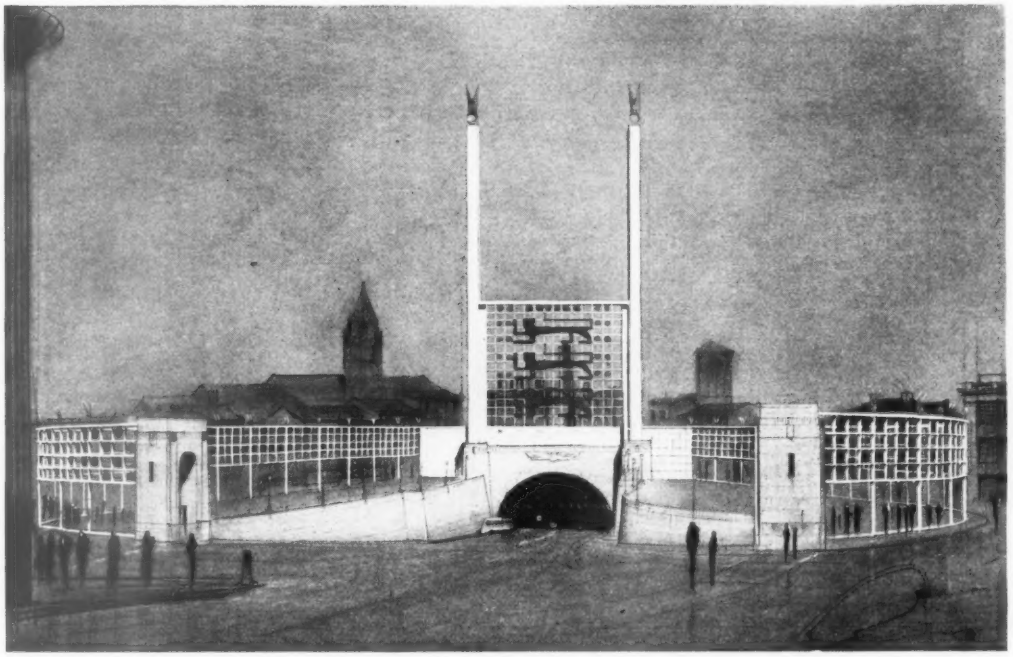
CORONATION DECORATIONS, LIVERPOOL

THE KINGSWAY ENTRANCE TO THE MERSEY TUNNEL



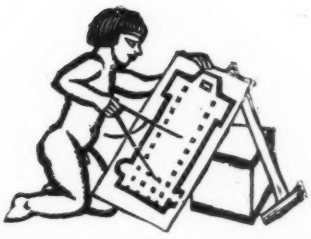
ON December 2 an exhibition of schemes prepared by students of the Recognized Schools of Architecture for the Coronation decorations of their respective cities will be opened at the R.I.B.A. Above is one of the contributions of the Liverpool School—a perspective drawing of a scheme for the treatment of the Kingsway entrance to the new Mersey Tunnel.

The programme followed by the School has involved concentration upon half-a-dozen centres of special importance in the town, the Kingsway entrance to the new tunnel being amongst them. Informal schemes of decoration with certain recurrent colours and motifs have been relied upon to provide the connecting links necessary to unify the decorative treatment of the centre of the city as a whole.

The Liverpool designs are the work of senior students working in groups, and are largely influenced by the experience which the School has acquired in the decoration of portions of the city on the occasion of Royal visits in the past.

BAVARIAN CHURCH ARCHITECTURE

A detail of the Church at Bayrischzell in South-West Bavaria.



SMALLER SHOPS

THIS is the time of year when, with something like a twinge of annoyance underlying acceptance of the unavoidable, the average man realizes that in the course of the next half dozen weeks he will be compelled to visit quite a number of shops ; and simultaneously with rather different feelings, the average woman knows that she must soon visit far more shops than usual.

Christmas is in the air, and the annual campaign to catch more than its fair share of the public's attention, and to catch it quickly, is being got under way in nearly every shop. The next few weeks will see best lines of gifts, biggest toy fairs ever, façades rioting with seasonable twinklings, and heavy advertising funds all being mobilized for the purpose of attracting customers and, once they have been attracted, selling as much as possible to them.

In a month's time the frenzy of glittering competition will have come very near to its climax, and among those making an essential minimum or a large-hearted host of purchases, few perhaps may wonder whether shouting the loudest is really the only policy which can save retail trade from bankruptcy—whether some quieter premises, dispensing with giant lights and giant posters, would not make a modest dividend from the thankfulness of the exhausted.

Such ponderers, feeling themselves to be probably but a drop in the ocean of more robust fellow citizens, would perhaps be surprised to learn that a number of the princes of retail trade have begun to indulge in similar speculations. Retail selling, depending as it does on the same uncertainties of human psychology, is as complex as international finance, and often as unpredictable in result. Shouting loudly paid handsomely as long as those with lungs truly brazen were comparatively few; but now that the trader of very modest means has been enabled by modern methods and materials to make a very tolerable imitation of the war cries of the giants, the more enlightened merchants have begun to change their minds. It has been found possible to carry the Oxford Street touch too far.

Shops, as has been said, are very complicated things, but their general development from a bow-windowed ground floor in the Georgian street can be divided into three main streams. In early days goodwill brought customers, and six foot letters announcing a bargain sale would have been regarded as civic bad manners on a scale approaching insanity.

As towns grew, however, goodwill proved not enough to attract new population. Some shops grew larger and larger, and sold more and more types of goods until they developed into the modern store of today. The remainder and far more numerous shops remained small—requiring usually only a ground floor and a front thirty feet or less in width—and gradually became divisible into two types. There were those which sold commodities universally needed, of which the butcher, the baker and the candlestick-maker are good old-fashioned examples, and those which specialized in one line of goods, or closely related group of lines, of a more luxury type, of which the tailor, the florist, and the bookseller are representative.

Although on these three types of shop retail trade has made infinite variations such as co-operative shops, chain shops, and "complete outfitters," they are still sufficiently distinct to require very different qualities and sites for the buildings in which they do business. But in the last ten years those who direct them have made the interesting discovery that one factor is common to them all. They have found, especially in the smaller shops, that competitive clamour externally is not enough. It is now realized by the more intelligent shopkeepers that the exterior, interior and salesmanship must be related to each other if the shop is to have that little something the others haven't got—if the customer, in making a purchase, is to receive the impression of good arrangement and attention which will make him or her come back again. And it is the customer who comes back that matters.

This fairly important discovery was made first in the semi-luxury shops which could afford to study details; for which, in fact, the study of detail was essential. But its effects are now being felt even in the design of general commodity shops. In consequence, architects are now being consulted to an increasing extent in the designing of all types of shop.

Nearly every firm of architects has at one time or another designed a shop, or one of the group of shops which are now being built at the centre of new housing schemes. But in a field of design in which enormous developments, and a multitude of new ideas, have made their appearance in the last few years, no detailed summary of the planning factors involved and the construction methods and materials available has been published.

The JOURNAL has therefore decided to try to remedy this lack of a concise reference.

Last February publication began of a new series of articles dealing with the planning of modern buildings, of which the first was devoted to Town Halls. In the belief that the design and planning of the shop which is too small to be called a store will in the future become of considerable importance in general architectural practice, the JOURNAL will publish next week the first of a series of illustrated articles on shops.

The authors of this section have had exceptional experience in the designing of shops of all types, whilst at the same time having the co-operation of most progressive clients. The articles will consider the special needs of various shop types, the design and construction of their components, and will also explain the basis upon which sites are decided on for special selling needs.

The JOURNAL hopes that this series will help eventually to create the best of all arguments for city streets being something better than a ribbon development of competitive vulgarity.

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

RE-HOUSING, BY THE RE-HOUSED

MISS ELIZABETH DENBY read a well-reasoned paper at the R.I.B.A. on Monday night, on "Rehousing from the Slum-Dweller's Point of View." That she is the first woman to read a paper before the Institute is a milestone, as the novelists say, but it really is too bad that the real content of the paper should lose any of its importance through chit-chat on the gossip pages.

*

The paper dealt with the problem from the human viewpoint and was supported by facts which had the conviction born of personal investigation and research.

*

In brief, Miss Denby said that rehoused people liked neither slums nor cottage estates. Her solution is the terraced cottage, planned around squares and private gardens—something akin to Regency cottage planning and nothing to do with the terrace streets of the industrial black age.

*

Terraced cottages with gardens can be planned at 50 to the acre—the same density as that of our present 5-storey rehousing flats. And with such development we could have properly grouped buildings, cafés, schools, health centres, sports centres, shopping centres, which were entirely lacking in most 19th century housing, and which any casual observer can see are lacking in some part in practically all the rehousing schemes of recent years.

CONTRIBUTIONS INVITED

The Royal Academy is going to hold an exhibition of modern architecture early next year—or rather, as the Royal Academy puts it, "An Exhibition of British Architecture in the 20th Century."

*

There is to be no restriction as to style, and the eminent R.A. architects have formed a selection committee including some other well-known architects.

*

On the face of it this is a really good idea. The illustration of works principally by working drawings, supplemented by photographs, is a first-rate method of impressing the public with the meaning of an architect's job; and the obligatory submission of at least one drawing by the architect responsible for the work has very obvious uses. But . . .

*

The R.A. circular does not give the names of the co-opted selectors, who are, I believe, Mr. G. Grey Wornum, Mr. C. H. James and Mr. H. Chalton Bradshaw. My confidence in the standard of works eventually accepted was not heightened by receiving an invitation to exhibit which was sent to an office address which must have been taken from a directory of considerable age. And there is something like a smile going round the higher architectural circles at the news that the R.A.'s official intimation to the R.I.B.A. was addressed to No. 9 Conduit Street.

BRITISH RAILWAYS

The recent competition for the design of tickets and parcels offices for the combined British Railways has been a model of its kind.

*

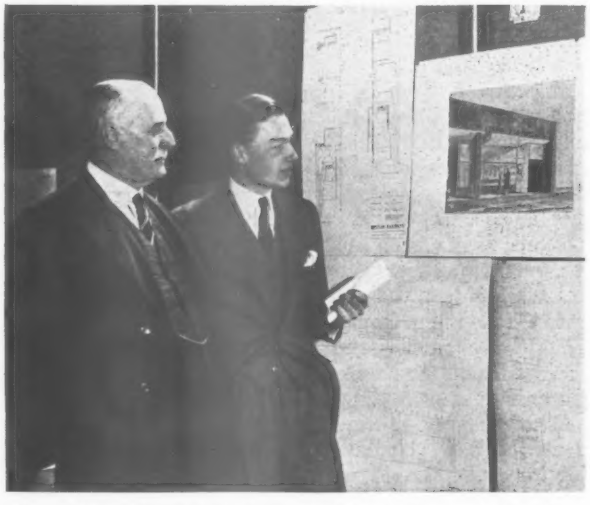
Designs had to be in on a Saturday. The jury, Messrs. Charles Holden, L. H. Bucknell, W. H. Hamlyn and C. Grasemann, got down to their work immediately and the award was made on the following Tuesday. The winners were notified the same day and on the next Monday the exhibition of designs opened—all in nine days.

*

Most competitions take as many weeks. The fault lies not so much with the assessors as with the promoters, and the combined British Railways are therefore to be congratulated on appointing an executive to deal with the business expeditiously.

*

They are to be congratulated, too, on the result of the competition, for, as Mr. Holland Martin said at the opening ceremony, the winner has done the almost impossible—produced a design of outstanding merit without indulging in architectural bad manners.



The designs submitted in the competition for a standard railway receiving office are now on exhibition at the R.I.B.A. Above is a photograph of Mr. R. Holland Martin, who opened the exhibition, and Mr. H. Cadbury Brown, author of the winning design.

The fish and chip shop which has recently been the subject of an action for infringement of copyright.

AUTHOR VINDICATED

The winners of the second prize in this efficient competition have what is called double news value for anyone who looks at anything else in the JOURNAL after my notes. For I am told that Mr. Bryan Westwood, who was considerably involved in this success, is also one of the authors of a section on the planning of shops which will next week begin to appear in the JOURNAL.

*

The other author, oddly enough, is also called Westwood, being Mr. Bryan Westwood's brother, Mr. Norman Westwood.

*

The design of shops is becoming of quickly increasing architectural importance since the epoch-making discovery was made a few years ago by some shop-owners that the thoroughly well-designed shop not only pays but keeps on paying.

*

And no one can be better equipped for explaining all the things that have to be done to bring about such desirable ends than the Westwood brothers—not forgetting a few possible hints from the senior member of the firm. Many of the very best shops are paying—well, paying very handsomely—through the efforts of these experts, and after the Railways Competition their excuses for authorship may be considered to have been found valid.

LOGICAL TEACHING

The chief snag about teaching any sort of design subject is that so few students ever get a chance of seeing what their work will really look like when it's fully carried out, and I shall therefore be very interested to see how the new Reimann School, which is starting in London early next year, works out a rather difficult problem.

*

Its prototype, the Reimann School in Berlin, has not only a teaching section, but a studio which does ordinary outside work, just like any other studio, and in this are employed a certain percentage of the more successful school students, who thus not only earn a certain amount of money but get, as well, really valuable experience of how the job is done, from start to finish. And the studio does definitely get a good deal of work to do from the more enlightened type of German manufacturer.

*

The London school is to be run on much the same lines, and has already got a certain amount of work for the studio to do, probably the most difficult side of the undertaking.

*

The head of the school is Mr. H. E. Reimann, the son of the founder, and there is an advisory council which will be in charge of the general school direction.

*

General organization, public relations and publicity will be done by Mr. Basil Marriott, who, after his experience of acting as a buffer state between artists and business men at the Empire Marketing Board, ought to know exactly how to run a show like this.

A CORONATION SCHEME FOR THE CITY COMPANIES

In suggesting that the City Livery Companies of London should found a Trades Training College in commemoration of the Coronation, the Master of the Worshipful Company of Tylers and Bricklayers has started a train of ideas that may be difficult to stop. He may drag the City Companies out of their hallowed, well-fed seclusion, and bring them once more into active participation in the educational life of the land.

ARCHITECTS' COPYRIGHT

For years and years I have been under the firm impression that any design I make is my own copyright, and that any private person or other architect who borrows my plan is liable to me for damages.

*

Yet apparently I, and some thousands of other architects, have been living in a fool's paradise, for I am shocked and surprised to discover that a drawing in two dimensions could have been reproduced "in the round" without necessarily infringing copyright.

*

For a case has recently been brought over a shop-front design which was carried out by an independent firm of shop-fitters, somewhat naturally to the considerable disadvantage of the original designer.

*

As far as I can make out the facts were not in dispute, yet it took no less than three days of complicated legal argument before Mr. Justice Crossman could decide whether the unfortunate designer's copyright had been infringed or not.

*

This case presumably gives an important precedent if such an affair should ever get as far as the courts again, but it astounds me to discover that the point has never been legally argued before, or that there should be any need for such a lengthy discussion.

*

But it's a relief to know that we needn't erect a sample building for a client to approve before we're certain of getting some fees for the job.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

ROYAL ACADEMY EXHIBITION

The Royal Academy is preparing for January and February, 1937, an Exhibition of British Architecture in the Twentieth Century, in which it hopes to show, in a wide variety of examples and without restriction as to style, the best work done by British architects in the past 36 years. The work will be classed in six main sections—domestic, civil, monumental, commercial, ecclesiastical, bridges—and will consist for the most part of the architects' own working drawings, illustrated by photographs, perpective views and models. A Retrospective Section, surveying British architecture from the seventeenth century, will be included.

DINNER TO SIR GUY DAWBER

A complimentary dinner was given to Sir Guy Dawber, R.A., at Pagani's Restaurant, on November 6, by many of his past and present pupils and assistants and others who have been associated with him in his practice for many years past, in celebration of his knighthood.

The gathering, which was presided over by Mr. T. M. Wilson, who was with him over 35 years ago, was representative of those who had been in his office or connected with him in his work for the past 40 years.

COMMONWEALTH FUND FELLOWSHIPS

Copies of the memorandum and form of application for the Commonwealth Fund Fellowships may be obtained, free, on application to the Secretary to the Committee of Award, Commonwealth Fund Fellowships, 35 Portman Square, London, W.1.

The Commonwealth Fund of New York, founded in 1918 and supported by gifts from the late Mrs. Stephen V. Harkness, has established for British subjects a number of Fellowships tenable at certain American Universities. The Fellowships, which are available for architects, are confined to University graduates, but a graduate who is taking a course at a School of Architecture which is not a University School would be eligible to apply for a Fellowship.

There is no fixed stipend, but the emolument attaching to each Fellowship, which is estimated at the approximate annual value of $3,000, is calculated to cover the full expenses of residence, travel and study in the United States during the year.

THE ARCHITECTS' DIARY

Thursday, November 19

HOUSING CENTRE, 13 *Suffolk Street, S.W.1. Exhibition: "Forbidden Houses." Arranged by the Ex-Servicemen's Group of the Hundred New Towns Association. Until November 21.*

BUILDING CENTRE, 158 NEW BOND STREET, W.1. *Exhibition of Inn Signs. Until November 28. 10 a.m. to 6 p.m. (Saturdays, 1 p.m.).*

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. Exhibition of Drawings and Paintings by Students in English Schools of Architecture. Organized by the A.A. Students' Art Club. Until November 20.*

PUBLIC HEALTH EXHIBITION AND CONGRESS. *At the Royal Agricultural Hall, Islington, N. Until November 21. 10 a.m. to 7 p.m.*

SOCIETY OF ANTIQUARIES, *Burlington House, Piccadilly, W.1. "The Retable in Westminster Abbey." By J. G. Noppen. 8.30 p.m.*

INSTITUTION OF STRUCTURAL ENGINEERS. *Yorkshire Branch. At the Hotel Metropole, Leeds. "A Revolution in the Technique of Concrete." By A. T. Gueritte. 7 p.m.*

BRITISH RAILWAYS COMPETITION. *At the R.I.B.A., 66 Portland Place, W.1. Exhibition of Designs for a Standard British Railways' Ticket and Parcels Office. Until November 25. 10 a.m. till 5 p.m.*

Friday, November 20

INSTITUTION OF STRUCTURAL ENGINEERS. *Midland Counties Branch. At the University of Birmingham, Edgbaston. "A Method for the Estimation of Compressive Strength of Concrete in the Field." By J. F. Williams. 6.30 p.m. Scottish Branch. At the Grosvenor Restaurant, Gordon Street, Glasgow. Fourth Annual Dinner. Western Counties Branch. At the Merchant Venturers' Technical College, Unity Street, Bristol. "A Revolution in the Technique of Concrete." By A. T. J. Gueritte. 7.15 p.m.*

Saturday, November 21

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY. *Visit to St. Stephen's, Wallbrook, E.C.4. 2.30 p.m. Also, visit to St. Augustine with St. Faith, Watling Street, E.C. 3.30 p.m.*

Monday, November 23

HOME ARTS AND INDUSTRIES EXHIBITION. *At Dorland House, Lower Regent Street, S.W.1. Until November 28. 11 a.m. to 6.30 p.m.*

Tuesday, November 24

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. "The A.A. Excursion to Czecho-Slovakia." By Verner O. Rees and J. A. Mackay. 8.30 p.m. Also, exhibition of photographs taken by members on the A.A. Excursion to Czecho-Slovakia. Until December 12.*

COPYRIGHT: DESIGN OF A SHOPFRONT

A matter of exceptional interest to architects, designers, shopfitters, multiple or individual retail shopkeepers of all trades was decided before Mr. Justice Crossman in the Chancery Division of the High Court at the beginning of the present term. The case in question dealt with the point of the copyright in a design for a shop front.

The plaintiff was Mr. C. J. Chabot, of Portland Road, London, W.11, who carries on business as a shopfitter, and the case arose owing to a design which he had prepared having been used without his permission in the erection of a shop front in Camden Town for the defendants, Messrs. M. G. Davies and Colonel L. A. Eddis. During the proceedings it was established that Mr. Chabot had prepared at the request of a customer a design for an original treatment of a shop which the customer proposed to open at 68 High Street, Camden Town, and the defendants had authorized another firm of competing shopfitters to erect the shop in question following Mr. Chabot's original design.

After listening to evidence and lengthy arguments from counsel on both sides for nearly three days, Mr. Justice Crossman held that Mr. Chabot's drawing was an original work and that his copyright had been infringed by the erection authorized by the defendants of the shop front following the drawing. He therefore gave judgment for Mr. Chabot with damages and costs.

B.I.F.

The Department of Overseas Trade has been notified by Earls Court, Ltd., that, owing to unforeseen circumstances, the new exhibition buildings now in course of construction at Earls Court will not be completed in time to permit of their being utilized for certain sections of the British Industries Fair of 1937 to be held from February 15-26 next. The Department of Overseas Trade announces, therefore, that the London sections of the fair will be held at Olympia and the White City, as in the case of the Fair of 1936.

LONDON'S BIGGEST HOUSING SCHEME

The largest scheme for municipal flats ever considered by the London County Council was submitted by the Housing and Public Health Committee on Tuesday last. The Committee asked the Council to approve the development of a site of 50 acres formerly occupied by the White City Exhibition at a cost of £1,437,000.

The scheme provides for 2,286 dwellings containing 7,290 rooms and including 312 flats of a new type still under consideration by the Committee. All blocks will be five storeys high, and accommodation will be provided in all for nearly 11,000 people. Shops, schools, public buildings and children's playgrounds will be included in the layout.

Another scheme put forward by the Committee is for the erection of 50 flats in Vesey Street, Poplar, accommodating 240 persons at a cost of £29,000. An interesting feature of the scheme is the provision of a number of barrow sheds to enable residents to carry on their occupation as costermongers.

At the same meeting the Town Planning and Building Regulations Committee recommended the Council to approve byelaws regulating the use of constructional timber which it is proposed to make in pursuance of the London Building Acts (Amendment) Act, 1935.

Before the byelaws can be made under the Council's seal, all valid objections must be considered and disposed of, and to this end copies will be placed on sale, and also forwarded to the authorities and persons specified in the Act and to those to whom the Council has given undertakings. Proposed byelaws relating to the construction and conversion of buildings and chimney shafts were approved by the Council on July 28 last, and the byelaws now submitted complete those then approved.

A NEW INDUSTRIAL ART SCHOOL

The new Reimann School of Industrial Art is to open in London early next year. The organization, the prototype for which is the Reimann School in Berlin, will consist of a combined school and studios. The school is to provide a specialized

training for those intending to enter the various professions covered by the title of Industrial and Commercial Art; the studios will exist to execute commissions received from manufacturers, and in this work proficient students are also to assist, thus having an opportunity of tackling, under guidance, the actual problems of applied design.

The Berlin School has been in existence for 32 years, and apart from the training of students, has done a good deal of regular work for many of the more enterprising German manufacturers: the London School will be run in the same way, starting with a nucleus of five main departments, Exhibition and Display Design, Commercial Art (Posters, etc.), Fashion and Dress-making, Photography and Fine Arts and Crafts.

Mr. Heinz E. Reimann, son of the original founder, will be at the head of the organization, and the direction will be in the hands of an advisory council consisting of Mr. John Beddington, Mr. E. McKnight Kauffer, Mr. John Grierson, Mr. F. Phillips, Mr. Howard Robertson, Mr. F. R. Yerbury, and Mr. Henry G. Dowling. The general organization will be in the hands of Mr. Basil Marriott.

FIFTY YEARS ON

As the practice of town-planning has developed in Britain, it is seen by thoughtful people to have become a more and more complex mechanism for putting into effect multitudinous small regulations to remedy small abuses.

The original aim and definition of town planning was the planning and guiding of the use of all the surface of Britain in order that the business of living should be carried on as easily, and in surroundings as suitable, as it was possible to achieve by human forethought.

It was no doubt necessary for this territorial guidance to begin first with the small things which could be achieved within a reasonable period of time; nor can it be denied that town-planning regulations have remedied a considerable volume of small abuses of the public's best interests and prevented many more.

But recently the ends, towards which the increasing complexity of petty regulations is supposed to be the means, have been formulated less and less frequently by those in authority in town planning, while at the same time it appears that an entirely unwarranted faith is being placed in the solving of grave problems by measures of small local restrictions.

In the last few weeks this change in national town-planning policy has been emphasized by two events: the Commissioner for Special Areas has been the first person in a high position to emphasize the need for preventing the further growth of London; and the Minister of Health has ordered the L.C.C. to prevent traffic congestion in London by regulating access to individual buildings.

Granted the variety of the forces at work, the complications set up by their interplay, and the profound difficulty of finding a solution, the fact remains that a solution will have to be found in the course of the next fifty years to the problems raised by the exploitation of modern scientific knowledge by unregulated enterprise. Some of our readers, we submit, have thought long and laboriously upon this problem. We announce, therefore, a competition as a means of inducing those who, in the ordinary way, are not tempted to write, to set down their reflections.

CHRISTMAS COMPETITION

for an essay in town and territorial planning prophecy; the time of action being the year 1987. In fuller explanation of the object of the competition the following examples are put forward from the multitude obviously available:

(1) *Part of the diary of an American visitor describing a holiday journey along a Trunk Road from London to Carlisle.*

(2) *A letter from a young woman to her best friend after her first three days' sight-seeing in London.*

(3) *An assessor's report on an architectural competition for a social centre at Manchester.*

(4) *Preliminary notes for an expert's report on the territorial planning of South Durham after a day's general survey from the air.*

[*The time of action of all the above examples to be supposed to be in the year* 1987.]

With a view to stimulating the literary ambitions of competitors, the JOURNAL *offers a FIRST PRIZE of* £20, *a SECOND PRIZE of* £10, *and a THIRD PRIZE of* £5 *for the three essays judged to be the best in order of merit.*

Essays should not exceed 3,000 words in length, should be typed on one side only of quarto paper, and must reach the JOURNAL by the first post on January 1, 1937, endorsed on the envelope "Essay Competition."

Each entry should have a pseudonym and the address of the competitor typed on the last page of the essay, the competitor's name being enclosed in a smaller sealed envelope having the pseudonym chosen clearly typed on the outside.

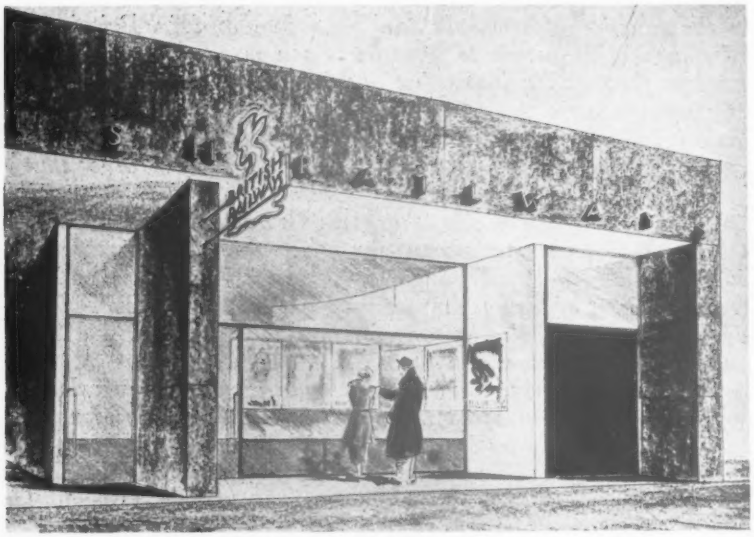
The Editor's decision will be final concerning the awards made, and no questions will be answered.

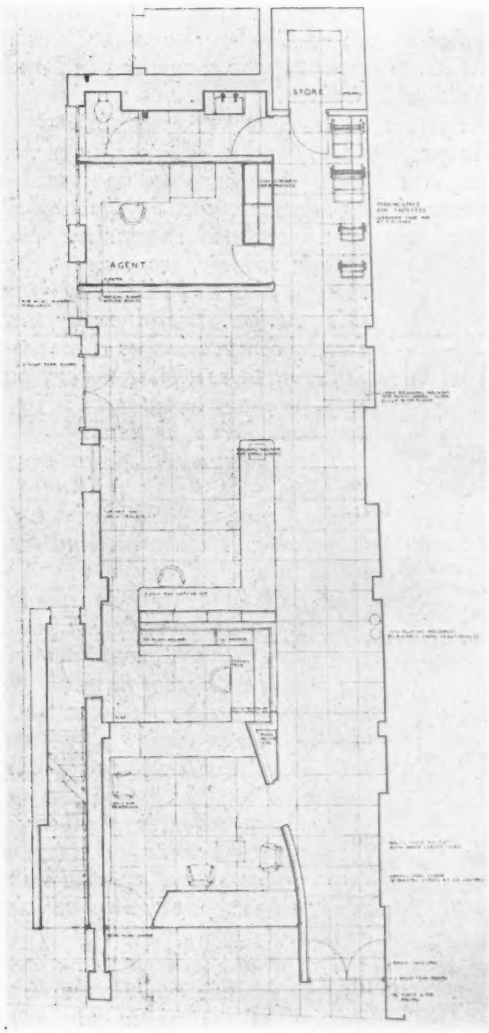
The competitor is asked to imagine that he is writing fifty years hence, in 1987, *with a full knowledge of the town and territorial planning moves that have been made in the interim; the idea being that his description, whatever form it takes, should acquaint the reader with what has and what has not been done to clear up the existing chaos during fifty years, and what the outcome of those moves (if any) is.*

The competitor is at liberty to regard his notes as an essay in constructive planning or in prophecy: he may be serious, satirical or funny.

The prizes will go to the competitors whose contributions, in the opinion of the editor, make the most original and illuminating reflections on the issue under discussion.

COMPETITION FOR A STANDARD BRITISH





Elevational drawing and plan of the winning design. By H. T. Cadbury Brown.

THE AWARD

The result of the competition for a standard British Railway Tickets and Parcels Office was announced on Monday last as follows :

Design placed first (£300) : H. T. Cadbury Brown, A.R.I.B.A., of 17 Clarges Street, W.1.

Design placed second (£125) : P. J. Westwood and Sons, F. & A.R.I.B.A., of 14 Buckingham Street, Adelphi, W.C.2.

Design placed third (£50) : Misses Beryl Bickerton and Zoe T. Maw, AA.R.I.B.A., of 63 Greencroft Gardens, N.W.6.

Design placed fourth (£25) : Messrs. Eric Galloway and Austin Vowell, of 226 High Street, Slough.

Highly commended : Messrs. Horace Farquharson and Donald McMorran, F. & A.R.I.B.A., of 14 North Audley Street, W.1 ; R. Furneaux Jordan, A.R.I.B.A., A.A.DIP., of 7 Gower Street, W.C.1. ; R. Parkinson, of 58 Gray's Inn Road, W.C.1 ; and Clifford Sanderson, B.ARCH., A.R.I.B.A., A.N.Z.I., of New Zealand House, 415 Strand, W.C.2.

The assessors were : Mr. Charles Holden, F.R.I.B.A., Mr. L. H. Bucknell, F.R.I.B.A., Mr. W. H. Hamlyn, F.R.I.B.A. (Chief Architect, L.M.S. Railway), and Mr. C. Grasemann (Southern Railway).

REPORT

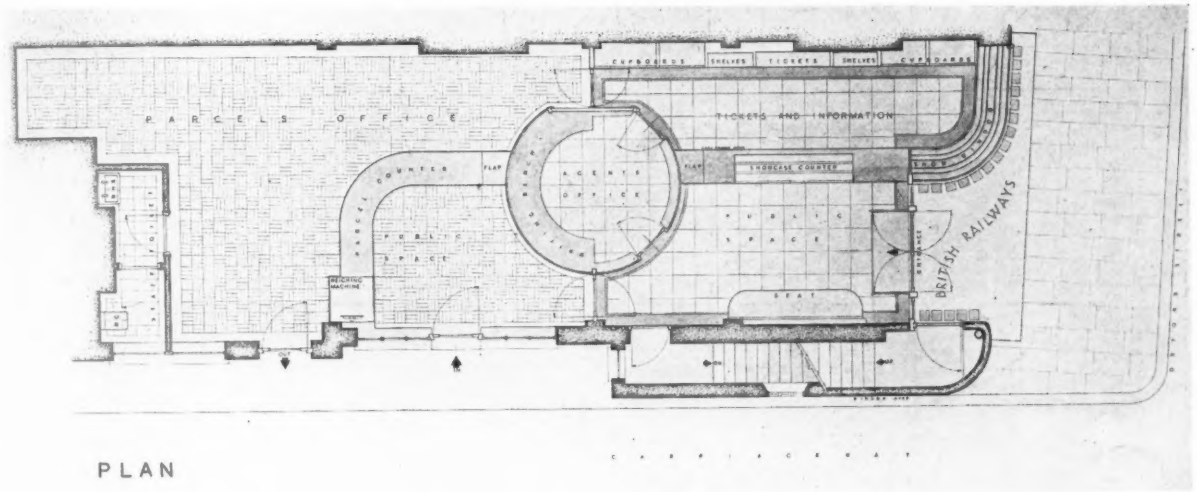
Following are some extracts from the official report :—

" The main line railway companies recently invited British-born architects to submit designs for joint receiving offices for the conduct of railway passenger business parcels and goods traffic and the supplying of information relative to the railway companies' activities. The object of the competition was to obtain a design both internally and externally which might be used as a standard for adapting to a number of premises which the railways propose to establish as joint offices. By adopting a similar character in design and a uniform method of display it is hoped that the public will recognize immediately the various centres where they may be able to purchase tickets, despatch parcels or obtain information, whether for passenger travel or goods and parcels business.

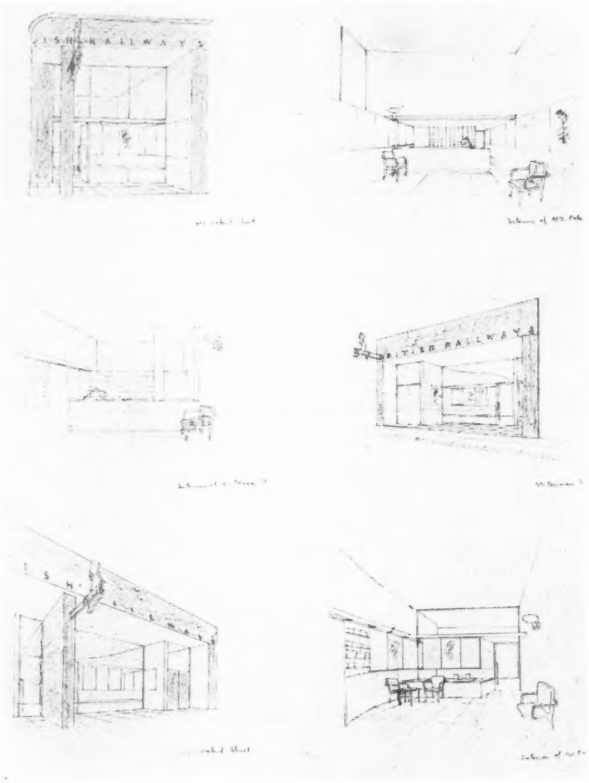
" In recommending design No. 1, by Mr. H. T. Cadbury Brown, the assessors considered that this design fulfilled more than any of the others the conditions of the competition and met more efficiently the practical requirements of the problem. The author has provided an elevation which is simple and possesses the dignity necessary for the exterior of an establishment of a great commercial undertaking. Whilst having the characteristics of a frontage intended for publicity display it is quite outside the category of an ordinary shop-front.

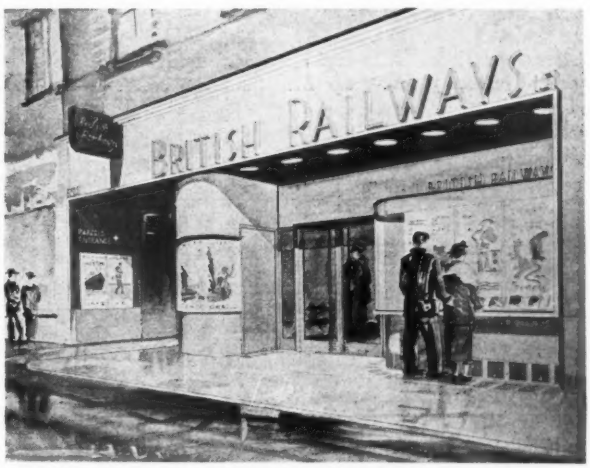
" The author has made a well thought out plan in each of the three cases referred to the competitors for their consideration. The detailed layout of the main design is well considered, as also is the circulation of persons using the office, whether for the purpose of visiting the ticket and enquiry bureau or the parcels or goods section of the establishment. Careful consideration has also been given to the disposition of advertising, the posters being so placed to satisfy

RAILWAY TICKETS AND PARCELS OFFICE



PLAN





Above: Plan and elevational drawing of the design placed second. By P. J. Westwood and Sons.

Left: The winning design. By H. T. Cadbury Brown.

æsthetic and practical considerations. The recessing of the front, whilst being a feature shown in several of the designs, seems to be more happily and simply arranged in the winning design.

The materials suggested for the external treatment, namely, shot-blasted slate with standard steel sections for the door and window frames, indicate that the author has paid close attention to the conditions asking for materials which would eliminate as much maintenance as possible. The application of these materials to the design provides a frontage which in the opinion of the assessors would probably be one of the most economical in the competition to build and maintain.

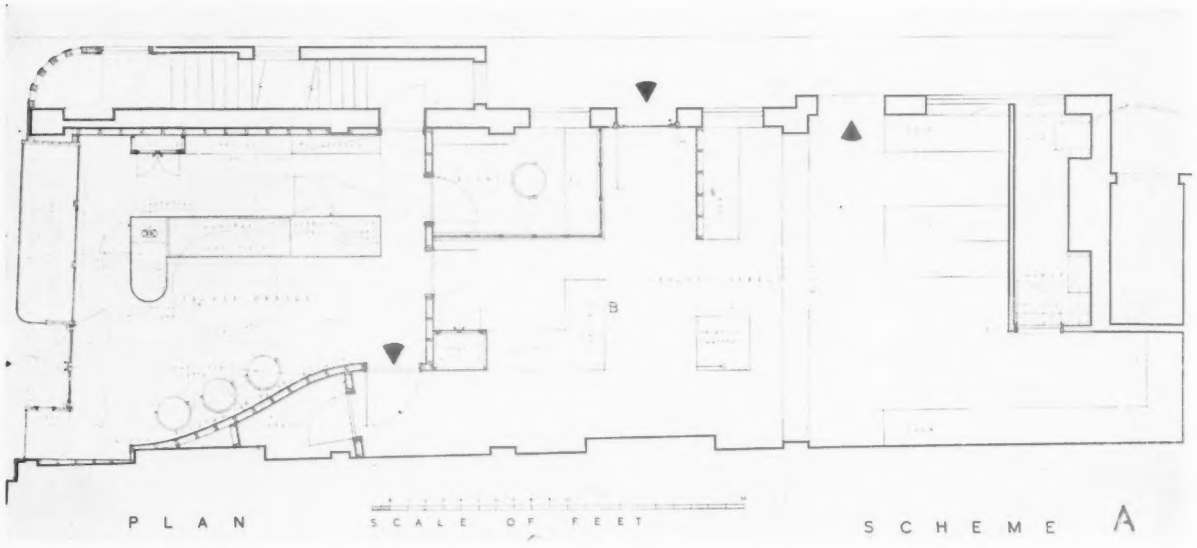
The only detail of an applied decorative character is the projecting sign which is very happily conceived and provides a most appropriate detail from æsthetic and. publicity aspects.

The general conception is such that the design applied to sites of varying dimensions would still maintain a definite character which could not be mistaken and which would clearly indicate that the premises were the property or business centres of the same undertaking.

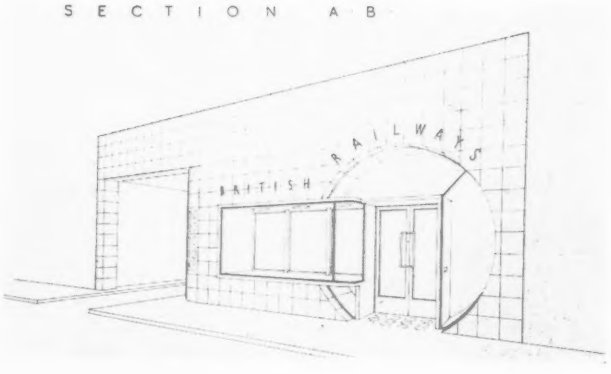
The same care which has been devoted to the question of economy on the exterior has also been well studied and applied to the internal finishings.

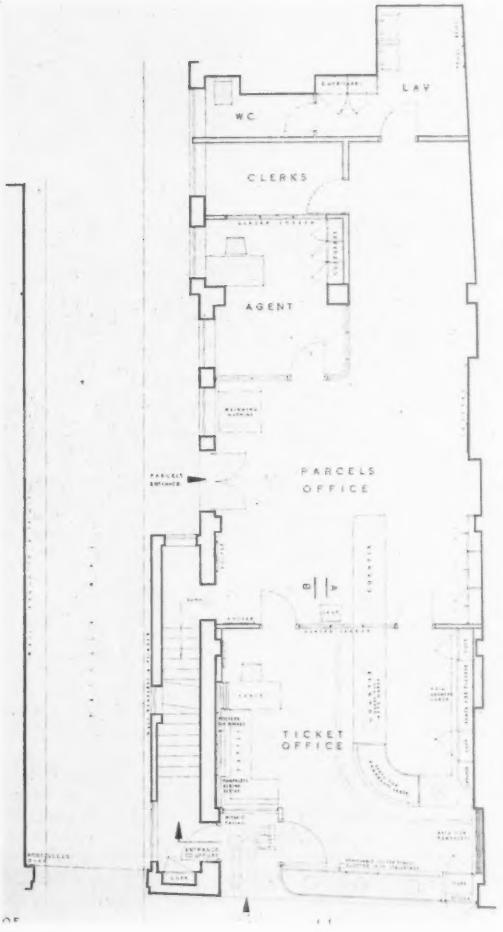
*** *A list of competitions open was published in our issue for October 22 last.*

RAILWAY OFFICES COMPETITION: PREMIATED DESIGNS



Above and right: Plan and elevational drawing of the design placed fourth. By Eric Galloway and Austin Vowell.





Left and below: Plan and elevational drawing of the design placed third. By Beryl Bickerton and Zoe T. Maw.

HOUSE IN SOUTH LONDON

DESIGNED BY

KELLER

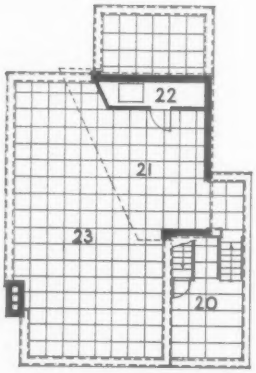
AND KOMPFNER

GENERAL PROBLEM—*House on a site 30 ft. wide. The garden is overlooked and does not obtain much sun; a flat roof therefore was built to obtain both privacy and sunshine. Access to the open air is provided from every floor. A four-way hatch is placed between the kitchen and the dining-room so that the house can be managed without living-in servants. By raising the ground floor 3 ft. 6 ins. above ground level, excavation was minimised, light was obtained in the basement and the half-landings on the staircase were made to give access to the garage, the study and the flat roof. The photograph is of the entrance front.*

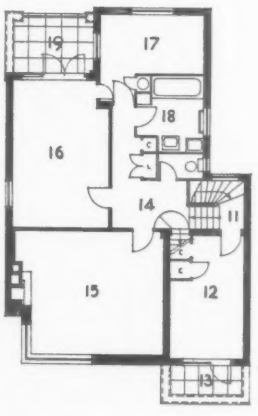
HOUSE IN SOUTH LONDON: DESIGNED

KEY TO ACCOMMODATION

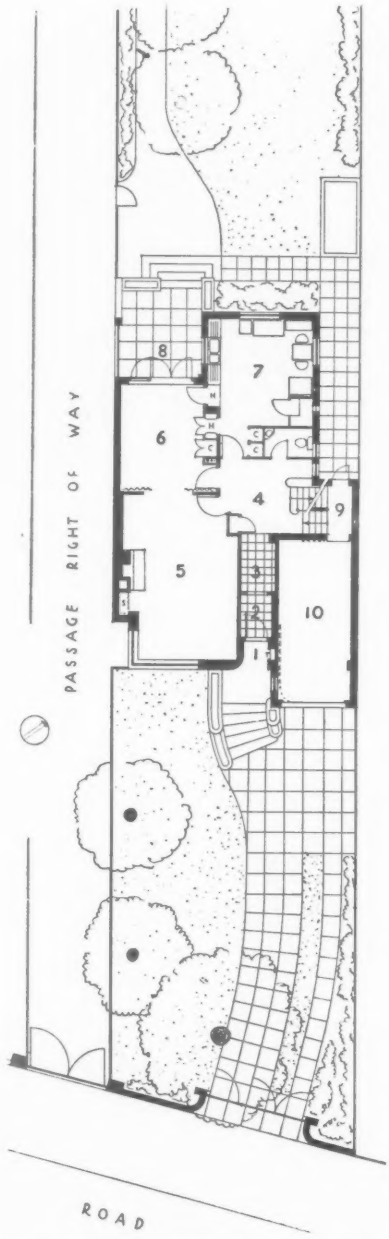
1 : Entrance porch
2 : Lobby
3 : Cloaks
4 : Hall
5 : Living-room
6 : Dining-room
7 : Kitchen
8 : Covered terrace
9 : Lower half-landing
10 : Garage
11 : Half-landing
12 : Study
13 : Balcony
14 : Landing
15 : Bedroom 1
16 : Bedroom 2
17 : Bedroom 3
18 : Bathroom
19 : Balcony
20 : Lower roof terrace
21 : Covered roof terrace
22 : Cisterns and deck-chairs
23 : Open roof terrace
24 : Maids' cupboard
25 : Meters
26 : Heating chamber
27 : Workshop
28 : Store
B : Boiler
C : Cupboard
S : Shelves
L : Linen
T : Tradesmen's hatch
H : Hatch



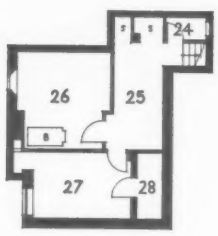
ROOF PLAN



FIRST FLOOR PLAN



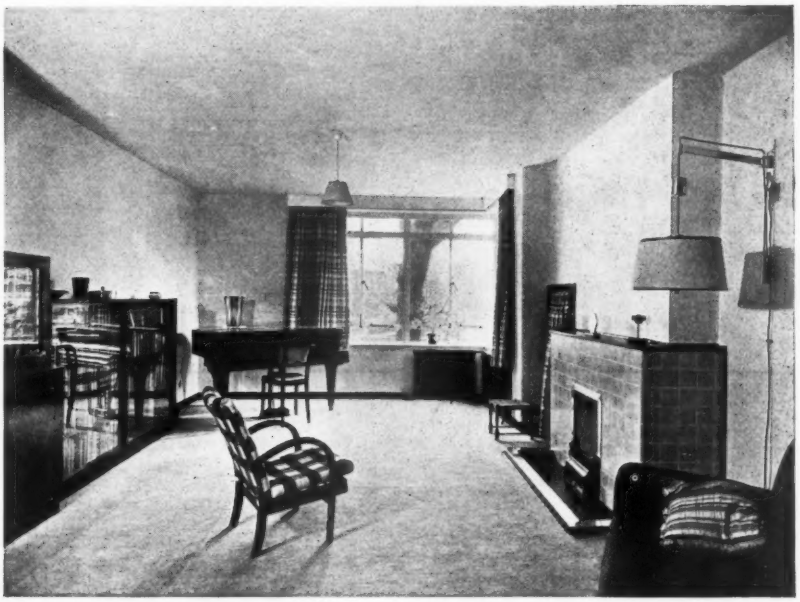
GROUND FLOOR PLAN



BASEMENT PLAN

The photographs show: above, the roof; left, the garden front.

BY KELLER AND KOMPFNER

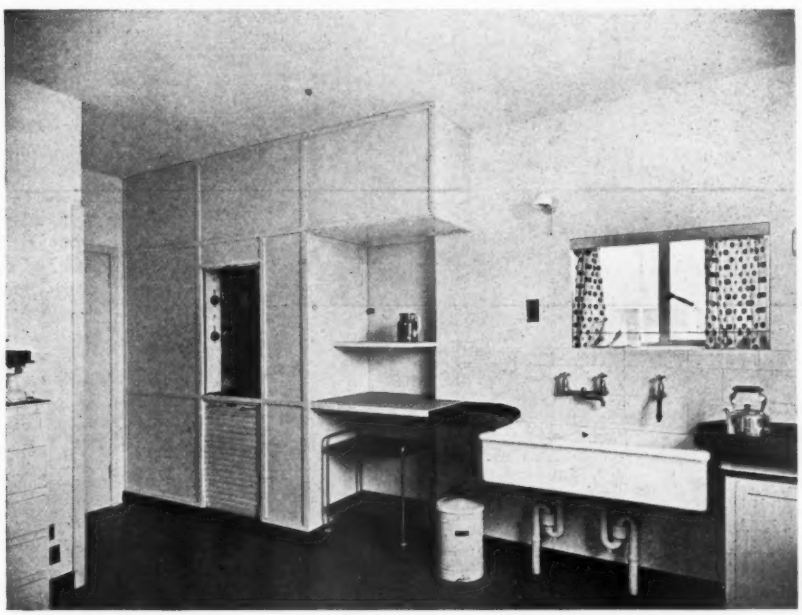


CONSTRUCTION—*External walls are London stocks; internal walls, flettons; partitions, breeze. The basement is waterproofed with three layers of asphalt. Floors and roofs are wood, habitable roofs being finished with bitumen-concrete. Windows are steel. Cills, heads and copings are reinforced concrete, projecting 1¼ in. in front of the brickwork and grooved. The concrete is finished in apricot flat paint, metalwork off-white.*

INTERNAL FINISH—*The staircase is natural oak, waxed; the hall panelled in oak plywood. External doors are double rebated against draught and hung on special hinges, internal doors are standard flush type. All ceilings are whitewashed, and walls are papered in yellow and grey. Floors are Columbian pine, close carpeted or finished in linoleum. All woodwork, other than oak, is white enamelled, and radiators are black enamelled. In the living room, the window cills and the fireplace are finished in light grey tiles.*

SERVICES—*There are hot water radiators, in every room, and in the living-room and bedroom No. 1 gas-coke fires are fitted in addition to the radiators. The damper of the boiler in the basement is controlled from the living-room. Hot water is by electric storage heater. Plumbing is in copper, all pipes being in accessible ducts.*

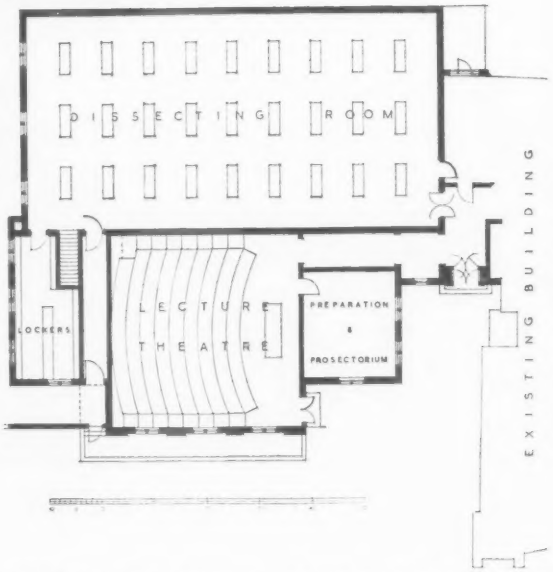
COST—*Approximately £1,800.*



The photographs show: above, two views on the staircase landing and a view looking from the living room into the dining room; right, top, the living room; right, the kitchen. *For list of general and sub-contractors see page 720.*

ALTERATIONS AND ADDITIONS, ST. BARTHOLOMEW'S

ARCHITECTS: LANCHESTER AND LODGE

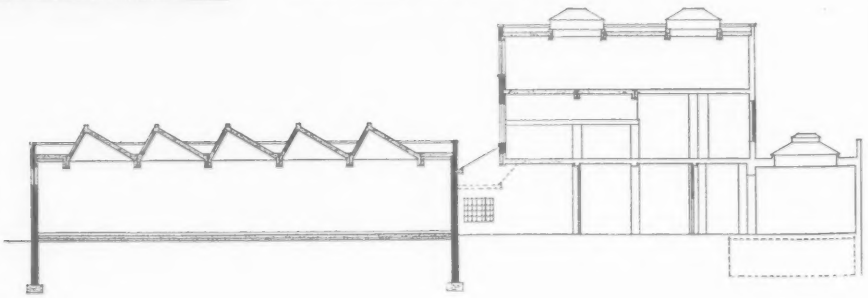


ANATOMY DEPARTMENT: GROUND FLOOR PLAN

GENERAL PROBLEM—*Conversion of the old buildings of the Merchant Taylors School, Charterhouse Square, E.C.1, into a medical school for St. Bartholomew's Hospital. The work included additions to the buildings now occupied by the physics, chemistry, physiology and anatomy departments, and a new laboratory building for the bio-chemistry department.*

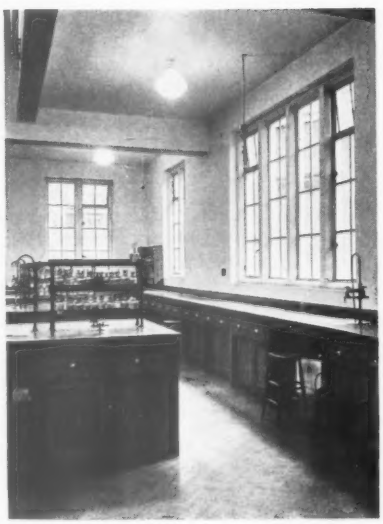
CONSTRUCTION—*Work generally is in brick to harmonize with the existing buildings, and new floors are concrete.*

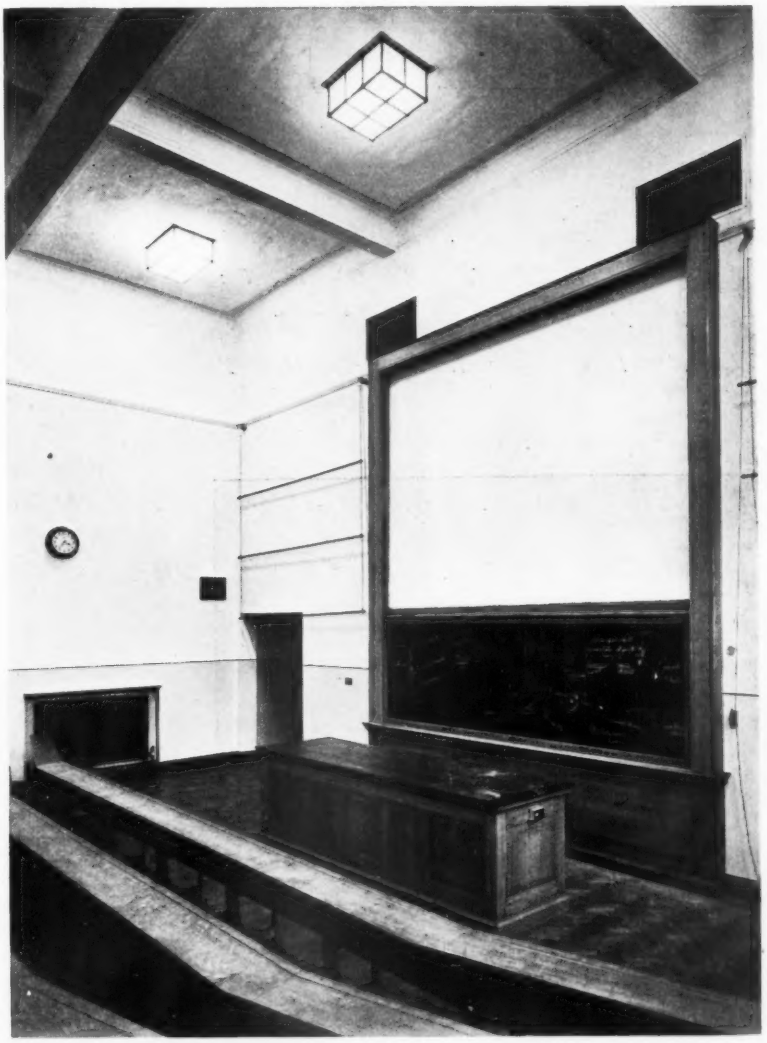
The photographs show: above, the anatomy department with, on the right, part of one of the older buildings; left, the entrance to the anatomy department.



ANATOMY DEPARTMENT: SECTION

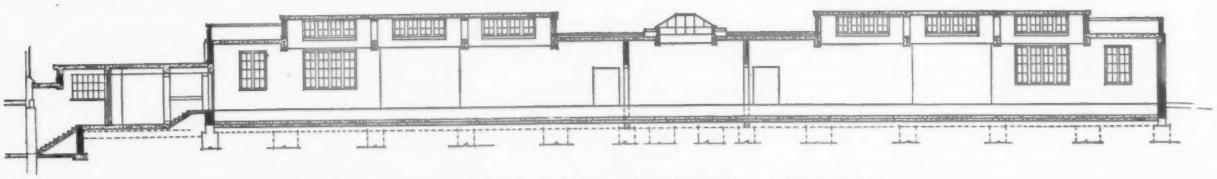
MEDICAL SCHOOL, CHARTERHOUSE SQUARE, E.C.





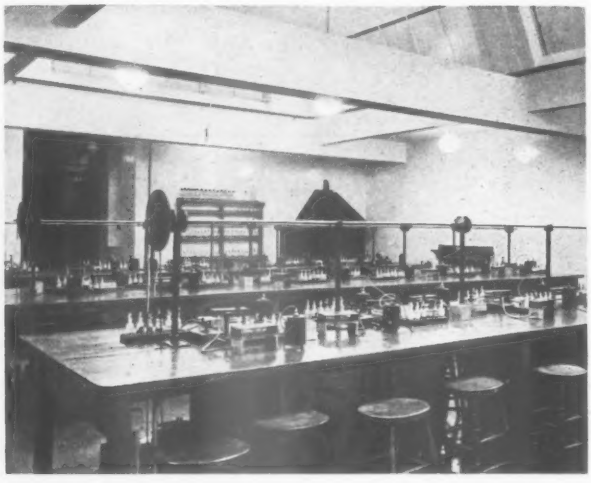
The photographs show: top left, the dissecting room and, right, two views in the lecture theatre in the anatomy department; above, a laboratory in the bio-chemistry department.

ADDITIONS, ST. BARTHOLOMEW'S MEDICAL SCHOOL



BIO-CHEMISTRY DEPARTMENT: SECTION

ARCHITECTS: LANCHESTER AND LODGE



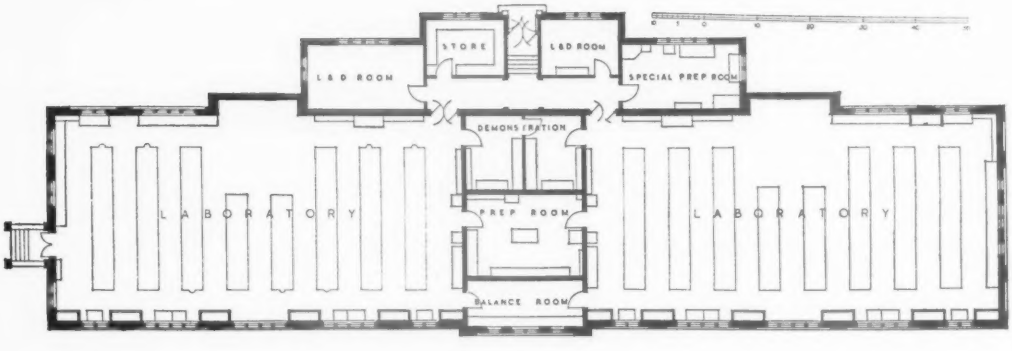
INTERNAL FINISH—*Walls generally are plastered and distempered cream, with dados in the corridors painted grey. The walls of the dissecting room, lavatories, etc., are of tiles. In the laboratories generally the floors are teak blocks; in the dissecting room they are tiled. A considerable number of existing benches and fittings have been transferred from the old Medical School in St. Bartholomew's Hospital and altered to suit their new positions.*

SERVICES—*New kitchens have been provided in the physiology building to serve meals in the Great Hall. Heating is by radiators and panel heating, all pipes being accessible as far as possible to simplify alterations or additions.*

COST—*£72,829.*

For list of general and sub-contractors see page 720.

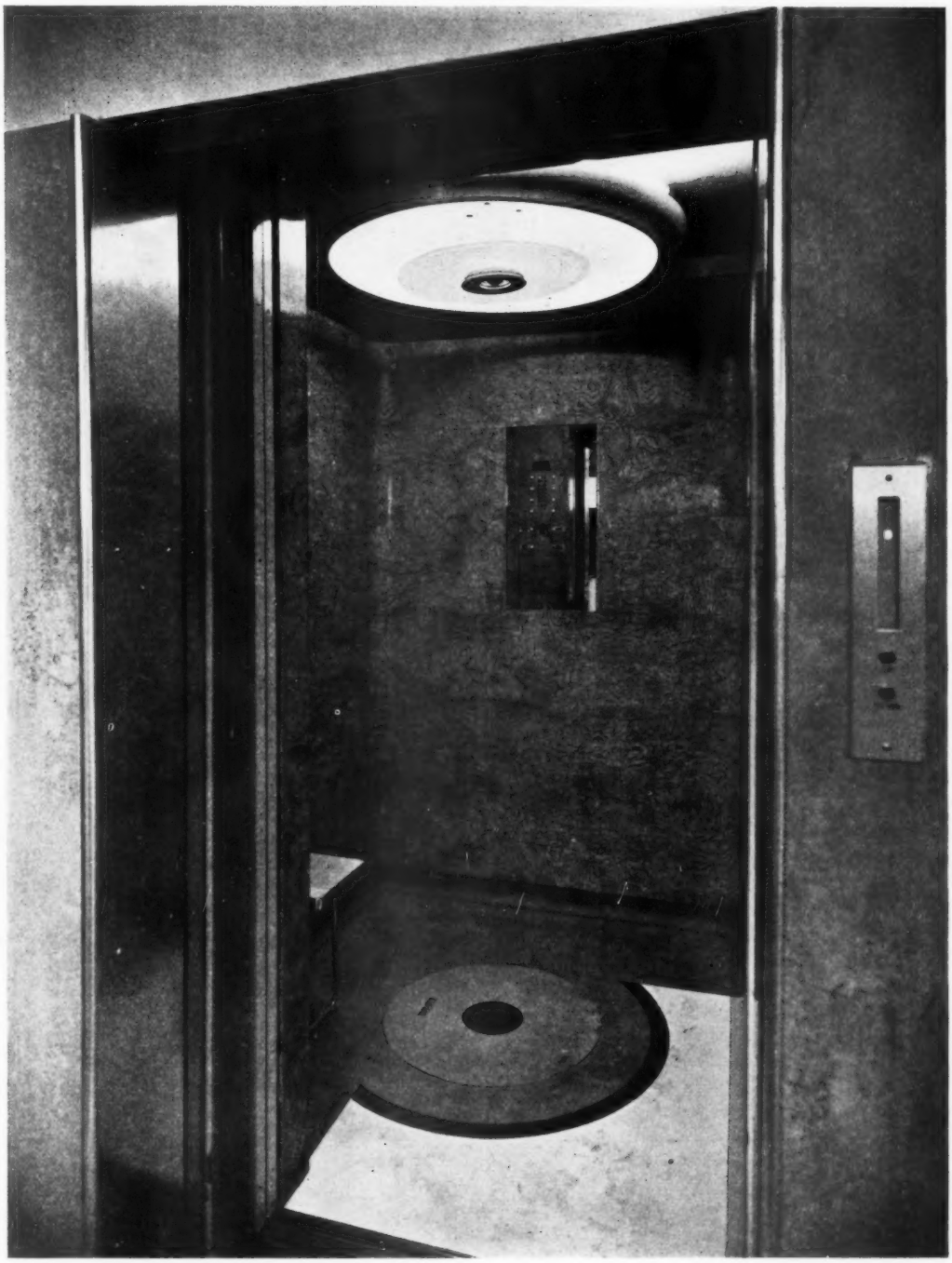
The photographs show two views in a laboratory in the physiology department.



BIO-CHEMISTRY DEPARTMENT: GROUND FLOOR PLAN

WORKING DETAILS : 527

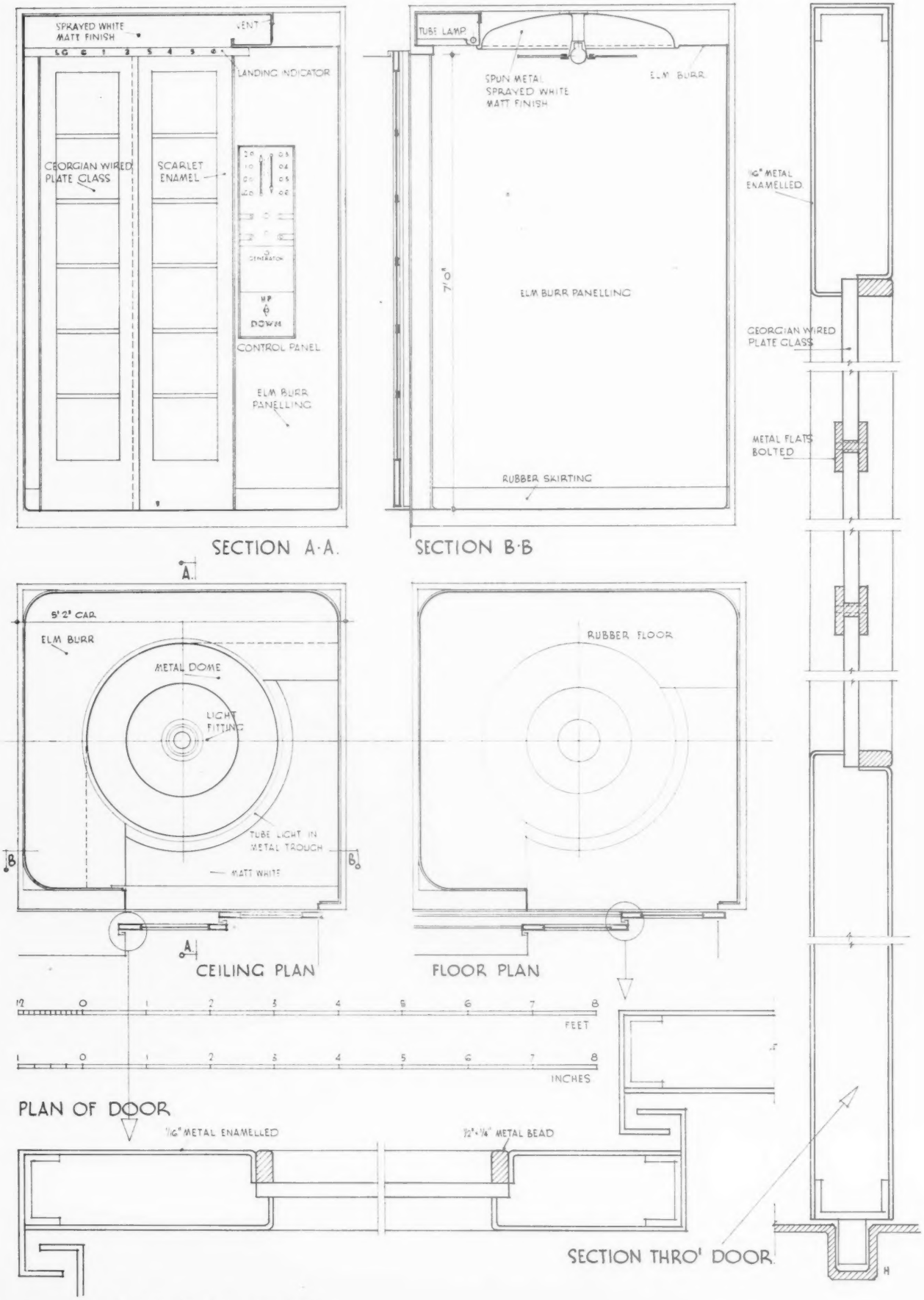
LIFT • SIMPSON'S, PICCADILLY • JOSEPH EMBERTON



This lift car is lined with elm burr panelling, with a rubber floor and skirting. The pattern of the floor follows the pattern made by the light fittings in the ceiling. The dome and part of the ceiling are metal sprayed matt white. The lift doors are pressed metal sprayed in scarlet enamel with georgian wired plate glass. The control panel is immediately to the left of the doors, but is seen reflected in the mirror on the back wall.

WORKING DETAILS : 528

LIFT • SIMPSON'S, PICCADILLY • JOSEPH EMBERTON



Details of the lift shown overleaf

WORKING DETAILS : 529

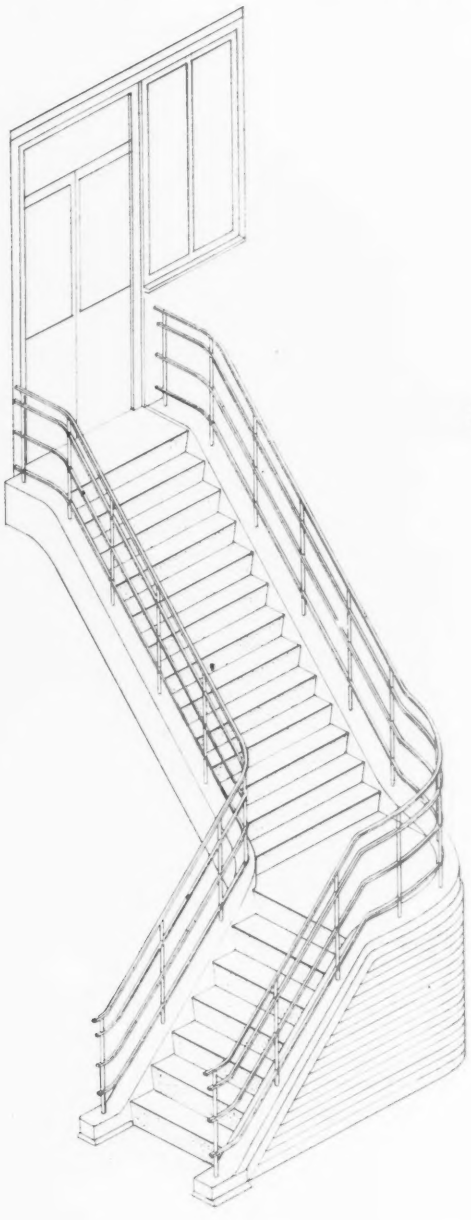
ESCAPE STAIR • RUGBY SCHOOL SANATORIUM • WILLIAM A. PITE, SON AND FAIRWEATHER

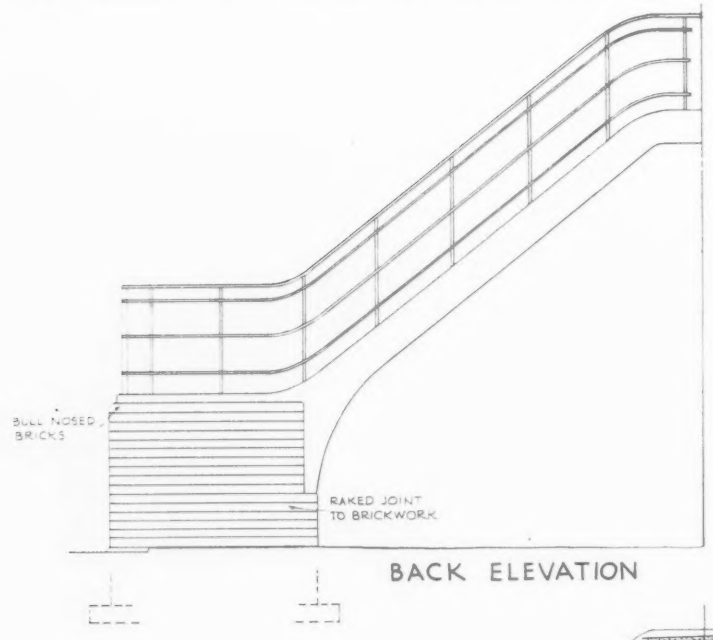
A brick and reinforced concrete escape stair with wrought iron balustrade. An axonometric and details are shown overleaf.

FILING REFERENCE:

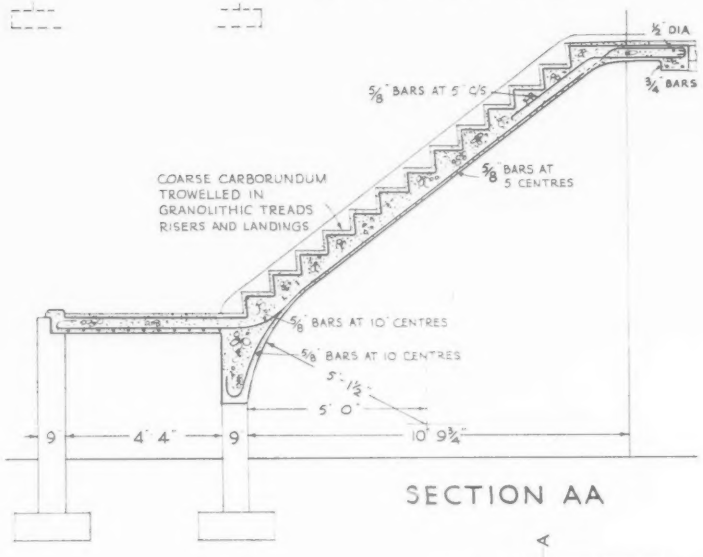
WORKING DETAILS : 530

ESCAPE STAIR • RUGBY SCHOOL SANATORIUM • WILLIAM A. PITE, SON AND FAIRWEATHER



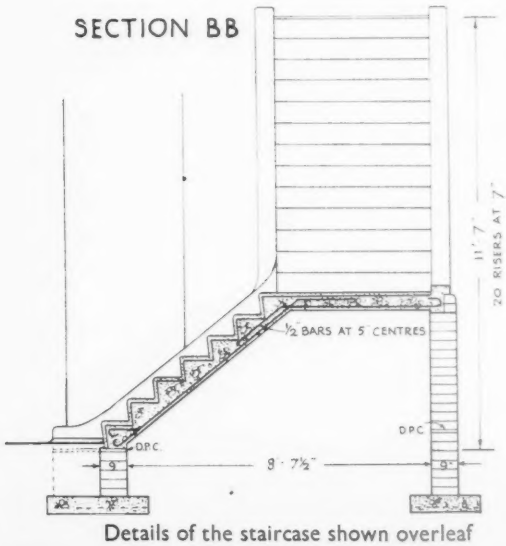


BACK ELEVATION

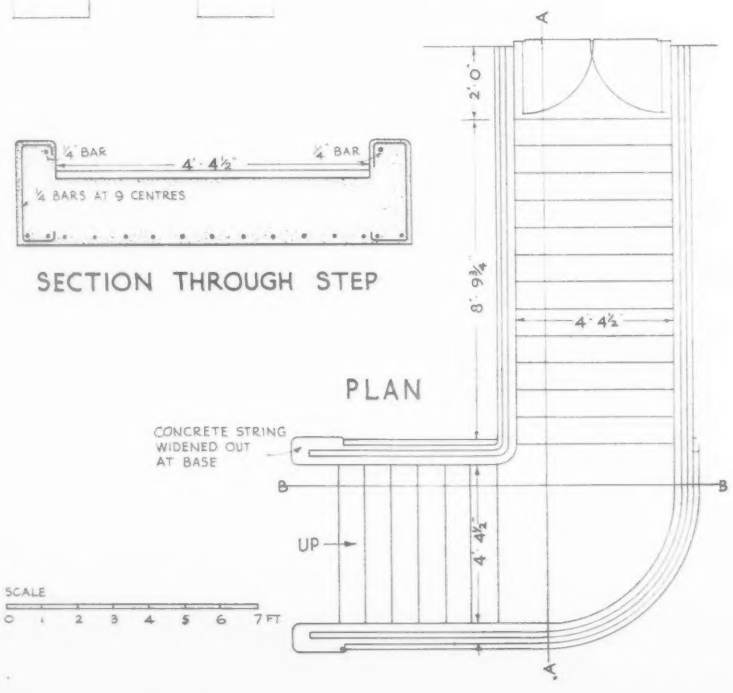


SECTION AA

SECTION BB



SECTION THROUGH STEP



Details of the staircase shown overleaf

INFORMATION SUPPLEMENT

10: SLATE: ITS PRODUCTION AND USES

BY H. A. J. LAMB, A.R.I.B.A.

The following article describes the sources of most of the slates used by the building industry in this country, the methods of preparation for different purposes, and some of the more recent uses of slate which will probably be much developed in the future.

SLATE, a material already widely employed in building, and of which the uses to-day are becoming popular for decorative purposes, may perhaps best be described as a clay which has become so metamorphosed by pressure that new lines of cleavage, distinct from those of its natural bed, have been imposed upon it which make it possible for it to be split along such planes into extremely thin and even pliable sheets.

In its earliest stages the slate rock was a deposit of fine mud weathered from ancient rocks, or dust and ashes. Seen through the microscope, its minute particles consist of grains of mica and quartz, but it is the various contributory minerals which affect its colour, which may range from grey, blue, purple and black to shades of red, green and brown.

The photograph above is of a Welsh slate quarry showing old surface workings and the entrance to the present mine to the right of the tubs on the light railway.

CHIEF SLATE PRODUCING DISTRICTS

In North Wales, a district which supplies an excellent quality of slate, the colours range from grey and purple to green, and the rock can be split into thin slates which have a smooth surface. South Wales produces similar shades, but the rock here does not split quite so thinly or smoothly. The nearly black slate from the Argyll district of Scotland is also a variety similar in character to the North Wales slate and can be split almost as thin. It is also quarried in blue and grey.

In Cornwall, the grey and green slate is frequently intermingled with red and brown staining and has an irregular surface which lends itself to cutting into medium thicknesses. But in the Lake District, which produces green and dark grey slate, the texture is rougher and the slates are rather thicker. Small quantities of grey stone slabs come from the Cotswolds and are known as Stonesfield and Collyweston slates. On the borders of Surrey and Sussex, the warm grey Horsham slates were at one time popular and used on houses and cottages of Elizabethan date. To-day, however, it is hard to find an original roof, since decay of the lathing and corrosion caused by iron nails have led to a relaying in tiles.

IMPORTED SLATE

A certain amount of slate is at present imported from Portugal, which is perhaps the best foreign slate within economic shipping distance of England. It is largely used as a basis for decorative treatment, particularly slabbing, since it cuts almost like cheese and is in character something like Welsh slate,

though being "soft" it is more specially suited to structural work than roofing.

France and Luxembourg also import quantities of roofing slates, mostly to South Coast ports, while the Norwegian slates (Green Voss and Viking) arrive in considerable cargoes to north country ports.

THE QUARRYING OF SLATE

As regards the quarrying of slate, the size of the blocks which can be drilled or blasted from the mines and quarries is only governed by the means available for their extraction, since the capabilities of cranes and tackle and transport are naturally the main factors apart from that of commercial uses.

The dip of the slate veins at Festiniog, at an average of 30 degrees from the horizontal in hilly country, necessitates the slate being won by burrowing, and so the mines are worked on the underground principle of alternate openings, termed "chambers," and walls or supporting pillars of solid slate. This contrasts with the sister workings in Caernarvonshire which are mostly open and can be worked in steps and resemble in appearance the lay-out of an old Roman amphitheatre. These are more liable, however, to stoppage by frost or rain, and the need to remove a heavy "overburden." Nevertheless, once this is removed, 100 per cent. of the slate rock can be won, whereas at Festiniog nearly half of the exploitable slate has to be left to form supporting pillars.

Once the "burrowed" slate blocks are won, they are hauled to the surface by electrical or mechanical traction and taken to the mills. After being split into convenient slabs, 3-4 ins. thick, they are placed on circular saw tables where they are further reduced for man-handling by the splitter. The still unshaped slate is then passed to the dresser, who by the use of a power-driven, revolving knife machine, fitted with a graduated gauge for sizing, soon transforms it into the characteristic size and shape of the English slate.

By way of contrast to the methods of quarrying just described, those of the Old Delabole Slate Quarries of North Cornwall are interesting.

Here there are no underground workings, but an enormous elliptical crater about 40 acres in extent and some 400 ft. deep. It resembles a huge inverted cone and is worked on the gallery system and gives employment to 400 men.

The crude slate is won by blasting, and some 250,000 tons are taken from the quarries annually. Holes are formed by compressed-air drills, and the slate is transported to the dressing sheds by rail trolley or overhead cables and pulleys. The slabs are received from the quarry in blocks weighing from 1-3 tons and measure from 6 to 12 ins. in thickness. They are subsequently split by hammer and chisel into slabs 2 ins. thick and then sawn by steel rotary saw into sizes slightly larger than that required for the finished slate.

The slate itself splits extremely easily and smoothly, and it is the duty of the splitter, with hammer and chisel, to reduce them to the normal dimensions of the roofing slate when they are finally finished off by a guillotine which straightens up the edges. The human element plays a large part in these quarries, for although splitting machines have been marketed from time to time, it has been found that human skill, judgment and experience are essential to carry out this operation successfully. Even in the slab department the blocks of slate, about 9 ft. by 4 ft. by 12 ins. thick are split with hammer and chisel in the same manner as for roofing. For many purposes, however, the natural split is not suitable, and so some of the slabs are put in a planing machine and, if necessary, sanded and polished.

WESTMORLAND SLATE

In the English Lake district, Westmorland green slate has been quarried for over 200 years. The principal quarries are those at Buttermere, off the Honister Pass, Tilberthwaite, Elterwater and Coniston.

The very mountainous country makes slate quarrying here difficult and dangerous, and when the slate rock is dislodged it has to be transported down steep precipices and across ghylls and gullies. Fifty years ago it was sledged down the mountainside, but today an elaborate system of telpherage, or overhead cables, makes it easier.

When the blocks reach the dressing sheds they are "docked" into convenient sizes for slates. This is accomplished by diamond studded sawblades *in lieu* of the one-time method of breaking them with a large wooden mell. The next process is to split them along the natural cleavage planes, and it is only experienced men who know where to apply the pressure for their sharp chisels and small wooden striking mallets. The final operation is to trim and dress the slate to commercial sizes. It is done by resting the split slate on a fixed knife, while a hand knife, or whittle, is brought sharply down along the selected line of cut.

Drilling for a splitting charge in the Westmorland slate quarries.

QUALITY

Enough has perhaps been said of the quarrying of slate to make it apparent that the winning of it is difficult and often dangerous and is by no means a matter for the inexperienced.

There are a few important qualities which a good slate should possess and sometimes undesirable elements can be detected by the smell. A good slate has no smell, and a bad one will give off a sulphurous odour when breathed upon.

A slate containing carbonates of lime will be affected by some acids, but a good slate should show no effervescence or softening.

The feel of a slate is some indication of its goodness, and even the smoothest should be slightly rough to the touch. But a certain silkiness must be distinguished from a surface which may feel oily or greasy. This latter characteristic is very noticeable in some French varieties. Care is necessary in judging slate for its colour, for every shade has good, bad or indifferent qualities, and it is the *quality* of the tone which has to be very carefully assessed.

Good slate should fracture like pottery and not, when cut, bear resemblance to flaky pastry. It is, too, only a good slate which will stand a widely chamfered edge, and this often provides a good clue as to its quality.

If a slate is partly immersed in water, there should be no signs of dampness creeping up above the water line. If struck a good slate will give a sonorous, clear, bell-like sound.

The Westmorland Green Slate is of a much rougher texture than slate from other districts, and the natural appearance, in conjunction with the thickness, adds beauty to roofing as the edges are pleasantly conspicuous.

As regards durability, it must be recalled that these slates were used several centuries ago. Sir Christopher Wren used them on Chelsea Hospital and they were used at Cockermouth Castle built about the same date. These are but two instances where the slates to-day are in an excellent state of preservation.

The slates are supplied in random sizes in three qualities—Bests, Seconds

Working out slate rock loosened by blasting; a skilled and often dangerous job.

and Thirds—but it should be noted that this does not actually apply to quality, but to size and thickness.

Owing to the varying degrees, it is difficult to give an accurate indication of cost, which also depends on the form of transport. In actual practice, however, it might be taken as from 9s. to 9s. 6d. per yard fixed.

OLD DELABOLE SLATES, CORNWALL

This slate is grey and green, with many variations of these tints, and is very strong and resonant, and of a close and hard texture. Its lustre is silky to resinous, and thin flakes are translucent at the edges.

These "grey" and "green" slates are produced mainly in separate sections of the quarry, and afterwards selected into grey, ordinary grey-green, weathering grey-greens, weathering greens, rustic reds.

This last variety is produced for the beauty of the natural colouring and may be regarded as special slates.

Three types of slates are made, and these may be classed as those of regular standard size; Randomwidths, which are of any regular length, but varied in width; and Randoms, which vary in length and width and are used for laying in diminishing courses, and make by this means one of the most attractive forms of roofing in slate.

USES

Slate has so many applications in building, apart from its universal employment as a most satisfactory, and one might say practically permanent, roofing material, that it is advisable to append a list giving some of the many uses to which slate adapts itself.

For instance, at Lancaster House, now the London Museum, the boundary wall between the garden and Green Park consists of iron railings filled in with slate slabs. These show no signs of decay and have doubtless been fixed in this position for a very great number of years.

In monumental work, too, slate is of special value, as can be judged from many examples in an excellent state of preservation—notably in many headstones as much as 350 years old in the West Country and in Cornish churchyards.

That all slate quarried is not marketable is shown by the problem which confronts the quarries in Cornwall, where 90-95 per cent. of the material handled is waste. One firm has succeeded, however, in partly overcoming this difficulty, and has installed a grinding plant. Since 1908 many thousands of tons of slate waste have been ground to a fine powder for use as a filler in various industries. The waste is also crushed and screened for the manufacture of concrete blocks. These are made at the quarry in sizes of about 18 ins. by 9 ins. by various thicknesses, and it is understood that this is the only slate quarry manufacturing concrete blocks from slate waste in this manner—a purpose for which it is particularly suitable.

Loading rough slabs for conveyance to the dressing-sheds.

The ability to subject slate to processing renders it applicable to a great number of uses which have been widely exploited by another firm in London. These products are manufactured in a variety of treatments under trade names.

One, for example, is a product of British manufacture which has as its base pure slate. The process gives a stove-enamelled finish on smooth-surfaced slate and enables the finish of any marble or wood or abstract pattern to be reproduced. It is suitable for wall linings, bath panels, skirtings, etc.

Another patent slabbing is manufactured in this country from natural slate slabs. It has great structural strength owing to its slate base, and the extremely hard permanent surface is obtained by scientific stoving at very high temperature. This is suitable for shopfronts, shelving, surrounds to coal, gas, and electric fires, counter tops, etc., and is supplied in standard thicknesses of $\frac{3}{4}$ in. up to 6 ins. The usual maximum size panel is 6 ft. by 2 ft.

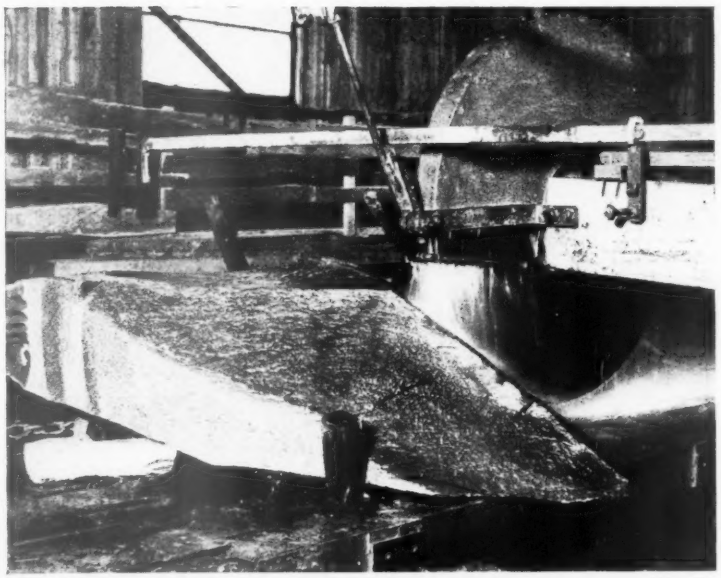
A "metalling" process, described later, is pure metal deposited on natural slate, and lends itself to similar uses as those mentioned.

For window cills slate has peculiar properties which render it quite unsurpassed by any other substance. It is absolutely inert and, unlike wood, will not warp, shrink or rot. Unlike metal it will not twist or rust, and it will not chip or crack like stone.

Once installed, a slate cill is in the nature of a permanent fixture requiring little or no maintenance. It also requires half the labour in fixing involved by other forms of cill, and it has, too, the advantage that it combines the inner cill, or window board, in one slab.

Slate cills are made 1 in. thick in four sizes. Standard lengths of 4 ins. are added to overall sizes of standard metal windows, allowing 2 ins. of cill for building into brickwork on either side. They are also made circular at various radii.

The future possibilities of slate for



A slab being cut by a diamond-studded saw in the dressing sheds.

Above, shaping and dressing Westmorland slates with a straight-edge and hand knife. Left, drilling nail-holes ; a modern development.

Splitting Delabole slates from the slabs.

decorative purposes and the results of experiments are discussed in a subsequent section.

SOME USES TO WHICH SLATE MAY BE PUT

Altar Tops and Frontals.
Aprons.
Aquariums.
Baths.
Bathroom Panelling.
Brewery Tanks and Vats.
Butter Blocks.
Billiard Table Beds (1 ton of slate goes to full-size table).
Channels.
Counter Tops.
Chemical Containers.
Cisterns.
Concrete Blocks (from Powder).
Copings.
Cramps.
Damp Courses.
Dowels.
Door Frames and Panels.
Dormer Cheeks.
Divisions.
Draining-boards.
Flooring.
Flat Roofs.
Fireplace Surrounds, Hearths, Curbs and Mantels.
Gateposts.
Gutters.
Gravestones, Headstones, Curbs, Coverstones.
Hips.
Landings.
Launders (Cornish water troughs).
Lavatories.
Louvres.
Memorial Panels.
Posts.
Powder (for Fillers and Concrete Slabs).
Paving (Interior and Variegated).
Quoins.
Radiator Covers.
Rails.
Roofing.
Ridges.
Shelving (Dairies, Larders, Pantries, etc.).
Sinks.
Skirtings.
Steps.
Shopfront Fascias and Surrounds.
Stallboards.
Switchboards.
Troughs.
Tables.
Valleys.
Walling.
Wine Bins.
Window Frames and Cills.
Urinal Backs and Divisions.

FIXING

Upon good fixing and laying depends not only the final appearance of a slate roof, but its watertightness and general efficiency for keeping out the weather.

For roof pitches of 45 degrees and over a 2½-in. lap is sufficient, but if under, a lap of not less than 3 ins. is necessary. Good slates may be safely laid on flatter roof slopes than more porous materials or materials with smooth

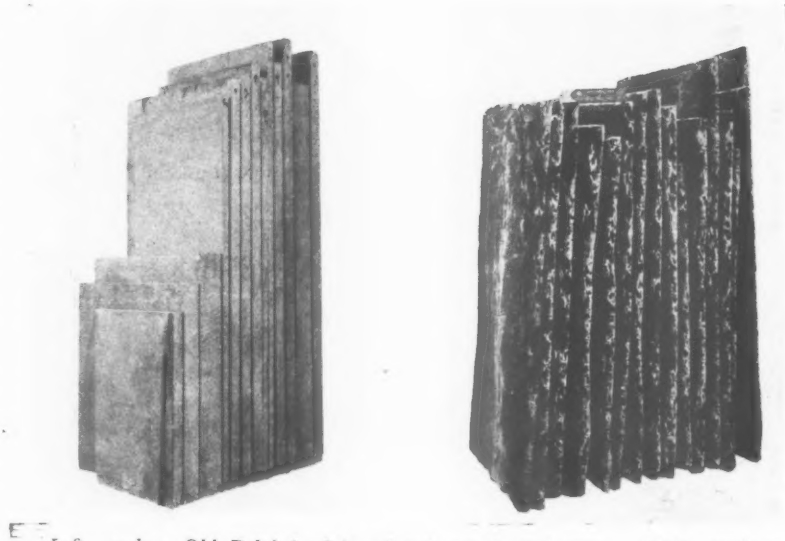
flat surfaces which lie close at the laps and induce capillary attraction. The lap, which is the distance the tail of each slate overlaps the head of the *second* slate beneath, depends a good deal on whether a building is on an exposed site, or if the slates are laid on an open roof without boarding, underlining or pointing. In such instances it should be increased, and many perfectly watertight roofs exist where the slates have been laid to a 3-in. lap on an open roof at 30 degrees which may be considered a standard lap, though in the West Country a 4-in. lap is customary.

It must be borne in mind that in designing roofs the steeper the roof the smaller must be the slate owing to the fact that as the pitch rises, so does the weight of the slate depend more on the nails. Proportionately wider slates should be used on flat pitches and the size increased as the pitch falls, for watertightness does *not* depend on the length of the slates but on the proportion of width to length and the "lap." There is sometimes an impression that the terms "Countess," "Duchess," "Ladies," etc., refer to a quality instead of to a size. These somewhat aristocratic titles emanate from Wales and are often specified in error when a smaller slate would do equally well.

Any vertical section of a slated roof should cut through two thicknesses of slate, though at the head and tail of each course three thicknesses will be cut. The lap, therefore, is the distance the tail of each slate overlaps the head of the *second* slate beneath, and the margin is that part of the slate visible from the tail of one slate to the tail of the next above. This, incidentally, is always equal to the gauge and a formula for arriving at this is to take the length, less the lap, divided by two—the battens being spaced at the same distance as the gauge.

Battens for slates should be of good quality red deal or sawn fir, free from knots, and not less than $1\frac{1}{2}$ ins. by $\frac{3}{4}$ in., but for heavier slates they should be at least 2 ins. by 1 in. The wise statement that a slate lasts as long as its nails is for practical purposes true, for the nailing is an important factor in good roofing. It is best to specify copper nails as being practically indestructible, but these and zinc should be avoided near gas and chemical works. Composition nails, made from an alloy of copper and brass or zinc are perhaps harder and usually preferred, and galvanised iron nails should only be used when low cost is the prime consideration.

The use of inferior nails is a false economy, and their correct length is another point to consider. This may be determined by adding 1 in. to twice the thickness of the slate, and for small thin slates $1\frac{1}{4}$-in. copper nails with minimum head diameter of $\frac{9}{32}$ in.



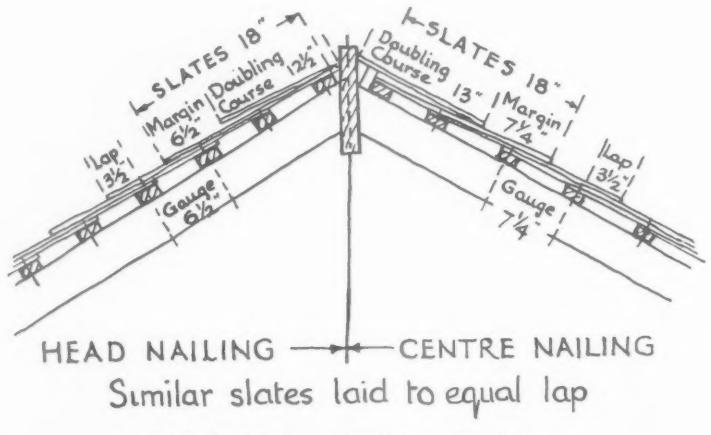
Left, grade 1 Old Delabole slabs, planed, sanded and sawn. Right, grade 3 rough slabs.

will suffice. Should nails be too short there is always a tendency toward tight nailing which is liable to shatter the nail hole or split the slate along its grain. Such faults may not show for several years, since they may begin by an almost invisible hair crack. To turn to the other extreme, nails which are too long or heavy will damage the battens and so weaken the roof.

Sometimes slated roofs are finished with a ridge in the form of a lead roll, but this is liable to produce weather stains on any light coloured slate and should be used with caution. Bedding ridge and hip slates in solid lime and hair mortar should be avoided, as the mortar absorbs any moisture, air is excluded and frost will loosen the slates. They should be jointed with a dab of cement and sand in equal proportions and backed with a similar mixture.

Ridge tiles of 2 ins., $2\frac{1}{4}$ ins. or 3 ins. diameter with wings 6 ins. or 7 ins. deep are made and are holed and bedded in lead cement, the holes being filled in with white lead and screwed with copper or brass screws. Adjoining lengths are jointed with slate dowels. To prevent slates from sliding they must be secured with hiphooks nailed and bolted to the rafter at the bottom end.

Slates may be fixed to battens nailed direct to rafters, or the roof may be boarded. In the latter case there should be counter-battening to provide adequate ventilation. It is a bad practice to nail slates direct to roof boarding, as the maximum life of any slate is only obtained where there is plenty of ventilation underneath it. Additional insulation and protection can also be gained by underlining the open rafters with untearable felt, or by covering the boarding with this type of material before fixing the counter battens. Where slates are hung to open battens, they conduct heat and cold freely and cause condensed moisture to

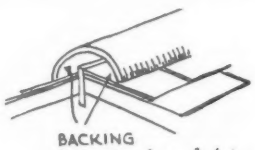


Methods of laying and nailing roofing slates.

drip when warm air comes in contact with their cold surfaces.

FUTURE POSSIBILITIES

Every type of slate for roofing has a certain beauty of its own, and although the ordinary grey or grey-blue slate with which acres of roofs are covered throughout the British Isles has an attractiveness under some conditions, they are, nevertheless, somewhat drab and lifeless in the mass. This is not only due to the colour, but to the fact that roofs covered with slates of an average thickness are so thin that they permit very little shadow at each course and lack that character and beauty of texture which rougher slates can give. They are, moreover, frequently laid without any regard to



æsthetic effect whatsoever, as for instance when finished with ridges and hips in ordinary red tiles.

The heavier type of slate, such as those varieties from Cornwall, Pembrokeshire, the Lake District, the Cotswolds and Yorkshire, are, although more costly, admirable for roofing. Nevertheless, the qualities of slate in general tend to make its use as a material which has great possibilities for decorative treatment in architectural design.

COLLOIDAL SLATES

A certain reluctance, perhaps, to make use of slates for external decoration is also due probably to its colour, and to overcome this "colour bar," if it may be described as such, a good deal of experimenting has taken place.

It is only in the last few years, however, that a process has been discovered, after long research, for the colloidal colouring of slates, and this patented invention belongs to Mr. R. G. Durrant, a Research Fellow of Reading University. It has been applied to the particularly hard slates of the Festiniog and Caernarvonshire groups of North Wales and makes possible a range of tints from moss green to dark brown, and from terra cotta to red with additional shades as required.

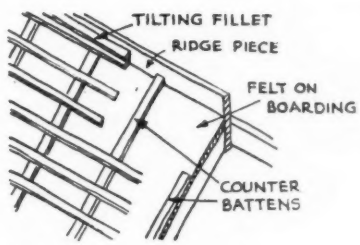
These colloidal colours are mineral dyes, technically known as "sols," and are made from chemicals which have nothing but a beneficial effect on the natural slate, and one of the chief advantages is that they do not obliterate or disguise the graining of the natural split. There are certain chemical reactions between the sols and the silica of the slate which render these Welsh slates suitable for colloidal colouring owing to the natural presence of silicates of alumina and iron. This permits the colour matter to get a grip on the slate, but since the solution is merely a film, there are some who might consider that it does not contain enough body for external work.

To render the mineral colouring permanent, the slate is treated to a fixing of sodium silicate which turns the "sol" into a "gel." When applied in the required quantity and strength sufficient to percolate the dry film of the first coat, this has the effect of binding the sol and any colouring matter to the silica of the slate. Providing the application of the two coats has been made correctly, no amount of scrubbing will remove the film, beyond, perhaps, a little soluble salt and any excess of colouring matter or fixative.

So far as is known, the colours can only be removed by abrasion; this process, therefore, would render the slate quite unfit for flooring, but it could be used effectively in shopfront fascias, wall linings, fireplace surrounds, and so forth where a more rugged and unglazed effect would seem suitable.

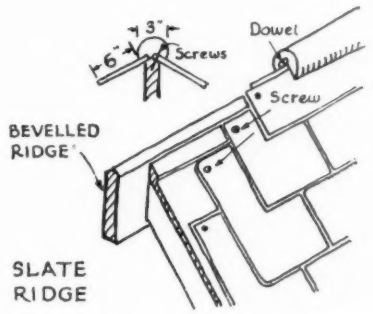
Actually, of course, slate is no new material for interior decoration, as it is now over eighty years since the first patent was taken out for the beautifying of it for decorative purposes. During the nineteenth century, slate was treated with stoving enamel and these first attempts took the form of imitating marble for chimney pieces which were much in vogue. The success which these attained was taken advantage of when wood surrounds to fireplaces came into fashion, and the slate producers were not slow to imitate painstakingly by hand some of the rarer types of wood. These found a ready market on account of their relative cheapness, and also because slate as a material will not crack, shrink or warp.

Today, however, there are other mechanical means of disguising slate than that previously described, and many very fine effects can be obtained with synthetic resins which are sprayed on after the surface has been well prepared by rubbing down. It is then usual to give the slate a priming coat followed by a first spraying on of the stoving to the required colour. It is then rubbed down once more and given an undercoat. This, too, is rubbed



COUNTER BATTENING FOR SLATES

down before the finishing coat is applied. The effect of this is certainly to make the colour a part of the slate, for if chipped it will be found that the enamel will bring away a fragment of slate with it, while the stoving process cannot be said to penetrate the pores of the slate.



"METALIZED" SLATE

Whilst a highly finished surface is thus given to a slab of slate, which makes it suitable for a variety of external and internal uses such as shopfront fascias and stallboards, panelling for bathrooms, etc., it has the disadvantage of completely disguising the material. To counteract this, there is an equally attractive process known as metalizing, which does not obliterate the "figuring" of the split slab. After a specially prepared and patented "key" is applied, pure molten metal is sprayed on with a gun, so that it can be finished in bronze, copper, brass or armour-bright. The slate can then be lacquered and polished, and beyond an occasional washing and polishing costs nothing in maintenance.

This process, also applied by the spray gun, enables any ductile metal to be played over the natural surface of the slate, and being thinly applied helps to emphasize its natural texture. Thus is formed a material which is not exactly artificial, since it is a combination of two natural substances. Just as the imitation stone or wood mantel became popular not so very long ago, so has this scientifically processed slate gained a wide demand for incorporation with the inset type of gas or electric fire so largely used in the modern house or flat today.

Since slate is also rust and vermin proof and a resistant to acids and alkalis, it lends itself in a plain, untreated state, apart from roofing, to a great variety of uses as previously outlined. It has, too, a distinct advantage with regard to rapid building in one respect at least. Slate is now being utilized more fully for window cills and can be supplied either straight or curved in stock sizes to suit the varying thicknesses of walls. The slabs are prepared with condensation grooves and serrated undersides for bedding in brickwork; they also seal very easily and effectively a cavity

wall. Such slabs for cills are usually about 1 in. thick and form, at the same time, a practical and clean inner cill which is suitable for painting.

It might be stated in conclusion that the reluctance to make use of slate more frequently is, in part, due to manufacturers. There are so many opportunities for its use in internal work, as distinct to outside uses, that it is difficult and expensive to put forward suggestions which shall meet with general approval. Slate, manufacturers maintain, can be very easily cut, and it is not much use filling stockyards and showrooms with standardized slabs for shelving, dados, radiator covers, surrounds, etc., if an architect or client requires some slight variance. On the other hand, the manufacturers are prepared to help as much as they can if a suggestion for a new use for slate is made to them.

SIZES AND PRICE

The question of determining the amount of slate required is generally a matter for the quantity surveyor since it requires special knowledge to arrive at with accuracy.

Bearing in mind that a square of slate is equivalent to 100 ft. super, the annexed table issued by one company for their roofing slates forms a general guide.

Sizes in Inches	Slates required to cover 1 Square		Approximate Average Weight per Square		
	3 in lap	4 in lap	Best and Mediums	Strongs	Seconds
			Cwt.	Cwt.	Cwt.
24 × 14 ..	98	103	4½	5¾	6½
24 × 12 ..	115	120	4½	5¾	6½
22 × 12 ..	126	133	4½	5¾	6½
22 × 11 ..	138	145	4½	5¾	6½
20 × 10 ..	169	180	4½	5¾	6½
20 × 9 ..	188	200	4½	5¾	6½
18 × 12 ..	160	122	4½	5¾	6½
18 × 10 ..	192	205	4½	5¾	6½
18 × 9 ..	213	228	4½	5¾	6½
16 × 12 ..	185	200	5¼	6¾	7¾
16 × 10 ..	221	240	5¼	6¾	7¾
16 × 9 ..	246	266	5¼	6¾	7¾
16 × 8 ..	277	300	5¼	6¾	7¾
14 × 10 ..	262	288	5¼	6¾	7¾
14 × 8 ..	327	360	5¼	6¾	7¾
14 × 7 ..	374	411	5½	6¾	7¼
13 × 10 ..	288	320	5½	6¾	7¼
13 × 7 ..	411	457	5½	6¾	7¼
12 × 10 ..	320	339	5½	6¾	7¼
12 × 8 ..	400	450	5½	6¾	7¼
12 × 6 ..	533	600	5½	6¾	7¼
10 × 10 ..	411	443	5½	6¾	7¼
10 × 8 ..	514	600	5½	6¾	7¼
10 × 6 ..	686	800	5½	6¾	7¼

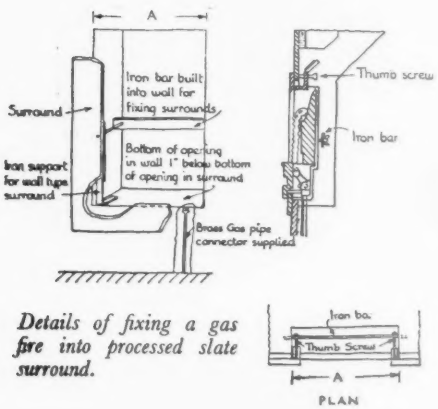
Taking cost of Best Old Vein fixed on roof at 100, Mediums work out at about 98, Strong and Second Mediums at 94, and Seconds at 91.

COLLOIDAL SLATES

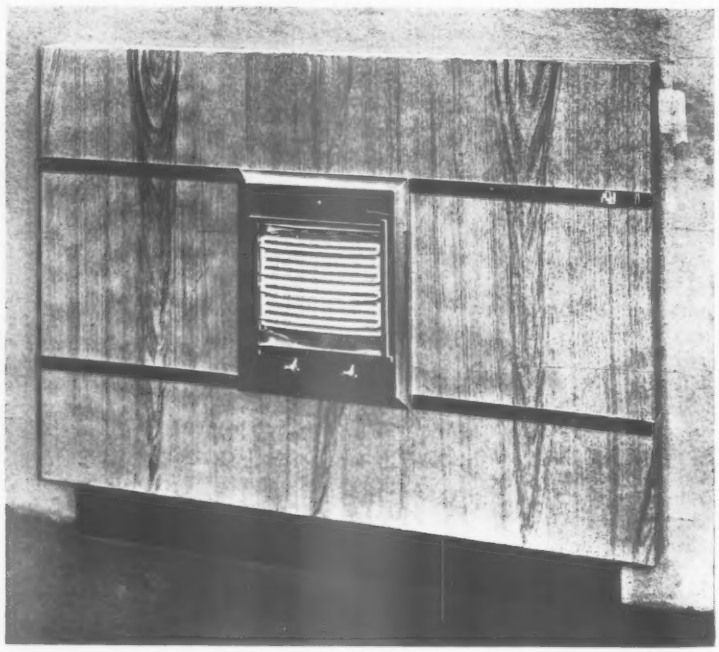
The cost of colloidal slates, of which all colours and combinations of colours are sold at the same price, is about 1s. per square yard more than that of ordinary Welsh slate. Rougher slates are slightly more.

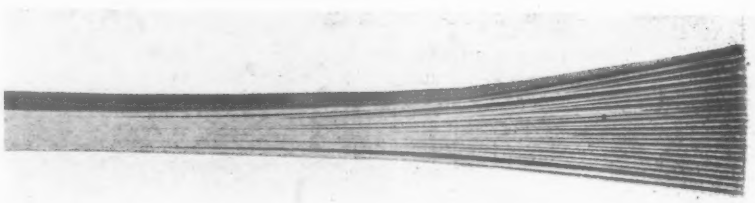
PROCESSED SLATE

Each design of processed slate is given a distinguishing name, of which the following, which is made from natural slate with a highly finished stove enamelled surface, is a guide to costs. One "Suite" consists of a range of



Details of fixing a gas fire into processed slate surround.





Top, an electric fire surround in processed slate. Below, a length of slate slab opened out in many laminæ, showing the flexibility of the material.

wooden bookshelves incorporated in the decorative slate surround to a coal fire with chromium plated bands and fire frame complete. The hearth is in eggshell tiles, and the "suite," 12 ft. long by 3 ft. high, costs £20.

Sizes and colours to suit individual requirements.

Another "suite" comprises a coal fire and two 1 k.W. electric fires in jambs and small bookshelves. The whole "suite" complete is 5 ft. long by 3 ft. 2 ins. high, costs £17 10s.; without electric fires, costs £13 15s.

SLATE CILLS

The following are prices for slate cills as described in a previous section :—

Window Width	Wall Thickness		
	9"	11" cav.	13½"
	Straight Cills		
Ft. Ins.			
0 11	2/6	2 11	3/7
1 8	4/-	4 8	5/8
3 3¼	7/4	8 7	10/4
4 10½	10/6	12 3	14/10
6 6½	13/10	16 2	19 7
8 2½	17/2	20 -	24/4
	Straight Cills with Two Mitred Ends		
0 11	4/6	5/3	6/5
1 8	6/-	7/-	8/6
3 3¼	9/4	10 11	13/2
4 10½	12/6	14 7	17/8
6 6½	15/10	18 6	22/5
	Straight Cills with One Mitred End		
0 11	3/6	4/1	5 -
1 8	5/-	5/10	7/1
3 3¼	8/4	9/9	11/9
4 10½	11/6	13/5	16/3
6 6½	14/10	17/4	21 -

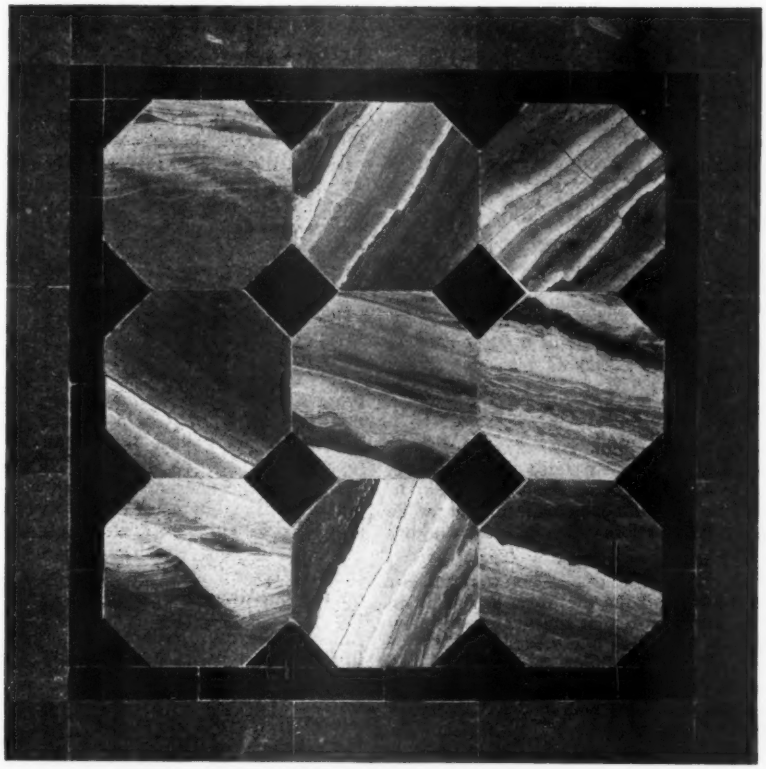
Circular Type Cill for C.O.P. Frames

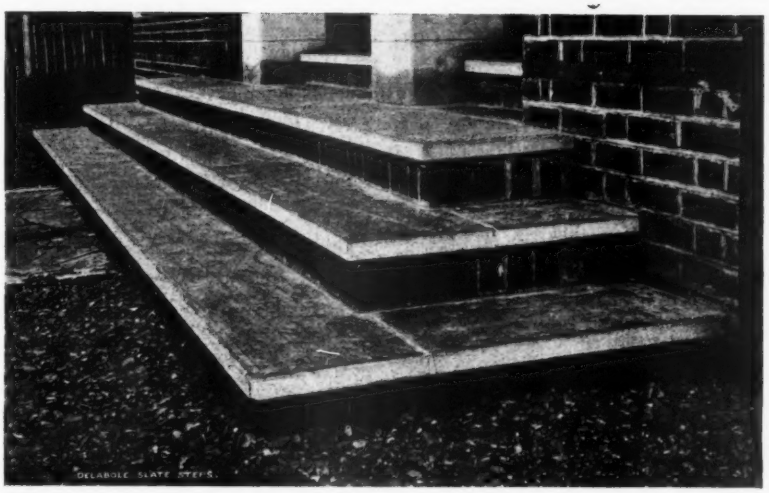
Radius	According to Type of Frame
Ft. Ins.	
1 10¼	14 - and 16/3
2 4¼	21 - and 24/-
2 7¼	25/6 and 28/6
2 10¼	30/- and 33/3

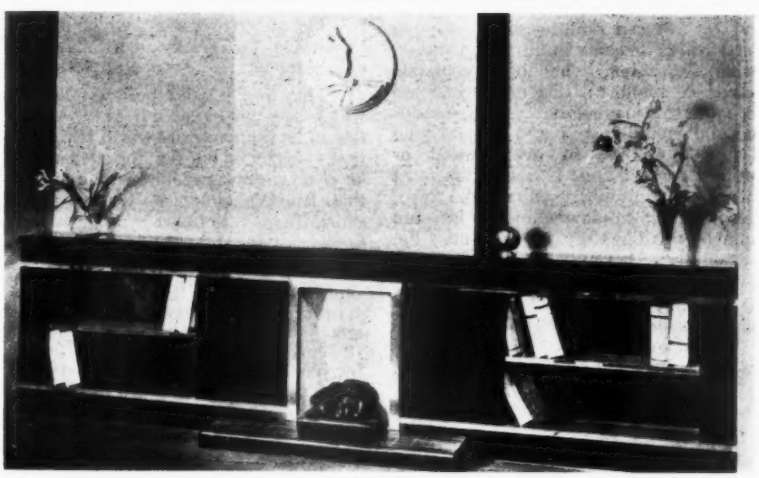
Square Type Cill for C.O.P. Frames

Radius	According to Type of Frame
Ft. Ins.	
1 10¼	12/5 and 14/5
2 4¼	18/8 and 21/4
2 7¼	22/8 and 25/4
2 10¼	26/8 and 29/6

An order should state if ends of cill are to be built into wall.







The illustrations show : Top, a specimen panel of differing Westmorland slates. The texture is very satisfactory and the colours are dark green, light green and barred light green. Centre, fairly rough slate used as steps. Right, processed slate fire surround ; the medallion above is also of slate.

R.I.B.A.

REHOUSING

"Rehousing from the Slum-dwellers' Point of View" was the title of a paper read by Miss Elizabeth Denby at a meeting of the R.I.B.A. on Monday last. Extracts from the paper are printed below.

Over three million new dwellings have been built in Britain since the Armistice, nearly two million of them subsidized to the tune of £160,000,000 from the public purse, and therefore presumably for working people.

This vast number of new homes represents one-third of all the dwellings in Britain in 1914, and means that the towns are being virtually rebuilt in one generation.

But although building is continuing unabated, it is said that the slums are hardly touched, and that few of the poorer-paid workers have yet been helped.

Surely it is time to take stock of these eighteen years' work, to see if, from that experience, we consider that we are in fact getting good value for the money that has been spent and that was so willingly voted for "clearing the slums."

Let us first consider what is a slum. As defined in Section 1 of the 1930 Act, it is technically an area in which "the narrowness, closeness and bad management, or the bad condition of the streets and houses or groups of houses within such area, or the want of light, air, ventilation and proper conveniences and other sanitary defects, or one or more of such causes are dangerous or injurious to the health of the inhabitants of the buildings in the said area, or of the neighbouring buildings." One of Charles Booth's fellow-workers based his definition more tersely on the inhabitants and not on the dwellings. He says a slum is "a street, closed court or alley tenanted by a casual, thoughtless, rough class of inhabitant not necessarily vicious but apt to contain bad characters." This is, however, not in accordance with the facts. Poverty is in the slums without doubt—grim, crippling poverty which prevents families from eating, dressing, furnishing, living to a reasonable standard of comfort: dirt and crime are there: but so also are hundreds of thousands of normal working men and women who are forced to live in overcrowded or insanitary surroundings because they must be near their work in the centre of the town, or because their employment is too insecure to enable them readily to undertake the responsibility of a Council house at a rent higher than that which they are paying.

For we must face the fact that the rent-paying capacity of the British workman is not high. Four-fifths of the *families* of Britain are receiving less than £4 a week. The average wage for a labourer is 45s. a week. For no apparent reason it seems to be assumed that over one-fifth of a workman's income (10s.) should be spent on rent, but this is manifestly far too high a proportion, if enough is to be left for coal, gas, electricity, food, clothing, and the other necessities of life.

In fact, the working man and his wife are at present faced with a very disagreeable choice. Are they to remain in unhealthy or overcrowded apartments for which they pay a comparatively low rent, or are they to move into purer air and greater space and stint their children of food?

Doctors and scientists are, from experience, saying emphatically that it is better biologically to be badly housed than to be badly fed.* Some parents insist, in spite of this, that the physical damage of under-nourishment is preferable to the moral damage which their children can hardly escape in a crowded slum.

What are the alternatives which are put before the inhabitants of an area which is scheduled for clearance?

In some of the larger cities, tenements are built in central areas and cottage estates on the outskirts; but, speaking generally, the choice is limited to a cottage estate or finding other, overcrowded, accommodation in the central area.

An acid test of the success of these new estates, whether cottages or flats, is to find out what the tenants themselves think of them. Many of the replies are disconcerting: isolation, loneliness, boredom, expense, in the cottage estates; lack of privacy, noise, inconvenience, a "barrack" atmosphere, expense, in the flats. And in many cases a lurking shame at being a tenant of a Council house!

What, then, do the other ratepayers think of these estates? It is, unfortunately, common knowledge that no district welcomes the "intrusion" of these dwellings: both æsthetically and socially they are held to lower the tone of the neighbourhood.

This is surely a deplorable state of affairs. Are these complaints, in this snobbery justified? What is wrong? Can things be righted without a complete reversal of the present housing policy?

Personally I doubt it. And I will try to justify my opinion by briefly capitulating the chief complaints as they appear to an impartial observer.

Flats.

Flats are intensely unpopular among working people, who consider that they provide an environment which is entirely unsuitable for family life. Their main objections are:—

1. They are usually built on five floors, which are too high without lifts, and too low to be economically worth their installation. Mothers on the top floors tend to keep their young children at home rather than face dragging them up and down the stairs. A private balcony, large enough for family use, is rarely provided for the family dwelling.

2. The quality of the building does not permit expenditure on proper insulation against noise. Sounds can be heard distinctly, not only in adjoining flats, but right through from the top to the bottom of the building.

This means that children must be kept unnaturally quiet; they must not run, or jump, or play naturally, without fear of complaints from neighbours. Nor can a big adolescent family behave in a jolly way, or entertain friends in the evening, as they claim they have every right to do.

3. The restrictions, which are imposed in most dwellings, are deeply resented. This particularly applies to the prohibition of pets and window-boxes, while the usual lack of any garden area from which a meagre larder can be supplemented is a real deprivation. There is absolutely nothing for anyone to do in these tenement estates, and leisure is apt to be unwisely spent.

4. The barrack-like appearance of most blocks of dwellings is felt to be peculiarly unhome-like, while it is widely felt that the space surrounding the dwellings should not be a replica of a school playground, but should be available for the adult members of the community, and planned as they would like it, for quiet and recreation. There is no doubt in my mind that the existing lay-out in concrete or asphalt round most of the tenements blocks is a direct encouragement to hooliganism in the child population.

5. It is said that rooms in flats are smaller than in an average cottage, that insufficient space is allowed for storage, and that prams must often be dragged up the stairs and kept in the bathroom.

6. Equipment is said to be unsuitable for working people, to be inconveniently placed, and extremely expensive to run.

In short, the general working-class opinion seems to be that the blocks of flats would be all very well for people who can afford to send their children to boarding-school, and go off themselves by car for the week-end and for holidays, but that they are definitely inadequate for families whose lives must centre in and round the home.

Cottages.

Cottages.—The same complaints as to planning, equipment, and over-control apply to cottage as to flat estates. Here, however, the lack of recognition of any obligation to the tenants but that of shelter, is even more apparent. The close companionship of the city, with all its drawbacks and ugliness, has been withdrawn. These fine-sounding estates are at first nothing but a pitiful segregation of the lowest income-level of the population; without meeting places or clubs; without cheap shopping centres or friendly tradesmen who know the family well and will give credit at a pinch; without amusements; often for many months without elementary or technical schools near enough for the children to attend without undue fatigue. By the time fares to work have been added, rents are in many cases nearly twice the rents which were paid in the slums, while the equipment in many estates is expensive to run and amounts to a weekly expenditure equal to the rent. The furniture which was adequate for one or two rooms looks entirely lost when it is sprinkled through

* See Sir John Orr: "Food, Health and Income." G. C. M. McGonigle and J. Kirby: "Poverty and Public Health."

three or four. Is it any wonder that some of these tenants lose heart and drift back to their old haunts, and that if they stick it out, they show the severity of the strain by the increased sickness and mortality rates?

There is no doubt about it. The mass of evidence shows that the housing problem has been cruelly over-simplified. Good housing is not the absence of slums any more than good health is just the absence of disease. Slum-clearance is not merely a question of substituting a clean box for a dirty one. It is not a problem which an be solved by better plumbing. Here is an opportunity, if it is only grasped with courage and wisdom, of replanning whole areas of towns in accordance with the clearly expressed wishes of the people who are to live in them; of rescuing, with a minimum of trouble and expense, the families who are at present living in conditions which are only preparing their children to be treated at public charge in hospitals, in clinics or in prisons.

With all my heart I agree with the working man and woman that the choice for a town dweller between a flat at fifty and a cottage at twelve to the acre is a choice between two impractical and unnecessary extremes. The rows of terrace cottages built in the Regency days, with a small garden in front and a long one behind, were built at a density of fifty and sixty dwellings to the acre. That is the density at which we are now building flats. The popularity of these coherent and dignified little streets and squares seems equally shared by the well-to-do and the private speculator who covet these areas. The pleasure and pride taken by working people in the few areas left to them, their grief at their destruction either by a zealous Council or a speculative builder seems to point pretty clearly to the popularity of some kind of re-development of central areas in this form. It would certainly be cheaper than tenements, the density would be identical, and the tenants would be able to add considerably to their food supplies while living centrally in touch with many kinds of work.

This would be feasible in any part of the country, although, speaking as a north countrywoman, there would need to be amendments to meet local needs and difficulties. There seems to have been some misunderstanding about the real nature of the overcrowding in the country. Here are figures of the *average* density of occupation of some of our greatest cities, in which the greatest overcrowding has been found :—

	Average Persons per acre	Average Dwellings per acre.
Greater London ..	18·5	3·4
County of London..	58·7	9·0
Birmingham ..	19·9	5·1
Manchester ..	28·2	6·5
Liverpool	34·2	7·0
Leeds	12·6	3·3
Bristol	15·1	4·2

These figures take no account of the space occupied by or required for industry. When the necessary reservations have been made, however, it will be seen that development in terrace cottages with gardens at 50 to the acre for all who want them (and there would be many) would leave ample space for playgrounds, parks and industry and for the flats which are undoubtedly the most convenient way for many persons, such as the unmarried or the childless, to live.

I can do no more in a paper of this length than to indicate the problem and the way in which, in my experience, people with low incomes would choose to bring up their families with maximum health and happiness and at a minimum cost.

There is no sense in blaming work done experimentally and under great pressure. But it would be stupid to continue to perpetuate mistakes and to force people into ways of living which are unnecessary as well as abhorrent to them.

And if, in addition, these re-developed areas include, as part of the design, from the start, all the needs for a full life—clubs, cafés, sports grounds, parks, markets, and halls—a life will have been returned to the working people of Britain which is as rich in texture, even fuller in content, than the one which was taken away from them in the Industrial Era.

The Trade Notes section is held over from this issue and will be resumed next week.

TIMBER
AND ITS USES

"IT is certain," states the Report* for 1935 of the Forest Products Research Board, "that the desire for specific knowledge of the properties of commercial timbers has grown considerably during the past few years. Members of the timber trade and timber-using industries are awakening to the need for more research directed to the solution of some at least of the many problems connected with wood and for definite information which will enable architects, builders, engineers and others to use timber with confidence."

Reliable evidence of the value placed by industry on the work of the Forest Products Research Laboratory is furnished by the fact that 2,200 applications for assistance and information were dealt with by the laboratory during the year. These covered a remarkably wide range of subjects. One manufacturer, for example, desired information on the screw-holding properties of oak flooring in connection with the seating of a cinema; another firm had tests carried out on the strength of extension ladders of different construction; while a third about to erect sawmills in Mexico and Brazil was supplied with information regarding the timbers of those countries.

There was also an increase of over 50 per cent. in the number of enquiries relating to seasoning problems; over 85 per cent. of these were from trade sources asking for advice and assistance in connection with kiln drying, steam bending and the moisture relations of timber. A full examination of the moisture conditions of timber in new buildings has been completed. The results show that the intensive "baking" to which new buildings are often subjected in the belief that they must necessarily be damp and unhealthy is both needless and wasteful. It has been found that the moisture content of the woodwork, after the completion of the walls and the glazing of the windows, falls, on the installation of temporary heating, from about 18 per cent. to 12 per cent. If more intensive heating is then applied a moisture content of 7 per cent. is attained, but with permanent occupation and ordinary heating, the moisture content gradually rises again to 12 per cent., which has been found to represent the mean yearly moisture content of a matured centrally-heated building—the variation from summer to winter being no greater than 2 per cent. either way.

Another group of enquiries dealt with at the laboratory related to sawmilling and woodworking matters, and there were a number of demands for information on the woodworking qualities of different timbers and their suitability for particular purposes, on sawmilling equipment and on machines and their layout for woodworking factories. In connection with the sawing of timber containing silica or other abrasive material, it has been found that if trouble in sharpening and resetting is to be avoided with the most refractory timbers, saws with teeth tipped with tungsten-carbide must be used. Reasonably good results were, however, obtained with saws having chrome nickel steel teeth whose shape and spacing had been found by experiment to be best suited for a particular timber. It has been found that timbers having wavy, interlocked or other forms of disturbed grain are liable to give torn finishes when planed or moulded in standard machines no matter how much care has been taken in sharpening and setting the cutting tool in the machine. A torn finish, the report states, in such cases is generally caused by the angle at which the cutters are offered to the wood being unsuitable.

A method has been developed using photo-electric cells by which the finish of planed wood surfaces can be accurately measured. The apparatus is being used to judge the effect of artificial finishes such as waxing, french polishing, etc., on the natural surfaces left by the plane. It is also to be used to measure the effects of insecticides on polishes and paints used on wood.

The report records a large increase in the number of tests of wood preservatives carried out on behalf of manufacturers and on the resistance of various building materials to dry rot. A large number of enquiries related to insect damage to timber, to dry rot and other types of attack in buildings, and to the prevention of stains or mould on timber. The damage caused by the Lyctus powderpost beetle is still of considerable importance from the economic standpoint. In spite of numerous requests received at the laboratory from individual firms for advice and assistance in connection with damage caused by Lyctus beetles, satisfactory progress, the report states, in the general application of control measures cannot be recorded, because the need for a united effort by all branches of the hardwood-using industries has apparently not been realized. The adoption of Lyctus

**Annual Report of the Forest Products Research Board for 1935.* H.M. Stationery Office. Price 2s.

control measures by a few individual firms is, however, a hopeful sign, for by their example it may yet be possible to demonstrate to the trade as a whole that with a little initial outlay and trouble an organised campaign of Lyctus control would secure an extensive reduction of the damage from this cause in hardwoods.

It has been demonstrated that female beetles are able to determine the suitability of wood for larval development, and avoid laying their eggs in starch-free timber. Moreover, if of two pieces of sapwood one contains a little more starch than the other, although both have sufficient for normal larval development, the majority of eggs will be laid in the sample of greater starch content. Methods of rendering timber free from starch and therefore immune from Lyctus infestations are being studied.

It is believed that there has been little increased activity or spread of the Death-watch beetle in recent years. While further instances of attack have been recorded in old buildings, it has been found, in the majority of cases, that the insect had long been present but had only recently been detected. Advantage was taken of the presence of scaffolding in Westminster Hall to examine the timbers for evidence of active Death-watch beetle attack. Although exit holes were present in parts of the roof, no living insects, beetles or larvæ were found during the inspection and it was evident that the insect was not obviously active in any of the timbers examined. The efficacy of the improved system of ventilation provided during the repairs of 1913–20 was demonstrated by a series of tests which the laboratory made to determine the moisture conditions of the atmosphere and of the roof timbers. It is probable that this efficient ventilation has played an important part in checking the activity of the insect. During inspections of buildings in which insecticide treatments have been carried out for the destruction of the Death-watch beetle, evidence has been forthcoming of the failure of a single and in some cases of two or more applications of insecticides to eradicate the insect from attacked timber.

Empire Timbers

The facilities of the Forest Products Research Laboratory are available for the assistance of various parts of the Empire for the investigation of the qualities of particular timbers and for the provision of technical information in connection with their marketing. The report of the Standing Conference, which acts as a consultative and advisory body to the Department of Scientific and Industrial Research and the units of the Empire making use of these facilities, is included as an appendix to the report. Reference is made therein to the establishment by the Colonial Office of a Colonial Forest Resources Development Department which has undertaken the marketing work in connection with Colonial timbers which had previously been carried out by the Forest Products Research Laboratory as a temporary measure. Under the scheme of research, major investigations have been completed during the year on Mora timber from Trinidad, Banak timber from British Honduras; while investigations on Ceylon gurjun, Santa Maria and pitch pine from British Honduras are in progress, in addition to a number of investigations which are being carried out on a smaller scale. The results recorded in the report do not appear to indicate, however, that a large market is likely to be forthcoming for any of these timbers in this country except for certain specific purposes.

LAW REPORT

ERECTION OF A HOUSE—CONSTRUCTION OF AGREEMENT

Lofts v. *Thorogood.—King's Bench Division. Before Mr. Justice MacKinnon*

IN this case Mr. Sidney Wm. Leonard Lofts, of Elmcroft Drive, Hook, Surrey, sued Mr. Ebenezer Thorogood, a builder, of Upper Brighton Road, Surbiton, for alleged breach of an agreement, dated June 21, 1934. The plaintiff's case was that by the agreement he agreed to buy and the defendant to sell the dwelling-house known as 10 Elmcroft Drive, Hook, for the sum of £925. The plaintiff, after completion of the purchase, took possession and went into occupation of the premises. By clause 8 of the agreement the defendant undertook, *inter alia*, to make good without further cost to the purchaser all defects (excluding any usual and unavoidable shrinkage of joinery) arising from faulty workmanship or materials in respect of the house during a period of twelve months from the date of completion of the purchase. The plaintiff asserted that within the period of twelve months defects within the meaning of clause 8 did arise in that the mortar used for jointing the brickwork being of alleged inferior quality became friable and crumbled and could be easily picked from the joints, and as a result the house was not weatherproof nor structurally sound.

The defendant admitted that defects had arisen owing to faulty mortar having been used and said that he had always been ready and willing to remedy this by re-pointing the work with proper mortar.

Expert evidence was called for the plaintiff to show that the trouble arose through lime mortar having been used which could be easily picked or raked out and that the walls ought, in the circumstances, to be removed and re-erected with proper cement mortar.

The defendant gave evidence that he had been engaged in the building trade for about thirty-four years and at the time he began to build the plaintiff's house the mortar in question had been used, and after complaint he had the mortar tested and found that it was defective. He could not remember the state of the weather when the house was built, but he knew it was in perfect order when the purchase was completed. He, after investigation, came to the conclusion that the lime mortar was not so satisfactory as he expected it to be. The defects could be easily remedied by re-pointing with proper mortar. To remove the wall was entirely unnecessary in his opinion.

Cross-examined, the defendant said the plaintiff's house was built in 1933; if he were allowed to rake out the mortar in question and replace it with cement mortar, he would guarantee the house for fifty years or more. He had tried to put everything right, but when it was desired that he should pull down the wall and rebuild it, he thought that was utterly unreasonable, as re-pointing would have remedied the defects satisfactorily.

Expert evidence was given for the defendant to the effect that the defects could be satisfactorily remedied by raking out the defective mortar and replacing it with good re-pointing.

His lordship, after hearing arguments, said he was of opinion he ought to give judgment for the plaintiff, with costs, and for a declaration that the defendant under his contract was liable to rebuild the outer skin of the wall in a satisfactory manner and that the plaintiff was entitled to the reasonable cost of living elsewhere and storing his furniture whilst the work was being carried out, and if it proved necessary to remove any windows and doors. There would be liberty to either party to apply and, added his lordship, "if you are reasonable people you will confer together."

Mr. A. F. Englebach appeared for the plaintiff, and Mr. A. Cecil Capron for the defendant.

THE BUILDINGS ILLUSTRATED

ADDITIONS AND ALTERATIONS, ST. BARTHOLOMEW'S NEW MEDICAL SCHOOL (pages 702-704).—The general contractors were Lovatt Wilson and Sons, Ltd., and the principal sub-contractors and suppliers included: Wilment Bros., excavation; Permanite, Ltd., dampcourses; East Acton Brickworks and Estates, Ltd., Himley Brick Co., Ltd., and Henry C. Parker & Co., bricks; Wm. Knight & Co., Ltd., York stone; C. W. Courtenay, Portland stone; Malcolm McLeod & Co., Ltd., artificial stone; Dawnays, Ltd., structural steel; Caxton Floors, Ltd., Seigwart Fireproof Co., Ltd., and Kleine Co., Ltd., fireproof construction; E. H. Smith (London), Ltd., slates; Hemel Hempstead Patent Brick Co., partitions; Shepherd Tobias & Co., Ltd., glass; Haywards, Ltd., patent glazing; Jos. F. Ebner, Ltd., and Turpins Parquet Floor, Joinery and Wood Carving Co., wood-block flooring; Diespeker & Co., Ltd., patent flooring; Roberts Adlard & Co., waterproofing materials; Richard Crittall & Co., Ltd., central heating; A. Gallenkamp & Co., Ltd., and A. Higginbotham and Sons, gas fixtures; Gas Light and Coke Co., gas-fittings (mains); Electrical Installations, Ltd., electric light fixtures and wiring and heating; Shanks & Co., Ltd., and Doulton & Co., Ltd., sanitary fittings; Dunlop Rubber Co., Ltd., stair treads; Nettlefold and Sons, Ltd., and James Gibbons, Ltd., door furniture; G.P.O. telephones; W. Neil & Co., flue linings; S. W. Farmer and Sons, Ltd., iron staircases; Joseph Avery & Co., dark sunblinds; Jeffries and Grant, Ltd., plaster; F. Braby & Co. and Clark Hunt & Co., Ltd., metalwork; J. P. White and Sons, Ltd., joinery; A. Bagnall and Sons, Ltd., painting (generally); May Acoustics, Ltd., acoustics; Osgood & Co., Ltd., tiling; The Carron Co., Electrolux, Ltd., Staines Kitchen Equipment Co., Ltd., Starkie Gardner & Co., and W. M. Still and Sons, fittings; Merryweather and Sons, Ltd., fire hydrants.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 miles radius)

ABBEY WOOD : *School.* The L.C.C. is to erect a new school building at the Goldie Leigh Hospital, Abbey Wood, at a cost of £16,470.

BARKING : *Town Hall.* The Barking Corporation has approved an estimate of £198,000 for the new town hall.

CROYDON : *Reconstruction.* The Croydon Education Committee has obtained sanction to borrow £26,250 for the reconstruction of South Norwood school.

ENFIELD : *School.* The Enfield U.D.C. is to utilize a site in Albany Park for the erection of a school.

ENFIELD : *Houses.* Plans passed by the Enfield U.D.C. : Five houses, Turkey Street, Mr. Chas. V. Cable; 41 houses, Alma Road, Green Street, Brimsdown, Mr. H. A. Nash; 26 flats, Hoe Lane, Hertford Road, Messrs. McManus & Co.; 14 houses, Ladysmith Road, Mr. Geo. W. Newman; 293 houses, Cowdrey Close and Enfield Town Estate, Messrs. W. Goodchild & Co.; 11 houses, Enfield Road, Messrs. Geo. Wimpey & Co.; 16 houses, Cranleigh Gardens, New Ideal Homesteads; 30 houses, Falcon Crescent, Ponders End, Mr. W. M. Edwards; 166 houses, Chestnut Road, Forest Road, Park Road, Aston Road, and Enfield Lock, Mr. H. E. Tufton; 42 flats, Hertford Road, Messrs. Hilbery Chaplin, Ltd.; 10 houses, Orchard Crescent, Forty Hill, Mr. F. J. Gates; 20 houses, Carterhatch Lane, Mr. Geo. W. Newman; 142 houses, off Palmers Lane, Messrs. Farebrother Ellis & Co.

HACKNEY MARSHES : *Housing Estate.* The L.C.C. is proceeding with the scheme for the development of a housing estate on part of Hackney Marshes, where some 970 dwellings are to be provided at a cost of £553,000.

LAMBETH : *Tenements.* The Lambeth B.C. is to erect further tenements on the Hemans Street area at a cost of £36,589.

LEWISHAM : *Houses, etc.* Plans passed by the Lewisham Corporation : 164 houses, Beckenham Lane Estate, Messrs. Manor Estates, Ltd.; eight blocks of flats, Eltham and Layland Road, Mr. J. J. de Segrais; 10 houses, Sydenham Park, Sydenham, Mr. J. Hodges; six houses, Tewkesbury Avenue, Forest Hill, Mr. H. Macintosh; 22 houses, Wells Park Road, Sydenham, Mr. L. A. Culliford.

LEWISHAM : *Dwellings.* The L.C.C. has approved a scheme for the erection of 1,038 dwellings on the Whitefoot estate, Lewisham, at a cost of £493,000.

LONDON : *Rehousing.* The L.C.C. is to clear the Thames Street area, Greenwich, and provide rehousing at a cost of £100,000.

LONDON : *Rehousing.* The L.C.C. is to clear the Coach and Horses Passage area, Islington, and provide rehousing at a cost of £86,000.

LONDON : *Housing Estate.* The L.C.C. is preparing a scheme for the development of a housing estate at Grange Hill, Essex, the cost being estimated at £175,000.

LONDON : *Housing Schemes.* The L.C.C. is to proceed with the subjoined housing schemes : Bostock Street, Stepney, £56,000; Charlton Street, St. Pancras, £19,000; High Hill area, Hackney, £113,000; Lambeth clearance areas, £512,000; Law Street area, Southwark, £72,600; Tamswell Street, Vauxhall, £126,000; Medland Street, Stepney, £16,800.

LONDON : *Housing Schemes.* The L.C.C. has approved the subjoined new housing schemes : Over 200 dwellings at Morning Lane, Hackney, at a cost of £114,400; about 86 flats at Lant Street, Southwark, at a cost of £52,650; rehousing at Pombury Road site, Hackney, at a cost of £57,000; flats (285) at Poynders Road, Clapham, at a cost of £169,000; dwellings, Pritchards Road, Bethnal Green, at a cost of £43,100.

SOUTHALL : *Houses.* Plans passed by the Southall-Norwood U.D.C. : Six houses, Shaftesbury Avenue, Messrs. Warren and Woods; five houses, Thorncliffe Road, The General Housing Co., Ltd.

STEPNEY : *Tenements.* The Stepney B.C. is to erect 76 tenements in Arbour Square at a cost of £38,537.

WANDSWORTH : *Dwellings.* The Wandsworth B.C. is to erect further dwellings on the Wandsworth Plain area at a cost of £31,242.

SOUTHERN COUNTIES

PLYMOUTH. *Flats.* The Plymouth Corporation has approved plans by the City Architect for the erection of 12 single room flats, Sithney Street; 32 flats, Mount Street, and 39 flats, High Street and Palace Street.

SURREY. *Nurses' Home.* The Surrey C.C. has appointed Messrs. Saxon Snell and Phillips, architects for the nurses' home to be erected at the Dorking Hospital.

WOKING. *Reconstruction.* The Surrey Education Committee is to reconstruct Knaphill School, Woking, at a cost of £21,794.

WEYMOUTH. *Houses, etc.* Plans passed by the Weymouth Corporation : Five houses, Fairclose, Faircross Estate, Messrs. Andrews and Andrews; Eight houses, Court Road, Broadlands Estate, Messrs. S. Jackson and Sons; Six houses, Beaumont Avenue, Mr. A. A. Hayward; eight houses, Weymouth Bay Avenue, Messrs. Hayward Bros.

MIDLAND COUNTIES

NORTHUMBERLAND. *Small Holdings.* The Northumberland C.C. is to provide small holdings at Moor Farm, Stannington, at a cost of £29,363.

NOTTS. *Cinema.* The Notts County Licensing Committee has passed plans for the erection of a cinema at Clipstone for the Kew Cinema Company.

NOTTS. *Tuberculosis Dispensary.* The Notts C.C. has purchased a site at Worksop for the purposes of the tuberculosis dispensary.

NOTTINGHAM. *Extensions.* The Nottingham Education Committee is to enlarge the Whitemoor school at a cost of £14,267.

MANSFIELD. *Houses, etc.* Plans passed by Mansfield Corporation : Six houses, Big Barn Lane, Mr. J. E. Baggaley; 21 houses, Norbury Drive, Mr. J. P. Smith; five houses, Matlock Avenue and Berry Hill Lane, Mr. T. Jeffery; extension to massage department, West Hill Drive, Mansfield and District General Hospital.

MANSFIELD. *Houses.* Mansfield Corporation is to erect 46 houses on the Bull Farm estate at a cost of about £25,000 and prepare plans for the erection of 12 houses for aged persons.

OLDBURY. *Houses, etc.* Plans passed by the Oldbury Corporation : Four houses, Ashes Road, Miss E. Whitehouse; five houses, Causeway Green Road, Miss E. Askew; eight houses, Tinkers Farm Estate, Mr. E. C. Whaler; offices and warehouse, Tat Bank Road, Messrs. Cox and Danks, Ltd.; 12 houses, Hagley Road, Messrs. Rudge Bros.

REDDITCH. *School.* The Worcestershire Education Committee is to erect a senior school in Bromsgrove Road, Redditch.

REDDITCH. *Houses.* Plans passed by the Redditch U.D.C. : 12 houses, The Meadow, for Mr. P. Cox.

STRETFORD. *Houses, etc.* Plans passed by the Stretford Corporation : 11 houses, Firs Avenue, Mr. A. Wallwork; technical college, Talbot Road, Lancashire C.C.; 33 houses, Moss Road (Lostock) and Lincoln Avenue, Messrs. Locke, Ltd.

STAFFORDSHIRE. *Small Holdings.* The Staffordshire C.C. is to purchase land at a cost of £22,120 for the provision of small holdings.

WORKINGTON. *Cinema and Shops.* The Workington Corporation has passed plans for the erection of a cinema and shops in Murray Road submitted by Graves Cinemas, Ltd.

WOLVERHAMPTON. *Houses, etc.* Plans passed by the Wolverhampton Corporation : House and surgery, New Road, off Hollybush Lane, Dr. H. L. Spackman; 52 houses, off Hollybush Lane, Messrs. A. M. Griffiths and Son, Ltd.; factory, Pool Street, Mr. C. G. Blane; 10 houses, Trysull Road, Merry Hill, Mr. H. Webberley nurses' home, Albany Road, for Governors; 10 houses, Linton Road, Woodlands Estate, Mr. J. C. Handy; 72 houses, Vicarage Estate, off Prestwood Road, Bushbury Estate and Building Co.; six houses, Deans Road, Heath Town, Mr. E. Egginton.

WOLVERHAMPTON. *Houses.* The Wolverhampton Corporation is to erect 66 houses in Springfield Road at a cost of £24,232.

NORTHERN COUNTIES

BARROW-IN-FURNESS. *Flats.* The Barrow-in-Furness Corporation is to erect 100 flats for aged persons, 50 three-bedroom type houses and 44 four-bedroom type houses, on the Vulcan Works site.

BLACKPOOL. *Fire Station.* The Blackpool Corporation has purchased a site in Lytham Road for the erection of a sub fire station.

LANCASHIRE. *School Clinic, etc.* The Lancashire Education Committee has purchased land at Fleetwood for the erection of a school clinic and child welfare centre.

LANCASHIRE. *School.* The Lancashire Education Committee is to erect a senior school on the Long View Farm Estate, Huyton, at a cost of £51,100.

LANCASHIRE. *Extensions.* The Lancashire Education Committee is to extend the Lancaster Girls' Grammar School at a cost of £15,903.

LANCASHIRE. *School.* The Lancashire Education Committee is to erect a grammar school at Colne at a cost of £49,524.

NOTTINGHAM. *County Hall.* The Notts C.C. reports that Mr. E. Vincent Harris, O.B.E., F.R.I.B.A., has agreed to act as architect for the purposes of the new county hall and offices to be erected at Nottingham.

RAWTENSTALL. *Maternity and Child Welfare Centre.* Rawtenstall Corporation has appointed a committee to consider and report upon arrangements for establishing a maternity and child welfare centre at Waterfoot.

RAWTENSTALL. *Houses.* Rawtenstall Corporation has accepted the tender of Messrs. Henry Trickett and Son, Ltd., Crawshawbooth, for the erection of 58 houses on the Hall Carr estate.

SHEFFIELD. *Houses, etc.* Plans passed by the Sheffield Corporation : Five houses, Bocking Lane, Mr. W. C. Mander; 238 houses (including 52 flats), Parson Cross Estate, for the Corporation Estates Committee; six houses, Norton Lane, Mr. W. Croft; nine houses, Walkley Bank Road, Mr. J. Samuel; 73 houses, Handsworth Crescent, Messrs. W. and E. Sadler, Ltd.; 12 houses, Redmires Road, for the Health Committee; 112 flats, Bernard Street, Corporation Estates Committee; eight houses, Westwick Road, Mr. W. Redmile; six houses, Westwick Road, Mr. R. Jones; 10 houses, Park Road, Mr. G. E. Marlow; six houses, Luke Road, Messrs. E. Butcher and Sons; 20 houses, Ledstone Road, Mr. C. W. Alflat; cinema, Beck Road, Messrs. Drury and Gomersall; house, Ringinglowe Road, Mr. W. Green; 24 houses, Edgedale Road, Messrs. A. Bradbury and Son; six houses, Causeway Head Road, Mr. C. Hatton; six shops, Baslow Road, Mr. C. L. Marcroft.

SHEFFIELD. *Cinema.* The Sheffield Corporation has leased land in Toad Hole, Southey Green Road, Parson Cross Estate, to Mr. E. F. MacDonald, as a site for a cinema.

SOUTH SHIELDS. *Public Library.* The South Shields Corporation recommends the erection of a public library at the rear of the town hall, at an estimated cost of £35,000, and that the architectural competition for a new assembly hall (the conditions of which are now in course of preparation) be extended so as to include the design of a new public library.

RATES OF WAGES

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

			I s. d.	II s. d.
A_1	ABERDARE ...	S. Wales & M.	1 5½	1 1½
A	Aberdeen ...	Scotland	1 6½	1 2
A_1	Abergavenny ...	S. Wales & M.	1 6	1 1½
A_2	Abingdon ...	S. Counties	1 5	1 0½
A	Accrington ...	N.W. Counties	1 6½	1 2
A_2	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_2	Appleby ...	N.W. Counties	1 3	11½
A	Ashton-under-Lyne	N.W. Counties	1 6½	1 2
B_1	Aylesbury ...	S. Counties	1 4	1 0
B_1	BANBURY ...	S. Counties	1 4	1 0
B_1	Bangor ...	N.W. Counties	1 4	1 0
A_2	Barnard Castle ...	N.E. Coast	1 5	1 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_2	Bedford ...	E. Counties	1 5½	1 1½
A_2	Berwick-on-Tweed	N.E. Coast	1 5½	1 1½
A_2	Bewdley ...	Mid. Counties	1 5½	1 1½
B_2	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[a] ...	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_2	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_2	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	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_2	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_2	Exeter ...	S.W. Counties	*1 5½	1 1½
B	Exmouth ...	S.W. Counties	1 4½	1 0½
A_2	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_1	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6	1 1½
A	Glasgow ...	Scotland	1 7	1 2½
A	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_2	Grantham ...	Mid. Counties	1 5	1 0½
A	Gravesend ...	S. Counties	1 6	1 1½
A	Greenock ...	Scotland	*1 6½	1 2
A	Grimsby ...	Mid. Counties	1 6½	1 2
B	Guildford ...	S. Counties	1 4½	1 0½
A	HALIFAX ...	Yorkshire	1 6½	1 2
A	Hanley ...	Mid. Counties	1 6½	1 2
A	Harrogate ...	Yorkshire	1 6½	1 2
A	Hartlepools ...	N.E. Coast	1 6½	1 2
B	Harwich ...	E. Counties	1 4½	1 0½
B_1	Hastings ...	S. Counties	1 4	1 0
A_2	Hatfield ...	S. Counties	1 5½	1 1½
B	Hereford ...	S.W. Counties	1 4½	1 0½
A	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_2	Kendal ...	N.W. Counties	1 5	1 0½
A_2	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	Maidstone ...	S. Counties	1 5	1 0½
A_2	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 Shields...	N.E. Coast	1 6½	1 2
A	North Staffs ...	Mid. Counties	1 6½	1 2
A_1	Norwich ...	E. Counties	1 6	1 1½
A	Nottingham ...	Mid. Counties	1 6½	1 2
A	Nuneaton ...	Mid. Counties	1 6½	1 2
A	OAKHAM ...	Mid. Counties	1 5	1 0½
A	Oldham ...	N.W. Counties	1 6½	1 2
A_2	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	Peterborough	E. Counties	1 6	1 1
A	Plymouth ...	S.W. Counties	*1 6½	1 2½
A	Pontefract ...	Yorkshire	1 6½	1 1
A_1	Pontypridd ...	S. Wales & M.	1 6	1 1½
A	Portsmouth ...	S. Counties	1 5½	1 2½
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_2	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	Teeside 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_2	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_2	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

MATERIALS

EXCAVATOR AND CONCRETOR

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

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

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

BRICKLAYER

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

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" " 2nds	" "			4
Mahogany, Honduras	" "		1	3
" African	" "		1	1
" Cuban	" "		2	6
Oak, plain American	" "		1	0
" Figured "	" "		1	3
" plain Japanese	" "		1	2
" Figured "	" "		1	5
" Austrian wainscot	" "		1	6
" English	" "		1	11
Pine, Yellow	" "		1	0
" Oregon	" "			4
" British Columbian	" "			4
Teak, Moulmein	" "		1	3
" Burma	" "		1	2
Walnut, American	" "		2	3
" French	" "		2	3
Whitewood, American	" "		1	1
Deal floorings, ¾"	Sq.		18	6
" ⅞"	"	1	1	6
" 1"	"	1	2	0
" 1¼"	"	1	5	0
" 1½"	"	1	10	0
Deal matchings, ¾"	"		14	0
" ⅞"	"		15	6
" 1"	"	1	4	0
Rough boarding, ¾"	"		16	0
" 1"	"		18	0
" 1½"	"	1	6	0

Plywood, per ft. sup.

Thickness	¼" A	¼" B	¼" BB	⅜" A	⅜" B	⅜" BB	½" A	½" B	½" BB	¾" A	¾" B	¾" BB	1" A	1" B	1" BB
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2¾	7	5	4	8	6	5			
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–			
Oregon Pine	–	2½	–	3	2¾	–	4	3½	–	5	4½	–			
Gaboon Mahogany	4	3¼	–	5	4½	–	7	6½	–	8	7	–			
Figured Oak	6½	5	–	7½	5½	–	10	8	–	1/–	9	–			

Scotch glue lb. 8d.

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"	1½"	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/–	1/–
Flanges	9	1/–	1/4	1/9	2/9
Caps	3½	5	8	1/–	1/–
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.

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

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

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ⅜"	cwt.	9	6
" " ¼"	"	9	6
" " 1"	"	9	6
" " 1¼"	"	9	6
" " ⅛"	"	4	6

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

PLUMBER

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

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

PLASTERER

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

GLAZIER

	s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.	s. F.S.			2½
" " 26 oz. " "	"			3
Flemish, Arctic, Figures (white)*	"			7
Blazoned glasses	"		2	6
Reeded : Cross Reeded	"			11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"			6
Crown sheet glass (n/e 12" × 10")	"		2	0
Flashed opals (white and coloured)	"	1 0 and	2	0
⅛" rough cast ; rolled plate	"			5½
¼" wired cast ; wired rolled	"			9½
¼" Georgian wired cast	"			11
¼" Polished plate, n/e 1 ft.	"	†10 to	‡1	1
" " 2 "	"	†1 2 "	‡1	4
" " 4 "	"	†2 3 "	‡2	6
" " 8 "	"	†2 9 "	‡3	2
" " 20 "	"	†3 1 "	‡3	9
" " 45 "	"	†3 3 "	‡4	0
" " 100 "	"	†4 0 "	‡4	10
Vita glass, sheet, n/e 1 ft.	"		1	0
" " " 2 ft.	"		1	3
" " " over 2 ft.	"		1	9
" " plate, n/e 1 ft.	"		1	6
" " " 2 ft.	"		3	0
" " " 5 ft.	"		4	0
" " " 7 ft.	"		5	0
" " " 15 ft.	"		6	0
" " " over 15 ft.	"		7	6
"Calorex" sheet 21 oz., and 32 oz.	"	2 6 and	3	6
" rough cast 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.			1½
Extra over fletton brickwork for picked stock facings and pointing	,,			8
,, ,, ,, red brick facings and pointing	,,			11
,, ,, ,, blue brick facings and pointing	,,		1	4
,, ,, ,, glazed brick facings and pointing	,,		3	6
Tuck pointing	,,			7½
Weather pointing in cement	,,			3
Slate dampcourse	,,			10
Vertical dampcourse	,,		1	1

ASPHALTER		s.	d.
½″ Horizontal dampcourse	Y.S.	4	9
½″ Vertical dampcourse	,,	7	9
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 labour, hoisting, fixing and cleaning down, complete	F.C.	17	9	
Bath stone and do., all as last	,,	13	6	
Artificial stone and do.	,,	13	0	
York stone templates, fixed complete	,,	10	6	
,, thresholds	,,	13	6	
,, sills	,,	1	0	6

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

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

CARPENTER AND JOINER—*continued*		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, ⅜″ 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
1¼″ deal moulded wall strings	,,	2	1
1¼″ ,, outer strings	,,	2	4
Ends of treads and risers housed to string	Each	1	9
3″ × 2″ deal moulded handrail	F.R.	1	3
1″ × 1″ deal balusters and housing each end	Each	2	0
1½″ × 1½″ ,, ,, ,,	,,	2	9
3″ × 3″ deal wrought framed newels	F.R.	1	3
Extra only for newel caps	Each	6	0
Do., pendants	,,	6	0

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

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

Lead service pipe and fixing with pipe hooks	F.R.	½″ s.	d.	¾″ s.	d.	1″ s.	d.	1¼″ s.	d.	2″ s.	d.	4″ s.	d.
		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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RECOMMENDATIONS FOR STAIRWAYS AND RAMPS:

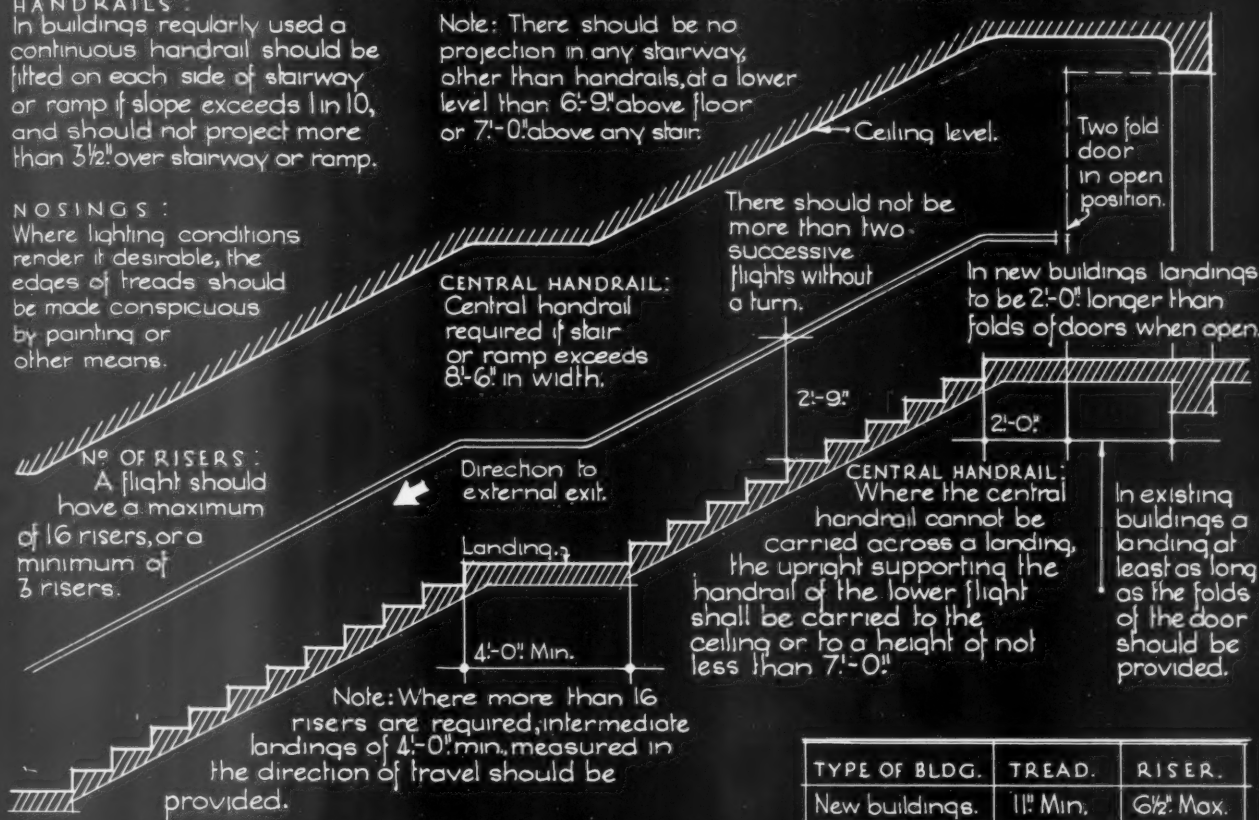
HANDRAILS:
In buildings regularly used a continuous handrail should be fitted on each side of stairway or ramp if slope exceeds 1 in 10, and should not project more than 3½" over stairway or ramp.

Note: There should be no projection in any stairway, other than handrails, at a lower level than 6'-9" above floor or 7'-0" above any stair.

NOSINGS:
Where lighting conditions render it desirable, the edges of treads should be made conspicuous by painting or other means.

CENTRAL HANDRAIL:
Central handrail required if stair or ramp exceeds 8'-6" in width.

Nº OF RISERS:
A flight should have a maximum of 16 risers, or a minimum of 3 risers.



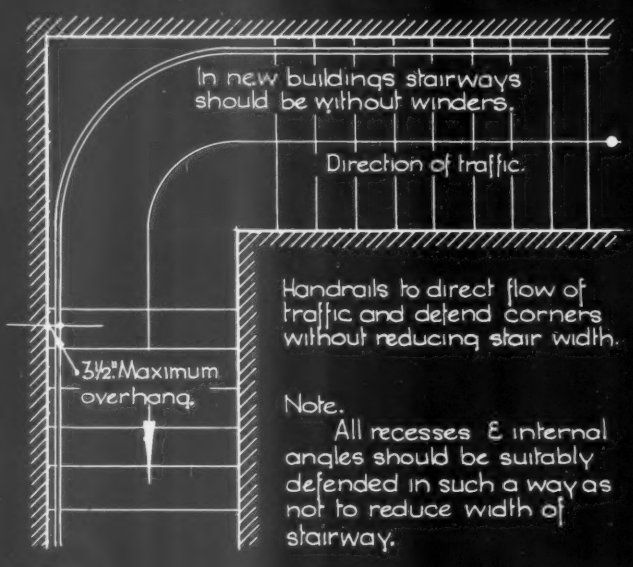
CENTRAL HANDRAIL:
Where the central handrail cannot be carried across a landing, the upright supporting the handrail of the lower flight shall be carried to the ceiling or to a height of not less than 7'-0"

In existing buildings a landing at least as long as the folds of the door should be provided.

Note: Where more than 16 risers are required, intermediate landings of 4'-0" min. measured in the direction of travel should be provided.

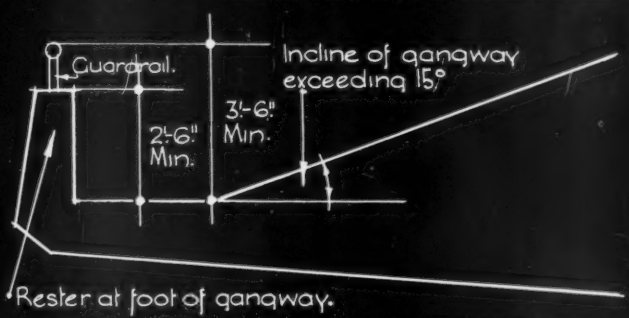
TYPICAL SECTION THROUGH A STAIRWAY.

TYPE OF BLDG.	TREAD.	RISER.
New buildings.	11" Min.	6½" Max.
Old buildings	10½" Min.	7" Max.



Handrails to direct flow of traffic and defend corners without reducing stair width.

Note.
All recesses & internal angles should be suitably defended in such a way as not to reduce width of stairway.



SECTION THROUGH A GANGWAY IN A CIRCLE OR GALLERY.

GUARD RAILS:
Guard rails 3'-6" minimum height above floor level should be provided on the resters at the foot of gangways in circles and galleries or areas where the incline of the gangway exceeds 15°. The resters should be 2'-6" minimum height from floor level.

TIERS:
The slope of the tiers in existing buildings should not be greater than 35° from the horizontal.
In new buildings the slope should not be greater than 30°.

Note.
For notes on steps in corridors & passages, outside stairways, obstruction of stairways & ramps, and further notes on use of steps and ramps in gangways, see back of this sheet.

Extract from the "Manual of Safety Requirements in Theatres & other Places of Public Entertainment." (Home Office) 1934.

INFORMATION SHEET: PLANNING DATA: PLACES OF PUBLIC ENTERTAINMENT: Nº 5.

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

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PLACES OF PUBLIC ENTERTAINMENT—V

Subject : Stairways and Ramps

When more than four lines of traffic are provided for on a stairway (i.e., about 8 ft. 6 ins. of stairway width), a central handrail is necessary, but it must not end in a support so low that it can be obscured from view by persons approaching it.

The practice of installing a flight of steps from an exit door without any landing is quite common. The steps may be only a few feet high, but persons are very apt to fall unless a landing is provided.

Obstruction of Stairways and Ramps :

Pay boxes and check boxes shall be fixed in such a way as not to obstruct stairways or ramps.

Provision for hanging coats, etc., shall not be made in stairways or ramps.

Where advertising boards or easels are placed in a vestibule, lobby, crush hall or similar space, they shall be railed off from areas traversed by the public or properly secured so as not to affect egress.

Use of Steps and Ramps in Gangways :

(*a*) In new buildings steps shall not be used to overcome differences in level in a gangway unless the slope of such gangway exceeds 1 in 10.

(*b*) Where steps of a pitch exceeding 30 degrees or ramps of a slope exceeding 1 in 10 are provided in gangways flanking the seating suitable handrails shall be provided.

(*c*) Where such a gangway intersecting the seating is more than 8 ft. 6 ins. in width, a central handrail shall be provided.

(*d*) The treads of steps in gangways shall be rendered and maintained in a non-slippery condition, and the edges of such steps shall be made conspicuous by painting or other means.

(*e*) Requirements (*b*) and (*c*) shall not apply to premises occasionally used.

Steps in Corridors and Passages :

The danger of a single step is often not realized. Movement of persons up or down a group of not less than three steps will be so obvious to those following that they will be prepared for the descent, but movement down one step is not so readily observed and may easily lead to falls.

(*a*) In new buildings steps shall not be employed to overcome differences of level in corridors and passages unless the provision of inclines or ramps of a gradient not exceeding 1 in 10 is impracticable ; single steps shall not be employed, and not less than three risers shall be employed at any one point.

(*b*) All corridors and passages shall be level for a distance of 5 ft. in each direction from any steps.

Outside Stairways :

Outside iron stairways are not common in this country in places of public assembly, and there is little to recommend them.

(*a*) Outside stairways for the use of the public, if intended for more than summer use, shall be protected from snow or rain.

(*b*) Outside iron stairways shall not be allowed except as an expedient to remedy deficiencies in the exit capacity of existing buildings, or in new buildings accommodating less than 300 persons. Where allowed, they shall be arranged to pass well clear of all windows, or such windows shall be fitted with fire-resisting glazing in fixed metal frames.

(*c*) Outside iron stairways may be of the return platform or straight run type. Spiral stairs or ladders shall not be allowed for use by the audience.

(*d*) No outside stairway shall be so arranged as to reduce the width of an external passageway below that required by the Manual, nor so as to discharge against or across the direction of exit in such passageway.

Outside Ramps :

Ramps of a slope not exceeding 1 in 10 may be employed in lieu of outside stairways.

Where employed, ramps shall be maintained with a non-slipping surface and, if the slope is greater than 1 in 12, handrails shall be provided as for stairs.

The material given on this sheet is taken from the Manual of Safety Requirements in Theatres and other places of Public Entertainment, published by the Home Office, 1935.

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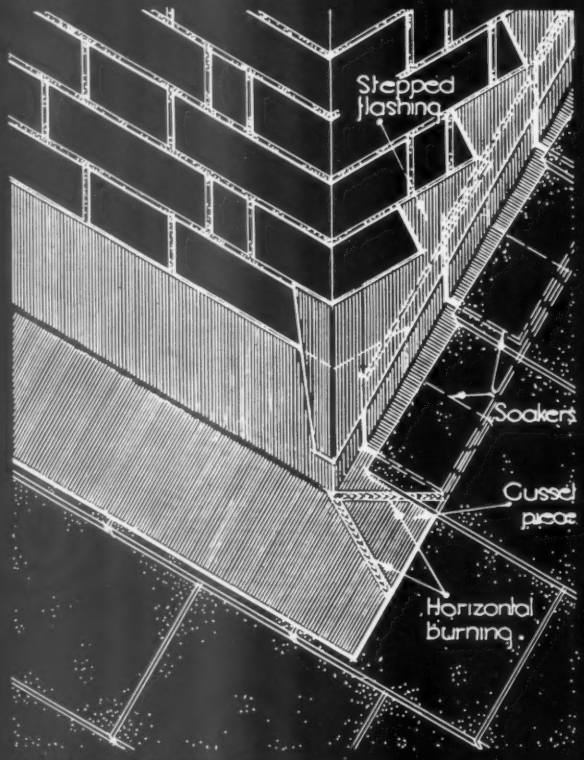
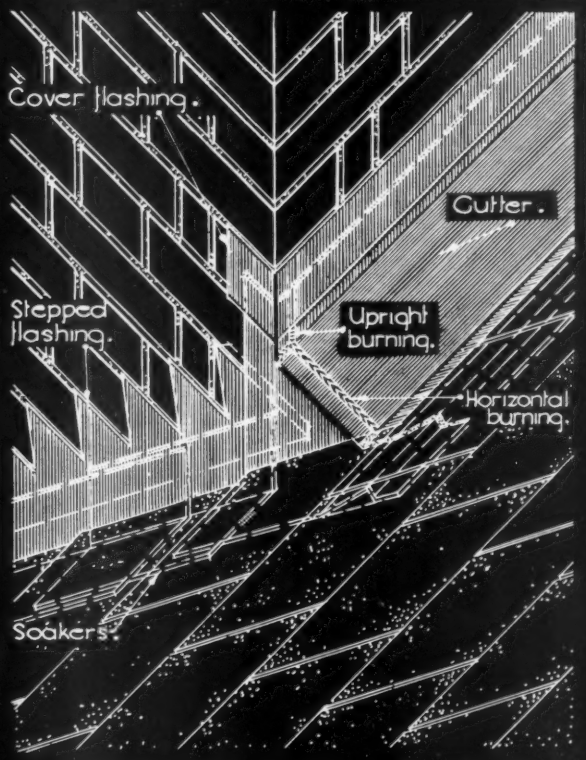
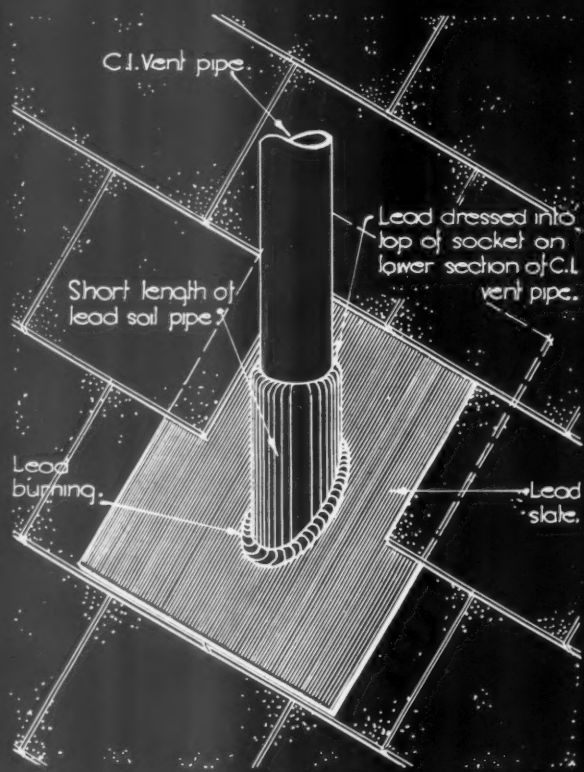
ISOMETRIC DETAILS OF LEADBURNING FOR ROOF AND GUTTER FLASHING.



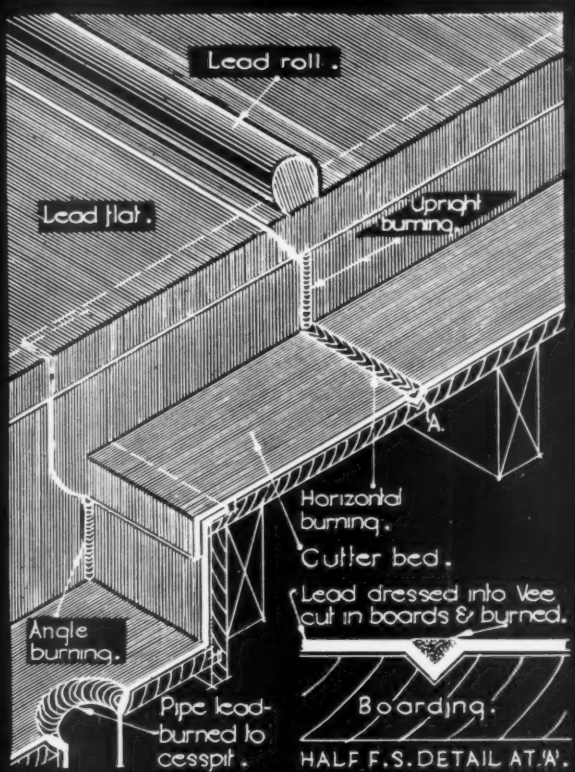
APRON FLASHING TO FOOT OF CHIMNEY STACK.



CUTTER AT BACK OF CHIMNEY STACK.



LEAD SLATE TO CAST IRON VENT PIPE.



BOX CUTTER, CESSPIT, AND DOWN PIPE.

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

INFORMATION SHEET: TYPES AND APPLICATION OF LEADBURNED JOINTS No. 2.

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

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INFORMATION SHEET

• 434 •

PLUMBING

Subject : Lead Burning

This Sheet, the second of two devoted to the types of lead burned joints and their application in building work, shows a number of lead burned flashings in roofing work.

Lead Burning in Roofing Work :

In the details given, it will be seen that all shaped leadwork has been shown to be built-up from geometrical shapes of lead sheet joined together with burned seams. This method of forming flashings renders unnecessary the slow and laborious "beating up" of the lead to the shape required; it it also ensures that the lead remains of uniform thickness throughout. In using the "beating up" method the lead has a tendency to draw out thin on corners and other parts unless the leadworker is not only competent but conscientious.

Corner Seams :

The internal vertical corner seam shown in the detail of the cesspit is carried out in this manner if the leadwork is prepared beforehand and then fitted in position. When the seam must be made in situ a lapped upright burned joint is adopted.

Equipment :

The equipment required for this class of lead burning consists mainly of two gas cylinders and the necessary tubes and jet.
These are now produced in small portable sizes suitable for in situ work on roofs and other constructions.

Previous Sheets :

Sheets already published are :—

No. 225	Details of joints
,, 234	,, ,,
,, 243	,, ,,
,, 251	,, ,,
,, 259	Weldable fittings
,, 268	,, ,,
,, 321	,, ,,
,, 413	Plumbing in welded copper (1)
,, 418	,, ,, ,, (2)
,, 422	Sheet copper work (1)
,, 428	,, ,, ,, (2)
,, 432	Lead burning (1)

Issued by : The British Oxygen Co., Ltd.
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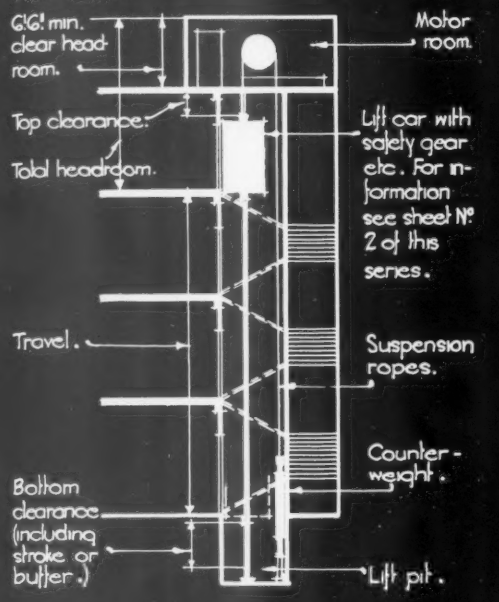
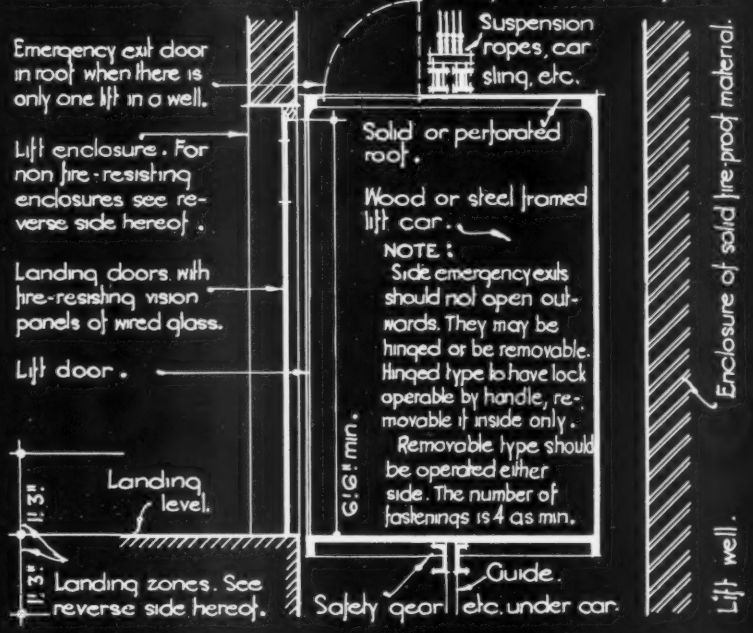
RECOMMENDATIONS FOR THE INSTALLATION OF LIFTS :

DIAGRAMMATIC TYPICAL SECTION THRO' LIFT WELL :



DIAGRAMMATIC SECTION OF LIFT CAR, ENCLOSURE, ETC:



GUIDES :

Guides should be of steel in all cases except where the nature of the process in the building renders these unsuitable due to acid fumes or similar causes. For speeds exceeding 200 feet per minute T-section guides are recommended.

Guides should continue the whole length of the lift well & be provided with adequate iron or steel brackets or equivalent fixings, designed & spaced so that deflection is 1/4" max. under normal operation. Guides should withstand safety gear action when stopping counterweight or fully loaded car.

NOTE: for information on lift cars, pits, inspection maintenance, suspension ropes, etc. see over leaf.

NOTE: Lift wells, together with whole of lift equipment should be fire-resisting to the greatest possible extent.

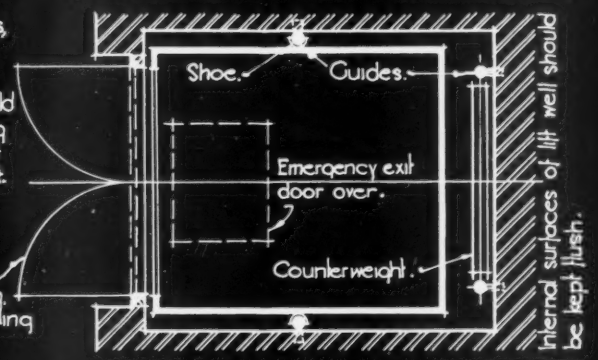


TABLE SHOWING MINIMUM CLEARANCES FOR CARS AND COUNTERWEIGHTS :

CONTRACT SPEED Feet per min.	TOP CLEARANCE.		BOTTOM CLEARANCE.		
	CAR.		COUNTERWEIGHT.		CAR.
	Trachon.	Drum.	Trachon.	Drum.	Trachon & Drum.
0 to 80.	1'6"	2'6"	1'0"	2'0"	1'6"
81 " 125.	2'0"	3'0"	1'0"	2'0"	1'6"
126 " 200.	3'0"	4'0"	1'6"	3'0"	2'0"
201 " 300.	4'0"	5'4"	2'0"	4'0"	2'6"
301 " 400.	5'0"		2'6"		2'9"
401 " 500.	6'0"		3'0"		3'3"
501 " 600.	7'0"		3'6"		3'9"
601 " 700.	8'0"		4'0"		4'3"
701 " 800.	9'6"		4'9"		4'9"

TOP CLEARANCE OF

THE LIFT CAR : The distance the car floor can travel above upper terminal landing without any part of the car or its attachments coming in contact with overhead structure.

THE COUNTERWEIGHT : Shortest vertical distance between counterweight structure & nearest part of overhead structure when car is level with bottom terminal landing.

BOTTOM CLEARANCE OF,

THE LIFT CAR : The distance, including any buffer compression, which the car floor can travel below lower landing without any part of the car or its attachments coming in contact with any fixed obstruction.

THE COUNTERWEIGHT : The shortest vertical distance between counterweight & any fixed structure below it when car floor is level with top landing.

Top clearance of service lifts for trachon drive is 1'6" min. & for drum drive 2'0" min. Bottom clearance 1'6" min.

NOTE: Top clearance of counterweight should be 6" greater than bottom clearance of the car for contract speeds up to 250' per minute & 9" greater for contract speeds over 250' per minute.

Information from the "Code of Practice for the Installation of Lifts and Escalators", by permission of the Building Industries National Council.

INFORMATION SHEET : LIFTS No 1 : CAR & COUNTERWEIGHT CLEARANCES & LIFT EQUIPMENT:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne.

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INFORMATION SHEET

• 435 •

LIFTS—I

Summary of some Recommendations given in the B.I.N.C. Code

Lift Wells :

(*a*) Lift wells should be reserved for lifts and lift equipment only.

(*b*) Wells should have flush sides as far as possible, any projections should be bevelled at 60 to the horizontal.

(*c*) Wells, lifts and equipment should be fire resisting.

Lift Enclosures :

(*a*) If not fire resisting should be carried up at least 7 ft. on all sides and 7 ft. from the centre of treads where against stairs.

(*b*) Gates should be close picket type, openings up to 1 ft. 6 ins. from the floor not to exceed 2½ ins. in width.

(*c*) Enclosures on the loading side should be carried up to ceiling across full width of car opening. On the top floor enclosure may terminate at the height of the car opening. Enclosure on sides used for loading should not be more than 5 ins. from the edge of the platform.

(*d*) Wire mesh, if used, to be not greater than 1½ ins.

(*e*) Area adjoining moving equipment fixed less than 2 ins. from the enclosure grille is to be further protected with mesh not greater than ½ in., of wire not smaller than 20 s.w.g.

(*f*) Doors in wells with solid walls should have small wired glass vision panels.

(*g*) Doors or shutters should not be used on any opening giving access to an exit from the building if operated by a fusible link or other device depending on the action of heat.

(*h*) Counter-weights should travel in the same well as the lift they serve.

(*i*) Where there is more than one lift each counter-weight should be independently arranged and guarded to prevent accident.

Lift Pits :

(*a*) Pits should be provided to all lifts with a travel of more than 15 ft.

(*b*) Pits should be dry, with permanent drainage if necessary.

(*c*) Rooms, passages or thoroughfares are undesirable under lift pits and should not be so placed unless the counter-weight is fitted with safety gear.

For table of clearances for cars and counter-weights see the front of this sheet.

Suspension Ropes :

In the Code the use of chain suspension is not permitted and a series of safety requirements for rope suspension is given.

Landing Zones :

The landing zone should be held to mean the space between positions not more than 15 ins. above and below the landing level. The car should not be capable of being moved or kept in motion between landing zones unless the landing gates, doors or shutters are closed.

Lift Cars :

(*a*) Cars should be enclosed on all sides by enclosures or gates not less than 6 ft. 6 ins. high. The roof, if perforated, should give adequate protection to the occupants.

(*b*) Every car with automatic control should be fitted with an alarm bell or telephone for use in emergency.

(*c*) Every car should be fitted with a light to burn during the whole time the lift is available for use, switch preferably not in the car, and of key or secret pattern.

(*d*) Passenger lifts should be fitted with an emergency exit. In single lift wells this exit should be in the roof of the car.

(*e*) Top exits should open out.

(*f*) Side exits may be hinged or removable but should not open out. Removable panels should have at least four fastenings removable from either inside or out, and not likely to be accidentally displaced.

Hinged panels should have a lock with a handle outside and a removable handle or key inside.

(*g*) Every car should have a car door to guard the full opening and should be fitted with an electric contact device to prevent car movement unless the door is closed.

(*h*) Cars fitted with levelling devices must be fitted with aprons to ensure that no space is permitted between the car floor and the landing during levelling.

Motor Rooms and Overhead Structures :

(*a*) All equipment except that required in the well should be fitted in the motor room.

(*b*) The motor generators controlling the speed of multi-voltage or variable voltage machines, etc., may be in a situation other than the main motor room, properly lighted, ventilated, weather-proofed and fire-proofed.

(*c*) Motor room floor should be designed to carry at any point the heaviest machine unit to be used.

(*d*) Headroom should be sufficient to allow hoisting of machines for repairs, and never less than 6 ft. 6 ins.

(*e*) Motor rooms should be lighted and adequately ventilated. One fixed light and one plug socket should be provided for each two or less machines.

(*f*) Exit openings should be large enough to allow for the removal of machines—means of access should be permanent.

(*g*) Motor rooms should be kept locked and should not be used as store rooms. A danger notice should be displayed if current used is over 250 volts D.C. or 125 volts A.C.

Overhead Pulleys :

Should be well lighted and accessible and a guard rail should be provided where the floor does not extend over the full area of the lift well.

Inspection, Maintenance and Insurance :

(*a*) A contract should be made, preferably with the makers, for maintenance and regular inspection.

(*b*) Every lift should be insured before use, the policy should require inspection to be carried out by the Insurance office at least three times a year.

(*c*) All lifts should be fully tested, and a certificate on the result issued at least every three years.

The material given on this sheet has been taken from the "Code of practice for the installation of lifts and escalators" issued by the Building Industries National Council.

The diagrams and notes given here are an interpretation and a summary of the provisions of the Code; for full details reference should be made to the Code itself, copies of which are obtainable from the Council. (Price 1s. 3d.)