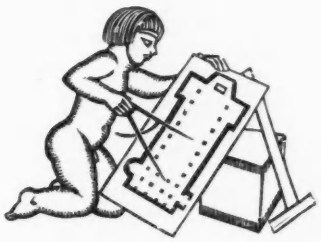
THE ARCHITECTS' JOURNAL



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MR. G. A. T. MIDDLETON'S next article on BUILDING AND DECORATIVE TIMBERS will appear on October 6 next. Meanwhile Mr. John Swarbrick will, next Wednesday, resume his invaluable series of articles on EASEMENTS OF LIGHT, the first part of which appeared on August 4, 11, and 18. His fifth and concluding article will follow in our issue for September 22.

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CHRISTIAN BARMAN, *Editor*

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

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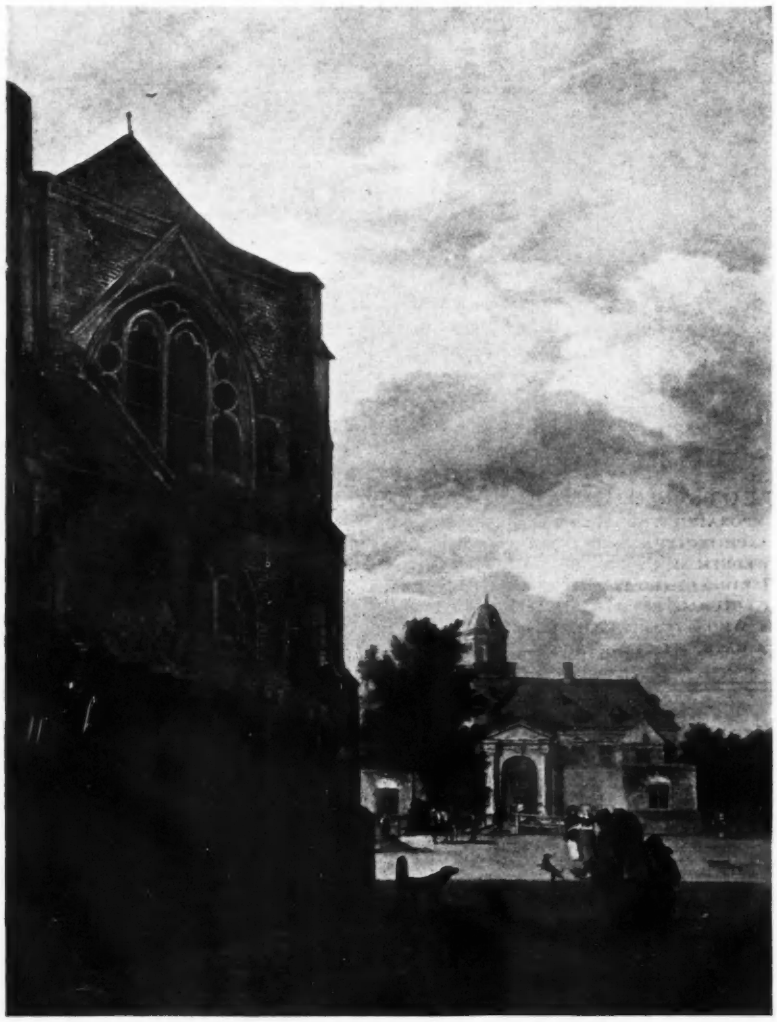


RENDERINGS OF ARCHITECTURE

Selected and annotated by Dr. Tancred Borenius.

xxxiv : Jan van der Heyden (1637-1712).
Street in a Town.

Among the Dutch seventeenth-century painters of topographical subjects, Jan van der Heyden undoubtedly holds a very distinguished place. He has been called the Canaletto of Holland, and he certainly presents a striking analogy to the great eighteenth-century Venetian in this, that an extraordinary minuteness of topographical accuracy does not interfere with a sense of atmosphere and of effective composition. Jan van der Heyden was a much-travelled man, and the majority of his pictures represent definite localities, either in Holland or elsewhere ; in the present example the artist has doubtless also chosen his subject from reality, though the city still remains unidentified. For simple and striking massing and contrasting of lights and darks this picture must be classed among the happiest efforts of its author, and it also shows the extraordinary vitality of his touch, though you may count the bricks in the fine old Gothic minster.—[National Gallery, No. 994.]

THE ARCHITECTS' JOURNAL

Wednesday, September 8th, 1926

TWO GATES TO ARCHITECTURE

THERE has never been an age in which so much attention has been paid to architectural education. The theory and methods of such education are the subject of endless inquiry, and on the administrative side reforms are constantly being inaugurated. If a great twentieth-century architecture does not result from these endeavours, we shall be convicted of a failure all the more colossal in that it is not the result of negligence (a fault which is easily curable), but to a fundamental intellectual weakness, to an inability, in fact, to understand what great architecture is. If, having willed the end we do not will the means, we convict ourselves of being ignorant of that end, for although this may seem a hard saying, *knowledge* of the end, if it be genuine, includes knowledge of the means.

Let us state definitely, then, that the end of architectural education is not the production of architects or even of great architects, but the production of great architecture. There is a certain objective reality, an achievement of design in three-dimensional space, which constitutes architecture, and the way to appraise the degree of architectural talent possessed by practitioners of to-day is to look at our cities, towns, and villages and ask ourselves the stern question: " Are they getting more beautiful or uglier as the result of the modern buildings which we erect ? " If we come to the conclusion that a process of uglification is now taking place, it is utterly useless for us to lay the blame upon the general public, or upon men of commerce, or upon any other body of people outside the architectural profession itself. The whole responsibility for the welfare of the arts rests with artists themselves, and it is not permitted to them to delegate to others any part of this responsibility. It is surely a recognition of this fact that has induced the Royal Institute of British Architects to reconstitute the Board of Architectural Education as a central authority advising on architectural education throughout the kingdom and in the Dominions. The Board has wisely concentrated its attention upon two main questions. It first decides: " *Who* are to be encouraged to devote themselves to the profession of architecture ? " and having chosen a suitable body of students, it then proceeds to devise means of encouraging superior talent among these students to declare itself. The problem of the personnel of the architectural profession is always a difficult one, and no independent observer can say that at the present moment it is being satisfactorily solved. The students are classified into two groups: those who attend some recognized architectural school, and those who still accept the old pupilage system or who enter offices as junior clerks or draughtsmen and gradually equip themselves for the practice of architecture.

As the R.I.B.A. cannot hope immediately to eliminate this latter class (though it would perhaps like to do so), it has decided to compromise with the pupilage system and to mitigate some of its obvious shortcomings. All members of the R.I.B.A. have been informed that it is their duty to give to their pupils reasonable facilities for carrying out their studies, and for the guidance of members who accept pupils in districts where professional school education is not available an outline course of study has been drawn up. This document points out that the suggested course cannot be expected to give results equal to those normally attained in the recognized schools, and strongly advises architects to draw the attention of prospective pupils to this point. It further urges that pupils on completion of articles be advised to take a course of full-time study in a recognized school. Unfortunately, there are many cases of capable students leaving the secondary schools who are anxious to take up architecture, but who cannot afford to live away from home in order to attend a school of architecture. The R.I.B.A. is taking up this question vigorously, and is not only giving considerable publicity to scholarships provided by the various leading schools of architecture, but has already produced a scheme of valuable scholarships of its own. But while suitable steps are being taken to encourage clever boys to enter the architectural profession, it is perhaps questionable whether sufficiently drastic means are adopted for the purpose of excluding from the profession certain types of youths who are totally unfitted for it. And here it is possible to suggest that the R.I.B.A. might do something more than it has already done to strengthen the hands of the schools. It is notorious that the very moderate educational test now imposed by the schools upon candidates for admission largely fails to exclude from the profession those who are deficient in general intelligence and who, for this reason are, to say the least of it, unlikely to become skilled in design; for a certain number of architects are willing to accept as articled pupils these same rejected students who are thus after all allowed to swell the ranks of the profession. It is clear that there should be an educational test not only for the entrants into the school, but for articled pupils as well.

Although great strides have been made in recent years, it must be confessed that architectural education is still in an immature state. The public will never be convinced of its adequacy until it is based upon a theory of design capable of winning the intellectual respect of the public itself.

NEWS AND TOPICS

THE THAMES BRIDGES COMMISSION — ROMAN RICHBOROUGH — ABOLITION OF SLUMS — ANOTHER WATERLOO —WHO BUYS ENGLAND?—THE NEW RURAL SOCIETY

THE *Times* of August 26 published the names of several persons who are to give evidence before the Royal Commission. To Mr. Basil Mott, engineer to the City Corporation for the proposed St. Paul's Bridge, has been entrusted the task of speaking " on the technical problems involved (including the safety of the Cathedral)." The *Times* probably did not intend to be ironic when it included the trifling item of the safety of the cathedral in parentheses, but, to judge from recent publications above Mr. Basil Mott's signature, the printer has managed to pack the famous engineer's view of the relative importance of the bridge and of the cathedral into the proverbial nutshell. It is natural for a builder of modern bridges to glorify his own craft; on the other hand, some of those who are interested in the upkeep of the cathedral have been tempted to allow their estimate of the value of the proposed bridge to shrink in proportion to their fears of its damaging effect on Wren's building.

* * *

Both parties must be forgiven if they are heard to articulate some modern equivalent of the old image-maker's cry : " Great is Diana of the Ephesians ! " It is to be hoped that the Commission will realize that the cathedral must be repaired on a comprehensive basis in any case. Even if the St. Paul's Bridge is postponed once more, it is only a question of time before some other modern improvement will be put in hand. It is not a practicable policy to strew the busy City streets with straw while the invalid building is gradually patched to death. It can and must be made strong enough for its purpose and its position.

* * *

Archæological research has received rather more attention of late years, and, indeed, it possesses two obvious claims to popular attention which the preservation of an ancient building often offers, if only the facts were recognized. Detective work and treasure-hunting both have a wide appeal, and an account in the *Observer* of August 29 shows how the tracing of buried Roman walls at Richborough in Kent has been most romantically assisted by the dry weather. In true Sherlock Holmes vein one paragraph is headed: " The clue of the clover," and the feebler growth of vegetation above the dry old walls did actually betray their presence. Richborough contains many remains of buildings beside its fort, and the Society of Antiquaries could make excellent use of any funds that may be given for the purpose in excavating the newly-discovered foundations before modern buildings obliterate them for ever. Detection of structural phenomena, and the discovery of buried treasure in the form of long-forgotten ways of thought in connection with building methods of the architects of past times, are the rewards of the conservator, but it would demand the literary genius of Fabre to put such details before the public in readable form.

In spite of all that has been said and done for housing by the successive Governments that have taken office since the Great War, the housing problem still remains unsolved. Houses, of sorts, have been built both by the private speculator and by various public bodies, with or without the grant of a subsidy, but though the deficiency in housing accommodation may be growing less, the remedy is most certainly not in every case much better than the disease. Quality is necessary as well as quantity, and a certain standard of endurance must be aimed at if only to spread the cost of construction and of the installation of sewerage and essential services over a reasonably long period of years. Cheapness in first cost may prove to have been a Jack-a-Lantern, leading those who follow deeper into the mire.

* * *

There is something rather pathetic in the boast of the Slum Abolition League of Glasgow that " they had a house —the plans for which were approved by the Ministry of Health for England—which could be built at £100 less than any other house now being erected." Neither the hundred pounds reduction nor the approval of the Ministry are really matters for congratulation unless all the other factors of the case are satisfactory. The approval has been given and a subsidy granted, on occasion, for plans which can hardly be regarded in a more optimistic light than as the seeds of future slums. Some houses, already built to plans advertised as having been designed by architects and approved by the Ministry, seem to have no merit except, perhaps, cheapness in first cost. In these slum dwellings of the future the planning is so defective that bedroom slops have to be taken through living-room and scullery, and the housewife's work is magnified out of measure by the ridiculous positions of the various apparatus of the house. In these ill-planned, work-creating types of house, three times the number of steps have to be taken that are needed in a well-designed dwelling in performing the routine of housework. The design of a labour-saving house which is also inexpensive is undoubtedly costly in architect's time, but the Ministry might easily have exercised discretion in granting the subsidy only to houses that were worthy of approval. A more minute and critical inspection of plans would have raised the standard of design throughout the whole country, whereas a lower standard has been accepted.

* * *

It would have been more convenient in several ways if the Waterloo Bridge that spans the Thames had borne in perpetuity the name originally intended for it. " Strand Bridge " would have been void of offence to our French friends, and reduplication of the name would have been equally unobjectionable. As it is there may be, for aught I know, several Waterloo Bridges. I am apprised of at least one rival claimant to the internationally obnoxious name, for a Scottish correspondent sends me the accompanying snapshot of Waterloo Bridge, Inverness. This bridge, he informs me, is the sturdiest of the half-dozen or so that cross the pellucid River Ness, and, as the view shows, has no pretensions to beauty, being but a plain lattice-girder structure, designed by an engineer, John Mackenzie, with Murdoch Paterson as consulting engineer; the contractors having been the Rose Foundry Company, of Inverness. This iron bridge superseded a wooden structure that had occupied the site for nearly ninety years. The present bridge was opened on February 26, 1896,

and, sarcastically adds our correspondent, "as it has no beauty to excite the insane hatred of the destroyer, the new bridge may attain to the age of its predecessor."

* * *

The discovery of a cobble paved way over marshy ground at York revives the question whether ancient road surveying really did consist in climbing a hill and sighting a line across the valley to some other conveniently situated crest. Mr. A. Watkins, in his book *The Old Straight Track*, calls attention to many remains which favour the supposition. Primitive tracks were often merely trodden hard on the uplands, but were paved in marshy valleys to maintain them in passable condition. The hunt for signs of these old leys gives additional interest to rambles on the downs, particularly in autumn, when the harvesting operations have left the fields bare and the slight depression on the line of the old straight track may be detected. As wheeled vehicles came into use, more modern roads were made to wind around the hills instead of over them, but the Edgware Road, with its long, straight march across hill and valley, and its interesting adjustment of alinement on the hilltop at Elstree, is one of the exceptions in which either the primitive track has been adopted, or the Romans used, in laying out the road, the same simple principle of sighting a straight line. The discovery of a Celtic settlement on a ley running from the site of Hadleigh Castle to the Abbey and Cathedral of Bury St. Edmunds is reported at Wickham Bishops, Essex, by Mr. A. H. Mackmurdo.

* * *

The series of Sussex cliffs known as "The Seven Sisters" was probably one of the first landmarks from the sea to guide to our shores those ancient traders and invaders who now lie dreaming under the downland grass. The land about is so historically precious that it is a wonder, as Kipling says, "the very earth does not bleed." Here are neolithic earthworks, traces of early British agriculture, Saxon remains, innumerable barrows, "and tracks which were immemorial when the Romans came." To preserve such things many of us, architects though we are, would see the great cathedrals fall in ruins before our eyes. The fourth of the "Sisters," counting from Cuckmere, is known as Crowlink Point, and between it and the next cliff eastwards is a narrow valley running inland upon which a London syndicate has laid its hands. Much of the south coast is already ruined: wherever the country has been most beautiful the pink and yellow villas have spread like lupus over the face of the Downs. Yet not only in the south. The English lake district has been affected, the Cotswolds, the Thames valley—there is scarcely a spot in England which is free. Angry questions arise: Who parcels up for common trade property which is rightly possessed only by the people? Who buys? Who sells? Why do societies such as the recently formed Rural England Society have to fight tooth and nail for what should be put right by a Parliamentary Act?

* * *

The facts of the Crowlink scheme are known. A syndicate has control over 345 acres of the coast. The land was bought in May last in the open market, and plans for its "development" were prepared straight away. It was proposed to cut it up into about 200 one-acre building plots, and to make an 18-hole golf course, with club-house in the centre. It was also the purpose of the owners to build an hotel. Eastbourne Corporation, who have purchased Beachy Head and the land up to the boundary of the estate, were offered this land also, but the offer was refused. The price per acre to the local authority is stated to have been £35, but to the ordinary purchaser £150. The fact that this large concession to the public interest was made hardly affects the case. In hundreds of like instances money has been extorted from public bodies under penalty of the heritage of the people being reft from them; many millions of pounds have been silently paid where it should have been possible by law for blackmail proceedings to have been instituted.

* * *

At present we can look for aid to the Societies and to the munificence of private individuals alone. The societies concerned in preserving the distinctive charm of the English countryside and old buildings cannot be oversupported, though their activities should be co-ordinated. There is the Society for the Preservation of Ancient Buildings, there is the Scapa Society, the Commons and Footpaths Preservation Society, while the R.I.B.A. keeps ever a watchful eye even upon things not strictly concerning its own welfare. As an outcome of Mr. Guy Dawber's presidential address last year, a new organization, the Society for the Preservation of Rural England, has been formed. Of the possibilities of this new society some reference will be made in the presidential address to be given by Mr. Dawber at the Institute on Monday, November 1, but its main objects are, briefly, as follow:

1. To organize concerted action to secure the protection of rural scenery and the amenities of country towns and villages from disfigurement or injury.
2. To assist existing organizations to secure the preservation of buildings and places of historic interest or natural beauty.
3. To act as a centre to its constituent members for furnishing or procuring advice and information upon any matters affecting the protection of such amenities and to arouse and educate public opinion in order to ensure the promotion of the objects of the society.

* * *

The need for the preparation of some kind of regional planning scheme to preserve the beauty of the Lake District from being spoiled by indiscriminate building developments was strongly urged at the recent conference at Kendal. The chairman, Major Cropper, said it might be thought they were over-anxious, and were moving before there was need; but that something should be done was obvious from the fact that at present anybody could build a factory on land between Lake Windermere and the road near Low Wood or Ambleside. A resolution was passed in favour of a joint town-planning committee to cover Kendal, Windermere, Ambleside, Grasmere, and the rural parts of South Westmorland. Piecemeal development, as it was urged, is wasteful economics, as well as disastrous to beauty. How imperative it now is that the whole of England should be thus surveyed.

ASTRAGAL

Above, Lloyd Street, looking towards Lloyd Square.

CLERKENWELL IN THE EARLY NINETEENTH CENTURY: iii

[BY G. LL. MORRIS]

HOLFORD, Percy and Vernon Squares, and Percy Circus were all built about the same time as Granville Square, which was finished in 1841. The site of the last named for a number of years was a waste upon which rubbish was shot. It is not large, though the church of St. Philip, in the middle, makes it appear much smaller than it really is.

There is a distressing and depressing air of poverty about this square. The railings protecting the garden and church are constructed of angle irons, and the allotments on the south-east side show a praiseworthy, but pathetic, attempt to make the best of a bad business. This square appears to be the original of Riceyman Square, in Arnold Bennett's novel, *Riceyman Steps*. With certain reservations his description might stand as representative of the conditions of many squares in London, and also the streets of houses erected between 1790 and 1840. He says: "The three-story houses (with areas and basements) were all alike, and were grouped together in sections by triangular pediments with ornamentations thereon in a degenerate Regency style. These pediments and the window-facings and the whole walls up to the beginning of the first floor were stuccoed and painted. In many places the paint was peeling off and the stucco crumbling. The fronts of the doorsteps were green with vegetable growth. Some of the front doors and window-frames could not have been painted for fifteen or twenty years. All the horizontal lines in the architecture had become curved. Long cracks showed in the brickwork where two dwellings met. The fanlights and some of the ironwork feebly recalled the traditions of the eighteenth century." [*Riceyman Steps*, by Arnold Bennett. Page 44.]

Holford Square, close by, is more spacious, less dreary, and treated with some respect for architectural effect. The poverty-stricken condition so noticeable in Granville Square is more marked in many of the smaller streets adjacent to the squares and main streets. Brunswick Close, near and south of Northampton Square; Easton Street, west of Wilmington Square; Medcalf Place, near the Angel, and Brewer Street are examples. All these are flanked by two or three storied dwellings, the latter including the basement (usually all below the street), with areas covered by close iron gratings at the pavement level. These were probably all built between 1820 and 1830. The situation of these small houses rather points to their having been built on spaces originally intended to remain open. The three narrow streets which form Brunswick Close are an example. The very name suggests it, and in Francis's Map of London, dated 1831, it is actually a close, and not the crowded place it is to-day. In Easton Street seventeen of these houses are empty, in St. Helena Street there are five, the latter a street which has been squeezed in after the original lay-out. Several of these streets are in various stages of decay, and it is not uncommon to find a ruin next to an inhabited house.

One may trace the progress of filling up the pleasant green spaces from about 1820 onward—at first by crowding in small dwellings as closely as possible, and latterly by workshops. Alleys like Chapel Row, Fletcher's Row, Vineyard Gardens, Vineyard Walk, Vineyard Mews, Pine Street, Locke Gardens, Rosoman Mews, all south of Exmouth Street, are further examples of crowding. Within this area of courts and alleys the vine at one time flourished

and "fountains of water, sweet, wholesome and clear, streamed from among the glittering pebble-stones." [Description of the Neighbourhood by FitzStephen, A.D. 1190.]

All the streets of small dwellings are not in this condition. In Wynyatt Street they are well built and carefully maintained, the entrance passages are panelled to a height of about 4 ft., and the windows and doors are dressed with rubbed red brickwork. Where this street crosses the end of Upper Smith Street, one of the approaches to Northampton Square, there is an attempt to give a fitting finish to Upper Smith Street by an additional story on the house facing it. Another block of small houses called Pearl Crescent, and dated 1816, is situated in King's Cross Road, facing the western end of Wharton Street. It is five steps below the level of the pavement, and forms a small courtyard paved with stone, and about 10 ft. wide. The steps down to it are at each end, with a flight also in the middle from the roadway.

Though the district of Clerkenwell is not the best example of early nineteenth-century town planning and housing, it is surprising to find there so many streets and squares which still retain on a modest scale the quiet and aristocratic air characteristic of Bedford, Mecklenburg, and some of the other West End squares. Myddelton, Claremont and Wilmington Squares, Upper and Lower Chadwell Street, River Street, parts of Pentonville Road, Spencer and Wynyatt Streets are all good examples, nor is the Clerkenwell district singular in this respect. There are suburbs in the south, south-eastern and south-western sides of London. In all of them the classic tradition, or what remained of it, still influenced the lay-out and character of the houses. Their attraction lies, not only in their simplicity and good proportions, but also in their suitability for street architecture. It is easy to picture the quiet, yet telling, effect produced by such streets terminating in a church or other public building of a more impressive kind.

Without making any extravagant claim for the architecture of these houses, it has merits which have been too often and too long overlooked. Mr. R. H. Mattock, writing on town planning in relation to housing and the provision of open spaces, observes that "we left the track when we gave up following the lead of the builders of the Georgian squares. Let us get back to it," he continues, "and make our cities really cities in scale and character, having the more ordered beauty of civic architecture, with here and there the natural beauty to bring it out in finer contrast." [*Town Planning Review*, December, 1920.] These houses cover large tracts of ground, the majority of them built between the years 1800 and 1845. Clerkenwell is only one district amongst many. It is not a little disquieting to realize how few public men and public bodies are aware of the immense problem presented by these domestic buildings. It is a problem which must inevitably become more difficult of solution as suburban housing schemes develop. It is not possible here, nor is it perhaps necessary, to state the number and extent of the areas covered by these buildings all over London. But a good notion may be formed of what to expect in many of them by a reference to the maps published with my first article. Each shows a large portion of Clerkenwell, the first map as it was in 1799, the second as it was in 1916. In the latter of the houses shown edged

Skinner Street, Clerkenwell: the north side.

with black, the majority were erected in the early nineteenth century; some are a little earlier in date, and a very few mid-eighteenth century. The dotted line on the second map indicates approximately the northern boundary of Clerkenwell in 1799. This map also shows another survey of a large area to the west of King's Cross Road covered by similar buildings. It will be noted that along the main thoroughfares they are rapidly disappearing, their places being taken by buildings poor in design, and often outrageous in treatment. In 1837 the main thoroughfares presented a staid and respectable appearance. To-day Rosebery Avenue is nearly the best we can manage.

. . . . . .

I should add that I have made use of both Pink's and Cromwell's histories of this district, and last, but not least, the splendid series of maps of London at the Institute Library. I am also indebted to the librarian for permission to photograph and reproduce a portion of Clerkenwell from Horwood's map of London dated 1799. Most of the illustrations are from photographs by W. H. Masters.

Above, Holford Square, Clerkenwell: part of the west elevation. Below, Claremont Square: the east elevation.

CURRENT
ARCHITECTURE
SECTION

NEO-CLASSICISM IN DENMARK

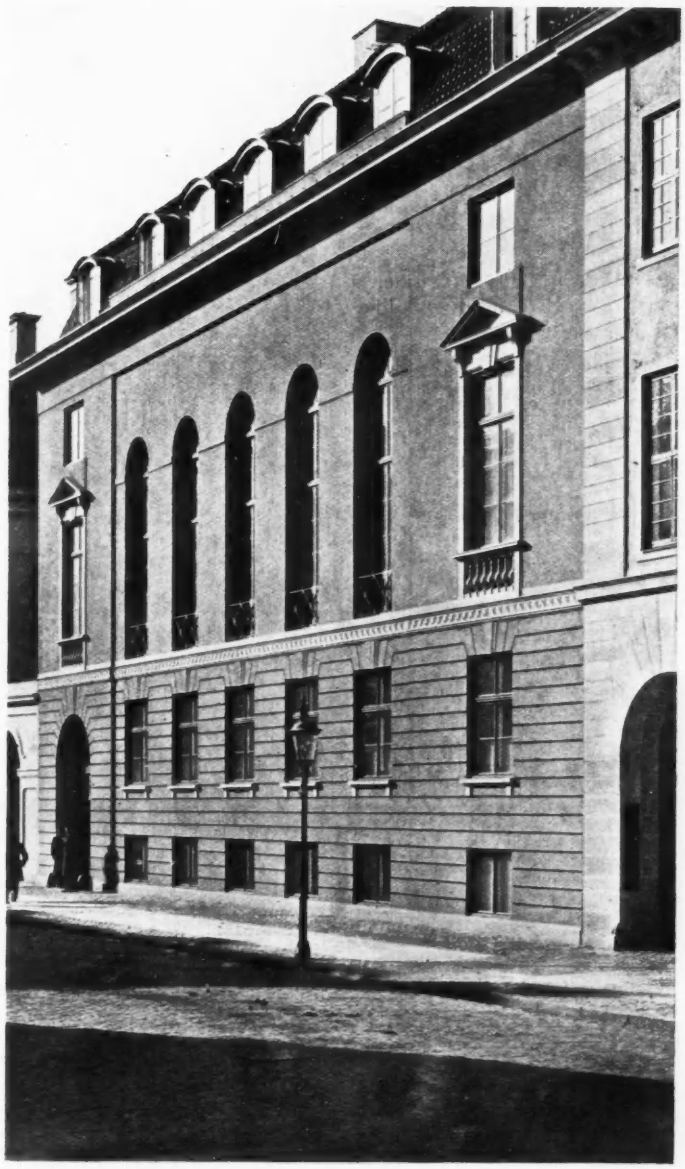
[BY L. MARNUS]

THE recent revival of Neo-Classicism in Denmark has produced many notable buildings of outstanding architectural interest. Previously Neo-Classicism in Denmark culminated in the works of C. F. Hansen about one hundred years ago, but the architectural character of the older buildings is surpassed in some respects by that of some of the newer buildings erected by the revivalists. In appearance the newer buildings seem to be less bulky and more refined. These qualities probably are due to the use of the lighter forms of building construction in use at the present time.

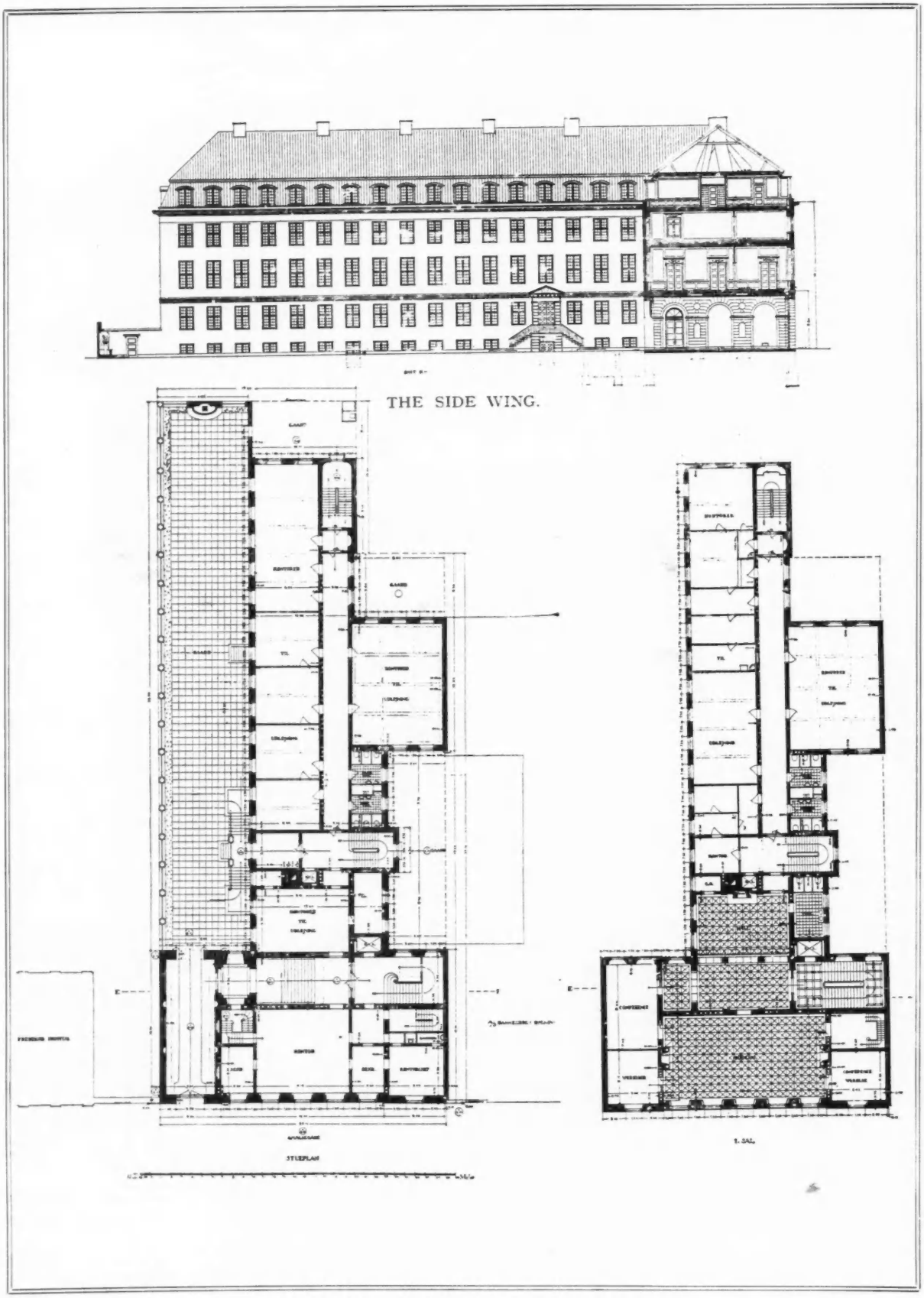
Among the finest works of the revivalists are those of Emanuel Monberg, whose buildings show in a striking manner the care and skill with which even the smallest detail has been designed. The buildings are notable for their harmony and balance, and every line and every tone of colour are evidence of the deep thought bestowed upon them.

The office-building of the Danish Steamship Owners' Association, one of Monberg's latest buildings, stands in one of the prettiest streets of Copenhagen. It is in the neighbourhood of the Amalienborg Palace, and close to the beautiful old Frederik's Hospital, which has now been transformed into a museum for art and industry. The Association of the Danish Steamship-Owners occupy the principal part of the building, that facing the street, and the long side wing facing the court of the museum consists of a five-story office building for ordinary rental use. The offices of the Association are on the ground floor, and the two stories immediately above contain the committee rooms, ceremonial hall, dining-room, and chairman's room; and the upper story is reserved as a residential flat for the director. The ceremonial hall extends through two stories.

The accompanying illustrations of the interiors show the simplicity of the decoration. The colour-schemes are just as refined; and the charm of the rooms is still further enhanced by the style and the arrangement of the furniture, all of which has been designed by the architect. The arched ceiling over a strong projecting cornice in the ceremonial hall is particularly effective. Both ends of the hall are decorated with large open fireplaces of red Verona marble, and above the chimney-pieces are mirrors with frames in relief of white Carrara marble. In the dining-room and lounge the fireplaces are of black marble with a centre part of yellow Verona. The main staircase is of Yiera Gelb marble. In the basement are the luncheon rooms, toilet- and cloak-rooms for the staff, and accommodation for the caretaker and porters, and for the heating and ventilation apparatus. The exterior of the building is covered with stucco, the tone of which harmonizes pleasingly with its surroundings. The mouldings round



The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. The main front.

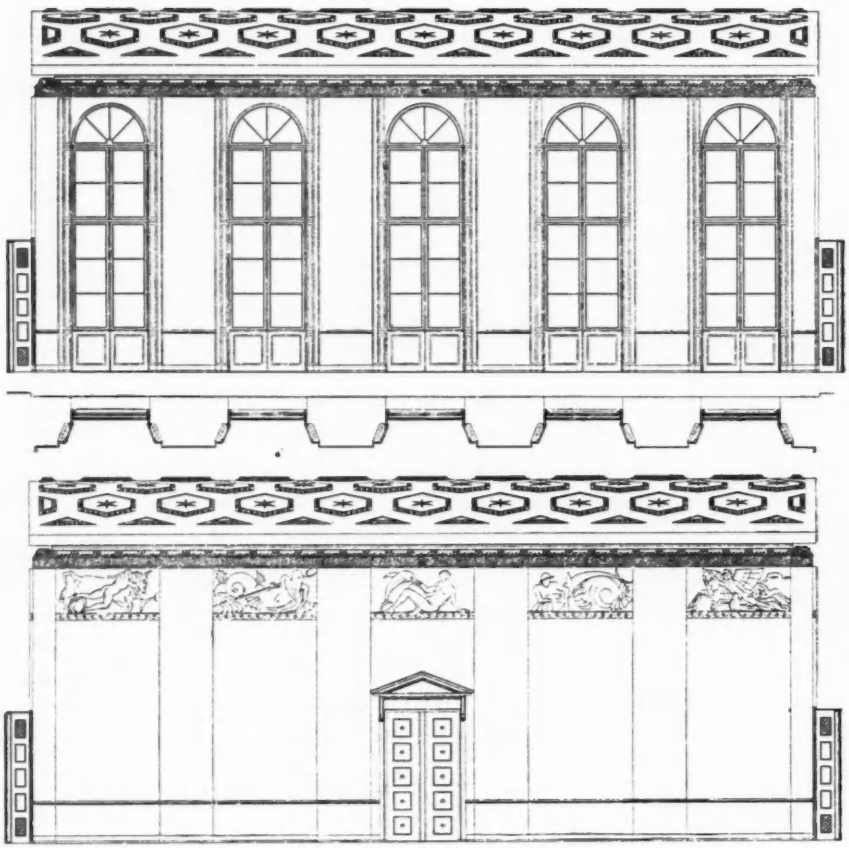


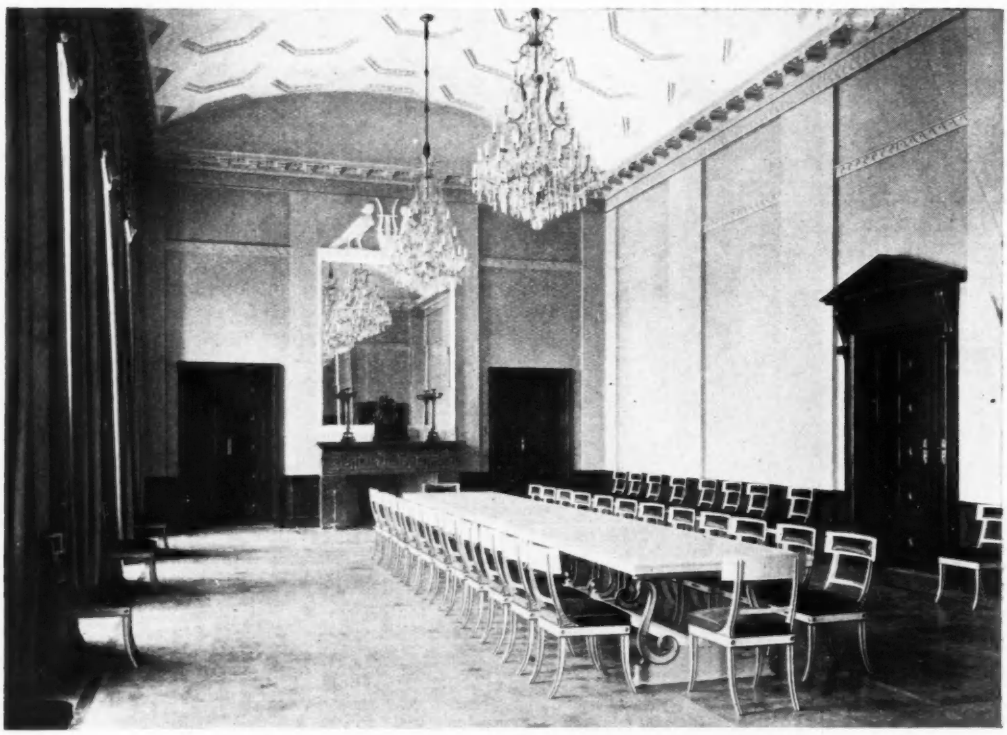
The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. Plans and side wing.

the windows; the door-portal in the court, and the steps leading up to it, and the bands of enrichment and the main cornice are all of cotta sandstone. The roof is covered with dark glazed tiles.

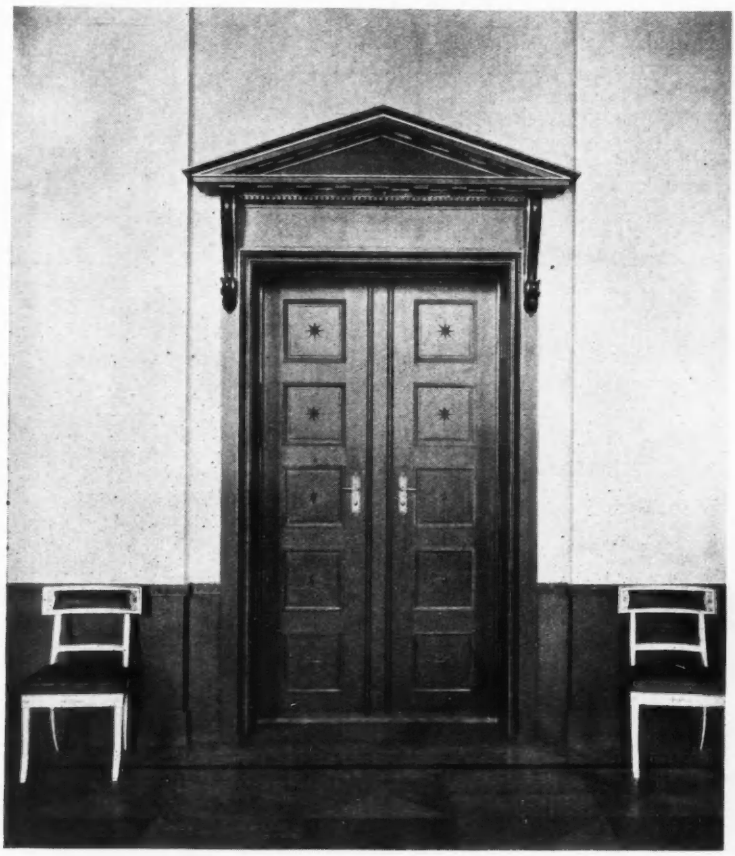
Emanuel Monberg has also designed and erected a number of residences. One of the latest, it was finished last year, is illustrated. Although plain and simple in design, the refinement and dignity of this house places it among the outstanding Danish architectural achievements of our time. The house is situated close to a church, and the grounds around it have been shaped into a beautiful harmonizing garden. Outside the drawing-room is a large open terrace, paved with flagstones, and a broad paved walk connects it with some fine garden seats. The latter are surrounded by walls on three sides, and covered by a glass roof. The exterior of the house is covered with stucco of a warm yellowish grey colour. The casings and lintels to the doors, and the cornices of the pediments are of wood, painted and sandblasted. The base is of a dark, black colour, and the roof is covered with black tiles. Emanuel Monberg, who is still a young man is, for the second year, President of the Association of Academic Architects of Denmark, and it is to be hoped that the country may be favoured with many works from his hand.

The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. Above, the entrance from court-yard. Below, the main staircase.

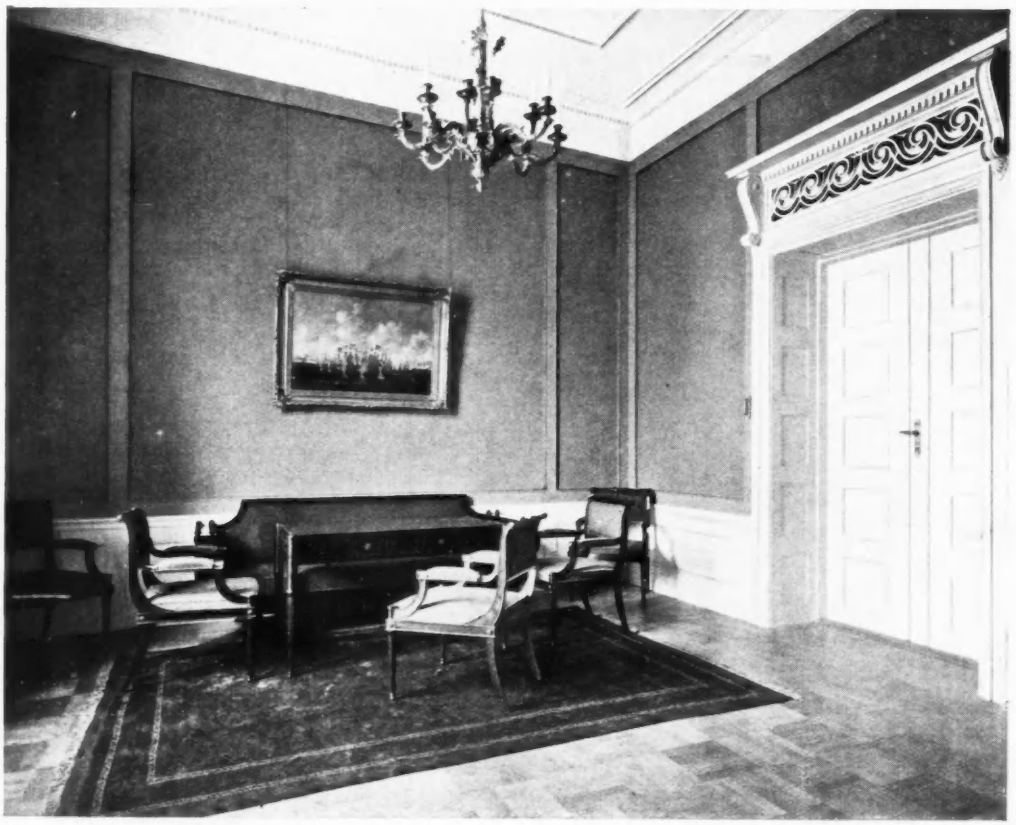




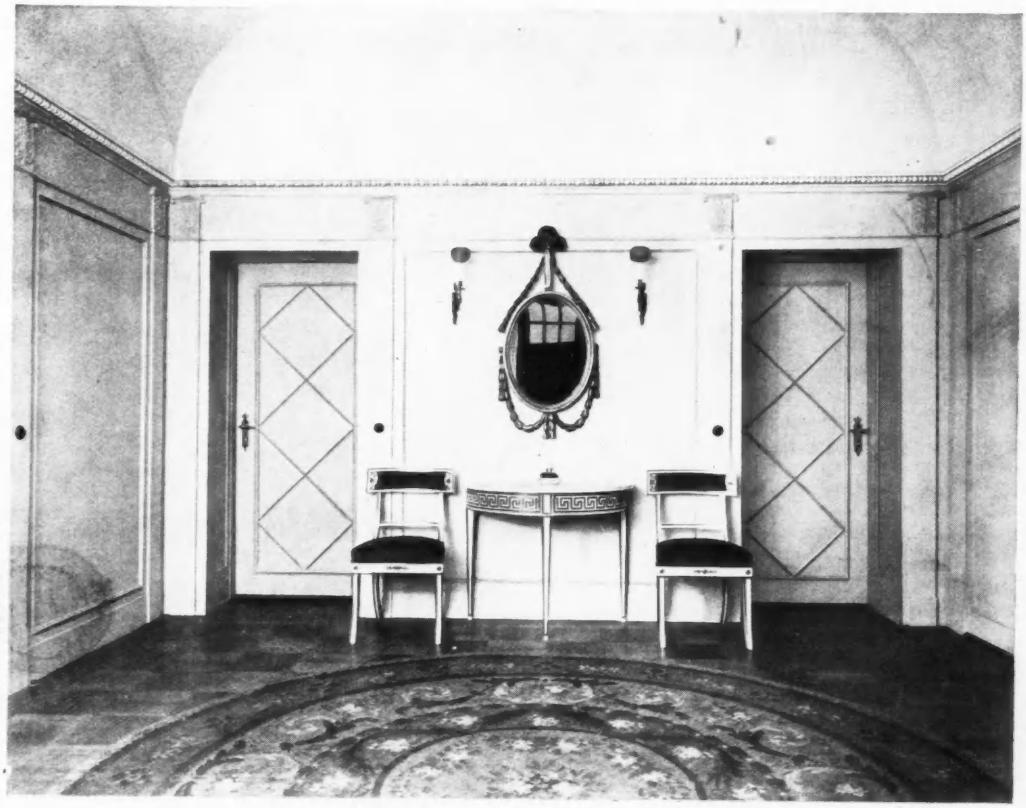
The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. The ceremonial hall. Above, details. Below, a general view.



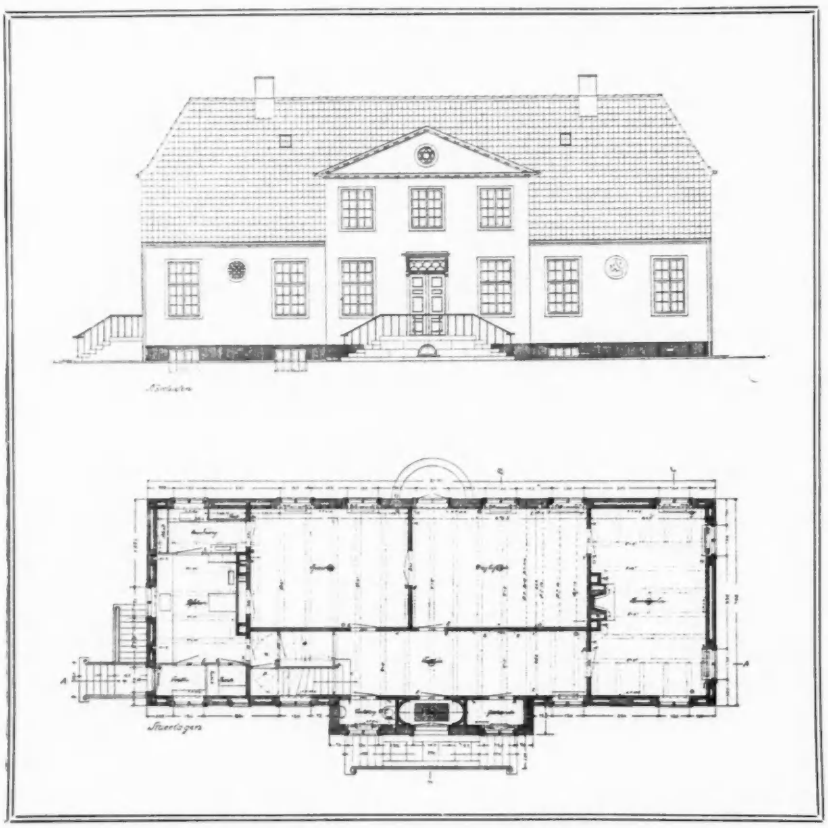
The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. Above, the ante-room to the ceremonial hall. Below, a door in the ceremonial hall.



The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. Above, a committee room. Below, the president's room.



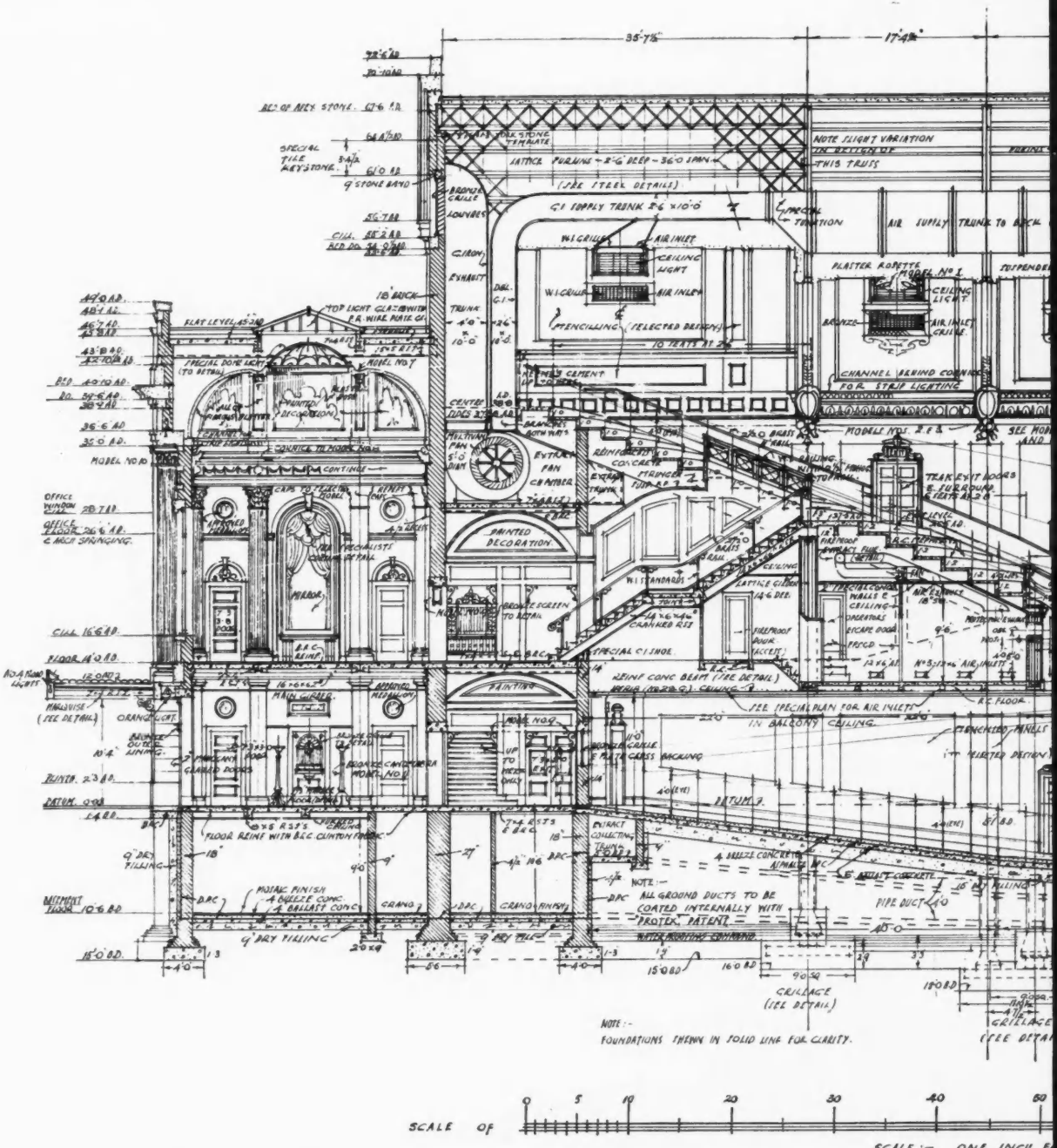
The Danish Steamship Owners' Association Building, Copenhagen. By Emanuel Monberg. Above, the lobby of the director's flat. Below, detail of door.



A house in Copenhagen. By Emanuel Monberg. Above and centre, the main front. Below, ground-floor plan.

COMMISSION Nº

— A CINEMA THEATRE —



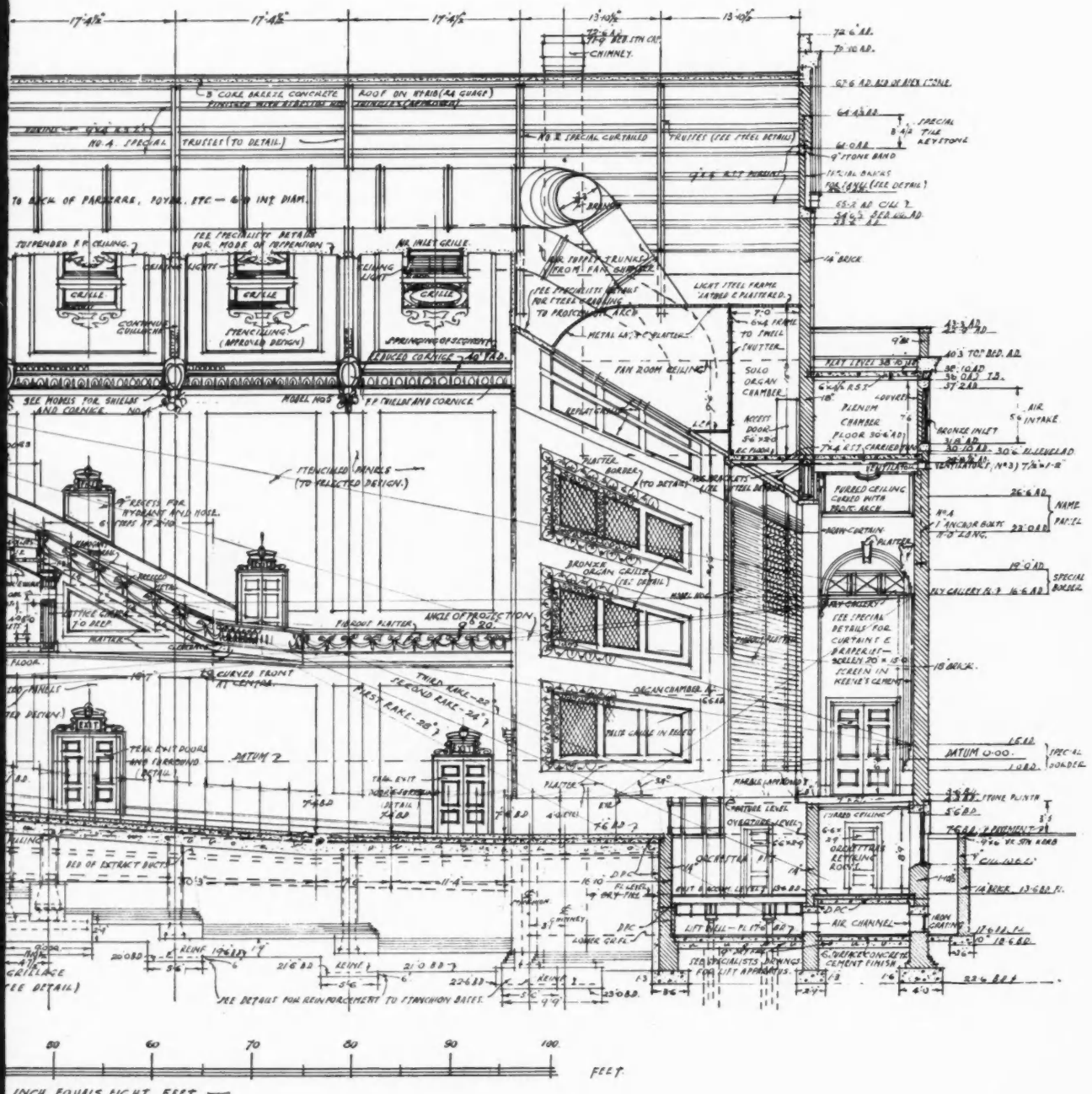
SCHEDULE OF MATERIALS

BRICK
STONE & PLASTER
COKE BREEZE
BALLAST CONCRETE
DRY FILLING

LONGITUDINA

— WORKING DRAWINGS. —

DRAWING Nº 5



INCH EQUALS EIGHT FEET. —

INAL SECTION.

DRAWN BY: H.E. REVISIONS —
CHECKED BY: E.J.M.
DATE ISSUED: 17.6.26.

ARTHUR C TODD.
SCHOOL OF ARCHITECTURE
UNIVERSITY OF LIVERPOOL.

A CINEMA THEATRE: THE WINNING DESIGN, HOLLAND AND HANNEN AND CUBITT PRIZE FOR WORKING DRAWINGS, LIVERPOOL UNIVERSITY SCHOOL OF ARCHITECTURE. BY A. C. TODD, FIFTH-YEAR STUDENT.

TRIBULATIONS OF EARLY PRACTICE

[BY KARSHISH]

X: TENDERS AT LAST!

WHEN our architect, the contract drawings and specification having been approved, duly receives instructions to invite tenders, he involves his client in liability for quantity surveyor's fees. To be stuck for fees additional to those due to his architect is likely to rattle a client who has just reconciled himself to spending much more on his house than he intended; but it will be not only the duty of our architect, but expedient for him, to make his client aware of the fact. If his client already knows of the charge no harm will be done by reminding him of it; if, on the other hand, the architect refrains from giving the unpleasant news he may mislead his client. The motive of the architect in so refraining is to avoid raising awkward questions, and it is a cowardly and unworthy motive which frequently, and most deservedly, gets the architect into trouble later on. If, after tenders have been invited, the owner decides not to build, he may, with good reason, object to pay fees for which he never authorized his architect to pledge him; or, on the other hand, if the work goes on, the architect will have no plausible reason for then remedying the omission, and should it happen that his client later on notices the item for quantity surveyor's fees in the final statement of account, he may rightly feel that he has been kept in a fool's paradise and esteem his architect accordingly. Our architect must therefore give his client an intelligent account of the need for bills of quantities, and show him that such bills are unavoidable and that they are not, in fact, a source of expenditure, but an incident of economy. As this matter is not generally understood it may be displayed here in such brief terms as our architect might use in making the explanation to his client.

Preparation of bills of quantities has always been the builder's affair. It has nothing to do with services rendered by an architect. The architect supplies drawings and specifications. In order to tender upon these the builder has to measure the materials and labour involved. The duty of making such measurements was formerly entrusted to clerks employed by builders for that purpose whose salaries were added to the builder's establishment charges. The cost of this system, which made it necessary for each builder to prepare bills for every work for which he tendered, was reduced by 20 per cent., or more, by builders combining to employ an independent estimator whose bills all could use in common. Thus was set up the profession of highly skilled quantity surveyors; but the system led to collusion among builders, and in order to prevent this the quantity surveyor is now nominated by the architect.

These, then, are the facts; and our architect should be familiar with them, for a day may come when his client may sniff at paying his architect a commission on the quantity surveyor's fees. These fees, however, are, as they always have been, part of the cost of building; and it is well for our architect to be equipped to promptly dispose of a suggestion which bears the taint of sharp practice. I regret, however, that without deeper thought than I am prepared to give to the subject, I am not able to offer any excuse to justify the architect who takes out his own quantities in charging 6 per cent. commission as architect on fees received by him as quantity surveyor; nor for the further refinement by which he charges 2¼ per cent. on the lithographer's account for printing the bills of quantities and a further 6 per cent. on the same account plus the 2¼ per cent. already charged on it.

When instructing his quantity surveyor our architect should bear in mind that some provincial builders, among whom are the best in the country, are not used to the highly itemized bills of quantities which enable London contractors to put in close tenders; and that such detailed bills, when not understood, are likely to inflate greatly the cost of the work. An experienced quantity surveyor well understands this; but it will be wise for our architect to raise the point with him and arrange for bills to be drawn in accordance with provincial custom, in which case the fees for their preparation should be less than those paid for the more highly specialized work. To illustrate the absurdity of supplying minutely itemized bills to men who do not understand them, I may instance the case of a thoroughly competent master mason in one of our country towns who was sub-contractor for the stonework of a somewhat elaborate Bath-stone-fronted public building. This man had duly priced in the rates, made the extensions, and cast up the total of his tender in the mason's bill prepared by a London quantity surveyor. He was led, however, to confess to the clerk of works, with some embarrassment, that he did not understand the meaning of many of the labours described in the bills. When asked how he had, in that case, priced the items, he explained that he had examined the drawings, priced the quantity of stone in the cube item, and used his judgment to determine the total value of the labours. He had then worked backwards from this total, fixing rates for various labours, which gave extensions totalling the figure he had tendered. His priced bill was, in short, a fantasy; in the event of alterations or additions being ordered, with consequent remeasuring, he might have been badly out of pocket or, on the other hand, he might have been able to claim a sum greatly in excess of the value of the extra work.

If he is to get what he wants at a reasonable price it is necessary for our architect, in deciding on the builders to be invited to tender, to make his selection from among those, only, who are used to the kind of work he wants done. To ask a large firm with heavy overhead charges to undertake a small unimportant work is like procuring a steam hammer to crack a nut. Besides this, a large firm is not so organized as to give the close personal attention to the work which the house our architect has designed calls for. On the other hand, a small builder, accustomed to what is called "cottage work" and speculative shops and villas, may be incapable of doing work of sound merit. The same glib terms of the specification mean very different things to different builders. When it comes to the point, what exactly *is* "well-seasoned fir scantling, free from sap, large, loose or dead knots, etc."? Such requirements are a mere reference to a judgment which varies widely, and depends upon association. "English oak" may mean almost anything; "mahogany" is represented by bay wood as a matter of course; a general requirement for "hard wood" may be interpreted as canary wood stained, and so on. It is as impossible to get good work out of a bad builder as it is to get good music out of a warehouse fiddle; and it is almost as hopeless to expect a low price for a semi-permanent bungalow from a reputable builder. In the matter of good house-building the duty of selecting a builder is of the same kind and complexion as that of choosing a craftsman, and our architect should at the outset so regard the man whom he is to entrust with the work of carrying out his design.

When our architect first gets into touch with builders he will be likely to overlook the fact that his relations to them involve him in obligations of a particular and exact kind which, though not so commanding as those due to his employer, are not of less

This, Karshish's tenth article on the Tribulations of Early Practice, *shows the young architect in full possession of his first job. He has put himself into the right mood for a successful practice; he has met and made his first client; he has turned out the embodied idea of a building of his own; he has conquered all his preliminary difficulties, and is now ready to build. Our readers will be happy to learn that as a result of the many appreciative letters we have received, we have been able to persuade Karshish to start on another sequence of articles in which the actual progress of the job will be followed step by step. This sequence will be published in the near future as* Part Two *of the* Tribulations.—*Editor* A.J.

importance. This circumstance will appear more fully later on; it is referred to here because in calling for tenders there are certain things which our architect might, for his own convenience and the advantage of his client, wish to do, but which his obligations to the builder forbid him to do. For instance, invitations to tender are always qualified by the proviso that the owner does not bind himself to accept the lowest or any tender; but though the client thus holds the right to accept a tender that is not the lowest, he cannot fairly exercise that right when certain chosen firms are invited to tender. (It is so rarely that a work of architecture is put out to public tender that the case need not be considered.) The reason is obvious. When a builder is invited to tender he understands that his tender will be accepted if it is the lowest, otherwise it would be of the nature of a practical joke to trouble him to prepare one. If his tender, being the lowest, were passed over, he would not merely feel chagrined, but affronted; for the only purpose served by treating him in such a way would be to use his prices as a check against the tender of the favoured man. For an architect to lend himself to any device of that sort is perfidy; but it happens that it is often difficult to choose four or six or eight builders who satisfy the requirements of the particular case, and there will always be some more highly esteemed by the architect and favoured by the client, than others. When a builder who is little favoured sends in the lowest tender, and the one whose services are most desired—who would certainly give better value and relieve the architect from half his anxieties—only exceeds that lowest by a few pounds or even shillings, it is a very real temptation to the architect to bring in the second tender and avoid accepting the lowest. An architect is, however, bound in honour not to do this, and to use all his influence to prevent his client taking that step. There is a very proper tenderness and awareness among builders on this point. Thus it is the custom in London for them to attend at the architect's office at the hour appointed for the opening of tenders. This is not, however, generally done in the provinces. If the client insists on accepting the second tender, the architect should write a private letter to the chief member of the injured firm making what protestations he can, which protestations will probably not be accepted. The result will be that the architect will scarcely venture to invite that builder to tender again, nor will that builder if invited be likely to condescend to do so. An architect will scarcely maintain his repute with clients unless he has the confidence and respect of builders, and perfect loyalty to their just interests is for him a special responsibility.

Our architect, for instance, must not suggest to any builder, for the purpose of getting a tender reduced to acceptable proportions, any reduction in the rates upon which the tender is based; but must touch only on reducing the quantity or the quality of the work. There must be no secret understandings or connivances or collusions which may favour one builder more than another or the client at the expense of any builder. The builder's priced schedule must not be used by the architect to guide his judgment in what it will be most profitable to omit. The schedule should be kept sealed and the builder should understand that it is so kept.

The opening of tenders is, as has been said, in London, a ceremonial affair. The builders, or their representatives, sit in a row against the wall; the appointed hour strikes; the architect breaks the seals, and the best and the worst is published to all present. When, as in the provinces, tenders are delivered by messenger or by the post office, our architect should observe a corresponding ritual in opening them. He is on delicate ground, because any slip, oversight, act or omission may bear unfairly on one party or on another. A right sense of responsibility in him will naturally express itself by a circumspect procedure; and by making a fixed rule of that procedure he will remind himself of his responsibility and not allow his perception of it to stale by usage. He must on no account open tenders as they arrive, and lay them aside. Such slackness would inevitably, sooner or later, lead to a catastrophe; some word dropped by an inquisitive clerk; some hint given by the architect himself, embarrassed or prejudiced by his own knowledge; the curious eye of a builder or stranger in the office observing what it was not intended he should see—any such traps might cause great mischief and hardship and discontent, and bring discredit on the architect.

Our architect will have directed tenders to be delivered on or before a certain hour on a certain day. If an expected tender has not been received an hour or two before that appointed time, the architect may go so far as to make inquiry, lest it should have gone astray or been delayed by some misunderstanding; but exactly at the hour fixed he will open the tenders, and any tender received after the last envelope has been torn will be too late for consideration. There must be no chance of any tender being overlooked and turning up next day in the office, a thing which the architect's imp will manage for him if he can. Our architect should head a sheet of foolscap with a memorandum that, on that day and at that hour, he opened a certain number of tenders in the presence of his clerk. One by one, as he breaks the seals, he should record the offers made and note any circumstances—such as a covering letter, or modification of the terms of the tender form. He should satisfy himself, and make his clerk confirm, that no enclosure in any envelope has been overlooked. He should then sign the sheet which will go on to the office files and remain as a record. By such orderly precision the chances of a slip or oversight is made almost impossible, and our architect is in aposition to rebut any claim by a tendering firm as to the hour or fact of a tender being received, or of what the enclosed documents consisted.

Builders expect to know at once the results of tenders: those tenders are founded on prices based on quotations, or options, or reciprocal bargains of which time is the essence; and our architect should satisfy this expectation. He must write to each forthwith, state the number of tenders received and the prices tendered, and mention any qualification of the contract particulars conditional upon any price. The names of firms tendering need not however be given, and it is best not to give them for, as the same group of builders will be likely to tender on other occasions, opportunity for collusion would thereby be set up. Collusion, it should be remarked, is not illegal.

Our architect will be aware that the acceptance of a tender establishes a contract, and he must be careful not to accept any tender out of hand. To do so would, technically, make him responsible, so that if his client had meanwhile gone mad, or been arrested, or run over, or for any reason changed his mind and refused to accept the tender, the architect would be liable to the contractor. Although it is not to be supposed that any builder would take advantage of a slip of that kind, yet he might be seriously compromised by it and forced to seek compensation, and his creditors would not hesitate to claim their pound of flesh. It must be remembered that such fantastic things frequently happen. What our architect, then, has to do is to tell the lowest tenderer that he is "prepared to recommend" his tender for acceptance, and the others that he regrets that he is "unable to recommend" their tenders for acceptance, and on what grounds, such as price, date of completion, etc. He then obtains his client's authority to accept the tender, preferably in writing; or, if the authority is given orally, he should write and confirm his understanding of the instruction. He should then write to the successful contractor: "I am instructed by Sir Wallaby Wimble to accept your tender of May 30 for the sum of . . ." Strict attention to the minutiæ of all this business, and a clear understanding of the reasons for each step, are of great importance. Not only does any looseness or irregularity give both builder and client an uneasy feeling of insecurity in the hands of the architect who, by the acceptance of a tender, is endowed with the God-given powers bestowed on him by the conditions of contract, but both parties are interested financially in the interpretation of intricate detailed documents and are liable to suffer loss and injury by any act or omission of the architect which may involve the business in confusion or give rise to ambiguity.

We may now consider that our architect has all the vital preliminaries to a building contract satisfactorily arranged, and in Part two of this series we will proceed to consider the more practical questions and closer personal relations which are involved in the erection of the building.

[End of Part One]

BUILDING AND DECORATIVE TIMBERS

[BY G. A. T. MIDDLETON]

iii: CANADIAN TIMBERS

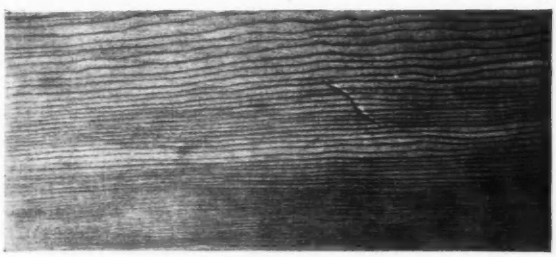
As the Prince of Wales said not long ago, when delivering his presidential address to the Empire Forestry Association, "Canada produces the finest soft wood lumber in the world." The trees are tall, straight, and of remarkably even growth and quality. They cover an area to which the word "extensive" is a mild term to apply, though it has been much reduced by wasteful cutting and burning compared with what it was but twenty years ago, especially in the east. This is unfortunate, as it is from the eastern seaboard and the east-flowing river of the St. Lawrence that England can most readily draw supplies.

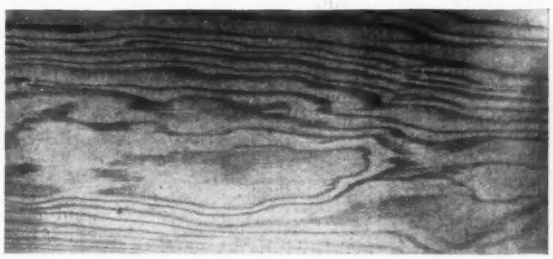
Commercially speaking, spruce is now the most important of these soft woods, and there are five Canadian varieties of it. Much of it, certainly, is used as pulpwood for paper making, for which it is peculiarly well fitted; but in building construction and joinery its use is steadily increasing, owing to its strength and moderate price. The colour, both of heartwood and sapwood, varies from pale cream to pale straw, the grain is straight, and the wood is soft and easily worked, taking a satiny finish—all qualities which commend it for joinery use, especially as the resin content is very small. It is also peculiarly well suited for good class work which is to be painted. The species grown in the east, however, are comparatively small, most being converted before exportation into "deals" three inches thick, six inches or more wide, and ten to sixteen feet long.

The sitka spruce, however, which grows in British Columbia, is obtainable in much larger sizes, the pieces which commonly reach our shores being two, three, or four inches thick, eight to twelve inches wide, and ten to forty feet long. The heartwood is slightly darker than the sapwood, being an orange-tinted cream colour of considerable beauty, so that it is eminently suitable for work which is to be stained or varnished, such as the cheaper pews in a church; but the fact that it is available in long, straight-grained pieces, combined with its light weight and comparatively great strength, makes it suitable for many more important uses, not only in building but even in aeroplane construction.

White pine occupied, until quite recently, the place of importance now filled by spruce, and it has now only lost its premier position owing to the comparative scarcity of supply of good material. Otherwise it has superior qualities for the woodworker, for besides being soft and easy to work, fairly durable and strong in comparison to its weight, it has the valuable property of holding its shape with a minimum of shrinking or swelling once it has been properly seasoned—and in this there are few woods of commercial value which can surpass it. It has cream or pinkish straw-coloured heartwood and cream-coloured sapwood, without well-pronounced annual rings. The presence of fine brown hair-lines in the direction of the grain makes it easy to recognize—architects know it well, as their drawing-boards are frequently made of it—and, while it has no beauty of figure, it is one of the most useful of joinery woods, especially for panels and for work to be painted. It usually comes to England as three-inch deals, four and more inches wide and six to sixteen feet long, though the western variety, otherwise indistinguishable, is shipped in less thicknesses up to thirty inches wide and from sixteen to thirty feet long. Both varieties, eastern and western, come over also in waney logs.

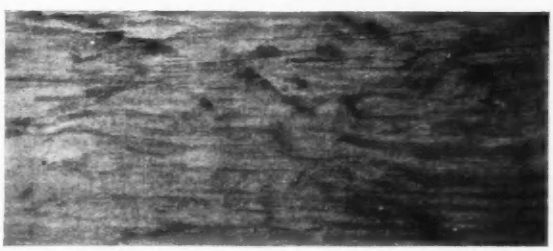
The red pine of Eastern Canada, with its distinct, clear, and straight grain and rich colour, somewhat harder and heavier than white pine, can be used for many similar purposes, but its greater durability and hardness make it more suitable for fine exterior joinery. It is also a good structural timber. It is exported in many different sizes, though deals rarely exceed ten feet in length.

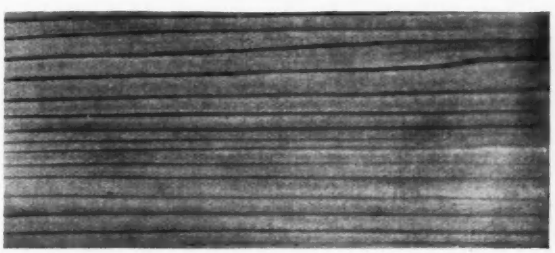




Left, Sitka Spruce. Right, Western Hemlock.

Douglas fir, also known as Oregon pine, which grows and is exported from the western coast of both Canada and the U.S.A., is one of the most important structural timbers in the world, while it also possesses great beauty, especially when rotary-cut for plywood. It is hard (for a coniferous timber) and extremely durable, and is obtainable in very large sizes. Clear and select deals up to thirty-two feet in length and merchantable deals and planks up to forty feet are quite usual, while long pieces up to a length of ninety feet and twenty-four inches square are procurable, both in select and merchantable qualities. It is useful, therefore, for all building purposes, and could be employed with advantage, for instance, in all church work, from roofs to pews,

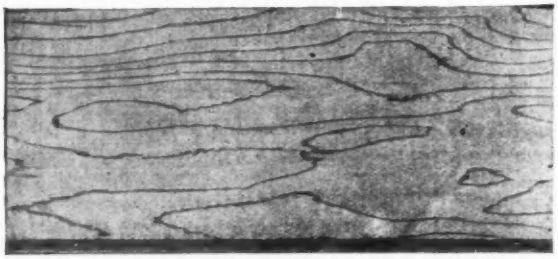




Left, Douglas Fir. Right, Western Cedar.

and for all good-class joinery, as well as for important structural work. Its colour is cream, the heartwood being pink or golden in tint, and the sapwood paler. Few timbers, if any, possess such a combination of high qualities.

Western hemlock is another very fine timber—at any rate that which grows in British Columbia, and on no account to be confused with that, from a different tree, which is exported from the St. Lawrence. Its strength and hardness, and its attractive figure and freedom from defects, make it a rival of Douglas fir in all except that it does not grow to so great a size, while for interior decorative work it is preferred by many. Heartwood and sapwood are not very easy to distinguish, the colour varying in both from greyish-white to light brown.



Maple (flooring).

The cedars, both eastern and western, are the most durable of the Canadian conifers, while the western is one of the giants of the Pacific coast, being only surpassed in size by the Douglas fir and the Californian sequoia. Unfortunately, the cedar is not plentiful and the wood is not strong, and little reaches this country except as weather-boards and wainscoting. Its colour runs from dark straw to reddish-brown, and there is only a narrow outer band of light-coloured sapwood, and the wood is light in weight and soft.

The Canadian hardwoods are of less importance than the soft woods, not much reaching this country except, perhaps, the maple, which is represented by nine or more species. It is used in England mainly for hard wood-block flooring, such as that of skating rinks, and decoratively in plywood panels when so cut as to display the characteristic "bird's-eye" marking. Unfortunately it has a bad reputation for shrinking.

Birch is also a good flooring timber, being hard, heavy, tough and strong, but it is not durable in contact with moisture. Very little of it comes to England.

For information contained in this article and for facilities for obtaining the accompanying illustrations the author has to thank the High Commissioner for Canada, the officials of the Imperial Institute, and Messrs. J. and C. Bowyer, Ltd.

[*To be continued*]

CORRESPONDENCE

THE CITY CHURCHES

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Cannot the City churches that have been doomed obtain a reprieve and a continued existence through the influence of the architectural profession? If a layman can venture to make such a suggestion through your columns, the writer would like to see a great crusade started by architects for saving some, if not all, of those pieces of architecture that are to be lost to London in the near future.

The practical side of such a crusade might be the formation of a fund to which the attention of the public could be drawn. If the readiness with which the British public subscribed to the fund for repairing St. Paul's can be taken as an index of general interest in preserving old buildings, then the object of this crusade against holy destruction might be achieved, especially if every architect in the country backed it enthusiastically, and beat up local interest in the fund.

To be without safeguards for architectural treasures is a humiliating situation. The eminent churchmen who have taken their guardianship of beautiful and historic things so lightly might well share this common epitaph:

"Dead to all Art, obsessed by childish creed;
Blindfold to beauty by the sin of greed;
Raising dull hands in blessing on the end
Of things far nobler than they comprehend . . ."

JOHN GLOAG

TRIBULATIONS OF EARLY PRACTICE

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Karshish does not agree with me. Though he undoubtedly sees the facts clearly, he does not, I think, see them in their right perspective, for he cannot bring himself to carry them to their logical conclusion. If it be true, as he admits, that no architect can entirely shape his own career because of circumstances he is unable to control, it seems reasonable to suppose that in certain cases untoward circumstances may be such as to present insuperable obstacles to the individual architect. It may be true that if an architect were fully armed on all sides he could overcome all obstacles. But to urge such an argument in defence of his position is not to face reality, but to take refuge in a theoretical abstraction, for no man alive is armed so completely, and because of this anyone may be defeated by circumstances. We see this illustrated to-day by the fact that many architects who were prosperous before the war have nowadays little or nothing to do. Will Karshish say it is their fault? And, if so, how does he explain their previous success? Obviously their change of fortune is due to economic causes over which they have no control. And if economic causes can defeat architects after they have been established in practice, how much more so with those who met such obstacles in early life?

"A. W. W." is disposed in a general way to agree with me. He is of the opinion that "want of success in the case of a capable architect will commonly be found to be intimately connected with his lack of wealthy or influential acquaintance, and with the absence of interest in the question of capability so much evidenced by the building public." But he is not prepared to say that exceptional brilliance will not find its way to the top without adventitious aid. But why should he make this qualification? If lack of wealthy or influential acquaintance may be fatal to the average capable architect, why not to the man of genius? He needs opportunities to set him in motion as much as lesser gifted men. We know that men of genius in other walks of life often suffer neglect; why, then, should it be assumed that architecture is an exception to this rule? The only reason I can think of is that in architecture a man of genius may be snuffed out so completely that we may never hear of him. The painter or poet may be neglected while he is alive, but so long as he can earn a bare existence he can produce, and if he has genius he is sure of posthumous fame. But the architect who is neglected cannot produce at all, and therefore cannot have posthumous fame. But we cannot reason from this that therefore no genius in architecture has ever died of neglect. When everything is left to chance and accident nothing is guaranteed. Under such circumstances anything may happen, and a first condition of understanding the problem confronting architecture is, I submit, a frank recognition of that fact.

But where is all this leading? What deduction do I make? It is this: If, as Karshish admits, architects of conspicuous ability often fail so completely as to end their days in the service of some firm of shopfitters, it is no reflection on them. On the contrary, it is reflection on the profession, and particularly on many of its more successful members, who exploit their talents when they are young

and immature, but are unwilling to employ them when they are older and more experienced. In the United States it is different. The skilful designer there is treated differently: he is not a drug on the market, he is not first made to fall and then kicked for tumbling, but his services are eagerly sought for, not only by established architects, but by builders. He is given status and is well paid. A widespread revival of architecture is impossible in a country which is content to see its talent run to waste. PONDERIVO

THE COMPETITORS' CLUB

[*This week* SENESCHAL, *the well-known architect who conducts this section, summarizes the conditions of the competition for new buildings for the Scottish Legal Life Assurance Society.*]

THE SCOTTISH LEGAL LIFE ASSURANCE BUILDINGS

MR. JOHN KEPPIE, A.R.S.A., F.R.I.B.A., assessor. Date for questions, September 11, 1926; sending-in date, October 30, 1926.

Competition in two stages. The first a preliminary competition of sketch plans open to practising architects in Great Britain and Ireland. From this preliminary competition not less than five and not more than eight architects will be selected to take part in a further competition. Each competitor selected for the second stage will receive £200 as an honorarium.

The island site available for the building is practically rectangular, with a frontage of 247 ft. to Bothwell Street on the north, about 105 ft. to West Campbell Street and Mains Street on the east and west, and 247 ft. to the narrow Bothwell Lane on the south. There is a fall of about 5 ft. from west to east, and 10 ft. throughout from north to south.

The building is to be designed for office and warehouse purposes on the upper floors. It should be planned so as to allow for the erection of partitions on any part of the floor for large or small offices or warehouses as may be required, and with spans such as will avoid, as far as possible, obstructing pillars.

The ground floor will probably be developed as shops, possibly for motor business, having saloons and a certain amount of relative basement space, although the storage required for the Scottish Legal documents will have the first consideration in planning the basement.

The portions of the building proposed to be occupied by the Scottish Legal would be for administration and life departments on the top floor; for health department on the second top floor; for claims section in life department, with a waiting-room, on the ground floor, at the back of the main vestibule. In addition, a considerable portion of the basement or sub-basement floor will be required for the storage of documents in both the life and health departments. At the main entrance there should be a spacious vestibule with main staircase and a block of not less than four lifts, one of which would be exclusively used for the Society, and subsidiary entrances and stairs with not less than two lifts. It may be essential to have safety stairs giving exit to the lane at the back, and there might be goods lifts to supply the various floors from the lane.

The details of the accommodation required by the Scottish Legal to be arranged on portions of the two top floors, the ground floor, and the basement would be approximately as follows:

Top Floor. Administration Department	sq. ft.
Boardroom	600
Retiring room for board	300
President's room, having small cloakroom with lavatory	180
Secretary's room, having small cloakroom with lavatory	300
Ante-room for secretary's clerk and assistants	300
Treasurer's room, having small cloakroom with lavatory	300
Ante-room for treasurer's assistants	300
Two rooms for typists, for secretary and treasurer, and machine room, 180 sq. ft. each	360
Large committee-room for interviewing, etc.	300
Lavatories for boardroom and private rooms.	

Life Society	sq. ft.
Policy section. Accommodation for thirty clerks. Also filing space in basement	1,100
Statistical section. Sub-department of policy. Accommodation for nine clerks	600
Checking section, to accommodate thirty clerks	1,100
Audit section for a staff of twenty-four	880
General and mail section for a staff of twenty-four	880
Bookkeeping section. Separate from above sections, and having accommodation for nine clerks near the treasurer	600
Cashier's room for five or six clerks	288
Strongroom for books and safe.	
Stationery stores	1,600
Lavatories and cloakrooms for staff on top and flat below and on ground floor.	

Second Top Floor. Health Society	sq. ft.
Manager's room, having small cloakroom with lavatory and typists' room adjoining	380
Assistant manager's room near the manager's	180
Typist's room, assistant manager and chief clerk	120
Chief clerk	200
District returns room	300
Glasgow claims section, approached by a separate stair and lift from the south corner of Mains Street	2,145
Public waiting-room on the second top floor	720
Doctor's examination room	120
Claims section, with the Glasgow claims section, and having use of same stair from Mains Street	2,400
Inspector's room	200
Cashier's room	210
Strongroom	48
Typists' and adding machine room (sound-proof)	350
Registrar section adjacent to claims sections	300
New members and transfers room	300
Stationery section, near above	2,230
Auditor's room	200
Lavatories and cloakrooms.	

Ground Floor Claims and Inquiry Section of Life Department

Section for the payment of claims and for general information regarding the Society in the neighbourhood of the main entrance:

Claims, three clerks	320 sq. ft.
Inquiry, two clerks	150 ,,

Basement. Stores for documents to the extent of about 6,000 sq. ft. for the life department, and 6,000 for the health department. This basement will require to be in touch with the departments on the upper floors.

The drawings required are as follows:

1: Plans, basement, and sub-basement (if any); ground floor; two typical upper floors, showing alternative arrangements for large and small offices.

Second top floor showing portion to be occupied by the Scottish Legal. The remainder as offices. Top floor showing portion allocated to the Scottish Legal, and the remainder developed as offices.

Two elevations, one to Bothwell Street and one to West Campbell Street. Sufficient sections.

2: All the above to be drawn to $\frac{1}{16}$ in. scale on imperial sheets of paper, rendered either in ink or pencil. The solid walls to be blackened, and the voids on the elevations tinted in black or grey. The corridors, lavatories, stairs may be tinted a light grey.

No perspective drawing required. A short description of the scheme along with an approximate cost should accompany the plans.

The relevant clauses in the Glasgow Building Regulations Act, 1900, governing the heights and cubical contents of buildings, are added.

The meaning of these clauses is briefly that the limit of height of the proposed building is 100 ft. measured from the highest pavement level, and that the whole building must be divided up with internal vertical divisions in such a way that no section shall be of greater cubical extent than 350,000 cub. ft., measured from the first floor level upwards. These sections can be connected by openings which must be protected by fireproof doors. Each section should have two alternative means of exit. The second exit might possibly be by gangways over the roof to the staircase in the adjoining section. SENESCHAL

[*For Competition Calendar see page* 310.]

LITERATURE

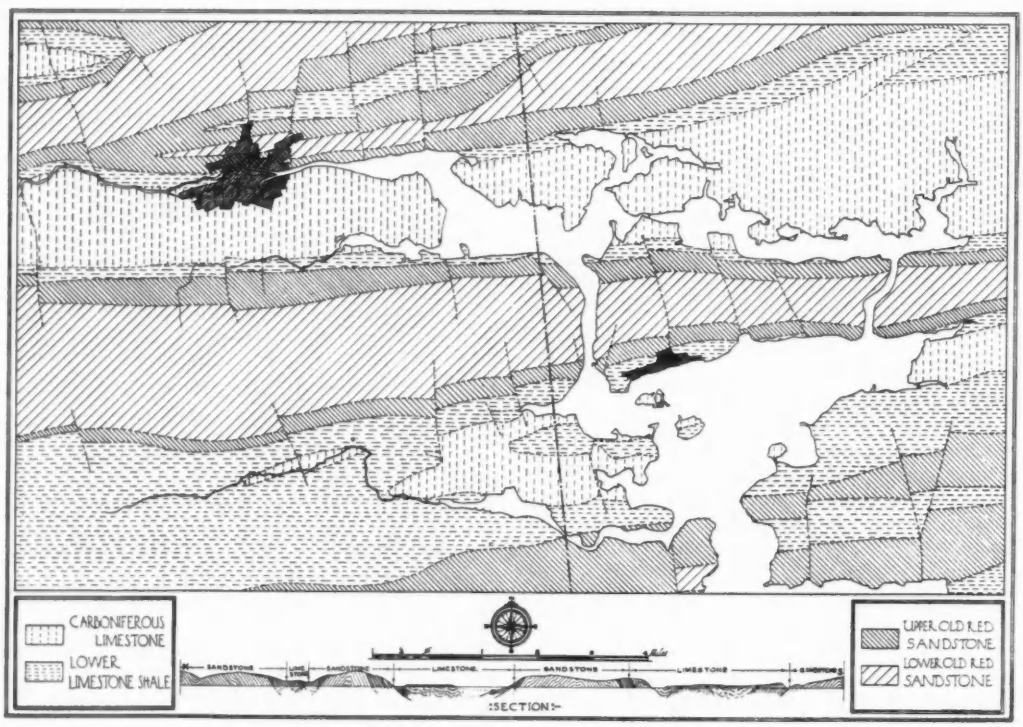
THE CORK CIVIC SURVEY SCHEME

THE special advisers to the committee are Professor P. Abercrombie and Sydney A. Kelly, and the names attached to the survey are a sufficient guarantee as to its quality and interest. The fine scheme prepared for Dublin afforded ample justification for the employment of its authors in an investigation of the possibilities for the second port of the Free State, and the publication before us confirms the wisdom of this choice. It opens with a description of the physical environment, and this is peculiarly important owing to the unusual conformation here met with. Instead of the normal case of the valley running down to the sea, the geological corrugations of the strata have resulted in the formation of a succession of valleys, parallel to the coast line, two of which are occupied by the outer harbour of Cobh (Queenstown), and the inner one of Cork. The rivers have broken through the intervening ridges much in the same way as those of the Weald find their way through the North and South Downs. In this case the flow is southward, and thus there are two landlocked tidal harbours connected at two points by comparatively narrow valleys through the dividing ridge.

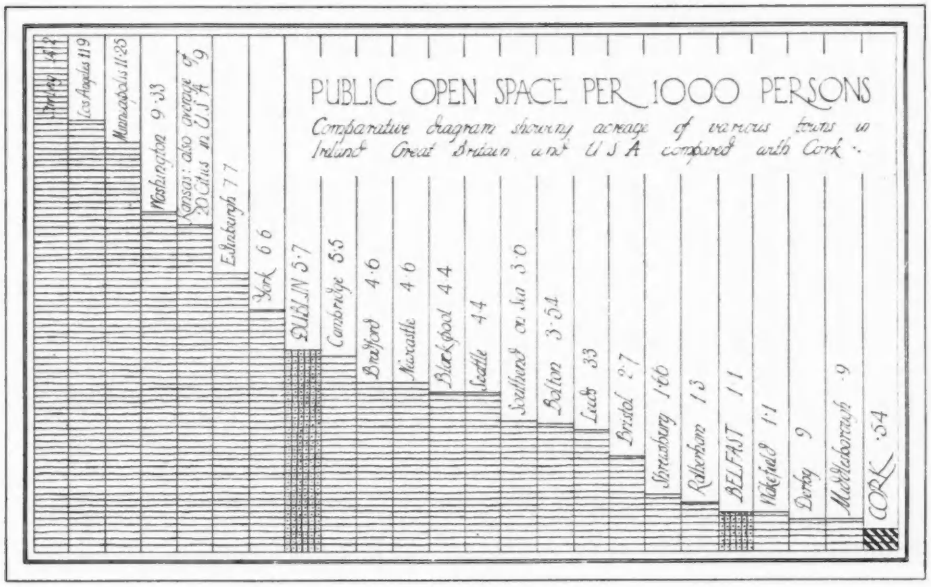
At the west end of the inner harbour stands the county borough of Cork, at a point where the river Lee, coming from the west, divides to form an island, now the centre of the town. A monastery and settlement were founded in the seventh century on the hill to the south of the river, but in 1013 the Danes destroyed this monastery and "founded a new town on the island which they enclosed with an earthen wall or fosse." They also occupied the northern hill and, despite many subsequent vicissitudes, the city retained this site; the walls, rebuilt in mediæval times, only finally disappeared in the eighteenth century. The survey summarizes the development as follows: "In the early centuries of the Christian era the south bank of the river Lee at Cork was inhabited by a native community, and a stronghold of the territorial Kings situated on an island in the marsh. During the mediæval period a monastic settlement was established and the district developed into an important centre of culture. Early in the eleventh century, after several invasions, a fortified town was built on the island by the Danes, and later passed into the possession of the Anglo-Normans. It prospered as a commercial and monastic City for several centuries. Reclamation of the adjoining lands began in the seventeenth century and continued into the nineteenth, when the area of the City expanded in all directions. Owing to its commercial prosperity extensive civic improvements were carried out, substantial residences, churches, and public buildings forming the chief feature of the City as it is to-day."

The City of Cork owes much of its importance to the fact that it is the natural centre of a great agricultural and livestock county, and has a large export trade in horses and cattle; but its industries also include brewing, milling, textiles, tobacco, and numerous others. Since the establishment of the Ford motor works there engineering has taken an important place. The population of the City and district is about 100,000, and for a town of this size the lay-out is exceptionally spacious and dignified, numerous broad streets having been made in and around the central area, mainly during the eighteenth century. The character of the buildings is in general inferior to that of the lay-out, and there are a few congested areas, though the density as a whole is only 29·8 per acre. The death-rate from notifiable diseases ranges from 1·9 to 2·7 per 1,000, and is roughly proportionate to the sanitary conditions in the various districts and to the degree of congestion in the areas actually occupied by houses.

Future possibilities are also considered in the survey. The most important of these is obviously the industrial growth which is facilitated by the allocation of the old racecourse to the south-east of the City for this purpose. This site has a frontage of



The Geological Map [*from* Cork: A Civic Survey].



[*From* Cork: A Civic Survey.]

nearly 1½ miles to the river, with a good depth of water, and facilities for railway connections. On the opposite, or north, bank there is also scope for extensive developments. The main problem confronting the Harbour Commissioners is, however, a broader one, namely, whether expansion is more needed at Cork or at Cobh (Queenstown). This question is outside the scope of this survey, and can only be dealt with by a specifically economic one. Cork is clearly a better centre from the land point of view, but this may be counterbalanced by marine requirements.

Other matters are dealt with in a concise, but explicit, fashion. It is pointed out that there is a good deal of dilapidated and unsatisfactory housing, but that, owing to the land available to the south, this can be more easily remedied than in most places. The road and railway systems are also considered, as well as the possibilities as regards cattle traffic, markets, and abattoir. The need for the grouping of public buildings evokes some suggestions, including the provision of a definite civic centre. A further section is given to the architectural character of the buildings, and in the following one it is pointed out that Cork comes very low on the list in the provision of public open places, having only ·54 of an acre per 1,000 population. Dublin possesses more than ten times this proportion, while English towns range from ·9 to 6·6 (see diagram). An extension of the municipal boundary is proposed, and the report closes with a note on the municipal services and their organization. H. V. LANCHESTER

Cork : A Civic Survey. Prepared by the Cork Town Planning Association. The University Press of Liverpool, and Hodder and Stoughton, Ltd., London. Price 10s.

HOUSING AT BOURNVILLE

This book is a revised reprint of a publication first made in 1922, and contains a full account of the housing activities of Cadbury Brothers, Ltd., and the Bournville Village Trust. Probably the matters which will present the greatest interest to the student of housing are the various methods of raising capital and of finance generally. The public utility societies at Bournville have been particularly active during the last four years, and their methods are worthy of study. The latest development is Bournville Finance, Ltd., the complementary development initiated by Cadbury Bros., Ltd., for their employees (whereby, jointly with the Bournville Works Pension Fund, money for houses is advanced on easier terms and at a lower rate of interest than the market provides). The importance of the provision of cheap capital is realized by all, but the two-thirds of the value, which is the usual amount loaned, may to-day prove to be little more than half the cost, and to find the remainder would be quite impossible for many a would-be house-seeker. Bournville Finance, Ltd., however, are willing to take a second mortgage, and the security they demand is *a :* the man's character, and especially his employer's report on his value; and *b :* some collateral security, such as a life policy. The first part of the security is interesting, and has not before, I believe, been tried in this country, although it has been in Germany with satisfactory results.

Another interesting aspect of the work is experimental building. Bungalows in brick and wood, houses in *pisé de terre*, in steel and other materials have been built. The conclusion arrived at as the result of these experiments is just that which any architect would expect. "After reviewing the whole question it was decided that no other method was so economical as brick for the district." The qualification contained in the last three words is scarcely necessary. If this fact were more generally realized and acted upon the dissipation of much energy would be prevented, money saved, ugliness avoided, and greater progress would be made towards the elimination of the housing shortage. The experiments, however, had their value, for they attracted considerable attention, and the fact that brick is the best building material, with but few exceptions, for the whole country was thus widely disseminated.

Before concluding this notice it may be of interest to give an actual example of the financial assistance given by Bournville Finance, Ltd. The case is taken of the purchase of a house valued at £750:

1: The trustees of the pension fund will lend two-thirds at 4 per cent. (£500).

2: Bournville Finance, Ltd., will advance one-third less purchaser's deposit on second mortgage at 5 per cent. (£150).

3: Purchaser contributes deposit, £100.

The purchaser thus obtains possession of a £750 house at an initial outlay of £100. Repayment is arranged generally over a period of ten years. The publication contains some plans prepared by Mr. Wilmot, the estate architect, which are compact and economical, and contain all the amenities which we are accustomed to look for in good-class property of this kind.

H. J. B.

Bournville Housing. Publication Department, Bournville Works. Price 6d.

COMPETITION CALENDAR

The conditions of the following competitions have been received by the R.I.B.A.

September 30. Cenotaph for Liverpool. Assessor, Professor C. H. Reilly, O.B.E., M.A., F.R.I.B.A. Premiums, first, £200; second, £150, provided he is an ex-Service man; third, £100; fourth, £50. The author of the selected design will be paid a commission of 500 guineas, which will include the premium of £200 above-mentioned, and, in addition to preparing all the necessary working drawings and superintending the erection of the work, he will be required to superintend the erection of a full-size wood and plaster model of his design on the site. Particulars from the Town Clerk.

October 30. New Offices for Scottish Legal Life Assurance Society, Bothwell Street, Glasgow. Assessor, Mr. John Keppie, A.R.S.A., F.R.I.B.A. Particulars from Mr. William Watson, Secretary, 84 Wilson Street, Glasgow, before August 21. Deposit £1 1s.

January 25, 1927. Conference Hall, for League of Nations, Geneva. 100,000 Swiss francs to be divided among architects submitting best plans. Sir John Burnet, R.A., British representative on jury of assessors.

The conditions of the following competitions have not as yet been brought to the notice of the R.I.B.A.

No date. Incorporated Architects in Scotland: 1: Rowand Anderson Medal and £100; City Art Gallery and Museum; 2: Rutland Prize (£50) for Study of Materials and Construction; 3: Prize (£10 to £15) for 3rd year Students in Scotland; 4: Maintenance Scholarship, £50 per annum for 3 years. Particulars from Secretary of the Incorporation, 15 Rutland Square, Edinburgh.

January 3, 1927. Academy, Perth. Open to Architects practising in Scotland. Assessor, Mr. James D. Cairns. Premiums: £100 and £50. Particulars from Mr. R. Martin Bates, Education Offices, Perth. Deposit £1 1s.

January, 8, 1927. Town Hall Extension and Public Library Building for the City of Manchester. Assessors, Messrs. T. R. Milburn, R. Atkinson, and Ralph Knott. Preliminary competition open to architects of British Nationality. Particulars from Mr. P. M. Heath, Town Clerk. Deposit £1 1s.

COMPETITION NEWS

Industrial Art Competitions

The report on the competition of industrial designs, held by the Royal Society of Arts, the exhibits of which were shown at the Imperial Institute, South Kensington, has now been issued. The judges state that they noted a distinct advance in the work submitted. In the textile section a travelling scholarship of £150 was awarded to Miss Pauline Athey (Manchester School of Art), and the Cadbury Bournville travelling scholarship of £50 went to William T. Rose (Working Men's College Art Class, Crowndale Road, N.W.). About £1,700 has been distributed as prizes during the last three years. The council have received assurances from many quarters that the competition has aroused the greatest interest among the students generally, and in some schools they are informed the work is being carried on with a zeal and earnestness which have never been known before. For the benefit of those whose work is approved by the judges for exhibition, it has been decided to start a bureau of information where their names will be enrolled if they desire to obtain employment as designers. The information will be placed at the disposal of manufacturers, and it is hoped that the bureau will be of service both to manufacturers and designers.

The Institution of Structural Engineers Scholarships

The Institution of Structural Engineers have awarded the Portland House Scholarship (£300 and gold medal) to Mr. George Robertson, of Bath. Mr. Robertson was educated at King Edward's School, Southampton, and Queen's College, Oxford, where he graduated B.A. in engineering, received honours in mathematics moderations, and 1st class honours in engineering science finals. He was awarded an exhibition of £175 per annum in 1922 by the Royal Commission for the exhibition of 1851. Mr. Robertson is twenty-six years of age, and is at present employed as assistant engineer to the city engineer of Bath. Under the terms of the scholarship award he will be required to travel on the Continent and in America to study modern concrete development. The Institution awarded a silver medal to Mr. C. J. Wood, of Purley, and a bronze medal to Mr. F. W. Davey, of Victoria Street, S.W., the two candidates placed next in order of merit. The Portland House Scholarship is one of a group of three travelling scholarships, each value £300, which the Institution offers to young engineers at the rate of one scholarship each year.

NEW INVENTIONS

[The following particulars of new inventions are specially compiled for THE ARCHITECTS' JOURNAL by permission of the Controller of H.M. Stationery Office, by our own patent expert. All inquiries concerning inventions, patents, and specifications should be addressed to the Editor, 9 Queen Anne's Gate, Westminster, S.W.1. For copies of the full specifications here enumerated readers should apply to the Patent Office, 25 Southampton Buildings, London, W.C.2. The price is 1s. each.]

LATEST PATENT APPLICATIONS

20506.—Birch, F. Ladder fire-escapes. August 19.

20213.—Glover, C. W., and Smith, H. F. Floors for buildings. August 16.

20458.—Howarth, F., and Raven, F. C. J. Bungalows, etc. August 19.

20484.—Losey, J. B. Manufacture of flooring, etc. August 19.

20674.—Massera, G. Cooling buildings, etc. August 21.

SPECIFICATIONS PUBLISHED

256673.—Farnsworth, A. W., and Thorpe, T. H. Ridge coverings for roofs of buildings.

256695.—Francis, A. Device for the erection and adjustment of boxes, moulds, or shuttering for concrete buildings, and of attaching or fixing any kind of interior or exterior lining thereto.

245732.—Irving Iron Works Co. Stairways.

250179.—Perfect Window Regulator Corporation. Regulating mechanism for sliding windows.

256875.—Henderson, J., and McKenzie, J. T. Wall tie.

ABSTRACT PUBLISHED

254070.—Cramer, J., 4 St. Mary's Parsonage, Manchester. Casting walls *in situ*.

TRADE NOTES

Sundials, bird and Italian flower-baths, garden seats, and vases, all of excellent design, are shown in a booklet just issued by the Empire Stone Company, Ltd. Empire stone is cast reconstructed stone, and is, of course, extensively used for building work throughout the country. The garden ornament is supplied in either Portland stone or pale buff colour, but any stone colour can be supplied to special order.

For a number of years the Art Metal Equipment Company, Limited, have manufactured and sold special steel equipment for banks, libraries, and business offices, and fire-resisting fittings, including doors, partitions, shutters, and adjustable shelving, in fact, any type of work previously made in wood; and Roneo, Limited, have confined themselves to the manufacture and supply of steel filing cabinets, cupboards, card index drawers, steel desks, and other standardized stock fittings of a similar character. Arrangements have now been completed to link up these two branches of the industry by Roneo, Limited, acquiring the goodwill of the Art Metal Equipment Co., Ltd. Additional premises have been obtained in Holborn so as to give greater showroom facilities. Contract work will be undertaken, and standard fittings will be sold throughout the world by the Roneo organization, which consists of seventeen branches in England and branches or agents throughout the world. Mr. James C. Sellers, who has been identified with the steel furniture and equipment business for over twenty years, will continue to direct this work as previously. He will be found at the Roneo Building, 5-11 Holborn.

The film illustrating the construction of upwards of thirteen miles of B.R.C. reinforced concrete roads at Tilbury was shown at the Picturedrome, Worthing, on the occasion of the meeting of the West Sussex surveyors. The B.R.C. will be pleased to receive applications for the exhibition of this film, together with their other film entitled "Constructing a Reinforced Tarmacadam Road," from all interested. Applications should be made to the British Reinforced Concrete Engineering Co., Ltd., Roads Department, King's Buildings, Smith Square, London, S.W.1.

The motor travelling exhibit of the National Radiator Company, Limited, of Hull, has been entirely re-designed, and is making a tour of the southern counties. The body has been made to resemble a small bungalow, and the interior has been arranged to represent parts of a hall, kitchen, sitting-room, and bathroom. In the kitchen are a No. 1 Ideal Cookanheat, Ideal Classic four column, and Ideal Classic wall radiators, as well as an Ideal towel rail radiator and an indirect cylinder for hot water supply. The whole apparatus can be seen in operation. A lavatory basin in the bathroom permits demonstrations to be made of the actual water-heating capacity of the Ideal Cookanheat. Smokeless fuel, viz., anthracite nuts, is used for stoking, but the Ideal Cookanheat is equally suitable for burning broken gas coke, which is recommended in preference to ordinary house coal. An Ideal open fire and Ideal Classic boilers are also exhibited.

Messrs. Burn Brothers (London), Ltd., have issued a new catalogue of cast-iron drainage pipes and fittings and sanitary appliances. Special patterns have been prepared for the firm's drainage pipes and fittings, and the cores are specially treated to ensure a perfectly smooth inside surface. The inspection chambers are designed to afford the greatest facility of access for cleansing or inspection, and the various bends, branches, traps, etc., will be found sufficient to meet the requirements of almost any situation, although fittings can be made to other angles to order. The pipes and fittings are made of ample strength and are coated at a high temperature inside and outside, to prevent corrosion, with Dr. Angus Smith's patent solution. The joints are put together with yarn and molten lead, or, under special circumstances, with lead "wool" well caulked, and the pipes, chambers, etc., thus rendered gastight throughout the entire system, are claimed to be capable of withstanding considerable pressure.

Following are the results of tests made by Messrs. Kirkaldy and Son, of London, experimental engineers, on the bricks of the London Brick Company and Forders, Ltd.: The bricks were kept saturated with water and were frozen and thawed alternately twenty times during periods of twelve hours each. Test No. 2403, six Fletton bricks, ordinary plain surfaces, recessed one side, Phorpres (in recess); two bricks were slightly attacked on corners and edges; others were apparently undamaged. Test No. 2404, six Fletton bricks, with one rustic face, recessed one side, Phorpres (in recess). The rustic faces were softened and loosened in places where the moulding was originally imperfect, but not where the moulding was originally clean and sharp. The corners and edges of the rustic faces were slightly attacked, but the edges of the plain faces, except in one brick, were apparently undamaged. Absorption after twenty-four hours immersion in water. Test No. 2403, plain Flettons, 10·8, 11·1, 10·0, average 10·6 per cent. Test No. 2404, rustic Flettons, 11·5, 12·0, 11·0, average 11·5 per cent.

The story of the speed-up in constructional work, by means of what may be called the super-concrete, Ferrocrete, is told in picture, diagram, and letterpress in the booklet *Ferrocrete* published by the Cement Marketing Co. With Ferrocrete an immense saving of time has become possible, and it is claimed that "concrete made with Ferrocrete is as strong in four days as concrete made with ordinary cement becomes after twenty-eight days." The photographs in this publication illustrate many big building undertakings carried out with Ferrocrete. So numerous and so varied are the kinds of work in which it has been used that it would be difficult to find any form of concrete construction in which Ferrocrete has not been employed. The booklet refers to its use for making roads, bridges, houses, grandstands, tennis courts, pipes, piles, and swimming-baths. London's most heavily-trafficked all-concrete road is undoubtedly that which is laid on the Chelsea Embankment from Victoria (Chelsea) Bridge to Albert Bridge. This is a two-course road and Ferrocrete has been used throughout. The reopening of this road is worth recording since, owing to the exigencies of the general strike, it had to be opened sooner than was deemed advisable, and the first vehicles to pass over were six armoured cars—the heaviest vehicles possible. A critical examination made immediately after showed that the road was quite unaffected.

A treatise on the structure and uses of stabilized bitumen (Stablex) has just been published by Messrs. D. Anderson and Son, Ltd. The firm state that Stablex will be found effectively to prevent walls in exposed positions from becoming damp, but from the point of appearance its black colour may be objected to. To overcome this objection cement wash, cement rendering or rough-cast can be applied over Stablex, and for this purpose the firm recommend that the cement and sand be mixed to a stiff gauge of 2 of sand to 1 of cement to make it hold up properly. For larger areas it is advisable to drive supporting galvanized nails into the joints at distances of about 9 in. apart in each direction. Any paint can be applied over Stablex, providing that it is first isolated by a coat of knotting or similar material. It is claimed that where hair cracks have developed in concrete roofs No. 3 Stablex will effectively seal these and render the roof waterproof, and that, at a very low comparative cost, zinc and lead flats, which are subject to leaking, can be made waterproof by a coat of No. 3 Stablex. The firm have produced and have had under trial for the past three years a flexible bitumen roofing which has been stabilized and given fire-resisting qualities in addition. It has been tried by fire tests under conditions much more intensive than any likely to be encountered in ordinary conditions, and it is claimed that the results prove that this roofing cannot cause or spread a fire because it will not support combustion.

OBITUARY

Mr. Somers Clarke

It is with deep regret that we record the death of Mr. Somers Clarke, at Mahamid, Upper Egypt. He was born in 1841, the only son of Mr. Somers Clarke, a solicitor, of Brighton. In his earlier days he was in the office of Sir Gilbert Scott. In association with his partner, Mr. J. T. Micklethwaite, he repaired many ancient churches. Among the largest of his churches were St. Martin's at Brighton, and St. John the Divine at Gainsborough. He was elected surveyor to the fabric of St. Paul's in 1897, and he was responsible for the design of the electric lighting which Mr. J. Pierpont Morgan generously gave to the Cathedral. He co-operated with Sir William B. Richmond in the internal decorations there, and after a long agitation he had the satisfaction of seeing the Stevens monument to the Duke of Wellington removed from the south-west chapel to the site it was originally intended to occupy. When the Dean and Chapter decided to set up a special chapel for the Order of St. Michael and St. George, at the south-west corner of the nave, it fell to the lot of Mr. Somers Clarke to design the stalls. He was appointed architect to Chichester Cathedral in 1900, and retired in 1922. Mr. Somers Clarke was a Fellow of the Society of Antiquaries, and served on the council of that body, and he was also an hon. member of the Comité de Conservation des Monuments de l'Art Arabe, Cairo. In addition to contributing to the proceedings of various learned societies, he was the author of *Christian Antiquities in the Nile Valley*.

Prince Frederick Duleep Singh

The following resolution has been passed at a meeting of the Society for the Protection of Ancient Buildings: "This committee records its profound regret on the death of Prince Frederick Duleep Singh. The late Prince became a member of the Society in 1892 and of the committee in 1919, and was one of the staunchest supporters of its principles. His great knowledge of archæology was always at the service of the committee, and he was ever a most helpful and charming colleague."

THE WEEK'S BUILDING NEWS

A New Market for Forest Gate

A new market is to be built in Woodgrange Road, Forest Gate.

Enlargements to Ealing Town Hall

It is proposed to carry out enlargements to the Ealing Town Hall.

A By-pass Road for Welwyn

The Herts County Council proposes to construct a by-pass road at Welwyn, at a cost of £56,000.

Improvements to Earlsferry Town Hall

Funds are being raised to defray the expenses in connection with the improvements to Earlsferry Town Hall, Fife.

A New Edmonton Nursing Home

The Edmonton Guardians have ordered plans to be prepared for an additional nursing home for the staff at their North Middlesex Hospital.

Proposed Flats at Wadhurst

The Ticehurst Rural District Council is considering a scheme for the erection of a number of flats at Wadhurst by private enterprise.

A Library for Insch

A sum has been bequeathed by Dr. John Russell, O.B.E., M.A., for the erection of a public library and village institute at Insch, Aberdeenshire.

Housing at Chelmsford

The Ministry of Health has sanctioned the borrowing by the Chelmsford Town Council of £20,000 for advances under the Housing Act, 1925.

A Dundee Health Institute

A new public health institute is to be built off Constitution Road at the corner of Salem Street, Dundee, at a cost of about £15,000.

Town Planning at Sefton

The Sefton Rural District Council has approved of a town-planning scheme for the townships of Ince Blundell, Thornton, Lunt, and Rural Aintree.

A Swimming Pool for Sunderland

A proposal to build a sea-water swimming pool at Roker is being revived again by the Markets and Baths Committee of the Sunderland Corporation. The estimated cost is £20,000.

Houses for Brigg

The Brigg Urban District Council has decided to apply for a loan of £16,500 for the erection of fifty houses, and also for a loan for the purchase of the necessary land.

More Houses for Gloucester

The Minister of Health has approved the extension of the Gloucester Urban District Council's scheme for assisting private enterprise in respect of an additional forty houses.

Manchester Improvement Schemes

The Manchester Corporation has received sanction from the Ministry of Health to borrow sums of £2,500,500 for the erection of houses and £500,000 for the land, streets, and sewers.

The Masonic Peace Memorial

The Duke of Connaught, Grand Master of England, has consented to lay the foundation stone of the Masonic Peace Memorial buildings, which are to be erected from the designs of Messrs. H. V. Ashley and Winton Newman, on Thursday, July 14, 1927.

Housing at Oxendon

At a meeting of the Oxendon Rural District Council it was stated that the Ministry of Health would raise no objection to the Council taking steps to acquire the site at Braybrooke for the erection of more houses.

An Improvement Scheme for Bridlington

Big changes on the north side of Bridlington have been suggested in a development and improvement scheme submitted to the local Council. The projects include the demolition of several properties owned by the Corporation.

The Aberdeen Beach Scheme

Messrs. Roberts and Hume, the architects of the Aberdeen beach improvement scheme, have submitted to the Links and Parks Committee of the Aberdeen Town Council amended plans lowering the cost of the scheme to £42,000. These have been accepted.

The Edinburgh Cenotaph

The Edinburgh Cenotaph Executive Committee has resolved to ask the Edinburgh Town Council to reconsider the original site asked at East Princes Street Gardens, between the Christopher North and Adam Black statues, as being under all the circumstances the most appropriate.

A New Road for Torquay

The Town Council of Torquay, with the help of Mr. W. R. Davidge, of the Town Planning Institute, has prepared a scheme in which provision is made for the construction of a road 60 ft. wide on the heights above the town. This highway will be about eight miles in length.

A Dundee Hospital Gift

A gift of £30,000 has been made to the Dundee Royal Infirmary for the purpose of building and equipping a new maternity hospital by Messrs. R. B. and F. B. Sharp, of John Sharp and Sons, jute spinners, Dundee.

A Renfrew Improvement Scheme

The Scottish Board of Health has intimated to the Renfrew Town Council its agreement to the making of an improvement scheme for the burgh under the Housing Acts. The scheme will apply to that area bounded by Hairst Street, High Street, Queen Street, and Renfrew Parish Churchyard.

Further Housing at Hailsham

The Housing Committee of the Hailsham Rural District Council has recommended that application be made to the Ministry of Health for such an extension of the building programme in regard to assistance to private enterprise as will permit of certificates being granted for a further fifty houses.

Enlargements to a Strand Hotel

An important change is foreshadowed on the north side of the Strand, concurrently with the transformation which is taking place on the south side. The Strand Palace Hotel is to be rebuilt and enlarged. It is the aim of the Strand Hotel, Ltd., to erect one of the biggest hotels in London. It will have a frontage to the Strand of about 660 ft.

A Southwark Housing Difficulty Solved

In order to compete with the serious housing difficulty in the locality, the Southwark Borough Council has made arrangements to provide accommodation on the L.C.C. estates erected on the outer fringe of London for 122 families of approximately 500 persons. No sites are available for the erection of new dwellings in Southwark, and the Borough Council has made the best of the situation by arranging for the transfer of families to Becontree and other L.C.C. estates.

Building Developments at Scarborough

Plans and estimates for the erection of electricity department offices, public conveniences, and cloakrooms on land in Harcourt Place, Scarborough, the cost of which will be about £10,000, has been approved by the Scarborough Town Council. The Electricity Sub-Committee has received formal sanction by the Electricity Commissioners to the borrowing of £175,000 for the purchase of the electricity undertaking. The Ministry of Health has no observation to make on the proposal to sell sites in Edgehill Park for the erection of houses and shops, and sketch elevations of the buildings are under consideration.

READERS' QUERIES

SAFE LOAD ON BRICKWORK

F. G. writes: "In reply to a query some time ago Professor Henry Adams gave the safe load on brick in mortar at 3 tons per ft. super. This is reasonable, but some steel-constructionists' handbooks give 8 tons for good bricks in cement mortar. I should like to know if the pier 'P' 2 ft. 4 in. × 9 in. could safely be loaded to 9½ tons if hard-pressed bricks were built in sand and cement mortar? The pier is stiffened one side by a 4½ in. cross-wall.

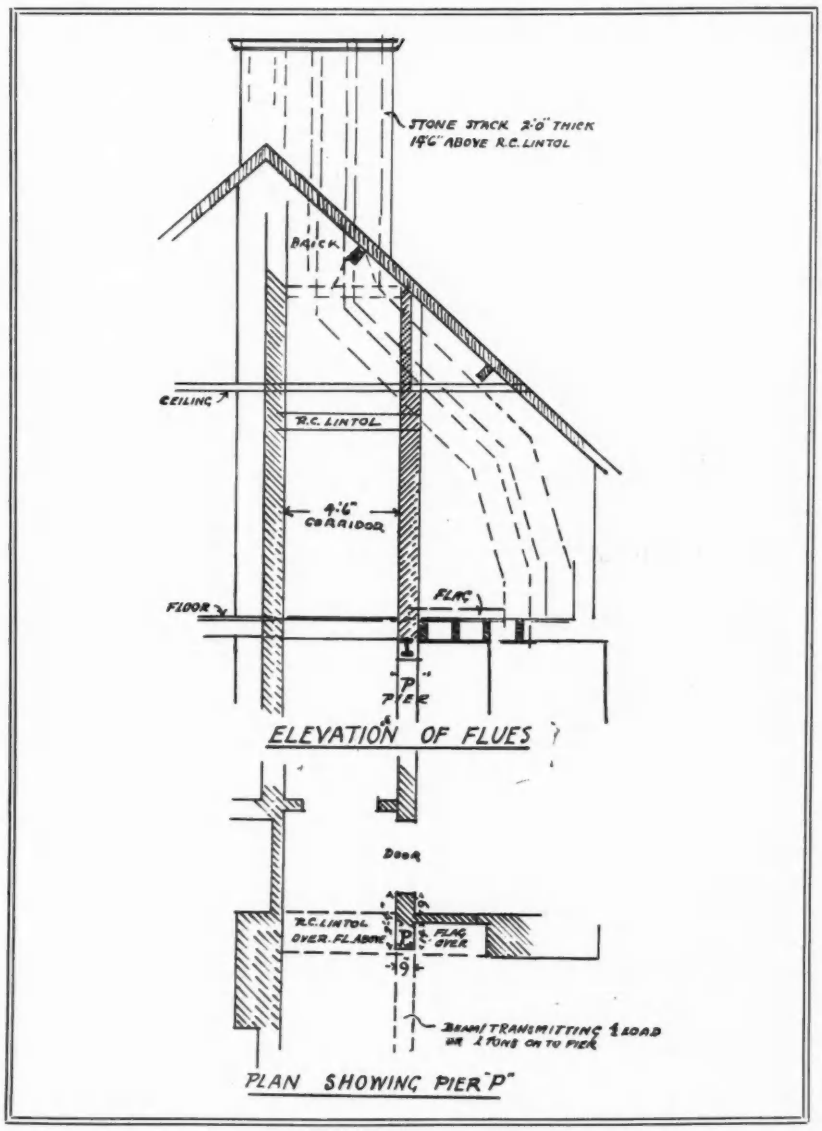
Details of Loading

	Tons
Load from r.c. lintel including the 9 in. into wall	3¾
Weight of pier itself (18 ft. high) including portion of wall between doors on each floor	2¼
Floor load (corridor) ½ 4 ft. 0 in. × 4 ft. 6 in. × ¾ cwt.	⅓
Load from steel beam	2
Load from flag 2 ft. 8 in. clear span 1 ft. 4 in. × 2 ft. × 12 ft. built hollow ..	1
	9⅓

Or allowing for ceiling 9½ tons.
Area of pier itself ('P') 1¾ tons.
Loading is less than 6 tons to foot super. (without taking into account any of the area of 4½ in. cross-wall)."

If the cross-wall be well bonded into the pier and the steel beam has not less than 18 in. bearing on it, the brickwork being of hard-pressed bricks set in cement, a load of 9½ tons may be put upon it.

HENRY ADAMS



Safe load on Brickwork.
[See answer to F. G.]

THE DIMENSIONS OF A PURLIN

H. writes: "What is the most economical section of purlin to use for a roof 15 ft. across space? The cross-walls are 15 ft. apart, the pitch 50 deg., and the spars 3 × 2½ in. The roof will be covered with ordinary slates."

If only one purlin is used in the centre of each roof slope it will be called upon to bear about 15 ft. by 7 ft., or 105 ft. super of roof slope, having a weight of about half a hundredweight to the super foot. The least dimensions for a sound pine beam to act as purlin might be 10×4 in., 5×9 in., or 6×8 in., provided that the purlins can be stiffened against deflection by means of collars and cleats, and that they are really free from knots and defects. If the purlin is depended upon to span the whole 15 ft. without such lateral supports it should be made stouter, since it is liable to fail by deflecting in the direction of its breadth as well as its depth. In old work it was often possible to diminish the effective span of the purlin by providing diagonal braces to its under side from corbels or seatings in the gable and cross-walls. Such braces apply a lateral thrust, however, and might overtax a thin modern wall. The economy of the purlin has now to be reconsidered in the light of its service to the structure, since stout self-supporting purlins assist the thin gables to withstand the overturning effects of wind; a point which did not arise in old-fashioned, thick-walled buildings.

W. H.

PITCH FOR A BELL-CAST EAVE

M. writes: "What is the flattest pitch that can be safely used for the bottom courses of a bell-cast eave where swept valleys are used?"

Swept valleys are generally used on roofs having a pitch greater than 45 deg. to the horizontal, and lower pitches very greatly increase their liability to leakage. Actually the flattest slope for the bottom course of a bell-cast eave where swept valleys are used differs for each material, and the matter is best determined by making an experimental valley and turning the hose on it, or leaving it to be tested by storms of driving rain. As the slater has to be instructed in the art, the experiment will serve a double purpose. Some modern architects install a wide secret gutter of lead under the battens which carry the slates, slabs, or tiles of the swept valley, but this is probably only really needed in the case of rough, irregular-shaped stone slabs or where the skill of the craftsman is not equal to the occasion. W. H.

ABANDONED WORKS

Provincial writes: "What can a client legally claim in the way of drawings, details, and quantities in the case of abandoned works? Drawings and quantities have been prepared and tenders received."

In the case of works abandoned after drawings and quantities have been prepared and tenders received, the client can legally claim all the drawings, details, quantities, and correspondence.

S. ST. J. S.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	Do.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W.Counties	1 8	1 3½
A₃	Addlestone	S. Counties	1 6½	1 2
A	Adlington ..	N.W.Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W.Counties	1 8	1 3½
B₂	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W.Counties	1 8	1 3½
A₃	Atherstone	Mid. Counties	1 6½	1 2
B₂	Aylesbury ..	S. Counties	1 4½	1 0½
B	BATH ..	S.W.Counties	1 6	1 1‖
B₂	Banbury ..	S. Counties	1 4½	1 0½
B₂	Bangor ..	N.W. Counties	1 5	1 1
A	BarnardCastle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
B₁	Barnstaple	S.W. Counties	1 5½	1 1½
A	Barrow ..	N.W.Counties	1 8	1 3½
A	Barry ..	S. Wales & M.	1 8	1 3½
B₂	Basingstoke	S.W. Counties	1 4½	1 0½
A	Batley ..	Yorkshire	1 8	1 3½
B	Bedford ..	E. Counties	1 6	1 1‖
A₂	Berwick-on-Tweed	N.E. Coast	1 7	1 2½
A₃	Bewdley ..	Mid. Counties	1 6½	1 2
B₂	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W.Counties	†1 9	1 3½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W.Counties	1 8	1 3½
A	Blackpool	N.W.Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₂	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W.Counties	1 8	1 3½
A₃	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1‖
A	Bradford ..	Yorkshire	1 8	1 3½
A₃	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₂	Bridgwater	S.W. Counties	1 5	1 1
A₁	Bridlington	Yorkshire	1 7½	1 2½
A	Brighouse ..	Yorkshire	1 8	1 3½
B₁	Brighton ..	S. Counties	1 6	1 1½
A	Bristol ..	S.W. Counties	1 8	1 3½
B₂	Brixham ..	S.W. Counties	1 4½	1 0½
A₃	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 4	1 0½
A	Burnley ..	N.W.Counties	1 8	1 3½
A	Burslem ..	Mid. Counties	1 8	1 3½
A₂	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W.Counties	1 8	1 3½
A₃	Buxton ..	N.W.Counties	1 6½	1 2
B	CAMBRIDGE	E. Counties	1 6	1 1‖
B₂	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W.Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1‖
B₂	Carnarvon ..	N.W.Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2‖
A	Castleford ..	Yorkshire	1 8	1 3½
B₁	Chatham ..	S. Counties	1 5½	1 1½
B₁	Chelmsford	E. Counties	1 5½	1 1½
B	Cheltenham	S.W. Counties	1 6	1 1‖
A	Chester ..	N.W.Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	‡1 8	1 3½
B₂	Chichester ..	S. Counties	1 4½	1 0½
A	Chorley ..	N.W.Counties	1 8	1 3½
B₂	Cirencester	S. Counties	1 5	1 1
A	Clitheroe ..	N.W.Counties	1 8	1 3½
A	Clydebank	Scotland	1 8	1 3½
A	Coalville ..	Mid. Counties	1 8	1 3½
B₁	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W.Counties	1 8	1 3½
B₁	Colwyn Bay	N.W.Counties	1 5½	1 1½
A	Consett ..	N.E. Coast	1 8	1 3½
B₁	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 8	1 3½
A₃	Crewe ..	N.W.Counties	1 6½	1 2
A₃	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W.Counties	1 8	1 3½
B₂	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W.Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury ..	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1‖
A	Doncaster ..	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W.Counties	1 4	1 0½
A₃	Driffield ..	Yorks	1 6½	1 2
A₃	Droitwich ..	Mid. Counties	1 6½	1 2
A₂	Dudley ..	Mid. Counties	1 7	1 2½
A	Dundee ..	Scotland	1 8	1 3½
A	Durham ..	N.E. Coast	1 8	1 3½
B₁	EASTBOURNE	S. Counties	1 6	1 1‖
A	Ebbw Vale	S. Wales & M.	1 8	1 3½
A	Edinburgh	Scotland	1 8	1 3½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 8	1 3½
B	Exeter ..	S.W. Counties	§1 7	1 2½
B₂	Exmouth ..	S.W. Counties	1 5	1 1
B	FELIXSTOWE	E. Counties	1 6	1 1‖
A₃	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W.Counties	1 8	1 3½
B₃	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham ..	N.W.Counties	1 8	1 3½
B₃	Frome ..	S.W.Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
B	Gloucester ..	S.W.Counties	1 6	1 1‖
A₂	Goole ..	Yorkshire	1 7	1 2½
B₁	Gosport ..	S. Counties	1 5½	1 1½
A₃	Grantham ..	Mid. Counties	1 6½	1 2
A₂	Gravesend ..	S. Counties	1 7	1 2½
A	Greenock ..	Scotland	*1 8	1 3½
A	Grimsby ..	Yorkshire	1 8	1 3½
B₁	Guildford ..	S. Counties	1 5½	1 1½
A	HALIFAX ..	Yorkshire	1 8	1 3½
A₁	Hanley ..	Mid. Counties	1 7½	1 2½
A	Harrogate ..	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₂	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S.W.Counties	1 6	1 1‖
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham ..	N.W.Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½

The initial letter opposite each 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	II
			s. d.	s. d.
A	ILKLEY ..	Yorkshire	1 8	1 3½
A	Immingham	Mid. Counties	1 8	1 3½
B	Ipswich ..	E. Counties	1 6	1 1‖
C₁	Isle of Wight	S. Counties	1 4	1 0½
A	JARROW ..	N.E. Coast	1 8	1 3½
A	KEIGHLEY	Yorkshire	1 8	1 3½
B₂	Kendal ..	N.W. Counties	1 5	1 1
B₂	Keswick ..	N.W.Counties	1 5	1 1
B	Kettering ..	Mid. Counties	1 6	1 1‖
A₃	Kidderminster	Mid. Counties	1 6½	1 2
B₂	King's Lynn	E. Counties	1 5	1 1
A₁	LANCASTER	N.W.Counties	1 7½	1 2
A₃	Leamington	Mid. Counties	1 6½	1 2½
A	Leeds ..	Yorkshire	1 8	1 3½
A	Leek ..	Mid. Counties	1 8	1 3½
A	Leicester ..	Mid. Counties	1 8	1 3½
A	Leigh ..	N.W. Counties	1 8	1 3½
B₃	Lewes ..	S. Counties	1 4½	1 0½
A₃	Lichfield ..	Mid. Counties	1 6½	1 2
A	Lincoln ..	Mid. Counties	1 8	1 3½
A	Liverpool ..	N.W.Counties	‖ 1 9	1 3½
B	Llandudno	N.W.Counties	1 6	1 1‖
A	Llanelly ..	S. Wales & M.	1 8	1 3½
	London (12 miles radius)		1 9½	1 4½
	Do. (12–15 miles radius)		1 9	1 4
A	Long Eaton	Mid. Counties	1 8	1 3½
A	Loughborough	Mid. Counties	1 8	1 3½
B	Luton ..	E. Counties	1 6	1 1‖
A	Lytham ..	N.W. Counties	1 8	1 3½
A₁	MACCLESFIELD	N.W.Counties	1 7½	1 2½
B	Maidstone ..	S. Counties	1 5½	1 1½
A₃	Malvern ..	Mid. Counties	1 6½	1 2
A	Manchester ..	N.W.Counties	1 8	1 3½
A	Mansfield ..	Mid. Counties	1 8	1 3½
B₂	Margate ..	S. Counties	1 4½	1 0½
A₃	Matlock ..	Mid. Counties	1 6½	1 2
A	Merthyr ..	S. Wales & M.	1 8	1 3½
A	Middlesbrough	N.E. Coast	1 8	1 3½
A₃	Middlewich	N.W. Counties	1 6½	1 2
A	Monmouth	S. Wales & M.	1 8	1 3½
	S. and E. Glamorganshire			
A₁	Morecambe	N.W. Counties	1 7½	1 2½
A₃	NANTWICH	N.W.Counties	1 6½	1 2
A	Neath ..	S. Wales & M.	1 8	1 3½
A	Nelson ..	N.W. Counties	1 8	1 3½
A	Newcastle ..	N.E.Coast	1 8	1 3½
A	Newport ..	S. Wales & M.	1 8	1 3½
A	Normanton	Yorkshire	1 8	1 3½
A₂	Northampton	Mid. Counties	1 7	1 2½
A	North Staffs.	Mid. Counties	1 8	1 3½
A	North Shields	N.E. Coast	1 8	1 3½
B	Norwich ..	E. Counties	1 6	1 1‖
A	Nottingham	Mid. Counties	1 8	1 3½
A	Nuneaton ..	Mid. Counties	1 8	1 3½
B	OAKHAM ..	Mid. Counties	1 5½	1 1½
A	Oldham ..	N.W.Counties	1 8	1 3½
A₃	Oswestry ..	Mid. Counties	1 6½	1 2
B	Oxford ..	S. Counties	1 6	1 1‖
A	PAISLEY ..	Scotland	*1 8	1 3½
C	Pembroke	S. Wales & M.	1 4½	1 0½
A	Perth ..	Scotland	*1 8	1 3
A₃	Peterborough	Mid. Counties	1 6½	1 2
A	Plymouth	S.W. Counties	¶1 8	1 3½
A	Pontefract ..	Yorkshire	1 8	1 3½
A	Pontypridd	S. Wales & M.	1 8	1 3½
B	Portsmouth	S. Counties	1 6	1 1‖
A	Preston ..	N.W.Counties	1 8	1 3½
A	QUEENSFERRY	N.W.Counties	1 8	1 3½
B	READING ..	S. Counties	1 6	1 1‖
B	Reigate ..	S. Counties	1 5½	1 1½
A₃	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₃	Ripon ..	Yorkshire	1 6½	1 2
A	Rochdale ..	N.W.Counties	1 8	1 3½
B	Rochester ..	S. Counties	1 5½	1 1½
A₁	Ruabon ..	N.W.Counties	1 7½	1 2½
A₂	Rugby ..	Mid. Counties	1 8	1 3½
A₃	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₃	ST. ALBANS	E. Counties	1 6½	1 2
A	St. Helens ..	N.W.Counties	1 8	1 3½
A₁	Scarborough	Yorkshire	1 7½	1 2½
A	Scunthorpe	Mid. Counties	1 8	1 3½
A	Sheffield ..	Yorkshire	1 8	1 3½
A	Shipley ..	Yorkshire	1 8	1 3½
A₃	Shrewsbury	Mid. Counties	1 6½	1 2
A₂	Skipton ..	Yorkshire	1 7	1 2½
B	Slough ..	S. Counties	1 5½	1 1½
A₂	Solihull ..	Mid. Counties	1 7	1 2½
B	South'pton	S. Counties	1 6	1 1‖
B₁	Southend-on-Sea	E. Counties	1 5½	1 1½
A	Southport ..	N.W.Counties	1 8	1 3½
A	S. Shields ..	N.E. Coast	1 8	1 3½
A₂	Stafford ..	Mid. Counties	1 7	1 2½
A	Stockport	N.W.Counties	1 8	1 3½
A	Stockton-on-Tees	N.E. Coast	1 8	1 3½
A	Stoke-on-Trent	Mid. Counties	1 8	1 3½
B	Stroud ..	S.W.Counties	1 5½	1 1½
A	Sunderland	N.E. Coast	1 8	1 3½
A	Swansea ..	S. Wales & M.	1 8	1 3½
B	Swindon ..	S.W. Counties	1 6	1 1‖
A₁	TAMWORTH	N.W.Counties	1 7½	1 2‖
B₁	Taunton ..	S.W. Counties	1 5½	1 1½
A	Teeside Dist.	N.E. Counties	1 8	1 3½
A	Todmorden	Yorkshire	1 8	1 3½
A₂	Torquay ..	S.W.Counties	1 7	1 2½
B₁	Tunbridge Wells	S. Counties	1 5½	1 1½
A	Tunstall ..	Mid. Counties	1 8	1 3½
A	Tyne District	N.E. Coast	1 8	1 3½
A	WAKEFIELD	Yorkshire	1 8	1 3½
A₂	Walsall ..	Mid. Counties	1 7	1 2½
A	Warrington	N.W.Counties	1 8	1 3½
A₃	Warwick ..	Mid. Counties	1 6½	1 2
B	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 8	1 3½
B	Weston-s-Mare	S.W. Counties	1 6	1 1‖
A₃	Whitby ..	Yorkshire	1 6½	1 2
A	Widnes ..	N.W.Counties	1 8	1 3½
A	Wigan ..	N.W.Counties	1 8	1 3½
B₂	Winchester	S. Counties	1 5	1 1
B	Windsor ..	S. Counties	1 6	1 1‖
A	Wolverhampton	Mid. Counties	1 8	1 3½
A₃	Worcester ..	Mid. Counties	1 6½	1 2
A	Worksop ..	Yorkshire	1 8	1 3½
A₁	Wrexham ..	N.W. Counties	1 7½	1 2‖
B	Wycombe ..	S. Counties	1 6	1 1‖
B₁	YARMOUTH	E. Counties	1 5½	1 1½
B₂	Yeovil ..	S.W. Counties	1 5	1 1
A	York ..	Yorkshire	1 8	1 3½

* Plasterers, 1s. 9d.
† Carpenters and Painters, 1s. 8½d.
‡ Plumbers, 1s. 9d.
§ Painters, 1s. 6d.
‖ Carpenters and Plasterers, 1s. 8½d.
¶ Painters, 1s. 7d

PRICES CURRENT

EXCAVATOR AND CONCRETOR

EXCAVATOR, 1s. 4½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; NAVVY, 1s. 4½d. *per hour*; TIMBERMAN, 1s. 6d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour*; WATCHMAN, 7s. 6d. *per shift.*

Broken brick or stone, 2 in., per yd.	£0	11	6
Thames ballast, per yd.	0	13	0
Pit gravel, per yd.	0	18	0
Pit sand, per yd.	0	14	6
Washed sand	0	15	6

Screened ballast or gravel, add 10 per cent. per yd.
Clinker, breeze, etc., prices according to locality.

Portland cement, per ton	£2	19	0
Lias lime, per ton	2	10	0

Sacks charged extra at 1s. 9d. each and credited when returned at 1s. 6d.
Transport hire per day:

Cart and horse	£1	3	0	*Trailer*	£0	15	0
3-ton motor lorry	3	15	0	*Steam roller*	4	5	0
Steam lorry, 5-ton	4	0	0	*Water cart*	1	5	0

EXCAVATING and throwing out in ordinary earth not exceeding 6 ft. deep, basis price, per yd. cube . 0 3 0
Exceeding 6 ft., but under 12 ft., add 30 per cent.
In stiff clay, add 30 per cent.
In underpinning, add 100 per cent.
In rock, including blasting, add 225 per cent.
If basketed out, add 80 per cent. to 150 per cent.
Headings, including timbering, add 400 per cent.

RETURN, fill, and ram, ordinary earth, per yd.	£0	2	4
SPREAD and level, including wheeling, per yd.	0	2	4
PLANKING, per ft. sup.	0	0	5

DO. over 10 ft. deep, add for each 5 ft. depth 30 per cent.

HARDCORE, 2 in. ring, filled and rammed, 4 in. thick, per yd. sup.	£0	2	1
DO. 6 in. thick, per yd. sup.	0	2	10
PUDDLING, per yd. cube	1	10	0
CEMENT CONCRETE, 4-2-1, per yd. cube	2	3	0
DO. 6-2-1, per yd. cube.	1	18	0

DO. in upper floors, add 15 per cent.
DO. in reinforced-concrete work, add 20 per cent.
DO. in underpinning, add 60 per cent.

LIAS LIME CONCRETE, per yd. cube	£1	16	0
BREEZE CONCRETE, per yd. cube	1	7	0
DO. in lintols, etc., per ft. cube	0	1	6

DRAINER

LABOURER, 1s. 4½d. *per hour*; TIMBERMAN, 1s. 6d. *per hour*; BRICKLAYER, 1s. 9½d. *per hour*; PLUMBER, 1s. 9½d. *per hour*; WATCHMAN, 7s. 6d. *per shift.*

Stoneware pipes, tested quality, 4 in., per yd.	£0	1	3
DO. *6 in., per yd.*	0	2	8
DO. *9 in., per yd.*	0	3	6
Cast-iron pipes, coated, 9 ft. lengths, 4 in., per yd.	0	6	9
DO. *6 in., per yd.*	0	9	2
Portland cement and sand, see "Excavator" above.			
Lead for caulking, per cwt.	£2	5	6
Gaskin, per lb.	0	0	5½

STONEWARE DRAINS, jointed in cement, tested pipes, 4 in., per ft. 0 4 3
DO. 6 in., per ft. 0 5 0
DO. 9 in., per ft. 0 7 9

CAST-IRON DRAINS, jointed in lead, 4 in., per ft.	0	9	0
DO. 6 in., per ft.	0	11	0

Note.—These prices include digging and filling for normal depths, and are average prices.
Fittings in Stoneware and Iron according to type. *See* Trade Lists.

BRICKLAYER

BRICKLAYER, 1s. 9½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour.*

London stocks, per M.	£4	15	0
Flettons, per M.	2	18	0
Staffordshire blue, per M.	9	10	0
Firebricks, 2½ in., per M.	11	3	0
Glazed salt, white, and ivory stretchers, per M.	21	10	0
DO. *headers, per M.*	21	0	0
Colours, extra, per M.	£5	10	0
Seconds, less, per M.	1	0	0

Cement and sand, see "Excavator" above.

Lime, grey stone, per ton	£2	12	0
Mixed lime mortar, per yd.	1	6	0
Damp course, in rolls of 4½ in., per roll	0	2	6
DO. *9 in. per roll*	0	4	9
DO. *14 in. per roll*	0	7	6
DO. *18 in. per roll*	0	9	6

BRICKWORK in stone lime mortar, Flettons or equal, per rod 33 0 0
DO. in cement do., per rod 36 0 0
DO. in stocks, add 25 per cent. per rod.
DO. in blues, add 100 per cent. per rod.
DO. circular on plan, add 12½ per cent. per rod.

FACINGS, FAIR, per ft. sup. extra	£0	0	2
DO. Red Rubbers, gauged and set in putty, per ft. extra	0	4	6
DO. salt, white or ivory glazed, per ft. sup. extra	0	5	6
TUCK POINTING, per ft. sup. extra	0	0	10
WEATHER POINTING, per ft. sup. extra	0	0	3
GRANOLITHIC PAVING, 1 in., per yd. sup.	0	5	0
DO. 1½ in., per yd. sup..	0	6	0
DO. 2 in., per yd. sup.	0	7	0
BITUMINOUS DAMP COURSE, ex rolls, per ft. sup.	0	0	7
ASPHALT (MASTIC) DAMP COURSE, ½ in., per yd. sup.	0	8	0
DO. vertical, per yd. sup.	0	11	0
SLATE DAMP COURSE, per ft. sup.	0	0	10
ASPHALT ROOFING (MASTIC) in two thicknesses, ¾ in., per yd	0	8	6
DO. SKIRTING, 6 in.	0	0	11
BREEZE PARTITION BLOCKS, set in Cement, 1½ in. per yd. sup.	0	5	3
DO. DO. 3 in..	0	6	6

THE wages are the Union rates current in London at the time of publication. The prices are for good quality material, and are intended to cover delivery at works, wharf, station, or yard as customary, but will vary according to quality and quantity. The measured prices are based upon the foregoing, and include usual builders' profits. 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.

MASON

MASON, 1s. 9½d. *per hour*; DO. *fixer*, 1s. 10½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour.*

Portland Stone:

Whitbed, per ft. cube	£0	4	7
Basebed, per ft. cube	0	4	8
Bath stone, per ft. cube	0	3	9

Usual trade extras for large blocks.

York paving, av. 2½ in., per yd. super.	0	6	6
York templates sawn, per ft. cube	0	6	9
Slate shelves, rubbed, 1 in., per ft. sup.	0	2	6

Cement and sand, see "Excavator," etc., above.

HOISTING and setting stone, per ft. cube	£0	2	2

DO. for every 10 ft. above 30 ft., add 15 per cent.

PLAIN face Portland basis, per ft. sup.	£0	2	8
DO. circular, per ft. sup.	0	4	0
SUNK FACE, per ft. sup..	0	3	9
DO. circular, per ft. sup.	0	4	10
JOINTS, arch, per ft. sup.	0	2	6
DO. sunk, per ft. sup.	0	2	7
DO. DO. circular, per ft. sup..	0	4	6
CIRCULAR-CIRCULAR work, per ft. sup.	1	2	0
PLAIN MOULDING, straight, per inch of girth, per ft. run	0	1	1
DO. circular, do. per ft. run	0	1	4
HALF SAWING, per ft. sup.	£0	1	0

Add to the foregoing prices if in York stone 35 per cent.
DO. Mansfield, 12½ per cent.
Deduct for Bath, 33⅓ per cent.
DO. for Chilmark, 5 per cent.

SETTING 1 in. slate shelving in cement, per ft. sup.	£0	0	6
RUBBED round nosing to do., per ft. lin.	0	0	6
YORK STEPS, rubbed T. & R., ft. cub. fixed	1	9	0
YORK SILLS, W. & T., ft. cub. fixed.	1	13	0

SLATER AND TILER

SLATER, 1s. 9½d. *per hour*; TILER, 1s. 9½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour*; LABOURER, 1s. 4½d. *per hour.*

N.B.—Tiling is often executed as piecework.

Slates, 1st quality, per M:			
Portmadoc Ladies	£14	0	0
Countess	27	0	0
Duchess	32	0	0
Clips, lead, per lb.	0	0	4
Clips, copper, per lb.	0	2	0
Nails, compo, per cwt.	1	6	0
Nails, copper, per lb.	0	1	10

Cement and sand, see "Excavator," etc., above.

Hand-made tiles, per M.	£5	18	0
Machine-made tiles, per M.	5	8	0
Westmorland slates, large, per ton	9	0	0
DO. *Peggies, per ton*	7	5	0

SLATING, 3 in. gauge, compo nails, Portmadoc or equal:

Ladies, per square	£4	0	0
Countess, per square	4	5	0
Duchess, per square	4	10	0
WESTMORLAND, in diminishing courses, per square	6	5	0
CORNISH DO., per square	6	3	0
Add, if vertical, per square approx.	0	13	0
Add, if with copper nails, per square approx.	0	2	6
Double course at eaves, per ft. approx.	0	1	0
TILING, 4 in. gauge, every 4th course nailed, in hand-made tiles, average per square	5	6	0
DO., machine-made DO., per square	4	17	0

Vertical Tiling, including pointing, add 18s. 0d. per square.

FIXING lead soakers, per dozen	£0	0	10
STRIPPING old slates and stacking for re-use, and clearing away surplus and rubbish, per square	0	10	0
LABOUR only in laying slates, but including nails, per square	1	0	0

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

CARPENTER, 1s. 9½d. *per hour*; JOINER, 1s. 9½d. *per hour*; LABOURER, 1s. 4½d. *per hour.*

Timber, average prices at Docks, London Standard, Scandinavian, etc. (equal to 2nds):

7×3, per std.	£21	0	0
11×4, per std.	31	0	0
Memel or Equal. Slightly less than foregoing.			
Flooring, P.E., 1 in., per sq.	£1	5	0
DO. *T. and G., 1 in., per sq.*	1	5	0
Planed Boards, 1 in.×11 in., per std.	30	0	0
Wainscot oak, per ft. sup. of 1 in.	0	2	0
Mahogany, per ft. sup. of 1 in.	0	2	0
DO. *Cuba, per ft. sup. of 1 in.*	0	3	0
Teak, per ft. sup. of 1 in.	0	3	0
DO., *ft. cube*	0	15	0
FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube	0	5	9
DO. framed in floors, roofs, etc., per ft. cube	0	6	3
DO., framed in trusses, etc., including ironwork, per ft. cube	0	7	3
PITCH PINE, add 33⅓ per cent.			
FIXING only boarding in floors, roofs, etc., per sq.	0	13	6
SARKING FELT laid, 1-ply, per yd.	0	1	6
DO., 3-ply, per yd.	0	1	9
CENTERING for concrete, etc., including horsing and striking, per sq.	3	10	0
SLATE BATTENING, per sq.	0	18	6

PRICES CURRENT; *continued.*

CARPENTER AND JOINER: *continued.*

DEAL GUTTER BOARD, 1 in., on firring, per sq.	£3	5	0
MOULDED CASEMENTS, 1¼ in., in 4 sqs., glazing beads and hung, per ft. sup.	0	3	0
DO., DO., 2 in., per ft. sup.	0	3	3
DEAL cased frames, oak sills, 2 in. d.h. sashes, brass-faced pulleys, etc., per ft. sup.	0	4	0
DOORS, 4 pan. sq. b.s., 2 in., per ft. sup.	0	3	6
DO., DO., DO., 1¾ in., per ft. sup.	0	3	0
DO., DO., moulded b.s., 2 in., per ft. sup.	0	3	9
DO., DO., DO., 1¾ in., per ft. sup.	0	3	3
If in oak multiply 3 times.			
If in mahogany multiply 3 times.			
If in teak multiply 3 times.			
WOOD BLOCK FLOORING, standard blocks, laid in mastic herringbone:			
Deal, 1 in., per yd. sup., average	0	10	0
DO., 1½ in., per yd., sup., average	0	12	0
DO., DO., 1½ in. maple blocks	0	15	0
STAIRCASE WORK, DEAL:			
1 in. riser, 1½ in. tread, fixed, per ft. sup.	0	3	6
2 in. deal strings, fixed, per ft. sup.	0	3	9

PLUMBER

PLUMBER, 1*s.* 9½*d. per hour;* MATE OR LABOUREP, 1*s.* 4½*d. per hour.*

Lead, milled sheet, per cwt.	£2	3	0
DO. *drawn pipes, per cwt.*	2	4	6
DO. *soil pipe, per cwt.*	2	6	6
DO. *scrap, per cwt.*	1	9	6
Copper, sheet per lb.	0	1	0
Solder, plumber's, per lb.	0	1	2
DO., *fine, per lb.*	0	1	5
Cast-iron pipes, etc.:			
L.C.C. soil, 3 in., per yd.	0	4	1
DO. *4 in. per yd.*	0	5	0
R.W.P., 2½ in., per yd.	0	2	0
DO. *3 in., per yd.*	0	2	5
DO. *4 in., per yd.*	0	3	3
Gutter, 4 in. H.R., per yd.	0	1	5
DO. *4 in. O.G., per yd.*	0	1	9
MILLED LEAD and labour in gutters, flashings, etc.	3	10	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	1
DO. ¾ in., per ft.	0	2	5
DO. 1 in., per ft.	0	3	3
DO. 1½ in., per ft.	0	4	6
LEAD WASTE or soil, fixed as above, complete, 2½ in., per ft.	0	6	0
DO. 3 in., per ft.	0	7	0
DO. 4 in., per ft.	0	9	9
CAST-IRON R.W. PIPE, at 24 lb. per length, jointed in red lead, 2½ in., per ft.	0	2	5
DO. 3 in., per ft.	0	2	10
DO. 4 in., per ft.	0	3	3
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	7
DO. O.G. 4 in., per ft.	0	2	10
CAST-IRON SOIL PIPE, fixed with caulked joints and all ears, etc., 4 in., per ft.	0	7	0
DO 3 in., per ft.	0	6	0
Fixing only:			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS only, with all joints	1	18	0
LAVATORY BASINS only, with all joints, on brackets, each	1	10	0

PLASTERER

PLASTERER, 1*s.* 9½*d. per hour (plus allowances in London only);* LABOURER, 1*s.* 4½*d. per hour.*

Chalk lime, per ton	£2	11	0
Hair, per cwt.	0	18	0
Sand and cement see "Excavator," etc., above.			
Lime putty, per cwt.	£0	2	8
Hair mortar, per yd.	1	7	0
Fine stuff, per yd.	1	14	0
Sawn laths, per bdl.	0	2	9
Keene's cement, per ton	5	15	0
Sirapite, per ton	3	10	0
DO. *fine, per ton*	3	18	0
Plaster, per ton	3	0	0
DO. *per ton*	3	12	6
DO. *fine, per ton*	5	12	0
Thistle plaster, per ton	£3	9	0
Lath nails per lb.	0	0	4
LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock, ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	5
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	11	6
FIBROUS PLASTER SLABS, per yd.	0	1	10

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

Glass: 4ths in crates:			
Clear, 21 oz.	£0	0	6
DO. 26 oz.	0	0	7½
Cathedral white, per ft.	0	0	6½
Polished plate, British ¼ in., up to 2 ft. sup.	0	2	0
DO. *3 ft. sup.*	0	2	6
DO. *7 ft. sup.*	0	3	6
DO. *25 ft. sup.*	0	4	0
DO. *100 ft. sup.*	0	4	6
Rough plate, ⅛ in.	0	0	6
DO. ¼ *in., per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	16	0
GLAZING in putty, clear sheet, 21 oz.	0	0	11
DO. 26 oz.	0	1	0
GLAZING in beads, 21 oz., per ft.	0	1	1
DO. 26 oz., per ft.	0	1	4
Small sizes slightly less (under 3 ft. sup.).			
Patent glazing in rough plate, normal span 1*s.* 6*d.* to 2*s.* per ft.			
LEAD LIGHTS, plain, med. sqs. 21 oz., usual domestic sizes, fixed, per ft. sup. and up	£0	3	6
Glazing only, polished plate, 6½*d.* to 8*d.* per ft. according to size.			

DECORATOR

PAINTER, 1*s.* 8½*d. per hour;* LABOURER, 1*s.* 4½*d. per hour;* FRENCH POLISHER, 1*s.* 9*d. per hour;* PAPERHANGER, 1*s.* 8½*d. per hour.*

Genuine white lead, per cwt.	£3	11	0
Linseed oil, raw, per gall.	0	3	7
DO., *boiled, per gall.*	0	3	10
Turpentine, per gall.	0	6	2
Liquid driers, per gall.	0	9	6
Knotting, per gall.	1	4	0
Distemper, washable, in ordinary colours, per cwt., and up	2	0	0
Double size, per firkin	0	3	6
Pumice stone, per lb.	0	0	4
Single gold leaf (transferable), per book	0	1	11
Varnish copal, per gall. and up	0	18	0
DO., *flat, per gall.*	1	2	0
DO., *paper, per gall.*	1	0	0
French polish, per gall.	0	19	0
Ready mixed paints, per gall. and up	0	10	6
LIME WHITING, per yd. sup.	0	0	3
WASH, stop, and whiten, per yd. sup.	0	0	6
DO., and 2 coats distemper with proprietary distemper, per yd. sup.	0	0	9
KNOT, stop, and prime, per yd. sup.	0	0	7
PLAIN PAINTING, including mouldings, and on plaster or joinery, 1st coat, per yd. sup.	0	0	10
DO., subsequent coats, per yd. sup.	0	0	9
DO., enamel coat, per yd. sup.	0	1	2½
BRUSH-GRAIN, and 2 coats varnish, per yd. sup.	0	3	8
FIGURED DO., DO., per yd. sup.	£)	5	6
FRENCH POLISHING, per ft. sup.	0	1	2
STRIPPING old paper and preparing, per piece	0	1	7
HANGING PAPER, ordinary, per piece	0	1	10
DO., fine, per piece, and upwards	0	2	4
VARNISHING PAPER, 1 coat, per piece	0	9	0
CANVAS, strained and fixed, per yd. sup.	0	3	0
VARNISHING, hard oak, 1st coat, yd. sup.	0	1	2
DO., each subsequent coat, per yd. sup.	0	0	11

SMITH

SMITH, *weekly rate equals* 1*s.* 9½*d. per hour;* MATE, *do.* 1*s.* 4*d. per hour;* ERECTOR, 1*s.* 9½*d. per hour;* FITTER, 1*s.* 9½*d. per hour;* LABOURER, 1*s.* 4*d. per hour.*

Mild steel in British standard sections, per ton	£12	10	0
Sheet steel:			
Flat sheets, black, per ton	19	0	0
Do., Galvd., per ton	23	0	0
Corrugated sheets, galvd., per ton	23	0	0
Driving screws, galvd., per grs.	0	1	10
Washers, galvd., per grs.	0	1	1
Bolts and nuts, per cwt. and up	1	18	0
MILD STEEL in trusses, etc., erected, per ton	25	10	0
DO., in small sections as reinforcement, per ton	16	10	0
DO., in compounds, per ton	17	0	0
DO., in bar or rod reinforcement, per ton	20	0	0
WROT. IRON in chimney bars etc., including building in, per cwt.	2	0	0
DO., in light railings and balusters, per cwt.	2	5	0
FIXING only corrugated sheeting, including washers and driving screws, per yd.	0	2	0

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity. *The measured work price is on the same basis . . . per ft. sup.*	£0	0	2½
FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. from 3d. to	0	0	6
Plaster board, per yd. sup. from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. from	0	2	8
Asbestos sheeting, 5/32 in., grey flat, per yd. sup.	0	2	3
DO., *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO., corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, 5/32 in. punched per M. grey	17	0	0
DO., *red*	19	0	0
ASBESTOS COMPOSITION FLOORING: Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO., ½ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6
DO., *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7
Waterproofing compounds for cement. Add about 75 per cent. to 100 per cent. to the cost of cement used.			
Plywood:			
3 m/m alder, per ft. sup.	0	0	2
4½ m/m amer. white, per ft. sup.	0	0	3½
¾ m/m figured ash, per ft. sup.	0	0	5
4½ m/m 3rd quality, composite birch, per ft. sup.	0	0	1½