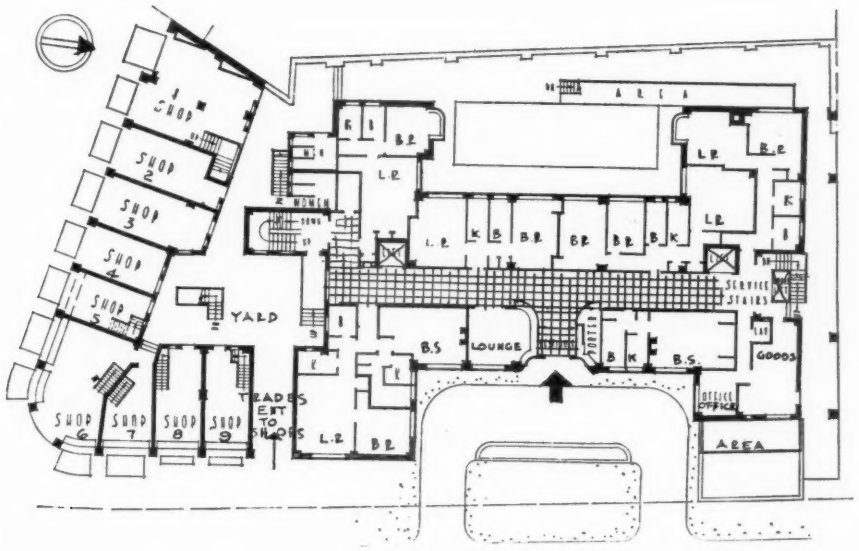
DESIGNED BY D. F. MARTIN-SMITH

For list of general and sub-contractors, see page 176.

IN VICARAGE GATE, KENSINGTON, W.

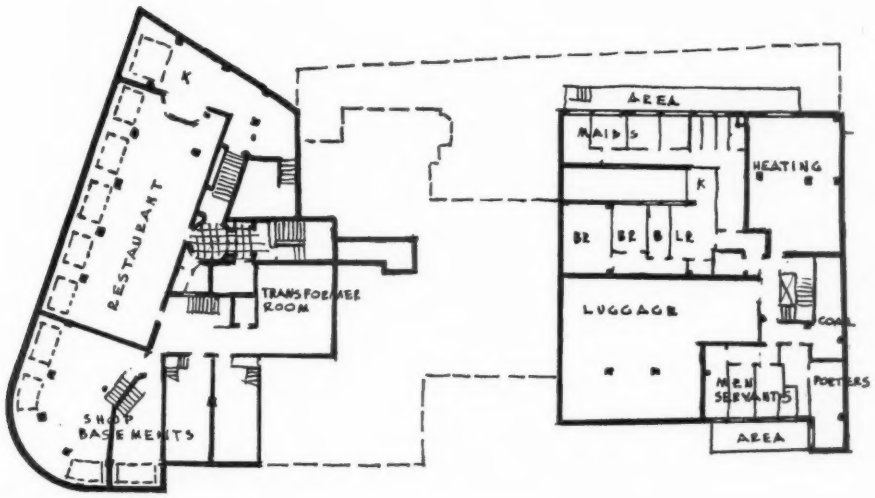


TYPICAL UPPER FLOOR PLAN



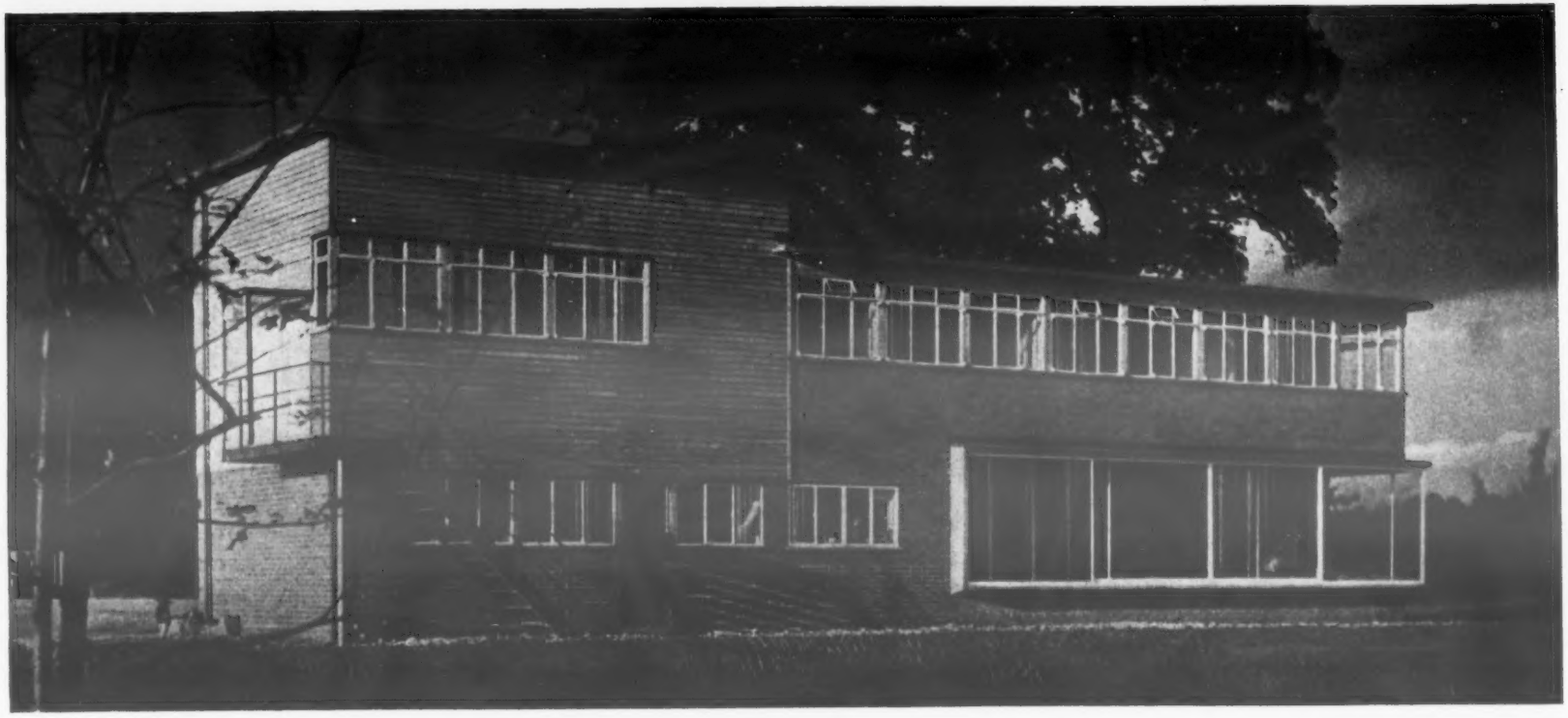
GROUND FLOOR PLAN

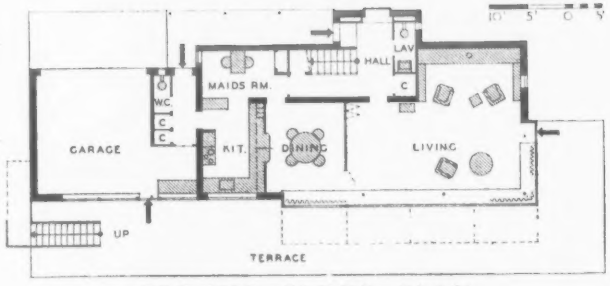
VICARAGE GATE



BASEMENT PLAN

HOUSE AT CHIPPERFIELD, HERTFORDSHIRE





GROUND FLOOR PLAN

FIRST FLOOR PLAN

PROBLEM.—*The house illustrated was originally designed in reinforced concrete for a site at Burhill, but was rejected by the Burhill Estate. A site was then found at Chipperfield, but the design was disapproved by the Watford R.D.C. under the Town Planning Acts.*

After negotiations, the ultimatum of the Council was that if the house were to be built in reinforced concrete it must have a pitched roof, if without a pitched roof it must be built in traditional materials ; finally, the latter alternative was adopted.

MATERIALS.—*The studio is teak framed and finished externally in oak weatherboarding, and internally with insulation board and plaster. The construction of the rest of the house is of brick and timber, with an R.C. window surround. The roof finish is of asphalt and insulation is of aluminium foil. Partitions are of plaster slab.*

FINISHES.—*Internally flooring generally is of oak strip, with composition in kitchen and bathrooms. Staircase is of teak with metal handrail. Ceilings are plaster slabs, skim coated, and internal fittings generally of painted deal. Heating and lighting is by electricity, as local rates are cheap. The contract price for the house was £2,530.*

On the facing page is a general view of the south front ; above is the entrance elevation, and on the left a detail of the external stair to the studio.

For a list of the general and sub-contractors, see page 176.

DESIGNED BY E. MAXWELL FRY

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 replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for application to all similar problems. [Crown copyright is reserved.]

Plasters for X-Ray Rooms

THE Building Research Station frequently receives requests for information on and specifications for barium sulphate plasters. In rooms where X-ray apparatus is installed, these plasters are used to afford protection against the passage of the rays through the walls.

In rooms adjacent to an X-ray installation the staff may be exposed to radiation leaking through the walls, unless the protection of the walls, floor and ceiling is adequate, and it is known that prolonged exposure to radiation, even in minute amounts, can cause severe illness, such as injuries to the superficial tissues of the body, changes in the state of the blood and derangement of internal organs. The importance of proper protection is therefore obvious.

The question of the protection of occupants of rooms adjacent to X-ray rooms is dealt with both in the "International Recommendations for X-ray and Radium Protection," and the "Fourth Revised Report of the British X-ray and Radium Protection Committee." Copies of these publications may be had, free of charge, from the Director, National Physical Laboratory, Teddington, Middlesex. In general, X-ray rooms for diagnostic work need no protection other than that afforded by the walls, but the walls, floors and ceilings of rooms intended for X-ray treatment should afford protection equivalent to not less than 2 mm. thickness of lead. This degree of protection may be obtained by lining the walls, etc., with lead sheet, by using a plaster containing barium sulphate, or by using blocks of barium concrete in the construction.

The table on the facing page, taken from a paper by Dr. G. W. C. Kaye, gives the protection values against X-rays of various building materials, compared in each case with the protective value of lead, which is taken as the basis of comparison.

It will be noted that when a wall having a protective value equivalent to 2 mm. of lead is required, and using an X-ray tube excited by a voltage of 200 kV, then equivalent protection with 4½ in. stock brickwork would be secured by plastering both sides with ½ in. of barium sulphate plaster of the composition shown. If, however, a greater degree of protection is required the coating of plaster required may become inconveniently thick. Furthermore, it should be noted that with X-ray tubes of 100 kV. and over the protective value of barium plaster in comparison with lead falls off with increasing voltage. It may then cease to be practicable to obtain the necessary protection with plaster, and recourse must be had either to barium sulphate blocks or to lead.

It is apparent from the general tenor of some enquiries with respect to barium sulphate plasters that consideration of the question of isolation of the appliances has been left far too late. *The design of the rooms in which X-ray apparatus is to be used must, from the outset, take account of the degree of protection necessary in order that proper provision may economically and conveniently be made.* It should not be left until the work is nearing completion to decide what thickness of barium plaster or other protective material should be used.

In any case it must be realized that the protective value of a plaster cannot be taken for granted. The table shows the protective value of a particular mix tested, but the stopping power of any mix which it is proposed to use should be checked by an actual test, which may be made at the National Physical Laboratory at a fee of half a guinea per specimen for each test voltage.

In this connection reference should be made to the "Recommendations of the British X-Ray and Radium Protection Committee" (Fourth Revised Report, 1934), which details the general requirements in such work. One point which it is particularly desired to emphasize is referred to in the above "Recommendations":—

"The Protection Committee further draw attention to the facilities which are provided by the National Physical Laboratory, Teddington, for the inspection of X-ray, radium, electromedical and ultra-violet light departments, the testing of protective materials and equipment, the calibration of dose-meters and the testing of radium and radioactive substances. In particular, when new departments are being planned, the Committee suggest that it will normally be found specially advantageous to call on the services of the Laboratory prior to or at an early stage in the erection of the department. The reports of the Laboratory are based on the Recommendations of the Committee, with which it works in close co-operation."

Suitable Floor Finish for Chemical Laboratory

¶ *An architect desired information with regard to a suitable acid-resisting floor finish for use in a school chemistry laboratory. The laboratory was on the first floor of the building, and the existing floor was of timber construction, with a deal boarded finish.*

In considering the type of floor finish suitable for a laboratory, it should be borne in mind that not only acids, but other types of injurious substances also may be present, so that an essentially acid-resisting material may not be capable of withstanding all the agents likely to cause harm.

The requirements, as regards acid resistance, for the floor of a school chemical laboratory are not so stringent as with the floor of a chemical works which may be subject to continual action of deleterious substances. In a school it is reasonable to suppose that any acids spilt will be immediately wiped up.

It is therefore possible that a good quality cork linoleum would be sufficiently lasting to admit of consideration. Actually, alkalis would be more harmful to this than acids. If the linoleum is kept polished, however, a certain amount of additional protection would be afforded.

As an alternative, an asphalt finish could be laid successfully over the existing deal floor, and would resist both acids and alkalis. This type of floor can now be obtained in various colours and finishes, and would have the advantage of being continuous. It would furthermore be possible to dress the asphalt around fittings, which would give increased cleanliness and would facilitate the washing down of the floor.

Failure of Keene's Cement Plaster Finish on Ceiling

¶ *THE authorities responsible for the building work in a factory desired information as to the cause of a failure of Keene's cement plaster on the ceiling of a new building.*

It was stated that the building was of single-storey brickwork construction, with 11-in. cavity walls. The roof was of hollow tile reinforced concrete with an asphalt external covering. A parapet wall of 9 in. solid brickwork ran along two sides and one end, the other end of the structure abutting on another building. It was stated that no damp-proof course had been inserted in this parapet wall.

The roof was insulated with cork slabs, which were laid on the shuttering before placing the main concrete roof.

Internally the ceiling had been rendered in Portland cement and sand (1:3), followed by a skimming of Keene's. A linen scrim was stuck to the Keene's.

The building had no windows, and ventilation was possible only through the ends. Temporary artificial heating had been installed, and it was stated that considerable condensation had occurred at various times.

The failure took the form of cracking and "shelling" of the Keene's from the Portland cement rendering over large areas. The adhesion of the undercoat to the cork was good.

From a consideration of the above information it is concluded that the failure is the result of a delayed expansion of the Keene's skimming. A failure of this type is due essentially to hydration of that proportion of the Keene's cement which had not been hydrated during the

X-RAY PROTECTIVE MATERIALS

Material	Mean Density	Lead Equivalent	Equivalent thickness of material in mm.			
			50 kV.	100 kV.	150 kV.	200 kV.
	gm./cc.	mm.	mm.	mm.	mm.	mm.
Aluminium	2·7	1	96	60	65	70
		2	—	120	130	140
		3	—	180	195	210
Brass	8·4	1	6·5	4·5	6·0	6·5
		2	—	9	13·5	16
		3	—	14	21·5	27
		4	—	19	30	40
Steel	7·8	1	11·5	6·5	9·5	11·5
		2	—	15	21·5	25
		3	—	23·5	34	39
		4	—	32	47	53
Lead Glass	4·6 to 3·4	1		4 to 7·5		
		2		8 to 15		
		3		12 to 22·5		
		4		16 to 30		
Lead Rubber	5·8 to 3·3	1		2 to 5		
		2		4 to 10		
		3		6 to 15		
		4		8 to 20		
Barium Plaster	3·5	1	10	4	7·5	9
2 parts coarse $BaSO_4$		2	—	9	18	25
2 parts fine $BaSO_4$		3	—	14·5	29	43
1 part Portland Cement		4	—	20	41	65
Concrete :						
4 parts Stone Chippings	2·1	1	100	70	75	80
2 parts Sand		2	—	130	145	150
1 part Cement		3	—	190	215	220
Concrete						
4 parts Clinker	1·5	1	135	100	105	110
1 part Cement		2	—	200	210	220
Concrete	2·1	1	110	70	80	85
4 parts Granite		2	—	145	160	170
1 part Cement		3	—	215	240	260
Coke Breeze	1·2	1	200	110	—	130
		2	—	220	—	270
Daneshill Brick, red	1·9	1	125	100	110	120
		2	—	200	220	250
Stock Brick, yellow	1·5	1	170	130	150	170
		2	—	280	350	450

Table giving the protection values against X-rays of various building materials, compared in each case with the protective value of lead, which is taken as the basis of comparison.

normal period of "setting." It should be appreciated that complete hydration of all particles of the plaster rarely, if ever, occurs in the normal period immediately after plastering, and any excess of moisture which subsequently gains access to the plaster may therefore cause hydration of the unhydrated portion of the plaster. The hydration of such portions is accompanied by expansion, and this expansion, when the plaster is already hard, causes the "shelling" and cracking observed.

In the present case, it is considered that the moisture necessary to cause the delayed expansion may have been derived from three sources, namely :—

(1) The main roof slab, which is prevented from drying out externally by the asphalt.
(2) Penetration from the exterior due to the absence of a damp-proof course in the parapet.
(3) Condensation on internal surfaces.

It is not possible to estimate to what extent each of these has been contributory ; but in particular, attention should be paid to remedying the absence of a damp-proof course in the parapet wall.

One of the following methods, given in order of diminishing cost and efficacy, should be adopted for the treatment of the parapet wall.

(1) A damp-proof course should be inserted at the base of the wall and made continuous with the existing roofing asphalt.
(2) The coping should be removed and the asphalt continued from the roof up the inner face of the wall and over the top. The coping may be replaced.
(3) The inner face of the parapet and the top of the coping may be treated with a suitable bituminous paint. This would require periodic renewal.

It must be appreciated that some penetration of moisture is still possible with the last two methods of treatment, and, whilst they will afford better protection than is now provided, there is not an equal certainty of satisfaction as with the first-mentioned method.

Whilst the following recommendation for re-plastering would eliminate the possibility of delayed expansion, it is suggested that every precaution be taken to minimize possible effects of the moisture derived from the three sources which are mentioned above.

Since the failure has been ascribed to the use of Keene's cement, i.e., a gypsum plaster of the accelerated anhydrous group, it is undesirable to use any plaster of this type in repairs. It is therefore suggested that the existing Keene's cement finish should be stripped and the cement-sand undercoat cleaned thoroughly. A skimming coat of a retarded hemihydrate plaster (finishing type) should then be applied to the existing cement-sand undercoat.

Damp Resistance of Cavity Wall

¶ *A N architect stated that in his experience an 11-in. cavity wall constructed of brickwork was not satisfactory when used in exposed positions. The trouble which he had experienced was that water drove through the outer leaf of the cavity, and crossed the special brick cavity ties, causing damp patches to appear on the inside plaster face. The architect therefore proposed to use a wall with a 1-in. cavity, and to fill this with a cement-sand mortar, waterproofed with an integral waterproofer, and the opinion of the Building Research Station was sought as to the effectiveness of such construction.*

It must be stated that in only one case reported to this station has trouble been experienced from a properly constructed cavity wall, and in this case a facing brick of most abnormal permeability had been used. The trouble was that water penetrated the outer leaf and ran down to the bottom of the cavity, where it collected, causing the internal leaf of the wall to become damp.

Many cases of trouble have, however, been reported to this station, but in these cases it was found that insufficient care during construction had resulted in mortar dropping into the cavity. In this connection

it is considered that the use of cavity tie bricks in place of metal ties may add to the risk, since the tie bricks form a considerable ledge upon which mortar can rest and form a capillary path, enabling moisture to pass from the external to the internal leaf of the cavity. It is also possible that the tie bricks may themselves allow a capillary penetration of moisture to occur. It should be possible to keep the cavity clear of mortar droppings by the use of battens padded with sacking, which can be drawn up the cavity as the work proceeds.

It is considered that the use of the wall with the 1-in. cavity filled with mortar may not prove satisfactory for several reasons. Of these the most important is the difficulty of ensuring the continuity of such a filling. It would be difficult to be certain that cracks were not produced either in the process of filling, or subsequently due to drying shrinkage of the rich cement mortar. The possibility of the formation of structural cracks is also present, and any of these would form capillary paths which would allow water to pass from the exterior to the interior face of the wall.

LAW REPORTS

REDUCTION OF CAPITAL CONFIRMED

Crittall Manufacturing Co., Ltd.—Chancery Division. Before Mr. Justice Crossman.

THIS was a petition by the Crittall Manufacturing Co., Ltd., for the confirmation by the Court of the reduction of its capital from £1,500,000 to £750,000.

Mr. Gordon Brown, for the company, stated that the petition was for the confirmation of the reduction of the company's capital by writing off 15s. on each of the 1,000,000 ordinary £1 shares of the company. The company was incorporated in 1924, and its business was the manufacturing of metal window frames and doors used largely in the construction of houses. The capital of the company was £1,500,000 divided into 500,000 preference shares of £1 each and 1,000,000 ordinary shares of £1 each. The preference shares carried a cumulative preferential dividend of 7 per cent. and were preferential as to capital. The dividend on the preference shares had been in arrear since December, 1931, but under the scheme the arrears had been provided for. The reduction was part of a general scheme of reorganization of the share and loan capital of the company. The company was now making very satisfactory profits, and it was now desired to enable the company to take advantage of its present position. Although the company had gone through two or three bad years, it was now doing extremely well. It was a company which would certainly profit by the boom in the building trade, which was the cause of the improvement.

For the purpose of paying off its £750,000 6½ per cent. registered notes, the company proposed to create and issue 750,000 5½ per cent. cumulative preference shares of £1 each, ranking for dividend and repayment of capital, together with a premium of 1s. a share, in priority to the existing 7 per cent. cumulative preference shares, which would thus become second cumulative preference shares.

In order to pay off its £500,000 6 per cent. debenture stock and for other specified purposes, the company intended to create £1,000,000 4½ per cent. debenture stock, of which £850,000 would be issued in the first instance.

On those proposals being carried into effect, the arrears of dividend on the existing preference shares to August 31, 1935, amounting to £101,718 15s. (less tax at 1s. 6d. in the £) would be paid in full. Counsel added that all the necessary resolutions had been passed unanimously.

Counsel, continuing, said that the reorganization would benefit the ordinary shareholders, as their shares would carry precisely the same rights which they had had before, and they would benefit by the reduction of the fixed annual interest charge and dividends ranking before them, and it was also proposed to increase the capital of the company to its former amount.

His Lordship sanctioned the reduction of the company's capital as asked.

ROAD CHARGES DISPUTE

Parker v. P. Gallagher, Ltd.—King's Bench Division. Before Mr. Justice Horridge.

THIS was an action by Mr. A. J. Parker, of The Chase, Romford, Essex, against the defendants, P. Gallagher, Ltd., for a declaration that he was entitled to be indemnified by them in respect of any payments he might have to make in regard to the making up of the road.

Plaintiff's case was that he purchased his house through a firm of estate agents and that he was told that there would be "no road charges." On that understanding he purchased the house. Plaintiff further alleged that there was a board displayed on the estate which stated that there were "no road charges."

Defendants, by their defence, set up that at the time the roads were partly made up. They denied that there was any agreement with the plaintiff at the time he purchased as to any further road charges.

Mr. Robert Fortune appeared for the plaintiff and Mr. G. O. Slade for the defendants.

His Lordship, in giving judgment, said it was clear from the correspondence between the defendants and their agents, who sold to the plaintiff, that defendants placed the property in their agents' hands to sell with "no road charges." Later defendants withdrew that instruction from their agents. In the meantime, however, the agents had sent the plaintiff a circular stating that there would be "no road charges." His Lordship found that plaintiff was told by one of the defendants that there would be "no road charges," and was asked not to go to the agents, as commission would have to be paid to them. Under all the circumstances he came to the conclusion that the plaintiff was entitled to his declaration and the defendants would have to pay the costs.

Mr. G. F. Chaplin, F.A.I., and Mr. William Evans, gave evidence.

SOCIETIES AND INSTITUTIONS

LIVERPOOL ARCHITECTURAL SOCIETY

An address on "Metal Finishes" was given by Dr. S. Wernick, Ph.D., M.Sc., to the Liverpool Architectural Society last week. Lt.-Colonel E. Gee, president, was in the chair.

Modern architectural design, said Dr. Wernick, seemed to aim primarily at simplicity, spaciousness and restfulness, subduing any tendency to fussiness and undue ornateness. Almost inevitably, one important result had been to enlist considerably the aid of metals in order to counterbalance and bring into some relief the effect of brightness and colour. This need for metal surfaces—highly reflecting, matt, or coloured, durable and easily renovated—had resulted in the increasing use by architects and builders of metal finishes possessing these qualities. It was not sufficiently realized, he thought, how much not only the beauty but the durability and general efficiency of a structure might depend upon the finish which that structure received.

Few architects were in possession of more than very general ideas of the properties or special qualities of a particular finish, or even of the fundamental principles which determined the value of a finish. The fault, however, did not lie wholly with the architects. It was not an unjust complaint on the part of architects and engineers that the metal finisher was rather a secretive soul, "who did not wax more loquacious concerning his work than was strictly necessary." In the old days the electro-plater, for example, was surrounded by an atmosphere of mystery reminiscent of the age of alchemists. Even today platers preferred to keep their own counsel, largely owing to the keen competition in the industry and to the development in each establishment of specialized methods of working which, naturally, it was not desired to broadcast.

Dr. Wernick gave a brief history of metal finishing and, with the help of lantern slides and a formidable array of test tubes, chemical bottles and specimen finishes, discussed the nature and use of electro-deposits and the treatment of ferrous materials in order to prevent corrosion.

LIGHTING SERVICE BUREAU

Following is a list of lectures arranged by the E.D.A. Lighting Service Bureau:

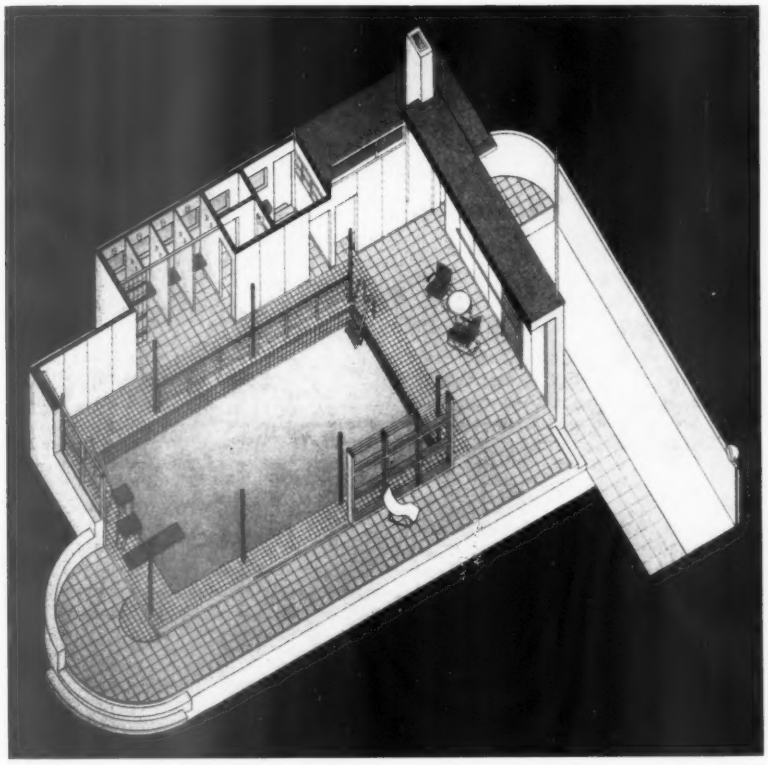
Wednesday, January 29: "Effectiveness and Economics of Lighting Systems," by Mr. W. J. Jones, M.SC., M.I.E.E. Discussion to be opened by Mr. E. Stanley Hall, F.R.I.B.A.

Wednesday, February 5: Discussion on "Recent Experiences in Lighting Practice." The speakers will include: Messrs. J. R. Leathart, F.R.I.B.A., Oliver P. Bernard, F.R.I.B.A., P. J. Blundell Harland, A.R.I.B.A., and E. B. O'Rorke, M.A., A.R.I.B.A.

Wednesday, February 12: "Glass in Relation to Lighting in Architecture," by Mr. B. P. Dudding, A.R.C.S. Discussion to be opened by Mr. C. Lovett Gill, F.R.I.B.A.

Wednesday, February 19: "The Application of Architectural Lighting to Existing Buildings" by R. O. Sutherland, A.R.I.B.A. Discussion to be opened by Mr. Joseph Emberton, F.R.I.B.A.

The lectures will be held at 7.30 p.m. at 2 Savoy Hill, W.C.2.



TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

Colour

NOBEL Chemical Finishes, Ltd., have just sent me a copy of their latest booklet on colour, which has been written illustrated and produced by Mr. Serge Chermayeff.

•

After a general introductory note which is mainly a plea for the more enterprising use of colour instead of the safety first of the "off-white" school, Mr. Chermayeff outlines a colour card system which I cannot do better than quote here.

•

"A number of cards are prepared 6 in. by 3 in., or convenient filing size, and one side painted with body colour (poster colour). The mixture of each tint is noted on the back and any one, therefore, can be matched when a drawing is being coloured to these standards.

•

"An unlimited range of gradations is possible in time, but a strict system should be followed. Begin with the primaries and secondaries, red, orange, yellow, green, blue and purple, an arrangement which shows the natural gradation of colour. A 'normal' red is neither crimson nor scarlet but between these extremes, so each of these colours should be further divided into three groups, so:

"RED: Crimson (purplish) red, normal red, orange red (vermilion); ORANGE: Reddish orange, normal orange, yellow orange; YELLOW: Orange yellow (hot), normal yellow, greenish yellow (cool); GREEN: Yellowish green (warm), normal green, blue green (cool); BLUE: Greenish blue (Prussian), normal blue, purplish blue (ultramarine); PURPLE: Blue purple (cool) normal purple, reddish purple (warm).

•

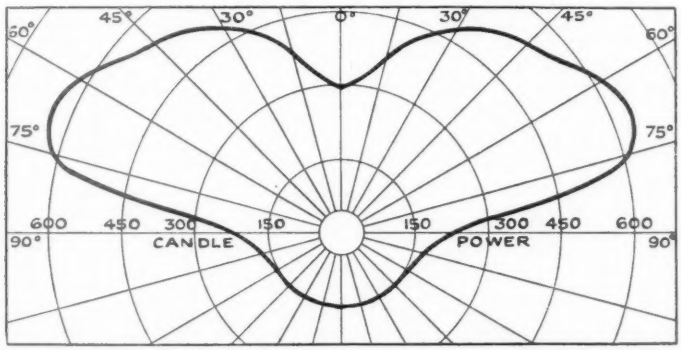
"These will probably have to be prepared in the office, as it is doubtful if such colours can be obtained already mixed to the right shade. As poster colour dries lighter, such mixtures can only be checked when dry.

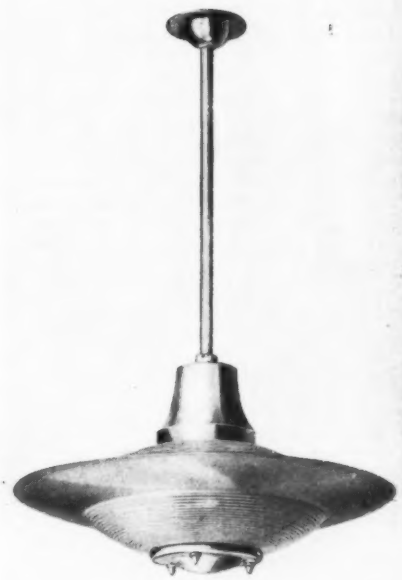
•

"Starting with eighteen colours of normal tone and brilliance, break these down with Chinese white till the palest tint to be distinguished as a colour from white itself is reached. The gradations of each colour should be in equal steps and the number of steps varies with each colour. There are naturally more between the blue (of normal tone) and white than between the yellow and white, but somewhere halfway there will occur a blue of equal tone to the first yellow, and so on with each of the other colours. Taking the blue as an example, there should be at least a dozen gradations to begin with. As more are added the gradations come closer together, and so make for finer adjustment in use.

•

"This gives a gradated range of pure and positive colours. The tertiary or neutral tints, probably the most often required by the architect, are formed theoretically by the mixture of complementaries—purple and yellow, red and green, blue and orange, and in turn gradate from dark to light. 'Theoretically' is used advisedly, as in practice one often uses the ready mixed colours such as burnt umber, itself rather tertiary. For example, this most useful colour with ultramarine blue and white





Above, the light distribution curve for the new Holophane fitting illustrated on the right.

produces a range of beiges which are not easily obtainable from any other mixture.

•

"These neutrals, beiges, greys and browns, are the most numerous in the whole range, since all the shades obtained from the eighteen 'positives' generate their own neutrals in turn, and they should be grouped according to colour, e.g., blue grey, purple grey, warm grey, yellowish grey, green grey. etc., and in sub-groups of tone from dark to light, as before.

•

"Make three or four cards of each colour. One set should always be kept intact in the file; the others are stock for use in issuing cuttings to contractors and manufacturers. Having selected from this file the colours he proposes to use, the architect makes his preliminary perspective sketches and mixes exactly the same colour as directed on the back of each card."

•

When considering colour schemes for an interior the cards can be laid over each other to give approximately the relative areas of each colour or material.

•

The rest of the booklet consists of abbreviated technical notes on paints of all kinds and their properties, arranged in the form of classified tables. There is also a sample of one of the series of twelve Information Sheets already published by Nobel's in this JOURNAL.

Lighting Fittings

A new and good-looking semi-indirect lighting fitting has just been introduced by Holophane, Ltd., and a sample of it is illustrated on page 175.

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The bowl is made in two pieces which are held together by an internal cage, and the whole fitting is therefore dust-proof, the exterior being smooth and easy to clean. Two sizes are listed, suitable for 200 and 300 watt lamps.

Manufacturers' Items

We are informed by Messrs. Kelvinator, Ltd., that two new refrigeration centres have been opened—one at Bristol and the other at Liverpool. Messrs. MacWhirter, Ltd., have opened new showrooms at 9, Victoria Street, Bristol, which contains a comprehensive range of refrigerating equipment for domestic and commercial use; and the West Lancashire Refrigeration Co., Ltd., have opened new showrooms at 147, Dale Street, Liverpool, where there is exhibited a complete range of refrigeration equipment.

*

Messrs. A. D. Dawnay and Sons, Ltd., the well-known constructional engineers, inform us that the name of their company has been changed to Dawnays, Ltd.

*

Messrs. A. J. Dearberg and F. Forbes, Constructional Engineers, who have been managing directors of Messrs. Measures Bros. (1911), Ltd., for the past twenty-three years, have severed their connection with the firm. They have now commenced business as constructional engineers on their own account, under the style of Dearberg and Forbes, 23, Charles Square, City Road, N.1. They state that estimates and designs will be furnished on application, and personal attention and supervision will be given to every contract, and that steel joists, angles, channels, plates, bars, etc., can be supplied at once from London stock.

The Leipzig International Building Fair will take place in Hall 19 of the Engineering Fair from March 9, 1936. The Fair promises to be a great success as about 70,000 sq. ft. have already been booked for exhibiting all kinds of building material. heating plant and machinery.

In connection with the Fair there will be various meetings and lectures, dealing with slum clearance, the use of natural stone, also road making machines and material, including an inspection of part of the motoring highway Halle-Leipzig. A special feature in Hall 19 will be the show of Art and Arts and Crafts in Building, whilst in Hall 18 the housing schemes exhibit, which was so popular at the recent Autumn Fair, will be repeated on a considerably extended scale.

*

The directors of the Midland Bank Ltd., report that, full provision having been made for all bad and doubtful debts, the net profits for the year 1935 amount to £2,353,098, which, with £871,946 brought forward, makes £3,225,044, out of which the following appropriations amounting to £1,653,376 have been made:—

To interim dividend, paid July 15, 1935, for the half-year ended June 30, 1935, at the rate of 16 per cent. per annum, less income tax ..	£883,376
To reduction of bank premises account	£300,000
To reserve for future contingencies	£250,000
To centenary bonus to the staff and pensioners of 5 per cent. on salaries and pensions as at January 1, 1936, with a minimum of £10 and a maximum of £100 subject to income tax	£200,000
To bank clerks' orphanage ..	£20,000
Leaving a sum of £1,571,668, from which the directors recommend:—	
(*a*) A dividend, payable February 1 next, for the half-year ended December 31, 1935, at the rate of 16 per cent. per annum, less income tax	£883,376
(*b*) A centenary bonus, payable with the dividend on February 1 next, at the rate of 2 per cent. on the paid-up capital of the company, less income tax ..	£220,844
And a balance to be carried forward of	£467,447

THE BUILDINGS ILLUSTRATED

PENRHOS SANATORIUM, COLWYN BAY (pages 156–159). The general contractors were Richard Costain and Sons, Ltd.; the principal sub-contractors and suppliers included:—

Elliott Ellis & Co., Ltd. and David Williams, heating and domestic hot and cold supply; W. R. Blackburn, electrical work; Bolton and Hayes, hollow tile floors; Conway & Co., terrazzo and tiling; Ioco Rubber and Waterproofing Co., Ltd., rubber flooring; H. Clegg and Sons, stonework; Rowe Bros. & Co., Ltd., sanitary fittings; Proctor and Lavender, facing bricks; G. Tucker & Son, Ltd., roofing tiles.

WINCHESTER COURT, KENSINGTON (pages 167–169). The general contractors were Y. J. Lovell and Co., Ltd. The principal sub-contractors and suppliers included:—

Structure.—Trussed Concrete Steel Co., Ltd., reinforced concrete foundations; Rubery Owen & Co., Ltd., constructional steelwork; Caxton Floors, Ltd., hollow tile floors; Ibstock Brick and Tile Co., Ltd., and A. H. Lavers & Co., Ltd., facing bricks; London Brick Co. and Forders, Ltd., Warboys' whites facing bricks; Eastwoods, Ltd., cement; Limmer and Trinidad Lake Asphalt Co., Ltd., asphalt; Metal Casements, Ltd., metal windows; G. R. Speaker & Co., Ltd., pumice partition blocks.

Finishes.—Doulton & Co., Ltd., faience; A. Vigers Sons & Co., Ltd., composition flooring; Diespeker & Co., Ltd., terrazzo; Turpin's Parquet Floor Joinery and Wood Carving Co., Ltd., hardwood floors; P. W. Rutherford, linoleum and carpets; W. A. Telling, Ltd., Pioneer plastering; A. H. Herbert & Co., Ltd., glazed tiling.

Equipment.—Harcourts, Ltd., electric fittings; Revo Electric Co., Ltd., electric fires; Doulton & Co., Ltd., sanitary fittings; Brooks Phillips & Co., Ltd., sanitary fittings and fireplaces; W. N. Froy and Sons, Ltd., glazing; Hammond Bros. and Champness, Ltd., lifts; Robert Adams, ironmongery; J. Gliksten and Sons, Ltd., flush doors; E. C. Blackmore, wrought iron gates and railings; Garton and Thorne, Ltd., metal entrance doors; R. J. Audrey, plumbing and drainage; James Slater & Co., Ltd., heating and domestic hot water; Permutit Co., Ltd., water softener; Johnson and Tanner, Ltd., electric installation.

HOUSE AT CHIPPERFIELD, HERTS (pages 170-171.) The general contractors were E. J. Waterhouse and Sons, Ltd., the principal sub-contractors and suppliers included:—

Structure.—West London Brick Co., bricks; Williams and Williams, Ltd., casements; Wm. Briggs and Son, asphalt; Imperial Chemical Industries, Ltd., pioneer blocks.

Finishes.—Pilkington Bros., Ltd., glass; Turner's Asbestos Cement Co., Ltd., "Decolite" flooring and aluminium foil roof insulation; St. James's Tile Co., fireplace surrounds.

Equipment.—Mortimer Gall Co., Ltd., electrical work; Unity Heating, Ltd., electric heaters; General Electric Co., Ltd., Hailwood and Ackroyd, Ltd., Troughton and Young, Ltd., Ascog, Ltd., and Merchant Adventurers, Ltd., light fittings; Cozy Stove Co., Ltd., stove; Shanks & Co., Ltd., sanitary fittings; Wehag, Ltd., and Baldwins, Ltd., door furniture; Venesta, Ltd., doors; Hilmor, Ltd., tubular stair rail; Hunter and Hylard, Ltd., curtain runway.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICTS (15-MILES RADIUS

ICKENHAM. *School.* The Education Committee of the Middlesex C.C. has decided to invite tenders for the proposed erection of a school at Bushey Road. The committee has also decided to seek tenders for a new school at Vista Way, Kenton; and for the further enlargement and erection of a clinic, etc., at Dawlish Drive, Ruislip.

LAMBETH. *Housing.* The L.C.C. has acquired the site of a greyhound racing stadium in Brixton Road, Lambeth, to provide housing accommodation for 500 persons.

NORTHOLT. *Extensions.* Messrs. Yates, Cook and Derbyshire are the architects for alterations and additions to members' stand at the Northolt Park Racecourse.

PADDINGTON. *Flats.* The B.C. has approved a scheme for the erection of 65 flats on the North Wharf Road area, at a cost of £19,000.

PERIVALE. *Service Station.* A petrol service station with flats is to be erected at Western Avenue to plans prepared by Welch and Lander.

PUTNEY. *Stores.* The British Home Stores Ltd. have, we understand, purchased the entire range of shops of R. W. Savage & Co., 79-93 Putney High Street. The premises are to be completely demolished and new stores erected on the site.

SOUTHALL-NORWOOD. *Development, etc.* Plans passed by the U.D.C.: Development, Wharncliffe Park estate, for Ideal Homesteads, Ltd.; 2 houses, Shaftesbury Avenue, for Messrs. Warren and Woods; alterations, Rectory, Norwood Green, for Ecclesiastical Commissioners; 10 houses, Thorncliffe Road, for General Housing Co., Ltd.; 48 flats, Lady Margaret Road, for Messrs. Perry and Gandy.

SOUTHALL-NORWOOD. *Library.* The U.D.C. is to prepare plans for the erection of a library in Jubilee Gardens.

STEPNEY. *Rehousing.* The L.C.C. is to provide rehousing for 922 persons on the Pennington Street area, Stepney, at a cost of £110,000.

SOUTHERN COUNTIES

GUILDFORD. *Factory.* Mr. E. C. Dyster proposes to erect a factory for the manufacture of metal windows in Woking Road, Guildford.

SURREY. *Police Headquarters.* The Surrey C.C. is to improve the police divisional headquarters and provide new sub-police stations at a cost of £50,000.

WORTHING. *Flats.* Plans passed by the Corporation: Two blocks of flats, Romney Road, for Onslow Estates (Worthing), Ltd.; conversion, Offington Hall, Broadwater, to flats, for Mr. G. H. Treacher; eight houses, Cranleigh Road, for B.B.C. Houses, Ltd.; public hall, Tarring Road, for Mr. F. J. Clements; four houses, Broadwater Road, for Worthing Estates Building Co.; four houses, Southview Gardens, for Mr. W. Le Maitre; rebuilding. Pier Hotel, Marine Parade, for Messrs. Tamplin and Sons, Ltd.; shop offices and store, Sompting Road, for Lilleywhite Dairies, Ltd.; 16 houses. George V Avenue, for Mr. R. L. Taylor; 86 houses, Terringes Avenue, for Messrs. Willmore Phillips, Ltd.; four houses, Copthorne Hill, for Mr. D. C. Payne; two houses, Arlington Avenue, for Messrs. Wignall and Ainsworth; four houses, Rectory Gardens, for Messrs. Princes, Ltd.; four flats, Bruce Avenue, for Mr. M. R. Fletcher; six houses, Parkfield Road, for Messrs. Thompson and Walker; public hall, Tarring Road, for Mr. H. M. Potter; three shops and houses, Upper Brighton Road, for Mr. A. M. Lyne.

WORTHING. *Houses.* The R.D.C. is to erect 20 houses at Sompting; tenders are to be sought for the erection of 16 at Findon; the Surveyor is to prepare plans for additional houses at Lancing and East Preston; and a site for housing purposes has been purchased at Rustingdon.

EASTERN COUNTIES

BRENTWOOD. *Villas.* The Essex C.C. is to erect convalescent villas at the Brentwood mental hospital, at a cost of £16,700.

CHELMSFORD. *Houses, etc.* Plans passed by the Corporation: 14 houses, Canwick Grove, for Whitehall Estate Co., Ltd.; 15 bungalows, Ipswich Road, for Mr. S. P. Uphall; development, East Hill estate, for Messrs. Duncan, Clark and Beckett; two houses, Mersea Road, for Messrs. Baker and Burton; four houses, Berechurch Road, for Mr. L. L. Brown; additions, Queen's Head P.H., Hythe Hill, for Messrs. Ind Coope and Allsopp, Ltd.; alterations, Windifan works, Denmark Street, for Messrs. M. W. Woods, Ltd.; two houses, Mile End Road, for Messrs. E. and F. Humm.

ONGAR. *Police Station, etc.* The Essex C.C. has obtained land in High Street, Ongar, for the erection of a police station and police houses.

SOUTH HORNCHURCH. *Extensions.* The Essex Education Committee has approved plans for the extensions of the South Hornchurch elementary school, at a cost of £11,187.

MIDLAND COUNTIES

KIDDERMINSTER. *Houses, etc.* Plans passed by the Corporation: Four houses, Hurcott Road, and 22 houses, Broadwaters, for Mr. W. Lindley; two houses, Sutton Park Road, for Mr. H. Matthews; eight houses, Cherry Orchard, for Mrs. H. Perks; four shops, Broadwaters, for Mr. J. H. Thursfield; additions, Futurist Picture House, Vicar Street, for Mr. B. Priest; extensions, Stourvale works, for Messrs. Baldwins, Ltd.; workshop extensions, Cherry Orchard, for Mr. F. Edge.

NORTHERN COUNTIES

BLACKPOOL. *Houses, etc.* Plans passed by the Corporation: Four boarding houses, Napier Avenue, for Blackpool Pre-Cast Stone Co.; houses, Park Drive, for Messrs. Staunton & Co., Ltd.; four houses, Napier Avenue, for Mr. J. Fitton; four houses, Devonshire Road, for Mr. H. Grimbledston; two houses, Kingscote Drive, for Mr. V. Hague; four houses, Harrington Avenue, for Mr. A. Turner; seven houses, Bloomfield Road, for Mr. S. A. Howard; 49 houses, Baldwin Grove, for Messrs. R. Fielding and Son; five houses, Park Road, for Messrs. J. Gregson and Son; five houses, Norbreck Road, for Messrs. G. and H. H. Whitehead; hotel reconstruction, Preston Old Road, for Burtonwood Breweries, Ltd.; 10 houses, Bispham Road, for Mr. N. Rideout; two houses, Cornwall Avenue, for Messrs. T. Bannister and Sons; 46 houses, Washington Avenue, for Mr. T. Smith; two houses, Stoney Hill Avenue, for Mr. G. Woodhead; hotel, Promenade, for Nuttall's Breweries, Ltd.; shop and house, Waterloo Road, for Mr. J. H. Knowles; four houses, Collins Avenue, for Mr. J. V. Marsh; hotel, Marton Drive, for Mr. C. Westwell; 11 houses, St. Martin's Road, for Messrs. J. Birtwistle, Ltd.; 24 houses, Beverley Grove, for Mr. E. Armitage; 12 houses, Hollywood Avenue, for Messrs. D. H. and R. Siddall; three houses, St. Edmund's Avenue, for Mr. G. Worrall; factory extension, Cornwall Place, for Mr. A. Bliazard; billiard hall and garage, Yorkshire Street, for West Lancs Territorial Association; pavilion, North Pier, for Blackpool Pier Co.; omnibus station, Tyldesley Road, for Ribble Motor Services, Ltd.

ROTHERHAM. *Fire Stations, etc.* The Corporation has appointed a committee to consider the provision of a new fire station and housing accommodation for firemen.

SHEFFIELD. *Workshops, etc.* Plans passed by the Corporation: Workshops, Effingham Road, for Messrs. G. Senior and Sons; club extensions, Bradway Road, for Dore and Torley Golf Club, Ltd.; swimming bath, Clarkehouse Road, for Corporation Education Committee; eight houses, Newlands Grove, for Hallewell Estates, Ltd.; two houses, Kemsworth Road, for Sheephill Estates; 12 houses, Bradway Road, for Mr. R. Jones; church, School Lane, Greenhill, for Greenhill Church Methodist trustees; two houses, Mount View Road, for Mr. L. A. Nicholson; 316 houses, Shirecliffe estate, for Corporation Estates Committee; two houses, Newlyn Place, for Mr. E. Cooper; eight houses, Lyminster Road, for Mr. D. Hurrell; six houses, Harcourt Crescent, for Mr. C. B. M. Wilson; 16 houses, Firshill Avenue, for Mr. C. W. Alflat; four houses, Wood Vale Road, for Mr. W. A. Wright; 10 houses, High Storrs Road, for Messrs. M. Gleeson, Ltd.; three shops and houses, Barnsley Road, for Mr. J. Maxfield; two houses, Cardoness Road, for Mr. W. Barlow; two houses, Holmhirst Road, for Messrs. T. A. Knowles and Sons; two houses, Grange Crescent Road, for Messrs. R. Craig and Son; eight houses, Rivelin Road, for Mr. W. C. Shaw; six houses, Cockshutt Avenue, for Mr. J. T. Redmile. Plans submitted: 202 flats, Bradfield Road, for Mr. A. Krausz; 32 houses, Cobnar Avenue, for Mr. J. R. Jubb; 25 houses, Capel Street, for Mr. H. Haywood.

STOCKPORT. *School.* The Stockport Education Committee is to erect an elementary school in Didsbury Road, Heaton, Mersey.

YORK. *Alterations, etc.* Plans passed by the Corporation: Alterations 218 Burton Stone Lane, for Messrs. Ind, Coope and Allsop, Ltd.; six houses, Bargain Lane, for Mr. F. M. Dixon; additions, 22 Burton Stone Lane, for Messrs. J. F. and H. Dandy; shop, Burton Stone Lane, for Thrift Stores, Ltd.; two houses, Danum Road, for Mr. T. Gledhill; six houses, Longfield Terrace, for Mr. E. Sherrey; two houses, Sefton Avenue, for Messrs. J. W. Maw and Sons; two houses, Greencliffe Drive, for Messrs. R. J. Pulleyn and Sons; four bungalows, Rowntree Avenue, for N.E.R. Cottage Homes; works extensions, Haxby Road, for Messrs. Rowntree and Co., Ltd. Plans submitted: Cinema, Blossom Street, for Odeon Theatres, Ltd.; cinema, Piccadilly, for Associated British Cinemas, Ltd.

YORK. *Clearance Scheme.* The Corporation is to prepare a clearance scheme for the Swan Street and Dale Street areas.

SCOTLAND

CASTLE-DOUGLAS. *Hospital.* The Stewartry County Council has under consideration the proposed erection of an Infectious Diseases Hospital at Castle-Douglas.

KIRKCUDBRIGHT. *Extensions.* The Stewartry County Council has instructed the Property and Works Committee to proceed with the preparations of plans for the extension of the County Buildings at Kirkcudbright.

WALES

SWANSEA. *Houses, etc.* Plans passed by the Corporation: Two houses, off Overland Road, for Mr. J. C. Oliver; two houses, Myals Road, for Mr. S. B. Evans; shop and house, Port Tennant Road, for Mr. S. West; rendering premises, Waterloo Street and Park Street, for Messrs. A. Chidzpy and Co.; four houses, Carmarthen Road, for Mr. W. Evans; 24 houses, Harlech Crescent, for Messrs. T. & G. Spragg; two houses, St. Helen's Road, for Mr. G. Davey; two houses, St. John's Road, for Messrs. S. Weaver and Sons; stores, Wassail Square, for Messrs. Truman Hanbury & Buxton, Ltd.; two houses, Middle Road, for Messrs. W. Morgan and Son; 10 houses, Gendros Crescent, for Mr. Edward Tucker; dairy, Trewyddfa Road, for Mr. W. T. Roberts; library, Singleton, for University College Council; 30 flats, Sketty Road, for Messrs. Henry Billings and Sons; alterations, Plymouth Street, for S. Wales Transport Co., Ltd.; two houses, Penrice Street, for Mr. D. A. Rosser; alterations and additions, Criterion Hotel, Oxford Street, for Messrs. Worthington & Co., Ltd.; four houses, Mansel Road, for Messrs. Jones and Evans; additions, Neath Road, for Jeffreys Commercial Motors, Ltd.; four houses, Lon Caron, for Mr. A. E. Wright.

RATES OF WAGES

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

			I s. d.	II s. d.
A_1	ABERDARE ..	S. Wales & M.	1 5½	1 1½
A	Aberdeen ..	Scotland	1 6½	1 2
A_1	Abergavenny	S. Wales & M.	1 6	1 1½
A_3	Abingdon ..	S. Counties	1 5	1 0½
A	Accrington ..	N.W. Counties	1 6½	1 2
A_3	Addlestone ..	S. Counties	1 5	1 0½
A	Adlington ..	N.W. Counties	1 6½	1 2
A	Airdrie ..	Scotland	*1 6½	1 2
C	Aldeburgh ..	E. Counties	1 2½	11
A	Altrincham ..	N.W. Counties	1 6½	1 2
B_3	Appleby ..	N.W. Counties	1 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_3	Barnard Castle	N.E. Coast	1 5	1 0½
A	Barnsley ..	Yorkshire	1 6½	1 2
B	Barnstaple ..	S.W. Counties	1 4½	1 0½
A	Barrow ..	N.W. Counties	1 6½	1 2
A	Barry ..	S. Wales & M.	1 6½	1 2
B_1	Basingstoke ..	S.W. Counties	1 4	1 0
A_2	Bath	S.W. Counties	1 5½	1 1½
A	Batley ..	Yorkshire	1 6½	1 2
A_3	Bedford ..	E. Counties	1 5½	1 1½
A_3	Berwick-on Tweed	N.E. Coast	1 5½	1 1½
A_2	Bewdley ..	Mid. Counties	1 5½	1 1½
B_3	Bicester ..	S. Counties	1 3	11½
	Birkenhead ..	N.W. Counties	*1 7½	1 2½
A	Birmingham ..	Mid. Counties	1 6½	1 2
A_1	Bishop Auckland	N.E. Coast	1 6	1 1½
A	Blackburn ..	N.W. Counties	1 6½	1 2
A	Blackpool ..	N.W. Counties	1 6½	1 2
A	Blyth	N.E. Coast	1 6½	1 2
B_1	Bognor ..	S. Counties	1 4	1 0
A	Bolton ..	N.W. Counties	1 6½	1 2
A_3	Boston ..	Mid. Counties	1 5	1 0½
A_2	Bournemouth ..	S. Counties	1 5½	1 1½
B_2	Bovey Tracey	S.W. Counties	1 3½	11½
A	Bradford ..	Yorkshire	1 6½	1 2
A_1	Brentwood ..	E. Counties	1 6	1 1½
A	Bridgend ..	S. Wales & M.	1 6½	1 2
B	Bridgwater ..	S.W. Counties	1 4½	1 0½
A_1	Bridlington ..	Yorkshire	1 6	1 1½
A	Brighouse ..	Yorkshire	1 6½	1 2
A_2	Brighton ..	S. Counties	1 5½	1 1½
A	Bristol ..	S.W. Counties	1 6½	1 2
B	Brixham ..	S.W. Counties	1 3½	11½
A	Bromsgrove ..	Mid. Counties	1 5½	1 1½
B	Bromyard ..	Mid. Counties	1 3	11½
A	Burnley ..	N.W. Counties	1 6½	1 2
A	Burslem ..	Mid. Counties	1 6½	1 2
A	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury	N.W. Counties	1 6½	1 2
A	Buxton ..	N.W. Counties	1 6	1 1½
A_1	CAMBRIDGE ..	E. Counties	1 6	1 1½
B_1	Canterbury ..	S. Counties	1 4	1 0
A	Cardiff ..	S. Wales & M.	1 6½	1 2
A	Carlisle ..	N.W. Counties	1 6½	1 2
B	Carmarthen ..	S. Wales & M.	1 4½	1 0½
B	Carnarvon ..	N.W. Counties	1 4½	1 0½
A	Carnforth ..	N.W. Counties	1 6½	1 2
A	Castleford ..	Yorkshire	1 6½	1 2
A_3	Chatham ..	S. Counties	1 5	1 0½
A	Chelmsford ..	E. Counties	1 5	1 0½
A	Cheltenham ..	S.W. Counties	1 5	1 0½
A	Chester	N.W. Counties	1 6½	1 2
A	Chesterfield ..	Mid. Counties	1 6½	1 2
B_1	Chichester ..	S. Counties	1 4	1 0
A	Chorley ..	N.W. Counties	1 6½	1 2
B_1	Cirencester ..	S. Counties	1 4	1 0
A	Clitheroe ..	N.W. Counties	1 6½	1 2
A	Clydebank ..	Scotland	1 6½	1 2
A	Coalville ..	Mid. Counties	1 6½	1 2
A_2	Colchester ..	E. Counties	1 5½	1 1½
A	Colne	N.W. Counties	1 6	1 1½
A_2	Colwyn Bay ..	N.W. Counties	1 5½	1 1½
A_1	Consett ..	N.E. Coast	1 6	1 1½
A_2	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 6½	1 2
A_2	Crewe ..	N.W. Counties	1 5½	1 1½
A	Cumberland ..	N.W. Counties	1 5	1 0½
A	DARLINGTON ..	N.E. Coast	1 6½	1 2
A	Darwen ..	N.W. Counties	1 6½	1 2
B_1	Deal	S. Counties	1 4	1 0
A_2	Denbigh ..	N.W. Counties	1 5	1 0½
A	Derby	Mid. Counties	1 6½	1 2
A	Dewsbury ..	Yorkshire	1 6½	1 2
B	Didcot ..	S. Counties	1 4½	1 0½
A	Doncaster ..	Yorkshire	1 6½	1 2
B_1	Dorchester ..	S.W. Counties	1 4	1 0
A	Driffield ..	Yorkshire	1 5	1 0½
A_3	Droitwich ..	Mid. Counties	1 5½	1 1½
A	Dudley ..	Mid. Counties	1 6½	1 2
A_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 1½
A_1	Ebbw Vale ..	S. Wales & M.	1 6	1 1½
A	Edinburgh ..	Scotland	1 6½	1 2
A_1	E. Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6	1 1½
A_2	Exeter	S.W. Counties	*1 5½	1 1½
B	Exmouth ..	S.W. Counties	1 4½	1 0½
A_3	FELIXSTOWE ..	E. Counties	1 5	1 0½
A	Filey	Yorkshire	1 5	1 0½
A	Fleetwood ..	N.W. Counties	1 6½	1 2
B_1	Folkestone ..	S. Counties	1 4	1 0
A	Frodsham ..	N.W. Counties	1 6½	1 2
B_2	Frome	S.W. Counties	1 3½	11½
A	GATESHEAD ..	N.E. Coast	1 6½	1 2
B	Gillingham ..	S. Counties	1 4½	1 0½
A	Glasgow ..	Scotland	1 7	1 2½
A_2	Gloucester ..	S.W. Counties	1 5½	1 1½
A_2	Goole	Yorkshire	1 5½	1 1½
A_2	Gosport ..	S. Counties	1 5½	1 1½
A_3	Grantham ..	Mid. Counties	1 5	1 0½
A_3	Gravesend ..	S. Counties	1 6	1 1½
A	Greenock ..	Scotland	*1 6½	1 2
A	Grimsby ..	Yorkshire	1 6½	1 2
B	Guildford ..	S. Counties	1 4½	1 0½
A	HALIFAX ..	Yorkshire	1 6½	1 2
A	Hanley ..	Mid. Counties	1 6½	1 2
A	Harrogate ..	Yorkshire	1 6½	1 2
A	Hartlepools ..	N.E. Coast	1 6½	1 2
B	Harwich ..	E. Counties	1 4½	1 0½
B_1	Hastings ..	S. Counties	1 4	1 0
A_2	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S.W. Counties	1 4½	1 0½
A_2	Hertford ..	E. Counties	1 5½	1 1½
A	Heysham ..	N.W. Counties	1 6½	1 2
A	Howden ..	N.E. Coast	1 6½	1 2
A	Huddersfield ..	Yorkshire	1 6½	1 2
A	Hull	Yorkshire	1 6½	1 2
A	ILKLEY ..	Yorkshire	1 6½	1 2
A	Immingham ..	Mid. Counties	1 6½	1 2
A_2	Ipswich ..	E. Counties	1 5½	1 1½
B_2	Isle of Wight ..	S. Counties	1 4½	1 0½
A	JARROW ..	N.E. Coast	1 6½	1 2
A	KEIGHLEY ..	Yorkshire	1 6½	1 2
A_3	Kendal ..	N.W. Counties	1 5	1 0½
A_3	Keswick ..	N.W. Counties	1 5	1 0½
A_1	Kettering ..	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 5½	1 1½
B_1	King's Lynn ..	E. Counties	1 4	1 0
A	LANCASTER ..	N.W. Counties	1 6½	1 2
A_1	Leamington ..	Mid. Counties	1 6	1 1½
A	Leeds	Yorkshire	1 6½	1 2
A	Leek	Mid. Counties	1 6½	1 2
A	Leicester ..	Mid. Counties	1 6½	1 2
A	Leigh	N.W. Counties	1 6½	1 2
B	Lewes	S. Counties	1 3	11½
A_2	Lichfield ..	Mid. Counties	1 5½	1 1½
A	Lincoln ..	Mid. Counties	1 6½	1 2
	Liverpool ..	N.W. Counties	*1 8	1 3
A_2	Llandudno ..	N.W. Counties	1 5½	1 1½
A	Llanelly ..	S. Wales & M.	1 6½	1 2
	London (12-miles radius)		1 8	1 3
	Do. (12-15 miles radius)		1 7½	1 2½
A	Long Eaton ..	Mid. Counties	1 6½	1 2
A	Loughborough ..	Mid. Counties	1 6½	1 2
A_1	Luton	E. Counties	1 6	1 1½
A	Lytham ..	N.W. Counties	1 6½	1 2
A_1	MACCLESFIELD ..	N.W. Counties	1 6	1 1½
A_3	Maidstone ..	S. Counties	1 5	1 0½
A_3	Malvern ..	Mid. Counties	1 5	1 0½
A	Manchester ..	N.W. Counties	1 6½	1 2
A	Mansfield ..	Mid. Counties	1 6½	1 2
B_1	Margate ..	S. Counties	1 4	1 0
A	Matlock ..	Mid. Counties	1 5	1 0½
A_1	Merthyr ..	S. Wales & M.	1 6	1 1½
A	Middlesbrough	N. E. Coast	1 6½	1 2
A_2	Middlewich ..	N.W. Counties	1 5½	1 1½
B_2	Minehead ..	S.W. Counties	1 3½	11½
B_2	Monmouth .. & S. and E. Glamorganshire	S. Wales & M.	1 3½	11½
A	Morecambe ..	N.W. Counties	1 6½	1 2
A_2	NANTWICH ..	N.W. Counties	1 5½	1 1½
A	Neath	S. Wales & M.	1 6½	1 2
A	Nelson	N.W. Counties	1 6½	1 2
A	Newcastle ..	N.E. Coast	1 6½	1 2
A	Newport ..	S. Wales & M.	1 6½	1 2
A	Normanton ..	Yorkshire	1 6½	1 2
A	Northampton	Mid. Counties	1 6½	1 2
A	North Staffs ..	Mid. Counties	1 6½	1 2
A	North Shields	N.E. Coast	1 6½	1 2
A_1	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham ..	Mid. Counties	1 6½	1 2
A	Nuneaton ..	Mid. Counties	1 6½	1 2
A	OAKHAM ..	Mid. Counties	1 5	1 0½
A	Oldham ..	N.W. Counties	1 6½	1 2
A_3	Oswestry ..	N.W. Counties	1 5	1 0½
A_1	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 6½	1 2
B_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_5	Portsmouth ..	S. Counties	1 5½	1 1½
A	Preston ..	N.W. Counties	1 6½	1 2
A	QUEENSFERRY	N.W. Counties	1 6½	1 2
A_2	READING ..	S. Counties	1 5½	1 1½
B	Reigate ..	S. Counties	1 4½	1 0½
A	Retford ..	Mid. Counties	1 5	1 0½
A_1	Rhondda Valley	S. Wales & M.	1 6	1 1½
A	Ripon	Yorkshire	1 5	1 0½
A	Rochdale ..	N.W. Counties	1 6½	1 2
B	Rochester ..	S. Counties	1 4½	1 0½
A_1	Ruabon ..	N.W. Counties	1 6	1 1½
A	Rugby	Mid. Counties	1 6½	1 2
A_2	Rugeley ..	Mid. Counties	1 5½	1 1½
A	Runcorn ..	N.W. Counties	1 6½	1 2
A_1	ST. ALBANS ..	E. Counties	1 6	1 1½
A	St. Helens ..	N.W. Counties	1 6½	1 2
B_3	Salisbury ..	S.W. Counties	1 3½	11½
A_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 1½
A_2	Skipton ..	Yorkshire	1 5½	1 1½
A_2	Slough ..	S. Counties	1 5½	1 1½
A_1	Solihull ..	Mid. Counties	1 6	1 1½
A_2	Southampton ..	S. Counties	1 5½	1 1½
A_1	Southend-on-Sea	E. Counties	1 6	1 1½
A	Southport ..	N.W. Counties	1 6½	1 2
A	S. Shields ..	N.E. Coast	1 6½	1 2
A_1	Stafford ..	Mid. Counties	1 6	1 1½
A	Stirling ..	Scotland	1 7	1 2½
A	Stockport ..	N.W. Counties	1 6½	1 2
A	Stockton-on-Tees	N.E. Coast	1 6½	1 2
A	Stoke-on-Trent	Mid. Counties	1 6½	1 2
B	Stroud	S.W. Counties	1 4½	1 0½
A	Sunderland ..	N.E. Coast	1 6½	1 2
A	Swansea ..	S. Wales & M.	1 6½	1 2
A	Swindon ..	S.W. Counties	1 5	1 0½
A_1	TAMWORTH ..	N.W. Counties	1 6	1 1½
B	Taunton ..	S.W. Counties	1 4½	1 0½
A	Teesside Dist. ..	N.E. Counties	1 6½	1 2
A_2	Teignmouth ..	S.W. Coast	1 5½	1 1½
A	Todmorden ..	Yorkshire	1 6½	1 2
A_1	Torquay ..	S.W. Counties	1 6	1 1½
B_2	Truro	S.W. Counties	1 3½	11½
A_3	Tunbridge Wells	S. Counties	1 5	1 0½
A	Tunstall ..	Mid. Counties	1 6½	1 2
A	Tyne District	N.E. Coast	1 6½	1 2
A	WAKEFIELD ..	Yorkshire	1 6½	1 2
A	Walsall ..	Mid. Counties	1 6½	1 2
A	Warrington ..	N.W. Counties	1 6½	1 2
A_1	Warwick ..	Mid. Counties	1 6	1 1½
A_1	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 6½	1 2
A_2	Weston-s.-Mare	W. Counties	1 5½	1 1½
A_2	Whitby ..	Yorkshire	1 5½	1 1½
A	Widnes ..	N.W. Counties	1 6½	1 2
A	Wigan ..	N.W. Counties	1 6½	1 2
B	Winchester ..	S. Counties	1 4½	1 0½
A_2	Windsor ..	S. Counties	1 5½	1 0½
A	Wolverhampton	Mid. Counties	1 6½	1 2
A_2	Worcester ..	Mid. Counties	1 5½	1 1½
A_3	Worksop ..	Yorkshire	1 5	1 0½
A_1	Wrexham ..	N.W. Counties	1 6	1 1½
A	Wycombe ..	S. Counties	1 5	1 0½
B	YARMOUTH ..	E. Counties	1 4½	1 0½
B	Yeovil ..	S.W. Counties	1 4½	1 0½
A	York	Yorkshire	1 6½	1 2

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

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

CURRENT PRICES

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

WAGES

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

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	16	6
Hydrated Lime	"	3	0	9
Portland Cement, in 4 ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	"	2	5	0
White Portland Cement, in 1 ton lots	"	8	15	0
Thames Ballast	per Y.C.		6	6
¾" Crushed Ballast	"		7	0
Building Sand	"		7	6
Washed Sand	"		8	6
2" Broken Brick	"		8	0
¾" " "	"		10	3
Pan Breeze	"		6	6
Coke Breeze	"		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	4" d.	6" s.	6" d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double "	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¼" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	0
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS:					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	"		5		—

BRICKLAYER

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

MASON

The following d/d F.O.R. at Nine Elms:

		s.	d.
Portland stone, Whitbed	F.C.	4	4½
" " Basebed	"	4	7½
Bath stone	"	2	10
York stone	"	6	6
" " Sawn templates	"	7	6
" " Paving, 2"	F.S.	1	8
" " " 2"	"	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	9
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	0

CARPENTER AND JOINER

		s.	d.
Good carcassing timber	F.C.	2	2
Birch	as 1" F.S.		9
Deal, Joiner's	" "		5
" " 2nds	" "		4
Mahogany, Honduras	" "	1	3
" African	" "	1	1
" Cuban	" "	2	6
Oak, plain American	" "	1	0
" Figured "	" "	1	3
" plain Japanese	" "	1	2
" Figured "	" "	1	5
" Austrian wainscot	" "	1	6
" English	" "	1	11
Pine, Yellow	" "	1	0
" Oregon	" "		4
" British Columbian	" "		4
Teak, Moulmein	" "	1	3
" Burma	" "	1	2
Walnut, American	" "	2	3
" French	" "	2	3
Whitewood, American	" "	1	1
Deal floorings, ¾"	Sq.	18	6
" ⅞"	"	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
" 1¼"	"	1 6	0

Plywood, per ft. sup.

Thickness	¼"			½"			⅝"			¾"		
Qualities	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	0	1/–	9	–

Scotch glue . . . . . lb. 8 d.

SMITH AND FOUNDER

Tubes and Fittings:

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

	¼"	½"	1"	1¼"	2"
Tubes, 2'-14' long, per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"-23" long each	10	1 1	1/11	2/8	4/9
" 3"-11½" long "	7	9	1/3	1/8	3/–
Long screws, 12"-23½" long "	11	1/3	2/2	2/10	5/3
" " 3" M-½" long "	8	10	1/5	1/11	3/6
Bends	8	11	1/7½	2/7½	5/2
Springs not socketed	5	7	1/1½	1/11½	3/11
Socket unions	2/–	3/–	5/6	6/9	10/–
Elbows, square	10	1/1	1/6	2/2	4/3
Tees	1/–	1/3	1/10	2/6	5/1
Crosses	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples	3	4	6	8	1/3
Diminished sockets	4	6	9	1/–	2/–
Flanges	9	1/–	1/4	1/9	2/9
Caps	3½	5	8	1/–	2/–
Backnuts	2	3	5	6	1/1
Iron main cocks	1/6	2/3	4/2	5/4	11/6
" with brass plugs	—	4/–	7/6	10/–	21/–

Discounts:

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

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

SMITH AND FOUNDER—*continued*

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ⅜"	"	10	6
" " ½"	"	10	3
" " ⅝"	"	10	0
" " ¾"	"	9	6
" " ⅞"	"	9	6
" " 1"	"	9	6
" " 1¼"	"	9	6
" " 1½"	"	9	6

Cast-iron rain-water pipes of ordinary thickness metal	F.R.	3" s. d. 8	4" s. d. 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 2
Half-round rain-water gutters of ordinary thickness metal	F.R.	5	6
Stop ends	each	6	6
Angles	"	1 7	1 11
Obtuse angles	"	2 0	2 6
Outlets	"	1 9	2 3

PLUMBER

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

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

PLASTERER

		£	s.	d.
Lime, chalk	per ton	2	5	0
Plaster, coarse	"	2	10	0
" fine	"	4	15	0
Hydrated lime	"	3	0	9
Sirapite	"	3	6	0
Keene's cement	"	5	0	0
Gothite Plaster	"	3	6	0
Pioneer Plaster	"	3	6	0
Thistle plaster	"	3	6	0
Sand, washed	Y.C.		11	6
Hair	lb.			6
Laths, sawn	bundle		2	4
" rent	"		3	9
Lath nails	lb.			3

GLAZIER

		s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.		s.	F.S.		2½
" " 26 oz. " "	"				3
Flemish, Arctic, Figures (white)*	"				7
Blazoned glasses	"			2	6
Reeded: Cross Reeded	"				11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"				6
Crown sheet glass (n/e 12 in. × 10 in.)	"			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	7 "	‡4	2
" " 45 "	"	†3	11 "	‡4	7
" " 100 "	"	†5	0 "	‡5	7
Vita glass, sheet, n/e 1 ft.	"			1	0
" " " over 2 ft.	"			1	3
" " plate, n/e 1 ft.	"			1	9
" " " 2 ft.	"			1	6
" " " 5 ft.	"			3	0
" " " 7 ft.	"			4	0
" " " 15 ft.	"			5	0
" " " over 15 ft.	"			6	0
"Calorex" sheet 21 oz., and 32 oz.	"	2	6 and	7	6
" rough cast ⅛" and ¼"	"		8½ "	1	0
Putty, linseed oil	lb.				3

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

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

PAINTER

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

CURRENT PRICES FOR MEASURED WORK

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

EXCAVATOR AND CONCRETOR

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

DRAINLAYER

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

BRICKLAYER

		£ s. d.
Brickwork, Flettons in lime mortar	Per Rod	26 10 0
" " in cement	"	27 12 6
" Stocks in cement	"	34 0 0
" Blues in cement	"	50 0 0
Extra only for circular on plan	"	2 0 0
" backing to masonry	"	1 10 0
" raising on old walls	"	2 0 0
" underpinning	"	5 10 0
Fair Face and pointing internally	F.S.	1¼
Extra over fletton brickwork for picked stock facings and pointing	"	¾
" " " red brick facings and pointing	"	11
" " " blue brick facings and pointing	"	1 4
" " " glazed brick facings and pointing	"	3 6
Tuck pointing	"	½
Weather pointing in cement	"	3
Slate dampcourse	"	10
Vertical dampcourse	"	1 1

ASPHALTER

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

MASON

		£ s. d.
Portland stone, including all labours 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
17" do.	"	1 9

CARPENTER AND JOINER—*continued*

		s. d.
1¼" deal moulded sashes of average size	F.S.	1 9½
2" " " " "	"	1 11½
1½" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ¾" parting beads, and with brass faced axle pulleys, etc., fixed complete		3 7
2" " " " "	"	3 10
Extra only for moulded horns	Each	6
1¼" deal four-panel square, both sides, door	F.S.	2 0
2" " " " "	"	2 8
1¼" " but moulded both sides	"	2 4
2" " " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " " "	"	1 4
1¼" 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.	1 18 6
Do. in flashings	"	2 2 0
Do. in covering to turrets	"	2 7 6
Do. in soakers	"	1 13 3
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

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

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

PLASTERER AND TILING

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

GLAZIER

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

PAINTER

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

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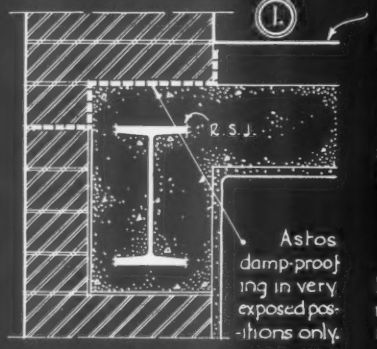
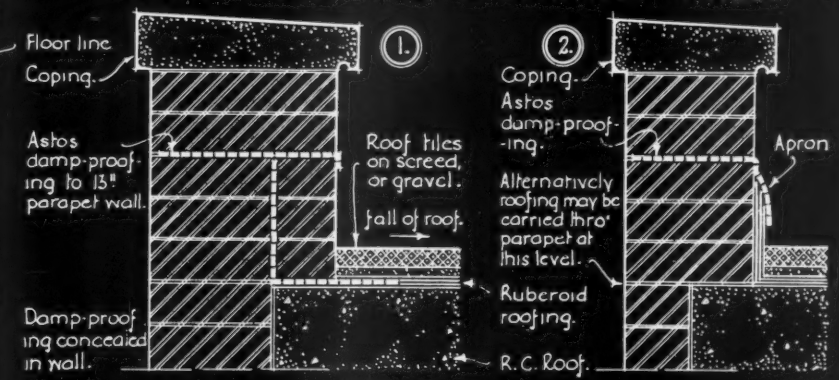
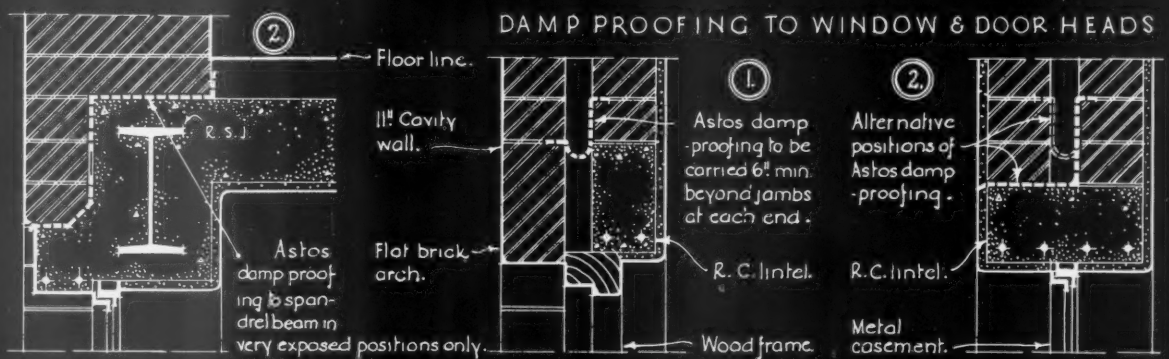
DAMP-PROOFING TO SPANDREL BEAMS :

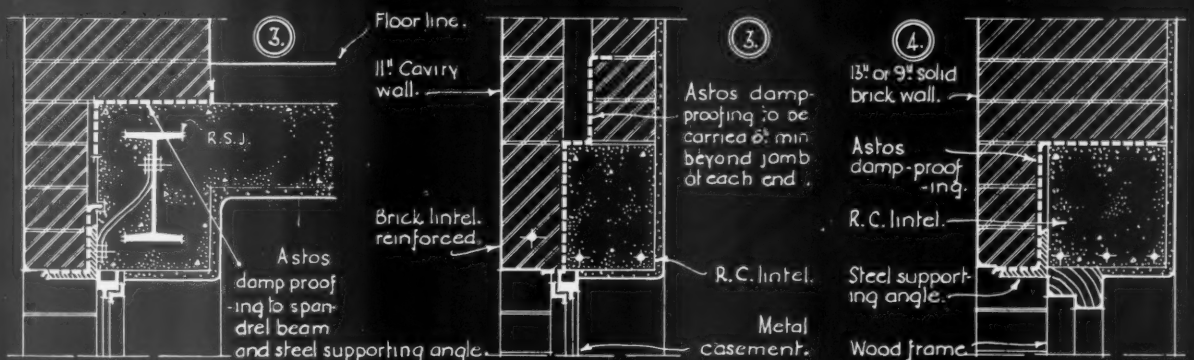


DAMP-PROOFING TO PARAPET WALLS :

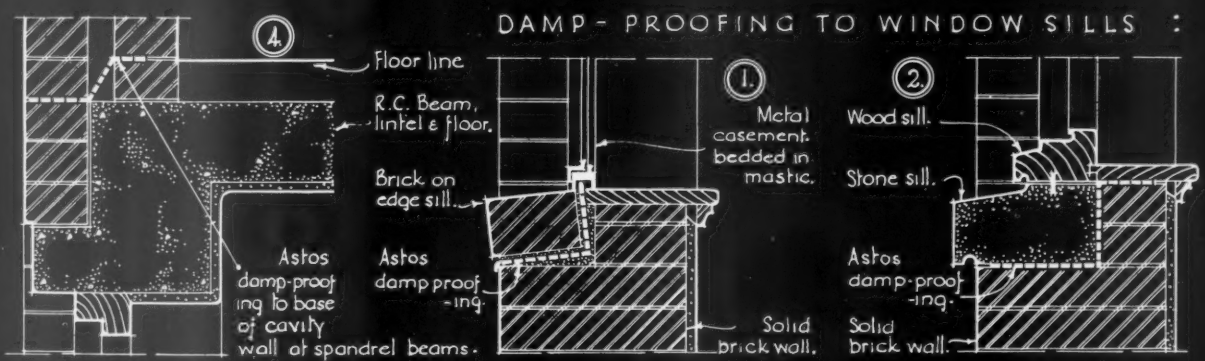


DAMP PROOFING TO WINDOW & DOOR HEADS :





DAMP-PROOFING TO WINDOW SILLS :



Information from The Ruberoid Co. Ltd.

INFORMATION SHEET : DAMP-PROOFING TO SPANDREL BEAMS, PARAPETS & WINDOW HEADS & SILLS
SIR JOHN BURNET TAIT AND LORNE, ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Miss A. Bayne.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET
• 304 •
WATERPROOFING

Product — Ruberoid Dampcourse

This Sheet sets out various methods, both common and uncommon, of damp-proofing wall beams, parapets, and heads or cills of window and door openings.

In this work, it is not possible to lay down any standard practice, nor to state specifically which is the best method shown. The subject has many minor aspects and the result is that architects and others of experience usually favour one particular method rather than another for particular reasons based on their own experience, and the characteristics of local building materials and conditions.

Waterproofing Wall Beams :

A great deal of work is carried out in this country with construction similar to the details 1, 2 and 3 given, in which no damp-proofing is provided.

The methods of damp-proofing shown are common in the U.S.A., and are used in this country when necessary.

The necessity for this particular damp-proofing is dependent to a large extent on the permeability of the wall or wall-facing material.

If the material is reasonably resistant to the penetration of damp, no trouble is likely to occur, even if the damp-proofing is not provided. If, however, a porous type of wall or wall facing is used, it is very likely, especially in very exposed positions, that damp will work its way down and through the wall, will collect on the top of the concrete above the R.S.J., and will consequently find its way in under the flooring and possibly through the concrete floor to the ceiling below.

When a type of construction such as No. 3 is used, it is essential that the damp-proofing over the exposed steel angle should be provided or continual corrosion may occur between the brick or other facing and the angle.

Detail No. 4 is the usual method of damp-proofing the bottom of the cavity in cavity-wall construction. This damp-proofing is essential in all cases, and it is important that the dampcourse should be stepped down as shown into a lower course in the outer wall, and that mortar droppings should not be permitted in the cavity.

If the mortar or other material is allowed to collect at the bottom of the cavity, the whole value of the cavity and the dampcourse is destroyed.

Damp-proofing to Parapet Walls :

Detail No. 2 is the common method used with a 9 in. parapet wall. Detail No. 1 is an interesting method of obtaining full protection while at the same time concealing all the damp-proofing material. The method necessitates a 13½ in. wall, which is considerably heavier than would otherwise be used, and it is preferable that falls should be arranged to grade away from all parapets.

Damp-proofing to Window and Door Backs :

In the details 1 and 2 shown, it is essential that no mortar droppings and other material should be allowed to collect on top of the damp-proofing. For this reason, the method of turning the damp-proofing out into the outer wall at a lower level than in the inside wall is much to be preferred. Should any blockage occur at either end of the damp-proofing, water would collect in the centre and would be turned out through the outer wall, the inner wall being fully protected by the damp-proofing carried up to the higher level.

The damp-proofing shown at No. 4 is frequently not provided, but it is recommended that at least the angle lintel should be protected.

Damp-proofing to Window Cills :

The necessity for the damp-proofing shown is dependent on the material of the cill. Brick on edge cills should always be damp-proofed, but slate, stone and similar materials are frequently damp-proof in themselves and need only be provided with a good drip.

Astos Dampcoursing :

Astos Dampcourse, particulars of which were shown in Information Sheet 267, is recommended for the work outlined on this Sheet.

Grades of Astos Dampcoursing :

The Dampcourse is made in two grades—"Standard" Astos and "Lead-lined" Astos, which is identical with Standard Astos in all respects except that it has an additional lamination of sheet lead.

Weight and Thickness :

Standard Astos is approximately ⅛ in. thick, and has an average weight of 7 lb. per yard super.

Lead-lined Astos exactly as above, but with a core of sheet-lead weighing 4 oz. per sq. ft. has a thickness of approximately ⅛ in., and an average weight of 9½ lb. per yard super.

Lead-lined Astos is also supplied with the lead core in all weights up to 12 oz. per sq. ft.

Sizes :

Astos is provided in all wall widths up to 36 in. in rolls containing 8 lineal yards.

The Building Research Station has conducted a series of tests on Astos, and a full report of these may be obtained from the manufacturers on application.

Previous Sheet :

The previous Sheet in this series was No. 267.

Manufacturers — The Ruberoid Co., Ltd.
Address : Lincoln House, 296-302 High Holborn, W.C.1
Telephone : Holborn 9501
Branches :
Birmingham : 66½ Corporation Street
Telephone : Central 2079
Manchester : 33 Blackfriars Street
Telephone : Blackfriars 3001
Newcastle-on-Tyne : 3 St. Nicholas Buildings
Telephone : Newcastle 25958
Edinburgh : Caroline Park, West Shore Road, Granton
Telephone : Granton 84041
Dublin : 1 Aston Place
Telephone : Dublin 23107
Belfast : 31 Corporation Street
Telephone : Belfast 26808

227.

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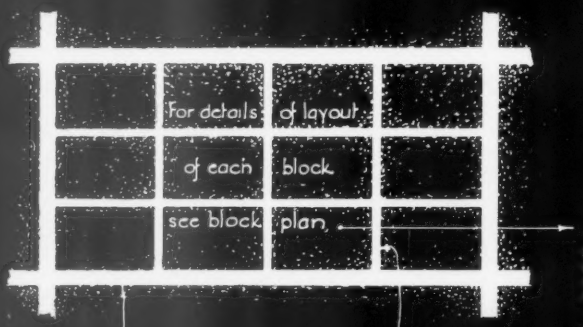
TYPE : THREE STOREY BLOCKS.

BLOCK PLAN showing one block of 10 buildings. (54'5")

Section thro' three storey apartments.

SITE PLAN OF 12 BLOCKS.
for notes see back of sheet 2.



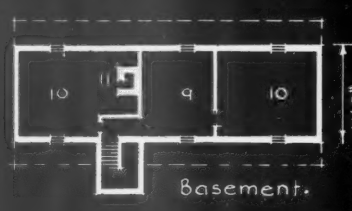
Main streets 80 ft. Intermediate streets 40 ft.

Block size (property line to property line)	386 × 610 ft.	
Streets bordering 12 block area, width of	80	"
Intermediate streets, width of	40	"
Sidewalks, width of	5	"
Population for 12 blocks	14,400	People
Area built on	30·25%	
Play area for 12 blocks	60,000	Sq. ft
Density per gross acre	180	People

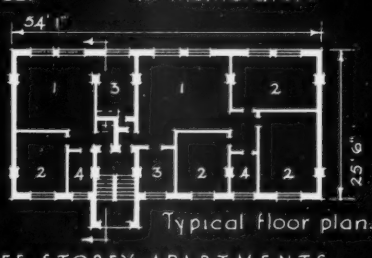
Number of buildings, 12 blocks	Number of units in 12 blocks	Number of rooms, per unit	Total no of rooms in 12 blocks
72 Buildings (A.) 7 units each.	504	24	12,096
48 Buildings (B.) 2 units each.	96	24	2304
Grand total	600		14,400

LEGEND:
1. Living room.
2. Bed room.
3. Kitchen.
4. Bath room.
9. Storage space.
10. Boiler room or storage.
11. Incinerator.

0 10 20 30 40 50
Scale for plans and section

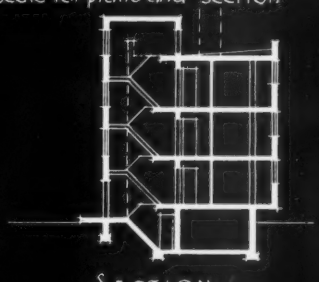


Basement.



Typical floor plan.

PLAN OF THREE STOREY APARTMENTS.
Cantilever construction ONE UNIT.



SECTION.

Factual data of one complete unit — Three storey buildings

Number of rooms, per floor (including kitchen.)	8
" " 3 room apartments per floor	1
" " 4 " " " "	none
" " 5 " " " "	1
Total number of " " "	2
" " " " " unit	6
" " " rooms " "	24

Information from The Housing Study Guild, New York.

④

INFORMATION SHEET : ANALYSIS OF VARIOUS TYPES OF HOUSING SCHEME

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON W.C.1. Otto. & Bayne.

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INFORMATION SHEET

• 305 •

AMERICAN HOUSING

(iv)

This sheet gives the site lay-out, plans, sections and general data for the two-storey flat block with basement. See also Sheets 292, 297 and 301.

COSTS	Cost per 24-room unit	Cost per room including kitchen
Foundations and Basement :—	$	$
Excavation and disposal by steam shovel	161·60	
By hand	57·20	
Backfill	17·60	
Rough grading	13·00	
Concrete footings and basement walls, including forms and reinforcement	693·00	
Steel columns	120·25	
Floor screed	156·75	
Concrete waterproofing	25·60	
Total	1,245·00	51·85
Basement Finish :—	$	
Stairs, forms and reinforcement	14·10	
6 in. hollow tile walls	58·00	
2 in. plaster partitions	29·30	
Perambulator store (wood partitions)	18·20	
Steel sashes and glazing	18·35	
3 fireproof doors and hardware	56·10	
Whitewashing and painting	26·00	
7 electrical outlets and fittings	32·75	
Slop sink	44·00	
Total	296·80	12·35
Structure and Enclosure :—	$	
Steel columns	295·80	
Setting-out anchor bolts	8·85	
Grouting column bases	4·40	
Floor slabs, forms and reinforcement	1,905·10	
Roof slab, forms and reinforcement	630·70	
Hollow-tile walls	284·20	
Curtain walls with external stucco and internal plaster	729·50	
Steel sashes and glazing	681·35	
Insulation	179·40	
Total	4,719·30	196·65
Stairs, Halls, Corridors, etc. :—	$	$
Stair landings, forms and reinforcement	57·60	
Staircase roof, forms and reinforcement	54·70	
Stairwell walls, hollow tile glazed	617·00	
Steel stairs and intermediate landings	309·90	
Steel sashes and glazing	42·85	
1 fireproof entrance door, 1 bulkhead door and furniture	73·50	
Painting of stairs, ceilings, windows and doors	45·15	
6 electrical outlets and fittings	28·10	
Bellwork and mailboxes	46·60	
Porch, floor and finish, roof insulation, etc.	110·65	
Total	1,386·05	57·75
Roof :—	$	$
Copper flashings, etc.	84·15	
3-ply roofing	89·75	
Insulation and screeded fill	225·05	
Parapet, hollow tile, glazed inside, rendered outside	288·20	
Parapet, glazed tile coping	59·40	
Total	746·55	31·10
Finishes and Equipment :—	$	$
Column fireproofing (2 in. hollow tile and plaster)	209·50	
2 in. plaster partitions	609·00	
Plastering of internal walls	102·00	
6 Fireproof entrance doors and furniture	140·70	
21 internal doors and furniture	220·50	
⅞ in. hardwood floors	712·65	
Skirtings and picture mouldings	129·80	
Tile floor for bathrooms	135·00	
Painting : walls, ceilings, doors, etc.	581·10	
24 metal wardrobes	300·00	
6 kitchen cabinets	270·00	
6 medicine cabinets	39·00	
39 window blinds	39·00	
6 gas cookers	150·00	
6 refrigerators	480·00	
Total	4,118·25	171·60
Plumbing :—	$	
Cost per unit, not including gas lines	2,346·00	97·75
Heating :—See Sheet 297.	$	
Total cost	1,274·64	53·11
Gas and Electrical :—	$	
Initial cost of gas carcasing	168·00	
Electric meter connections	13·92	
66 outlets and fittings	309·00	
Total	490·92	20·43
Total cost per room, including kitchen		$723·09

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DESCRIPTION:

Sand-lime bricks may be defined as building units made essentially from siliceous sand and slaked lime mixed with water, moulded under pressure & hardened by exposure to steam.

ADVANTAGES:

Sand-lime bricks are light in colour & have light reflecting properties, for interior or exterior use. They have uniformity of size & shape Absence of efflorescence Adaptability to carving painting, etcetera.

NOTES ON MATERIALS FOR MANUFACTURE:

① SAND • Should be free from mineral coating-material, soluble salts & organic matter, clay may be advantageous up to approximately 5% All sand must be carefully graded & must contain a proportion of very fine particles to fill the interstices. It has been found that from 12 - 15% of the sand should pass 100 mesh sieve (B.S.S.) and that a portion of this should be considerably finer The remainder of the sand should be graded in increasing sizes up to the maximum, 18 mesh sieve (B.S.S.)

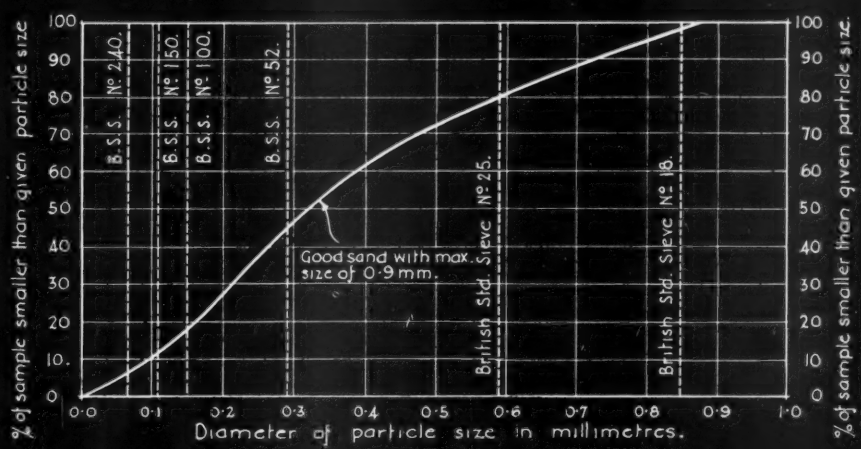
② COMMERCIAL LIME • Should be of the high calcium type (7% max. CO_2) low in magnesia content (3% max. MgO) and low in hydraulic constituents (5% max. $SLO_2 + AL_2O_3$). All types must be easily and completely hydrated before use.

QUICKLIME • Suitable if very fine & completely hydrated; quality to be equal to above specification, except that magnesia and hydraulic constituent percentages may be slightly increased.

③ WATER • The water used should not contain large amounts of soluble salts, nor should it be contaminated with organic matter.

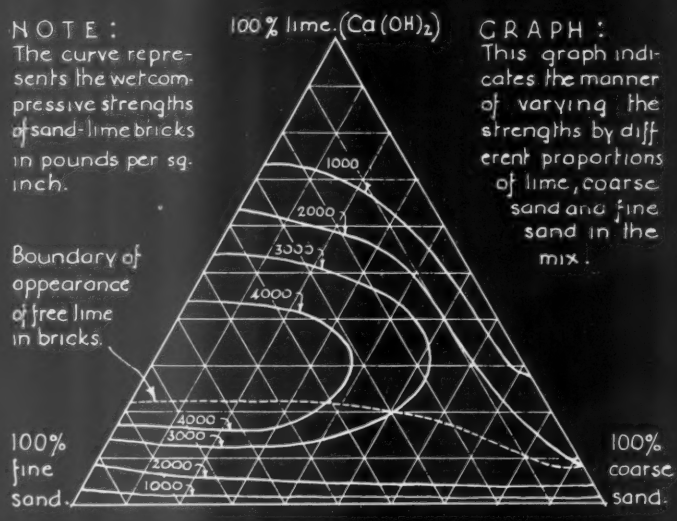
GRAPH SHOWING IDEAL SAND GRADING FOR SAND-LIME BRICKS:

The curve shows the percentage of the sand (passing through British Standard Sieves of various meshes) which is smaller than the given particle size. Maximun diameter sand to pass British Standard Sieve No. 18.



NOTE:

The curve represents the wet compressive strengths of sand-lime bricks in pounds per sq. inch.



GRAPH:

This graph indicates the manner of varying the strengths by different proportions of lime, coarse sand and fine sand in the mix.

TABLE OF NORMAL PROPORTIONING OF LIME & SAND CONTENTS:

Note: The proportions by volume are computed on the assumption that Quicklime has a bulk density of 65 lbs. per cub. foot. Hydrate a bulk density of 35 lbs. per cub. foot, and sand a bulk density of 100 lbs. per cub. foot

	Parts of lime.		Parts of sand.	
	By Weight.	By Volume.	By Weight.	By Volume.
Oxide.	5 - 8	1.	95 - 92	12·5 - 7·5
Hydrate	6·5 - 10·5	1.	93·5 - 89·5	5 - 3

AUTOCLAVING (or Hardening): The max. maintained steam pressure varies but is related to the time of autoclaving. Brick strength increases with time and pressure, a longer period of autoclaving being necessary for lower pressures to obtain a similar strength. A period of 7 hours is usual at a pressure of 160 lbs/sq. in., but from 8 - 12 hours at 120 lbs./sq. in, or 4 - 6 hours at 200 lbs/sq. in. are equally efficient.

Extracts from The Department of Scientific and Industrial Research. Spec. Rpt. No. 21.

Issued by The Midhurst Brick Co. Ltd.

INFORMATION SHEET: DATA CONCERNING SAND-LIME BRICKS.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON W.C.1. Olive A. Bayne.

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INFORMATION SHEET

• 306 •

SAND-LIME BRICKS

This is the first of a series of Information Sheets dealing with Sand-lime bricks generally and with " Midhurst Calcium Silicate " bricks (Midhurst Whites) in particular.

This Sheet is a summary of some of the main features of a report on manufacture, Properties and Test results of Sand-lime bricks issued by the Building Research Station, and is published by permission of His Majesty's Stationery Office.

For full detail reference should be made to this publication :—

Department of Scientific and Industrial Research, Building Research. Special Report No. 21, by G. E. Bessey, M.Sc., A.I.C. H.M. Stationery Office, 1934.

Reference should also be made to the British Standard Specification for these bricks (No. 187).

Sand-lime bricks conforming to this specification are accepted by the London County Council and are regarded by the Council " as blocks of Stone." (See R.I.B.A. Journal, p. 541, March 9, 1935.)

Sand-lime Bricks.—The following paragraphs are quoted from the introduction to the B.R.S. report mentioned above :—

" The type of building material known as sand-lime brick is a comparatively modern product. It was first introduced commercially less than fifty years ago, but its production and use has now increased to such an extent as to bring it to the forefront amongst building materials of the present day."

" Sand-lime bricks may be defined as building units made essentially from siliceous sand and slaked lime, with sufficient water to allow the mix to be moulded under pressure, and hardened by exposure to steam. Hydrated calcium silicate is formed by the action of the steam from the sand and lime, and this acts as a strong and durable cementing agent which binds the sand grains together."

" Whilst it is possible that the utility of sand-lime bricks is greatest in countries where good brick clays are not available everywhere, the advance of sand-lime bricks, even when in close competition with local clay bricks, indicates that they have general properties which compare favourably with those of clay bricks and that for some purposes certain of their properties may cause them to be preferred."

" Amongst the advantages which they possess when compared with other materials, the light colour and good light reflecting properties is perhaps one of the most outstanding. This causes them to serve as a cheap and satisfactory substitute for glazed bricks for interior work in schools, halls, factories, etc., and also externally in lighting wells in large buildings. Their uniformity in size and shape, with square and sharp arrises, adds to their suitability for such work, and also facilitates the actual laying of the bricks. A further property which is of some importance is the absence of any serious tendency for efflorescences, to form upon the surface of the brick ; such efflorescences are a frequent source of trouble with clay bricks."

" The price of sand-lime bricks varies considerably according to the district, and the amount of competition between clay and sand-lime bricks. In general, a sand-lime brick can be sold at a price which will compete with the prices of clay common brick in a district where both can be manufactured under normal conditions, or where both have to be brought similar distances. The better grades of sand-lime bricks, suitable for facing work and work where extra strength is required, sell at prices above clay common brick prices but much lower than good clay facing or engineering bricks."

Midhurst Calcium Silicate Bricks.—Full details will be given in succeeding Information Sheets of this series, of the characteristics, porosity, crushing strength, tests results, etc., of Midhurst Bricks, together with a full schedule of the Standard shapes and moulded bricks produced for special purposes.

Manufacturers : The Midhurst Brick Co., Ltd.

Address : Windsor House, Victoria Street, S.W.1

Telephone : Victoria 5551-2

Works : Midhurst, Sussex

Telephone : Midhurst 103