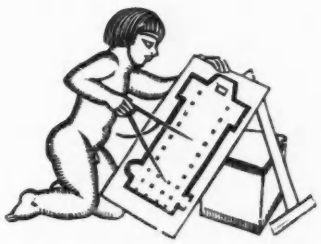
THE ARCHITECTS' JOURNAL



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Post-war work in the Hampstead Garden Suburb will be dealt with in the next issue. Many of the houses to be illustrated have not before been published, and are examples of the work of architects eminent in domestic design.

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WEDNESDAY, JUNE 30, 1926. NUMBER 1641: VOLUME 63

PRINCIPAL CONTENTS

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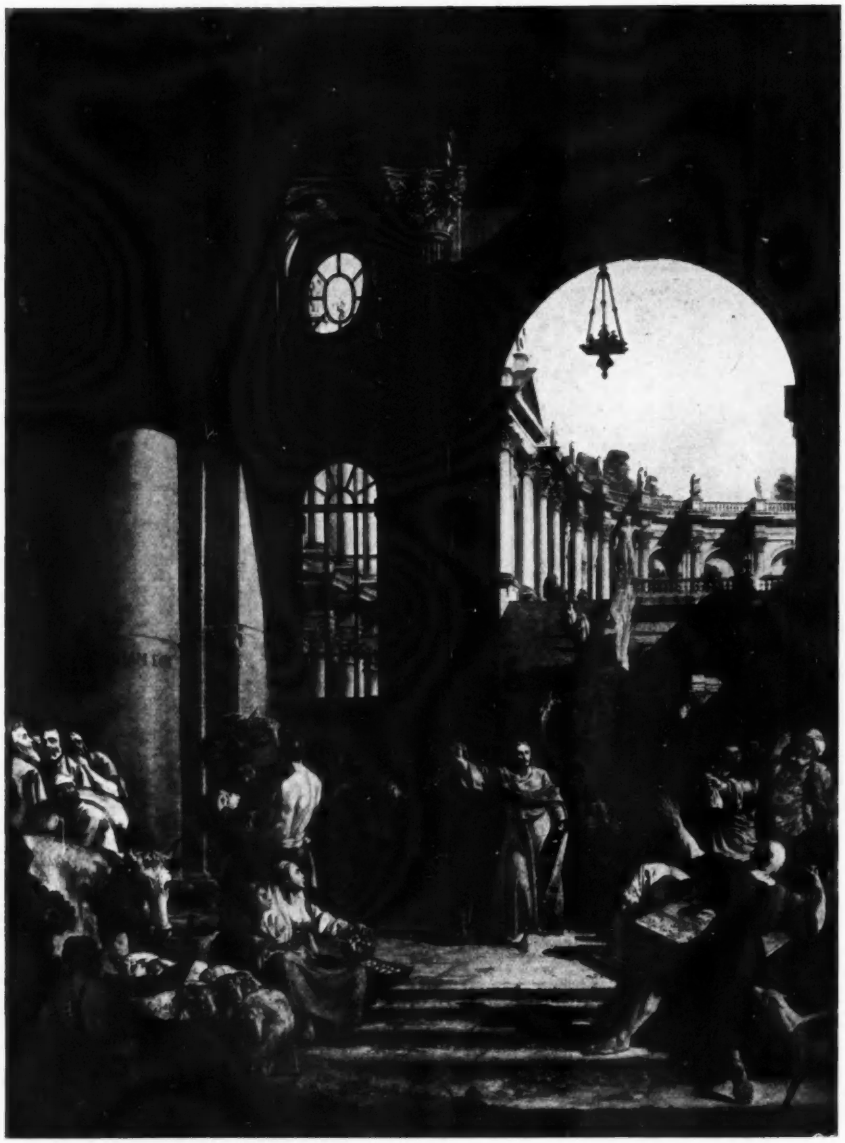
CHRISTIAN BARMAN, *Editor*

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.



RENDERINGS OF ARCHITECTURE

Selected and annotated by Dr. Tancred Borenius.

xxiv. Bernardo Bellotto (1720-1780).
Christ and the Money Changers.

In 1770, Bellotto, having resigned his post as Court Painter to the Elector of Saxony, settled at Warsaw where he became attached in a similar capacity to the King of Poland, Stanislas Auguste, and where he spent the remainder of his life, dying in 1780. Among the numerous works carried out by him for the King of Poland are a pair of pictures of which this is one—a highly unusual example of Bellotto's art, inasmuch as it illustrates a scene from sacred history. The figures are executed in a style which is reminiscent both of Sebastian Ricci and Tiepolo. Like its companion piece, the present picture is painted with Bellotto's characteristic masterly vigour and very effectively designed, the broad massing and contrasting of light and shade being especially helpful in this respect. The grand staircase in the background reminds one of the Scala dei Giganti at the Doge's Palace. [Private Collection.]

THE ARCHITECTS' JOURNAL

Wednesday, June 30th, 1926

AN ARCHITECT'S CLAIM FOR FEES

LITIGATION about an architect's fees for abandoned work is endless. Such cases, being among the most prolific sources of emolument to the lawyer, of worry to the architect, and of exasperation to the client, seldom present any new feature either of principle or of detail. Nevertheless, the action of Lawson *v.* Winstanley, reported on a later page, offers certain points that, while by no means novel, seem to invite comment.

Again we get the old, old story, ever new and perennially interesting in spite of its threadbare plot. Thus it always runs : (1) Architect asked to design building; (2) client jibs on discovering that the cost will exceed the limit he had thought to impose; (3) client disputes architect's fee for abandoned work; (4) architect sues client, and is awarded the sum he claims.

It will be instructive, and perhaps mildly amusing, to bring into comparison the divergent prices mentioned in the case. About £2,000 was the sum suggested by the client; the architect's estimate after preparing the plans was £2,400, " or more "; the tenders received ranged from £3,340 to £4,747 ; while revised plans produced an amended tender for £2,698. Now the average client hates amended tenders; they dash his cherished hopes and ambitions as a prospective building-owner, they smash to smithereens the happy little home of his dreams and of his heart's desire. Also they destroy the architect's first fine rapture, which he feels that he never can recapture when his wings are thus clipped in the interests of stringent economy. In the case under notice, the client declined to have what he called " the skeleton of a beautiful house," and the scheme was abandoned.

Ultimately the architect was compelled to vindicate his claim for fees due to him in accordance with the scale in such case made and provided by the Royal Institute, and doubtless dictated long, long ago by the bitter and oft-recurring experience of its members. It may be noted that the architect in this case did not exact the full fee to which the R.I.B.A. rule entitled him.

For the defence, the customary lines were adopted. It was contended that the architect had given a guarantee as to cost, and that as he had not fulfilled his engagement to build a house to cost a certain specified sum, he was not entitled to his fees. Moreover, it was contended—and the argument is not without a suspicion of ironic humour—*that as the architect was not a member of the Institute, he was not entitled to fees prescribed under its rules.* Fallacious as it is, such a superficially plausible argument might possibly prevail with a weak judge; but in this case the judge was not to be caught napping. In the eye of the law it is sufficient that he is a duly qualified member of his profession.

The three witnesses called, for or against the claimant, were unanimous in the opinion that the architect was entitled to some sort of remuneration, but they differed curiously in assessing the amount. One witness thought the claim " too reasonable," which we take to mean too low; another supposed that, in strictness, the claimant was not entitled to any fee at all, except on account of the preliminary interview with the client; while a third witness took the " werry modderit " view that £50 plus travelling expenses would be a fair remuneration. It will be seen that the witnesses wobbled somewhat. For a firm opinion on fees the R.I.B.A. scale must be consulted.

Is not all this conclusive proof of the value and importance to the profession possessing for reference a standardized and stabilized scale of fees such as that prepared and published by the Royal Institute and accepted as authoritative evidence in courts of law? Now comes a rather ironically humorous incident. In his evidence the claimant stated that he was not a member of the Royal Institute—that he had actually declined to join it when, about the year 1910, he had been invited to do so. He added, rather gratuitously, and perhaps rather pharisaically, " I do not altogether approve of institutes."

His reason for his non-approval of the Royal Institute was : " I look upon architecture more as a fine art than as a profession. Many architects look at it the other way about." In case there is here a lurking insinuation that members of the Institute usually look through the wrong end of the telescope, we shall vehemently contend that non-membership does not *ipso facto* confer a patent of æsthetic nobility, and that membership does not disqualify for it.

Here we have an architect who, in the very act of availing himself of a valuable service rendered to the profession, declares that he " does not altogether approve of institutes." Yet but for the existence of the Institute scale he would have found it hard to prove the custom on which he must perforce rely for material help to win his case !

NEWS AND TOPICS

THE awarding of the Gold Medal for the best street frontage erected during the year must always be a difficult matter for the R.I.B.A. Jury entrusted with this task. The present is not an age in which the level of street architecture is high, and for this many excuses can be found. In the first place there is no æsthetic control over our street façades, and secondly we have to record the distressing circumstance that during the last generation architects themselves, while showing a great skill in designing detached country houses, have not devoted sufficient attention to the principles of street building. Again, the great height of the structures now permitted by the by-laws militates against the possibility of those gracious façades which adorned the streets built by our forefathers a hundred years ago. The trouble about the great façades of our modern blocks of offices is that on account of their excessive height *there are too many windows*. That is the crux of the whole matter, and the problem is how to compose these windows in such a way that the repetitive element is not productive of dullness and monotony. Obviously the R.I.B.A. Jury charged with the business of awarding the Gold Medal for street architecture are of opinion that in his "Britannic House," Sir Edwin Lutyens has been successful in achieving this, and he is to be congratulated on the honour bestowed upon him. The design, which has already been commented upon at length in these pages, always strikes me as having an attractive English quality which contrasts favourably with some of the Germanico-American structures which are now beginning to take such a prominent place in the architecture of London.

* * *

The result of the Rome and Jarvis scholarships, made known during the week, created the usual talk and excitement. The Rome has gone to Mr. Angus D. Connell, of London University, and the Jarvis to Mr. Herbert Thearle, A.R.I.B.A., of Liverpool University. Connell was articled in Wellington, New Zealand. During two years at the University of London Atelier he worked in various offices, but spent the greater part of time with Messrs. William and Edward Hunt. He was a Soane Medallion Finalist for 1925.

Mr. Angus D. Connell.

* * *

Thearle, it will be remembered, won, in collaboration with Mr. L. G. Hannaford, the Birkenhead Art Gallery Competition, and was in the final round of the Rome in 1924. He was also in the final for the Soane Medallion last year, and received an honourable mention. While at Liverpool, he won the Holiday Sketching prize, the Lever prize, the Holt Travelling Scholarship, the Honan Scholarship (given by the Liverpool Architectural Society), the John Rankin prize for sketch designs in both his fourth and fifth years, and the Holland and Hannen and Cubitts prize for working drawings.

* * *

Sir Charles Walston's article on the Parthenon in the *Times* was a very plausible if not a particularly convincing plea for the retention at the British Museum of the Elgin Marbles. Thus is revived an old vexed question, the new occasion being the conditioning or protective works now being inflicted on the Parthenon. While Sir Charles's clever little essay in casuistry does not seem, somehow, to satisfy entirely one's idea of cricket according to the rigour of the game, there is undeniable weight in his contention that Bloomsbury is a safer asylum for the Marbles than the Acropolis ever was; and that is the argument that seems always to determine the issue. Moreover, there is much force in the argument from the conjecture that the comparative numbers of persons seeing the Marbles (*a*) at the British Museum, and (*b*) at the Parthenon, supposing them to be sent back, might be estimated at more than a thousand to one in favour of (*a*); which is long odds. So *cadit quæstio*. Sir Charles thinks, however, that the British conscience would be appeased, and we should be showing at once our gratitude and our sense of fair play to the Greek people, if we made them a present of cement casts of the Marbles. I have so much respect for Sir Charles Walston's services to art that my sole comment shall be—that cement weathers well and hardens with age.

* * *

It is perhaps as well that John Ruskin could not live to see these days. Its faults and follies would have been unendurable to him. The L.C.C. seek now to control not only the bridge, but the waters under the bridge, and by means of a clause in a Bill they are promoting in the House of Lords, seek to obtain a declaration that the Rivers Graveney and Wandle, or certain specified sections of them, are, and always have been, watercourses within the jurisdiction of the Council or its predecessors. Their engineer has produced documentary evidence that "for centuries both the Graveney and the Wandle had been regarded as sewers." The L.C.C., having it in custody, ought to know. But then, a body that cannot distinguish Waterloo Bridge from a tramway track would be pretty sure to apply the mean character of sewer to inoffensive rivers.

The destruction of that historically and architecturally important structure, Baltimore House (to give it its original name), in Russell Square, which had not only been associated with a number of famous people, but was a fine example of the Adams type, is a matter for keen regret to those who see with apprehension the gradual and almost systematic disappearance of so many notable landmarks in London. But there is a more serious aspect of the matter: no one seems to be aware, except fortuitously, of the impending fate of such things. One by chance passes along a thoroughfare or through a square, and lo! the housebreakers are already hacking away some piece of London's history before one has even so much as heard that it is threatened. Then it is too late for action to be taken. This has so often happened that the old or beautiful or historic, as the case may be, is being reft away piecemeal from us. In some cases intervention would be unavailing, but at least those who care for such things, and are anxious for their preservation, should be given the chance of saving them from destruction. The fact is, nothing ought to be destroyed in London without notice being given to some committee of experts, and the sooner such a body is created the better for ourselves and for our credit in the eyes of posterity.

* * *

With reference to my note last week upon St. Paul's Bridge, an authoritative correspondent writes: "The chief danger when the bridge was mooted was not the underground tramway tunnel which was definitely turned down on practical grounds, but the possibility of excavation and pumping for foundation work. Now Mr. Mott proposes even to eliminate that risk by using pile foundations only. The point, however, is that St. Paul's stands upon the estuarine deposits of the original Thames Valley bed. The deposits all incline to the south towards the river. Those upon which the cathedral foundations immediately impinge are most subject to slip and creep if they are 'buttered up' to any extent by the subsoil water or disturbed conditions. There is already evidence of this slip and creep to the south, and even pile foundations might conduct, by percussion piling, water from the subsoil water to depths where slip might occur, while the institution of arches and piers across the Thames at that point might well cause the disturbance of the river bed by scour, which would set up conditions of movement such as we have, in fact, experienced opposite the Tower of London owing to dredging. The fact is that we do not know what a bridge would do to St. Paul's, and the building is too valuable an architectural inheritance to allow of the matter remaining as an indefinite issue until it is too late. All we are claiming is inquiry; we are not claiming that we are necessarily right."

* * *

When my enemy, the Editor, told me that this number of THE ARCHITECTS' JOURNAL was to comprise a supplement on heating, even though we were in the middle of summer, I felt a little appreciative of him. For I am one of those who worship warmth, and tremble exceedingly at the first sign of frost. I welcome everybody engaged in the science of heating; some thousands of years hence it will be to the heating engineer we shall look to help us through the third Ice Age. Moreover, though of all forms of heat I care most for that of the sun, many winters of fire-gazing have made me aware that whether it be peat or wood or coal or oil or gas or electricity which keeps my fire alight, their thermal units all derive from the sun.

* * *

Yet as it is of wood fires I have the most experience, so it is for them I have the most love. On an open hearth I have burned, or tried to burn, most of the woods we grow. Oak cordwood, after a year in the dry, makes the best native firewood, and next in value I place the beech. The ash is one of the few trees which burn when freshly cut, and it shows a beautiful colour while burning. Elm burns but poorly, even though kept in the dry for a long time. The pines burn very well, but spark dangerously in the burning. The fruit trees—apple, pear, and plum—blaze very cheerfully. All this I have learned from more Christmas Eves than I can count.

* * *

For many years now it has been said that the open fire is wellnigh extinct. Though this used to make me very sad, it now affects me not at all. So long as I am warm, I do not mind. I find that fuel oil brought through a thousand-mile pipe line from Persia offers as much substance for the imagination to feed upon as does the finest oak or Wallsend. Moreover, I can read Dr. Saleeby and the writings of a hundred other doctors and know that if I live in a house that is centrally heated I shall probably die only of old age. And so even on health grounds alone—and with the Smoke Abatement Bill having passed its second reading—I know that my enthusiasm for the open fire must now be turned to automatic oil-firing plants and Shell-Mex, and to the compression-jointed copper tubing with which the best central heating systems are now equipped.

* * *

An architect, worn out and made old by his dealings with difficult clients, was ordered by his doctor to retire from practice and live a secluded life. Though he dearly wanted to design a house in the country for himself, this he was not permitted to do, and a brother architect had to be called in for the job. But the worn-out architect, grown querulous by his dealings with difficult clients, and himself now made almost impossible to please, by his strange demands and changes of mind in the designing of his own house brought his brother architect also to old age and nervous ruin, and *both* were compelled to retire into the country and live secluded lives.

ASTRAGAL

ARRANGEMENTS

SATURDAY, JULY 3

At Liverpool University. Mr. T. P. O'Connor opens the School of Architecture Exhibition at the Walker Art Gallery.

MONDAY, JULY 5

The Royal Sanitary Institute. Jubilee and London Congress, 1926. (Continuing until July 10.)

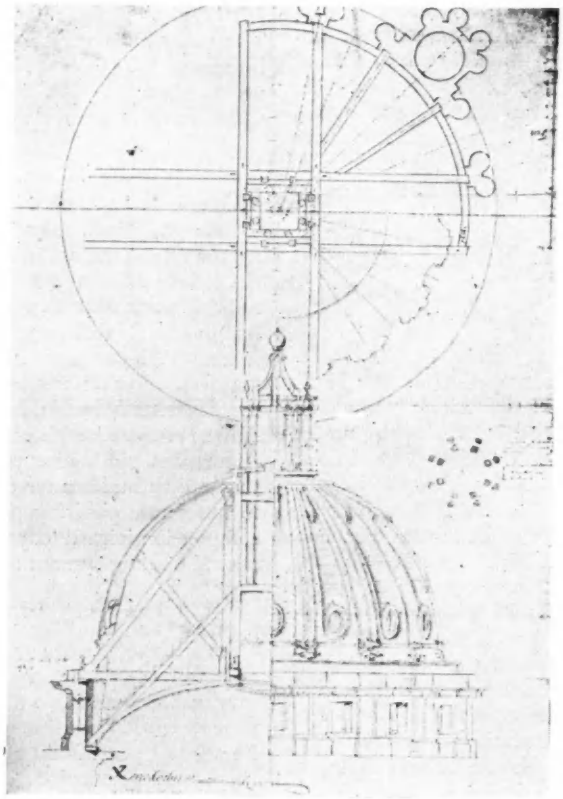
SATURDAY, JULY 10

The Incorporated Association of Architects and Surveyors. Meeting at Crewe.

THE COMPLETION OF GREENWICH HOSPITAL [1702-15]

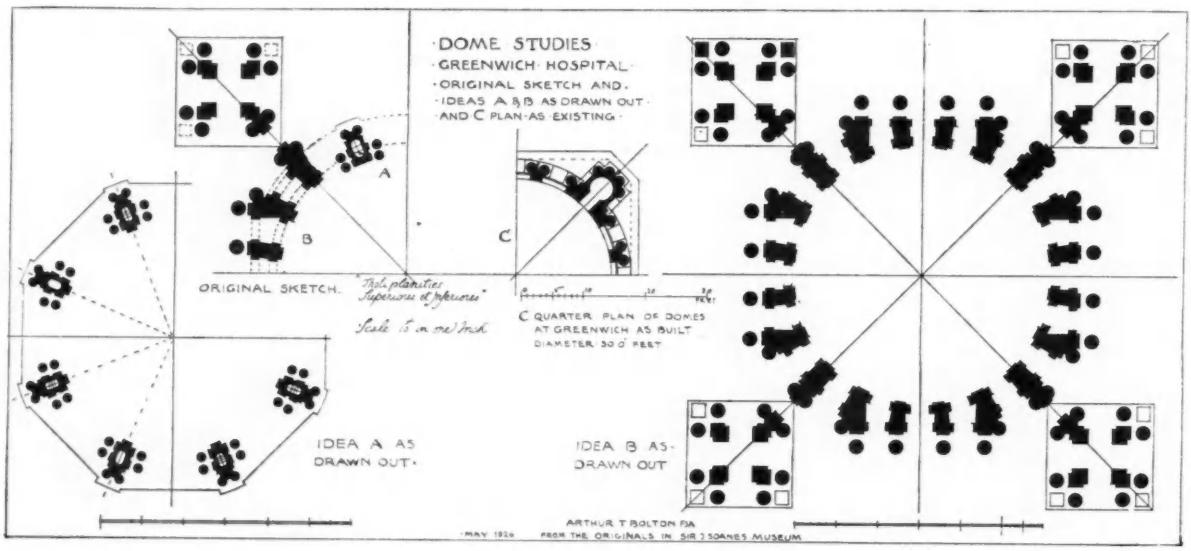
[BY ARTHUR T. BOLTON]

It may be taken as certain that, without the technical assistance of Wren's office, Blenheim and Castle Howard could not have been carried out as readily as they were. It seems fair, therefore, to suggest that we have here proposals by Vanbrugh made with the sympathy and tacit approval of his elder. Coming now to the second and greatly reduced scheme (figure eight, see last issue), which eliminates the oval court, and leaves only an isolated square colonnaded chapel, surmounted by a dome, we have for this design a fixed ultimate date of 1715. It is evident that here (figure eleven) is the original of that redrawn and published by Colin Campbell in *Vitruvius Britannicus* (1715). The curious point, however, remains that there the scale is reduced to one-half. We know that Campbell had Vanbrugh's assistance in the plates he gives of Blenheim in the same volume, as he says that the architect's drawings were lent to him for the purpose, and, further, that his plates had been revised by Vanbrugh himself to show what had been actually built. It is evident, therefore, that Campbell had also this second Greenwich design, and unless a perspective effect is intended we must assume that he halved the scale with or without Vanbrugh's concurrence. It will be noticed that the account in the text is mostly official and non-committal. This second design can, therefore, be dated between 1702 and 1715. The block plan (figure twelve) may be as late as 1728, but it is now perfectly certain that the separate heading strip at the foot of this drawing really belongs to the same original sheet.



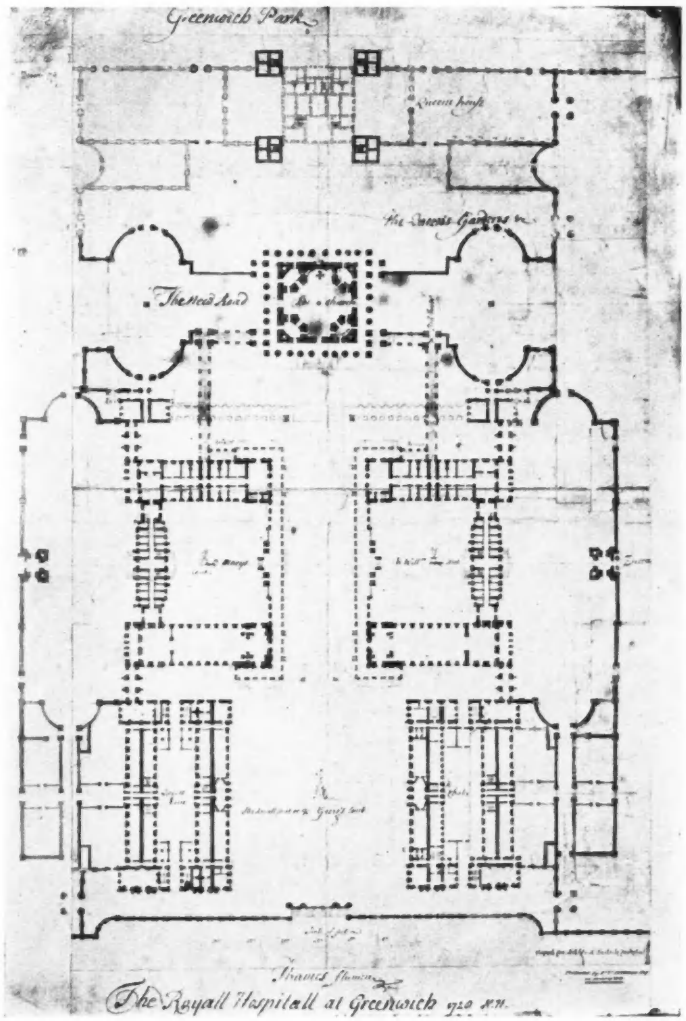
The question now arises of the drawing (figure nine) for the existing domes at Greenwich. This constructional detail is framed in the R.I.B.A. library, and is claimed for Wren. The turret here shown should be noted in relation to the bold sketch in rough perspective (figure thirteen) which is in the Soane Museum collection. The point is that it is the latter, and not the former, which

Figure nine. The domes as erected and attributed to Wren. Figure ten. Dome studies by Vanbrugh.



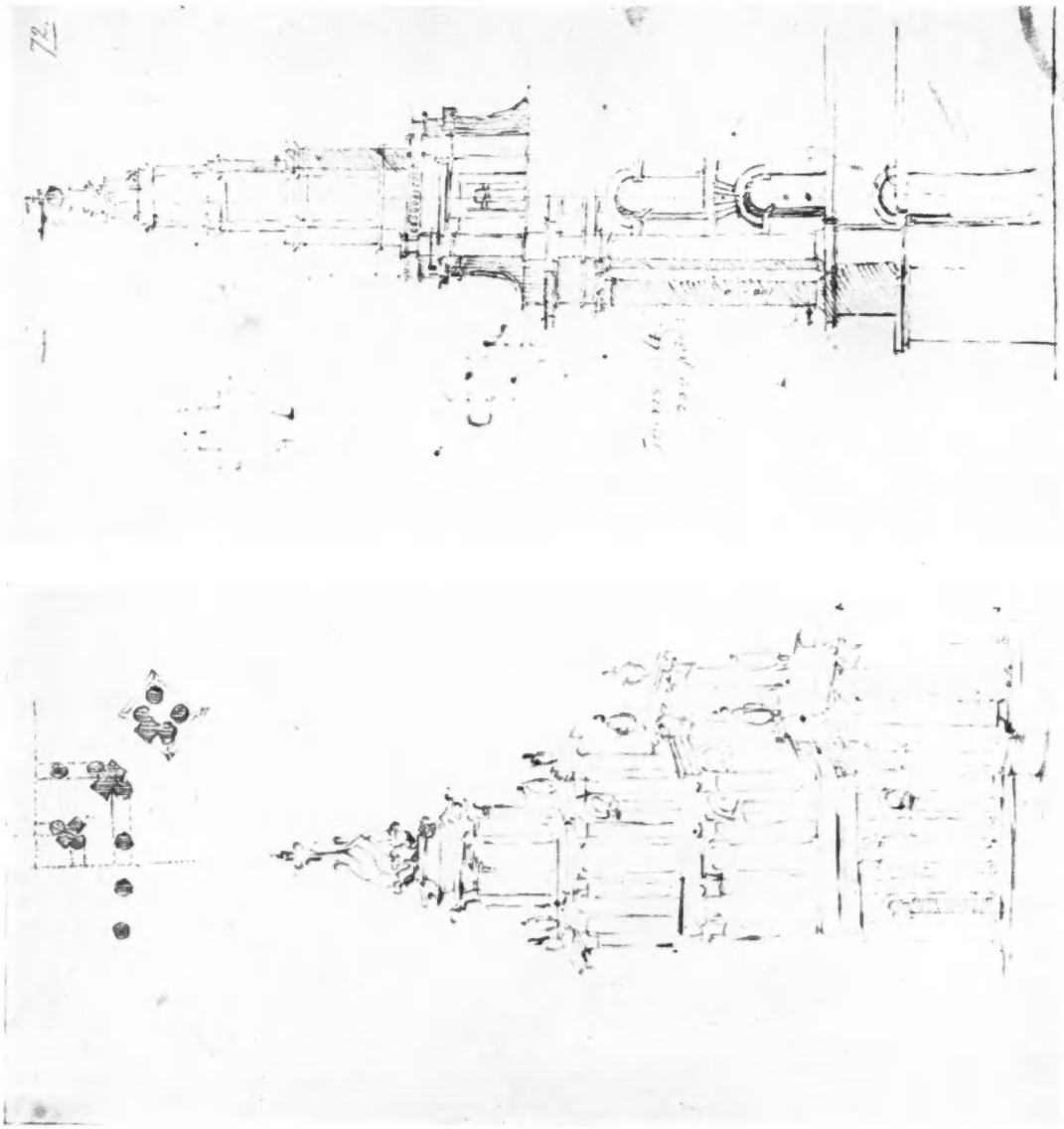
has been carried out, excepting only that the reversed consoles at the feet of the pillar strips do not appear in the measured survey drawings in the A.A. Sketch Book. The constructional dome drawing is dated "February, 1702," and the work may have been completed by 1705, when the first hundred pensioners were admitted to the Hospital; 1708 is given as the date when Sir James Thornhill began his decorations, which appear to have been in hand nineteen years. Before, however, the actual lead dome and its carpentry was drawn in this detail, the design of the cupola itself, more particularly the plan for the columned drum, must have been determined.

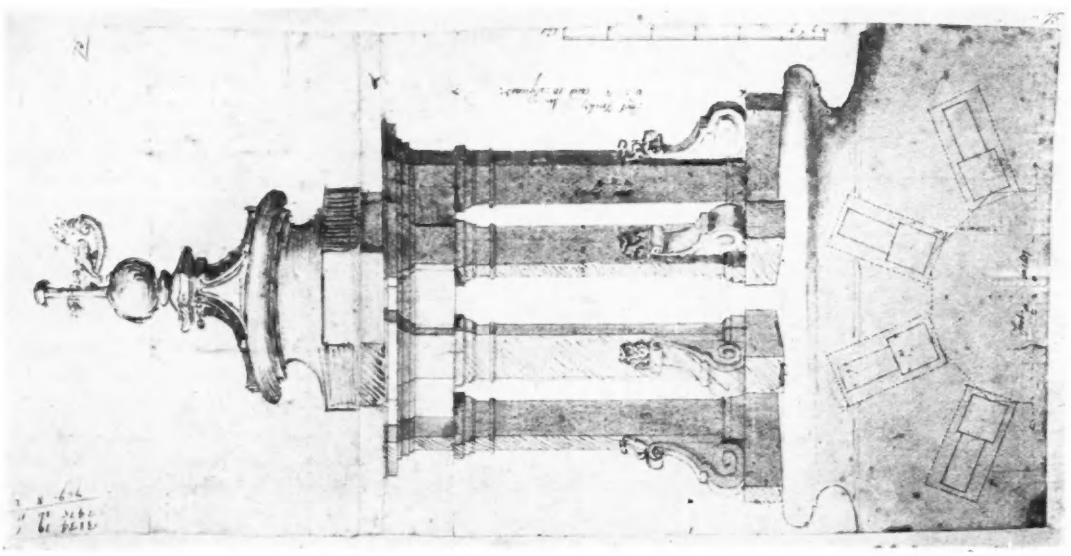
I give here an original sketch (figure ten) which comprises two ideas marked A and B, each of which is drawn out separately,



and in C, I give the plan as existing from the survey in the A.A. Sketch Book. Now, on this original is the Latin word *Tholi*, which at once called up a recollection of the Jesuit Bonanni's book on St. Peter's. There is to be found a scheme given by him, as Bramante's idea for the great dome, identical with the plan of the chapel (figure eight). The book was published in 1696, but as a matter of fact the plate so headed is simply re-engraved on copper from the woodcut in Serlio's *Architettura Venezia*, 1551. The woodcuts have no titles, and the text is in Italian. There is, however, a Latin or Italian edition of 1663, in which the word *Tholi* occurs in the text. Serlio was translated into English from

Figure eleven. Elevation in Vitruvius Britannicus, *published 1715, showing the chapel of the second scheme. Figure twelve. Key plan.*





Left, figure thirteen. Sketch of a turret on a cupola, agreeing with those at Greenwich. Centre, figure fourteen. Sketch for a central feature, possibly for the first proposed chapel. Right, figure fifteen. Sketch for a tower, 200 ft. high, possibly for Greenwich Hospital, first scheme.

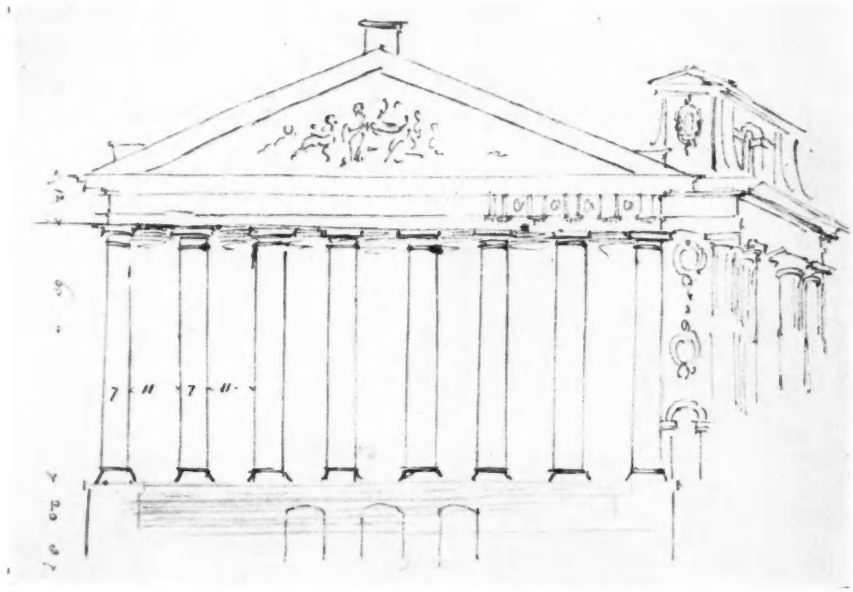


Figure sixteen. Sketch attributed to Vanbrugh for a great portico with side supporting masses and a high podium. This portico has several points in common with the great frontispiece to the oval court at Greenwich.

the Dutch in 1611, and Wren refers to the book, which was, no doubt, in common use. It seems, however, most likely that Bonanni's book was being referred to on this occasion. Pepys' nephew, writing from Rome to his uncle, March 1700, describes how he has bought " the noble volumes of the *History of the Vatican*, giving not only a minute account of every part of its present fabrick, but also *taille-douces* of the various designs of all the great masters whilst in projection. I am in doubt of your being greatly pleased with it." Presumably Fontana's *Il Tempio Vaticano Roma, 1694*, was included as well, which has a Latin and Italian text, but is concerned with the building as actually built more than with the earlier projects. These books were sent to Paris, and so home, and would reach Wren through Evelyn, even if, as is much more likely, they were not obtained direct at the time of publication, as he had friends like Edmund Warcupp greatly interested in Italy.

The dome actually built at Greenwich is a simplified version of the A sketch. The plan B is possibly for the domed crossing of the chapel in the first scheme of 1702. Proceeding now to a further consideration of Vanbrugh's grand conception of 1702, the oval court is 360 ft. across by 270 ft., supposing it were a closed circuit. It will be seen, however, that an opening of nearly 300 ft. is left, doubtless in order to bring the William and Mary blocks into the scheme. The end development of the curved wings have thus been a particular point of study, as will be seen on the elevation. In plan it unites four wards for the pensioners with groups of residences for officials.

The great frontispiece portico is about 80 ft. wide, the dimensions of the decastyle of University College in Gower Street. Behind this is a vestibule leading to the transept of the great chapel. The dome over the crossing is 60 ft. in internal diameter. There is a massively designed west façade for the chapel, but no section or side elevation has survived, if ever made.

The rough and incomplete state of the half-drawings we have suggests that Vanbrugh abandoned the project at an early stage. Never having been through the drill of the professed architectural student he seems to have been incapable of the sustained effort that the full development of such a great design must demand. Technically the draughtsmanship is crude in the extreme. The impetuosity of his temperament is suggested by the haste to convert elevation into perspective, a dramatic touch which gives a special character to the drawing. In the third volume of the Wren Society, published this year, is a similar brushwork design, or suggestion, for the western towers of St. Paul's, superimposed over the accurate and careful drawing of the part-side elevation of the cathedral that one associates with Hawksmoor's work for Wren. It seems reasonable to suppose that this is a friendly suggestion by Vanbrugh.

We come now to two or three dashing sketches of a similar character. It is uncertain that these belong to the Greenwich project, but it seems highly probable. Figure sixteen is for a portico that has several points in common with the great frontispiece to the oval court. The supporting masses are less in height but have features in detail common to both, and the height of the podium is significant.

Another sketch (figure fourteen, refer to plan B, figure ten) might be for a central feature rising above the internal dome of the chapel. Lastly, the sketch for a tower 200 ft. high (figure fifteen) might possibly relate to the two isolated square pavilions shown on the plan. Something of equivalent mass and height would not be beyond the scope of Vanbrugh's conception; compare, for instance, the tower masses of the remoter wings of Castle Howard, which add so much to its picturesque grouping.

It will be clear that this whole scheme of 1702 is a remarkable *tour de force* only comparable with Bernini's forecourt

of St. Peter's. In the first enthusiasm of Queen Anne's succession and expected patronage of the hospital, Vanbrugh, with his knowledge and appreciation of the Continental scale of building, may have dreamt of such an opportunity. It was a time of national effort, soon to be crowned with the victory of Blenheim, and it may have, at the moment, have seemed within the bounds of possibility. Vanbrugh, as we know from his contact with Coleman at Kimbolton, regarded himself as an exponent of a grander and more Roman manner. The beautiful ease of manner and the practicable range of Wren's designs and achievement very likely seemed somewhat old-fashioned and timid to Vanbrugh's bold imagination. Probably the veteran looked on with a shrewd but kindly attention while his colleague of half his own age and a tenth of his experience impetuously dashed out these first essays of his daring and soaring imagination. Well might Robert Adam, two generations later, in a calmer and disillusioned age, hail Vanbrugh as a master whose works were "rare jewels" that only needed to be set and polished.

THE STATE RECOGNITION OF AUSTRIAN ARCHITECTS

[BY A. S. LEVETUS]

For some time past the architects of Austria have been making efforts to found a Chamber of Architects, similar in form to that of the Society of Engineers, who, in the meantime, have received them in their midst. Although Austria has produced many eminent architects of recognized reputation in and beyond their own country, it is only of recent years that the term architect has been recognized as distinct from the builder and the building contractor. The architect has had a precarious existence, for even after passing through the schools there was little chance of his obtaining commissions. This was due to the fact that each State, province, and city within the Austrian monarchy had its own building departments, and had appointed its own officials to draw up plans and superintend building operations. Many of these officials were trained engineers, and there were many competent architects, who had received their training at the Technological University in Vienna, waiting in vain for work.

In 1907, the Zentralvereinigung der Architekten Oesterreichs (Central Union of Austrian Architects) was formed, and the statutes for a Chamber of Architects was drawn up and placed before the Ministry. It was not, however, until 1917 that anything was decided, and, as matters now stand, a distinction has been made between the engineer and the architect. The former must have attended the Technological University for a fixed number of semesters, and have passed the examinations prescribed by law. There are no grades. It is otherwise with the architects. They have been divided into three classes: *a:* those who have completed their studies in the faculty of architecture at the Technological University; *b:* those who have attended the Academy of Art, and those who have been trained at one of the special schools for building; and *c:* those who have passed through the Arts and Crafts School.

Previously a student of architecture had to study first at the Technological University before he could enter the classes for architecture at the Academy of Art, and he could only attend the latter if he obtained the approval of the particular professor whose class he wished to attend. This privilege was not granted to the teachers at the Technological University, who had to accept any students possessing the required qualifications. The complete course of study took eight years, besides the previous seven or eight years spent at a secondary school and for matriculation. Very few students, therefore, could present themselves at the Academy of Art, and the professors circumvented the statutes and allowed such youths who had received their training at one of the schools of building, and even one of the still lower grade trade schools, to study architecture under them. No examinations were held either in theory or practice.

The trade schools provided master workmen; so did the building schools. The latter were not satisfied, and higher grade building schools were started to provide further training. It was with some right, therefore, that these students could then attend the Academy of Art. On the other hand, they could not become students at the Technological University because they had not been educated and matriculated at a secondary school. Again, since the reform of the Arts and Crafts School at the end of last century the teachers have included distinguished architects, and many of the younger prominent architects have received their training there. All this led to some confusion as to what constituted an architect and to a misconception of the term. It also led to differences of opinion as to which school afforded the best opportunities for study.

To end this controversy the Centralvereinigung der Architecten Oesterreichs have drawn up certain rules and regulations, and have made a distinction between an engineer architect (one who has studied at the Technological University) and the civil architect, one trained at the Academy of Art, or the Arts and Crafts School. The proposal to form a Chamber of Architects has to be laid before the National Assembly, for a professional body can only be formed by a special law. Pending the decision of the National Assembly, a ministerial regulation has been arrived at and accepted both by engineers and architects, the latter to form a distinctive group within the already existing Chamber of Engineers. This brings the matter up till the end of 1925. The architects in this group are entitled to the predicate "civil" after five years' practice and after passing satisfactorily examinations in national economy, administrative law, together with the particular building laws therein contained. A temporary regulation grants full membership to such architects who have won recognition by their works, even though they may not possess the qualifications mentioned. Civil architects, in the eyes of the law, are not equal to engineer architects. Naturally the architects are not satisfied with the present state of affairs, and only when they have been legally granted a Chamber of Architects will the matter be settled finally.

CURRENT
ARCHITECTURE
SECTION

TWO SMALL SCHOLASTIC LIBRARIES

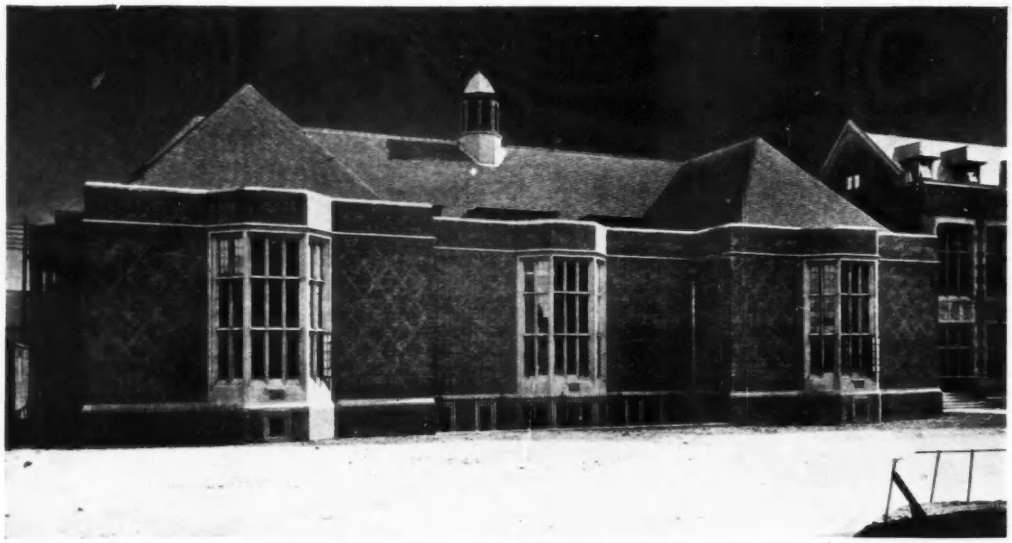
[BY J. F. McRAE]

PASSMORE EDWARDS and Andrew Carnegie seemed at one period to be competing in the wholesale building and endowment of free public libraries. Their more or less friendly rivalry has possibly stimulated to more vigorous growth such libraries as the two examples here illustrated. These two libraries are the more interesting for their diversity in type. Of the one it may be said that the type is distinctly north-country; of the other that it is as markedly southern. Of one the character is more technical, of the other more academic. Armstrong College Library, Newcastle-upon-Tyne, is an entirely new structure, designed by Messrs. Smith and Brewer, while the library of Christ's Hospital, Horsham, is a remodelling, from designs by Mr. Sydney Tatchell, F.R.I.B.A., surveyor to the hospital, of a library already in being. From the accompanying illustrations, the difference in character of these two variously typical libraries will be seen at a glance.

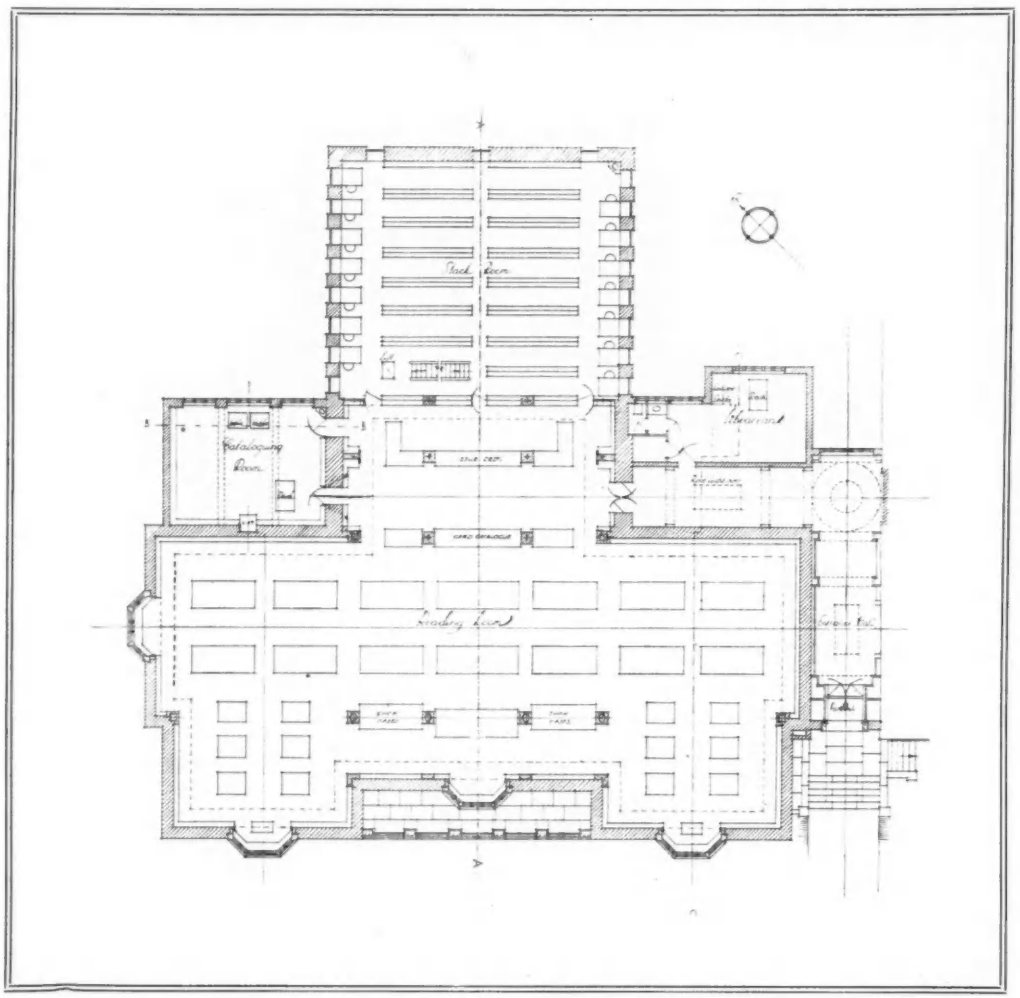
In both instances, style is clearly indicative of purpose.

Armstrong College Library, Newcastle-upon-Tyne. By Smith and Brewer. The entrance.

Armstrong College Library is plainly adapted to the specific needs of the technical student. In elevation and in plan, the building proclaims itself designed for practical utility first and foremost, although the treatment of the brickwork in the entrance front repudiates mere baldness, while the projecting stonework of the windows redeems the

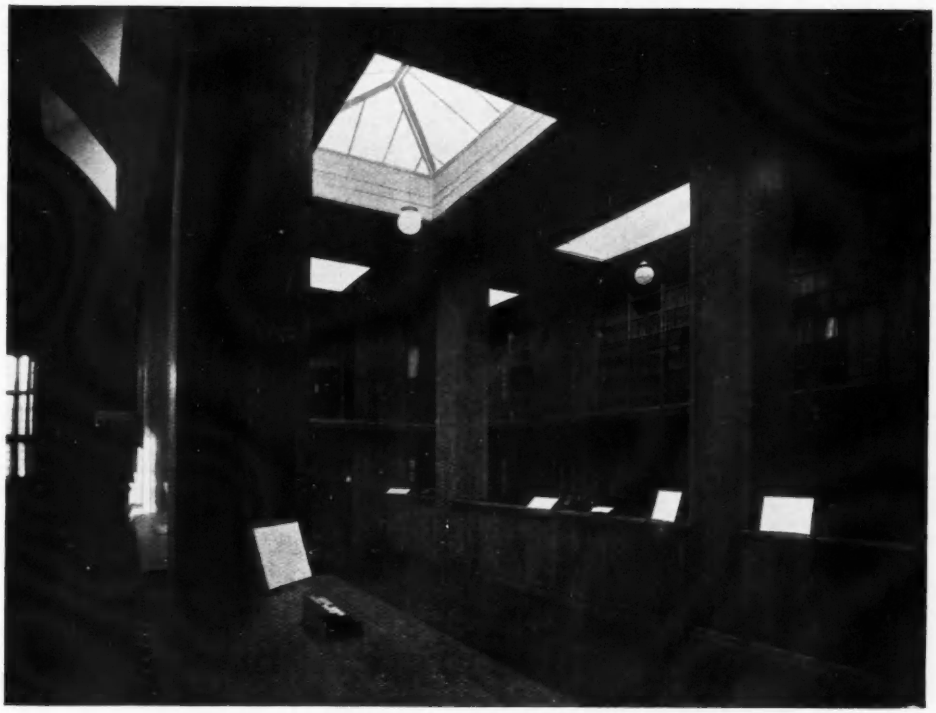


Armstrong College Library, Newcastle-upon-Tyne. By Smith and Brewer. Above, the entrance front. Below, the plan.



elevation from flatness, and a hint of classicism in the doorway is a welcome concession to grace. As to the inside of the building, no explanation need be given of so simple and straightforward a plan, nor do the interior views call for comment beyond the remark that they seem to provide exactly the right arrangement for students likely to be much engaged in consulting the sometimes large plans and diagrams required by engineers, while the lighting arrangements seem to be admirably adapted to such work.

Naturally the library for Christ's Hospital at Horsham is of a more characteristically academical type. It shows cosy little bays in which studious boys may read in undisturbed quietude and comparative seclusion. One remembers sympathetically the "strange, surprising adventure" which befell the sometime Christ's Hospital boy—Samuel Taylor Coleridge—when the school occupied its original home in Newgate Street, London. Passing



Armstrong College Library, Newcastle-upon-Tyne. By Smith and Brewer. The issue desk, with the card catalogue in foreground.

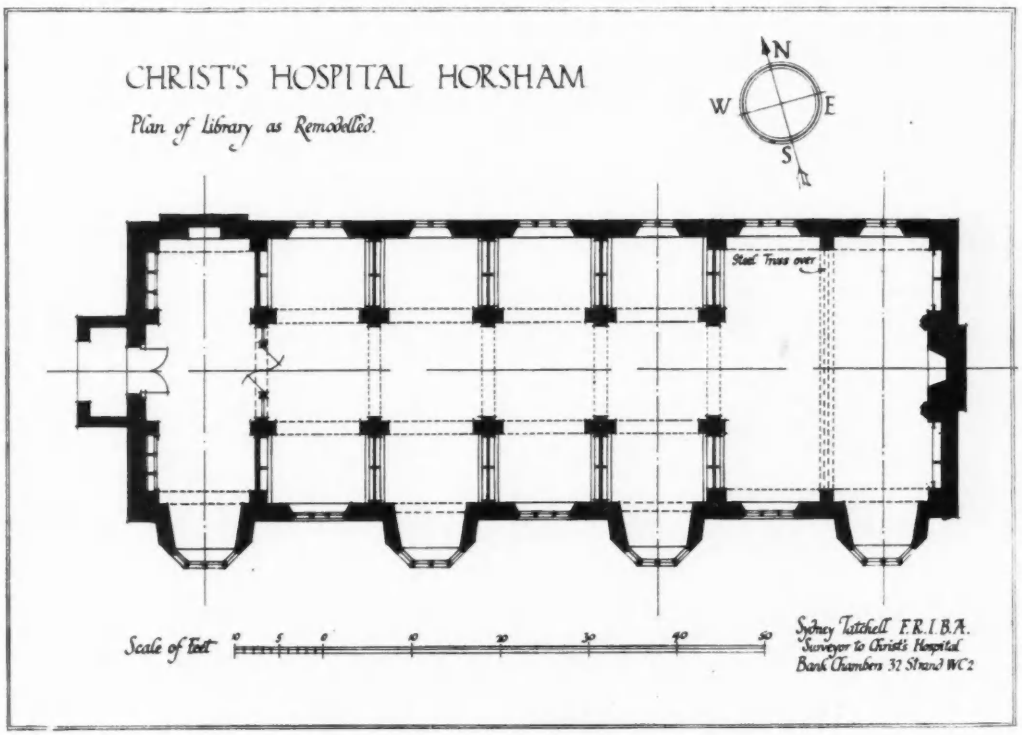
along the Strand, day-dreaming as usual, the boy must needs fancy himself to be swimming across the Hellespont. In the involuntary gesture of natation, one of his thrust-out hands touched a gentleman's pocket. Knowing his London, the gentleman very excusably suspected the worst, and at first found it hard to believe the boy's explanation of swimming the Hellespont, the Thames being so much nearer. Struck by the quality of the boy's speech, however, the gentleman not only freed the hand he had promptly seized, but as promptly made young Coleridge free of a circulating library in King's Street, Cheapside. That library has long since vanished; probably it disappeared when the Guildhall Library came into being at the foot of that same King Street. How inestimable a boon the Christ's Hospital boy, Coleridge, would have found such a library—simply inconceivable in his wildest day-dreams—as that comprising the nine or ten thousand volumes now housed in Christ's Hospital at Horsham!

Following are the names of the contractors and sub-contractors:

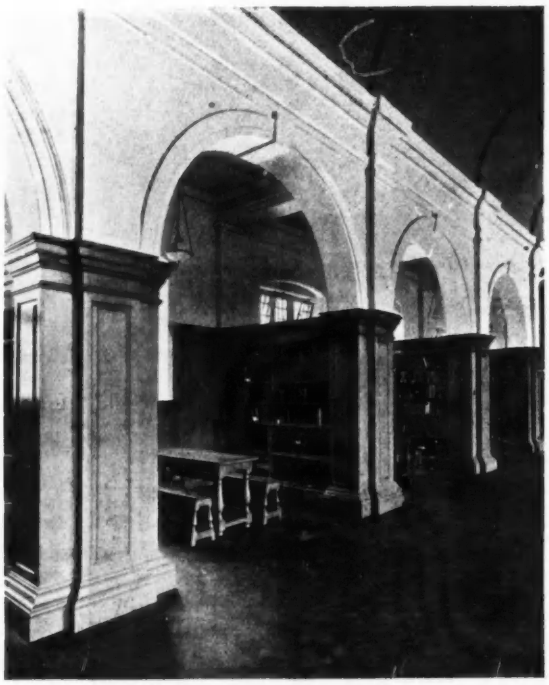
Armstrong College Library, Newcastle-upon-Tyne. The general contractors were Messrs. Alex Pringle, Ltd., who also executed the oak bookcases. Sub-contractors: Ames and Finnis, old English hand-made bricks and hand-made horseshoe tiles; Art Metal Construction Co., book stacks; M. Aynsley, wrot-iron railings and balustrade; Korkoid and Ruboleum Tile Co., Bridgeton, Glasgow, cork floor tiling; the whole of the furniture has been designed by the architect, Mr. A. Dunbar Smith, and made by the North of England School Furnishing Co., of Darlington; Charles Nicholson & Co., Newcastle, tiler; Matthew Charlton, plumber; Peter Harle, plasterer; Merrilees and Denton, Ltd., painter and glazier; The Tees Side Bridge and Engineering Works, Ltd., structural steelwork; The Kleine Patent Fire-resisting Flooring Syndicate, Ltd., fireproof floors and roofs; Wainwright and Waring, Mortlake; and Rea Metal Casements, Ltd., Liverpool, metal windows; Mellowes & Co., Ltd., patent glazing; Henry Walker and Sons, steam-heating and ventilation; Thos. Usher & Co., Newcastle, electrical work; J. L. Emms, cast-lead rainwater pipes; Shanks & Co., sanitary fittings; Rowells, Ltd., glazed wall tiling and terrazzo flooring; Synchronome Clock Co., clocks.

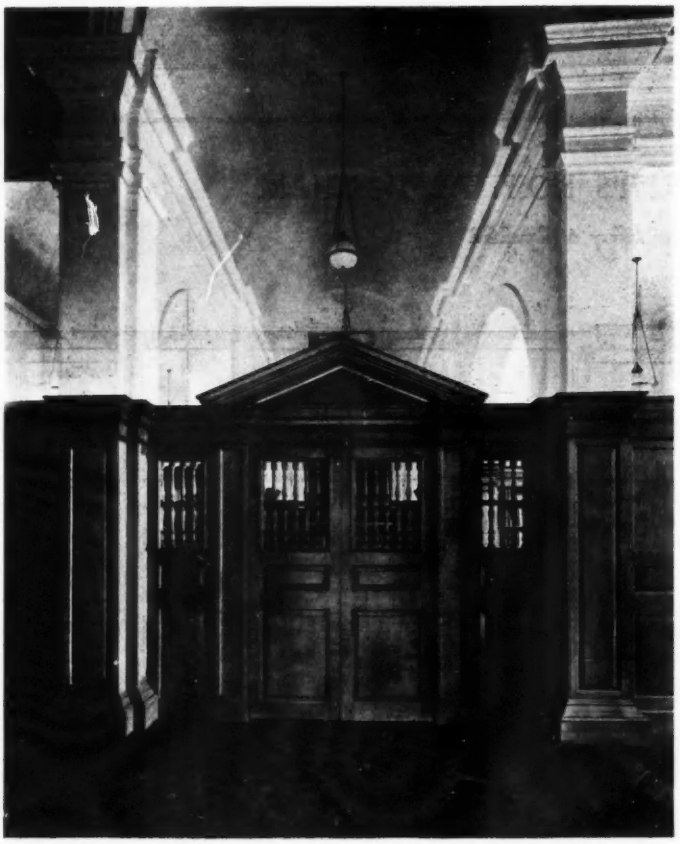
Christ's Hospital Library. The tables and benches were reproduced from the seventeenth-century originals from the old school at Newgate. All the joinery work has been executed in English oak by Messrs. Holland and Hannen and Cubitts, Ltd., who also were the general contractors. Sub-contractors: G. Jackson and Sons, Ltd., plaster work; Smith Walker, Ltd., constructional steelwork; C. E. Welstead, Ltd., steel casements and lead lights; Holophane, Ltd., electric light fixtures; Holland and Hannen and Cubitts, Ltd., tables and benches; Heal and Son, Ltd., chairs; Mr. George Alexander executed the carving; the heating and electric light installations were the work of Mr. Strand, the hospital resident engineer.

Armstrong College Library, Newcastle-upon-Tyne.
By Smith and Brewer. The reading-room.



Christ's Hospital, Horsham. By Sydney Tatchell.
Above, the library, looking east. Below, the plan.





Christ's Hospital, Horsham. By Sydney Tatchell. Above, left, the interior looking east, and, right, looking west. Below, a detail of the screen at the west end.

THE COMPETITORS' CLUB

[This week Seneschal, the well-known architect who conducts this page, summarizes the conditions of the Liverpool Cenotaph Competition. It will be observed that the second premium of £150 will only be awarded provided the author is an ex-Service man.]

COMPETITION FOR CENOTAPH, LIVERPOOL

Open to architects and sculptors. Assessor, Professor C. H. Reilly, F.R.I.B.A.

1st premium	.. ..	£200 (merging)
2nd ,,	.. ..	£150 (to ex-Service man only)
3rd ,,	.. ..	£100
4th ,,	.. ..	£50
Commission for execution		£525

Designs must be personal work of competitors, sent in without motto or device. Carriage paid to Town Clerk, Municipal Offices, Dale Street, Liverpool, not later than September 30, 1926.

Explanatory statement and estimate required.

Drawings to comprise plan, section, and all elevations that differ to scale of ½ in. to the foot rendered in monochrome and mounted flat. A model to the same scale may be submitted in addition.

The inclusive cost is not to exceed £10,000.

It is the intention of the promoters to proceed with the scheme, and the author of the design placed first will be employed to carry out the work unless the assessor shall be satisfied that there is some valid objection to such employment. If, however, within twelve months after the date of the award, the promoters do not decide to proceed with the work for certain prescribed reasons, the author of the selected design will be paid in addition to the premium of £200 he will have already received, the remaining £325 of the sum of 500 guineas commission, and the promoters are to be free to act in any way they think fit. The author of the selected design shall be paid a commission of 500 guineas for preparing all the necessary working, detail, and full-size drawings which may be necessary for obtaining any tenders and for superintending the erection of the work until completion. The author will also be required for the above sum, to superintend the erection of a full-size wood and plaster model of his design on the site.

COMPETITION CALENDAR

The following competitions are announced with the full approval of the R.I.B.A.

Saturday, July 10. Proposed Council Offices and a Fire Station on a site in Brighton Road, Purley, for the Coulsdon and Purley Urban District Council. Assessor, Mr. Philip Hepworth, F.R.I.B.A. Premiums, first, £300; second, £200; third, £100.

Saturday, July 31. Australian National War Memorial, Villers Bretonneux, France. Open to Australians. Particulars from the High Commissioner's Office, Australia House, Strand. Deposit £2 2s.

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

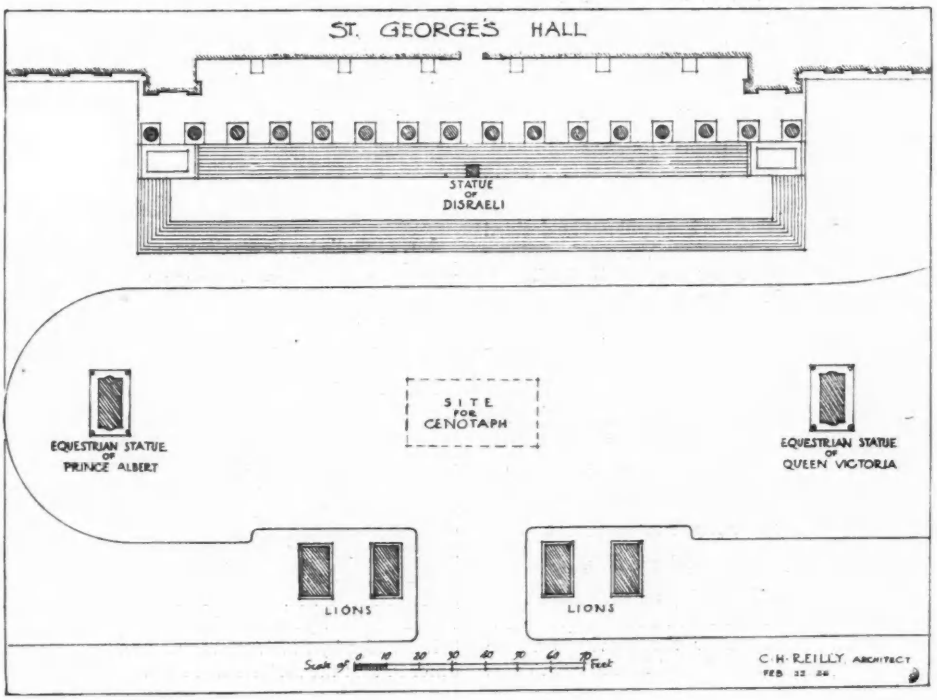
Monday, July 12. Royal National Eisteddfod of Wales, Swansea. Competitions: (1) National Parliament House of Wales (Prize, £100); (2) Street Façade to a Large Stores (Prize, £25); (3) Set of Measured Drawings of Architecture (Prize, £25). Assessor, Mr. Arthur Keen, F.R.I.B.A. Particulars from the publishers, Messrs. Morgan and Higgs, Heathfield Street, Swansea (1s. 2d. post paid).

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.

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

No date. 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.

No date. Manchester Town Hall Extension. Assessors, Mr. T. R. Milburn, F.R.I.B.A., Mr. Robert Atkinson, F.R.I.B.A., and Mr. Ralph Knott, F.R.I.B.A.



The site plan of the Liverpool cenotaph.

CORRESPONDENCE

ARCHITECTURAL CRITICISM

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—In the article, "Criticism," by Seneschal, published in your issue for June 16, he refers to the importance of the main axis in deciding the lay-out of a big building scheme. He alludes further to the Cairo Hospital, the Port of London Office, and the Masonic Hall competitions. I submitted designs for all three, and was in the short list for the first two. It usually comes to this. One has to make up one's mind as to which is the more important —the obvious main axis, or some extremely important condition either expressed or implied.

In my scheme for the Cairo Hospital the placing of the wards running east and west (and so facing north and south) with me defeated the claims of the obvious main axis—I lost. In the Port of London scheme—the great value of the land to be left for independent development, emphasized over and over again, defeated the claim of the obvious main axis—I lost again. With me, in the case of the Masonic Hall competition, the necessity to express from outside the building the presence of the great temple defeated what was the obvious axis. In all these three great competitions it seemed that the assessors could not make up their minds in the first competition as to which was the more important —the obvious axis or the "great consideration," since designs expressing both appeared in the final. One would have thought that from the first competition the most suitable "type" of plan would have evolved in the mind of the assessor and he would exclude from the final anything that did not conform more or less to it.

If the design of the winner of the Cairo Hospital was the type of plan the assessor was after, I could never understand his admitting me to the final competition. Sir Aston Webb, when assessing the Lille Memorial recently was at any rate logical, since he would look at nothing that was not circular. This decision at any rate was clear-cut and decisive.

My experience, therefore, leads me to think that if there is a definite choice to be made between the "great consideration" and the "obvious main axis," and there is no way of reconciling the two—choose the obvious axis. Few assessors can resist the scheme that has a balanced plan.

J. REGINALD TRUELOVE

WHAT THE REFERENDUM OFFERS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—It is to be hoped that every "chartered architect" will avail himself of the opportunity of casting a vote on the subject of architectural competitions and that the issue will not be decided on a minority vote, as appears to have been the election of our new Council. The lack of interest in the Council elections is understandable, for the views of but few of the candidates were known to us.

Personally I have voted for the decontrol of limited competitions. Actually I am not in favour of such competitions being uncontrolled, but am glad of the opportunity of being able to cast a vote for freeing anything from the control of the R.I.B.A. which in the past seems to have had a deadening influence on everything it handles.

FED-UP LICENTIATE

QUANTITY SURVEYORS AND ESTIMATING

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—A contractor of some years' standing recently stated in a letter to one of our technical journals that he had never met a quantity surveyor either in London or the provinces whose capabilities as an estimator would recommend him to a first-class post of this description. Such a statement as this has no doubt set many contractors thinking, especially those builders who follow present-day custom and allow the surveyor who prepared the contract bill of quantities to submit his final statement of variations at the completion of the works for the contractor's approval. Incidentally, this is all wrong, as in all cases, if the variations amount to any sum, the builder should undoubtedly employ a surveyor to measure up on his behalf and thereby eliminate one-sided methods so prevalent these days. The wise contractor who follows this practice is rarely found grumbling about his losses on a job.

Quantity surveyors generally are not bad estimators so far as their own practices are concerned, but in a builder's office I agree with our friend the contractor that they could not be recommended to a first-class post, the reason being simply because the average quantity surveyor becomes an estimator by routine and not abilities. He obtains all his prices from his schedules, which usually in a good office contain the "cream" of the local contractor's prices. When in doubt, he usually averages the price of an item. No surveyor can truthfully dispute this. In other words, he obtains all his data free without the labour of working out the exact costs on the methods he had to learn when taking his examinations for qualification.

Not so, however, the builder's estimator. His work is absolute specialization learnt by plain statistics and based on the fluctuating rates of materials from day to day, added to his knowledge of output, which varies with the workmen the firm are likely to employ on the job, whether their own or casual labour. Such knowledge as this is the only road to successful pricing and estimating, and one cannot obtain this knowledge by working it as a side line with quantity surveying, any more than the architect can with quantity work. In all up-to-date surveyors' offices the practice is growing of having one member of the staff to deal with contract settlements alone, this man thereby being highly skilled in pricing. Where such a practice exists the contractor will find himself more fairly dealt with. It therefore behoves every builder in settling a contract to have his measured bill of variations in full examined by his chief estimator before acceptance of a final cost of works, and also to request the surveyor to price all items that are not schedule rates in pencil. Good surveyors usually do this.

It is, of course, quite possible to meet with success by pricing on "data" averaged from various bills of quantities. The first bill the writer ever priced was done in this way some twenty-four hours before the tender had to be sent in, and without seeing the plans or site my price was only £5 below the successful firm, but whether one could make anything out of such an estimate is another matter. The builder would have to gamble on it.

C. G. RADNEDGE

ANNOUNCEMENTS

Mr. H. Bulkeley Creswell, F.R.I.B.A., has removed to 3 Plowden Buildings, Middle Temple, E.C.4.

Mr. J. J. Joass, F.R.I.B.A., has moved to 40 St. James's Place, S.W.1. Telephone: Gerrard 7154.

Mr. F. N. Astbury, B.ARCH., who finished his five-year course at the Liverpool School of Architecture in June last, has been awarded by the Trustees of the Commonwealth Fund Fellowships a Fellowship of £600 a year for two years in order to visit America and study American architecture. Mr. Astbury was one of the best students of his year throughout his course in Liverpool, obtaining in his third year the Lever Prize and the Holt Travelling Scholarship. In his fifth year, in 1925, he reached the final stage of the Rome Scholarship, when it was won by another Liverpool student, Mr. G. A. Butling. These Commonwealth Fellowships were founded by an American benefactor to balance the Rhodes Scholarships by which so many Americans go to Oxford, but they differ in that the recipients of them must be graduates and attach themselves to a recognized university in America for research purposes.

LITERATURE

THE SOUTH TEES-SIDE REGIONAL PLANNING SCHEME

It is rarely that the regional planner is confronted with a district in which Nature defines the programme before him so clearly as in the area south of the Tees, dealt with in the report of Professors Adshead and Abercrombie. Along the northern edge is a navigable river, with a margin of level ground averaging two miles in width. Then there is a belt of rising ground for about a mile and a-half, and south of this the steep escarpment of the Cleveland Hills. Docks and works have taken up practically the whole of the river frontage; and comparatively modern towns, of which Middlesbrough is the principal, have grown up close, indeed too close, behind these. The development which has taken place without any general direction as to growth has not become so hopelessly irregular as to make a good general scheme impossible of realization. This is largely due to the well-defined, natural formation above described. There is little of the haphazard planning as is found in the large manufacturing towns of earlier origin. Main streets are nearly all straight, with the side streets at right angles to them, giving the gridiron type of plan around each centre; but the planning falls to pieces between these where in large measure the intercommunication has been left to chance. The industries of the region are fairly well known, and are the direct result of the Cleveland iron ore found in the Eston Hills. As this ore is becoming more difficult to obtain, the tendency is towards importing more and more from abroad, but there will remain the two great assets of a fine navigable river and the neighbouring Durham coalfield. In addition, there is the huge capital which has been spent on first-rate plant for works and, what is perhaps more important, the traditions by which the inhabitants have gained an aptitude for this type of work.

The main features of the proposed scheme are two : an improved system of road communications, and a revision of the general practice as regards residential areas. These two features are obviously interdependent, and this is clearly recognized. Hitherto most of the building has been on the flat ground towards the river. Any new arterial route must avoid this; and therefore it will be found that the great road planned (and partly constructed) to run right through the district coincides, in large measure, with the line of demarcation between the belts of level and rising ground. As it would be desirable in the future that residential areas should be on this rising ground, and not wedged in among the large industrial concerns towards the river, this road conveniently defines the general boundary between the two. Thus the programme is that the existing towns should have their growth directed southwards, only leaving the spaces between them for industrial expansion; and the subsidiary roads are planned with this general idea as a basis. Under this programme the residential areas will creep nearer to the steep escarpment of the hills, which it is proposed

Contour plan and plan of South Tees-side, showing development of coast road. [*From* the South Tees-side Regional Planning Scheme. Report by Professors Adshead and Abercrombie.]

should form a nature reserve, as the land had comparatively little value, and the summits offer magnificent viewpoints overlooking the sea and wide stretches of country.

There is a further reason for laying down the great artery east and west. At the extreme eastern end of the area lies Saltburn, a popular watering-place, and, beyond the western boundary, the towns of Stockton and Darlington, with which this route will communicate by one branch through Thornaby and by another designed to link up with an arterial forming part of the North-Tees town planning scheme. This latter scheme has been planned simultaneously, and the two plans have been co-ordinated to each other at the points where they come in contact.

H. V. LANCHESTER

The South Tees-side Regional Planning Scheme. Report by Professors Adshead and Abercrombie. Jordison & Company, Limited, Middlesbrough and London, 1925. Price 7s. 6d.

THE ENCYCLOPÆDIA OF FURNITURE

This work, as the sub-title declares, is "an outline history of furniture design in Egypt, Assyria, Persia, Greece, Rome, Italy, France, the Netherlands, Germany, England, Scandinavia, Spain, Russia, and in the Near and Far East, up to the middle of the nineteenth century. It is illustrated with 659 plates, which are unnumbered. The work is introduced by a text of some 30,000 words grouped in twenty-seven chapters, giving a continuous sketch of the development of furniture in all the countries above mentioned. It is an international production, being issued simultaneously in four languages and five countries.

The book undoubtedly fills a gap so far as this country is concerned. Perhaps to the English student more than those of other European nations, it is very essential to have a general knowledge of continental furniture, because in this, as in many other of the arts and crafts, England lagged behind for centuries, and depended to a large extent upon the more advanced skill in cabinet-making in Italy, France, Spain, Germany, and the Netherlands up to the end of the seventeenth century. Moreover, while it is desirable for the student and craftsman, the connoisseur and the collector, to know everything about the particular branch of his subject in which he specializes, it is equally desirable that he should know something about every other phase, and this, Mr. Shapland considers, is precisely the knowledge which the author of *The Encyclopædia of Furniture* marshals for his readers, "following the subject not so much in respect of its intricate details, but in broad outline, the reader inevitably gains the impression that the history of furniture is one and undivisible, and that it is impossible to understand the subtle changes which took place in design in any one country without a due appreciation of what was happening in adjacent lands." This is very true. Many lack both time and facilities for travel abroad to study at first hand the local styles of furniture, but have now the opportunity of making at least a nodding acquaintance with the principal types of furniture of other nations through the carefully selected illustrations of this volume. The usefulness of the encyclopædia may be appreciated in this sense: when a young person commences the study of English architecture, he does not confine his reading and drawing to the Gothic periods and Renaissance in this country; rather is he first coached in the ancient Egyptian and classic styles, is taught to compare the Gothic of the Continent with his native churches, and to trace the Renaissance in Italy through Europe to the eighteenth century in England. For the student of English furniture the encyclopædia gives in outline the same course of study, and may be regarded as a starting point of his investigation of the subject.

Owing to the very wide field and great periods of time which this work embraces, it has been necessary to reduce the number of illustrations to a minimum consistent with the aim of the authors. This has called for considerable skill and judgment in making a selection limited to hundreds from among specimens numbering many thousands; many types are necessarily excluded. It would have been doubly interesting and very much more valuable as a book of reference had all articles been represented, but that would have meant a work running into several volumes, and have called for a more complicated treatment of the text. In its present form, while the information it imparts is strictly limited and superficial, it, nevertheless, will hold its own as an authoritative outline history on a useful comparative basis.

The illustrations are well produced, and generally, though not invariably, well selected. To follow their relation to the text is difficult, and requires considerable patience, for they are unnumbered, and are grouped all together following the consecutive series of twenty-seven chapters. Owing to the manner in which the book was produced this arrangement no doubt proved most convenient, but it cannot be doubted that any work must lose in value to the student which is devoid of cross reference between text and plates; especially is this to be regretted in this case, as the chapters are ably written and the plates well chosen. But the illustrations alone can teach the student of English furniture much, and what he will realize above all else, by comparing dates and designs, will be England's backwardness in craftsmanship and design for many centuries, and that the great majority of our native types are adaptions of earlier continental work. This fact in itself demonstrates the importance of having a knowledge of the main outlines of European furniture in general.

JOHN C. ROGERS

The Encyclopædia of Furniture. Compiled by authors in various countries under the general direction of Dr. Herman Schmitz, of the Schloss Museum, Berlin, and with an introduction by H. P. Shapland. Ernest Benn, Ltd. Large quarto. Price 42s.

NORTHERN LIGHTS AND SOUTHERN SHADE

This volume contains a series of impressions written mostly around Gothenburg, where the author was, for a year, English lecturer at the University College of Commerce. The second part of the title hardly justifies itself, since the end of the book introduces a vile Sir Oliver Martext type of chaplain who pervaded a town on the Italian Riviera; the author was, indeed, unfortunate if he ever met such a creature, but the whole episode might as well have occurred at Gothenburg as in the shade of the south. After leaving Sir Oliver we are taken to interview an amiable gin-sodden English colony in Brittany, and we are finally landed among the whelk stalls of Southend on our way back to Gothenburg. Throughout the book the author gives the curious impression that he is afraid of being considered over-moral; he is also distinctly suspicious lest we should think him orthodox in his religious views, but his tales are well written and entertaining.

The more serious section of the book describes his impressions in Scandinavia. He joins with every other visitor to those parts in admiration at the hospitality of the people, a characteristic that has been stressed by practically every other writer on Sweden. Gothenburg impresses him with its fine lay-out, the formality of its manners and customs, and the general effect that it gives of commercial success allied to an uncertainty as to its social position that precludes the more self-confident free-and-easy life of the capital. Concerning Messrs. Ericson and Bjerke's magnificent art gallery he tells us that he began by disliking it, "but having lived in close proximity to it for several months, my opinion has begun to change," and he sees that in that building Gothenburg may well possess a masterpiece of modern architecture. He describes the Police Court at Copenhagen with still greater enthusiasm, and shows an appreciation of the value of reticence and mass effect that is unfortunately still rare in the layman. The Town Hall at Stockholm apparently overwhelmed him with its display of "good taste," and it certainly induced an overestimate as to its cost. One feels that the author should again take a course of "close proximity for several months." The book is enlivened with touches of personal idiosyncrasy; for example, he likes town cats and dislikes the Irish, bewailing that almost the only people the Irish have never taken in are Mr. Bernard Shaw and Mr. W. B. Yeats; but surely he will grant that even "the biggest bluffers in the world's history" cannot be expected to carry their skill to the extent of always deceiving each other. But the most astonishing of his conclusions is that the climate is probably responsible for the Swedes' frigidity and lack of temperament. "As a result, they express themselves in engineering,

in architecture, and in science, and haven't, as a rule, the necessary warmth to be creative in the arts of literature and painting." Even if we leave Swedish literature out of account, this generalization is contradicted by the corporate achievement in the creative fields of mosaic, fresco, ironwork, joinery in the Town Hall, not to mention the structure itself and numerous other buildings that show similar imaginative qualities. The traditional craftwork of Sweden stands also as witness to the Swedes' creative ability. One cannot, in order to suit a peculiar thesis, take architecture out of the art world and place it in the totally foreign domain of pure science. M. R.

Northern Lights and Southern Shade. By Douglas Goldring. Chapman and Hall, 1926. Price 12s. 6d. net.

THE ALBANY—PICCADILLY

The Duke of York and Albany was happy in his architectural associations. The magnificent monument in the form of a figure on a Doric column, one of the few entirely satisfactory monuments in London, was erected to his memory. He has also by reason of his second title given name to that famous set of apartments in Piccadilly known as The Albany. The original mansion with its two projecting side wings, familiar to all lovers of London architecture, was built from the designs of Sir William Chambers. Originally known as Piccadilly House—which sufficiently marks its importance in a street at that time containing many famous mansions—it was sold by Stephen Fox, the second Lord Holland, in 1770 to the first Viscount Melbourne. Lord Melbourne afterwards exchanged it with Frederick, Duke of York and Albany (the favourite son of George III), for Melbourne House, that chaste example of classic art now occupied by the Scottish Office and known as Dover House, Whitehall. The history of its conversion from a private dwelling is very interesting, and we cannot do better than quote Mr. Furniss's own words :

" In the good old days when George III was King there lived a builder of St. Martin's Lane, a shrewd, level-headed man of business, one Alexander Copland, who, finding that the spendthrift Duke of York's mansion in Piccadilly was to be sold, bought it for thirty-seven thousand pounds, and, paying off the mortgages, converted the mansion into apartments. In order to accommodate more tenants, he erected substantial buildings on the spacious long garden that extended behind the house between Piccadilly and Burlington Gardens.

" Copland appears to have provided for the mansion a common dining-room, cellars, baths, and proper offices for the use of a maître d'hôtel or tavern keeper. Sold to several persons were certain sets of apartments ' in fee simple to be conveyed and vested in trustees not exceeding seven with a view to general regulation, so as to give each proprietor a freehold estate therein in equity.' So it was to the enterprise and foresight of Copland, with the financial aid of Thomas Coutts, banker, that this remarkable and unique place ' not merely a wonder of London, but of the world,' originated."

From that time until the present day The Albany has been a continuous chapter in the social history of London. The story of the building is the story of its tenants, many of whom were famous in the world of art and letters. Amongst the well-known people who, at one time or another, have had chambers in The Albany, are Byron, Macaulay, Bulwer Lytton, Lord Bingham, Lord Melbourne, Sir Herbert Tree, Sir Squire Bancroft, and " John Oliver Hobbes."

The story of the building and all the famous people who have dwelt there is entertainingly set forth in *A Paradise in Piccadilly : The Story of Albany*, by Mr. Harry Furniss, who, unfortunately, did not live long enough to see the result of his labours in print. Not the least charming part of the book are the pen-and-ink illustrations in Mr. Furniss's well-known manner. Whilst of importance to all who are interested in the history of London and London's historic buildings, the book will have a special claim on the attention of those fortunate ones who have been privileged to live under the sheltering roof—or should one say roofs ?—of The Albany. S. C. R.

Paradise in Piccadilly. By Harry Furniss. John Lane & Co. Price 12s. 6d.

THE MAKING AND TESTING OF PORTLAND CEMENT

Nowadays we take Portland cement for granted. Secure under the safeguard of the British standard specification we specify for all general work British standard Portland cement without experiencing uneasy fears of failure, and often without making any tests of our own, certainly not the closely supervised tests of bag after bag to which our predecessors were accustomed. Our security is not so much due to the existence of the B.S. specification as to the certain knowledge that all the reputable manufacturers adhere closely to it, maintaining often large laboratories and staffs for the sole purpose of making detailed and continuous tests. This reliance on, and reliability of, the makers enable us to cut our structures closer and closer to safe limits in the interests of economy. Such a desirable state of affairs has been chiefly brought about by the research and care of such firms as Messrs. G. and T. Earle, Ltd., whose book, *The Making and Testing of Portland Cement and Concrete*, lies before us. Originally founded in 1809 as makers of Roman cement, the firm has had a continuous history, and has been associated with the same family ever since. The frontispiece is a reproduction of a page of the firm's cash-book dated 1811, and recording, among certain other intimate items, the losses at cards of one of the partners ! The book is conveniently divided up into a brief history of the firm, a description, not too discursive and technical, of modern processes of cement manufacture, a number of chapters dealing with cement testing, concrete making and testing, minor problems in concrete and their solution, and, finally, a most interesting tabulated series of tests made in the laboratories of the firm; two or three sets of these tests have been continuously in progress for over fifty years. These tests should prove useful to architects for purposes of reference. Messrs. Earle give detailed reports on 155 concrete cubes of all the usual and well-known aggregates in different proportions, and the tables give at a glance the tensile and compressive strengths at one, three, six, and twelve months, together with a variety of notes. The tests are clearly explained, and much interesting information deduced from them, some of which will be new to the majority of architects. For example, the standard mixture of 4 : 2 : 1 is found to be unreliable, as in some cases an equal or greater strength can be obtained with a smaller proportion of cement, depending on the all-important matter of voids in the aggregate. The value of tamping concrete, washing of aggregate, and the danger of excess of water in mixing are all clearly demonstrated.

The writers fully recognize that the greatest element of risk in concrete construction does not lie with the cement at all, but in the actual mixing process of the concrete itself, and that fear of defective mixing leads many architects into providing a more than sufficient margin of strength on paper. There are some useful suggestions made with regard to this, but Messrs. Earle look for the real solution of the problem in the increasing use of machine mixing. One thing is clearly proved, namely, that given proper mixing much concrete work is grossly wasteful, specially when the usual byelaws have to be complied with. Information is given in other chapters on practically all the side issues and details in the use of concrete and cement. Aluminous and quick-setting cements are dealt with at some length, as also is the important question of percolation, not only of water, but also of oils and acids. There are useful recipes for surface hardening, together with some accounts of abrasive tests. The tests generally, though conducted in laboratories, are of a practical nature.

There is undoubtedly a demand for a complete and comprehensive handbook on cements and concrete, which will give in concise and tabulated form all the assorted information available. This book of Messrs. Earle is not quite so compendious as such a reference book would be, but it goes a considerable way in that direction, besides incorporating a lot that is new; most architects and all students will find it useful and interesting reading. It avoids the prime error of many such books which often smack more of the physicist than the clerk of works. Messrs. Earle are to be thanked and congratulated. ERIC L. BIRD

The Making and Testing of Portland Cement and Concrete. By G. and T. Earle, Limited. Price 10s.

IN PARLIAMENT

[BY OUR PARLIAMENTARY CORRESPONDENT]

The Smoke Abatement Bill

FOR several hours last week the House of Commons was occupied in a debate on the second reading of the Public Health (Smoke Abatement) Bill, which has passed through the Lords, and which seeks to mitigate the smoke nuisance.

Mr. N. Chamberlain, the Minister of Health, in moving the second reading, said that there was no difference of opinion as to the desirability of trying to do something to purify the atmosphere, and to exercise a somewhat stricter control than was possible at present over the emission of smoke and other noxious vapours. The present Bill, although not a drastic measure, contained provisions for strengthening the present law, and for strengthening administration. Pollution of the atmosphere in some of our larger towns was at once costly, wasteful, and highly injurious. One had only to look at the Houses of Parliament to see what was the effect of acid soot when it was deposited on the most durable kind of stone. The Bill made it possible for a local authority to take proceedings against the undue emission of white smoke, as well as black smoke; it increased the penalty for such an offence, and it extended the power of the local authority to deal with smoke emanating from other apertures than chimneys. Clause 5 extended the power of an urban authority in the making of by-laws requiring the provision in new buildings of such arrangements for heating as were calculated to prevent or reduce the emission of smoke, but it specially exempted private dwelling-houses. He admitted that it was the private dwelling-houses which were the greatest sinners in the product of smoke, and it was suggested that the local authorities should be given power to require that new dwelling-houses should not be erected unless they were fitted with arrangements for heating and cooking by means of gas or electricity. Inquiries of local authorities showed that 75 per cent. of the new houses now being erected were already fitted with gas stoves. He had given a good deal of consideration to the matter, and he came to the conclusion that it was not wise to include private dwelling-houses with other new buildings, because he felt that in our present state of knowledge it was too great an interference with private liberty. A very large number of these private dwelling-houses were being erected by local authorities, who, if they chose, could so fit those buildings that there were no open grates in them. He did not want to do anything to hinder or hamper the erection of houses, nor to do anything to make the houses more expensive to live in.

In the discussion which followed it was pointed out that the open fire, in addition to being the cheapest method of heating a room, was also the healthiest, because of the efficient natural draught which it produced. Lt.-Commander Kenworthy suggested that encouragement should be given towards the building of houses which contained provisions for the consumption of smokeless fuel.

Captain Waterhouse thought that the Minister should introduce a regulation making it compulsory on any person building a house in an area where there was a service of gas, to put in the necessary pipe lines.

Mr. T. Thomson maintained that a local authority should have a permissive power to deal with smoke prevention in new buildings, including private buildings.

Sir K. Wood, Parliamentary Secretary to the Ministry of Health, agreed that the problem was a very serious one, but he felt that a great many people would resent an attempt on the part of the legislature to insist that the open fire should be taken away from them. There were something like 20,000,000 coal fires already in private houses in this country, and it would be a big task for the Government to begin prohibition in a matter of this kind, and not to endeavour to encourage and educate people towards the adoption of a new system. He did not think anyone would ever really succeed in doing away with the domestic fire until we obtained a smokeless fuel, and that was the direction in which the Government should move, as they were moving at present. In 1926 something like £76,000 was allocated for research on this matter, and next year that sum would be increased to £96,000. Favourable results were in sight.

The second reading was unanimously agreed to.

The Fate of Garrards House

At question time Sir Henry Slesser asked the Under Secretary of State for the Home Department, as representing the First Commissioner of Works, if he was aware that Garrards House, in Water Street, Suffolk, a very rich half-timber building with carved figures on the door jambs and beautiful ceiling, was about to be removed to America; and whether he would take any steps to prevent this removal?

Captain Hacking, in reply, said that he assumed the house referred to was in the village of Lavenham. The First Commissioner of Works had learned with great regret that this house was being demolished, but the Department had no evidence that it was to be exported to America. Intervention by the Office of Works under the Ancient Monuments Act would involve purchase or the payment of compensation, for which at present funds were unfortunately not available.

SOCIETIES AND INSTITUTIONS

R.I.B.A. Council Meeting

Following are notes from the Minutes of the last Council meeting of the R.I.B.A.:

Architects' Defence Union. A scheme for the establishment of a Professional Defence Union for architects, prepared by the Practice Standing Committee, was approved by the Council. Steps will be taken at once to lay it before the profession.

Limited Competitions. Under the provisions of the new by-law 70 it was decided to hold a referendum on the subject of the control of limited competitions.

Scale of Charges. On the recommendation of the Practice Standing Committee it has been decided that when the present edition of the scale of charges is exhausted it should be reprinted in similar form to that of the Surveyors' Institution, i.e. in the form of a brochure, 4½ in. by 3 in., and that the price should be 3d. a copy.

Fees of Specialists and Consultants. On the recommendation of the Practice Standing Committee the Council decided to recommend the general body to approve of the following revision of clause (*f*) of the conditions of engagement, which form part of the scale of charges: (*f*) In all cases where special construction or equipment is necessary, a consultant or consultants may be required. His or their selection shall be at the architect's discretion, in consultation with client. The fees of such consultants or specialists are not included in the architect's percentage charges.

Law of Property Act, 1925. The Council directed that observations by Mr. Douglas Scott on the law of Property Act, 1925, should be published in the Journal for the information of members.

Economies in Building Practice. On the recommendation of the Science Standing Committee the Council invited the Institute of Builders to appoint a small sub-committee to receive, consider, and report monthly upon suggestions for eliminating processes in modern building practice which do not afford additional durability and/or strength commensurate with their cost in labour and material, with a view to exchanging information and eventually of submitting a report to the main committee or councils.

Regulations for Steel-framed Buildings. The Council approved of the publication in the R.I.B.A. Journal, for the information of members, of a report by the London Building Acts Committee of the R.I.B.A. with respect to the construction in London of buildings with a skeleton framework of iron and steel.

Reinforced Concrete Regulations. On the recommendation of the London Building Acts Committee the Council decided to obtain a number of copies of the Joint Committee's report for

the use of interested committees and members, and that it be priced at 1s. a copy.

National Association for the Prevention of Tuberculosis. Mr. James Lochhead was appointed as a delegate of the R.I.B.A. to the twelfth annual conference of the National Association for the Prevention of Tuberculosis to be held on July 1, 2, and 3.

The University of Sheffield. Mr. F. E. Pearce Edwards and Mr. E. Vincent Harris were appointed as representatives of the R.I.B.A. at the celebration of the coming of age of the University of Sheffield, which will take place on June 30 and July 1 and 2.

International Federation for Town and Country Planning and Garden Cities. The following members were invited to serve upon the Council of the International Federation for Town and Country Planning and Garden Cities: Professor S. D. Adshead; Sir Reginald Blomfield, R.A.; Mr. W. Harding Thompson; Mr. W. Alexander Harvey; Mr. H. T. Buckland.

International Congress on Bribery and its Prevention. Mr. J. Douglas Scott was appointed as official representative of the R.I.B.A. at the International Congress on Bribery and its Prevention, which is to be held at the Royal Society of Arts on July 8 and 9.

The British School at Rome. Sir Reginald Blomfield, R.A., was reappointed as one of the two representatives of the R.I.B.A. on the Council of the British School at Rome.

Resignations. The following resignations were accepted: W. W. Scott-Moncrieff, F.R.I.B.A.; A. K. Brown, A.R.I.B.A.; L. C. Brooks, A.R.I.B.A.; A. C. Denny, A.R.I.B.A.; A. T. Wright, A.R.I.B.A.; A. F. Poole, L.R.I.B.A.; T. H. Russell, L.R.I.B.A.; J. Stables, L.R.I.B.A.

The Architectural Association. The usual annual grant of £100 was made to the Architectural Association.

Guildford Corporation Bill, 1926. On the recommendation of the Practice Standing Committee the Council invited the Guildford Corporation to consider, in any amendment of the Guildford Corporation Bill, 1926, the desirability of introducing clauses on the lines of part viii of the London Building Act, 1894.

Bristol Corporation Bill, 1926. On the recommendation of the Practice Standing Committee the Council requested the Bristol Society of Architects to consider the desirability of asking the Bristol Corporation to amend the Bill on the lines suggested.

R.I.B.A. New Members

At the last general meeting of the R.I.B.A. the following members were elected:

AS FELLOWS (39)

Andrew, Harry.
Barker, Philip Edward.
Bates, Ernest.
Beswick, Alfred Edward.
Castello, Manuel Nunes.
Durand, Arthur Henry.
Gee, Ernest.
Gutteridge, Lt.-Col. Reginald Fowler, T.D.
Harrild, Fred, M.A.OXON.
Holden, Walter Frederick Clarke, M.C.
Kennedy, Edwin Riddell.
Minty, James Andrew.
Walker, Frederick Arthur.
Wearing, Stanley John.
Woods, Frank.
Ball, Charles William, F.S.I.
Berry, Joseph, J.P.
Bottomley, John Mitchell.
Fisher, Frank James.
Havers, Albert Charles.
Kempster, Fred.
Long, Alfred, J.P.
Shenton, Frederick William.
Belsher, Bernard James M.INST.C.E.
Bond, John Owen.
Clare, George Edward.
Davidson, William.
Easton, Col. Arthur, T.D.
Forge, Frederick Lindus.
Haynes, Frederick Stanley.
Hill, Thomas Jackson.
Johnston, Joseph Marr.
Lamb, Percy Aidan.
Lumb, Francis Leonard.
Munden, Patrick John Fitzgerald.
Sanders, Ingalton.
Soutar, John Carrick Stuart.
Taylor, Samuel.
Weekes, Joseph.

AS ASSOCIATES (16)

Alabaster, John Richard.
Allen, Alfred Maxwell.
Braddock, Henry.
Hollinshed, Charles Neville.
Llewellyn-Morgan, Guy.
Lord, Wilfrid Turner, B.A.CANTAB.
McConnell, Kenneth Hamlyn, B.ARCH.SYDNEY.
Martin, George Legat, Junr.
Martin-Smith, Donald Frank.
Morris, Alexander George.
Mosely, Edna.
Preston, Frederick Leslie.
Ritchie, Thomas.
Roscoe, Frank, Junr.
Stewart, Alexander Malcolm.
Wood, John William.

AS HON. ASSOCIATES (2)

Bell, Robert Anning, R.A., R.W.S., R.B.C., HON. LL.D.
Mackail, John William, M.A., LL.D., F.B.A.

AS HON. CORRESPONDING MEMBER (1)

Defrasse, Alphonse.

R.I.B.A. Problem in Design.

The R.I.B.A. inform us that owing to the disorganization caused by the strike the date for the submission of Problem in Design No. LXXXVII (*a*) and (*b*) has been altered from June 30 to July 17, 1926.

The Berkshire Society of Architects

By the invitation of Captain Denzil Cope, a number of members of the Berkshire Society of Architects and friends visited Bramshill House, Hants, and spent a most enjoyable afternoon looking over the house and grounds. Those present included Mr. J. G. T. West (chairman of the Society), Mr. and Mrs. Harry Hutt, Mr. and Mrs. H. Whiteman Rising, Mr. C. B. Willcocks, Mr. J. T. Saunders, Mr. H. T. Morley, Mr. A. B. West, Mr. F. Woods, Mr. J. R. Greenaway, Mr. W. J. Freeman, Mr. S. E. Burrett, Mr. G. H. Cotton, Mr. J. S. Paton, Mr. and Mrs. H. W. Rogerson, Mr. G. Cobb, Mr. and Mrs. W. H. Allen, Mr. A. T. Doe, Mr. G. Batten, Mr. R. J. Eele, Mr. R. A. Frowde, Mr. E. J. Harris, Mr. J. W. Turner, Mr. R. P. Walden, Mr. P. Watkinson. Mr. J. Hautenville Cope showed the party over the Jacobean mansion and gardens, and gave a most interesting account of the house, its growth, and history. By invitation of Mr. and Mrs. J. Hautenville Cope, those present were entertained to tea at Finchampstead Place, and subsequently visited Finchampstead Church.

The Ulster Society of Architects

A general meeting of the Ulster Society of Architects was held in Portrush. Mr. John Seeds, President, occupied the chair. The Council reported that it had examined the question of public officials engaging in private practice as architects and believed that the heads of departments would stop this practice upon proof that it was conducted during official hours. The Council detailed the steps which it was taking to procure this proof. The circular letter issued by the Council in regard to the Board of Works acting as architect for all new schools under the Education Act had been received most favourably by a majority of regional committees. The Council advised that no member of the Society should act in any professional capacity for a regional committee adopting plans prepared by the Board of Works. A deputation was appointed to wait upon the Belfast Corporation and protest against the proposal of the Electricity Committee to transfer to the city electrical engineer the design and superintendence of all building work in connection with the electricity undertaking.

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, W.C.2. The price is 1s. each.]

LATEST PATENT APPLICATIONS

12113.—Abrey, R. H.—Plastic compositions. May 11.
12464.—Baur, W.—Method of coating wood, iron, &c. May 14.
12167.—Macomber, S.—Floors. May 11.
12026.—Roberts, R. G.—Building constructions. May 10.
12215.—Stewart, J.—Preservative, and method of facing walls. May 12.

SPECIFICATIONS PUBLISHED

251807.—Knapen, A.—Method and means for drying buildings.
251828.—Iggulden, W. A.—Floor cramp.
244447.—Kulbeck, N.—Device for use in the whitewashing, washing, scraping, painting, or repair of ceilings and the like.

ABSTRACT PUBLISHED

249776.—Reed, W.—Walls.

LAW REPORTS

AN ARCHITECT'S CLAIM FOR FEES

Francis R. Lawson v. *William Winstanley. Liverpool Assizes. Before Mr. Justice Talbot*

Mr. Francis R. Lawson, architect of Glebe Street, Stoke-on-Trent, brought an action to recover £162 for professional services from Mr. William Winstanley, cotton broker, Caldy Road, West Kirby, Cheshire.

The claim was in respect of preparing plans, specifications, and bills of quantity in connection with a house Mr. Winstanley proposed to build at Caldy.

Mr. J. Procter, for Mr. Lawson, said that his client was asked to prepare plans for a house to cost about £2,000, and Mr. Winstanley's contention was that the plans prepared could not be carried out for less than £3,500, and consequently were of no use to him. Stoke-on-Trent builders were asked to tender, because Mr. Winstanley thought Caldy builders had a ring to keep up prices, added Mr. Procter. Their tenders ranged from £3,340 to £4,747, that, however, was due to Mr. Winstanley's additional requirements. He asked that the house should be raised four feet above the ground level in order that he might get a better view of the Dee Estuary. He also wanted the hall and living room panelled in oak, which counsel thought was rather luxurious, other refinements of detail and the best of everything throughout. He further stipulated for a terrace wall. Of course, no architect could guarantee work could be carried out at a certain price, because builders estimates differed so greatly. Mr. Lawson after several consultations with his client, offered to meet him by cutting down the plans, but Mr. Winstanley said : " I will not have a skeleton of a beautiful house," and his wife said : " My friends say the design is perfectly lovely, and we do not want to spoil it."

Mr. Lawson said he had been an architect twenty-five years, but he would not join the Royal Institute of British Architects as he did not think it was in the interests of architects to make it a closed profession.

Mr. Procter : The suggestion seems to be that as you are not a member you are not entitled to charge on the Institute's basis.

Mr. Lawson said he had not made the full charge, because he was still willing to act for Mr. Winstanley for a further house. He had been paid in full for abandoned work in other instances. By eliminating some of the original features an amended tender for £2,698 was obtained; at the reduced price the house would still have been built substantially as originally planned although various details would have to be cut out. He claimed remuneration at the rate of two-thirds the usual fees, that being the basis authorized by the Royal Institute of British Architects for abandoned work. Mr. Lawson, in examination, denied that on a measurement basis it should be obvious to any architect that the house could not be built, according to his (Mr. Lawson's) plans for less than £3,500 to £4,000. He did not agree that very few architects were able to obtain the R.I.B.A. scale of fees for abandoned work.

Mr. Reginald Longden, F.R.I.B.A., President of the North Staffordshire Architectural Association, said Mr. Lawson's charges were based upon the Institute scale, but in his (Mr. Longden's) opinion they were too reasonable. £255 would be a proper charge in this case.

In examination, Mr. Longden said he was not aware that trouble had been caused in the profession by architects taking instructions from a client.

The defence was that Mr. Lawson undertook that the house should not cost more than £2,400, and as he had not carried out his instructions he was not in law entitled to his fees. In view of the large amount of the tenders the plans and specifications were useless to Mr. Winstanley, who, however, had paid £70 into court.

Mr. Winstanley stated he was prepared to go to £2,400, but Mr. Lawson had not given him what he wanted or what he instructed him to. He denied making any suggestion that Caldy builders were in a ring.

Mr. Edmund Kirby, F.R.I.B.A., ex-President of the Liverpool Architectural Society, said in his opinion the plans prepared by Mr. Lawson were for a £4,000 house and could not be carried out for £2,400. The fee fixed by the Institute for abandoned work was not always asked; it depended on the circumstances. With regard to this case if the architect had not complied with the conditions laid down by his client, he was not, in witness's opinion, strictly entitled to any fee, except in relation to the preliminary interview, and if he received any reasonable amount, it would be more or less an act of grace. Assuming, however, Mr. Lawson was entitled to be paid witness agreed with Mr. Longden as to the amount of the remuneration.

Mr. John E. Bladon, quantity surveyor, thought £50, plus travelling expenses, would be fair remuneration for Mr. Lawson, assuming he was entitled to be paid.

Mr. Justin Lynskey, for Mr. Winstanley, contended Mr. Lawson had not carried out his contract to provide for a house costing £2,000, and put Mr. Winstanley in the position of a man who ordered a modest motor-car and had been supplied with a Rolls-Royce.

Mr. Justice Talbot held that Mr. Lawson gave no guarantee as to the cost of the house, and was entitled to be paid for the work he had performed, and the only question was the scale of remuneration. He had no difficulty on the point because expert witnesses on both sides had agreed. There would be judgment for Mr. Lawson for £162, with costs.

STRUCTURAL REPAIRS : LIABILITY

Parkes v. *Austin Reed, Ltd. Chancery Division. Before Mr. Justice Lawrence*

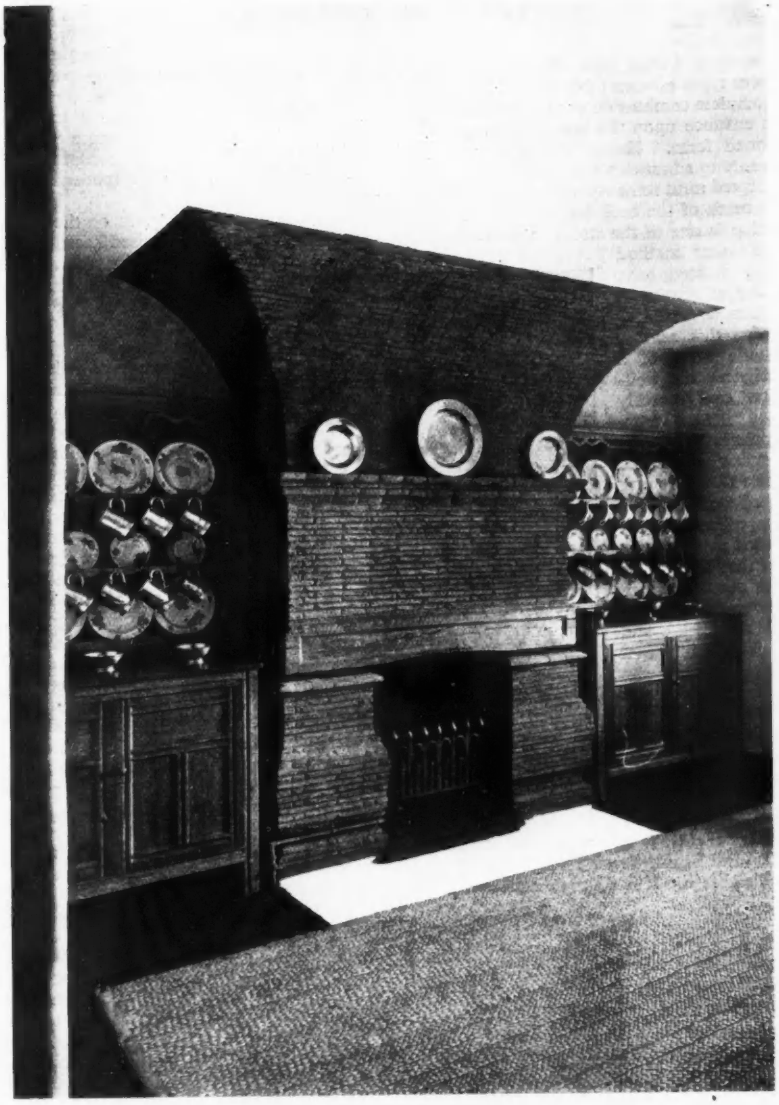
This matter came before the Court on a summons asking for a declaration that the applicant was entitled to have inserted in the underlease and the underlessee's covenant to repair contained therein, a proviso restricting the underlessee's liability for structural repairs to such structural repairs as would be necessary if the premises were a separate and independent building, or otherwise limiting the underlessee's liability for such repairs in such manner as the Court might direct.

Mr. Stevens, for the applicant, Mr. A. F. V. Parkes, said the matter arose out of a contract of January, 1925, for the grant of an underlease by Austin Reed, Ltd., to the applicant of a portion of the premises at 105 and 113 Regent Street and 12 and 13 Vigo Street, at a rental of £1,650, which rental had been fixed by arbitration. Counsel's contention was that under the underlease as it now stood his client would be liable for structural repairs, due to a matter over which he had no control, viz., the weight of the superstructure. He believed that such a proviso had been inserted in one case.

Mr. Konstam, K.C., for respondents, argued that the applicant was asking for something more than he was entitled to.

His lordship in giving judgment, said it appeared that respondents had negotiated with the Commissioners of Crown Lands for the erection of a large new building at the corner of Regent Street and Vigo Street and the applicant desired accommodation in the new building for the purpose of the business he had previously carried on in Vigo Street. The commissioners had stipulated that before they executed an agreement with Messrs. Austin Reed and Co., the agreement for the underlease to the applicant should be executed. His lordship thought there was a substantial dispute between the parties as to whether the repairing covenant should be confined to the premises underleased, irrespective of subsidence and other matters which might be caused to the foundation of the whole building or the superstructure. Applicant was willing to enter into a repairing covenant with respect to the demised premises similar to that entered into by the lessees of the whole building, but he said fairly and truly that he was not bound to enter into identical covenants which would make him liable for subsidence or injury caused to his demised premises by the weight or character of the building as a whole. His lordship held that the covenant to repair contained in the underlease should have added to it the words " without prejudice to the lessee's right to support of the premises hereby demised," which would make it plain that the danger applicant anticipated, and as to which he was entitled to protection, would not hurt him.

HEATING



SUPPLEMENT OF
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JOURNAL · JUNE 30

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THE OPEN FIRE

[BY V. M. CHRISTY]

THERE can be no doubt that, for many years to come, the ordinary open fireplace, burning coal or wood, will continue to hold its own as a heating medium in the homes of the people of this country. The open fire has some obvious disadvantages, most prominent among which looms the smoke problem; but the newer types of open grate are designed with a view to the more complete combustion of the fuel used, and all are an enormous advance upon the wasteful and smoke-producing old-fashioned form. Expert inquirers into the smoke question are ready to admit that the continuance of the open fire must be accepted until some equally efficient method can come within the reach of the ordinary householder. Its efficiency for ventilation is one of the strongest pleas for the open fire, which no other method supplies so effectively. Indeed, even where some other form of heating is relied upon, a fireplace is often included in a room for this reason. Moreover, the æsthetic value of a well-placed, well-designed, and well-constructed fireplace can scarcely be overrated.

Returning to its primary function, that of heating, to many people the point that an open fire does not give an equably distributed warmth to a room is an advantage rather than otherwise. Be this as it may, it is an uncontrovertible fact that there is an unconquerable charm about an open fire, inseparably bound up with traditions of English family life and hospitality, and it is in vain that "practical" people attempt to eliminate the factor of sentiment. Nor is the open fire necessarily so unpractical. Were it unpractical there would be no more hesitation about installing other heating methods as such become available, than there is about allowing the pump to succeed to the draw-well and the company's water supply to succeed to the pump.

Another charge against the fire is its dirt and the amount of labour entailed by it. But again, newer forms of grate to a large extent nullify this charge. It is a simple matter to clear away the ash of a well-burnt fire, already perhaps collected automatically in a movable tray below the hearth; a handful of kindling wood will set the fire going, and a small scuttle of coal will suffice for a day.

The barless grate needs no ministrations with the black-lead brush, and there are no metal knobs to polish, simply perhaps a tiled surround to wipe over. Stainless steel may be employed for some parts, and in this case there is no need to forgo the cheerful sparkle and sheen, which so greatly enhances the welcome radiance of the fire itself. The use of stainless steel for this purpose is one of the welcome novelties in connection with fireplaces, and it does much to increase the scope for interest and beauty in a room.

The fire itself ever-changing, gloriously free, will enter any setting and bring with it dignity and adornment. Whether it be in a "baronial hall," or its more modest counterpart, with embrasured chimney and dog-grate; whether it be in a tiny compact sitting-room, with faience hearth, curb, and surround; or in the nursery, within the security of an enclosing guard, beneath a mantelpiece painted with fairy tales; whatever the purpose of the room, the mood of the architect, the temper or occupation of the persons in the room, the open fire in the modern grate is always entirely appropriate.

Particular makes of grate on the market have each their individual features; a raised hearth, perhaps, specially contrived air inlets, or a special use of fireclay, or some novel method of aiding smoke consumption. The variety of materials used for its setting range from various effects in metals, including the stainless steel already mentioned, to brickwork in various forms, or some other clay products, such as tiles and vitrified stoneware. In this age when colour is so much discussed, so much abused, and so much relied upon for decorative effect in conjunction with simple form, the fireplace may give the key-note for the whole colour-scheme of a room, or may be of some neutral tone inviting contrasts. Both faience and stoneware offer many possibilities in the direction of colour, while the endless range of brickwork in this connection is still popular both with architect and client, and gives scope for originality.

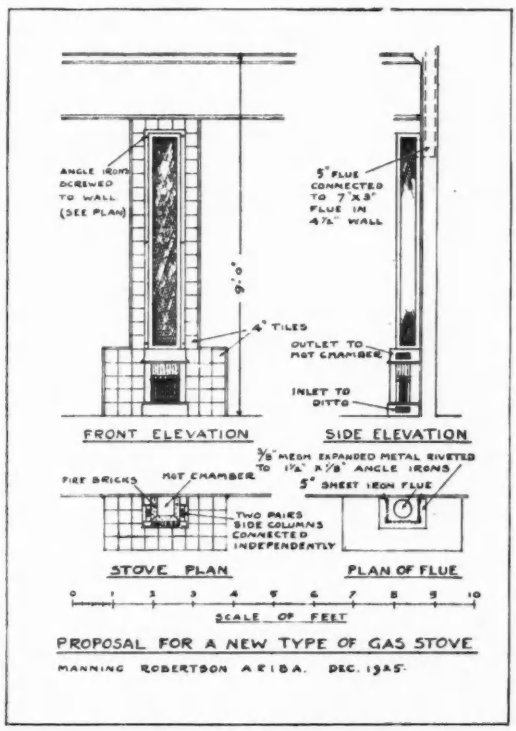
It is a point of no little significance that the attention given by the architect to the question of fireplace design is at the present time perhaps greater than before in the history of house building, and this at a period when other forms of heating are so much to the fore. Moreover, the architect does not limit his interest in the fireplace to the home; he uses fireplaces at points of interest in administrative buildings, in banks, board rooms, and village halls, and in the vestibules of cinemas. Indeed, there seems ample evidence that, far from being ousted from its position, the open fire is, if anything, assuming a more prominent and important role than ever.

Above, the Connaught grate. By the Well Fire and Foundry Co. Below, the Heaped fire. By Bratt Colbran and Co.

THE FUTURE OF THE GAS FIRE

[BY MANNING ROBERTSON]

THE wickedness and folly of burning raw coal in open grates, and the virtue and wisdom exhibited by those who burn gas, have been sung so long and so loud that there exists a real danger lest we accept complacently a "gas fire" habit that, if not so wicked, might be thought as foolish as the open fire that gas is endeavouring to oust. One of the main reasons why gas has not long ago superseded the coal fire is because we might design and use our gas fires more efficiently, and consequently heat our rooms better. Seeing that the gas industry is among the most enterprising and public-spirited in the country, it is worth while examining the defects of our gas fires, considering how these defects arose, why they are being perpetuated, and how best we can secure more efficiency in the future. What, then, is fundamentally wrong with our gas fires? Is it not that they are hampered and bound down by our "fireplace" tradition—that they are fires when they ought to be stoves? Although this is no longer carried to the extreme of heating sham logs of wood, yet the fires are still made with flat backs that fit tightly against pieces of sheet iron, and so vent the hot products of combustion direct into a brick flue, as well as wasting the heat from the backs of the fire-bricks. The result is that the heat mostly goes straight up the chimney and all the convected heat that should rise from the back of the stove and the flue is lost. We get only the radiant heat from the front which does not directly warm the air in the room. If it be argued that we used to obtain adequate heat from an open coal fire, we must reply that such fires had to be very large and very hot, since only one quarter of the heat liberated was used to warm the room while three-quarters was dispatched straight up the chimney. The price we pay for pretending that our gas stoves are "fires" involves a corresponding wastage of heat.



Habit is a strong factor, but it is inconceivable that if the gas companies brought out a different type of gas stove they would not create a demand for such a novelty. It would force its way on its merits. As to its nature: the essential considerations would be, to avoid vitiating the air, and to combine the radiant heat which is given out by our present fires with the maximum of convected heat, or hot air, given off by the back and the products of combustion in the flue. The principle is merely that recognized in the army hut, where a stove is placed in the centre with as much exposed flue as possible. In our new houses this principle postulates doing away entirely with the mantelpiece, and since the flues need not be more than 7 in. by 3 in. in size the chimney breast is also unnecessary—an enormous economy in construction. In place of the chimney breast and mantelpiece we should find a more or less square stove designed to stand out into the room or to liberate the heat from the back. The stove and its flue should extend to the ceiling, being in some way unified in design, the flue possibly being cased in a grille. At or near ceiling level it could enter the small wall flue or it might even be carried into the room above before discharging into the flue. The upper part would be so designed that the fumes would have full opportunity of parting with their heat and warming the air in the room before they finally escaped into the wall flue. Stoves built on this principle for use with hard coal are found throughout the continental countries of the north, and they give the fullest scope for beauty, colour, and design. In the continental examples the flue is generally divided into two arms, and a little hot cupboard is fitted between them.

The choice the Englishman has to make lies between the "gas fire" that apes the coal fire, complete with mantelpiece and tile surround, and a stove primarily designed to throw out every available unit of heat. To the architect the stove should make the strongest appeal, since it would provide a new problem in beauty of line and in the best use of materials. It would represent an immense national economy.

In existing houses where so drastic a reform would be expensive and cumbersome we must agree to compromise. Even the thin, flat stove can stand boldly into the room and so present some twelve inches of flue pipe leading to the sheet iron plate behind; and this is no more revolutionary than the anthracite stove with which everyone is familiar.

Those who think most highly of gas are also the most anxious that it should fulfil its destiny with the greatest possible speed, but its development is bound to be hindered so long as the gas companies continue to manufacture only those "fires" that can remind purchasers of their grandfathers' coal fires. If the gas industry evolved something ahead of its time, there must be hundreds of architects and people of sense and good taste who would set the example in the use of really efficient apparatus, even though the normal Englishman in his hideous house would at first reject it on the score of "appearance."

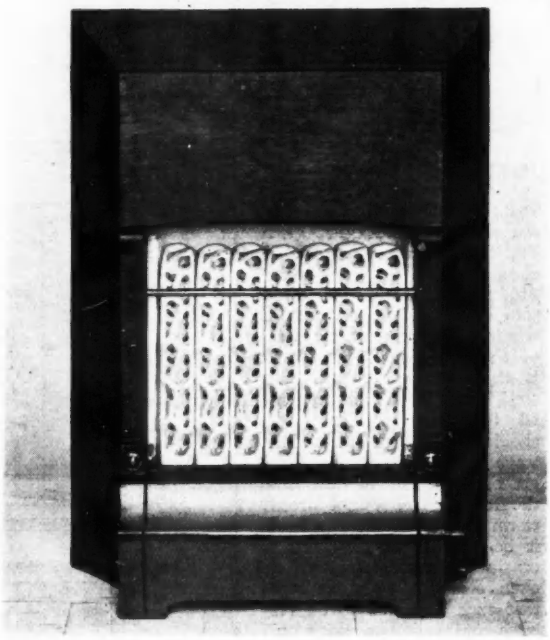
The accompanying illustration comprises a suggested solution of a simple and economical nature. It will be seen that a small ventilated hot chamber would tap the heat from the backs of the fire bricks, while five feet at least of the flue would be exposed behind a grille—the grille being, of course, a concession to æsthetics. The flue, if it were five feet long, would provide six and a-half superficial feet of heating surface at the temperature of a steam radiator. This powerful source of heat would not only be obtained free of charge, but it would, of course, effect a saving in gas, since much less gas would be required to heat a room if it were used in this way instead of being wasted. Pleasing colour effects could be obtained with the tiles, and the flue should be blackened to enable it to part with its heat to the best advantage. The grille could be painted to any colour desired, or treated with aluminium paint. This particular solution happens to be the first that has entered the writer's head, and the problem could be tackled in an infinite variety of ways. This suggestion may, however, play the part of the porcelain egg and stimulate the production of other similar schemes that will effect a necessary change in our treatment of gas for domestic purposes.

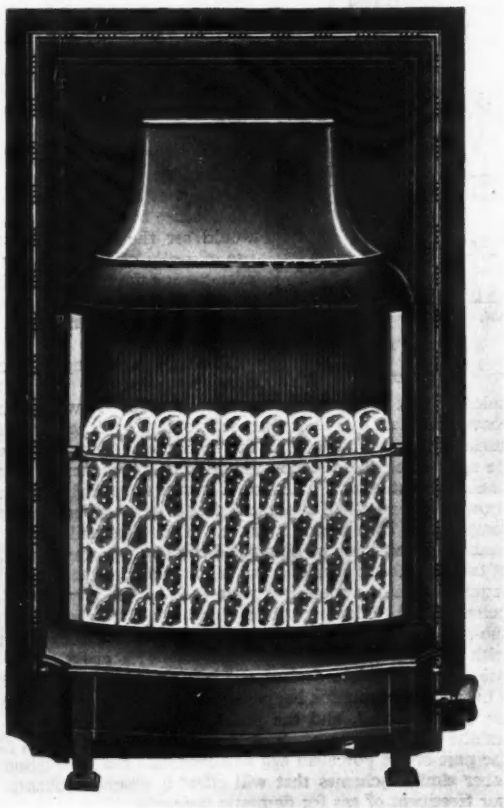
ÆSTHETIC ASPECTS OF THE GAS FIRE

[BY WILLIAM HARVEY]

FRENCH people who are credited with taking an interest in architecture as an art, and who make consistent efforts to keep the exterior fronts of their buildings clean, welcomed gas much more cordially than we show any signs of doing, even now that the coal shortage is acute and the discovery of other methods of heating has become a matter of urgency. Must the adoption of the gas fire by our artistic neighbours be accepted as evidence of its beauty, and our rejection of it be set down to British conservatism and bad taste, or had they reasons for their choice which did not apply so forcibly in England? It must be admitted that the change from the use of closed stoves and charcoal stoves to the use of gas for heating and cooking is not so great a change as from the use of open fires, and the smell of coal gas may not have proved offensive to nostrils already inured to the fumes of burning charcoal. The slightest escape of gas is offensive to most Englishmen, but the self-lighting gas-jet had a great vogue in France some eighteen years ago. The motive power of this ingenious piece of mechanism was simply escape of gas, and while the tap was turned on and the gas was whistling out the family at the dinner table would sit with upturned faces drinking in its odour of civilization and progress until the reagent in the nozzle produced a spark, and the jet condescended to burst into flame.

Some types of modern English gas fires are certainly less troublesome in respect of smell than those early examples which were improvised out of a piece of punctured iron pipe, laid in the bottom of an old grate, with rounded lumps of fireclay to diffuse the flames. Such gas fires ensured the production of an actively poisonous atmosphere in a remarkably short space of time, with headache and nausea in store for those unlucky, or foolish, enough to breathe it in for many minutes. Gas itself is now just as dangerous and as unpleasant as before, and though its scent is a useful warning of the risk of suffocation or fire, a leak which is too small for the gasfitter to trace and cure may still be an annoyance to the household. Gas companies and manufacturers have already done much to make apparatus safe and foolproof, and will doubtless continue to improve in these directions. Whatever shortcomings still remain in connection with the escape of gas, or of noxious products of its combustion, the benefits of economy in coal consumption and the avoidance of fog and soot vastly outweigh them in importance.





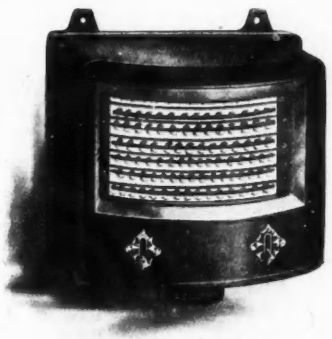
Without doubting that makers of gas stoves have taken pains about their appearance—some good examples of present-day designs accompany this article—there is reason to suppose that they have adhered far too closely to the proportions and arrangement of the open fire which preceded it. It is a fault in artistic discretion to design the gas fire in a manner which brings it into competition with the open fire of glorious memory. It may not blaze and shoot out sparks and crackle in a cheerful manner, but it can glow, and the designer of the future will take care that its glowing mass is improved in outline and in detail. The appropriate forms for placidly glowing objects are circles and star shapes, and these outlines can easily be arranged for gas fires without drastic alterations in their working parts. A metal shield perforated with a large star-shaped hole surrounded by a mesh of minor perforations might be placed in front of the stove to serve instead of the bar which holds the asbestos tubes in position, and such a perforated screen would give relief to the incandescent material within. Amendment of the design of the asbestos tubes might also be undertaken with a view to getting greater artistic beauty out of the play of flame about them, as well as for the preservation of a pleasant appearance when the stove is unlit.

Above, and below, two gas fires. By Radiation, Ltd.

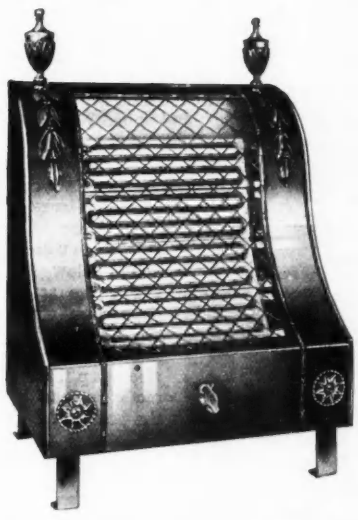
ELECTRIC HEATING

[BY H. J. BIRNSTINGL]

THERE are two distinct methods of room heating. The one is a method by which the room is constantly kept at an equable temperature, the other is a method by which heat can be quickly and cleanly generated when it is wanted, and for as long as it is wanted, and when it can be as quickly extinguished. Some form of central heating accomplishes the first, gas or electricity accomplishes the second. But this difference of method is more fundamental than a mere difference of convenience. By the one method we aspire to heat the air of our rooms, by the other we depend for our warmth primarily upon direct radiation, by the same method, in fact, as that upon which our planet receives its heat from the sun. Of the various methods of heating by radiation the maximum percentage of efficiency is obtained from the electric radiator, that is to say, that with the electric radiator the difference between the generating energy and the radiated energy is less than in any other radiation method. In this connection some figures by Dr. Margaret Fishenden and R. E. Willgress published by the Fuel Research Board are of interest. The radiation efficiency of the open coal fire is between 17½ per cent. and 25 per cent., to which must be added 5 per cent. for direct convection, making 22½ per cent. to 30 per cent. Low temperature coke yields a radiation efficiency of 28½ per cent. A good modern gas fire yields 45 to 50 per cent., plus 10 per cent. for convection. A good type electric heater, however, yields 70 per cent. and the balance in direct convection.



The modern electric fire is made in a variety of forms, but the most usual types are in bars each consuming 1,000 watts—one unit—per hour. The fires generally contain two or three bars, each having its own switch, and thus enabling the heat and current consumption to be controlled. For continuous warming the electric fire is too costly, and it would scarcely be an economic proposition were current available at ½d. per hour. But as the periods during which the room is in use become shorter, so the comparative cost of the electric fire improves. The rooms therefore for which the electric fires are most suited are the dining-room and bedrooms; it is not suited for the nursery and main sitting-room. Another point to be considered is the considerable saving of labour, and of cleaning and laundry expenses which are not so easily computed.



The electric fire is only one of several ways of utilising electricity for heating purposes. Another is by means of air-warmers. These heat by means of convection. They have the appearance of central heating radiators, but they are warmed by means of electric elements. Another method is the tubular electric heating. This system consists of a coiled element contained in a pair of D-shaped insulating tubes which are bound together with asbestos cord; the whole being placed in a steel tube. The surface heat varies from 160—210 deg. F. according to requirements. It is thus a convection system of heating. These tubes, which vary in length from 2 to 11 feet, are placed horizontally wherever they are required. It is estimated that for a house with three sitting-rooms and four or five bedrooms, the fuel costs, at 1d. per unit, work out at 17s. 6d. per week. The capital cost of equipment and installation is estimated at £90.

There is one more system which requires to be mentioned and that is the off-peak load system, which is very little known in this country although it is extensively used on the Continent, especially where electricity is produced from hydro-electric stations. The principle of the system consists in storing electrically-generated heat in water accumulators, this heat being obtained at off-peak periods, that is to say, for the most part during the night. This system can only make headway in this country if the supply companies will undertake to deliver current during off-peak load periods at a reasonable flat rate, a flat rate equal to the cost of the fuel actually passing through the boilers. The companies' line at present seems to be that from such a charge they would derive no benefit. Those who are advocating the system, however, maintain that the companies would materially gain in maintaining a steady load throughout the 24 hours, and their profit would be derived from a higher overall efficiency. One off-peak load plant has been installed at Newcastle. The off-peak system is entirely automatic in its action and needs very little attention. The idea of off-peak load, themol electric storage heating, was evolved and developed by Sulzer Bros.

The exploitation of electricity in this country is in a very backward condition. Fortunately, as more attention is now being given to the scientific and economic use of fuel, the prospect for the development of electric power increases. Electricity in some form would seem to provide the ideal method both for domestic heating and for the heating of larger buildings.

Above, the Fixall electric stove. By Belling. Below, two Magnet stoves. By the General Electric Co., Ltd.

HEATING THE MODERN STORE

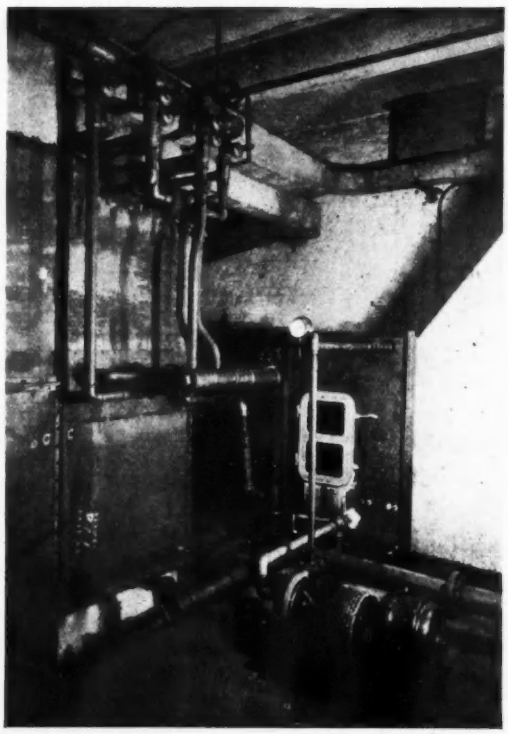
[BY W. W. WOOD]

AMONG the most popular systems for the heating of the modern store are the plenum system for the ground and basement floors, and the one-pipe main drop system for the first and upper floors. The two-pipe main drop system gives the advantage of flow mains at the roof level in the workrooms. These are invariably on the top floor and would otherwise have to be kept warm by ove head coils. The system also does away with main pipes at basement ceiling level, and the difficulty of chasing them in the floor above, or casing them. The main returns are brought back to the boilers at basement or sub-basement floor level, adding their quota to the warming of this showroom.

The accompanying illustrations show how the plenum system was installed at Messrs. C. & A. Modes, Ltd., new premises in Liverpool. The passages formed under the air ducts in the basement are made excellent use of for storage purposes. There are gratings all round the basement, through which warm air is constantly flowing in winter and cooled air in summer. (The above systems were described fuller in the JOURNAL for October 28, 1925.) On the ground floor the air is blown through grilles in a metal skirting on the party wall side of the building, and through grilles in the space between the window level and floor level on each side of the main sources of cold entering air, viz. : the doors.

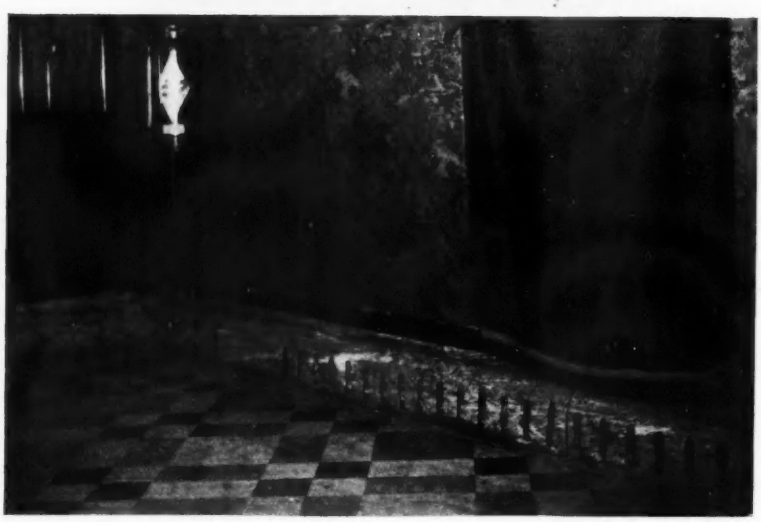
A constant supply of hot water is necessary at each lavatory basin in a store and especially is this the case in the public lavatories. In addition to the lavatory basins there are numerous service sinks for the benefit of cleaners in the staff lavatory blocks on each floor, probably a caretaker's flat with bath, lavatory basin, and sink on the top floor, and if the store possesses a restaurant there will be kitchen sinks, all of which require a good supply of hot water.

The direct method of hot water supply with the circulating layout is the most usual system for stores. A wrought-iron or steel boiler is of course necessary, and either can be easily cleaned. By using copper tubes, which are very little more expensive than the conventional cast or wrought-iron pipes, furring up is entirely eliminated in the piping system, and there is the additional advantage that connections by unions may be made direct to the hot water tap. There is on the market a boiler with an internal copper water jacket which isolates the supply water from the circulating water, thus acting in the dual capacity of boiler-calorifier, and in consequence entirely prevents the trouble due to the formation of furry deposits. The term "direct" indicates that the water supplied at the tap has been heated in the boiler itself, and that the cylinder is used for storage purposes only, and not as a calorifier. The expression "circulating layout" is self-explanatory, but perhaps it is as well to point out that there is a primary and a secondary circulation. The former is between the boiler and the cylinder and the latter between the cylinder and the draw-off points.



The cold water supply tank, which must be fixed above the highest draw-off point of the installation, is usually alongside the main supply tank (or a tapping may be taken from the main tank itself) at the top of a lift shaft, in the housing on the roof above the lift gear. The tank is supplied from the town main and controlled by a ball valve. The cold water feed pipe is connected to the underside of the storage cylinder and reaches the boiler low down at the side, the primary flow being, of course, from the top. An open vent pipe should be taken from the highest point of the system and tipped over above the level of the water in the C.W. supply tank.

The heating engineer's work, so far as lavatory basins are concerned, usually ends below the basin, the actual connection from the wrought-iron hot water pipe to the tap being made in lead by the plumber.



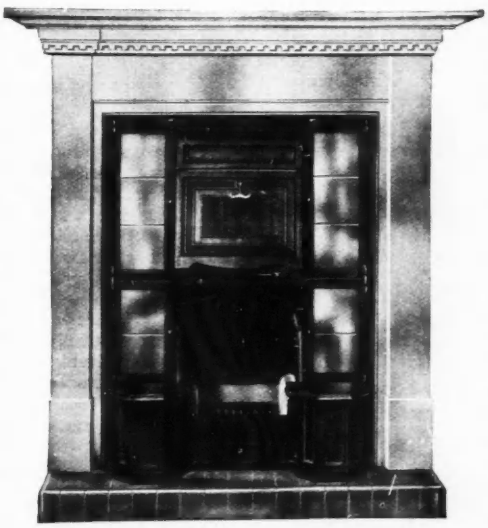
The premises of C. and A. Modes, Ltd., Liverpool. Above, the air chamber. Below, the air ventilator skirting.

HOT WATER IN THE SMALL HOUSE

[BY HIMALAYA]

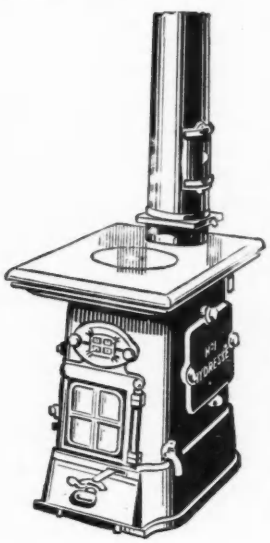
GONE are the days when the designer of the small house could airily instal a range in the kitchen, with a boiler behind it, and leave the rest to the occupier. To-day, the question of providing a hot water system which will meet with the approval of the housewife, is one of the more serious problems with which the architect is concerned. The work involved in the maintenance of the supply must be made as light as possible, as the kitchen, which becomes the maid's sitting-room, must be kept cool and pleasant; fuel is expensive and economy has to be rigidly pursued; and over all runs the consideration of efficiency.

At the present time there is no satisfactory method of combining the convenience of the range from the point of view of cooking, with the economy and other qualifications required by the users during the slack periods. The boiler which is to provide the hot water must obviously be allowed to burn permanently; on the other hand, when once the water has been heated, only a slow combustion is required to keep it at an even temperature, and any necessity to draw a big fire is necessarily wasteful. So that the ideal arrangement is that by which a small fire can be maintained all the time, in a boiler which is devoted purely to the water supply, while the cooking of the house is done on a small gas or electric cooker. If the cooker be placed in the scullery, and the boiler in the kitchen, the latter room will not become unduly over-heated, while the former is not used as a sitting-room, and, in any case will cool down as soon as the fire is allowed to go out, which can be done as soon as the last meal has been cooked.



Above, the Super Interoven, by The Interoven Stove Co., Ltd. Below, left, the Hydresse, by Smith and Wellstood Ltd., and right, the Sentry boiler, by Wood, Russell and Co., Ltd.

Some form of gas or electric cooker in the scullery may be taken as a necessity, from the points of view both of having adequate cooking convenience and of maintaining a cool room for the maids. But some sort of warmth is required in the kitchen, and, if possible, the appearance of a fire; also the method used must be economical both of fuel and of labour, so that the idea of heating the water from a boiler in the kitchen suggests itself.



This boiler, then, must be easily stoked and easily cleaned, besides having a small and efficient fuel consumption. It must also have some form of window through which the fire is visible.

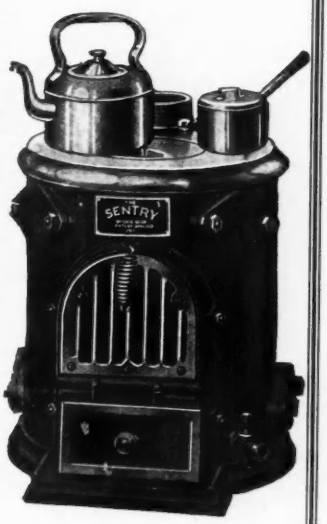
Again, there is a certain demand for a boiler that will do a little cooking on the hot-plate.

Now let us consider what type of independent boiler is most likely to fill all the desires that have been set out above, not forgetting, of course, that we must choose a boiler that does not require daily fire lighting.

The boiler we must find is one with a visible fire, i.e. with as large a mica-fronted door as possible, and let it be so constructed that the ashes can be shaken down without the use of a poker, and without the necessity of opening up the fire. There is no difficulty in securing a boiler, the bottom grating of which is movable by means of a rod projecting through the front. To obtain a little boiling water, it should be possible to insert right into the hot part of the fire, a kettle through an opening, preferably the coal feeding opening. Then again, select a boiler that has a waterway *over* the fire, rather than merely a waterway *around* the fire.

Below we illustrate two types of stoves which are eminently satisfactory from these points of view. One is the "Sentry" which has a large area of hot-plate so that the cooking of a small meal can quite conveniently be done without use of the independent cooker. The "Hydresse" is similar, but has the waterway carried over the fire, so that while from the point of view merely of water-heating it is highly desirable, the convenience of being able to do more than boil a kettle is to some extent lost. Both these patterns as well as the "Glow-worm" and the "Ideal" have the movable ash-tray, which lightens the work of cleaning, and in each case adequate means are provided of cleaning the waterways, which, in time, depending upon the quality of the water, are sure to collect deposits.

There is, of course, the question of the house where, for any reason, it is not practicable to instal two stoves, one for heating and one for cooking, or where the house is so small that a sitting-room is to be used as the kitchen. The Interoven Stove Co., Ltd., have placed on the market a series of convertible ranges, one of which we illustrate above. This presents quite a pleasing appearance in a room, and is used between hours of cooking as an ordinary fire-place, and when meals are in preparation it can be opened up to form a range practically of the usual pattern, with a large hot-plate and oven, besides a hot closet for light cooking when the oven is in use, or for heating plates. As in an ordinary range, a boiler is easily fixed, and derives the benefit of the fire whether it is being used as a range or as a grate.



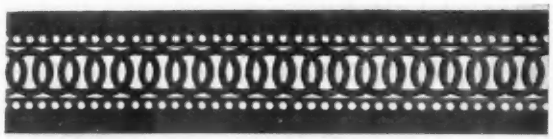
RADIATOR COVERS

[BY BASIL IONIDES]

IT is extraordinary how long it takes for any innovation to take its proper place in a domestic or public building. Central heating has been in use for a great many years, and yet its decorative side has been a perpetual makeshift. There used to be pipes laid below the floor to heat halls, and other rooms. These were laid in pits, with grids over them, which, when one walked on them, resounded with a clang. Then came radiators, sometimes left naked and sometimes encased indifferently. At first the radiators were high, and an erection like an altar had to be built over them. If a fireplace was being designed, an overmantel would probably be introduced if the style was classic, but over the radiator one usually finds nothing. This is a mistake, because interesting features can be worked into the decoration if the radiator case is taken as the foundation of the design. Suitable materials for radiator cases are many, and they must be chosen according to particular requirements. Many firms are making very satisfactory grids in metal frame-

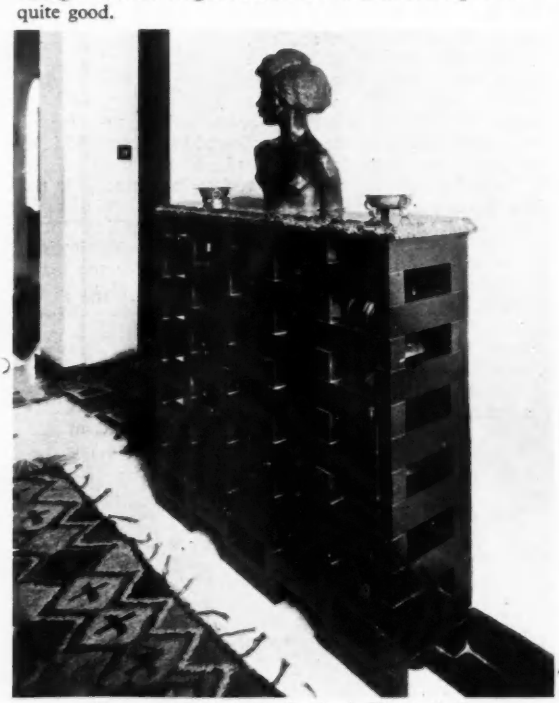
work (one must allow in the fixing for expansion) and one can, of course, have many other designs specially created. Some firms make radiator cases of wrought metal in scroll form. These are good, but being a little open in design they need a second backing. Wood cases are sometimes of fine design; and carved scrolls and cartouches in the manner of the late seventeenth century will provide a delightful screen. Sir Edwin Lutyens, R.A., has designed some charming radiator cases in wood with many delicately turned balusters. There is no end to the designs that may be indulged in in wood, provided the position of the radiator and the treatment above it are carefully considered. If thought is not given the radiator case becomes a useless piece of furniture, but if it is part of a decorative feature that is carried up it takes the place of the mantelpiece. The tops of these radiator cases are best of marble, but under the top there should be a sheet of asbestos. There are many materials of which radiator cases can be made. I had to design a hall in a very modern manner, and found that the most suitable casing for the radiator was small black marble blocks, built up with spaces between. It was quite effective in its way, but was only suited to the modern style of the hall. At the Savoy recently I had a space to fill above the radiators, and here I found that glass niches were most suitable. The radiators were cased in metal with marble tops and above these came the niches of glass with vases of flowers in them. These are expedients for high radiators, but when they are low they are quite different. Then there is no need for the wall treatment above.

Low radiators are far easier to decorate than high ones. They may be placed in the window recesses so that they form seats, and they may be cased with brass or other metal woven grids that will support cushions if necessary. In fact they will go into the old-fashioned window seat. When the radiators are in the room it is a temptation to place them under a table. This is not very satisfactory as the appearance is too cramped and the table—if it is a good one, loses its looks. The radiators should be placed in the position of a chest or cassone, and the cover design should carry on the idea. This is not easy, but it can be done. Thus the radiator becomes part of the



furniture of the room, and it should be designed and made on the same scale. Do not put books over a radiator. It will ruin them. Radiator cases should be quite sealed at the back. There is also a system of heating which does away with radiators, and replaces them with panel heating in the walls and ceiling. This is very convenient and the result is excellent.

The day is approaching when really good radiator casings will be common. At present they are apt to be too monumental. There are many old Regency cupboards with grille fronts that suggest designs for covers, and there are certain carved tables of the seventeenth century that would lend their design to adaptation. There are Tudor balusters that may be copied for covers to suit early work, while for really modern design there are endless materials. Messrs. Bagues have produced some very beautiful grilles, each especially designed to suit its place. Messrs. G. A. Harvey & Co., Ltd., make metal trellis work that only needs framing to complete a case. Comyn Ching have some designs all in metal or with marble tops that are quite good.



Above, a radiator grille, by G. A. Harvey & Co., Ltd.; centre, a radiator cover, by Bagues; below, a marble radiator casing, designed by Basil Ionides.

THE HEATING OF UNIVERSITY COLLEGE HOSPITAL

[BY E. B. MUSMAN]

THE heating installation recently completed to the designs of Mr. A. H. Barker, M.I.C.E., B.SC., consulting engineer to the Hospital, and carried out under his supervision, at University College Hospital, is perhaps the most up-to-date and efficient system for this class of building to be found to-day. The various buildings served are, first: the existing main hospital; a portion of the nurse's home, located in the s.w. wing of the main building, and the students' house and the medical school. Secondly: the new buildings, which consist of a large extension to the nurses' home, built to the design of the late Mr. Paul Waterhouse, F.R.I.B.A.; an entirely new "obstetric hospital," designed by Mr. George Hornblower, F.R.I.B.A., and opened on May 28 last, by the Prince of Wales (the foundation stone having been laid by H.M. the King on May 31, 1923); and the new Royal Ear Hospital, which is now being built to the designs of Messrs. Wimperis, Simpson and Guthrie. The total contents of these buildings are about 4,000,000 cubic feet.

As will be seen from the key plan below, great difficulties had to be overcome, owing to the isolated sites of the various blocks, and pipe tunnels had to be constructed to bridge over, without disturbing, the large sewers passing down the various streets. It was essential also that no interruption of service, either in the main hospital or nurses' home, could be allowed while the change over from the old to the new plant was being effected.

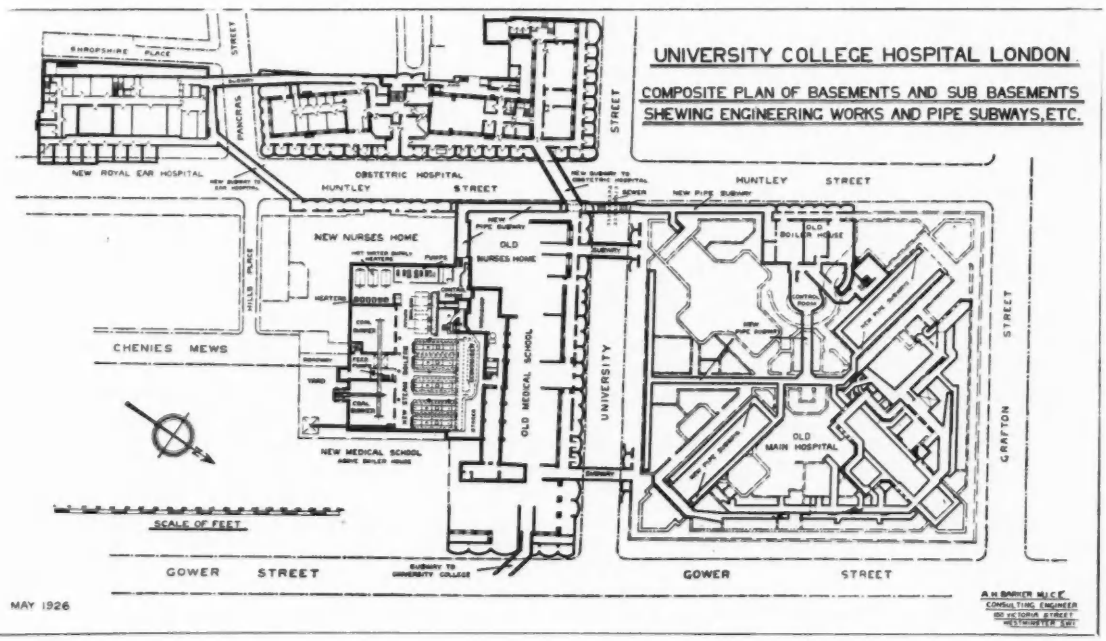
In each case the existing plant was retained in service until the new plant was completely installed and ready for use. Pipes were carried in pipe tunnels from the new plant to carefully selected points of connection to each of the old systems. The old systems were then emptied and disconnected during the night, and the new connecting pipes were rapidly bolted in place. The interruption of each service did not exceed two hours.

The whole of this large group of buildings, both old and new, together with any probable extensions, are provided for by five Lancashire boilers, located in a new boiler-house extending under the whole of the new and part of the old nurses' home, capable of working up to 120 lb. per sq. inch, and of evaporating jointly 320 tons of water per day. These boilers had to be placed and built into position in the early stages of the building operations, as there would have been difficulty in getting them in otherwise. Fuel is contained in two large bunkers in front of the boilers, containing 400 tons of coal; and provision is made for the future addition of automatic fuel and ash conveyors for distributing the fuel in the bunkers and removing automatically the large quantities of ashes produced. The boilers are fed automatically, and the dampers are automatically adjusted so that the water level and steam pressure are self-regulating. Steam is taken from the boilers in large pipes to several series of large calorifiers or water heaters, nine in all, for heating the building and supplying hot water to the taps.

There are three different methods of heating employed: heating by ordinary radiators, by "panel heating," and by steam radiators. Each of these methods requires an entirely separate plant, all the central parts of which are located together in the new heater and pump chamber. The water after being heated by the calorifiers is circulated to all parts of all the buildings, in each case by two separate pumps, of which one in each case is driven by steam and the other by electricity. The steam so used is all used over again in heating the water.

All the services, both of boiler feed, heating, hot water supply and steam supply, pass through the control room, in which are fixed all the valves for controlling every service in every part of the hospital, and instruments and meters for indicating and recording the temperatures and amounts of steam and water used, and many other details for administrative purposes. The control room also contains electrical distant thermometers so that the attendants can read the temperatures in all the wards without leaving the control room. Many of the wards are hundreds of yards away from the control room. Pipes and connections are carried along the tunnels and distributed in every room in the whole of the buildings.

The "panel system" is a method of heating buildings



invented by Mr. Barker, in which small pipes are embedded in the plaster forming the ceiling or the walls. Hot water is pumped through these pipes so that parts of the ceiling or of the walls become warmed without any source of heat being visible. Richard Crittall and Co., Ltd., were responsible for installing this system. To supply the great quantity of hot water required there are three large storage heaters containing 10,000 gallons of hot water, heated to 150 deg. F. by live or exhaust steam. All the nurses' private bedrooms are supplied with radiators and with hot and cold water lavatory basins.

The kitchens, of which there are four, are all provided with the latest method of cooking by steam, gas, and electricity, and are ventilated by special fans, glazed hoods, and ducts, whereby all the air in each of the kitchens is changed thirty-five times per hour or about once every two minutes. Plates and dishes are all washed up by electrically driven steam-heated washers. Each kitchen is supplied with refrigerating plant and cold chamber. Each of the wards and utility rooms are provided with "sterilisers" which can be operated either by steam or electricity. The operating theatre is also provided with a very elaborate outfit of sterilisers, all of which can be operated by the foot.

FLUE REQUIREMENTS IN HOUSING SCHEMES

[BY ARTHUR FORSHAW]

THE gas industry and the gas appliance industry are to-day faced with a very serious state of affairs in connection with new house property. This arises primarily from the attempt of some architects and builders to reduce the price of the finished house. Unfortunately the means adopted towards this end are open to grave objection from several points of view, and the writer's aim here is to bring the matter to the notice of the industry generally, not only so that those to whom it is a new thing may be forewarned, but also so that counsel may be taken as to concerted steps that are necessary to avert the danger and its consequences. Unless this is done we shall, with our usual British slackness, awake to find ourselves presented with a *fait accompli* that cannot be altered without an inordinate effort.

To put it briefly, the attempt to reduce building costs is taking the form of providing rooms or offices with inadequate flues or, what is worse, with no flues whatever. Our industry has had such a firm grounding in the necessity for providing adequate ventilation in bedrooms, living-rooms, offices, and factories during the last twelve or fifteen years that this attempted new development in building practice comes as a great shock. It is apt to make us feel momentarily "non-plussed"; it seems barely credible to us that some architects and builders, particularly the former, should take grave risks to health for the sake of saving a few pounds (in one case, for instance, two bedrooms were being built without flues in order to save, according to the builder, between £4 and £5 *per house*). Our first question, on being confronted with a case of this sort, is naturally to ask what is the state of the law, and, further, who is responsible for passing the plans of new property, and what are their duties and obligation in the matter.

So far as Scotland is concerned the statute governing the matter appears to be the Burgh Police (Scotland) Act of 1892, and this provides for means of ventilation approved of by the town council; in practice this is interpreted as meaning a sufficiently opening window. It is further laid down that every habitable room shall have at least one window of an area of one-tenth of the area of the room, one-half of the window to be made to open full width, and, further, that any habitable room of less that 100 sq. ft. of floor area, and without a fireplace, shall be provided with special means of ventilation to be determined by the town council. This is usually met by making an opening in the wall communicating with the external air, the area of the opening being generally a nominal 9 in. by 9 in. It will be seen that in Scotland, and no doubt the English provisions are much on the same lines, if a room is greater than 100 sq. ft. and is provided with a window as laid down, no fireplace or flue of any sort is required by law. In a room smaller than this any form of air-brick or grating leading either to the open air or to a cavity wall may satisfy the local town council. Thus, so far as statutory requirements go, there is no obligation on architects or builders to provide a flue capable of being used with a fire, either coal or gas, whether the room be great or small. The result of this is that, unless immediate steps are taken to get fresh legislation or to alter the interpretation by town councils of the existing Act, new property will inevitably be built without flues, and the use of gas for fires and the like will be automatically prevented. The matter is particularly urgent since it is understood that at the present moment the L.C.C. has the London Building Act under review with the intention of bringing forward shortly an amended Bill.

With regard to architects we should naturally expect from them a better-informed and exact appreciation of the needs of the tenants in the matter of ventilation, but whilst no doubt this is true of the majority, yet, unfortunately, the expectation is in a number of cases hardly justified, and it is these latter who are the cause of the trouble under discussion. Thus, two cases have been met with in the last week or so where 3 in. flue pipe has been specified. It is only fair to say that one of these was due not to an architect, but to the engineer to the town council concerned, and on representations being made to him he altered his decision. There must be many cases of this sort which do not come to notice until it is too late for alterations to be made to the plans; all the more reason for now ensuring that such cases cannot recur.

The first step in the matter appears to be for us to make up our minds as to the minimum sizes of flue channels that will satisfactorily meet the requirements of all the types of room likely to be met with. In this connection it is necessary to mention again here, as the writer has done on other occasions, that the function of a flue is two-fold, viz., the effective removal of all the products of combustion of the appliance to be used; and, secondly, the removal of a quantity of extra air. From the point of view which we have to meet, viz., that of reducing building costs, it seems to the writer that these two functions had better be considered separately. A comparatively small and inexpensive flue channel is sufficient to deal effectively with the removal of the products of combustion, provided it be properly attached, whereas if the channel has to be made large enough to deal with a large amount of extra air it will become too expensive. The secondary function can in fact probably be more cheaply fulfilled by any entirely separate arrangement such, for instance, as a ventilating grating and shaft in the upper part of the room, or at any rate some similar device independent of the window.

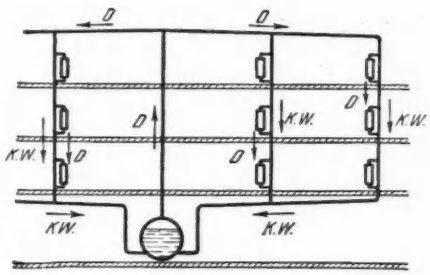
Enough has been written to outline the danger with which we are faced, and the problem we have to solve, unless we wish to be cut off from an important outlet for gas as a fuel. The size of coal-fire flues is already compulsory under existing Acts, and with this precedent there appears to be good hope that similar legislation could be initiated for dealing with gas fires. We must, however, be in a position authoritatively to recommend for the purpose the necessary shafts, and before we can do so inquiries must be made as to permissible dimensions, materials, condensation. and its effects and similar details, and the results collated and their bearing determined by a representative body

ZURICH TECHNICAL INSTITUTE HEATING INSTALLATION

[BY C. H. S. TUPHOLME]

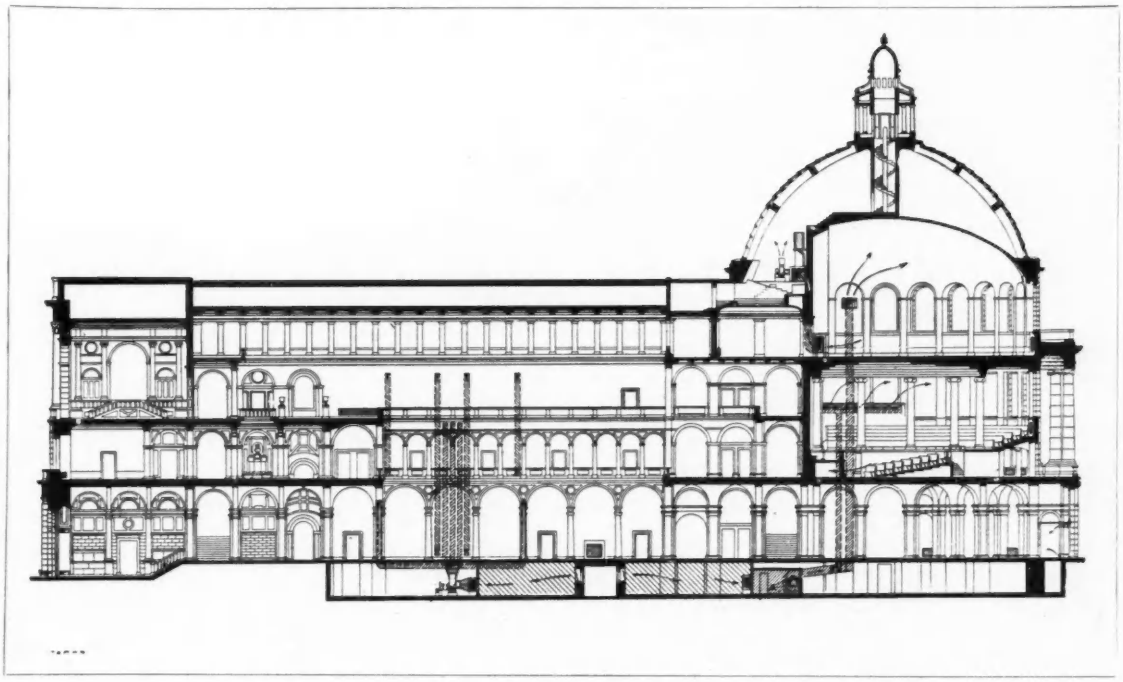
THE new heating and ventilating installation at the Federal Technical University, Zurich, is a plant of special interest, both from the point of view of size as well as of originality in design. It was erected with the object of dealing with large extensions then being made to the existing buildings, and of replacing the old installation which had become obsolete. The old plant had been installed by Sulzer Bros. about 1860, when the main building was constructed, the installation at that date being considered an outstanding achievement. It was a medium-pressure, steam-heating plant, consisting of large cylindrical water radiators in two groups, each group served by two steam boilers. The steam at 20 lb. gauge pressure was delivered to the attic floor, from whence it passed through about sixty drop mains to the radiators, The whole heating system formed a closed circuit; the condense flowed to a collecting tank and was utilized again for boiler feed.

This heating installation, which according to present-day standards was rather primitive, was regularly in service for more than sixty years without substantial repairs being required, testifying to the quality of the workmanship. As already mentioned, new buildings were required to accommodate the larger number of students at the Federal Technical University, thus making it necessary to replace the old heating installation by a more powerful one to comply with modern requirements.



From the architectural point of view the task of transforming and extending the University was not unattended with difficulties. An entirely new building with the principal facade towards the Ramistrasse had to be erected adjoining the old building; four new lecture halls had also to be arranged between the two main wings of the old building, which had been designed by Semper, and the old attic floor had also to be reconstructed. Details of the alterations and the lay-out of the new Sulzer heating and ventilating plant are shown in the accompanying illustration. The erection of the new buildings increased the space to be heated from 2,225,000 cu. ft. to about 6,000,000 cu. ft.

The buildings cover a large area on plan, the distance between the farthest heating pipe and the distributor being some 525 ft. The design of an installation of such size had necessarily to be studied with great care with a view to rendering its operation as economical as possible, and reducing the consumption of fuel to the minimum. Of the various systems considered, preference was given to an accelerated hot-water circulating system as the one complying with all requirements. This system provides the utmost flexibility, on account of the facilities offered for regulation, thus ensuring the maximum of economy. From an hygienic point of view the hot-water system is generally admitted to be the best. Further, attendance to an installation of this type is simple, and the power required for circulating the water is small.



Above, the old system of heating with cylindrical water radiators. Below, a section through the building, showing the alterations and the new ventilating plant.

In order to allow of the requisite amount of heat being delivered from the boiler-room to all parts of the building, the heating installation has been subdivided into a large number of groups, each of which may be regulated from a central control station, and can be put out of service, or emptied, quite independently of the others.

Efficient temperature regulation of each group is obtained by an admixture of water from the return main. In all, there are ten principal and four subsidiary groups divided as follows: Group 1, north wing; group 2, east wing; group 3, south wing; group 4, west wing; group 5, all corridors; group 6, large lecture hall; group 7, reading room; group 8, lecture rooms facing the court (with four sub-groups); group 9, ventilation of the large lecture hall and reading room; group 10, ventilation of the lecture halls facing the court.

As the pipes for groups 1 and 4 run a great distance horizontally, and have many branches, they are subdivided at the main branches and arranged so that each sub-group can be filled or emptied independently of the others. The three flats occupied by the personnel are not heated from the main plant as the fuel cost due to the losses of heat in the long runs of piping would have been excessive. For heating these apartments, therefore, a separate electric thermo-storage plant has been installed working independently of the main heating plant.

The maximum flow temperature of the accelerated hot-water system has been fixed at 195 deg. F., and the return temperature at 150 deg. F.; the amount of water requiring to be kept in circulation amounts to about 200 gals. per minute. The total resistance of the piping is about 26 ft. water gauge. The water is circulated by means of a Sulzer centrifugal pump running at a maximum speed of 1,430 revolutions per minute. The pump is direct coupled to a three-phase slip-ring motor fitted with speed regulation, which device in spite of its initial cost adds to the economy of the plant; 5 h.p. is absorbed in circulating the hot water. A second pumping set of the same power serves as stand-by.

As already mentioned, the heating and ventilating installation of the new and old buildings is controlled from a central station. On the switchboard are mounted starting switches for the motors, ammeters, and voltmeters, differential pressure gauges, distance thermometers, thermometers for the branch pipes, the hydrometer, handwheels for operating the various valves, cocks, etc. In the same room is a Johnson apparatus for automatically adjusting the valves of the ventilating plant. From this central station every part of the heating and ventilating system can be controlled and regulated. On pressing a button connected with the distance thermometer the temperature in the corresponding room can at once be read on a graduated scale, and if adjustment is necessary this is accomplished by a turn or two of a hand-wheel. Subsequently the button may be again pressed to check the results of the previous adjustment. The whole installation, although complicated, is very simple in operation.

The radiators in groups 5–8 are not fitted with valves to admit of the installation being regulated from one central point.

The radiators and heating pipes are generally placed in the window recesses or under the windows in the outside walls, allowing of the subdivision of the rooms as desired. In the lecture rooms the radiators under the windows are concealed behind the woodwork, the hot air issuing at the top through grills.

On the upper galleries of the main staircase long pipe coils are provided along the walls without covering; this simple arrangement being perfectly satisfactory as regards appearance. The total heating surface of the radiators, heating coils, etc., in the whole building amounts to 46,300 sq. ft.; the total length of piping being over 11 miles.

The ventilating installation is also subdivided (groups 9 and 10). The large lecture hall and the reading room of the library directly above it are arranged as one group, and by taking account of the fact that these two rooms are never used simultaneously the fan set has been designed of a size equal to the demand of one room only, thus effecting considerable economy. When the temperature of the outside air is not less than 22 deg. F. the air is renewed three times per hour in the large lecture hall, and two and a-half times in the reading room.

A combined plenum and exhaust system of ventilation has been adopted for these two rooms. The fan set, capable of delivering 350,000 cu. ft. of fresh air per hour, is installed in the basement, and the exhaust fan is located in the cupola above the library. This system of ventilation maintains the air in these two rooms in excellent condition without the occurrence of the slightest draught.

The four lecture halls facing the court are provided with plenum ventilation, designed to renew the air three times per hour; air outlets being fitted at various heights. The two sets of fans serving this group each deliver 350,000 cu. ft. of fresh air per hour.

The lavatories are, as usual, ventilated by an exhaust system, the air being changed three times per hour, the plant being subdivided into six independent groups.

The fresh air for the lecture halls passes through a fine wire filter to the dust chambers. These chambers are of a size sufficiently large to accommodate additional filtering apparatus, should such be found necessary later on. The air is heated in Sendric apparatus, and then delivered to the distributing ducts by means of three low-pressure centrifugal fans. The air ducts are fitted with butterfly valves, operated through levers from the central control station; they serve to cut off the air supply to individual rooms as required, or to divert it in other directions.

In all rooms the air inlets are situated about 10 ft. to 13 ft. above the floor level; the vitiated air is withdrawn through openings in the walls covered with grills and fixed near the floor level. The air inlet orifices are fitted with louvres deflecting the air towards the ceiling.

Each of the six ventilating groups for the lavatories is provided with its own fan direct coupled to an asynchronous motor which can be started and stopped from the central control station. The vitiated air is discharged through the roof. In order to be able to stop the motors for inspection the sets fixed at a distance from the central control station are fitted with additional hand-operated switches.

As it was not possible to accommodate the whole boiler plant in one room it became necessary to divide the equipment into two groups of four boilers each. Eight large Sulzer sectional heating boilers, with a total heating surface of 3,750 sq. ft. have been installed; the four boilers in one room are fired with coke, the four in the other are fitted with oil-burners. Special mention of the design of the boilers themselves is unnecessary as they are well known, but the oil-firing equipment fitted to the four boilers deserves to be more closely described.

The oil is first filtered and then pumped into the main tank which has a capacity of 7,260 gals. The same pump is also used to deliver oil as required from the main tank to the day service tank which has a capacity of 330 gals.; before entering it the oil is again filtered.

The air for the oil burners is delivered under pressure by a high-pressure centrifugal fan delivering 950 cu. ft. per minute at a pressure of 18 in. W.G.; the low pressure at which the air enters the burners insures quiet working.

On completion of the installation the boiler output was tested, and the results of these trials were remarkable. With oil of a lower calorific value of 18,320 B.Th.U. per lb. the mean temperature of the flue gases was 355 deg. F., the CO_2 content about 12·3 per cent., and the efficiency of the firing was 86 per cent.

The installation has realized expectations in every respect. The heating and the ventilating systems satisfy all demands made on them even when the outside temperature is extremely low. Regulation of the heating to give the desired temperatures and control of the ventilation are so simply effected from the central control station that it is easy for one man to operate the whole plant. The writer is indebted to Messrs. Sulzer Bros., of 31 Bedford Square, W.C.1, for the illustrations accompanying this description.

THE WEEK'S BUILDING NEWS

Proposed Buildings at Liverpool

A large cinema and several shops are to be built on a site in Lime Street, Liverpool.

Enlargements to a Croydon Hospital.

The Croydon Mental Hospital is to be enlarged at a cost of £32,000.

A Fire Station for Kingston

It is proposed to build a new fire station at Kingston.

Plans Passed at Wealdstone

Plans of forty-two houses have been approved by the Wealdstone Council.

A School for Woking

A new school is to be built at Westfield, near Woking.

A New Cinema for Temple Fortune

A new cinema is to be built in Finchley Road, Temple Fortune, Golders Green.

One Hundred Cottages for Oldham

The Oldham Corporation proposes to erect 100 cottages at a cost of £40,000.

Proposed Houses at Stevenage

The Stevenage Urban District Council will shortly proceed with a scheme for the erection of sixty houses.

L.C.C. Housing Bonds.

The result of the L.C.C. issue of £720,000 5 per cent. housing bonds was an application totalling £954,000.

Flats for Hull.

The Hull Corporation has decided to erect blocks of flats to re-house the inhabitants of the New George Street area.

Housing Sites at Kettering

The Kettering Urban District Council is negotiating for building sites for the erection of 325 houses.

Housing at Yeovil

The Yeovil Town Council has decided to erect 120 houses in the Lyde district, at a cost of £60,000.

Additional Housing at Mexborough

The Mexborough Urban District Council has decided upon the erection of another fifty-five houses.

A Proposed School at Bangor

A recommendation has been made at Bangor to provide a new central school on a site on the Ffriddoedd Road.

Fletton Bricks for London

The L.N.E.R. has transported 30,000 tons of bricks from Fletton to London and other centres for housebuilding.

Housing at Petersfield

Subject to further consideration, the Petersfield Urban District Council proposes to build thirty houses in the district.

Housing Progress at Ripon

The Ripon Housing Committee has decided to erect an additional fifty houses on the Ripon Road estate.

Housing at Hinckley

Plans for forty-two houses have been approved by the Hinckley Urban District Council.

Housing Activity at Bradford

The Bradford Corporation Committee has passed plans for over 150 houses in various parts of the city.

A Proposed Northumberland School

The Northumberland Education Committee has received a proposal for the provision of a new public elementary school at Forest Hall.

A New School for Armagh

The Armagh Regional Committee has decided to build a school and a teacher's residence at Markethill for the accommodation of 200 pupils.

A Dorking Housing Scheme

The Dorking Urban District Council has under consideration a scheme for the erection of seventy-nine houses on the Poultry Farm Housing Estate.

A Housing Scheme at Eltham

The London County Council has agreed to sanction a loan of £250,000 for the erection by the Woolwich Borough Council of 500 concrete houses at Eltham.

Housing at Nelson

The Nelson Town Council has decided to apply for sanction to borrow £50,000 for 100 houses on Hodge House Estate, and £12,000 for roads and sewers.

Additional Houses at Eltham

The Woolwich Borough Council has obtained sanction to borrow £31,314 for the erection of fifty-one additional houses on the Eltham Estate.

A Housing Loan for Bromley

The Ministry of Health has agreed to sanction a loan of £19,041 for the erection of forty-five houses by the Bromley Rural District Council.

Housing at East Ham

The East Ham Council has approved of a scheme for the erection of thirty-eight tenements to complete the central site housing scheme.

Housing at Keynsham

The Housing Committee of the Keynsham Rural District Council has decided to erect twenty-four houses at Keynsham, fourteen at Whitchurch, and six at Saltford.

Land for L.C.C. Schools

The Accommodation and Attendance Sub-Committee of the London Education Committee recommend that land should be acquired for higher education purposes at an estimated cost of £14,000.

Housing at Peterborough

The Peterborough Rural District Council has resolved to apply to the Ministry of Health for sanction to borrow £25,000 for acquiring land, and for the erection of houses.

Improvements at Folkestone

The Folkestone Council has approved a scheme for demolishing over seventy houses on the Stade Fish Market. The estimated cost of the scheme, which provides for new houses, is over £75,000.

Flats for Hammersmith

A scheme is being considered by the trustees of the Peabody Donation Fund for the erection of three-story blocks of flats on the Uxbridge Road, Hammersmith, to accommodate 245 families.

Forty-two Houses for Newry

The Newry Urban District Council has decided to apply for sanction to a supplemental loan for the completion of a housing scheme of forty-two dwellings in Chapel Street.

A Subsidy for Harrogate

The Ministry of Health has approved of the proposal of the Harrogate Town Council to assist, financially, private enterprise in the erection of seventy-five additional houses.

A New Tunbridge Wells Hospital

The Tunbridge Wells and Counties General Hospital has approved of the acquisition of eight acres of land at Great Culverden, for the erection of a new building, with accommodation for 150 patients.

The First Kentish Mining Town

The Ministry of Health has given sanction for the borrowing by the Eastry Rural District Council of £18,205 for the purchase of two farms comprising 600 acres at Nonington, near Canterbury. It is proposed to erect on this site the first of eight new mining towns, and it is estimated that the cost will be £600,000.

Municipal Flats for Marylebone

Two housing projects are being considered by the Marylebone Borough Council, one involving the development of the Lyons Place site, roughly bounded by Richmond Street, Edgware Road, Aberdeen Place and Fisherton Street, and the other consisting of an area bounded by Church Street, Carlisle Street, Huntsworth Terrace and Salisbury Street. The latter scheme is to provide accommodation for about 400 persons.

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
A₂	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
A₂	Atherstone	Mid. Counties	1 6½	1 2
B₂	Aylesbury ..	S. Counties	1 4½	1 0½
B	BATH ..	S.W.Counties	1 6	1 1½
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 1½
A₂	Berwick-on-Tweed	N.E. Coast	1 7	1 2½
A₂	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
A₂	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
A	Bradford ..	Yorkshire	1 8	1 3½
A₂	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
A₂	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
A₂	Buxton ..	N.W.Counties	1 6½	1 2
B	CAMBRIDGE	E. Counties	1 6	1 1½
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 1½
B₂	Carnarvon ..	N.W.Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2½
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 1½
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
A₂	Crewe ..	N.W.Counties	1 6½	1 2
A₂	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
B	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 1½
A	Doncaster ..	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W.Counties	1 4	1 0½
A₂	Driffield ..	Yorks	1 6½	1 2
A₂	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 1½
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 1½
A₂	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W.Counties	1 8	1 3½
B₂	Folkestone ..	S. Counties	1 4½	1 0½
A	Frodsham ..	N.W.Counties	1 8	1 3½
B₂	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 1½
A₂	Goole ..	Yorkshire	1 7	1 2½
B₁	Gosport ..	S. Counties	1 5½	1 1½
A₂	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 1½
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 1½
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 1½
A₂	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
A₂	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
B₂	Lewes ..	S. Counties	1 4½	1 0½
A₂	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 1½
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 1½
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
A₂	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
A₂	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
A₂	Middlewich	N.W. Counties	1 6½	1 2
A	Monmouth	S. Wales & M.	1 8	1 3½
A₁	S. and E. Glamorganshire Morecambe	N.W. Counties	1 7½	1 2½
A₂	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 1½
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
A₂	Oswestry ..	Mid. Counties	1 6½	1 2
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 8	1 3½
C	Pembroke	S. Wales & M.	1 4½	1 0½
A	Perth ..	Scotland	*1 8	1 3
A₂	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 1½
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 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A₂	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₂	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
A₂	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₂	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
A₂	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 1½
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 1½
A₁	TAMWORTH	N.W.Counties	1 7½	1 2½
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
A₂	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 1½
A₂	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 1½
A	Wolverhampton	Mid. Counties	1 8	1 3½
A₂	Worcester ..	Mid. Counties	1 6½	1 2
A	Worksop ..	Yorkshire	1 8	1 3½
A₁	Wrexham ..	N.W. Counties	1 7½	1 2½
B	Wycombe ..	S. Counties	1 6	1 1½
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, 1*s.* 9*d.*
† Carpenters and Painters, 1*s.* 8½*d.*
‡ Plumbers, 1*s.* 9*d.*
§ Painters, 1*s.* 6*d.*
‖ Carpenters and Plasterers, 1*s.* 8½*d.*
¶ Painters, 1*s.* 7*d.*

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	19	0
Flettons, per M.	3	0	0
Staffordshire blue, per M.	9	12	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	5	3
Basebed, per ft. cube	0	5	4
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 18*s.* 0*d.* 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.	£23	0	0
11×4, per std.	33	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.	33	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., 1¼ in., per ft. sup.	0	3	0
DO., DO., moulded b.s., 2 in., per ft. sup.	0	3	9
DO., DO., DO., 1¼ 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., 1¼ in., per yd., sup., average	0	12	0
DO., DO., 1¼ in. maple blocks	0	15	0
STAIRCASE WORK, DEAL:			
1 in. riser, 1¼ 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 LABOURER, 1*s.* 4½*d. per hour.*

Lead, milled sheet, per cwt.	£2	2	0
DO. *drawn pipes, per cwt.*	2	3	6
DO. *soil pipe, per cwt.*	2	5	6
DO. *scrap, per cwt.*	1	9	6
Copper, sheet, per lb.	0	1	1
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	9	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. 1¼ 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	5
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: 4lbs 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. *3ft. 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, ⅝ 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	0	0
Linseed oil, raw, per gall.	0	3	10
DO., *boiled, per gall.*	0	4	1
Turpentine, per gall.	0	6	0
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.	£0	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

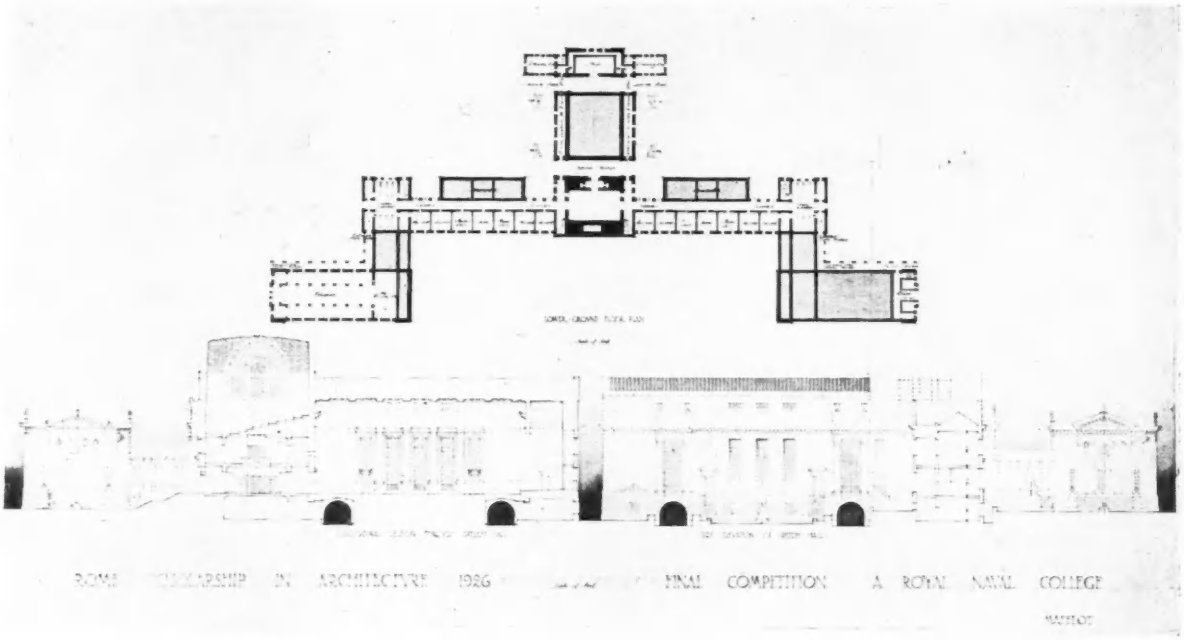
SMITH

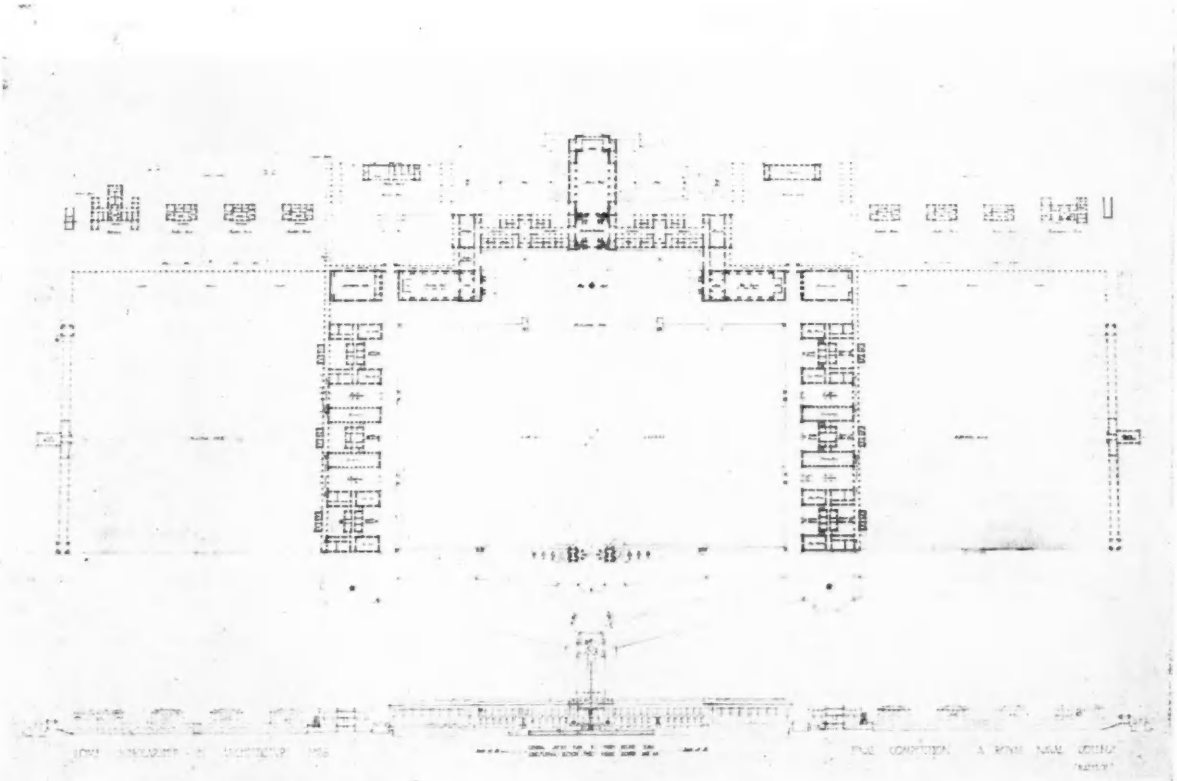
SMITH *weekly rate equals* 1*s.* 9½*d. per hour;* MATE, *do.* 1*s.* 4*d. per hour;* ERECTOR. 1*s.* 9½*d. per hour;* FITTER, 1*s.* 9½*d. per hour;* LABOURER. 1*s.* 4*d. per hour.*

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

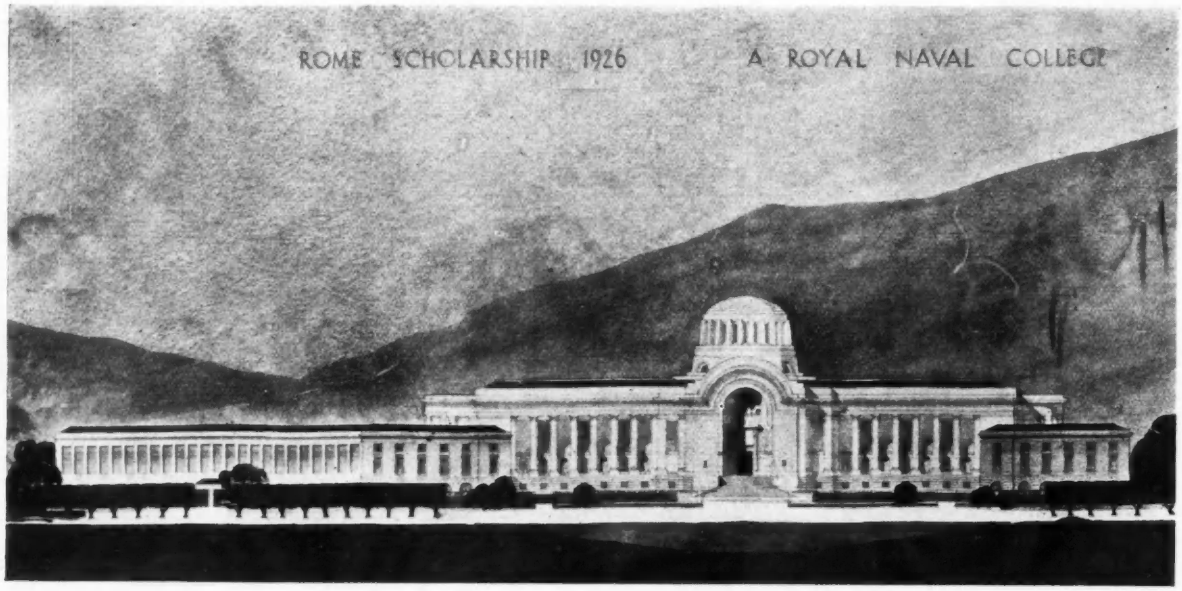
SUNDRIES

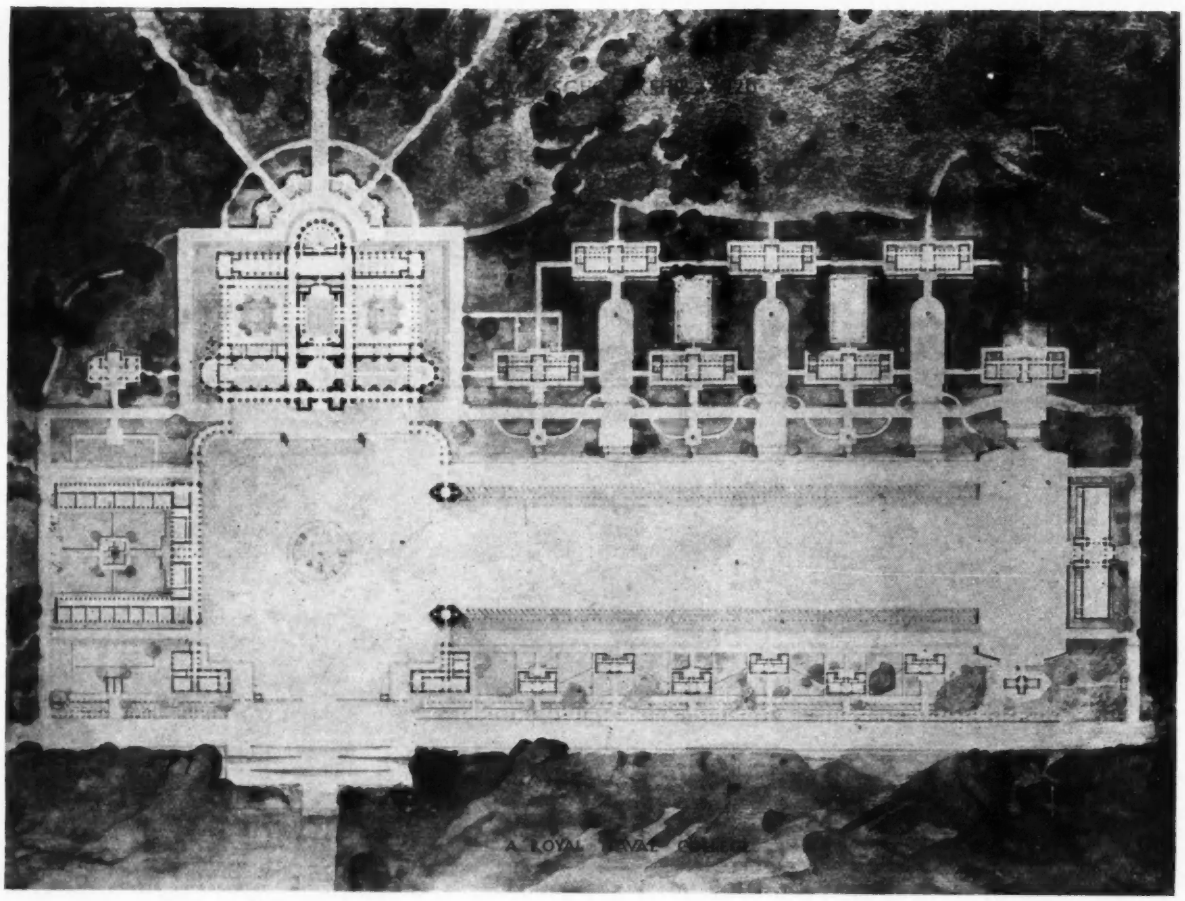
Fibre or wood pulp boardings, according to quality and quantity. *The measured work price is on the same basis per ft. sup.*	£0	0	2½
FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. from 3d. to	0	0	6
Plaster board, per yd. sup. from	0	1	7
PLASTER 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., ¾ 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



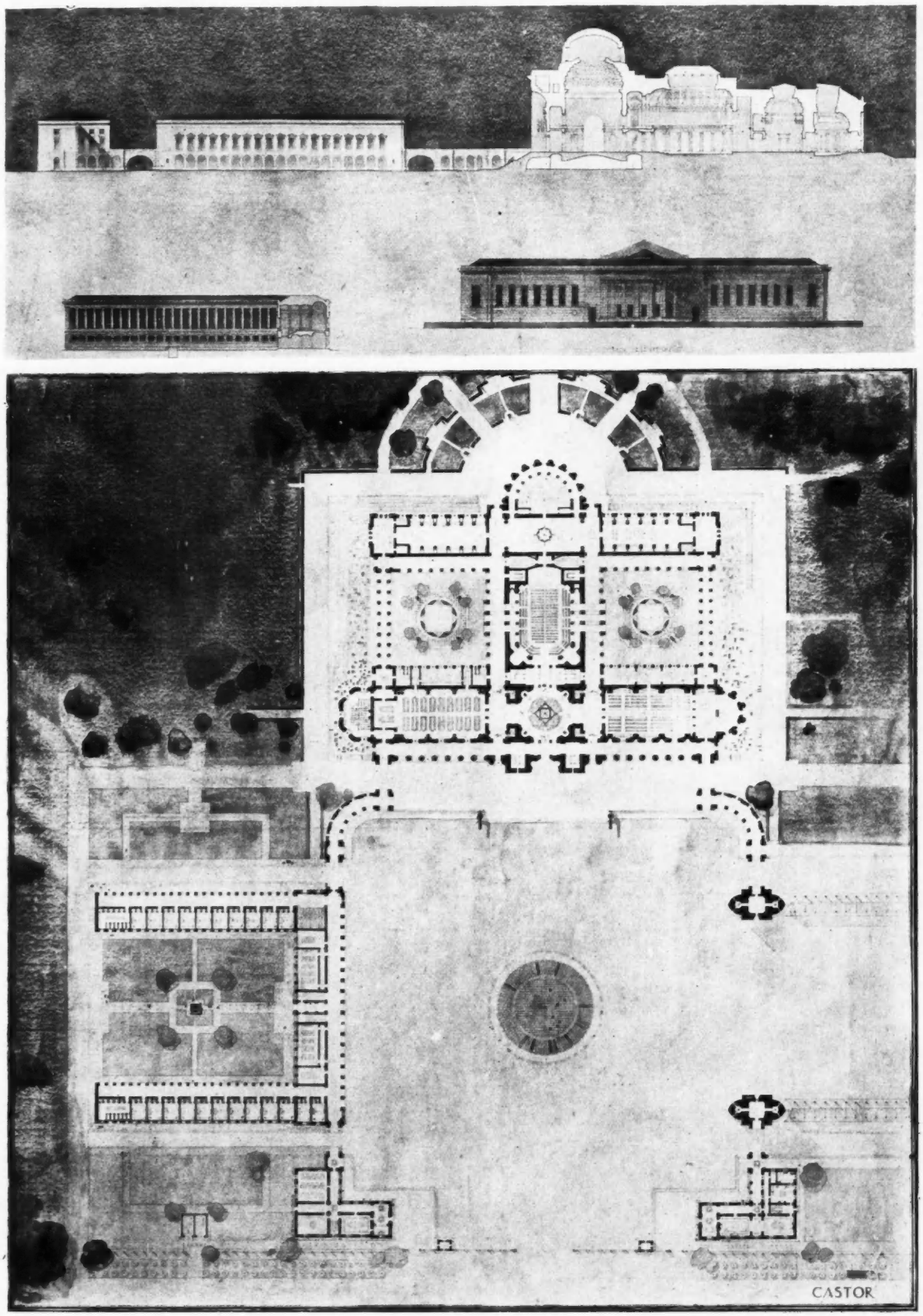


The Henry Jarvis Travelling Studentship, 1926: the winning design. By Herbert Thearle, School of Architecture, Liverpool University.





The Rome Scholarship, 1926: the winning design. By A. D. Connell, London University Atelier.



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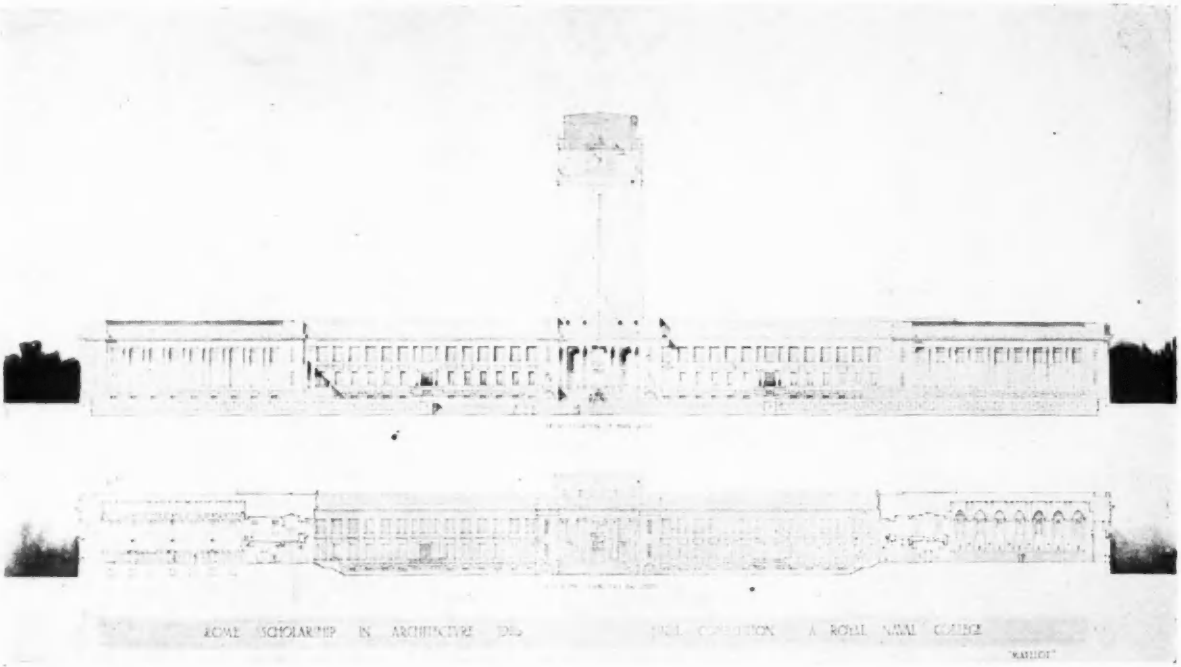

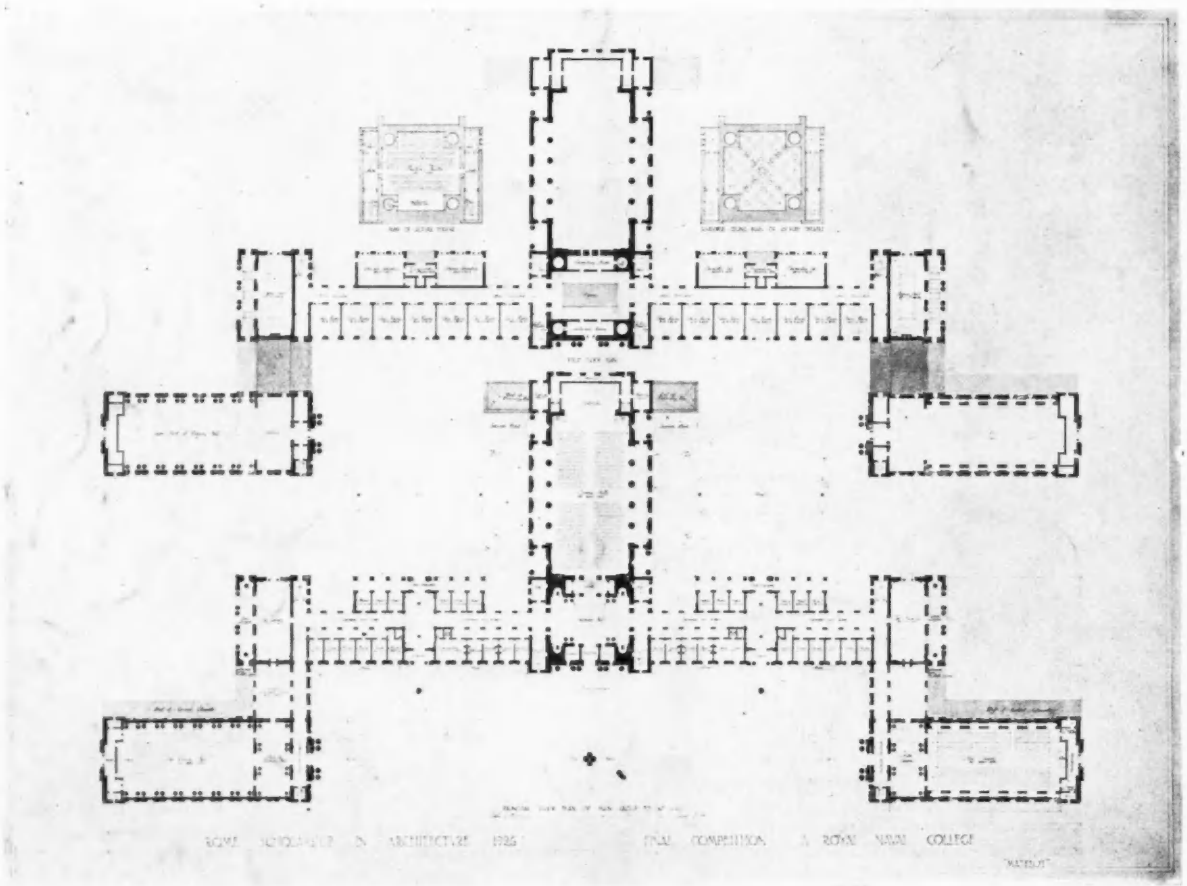

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