Wednesday, February 27, 1924. Vol. LIX. No. 1521.

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FROM AN ARCHITECT'S NOTEBOOK.

In the beginning of the new Works of St. Paul's, an incident was taken notice of by some people as a memorable omen, when the surveyor in person had set out, upon the place, the dimensions of the great dome, and fixed upon the centre; a common labourer was ordered to bring a flat stone from the heaps of rubbish (such as should come first to hand) to be laid for a mark and direction to the masons; the stone which was immediately brought and laid down for that purpose, happened to be a piece of gravestone, with nothing remaining of the inscription but this single word in large capitals, RESURGAM.

SIR CHRISTOPHER WREN.
"The Parentalia" (1750).

27-29 Tothill Street, Westminster, S.W.1.

Almshouses at Leiden, Holland

Photo : F. R. Yerbury.

A picturesque eighteenth-century enclosure that offers suggestions for modern work of similar character. The pump—a feature of decorative value—also serves the purpose of a lamp standard.

THE

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Safety First

THE recent traffic congestion and the increased incidence of accidents have once more drawn attention to the dangers with which our streets are beset. Yet, although the undesirability of the present state of affairs receives general acknowledgment, little is done to improve things, and for the simple reason that there is no unanimous opinion as to what measures can be taken to lessen the traffic. Meanwhile, however, good work is being done by the "Safety First" Council to minimize the dangers; yet, despite their activities, the terrible toll of accidents increases enormously. Thus the figures for the year ending on September 30 last show an increase of 23 per cent. over the previous year. There is no doubt that reckless driving is responsible for a great many unnecessary accidents, and the remedy here is largely in the hands of magistrates, who, for the most part, are far too leniently disposed towards offenders of this kind. Indeed, there is need here of an entirely changed attitude of mind. In the hierarchy of offences, those directed against property have always been placed extremely high. It is surely time to realize that a man who drives to the public danger is guilty of a far graver misdemeanour than one who steals, perhaps to satisfy his own hunger or that of those dependent upon him. The former is guilty of an utterly selfish act by which he endangers the lives of his fellows. And until society realizes that such conduct is that of a cad who merits its utmost censure and disapprobation, and not that of a reckless "sport" meriting amused approbation, if no bad results occur, and sympathy if they do, this useless and appalling massacre of the innocent will continue. The granting of a motor-driving licence, too, should imply a proficiency in driving.

Unfortunately, a heavy percentage of the deaths due to street accidents is composed of children. Here something might be done in the way of definite instruction in schools as to the proper manner of crossing streets, of alighting and boarding buses and trams, and, where schools are situated in proximity to a particularly dangerous crossing, a teacher might be detailed at the beginning and end of each session to pilot the smaller children across it. Already safety first propaganda has penetrated to the classroom, but we think that more emphasis might with advantage be given to it.

Yet all these measures are dealing with but the result of the disease, leaving untouched the cause, which is to be found, for the most part, in the bad distribution of the population in relation to public buildings, shops, and places of work. Thus the problem resolves itself ultimately into one of town planning. It would seem, on the face of it, obvious that increased height of buildings must add to the congestion, yet there are those who still advocate this course. "Unable to believe anything so simple," said Mr. Raymond Unwin, in the recent paper which he delivered at the R.I.B.A., "as that there is plenty of room for everybody, modern business intelligence in this country is now proposing to adopt vertical overcrowding." And this, too, is suggested on economic grounds. But we know that the business man's view of economics is generally extremely limited and unco-ordinated. It is sufficient that a particular site is a valuable one for him to desire to extract the maximum from it by the erection of a high building. Yet the increased traffic congestion which must inevitably result, owing to the daily convergence of an increased number of persons on to a particular site, is utterly opposed to sound economics. For increased traffic congestion entails increased waste of time, and this is directly translatable into terms of money. That "time is money" is one of the business man's most favoured slogans. The average number of vehicles passing Piccadilly Circus in twelve hours was, during last year, estimated at 41,000, which, at an average of three per vehicle, represents 123,000 persons, to this must be added some half-million pedestrians, making a total of about 600,000 persons. If each is delayed an additional thirty seconds, owing to increased traffic congestion and increased difficulty in road crossing, the total time wasted is 5,000 hours per day; at three pence an hour (a low estimate, since at Piccadilly Circus a considerable proportion will be women whose time is of no particular value; at the Mansion House, for example, the figure would be very much higher) this represents a loss of about £20,000 in the weekdays of the year. Another illuminating calculation would be the value of the wasted petrol due to enforced stoppages and slow speeds. Thus it is at once apparent that, apart from the added danger and inconvenience accruing from the increased traffic congestion as a result of higher buildings, the economics are not so straightforward and simple as many advocates presume.

The fact has to be realized that traffic congestion is a disease of our modern industrial organization that can be remedied only very slowly. In dealing with it, two objectives must be kept in view; the one is to permit of no alteration to the built-up portions of our towns which will aggravate the evil, such as the haphazard erection of higher buildings or the misplacing of new buildings; the other is to plan new areas with greater care than has been taken in the past, so that the population will be better distributed, so that the roads are of adequate width to deal with the traffic, so that the various methods of transport are properly co-ordinated. The English national character has always been opposed to co-ordination except for purposes of war, but as our organization grows ever more complicated, the need for it increases; without it there will be no solution to the traffic problem. Safety first depends upon mutual co-operation. There are means of alleviation without it, but none of cure. Such alleviation may take the form of occasional street widenings, of additional subways for pedestrians, of traffic regulations, relegating certain types of vehicles during certain hours along certain roads; but so long as it is necessary for a vast number of persons to be moved each day to and from certain more or less restricted

areas for purposes of work, shopping, or recreation, so long as raw materials must be brought long distances by road from railhead and quayside to factory, and manufactured goods long distances by road from factory back to railhead and quayside, safety first will remain an ideal and not a reality, for there is no short cut to street safety. For architects to say "it is a matter for traffic experts" is to shirk their responsibility. Who, if not they, should be the experts?

Opportunities for Art Students

We hope that the L.C.C.'s recent rebuff to London art students will not have the effect of freezing the genial current of their souls. If there is no room for their work in the County Hall, why not try to place it elsewhere? We have in mind something rather different from the idea of enriching the walls of Underground booking halls, though this is by no means an ignoble purpose to serve. There is unlimited scope for the efforts of students in the decoration of buildings that commonly receive no such treatment—schools, hospitals, infirmaries, and similar public institutions. How greatly these consistently drab and depressing buildings would benefit by a little of that brilliant colour which is apparently too joyous for the County Hall! It cannot be objected that the students would be depriving established artists of the possibility of commissions, for while decorative art continues to be regarded as an expensive luxury commissions are not likely to be forthcoming from the quarters indicated. The work would have to be entirely regarded as a labour of love. In the case of buildings such as those to which we have referred, love's labour is not likely to be lost, as, unhappily, it has been in the case of the County Hall.

Advisory Art Committees

Following closely upon the appointment of the Fine Arts Commission comes a suggestion from the R.I.B.A., that advisory art committees should be formed in towns and rural districts with the object of affording advice in a consultative capacity in all matters concerning the amenities of the district. This is an excellent suggestion that should find ready acceptance. Such advisory committees would do a real public service, not merely by giving advice with regard to such matters as the preservation of old buildings, the lay-out of new streets, open spaces, cemeteries, designs for proposed new buildings, bridges, monuments or memorials, and so forth, but by definitely following out a policy of public enlightenment on all questions of civic interest. They could strongly reinforce the efforts of civic societies, where these exist, and would form a valuable link with the Fine Art Commission, which is likely to find itself heavily overtaxed by demands for advice from all parts of the country. Such committees should, of course, work in close conjunction with the local authorities, whose interest and sympathy it is essential to engage and retain.

Overhead Street Crossings

The overhead crossing is a device that in the United States has, we believe, proved to be a satisfactory solution of the problem of traffic blocks at street intersections. There it has been introduced under favourable conditions. Whether it could succeed here is a question the answer to which largely depends upon the spot selected for the experiment. The narrow, unaligned streets of London are all against the overhead crossing; it could only be introduced where the intersecting thoroughfares are directly opposite and of considerable width. Oxford Circus has been suggested as a suitable place for the experiment which Sir Alfred Yarrow has so generously offered to carry out at his own cost. The roadways are certainly wide enough here, but we would rather that the test were made at some less prominent (though not less busy) spot. This, of course, is mere sentiment. The practical objections to the overhead bridge are that it reduces the normal carriageway of a road by at least half, and that the necessary gradients involve approach slopes of 300 ft. on either side. Both on the bridge itself and the level roadways at its sides (if, as is likely in London, these latter cannot be of more than one-vehicle width) the speed of the traffic must be the speed of the slowest vehicle, and there can be no stopping to take up or set down over this stretch of 200 yds. From another point of view the overhead bridge provides a very difficult problem. If its sides remain open its underneath soon becomes a place of foulness; while if they are closed there is the hindrance to pedestrian traffic. From the æsthetic aspect, such bridges are not to be regarded as an unmixed blessing, though they should be capable of effective architectural treatment. The traffic congestion in the Metropolis has become so serious that no suggestion offering hope of relief should be turned down without a trial. That the elevated crossing has its drawbacks is obvious enough, but "diseases desperate grown by desperate appliance are relieved, or not at all."

Charing Cross Bridge: A New Idea

Mr. Waterhouse in his paper at the R.I.B.A. (reported in this issue) put forward an original and eminently practicable suggestion for a new bridge at Charing Cross. His bridge would consist of three roadways—the middle one for high-level traffic, the side ones for low-level traffic. Thus two strongly opposed schools of thought are unified in one design. If ever it is decided to build a new bridge at Charing Cross, Mr. Waterhouse's scheme must receive careful consideration.

"Flooring" the Thames

While the St. Paul's and Charing Cross Bridge protagonists continue to lash out lustily at one another, Mr. Alan Munby steps in with a new suggestion. In a letter to "The Times" he points out that the Thames at Waterloo Bridge is about half as wide again as at Southwark Bridge; that this surplus area at low tide between Waterloo and Blackfriars Bridges appears to be nearly 50 acres, and that between Waterloo and Westminster Bridges rather more—say, together, 100 acres—"which approximates to the area bounded by Cannon Street, Bishopsgate, London Wall, and Aldersgate and St. Paul's. At high tide this river area is possibly 20 per cent. more." Mr. Munby's calculations of superficial area lead up to the suggestion that this section of the river might well be "floored over" near the southern shore, thus creating a fine new frontage, "to which one or more new bridges of less span, and hence of less cost, could be attached," and creating also valuable ground rents, "without the interminable process of acquiring existing interests." It is a stimulating suggestion, and one that appears to have practical possibilities. The flooring-over would involve considerable capital outlay, but if it could be done on the northern side, why not the southern? The whole of this area will soon have to be dealt with on a comprehensive scale, or the opportunity will be lost for a century. Will the L.C.C. dilly-dally until it is too late?

A "Remedy" for Overcrowding

On the subject of slums and overcrowded cities Mr. Mead, the Marlborough Street magistrate, makes a remarkable suggestion in a letter to "The Times." Mr. Mead is very much alive to the evils of overcrowding, which, in the past, has been commonly—according to Mr. Mead, wrongly—attributed to the lack of proper housing accommodation for the poorer classes. "It is idle to expect that the provision of new houses will mitigate the evil," says the magistrate, "for the greater the accommodation the greater will be the influx of undesirable strangers." What, then, is the remedy? The subtlety of the legal mind (as the Lord Chancellor observes in "Iolanthe") is equal to the emergency. The remedy is legal repression. In other words, don't try to ease the situation by building more houses, but penalize the overcrowders for creating a nuisance. As there are no houses for them to go into, the alternatives are, presumably, the open air or the workhouse.

Architectural Draughtsmanship During the Last Hundred Years

The Exhibition of Drawings at the A.A.

NEW GOVERNMENT OFFICES, DUBLIN.
SIR ASTON WEBB, R.A., AND SIR THOMAS MANLY DEANE, ARCHITECTS.

WHEN a draughtsman wishes to render an elevation he has only to glance out of the window to see how nature orders her effects, and then he can conventionalize his work to any degree he may desire. But with a plan he is under the disadvantage of unfamiliarity with the natural aspect of the subject, and his efforts must be governed largely by guesswork. This being the case, it is rather disappointing that plans take no place in the exhibition of architectural draughtsmanship at the A.A., as they would have been not only interesting, but instructive. But although the work shown is confined to one section of the subject, it is for the most part very good, and is enough to illustrate the changes of style which have taken place during last century.

Pictorial art falls under the sway of fashion just as do poetry and dress, and this is very clearly seen by a comparison of the earlier drawings with those of later years. The draughtsman of last century relied almost entirely on line for his effects; each moulding is drawn out precisely and accurately, and a slight thickening of a line gives the idea of shadow. There is no real colour; a wash has been applied, and a few varying tones may have been used, but the actual pigment is the same. The finished drawing presents a rather peculiar appearance, due partly to age but a close scrutiny reveals the skill and patience of the draughtsman.

Although this type of drawing is quite pleasing to look at, it cannot be said to give a realistic effect, because the element of line is at variance with the principles of Nature. It is the realization of this fact which is responsible for the great progress which has been made in draughtsmanship of late years. There has been a striving for greater freedom of style and a closer reproduction of natural effects; so that in recent drawings we find line diminishing in value to make way for the more correct, if less definite element of tone.

The three drawings which are most representative of the earlier type are the "South Transept of St. Paul's Cathedral," by Malton (which is reproduced in this issue); the "Law Courts," by Street, and the "Houses of Parliament," by Sir Charles Barry. These will all bear the closest inspection and, even in the case of the "Houses of Parliament," where there is a superabundance of detail, it is doubtful if the least item of carving has been omitted. In this drawing the planes have been very definitely marked, partly by the thicknesses of the lines and partly by the tone-values of the rendering; thus we have the south elevation to the Thames, quite powerfully drawn, forming the first plane; behind this, in a considerably lighter tone, are the Victoria Tower, the central lantern, and Big Ben, while behind those again the towers of Westminster Abbey are just visible in the haze of the sky.

"Blickling Hall," by Mr. Maurice Adams, is noteworthy as showing the value of pen and ink for an architectural perspective drawing. It appears to have been drawn out accurately in pencil and finished in ink as a freehand sketch. The general effect is quite nice, but the technique is rather mixed; the outline is firm almost to self-assertion, and this gives a somewhat unyielding appearance to the drawing. It is an attempt to produce realism, using a technique which is truthfully only applicable to a line elevation, thereby making the naturalistic forms appear incongruous.

Sir Edwin Lutyens's house at Ilkley, drawn by Mr. Raffles Davison (reproduced in another page), is a wonderfully vigorous piece of work and is sufficient testimony that, used rightly, pen and ink is a very satisfactory medium from the architect's point of view.

In powerful contrast with these is Mr. Walcot's "War Memorial Church at Basildon." This is in the artist's best style, and is full of his little individualities and quaint smudges. The sketch relies entirely upon tone, and to such an extent has been carried the exclusion of hard outline, that the actual drawing has been done with a very hard pencil, or possibly even with a sharp metal point. Mr. Walcot does not bind himself to any conventions, such as we associate with an architectural drawing; the ordinary man, we may suppose, draws the building and, when he finds the drawing looking very "architectural," tries to

soften it down by putting in some rather extraordinary trees as a background. But Mr. Walcot, by his mere suggestion of natural objects, places the architectural subject in an harmonious setting.

The drawing of "Spencer Lodge, Hampstead," is probably the best piece of work in the exhibition. It is ideal as an architectural perspective, being that queer mixture of realism and conventionalism which Mr. Farey knows so well how to produce. His tricks of line and tone are the secrets of his success. For instance, the courses are picked out with white lines, which, in a brick building, is a perfectly obvious and truthful statement of fact; the termination of these lines indicates the junction of one plane with another without the introduction of any hard line. The background does not assert itself, but forms an integral part of the scheme; and, while it cannot be said to be realistic, it still gives quite a convincing impression of natural forms and shades. Realism tempered with convention is the basis of a good architectural drawing, as Mr. Farey has found out. It remains for more draughtsmen to follow the lead he has given them. M. L. A.

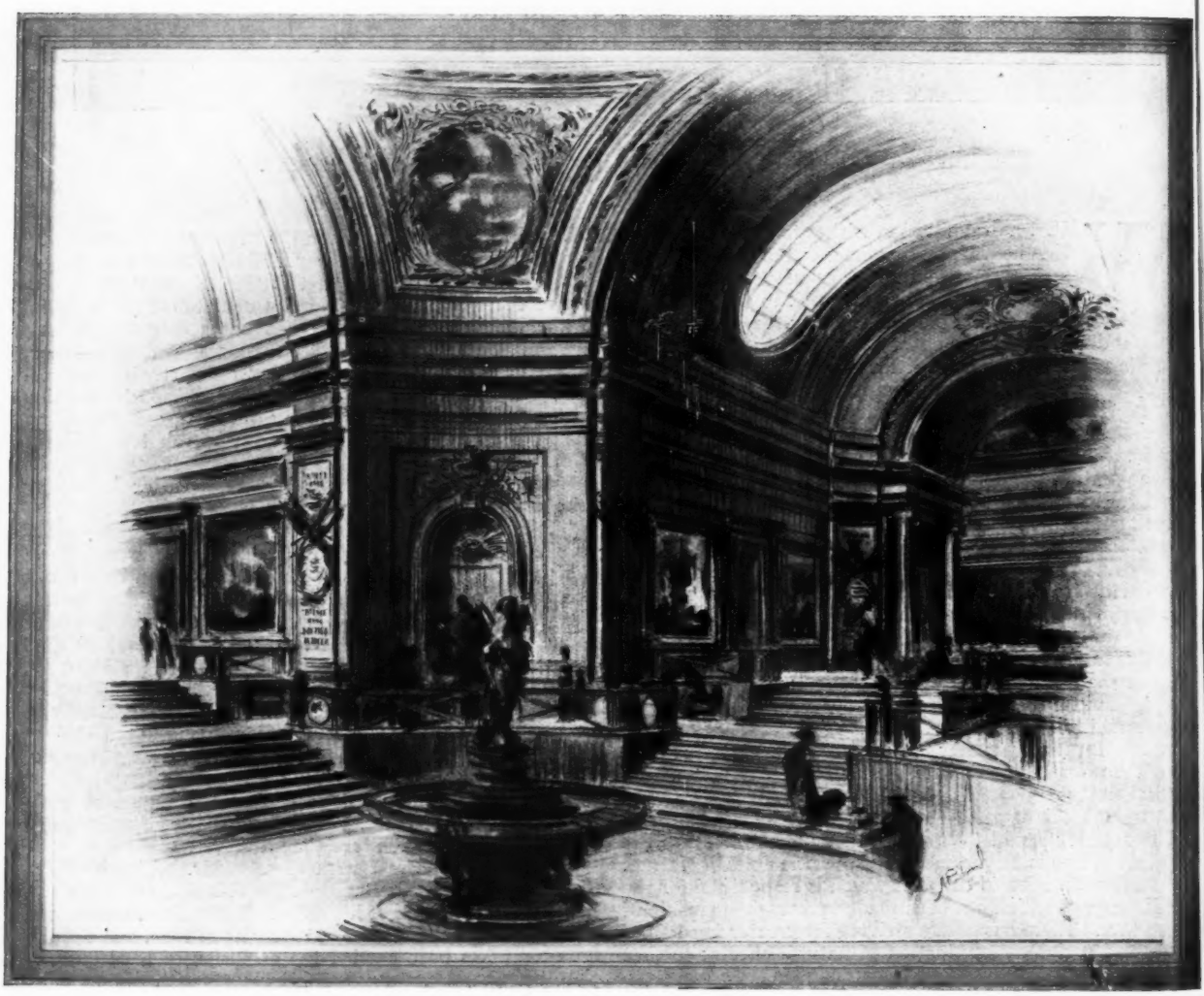
The exhibition also includes drawings by Augustus Welby Pugin, R. Phené Spiers, Alfred Waterhouse, George E. Street, Sir Ernest George, Robert Atkinson, D. W. English, T. S. Tait, E. A. Rickards, Charles Gascoyne, Sir Charles A. Nicholson, C. E. Mallows, Sir Reginald Blomfield, Philip Hepworth, and L. H. Bucknell.

The exhibition, which is at 35 Bedford Square, will remain open until Saturday, March 1.

It may be pointed out, with regard to the drawing reproduced below, that the purpose of the war memorial, which was to house pictures commissioned by the Canadian Government, imposed restrictions and to some extent dominated the design, which had to be adapted to the number and sizes of the various paintings, though necessarily this was eventually modified, at least as to the areas to be occupied, so that the pictures could be grouped with some regard to symmetrical and harmonious arrangement.

The building has the distinctive interest of being solely the work and conception of E. A. Rickards. The memorial is cruciform in plan, the central hall being surmounted by a dome. From this hall radiate galleries terminating in chapels, the galleries forming the arms of the cross being connected by other galleries, oval on plan.

The view shown is in the central hall on the principal floor. Below this on the ground level is a similar arrangement of galleries, lighted externally and by means of wells.



DESIGN FOR A CANADIAN WAR MEMORIAL: THE CENTRAL HALL.

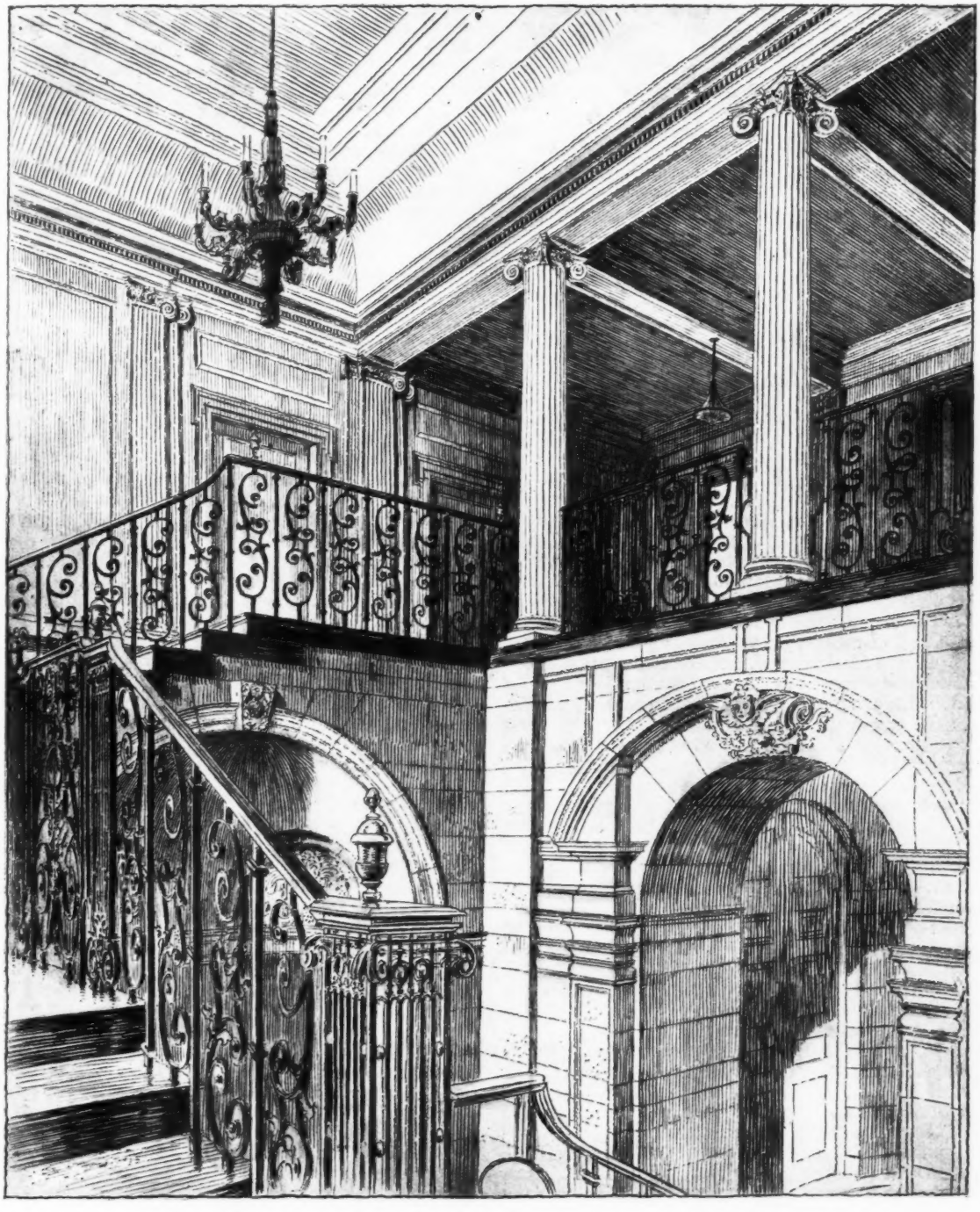
In the Draughtsmanship Exhibition at the A.A.

(*From a Pencil Drawing by the late E. A. Rickards.*)

The South Transept of St. Paul's Cathedral

From a drawing by Thomas Malton

This drawing, one of the treasures of the R.I.B.A. collection, and a characteristic specimen of Malton's meticulously careful draughtsmanship, is now on view in the Exhibition of Architectural Draughtsmanship at the A.A.



THE STAIRCASE, HEATHCOTE, ILKLEY. SIR EDWIN LUTYENS, R.A., ARCHITECT.

In the Draughtsmanship Exhibition at the A.A.

(From a Drawing by Raffles Davison.)

The Principles of Architectural Composition.—5

By HOWARD ROBERTSON, S.A.D.G., Principal A.A. School of Architecture

CONTRASTS we have discussed, such as those of solid and void, are perhaps the simplest and most readily understood, and serve as an introduction to the more delicate subject of the consideration of contrast in form and mass. A single building, and more frequently still, a group of buildings, will almost certainly present to the designer possibilities in the use of contrasts in treating his main masses. The necessity for Unity, for Dominant in the composition, will have dictated the relative bulk of the masses under consideration, but will not have dealt with the influence of form on these masses, nor with the effect which may be obtained by contrast of form.

It is visually apparent, for instance, that a very marked shape, having an extremely definite form, or line of direction, may produce a more startling and vigorous effect on the eye than a much bulkier but more amorphous shape. This question has been already alluded to when treating of the "weights" of light and dark masses in abstract composition (Fig. 30). An example of such a case is given in Fig. 47, where the comparatively slim tower forms an effective balance of contrast with the bulky horizontal mass of the building to which it is attached. There are, however, many cases of buildings in which the effect of contrast has been missed. Such an instance occurs in the Church of the Sacré Cœur in Paris, where a strongly marked effect gained by a massing of cupolas round a central dome finds an unfortunately close competitor in a rectangular campanile rising to approximately the same height as that of the central dome, and whose verticality stresses it as an accent in the design. The dome and the campanile, so dissimilar in bulk and shape, are yet vying with each other for pride of place in focal interest, and the composition of the Sacré Cœur loses much of its beauty thereby.

The difficulty of the designer will always be in the attainment of the proper degree of contrasts. If pushed to an extreme degree there will result merely discords; the effect, for example, of the interest of the contrast between strongly marked verticals and horizontals may be utterly missed if the proportions are such that instead of one form serving as a foil to the other, each is so individually insistent that the eye finds them in competition. For the avoidance of such competition, we must refer once more to the necessity for a Dominant.

The value of the contrasts of elementary forms has been illustrated by such instances as the use of spherical, conical, cylindrical, and other forms for the domes and roof coverings of buildings, such forms deriving a large measure of their interest from the contrast with the rectangular bulk of the building. Towers which combine in their design the rectangle, the octagon, the cylinder, or the sphere, are not uncommon, and the contrasting interest of these forms is at once apparent in the play of light and shade which results from their different contours (Fig. 47). In the design of architectural elements it is necessary, therefore, not only to consider the structural, practical, and logical requirements, but to envisage forms from the purely æsthetic point of view. Structural, logical, and truthful expressions do not, of course, automatically endow a building with the attribute of beauty, but merely satisfy a sense of fitness, which produces a totally different emotion.

This fact explains the retention in architectural design of many features which are of no structural value, and which, in addition, are quite illogical from a practical standpoint. The treatment of a window head, for instance, may logically demand a cornice supported on consoles, as such a projecting hood will assist in sheltering the window from the weather. It is not necessary, however, that this cornice should be completed by another in the form of a raked pediment. If the latter is necessary in order to throw the water off sideways, then the horizontal shelf below becomes itself redundant. Yet both features may be required in an architectural scheme, merely because of the interest which they create in the form of contrast of line, shape, shadow, etc., with some other element with which they are related in the design.

The presence of such apparently illogical forms, if they are necessary from the point of view of composition, is therefore not to be hastily condemned. The necessity, so often felt in composition, of introducing strong vertical elements in order to create sub-divisions, or to accentuate a sense of direction in a form, partially explains the reluctance of architects to abandon the use of the applied orders, whose presence may be required for no practical purpose (Fig. 48). Columns are logical as vertical supports, being in their simplest form merely detached sections of wall, but their use as applied ornament, supporting nothing and yet requiring a substantial base to bear their functionless mass, is less defensible. Yet three-quarter columns and pilasters are extremely useful as elements in design in pure form. Clothed with the beauty of proportion and detail which represents something approaching finality in this particular form of design, and having therefore inherent decorative qualties, classic columns and entablatures form a means of expressing form and line contrast which is tried and ready to hand. Small wonder, therefore, that the architect seizes on the orders to provide his dominant decorative effect. Similar effects, of a much more interesting and stimulating character, could certainly be obtained by the handling of form in some other way. But this entails imagination and effort, and it requires a great deal of both to originate a series of verticals and horizontals as satisfactory as that which is furnished by a well-selected classic order. If the designer realizes that the orders are a very subtle and refined expression of some of the principles of pure design, and not merely a more or less fashionable trapping to be borrowed and applied without reason, he will then be in the position to tackle the problem of using them with fitness or of creating his own set of elements to take their place.

Mr. Roger Fry has declared (cf. "The Architectural Heresies of a Painter") that one of the main weaknesses of the architect as an artist lies in his inability to realize plastic design or, in other words, successfully to handle form. English architecture of the last hundred years justifies this criticism, but recent development in training in design, coupled with the example of architects in other countries, leads us to hope that this disability is a passing phase. There is in Europe a notable architectural reaction against the production of effect through the mere application of the externals of style or the grafting of interesting features on to forms themselves uninteresting. Modern Dutch, German, and Swedish design, and some American work also, reveals at times an effort to grapple with pure form and mould it into architectural shapes. Buildings are not, however, made of plastic, but of hard and resisting material, and forms suitable to clay modelling can only be realized in the materials of building at the cost of fantastic difficulty and expense (Fig. 50). Hence the danger of failure in extreme essays in plastic design. But the examples given in Figs. 49 and 51–55, show that beneath a certain wilfulness is latent the promise of power and breadth of treatment which can only be produced by vigour and unity of conception in the handling of form in bulk, regardless of subordinate details.

The study of form in such an art as architecture, which is essentially an art dealing with static elements, naturally takes precedence over that of pure line, especially since

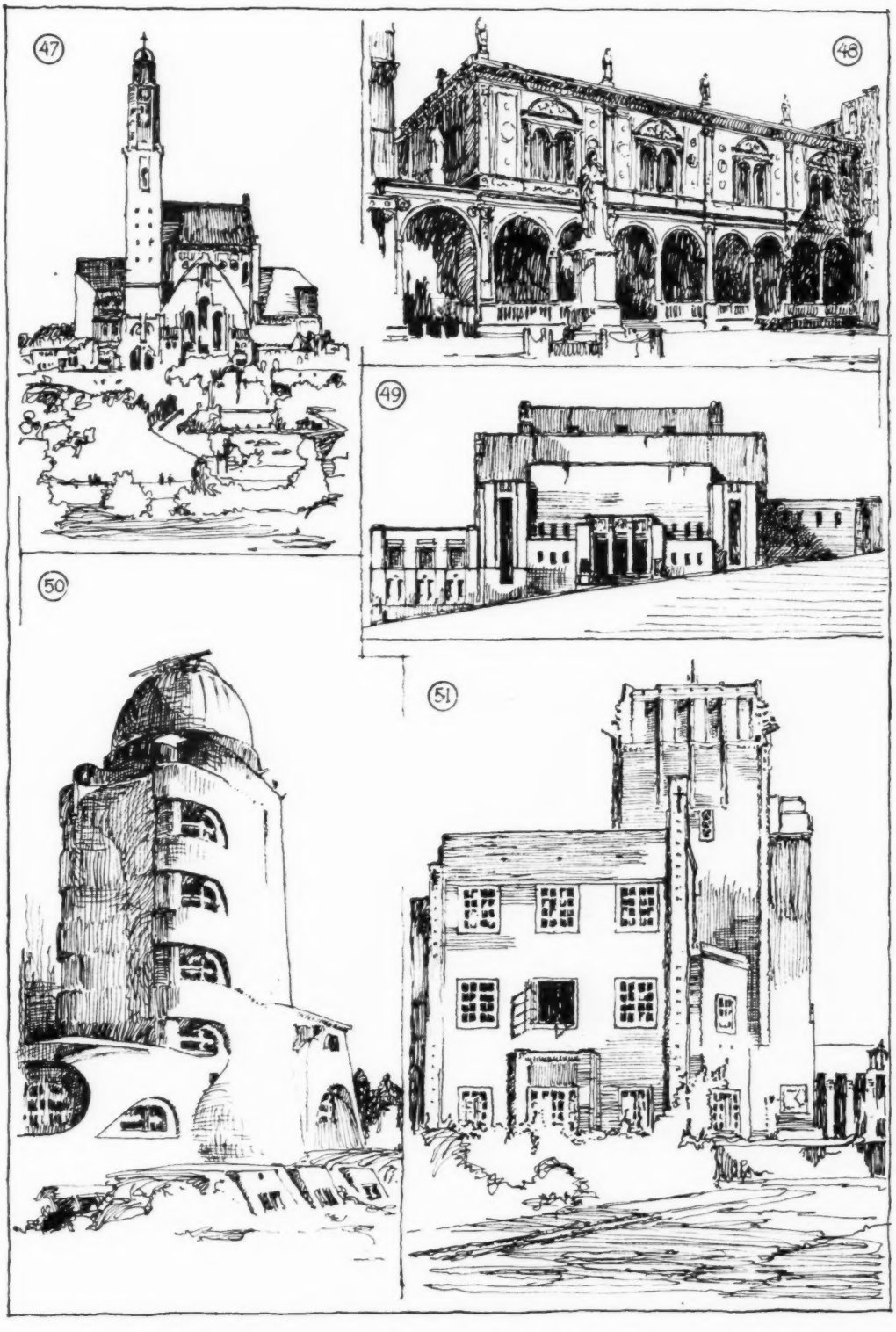


FIG. 47.—Church in Stockholm. Contrast in shapes both in the main mass and in the form of the tower. Dominant verticality.

FIG. 48.—Loggia in the Piazza dei Signori, Verona. Pilasters as a useful element in design, providing the accents or a rhythm, and breaking up solids so as to prevent competition with voids.

FIG. 49.—Prize design for Scottish Rite Competition, Portland, Oregon, by Sutton and Whitney. Study in the treatment of rectangular forms without the aid of classic detail.

FIG. 50.—The Einstein Tower, Potsdam, by Erich Mendelsohn. Expressionism in plastic form. Architecture bordering on the sculpturesque, a treatment logical only where warranted by the material and the importance of the idea expressed.

FIG. 51.—Seamen's Union Building, the Helder, Holland, by P. Kramer. A dignified and well-massed handling of form with accompanying appropriate detail.

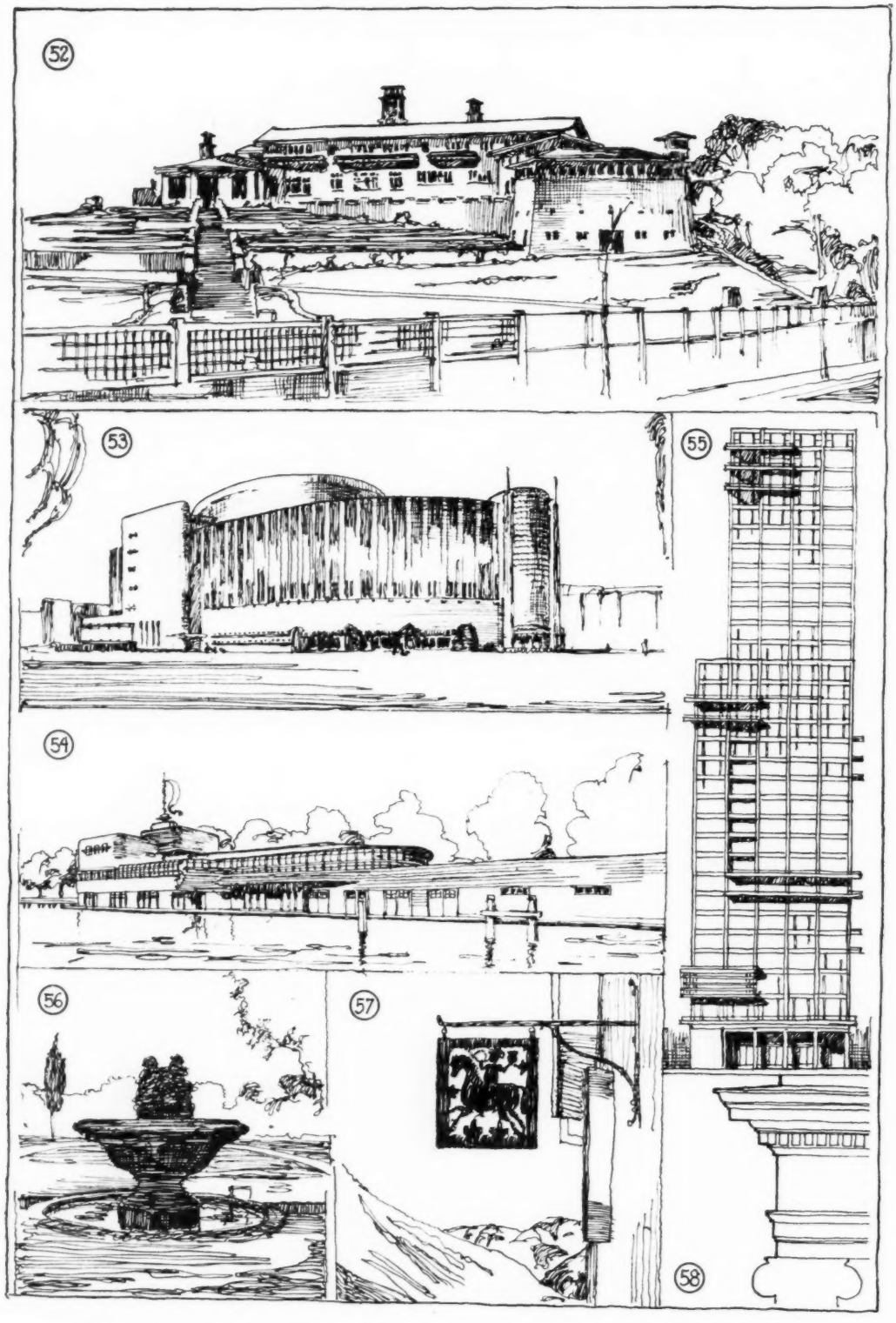


FIG. 52.—Residence in Berkeley, California, by Louis Mullgardt. Not free from tradition, but depending for effect on decision of idea and plastic treatment of form masses to suit the site. Note unity of house and landscape.

FIG. 53.—Design for a National Theatre, Amsterdam, by Th. H. Wijdeveldt. Expression, study of pure form, breadth of treatment, consideration of site in determining shapes.

FIG. 54.—Design for Boating Club, Amsterdam, by de Klerk. Expressionism of function, handling of form to harmonize with building's purpose and situation.

FIG. 55.—German design by Walter Gropius and Adolf Meyer for Chicago Tribune Building. Study of massing of elementary form, relieved by accents definitely placed. Building is in reinforced concrete and glass.

FIG. 56.—Fountain in Borghese Gardens, Rome. Importance of line as contour of objects.

FIG. 57.—Inn sign from Guarda (Engadine). Importance of silhouette.

FIG. 58.—An Ionic entablature. Contrast in mouldings.

line, when considered as the contour of form, is essentially incorporated with form. Line, however, assumes a great importance of its own, as it may appear as practically independent of strongly modelled forms, as, for instance, in the case of the flutes of a pilaster, or in the jointing of stone or brickwork. Line may also appear as the silhouette of a form which is, or appears to be, practically two-dimensional. The silhouette of an element, such as a weather vane, or the cresting of a roof, may be more important than its actual surface modelling (Fig. 57), and even strongly modelled elements, such as a dome, a tower, or a piece of sculpture, will sometimes count chiefly as dark and strongly silhouetted objects against a light background. Such instances occur when a spectator looks at a building into the eye of the sun (Fig. 56).

It is because line and silhouette impinge so strongly on the vision that their study becomes of high importance, and here again we find that the principles of unity, proportion, and contrast apply in exactly the same way as in the study of mass and form.

The examination of any well-designed silhouette, such as that of a classic cornice (Fig. 58), will reveal the exemplification of the main principles, which apply to both form and line. Unity is suggested by the general sense of direction of the profile following in this case a general line at 45 deg. with the horizontal. It is further confirmed by the presence of the Dominant, namely the strongly-marked overhanging profile of cyma and corona, which dominate the subordinate supporting bed mouldings of cyma reversa, dentil, and ovolo.

Contrast is exemplified in every line. The cyma reversa consists of two curves, each directly contrasting with the other, and the whole contrasting with the rigid lines of the dentil course above. This course has contrast of spacing in its dentils, producing a strongly-marked effect of solid and void. The ovolo contrasts with both dentil course and cyma reversa, and the whole trio of bed moulds with their broken silhouette contrasts with the firm rectangular lines of the corona. The corona itself, in character and form, is in opposition with the cyma recta above it.

The mouldings of any well-designed profile may be analysed in the same way, and this analysis will enable us to arrive at synthesis of form and line by working on the same principles. In line, as in form, our distaste for hesitation implies a desire for decisiveness. Curved lines in particular, through their fundamental lack of rigidity, demand most careful study and treatment. A weak and undecided curve is actively disagreeable to the trained eye. In the contour of domes, or any silhouetted element, this is particularly noticeable, while arched forms again must observe the principle of unity and decision.

A contour to dome or arch, which consists of a much flattened semicircle, will contain a short portion of line which is practically straight. The presence of this straight line destroys the unity of the curve, quâ curve, and is yet too indecisive to provide contrast. Curves which are broken or "bent," should be sharply broken or have their change of direction definitely marked, a crispness of inflection, or a decisive sense of their interruption being demanded by the eye. Such curves as the semicircle, the ellipse, various forms of Gothic vaulting, etc., have unity through their continuity or the decision of their form contrast, while curves, such as the parabola and the subtle contour of the Greek Doric abacus, have a beauty of inflection which is a delight as a study of pure line. The drawing of a beautiful curve is the production of an artist's eye and hand, but bad silhouettes may be avoided if the basic principles of composition are adhered to.

(To be continued.)

[The previous articles in this series appeared in our issues for January 9, 16, and 30, and February 13.]

The A.A. Visit to Fishmongers' Hall

THE last of the City workers were hurrying home to the suburbs when a party of some forty persons were assembling at the Fishmongers' Hall, a grand, dirt-stained building, which stands facing Adelaide House across King William Street, and forms an abutment to the north end of London Bridge.

Certainly no City guild could have a finer site than this for its building. The plan is an oblong, the short elevation facing southwards to the river and forming a centre of interest to north-bound traffic over London Bridge. The building itself is of five floors, two of which are above the level of the bridge. The other three may be termed basements, although they are actually seen above ground from the lower level of Upper Thames Street, and are of rusticated granite. The two upper floors are in the refined style of the Greek revival.

The south elevation has an exceedingly fine "pseudo-portico," which is of six columns and a pediment in the Ionic Order, and opens on to a large balcony, which is the roof of the warehouse underneath (this last being approached from the Fishmongers' Hall Wharf). Between the Hall and London Bridge is a wide stone stairway leading directly to the river, and descending in flights of twenty-eight steps.

The interior is richly decorated with the Greek Orders, except the large hall, which is Roman, and each room has its own colour scheme. The entrance hall, for instance, has a Doric pilaster order, the pilasters themselves being in a cream tint, picked out lightly in gold, while the wall-spaces are in a rather elusive salmon-pink.

Two basement floors down are the kitchens, the staircase leading down being ridiculously small, with treads only 3 ft. wide.

Coming back to the ground floor we find the administrative offices and committee rooms, still with their fine decorative schemes. The central corridor is very imposing, and the grand staircase leading from its centre is most impressive; the gilded balusters and ebony handrail are shown to their best advantage by the planning of the stairway, which rises one flight on the centre line and then divides on a landing to left and right.

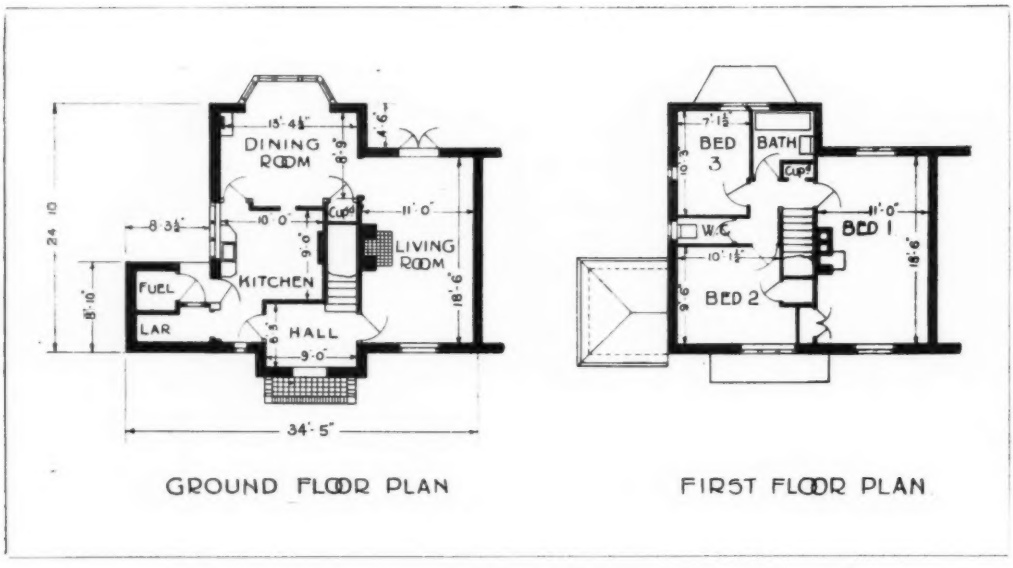
On the first floor is the grand hall, a magnificent room, with the ladies' gallery at the north end. The Corinthian Order is the theme of decoration, and stands very well in all its wealth of detail, giving a very fine effect in a hall of this size. The room is 85 ft. long, with a curved roof, which undoubtedly lends grandeur to it.

Looking out over the Thames are the drawing-room and court dining-room, which are most charming, and are, in a way, the most interesting features in the building. They were redecorated thirty years ago with most elaborate plaster details and coffering, and the carpets were specially designed to harmonize. The two show a most extensive study and a very high appreciation of the best Greek style in detail.

The doors to all the main apartments are of oak, in six panels, and 10 ft. high, slightly gilded. The architraves support the general decorative scheme, being in the Greek style with "ears."

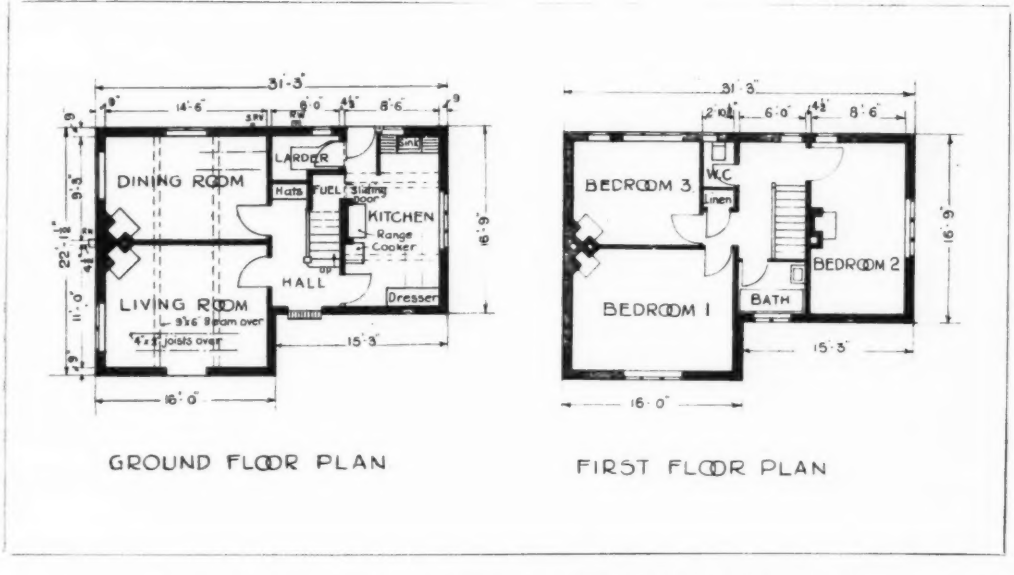
The City Guilds always retain an atmosphere of mystery and romance, and it is sad to see them falling before the storm of modern industrialism—an industrialism eloquently described by the immensity of the unfinished Adelaide House. We have no time in these days and no money to allow us to erect halls to be the headquarters of our businesses, but we can at least hope that a few of the buildings of past generations may remain as reminders of early prosperity.

M. L. A.



STANDARD TYPE HOUSES IN GUESSENS ROAD, WELWYN GARDEN CITY.
LOUIS DE SOISSONS, F.R.I.B.A., ARCHITECT.
These houses were built in 1922 at a cost of £850 each.

A VIEW FROM THE GARDEN.



STANDARD TYPE HOUSES IN HANDSIDE CLOSE, WELWYN GARDEN CITY.
LOUIS DE SOISSONS, F.R.I.B.A., ARCHITECT.

The houses in the centre of the picture were built in 1921-22 at a cost of £900 each.

Charing Cross Bridge: A New Suggestion

Mr. Paul Waterhouse at the R.I.B.A.

AT a meeting of the R.I.B.A., held last week at Burlington House, Mr. Paul Waterhouse, PP.R.I.B.A., read a paper on the above subject. Speaking personally, he said, I may say that there is only one bribe that would induce me to acquiesce in the continuance of Charing Cross Bridge. If by some wizardry you could give me back the pre-fire London Bridge with the houses on it, I would at that price reconcile myself to the prolonged existence of the unholy thing.

Commonsense will reply to this observation that I do not know the elementary facts of the practical problem at issue, and that one who can talk of the demolition of the ancient London Bridge as a calamity ignores the fact that the loss of the old bridge brought about the abolition of a most inconvenient obstruction to river traffic, the weir with which the construction of the bridge was incorporated.

I have no wish to pursue this point, and as we cannot have old London Bridge back I will not cry for the moon.

But, let it be said, it is not merely fools who have suggested that the water traffic problem would be partly improved—not hindered—by the re-establishment of a weir or rather a modern barrage at some chosen point below bridges.

What are the elements of the bridge problem? I think they are five in number:—

1. The bridge must go because it is an abomination of ugliness standing commandingly in the spot which is London's great opportunity for beauty on a grand scale. When I use the word beauty I mean nothing more fantastic than the ordered arrangement of the useful according to traditional and recognized art.

2. A new bridge must take its place because one is needed at that point, not only for the foot traffic already existing, but also for the wheeled traffic which is ready to make immediate use of any new bridge at or near that point which would accommodate it.

3. The abolition of railway traffic across the river at that quarter would not only simplify the problem of making the new bridge a thing of beauty, but would release a large amount of Middlesex land which could be profitably and beautifully used for new streets and new buildings.

4. Incidentally, this would have a double effect in the relief of wheeled traffic, for the new roadway would be a remedy for a congestion of which the presence of a railway station is in itself a part cause.

5. The new bridge, besides being a compensation to the railway companies for the loss of their own powers of crossing the river, would be the means of providing for wheeled traffic a means of crossing from side to side the present necessity for which is as nothing to that which the future—the comparatively early future—will demand.

Next come the questions: Where shall that bridge start and where shall it arrive?

You will know that there are two schools of thought in this matter. There are advocates of the high-level scheme—who may be described as those who proposed to utilize the fall of the ground towards the river on the Middlesex side so as starting from some point 20 ft. or more above the present embankment level to allow the present Middlesex embankment road to pass beneath the new approach road. Some propose that the Surrey embankment, if and when formed, shall be similarly crossed by the Surrey approach road.

The low-levellers are those who claim that both embankments will be best served by having direct access to the new bridge.

In fact, the low-levellers' bridge would follow the example of Westminster Bridge, while the high levellers are on the Waterloo Bridge principle.

There are disadvantages, or rather difficulties, besetting each of these schemes as well as their great and obvious advantages.

The high-leveller must be very careful as to where he starts his new road. Some say relieve the Strand by starting straight from the site of Charing Cross Station. But the Strand is rather fully burdened with its own troubles, and we have to make quite sure that the new road, while relieving with one hand, so to speak, does not, with the other, pour into the Strand at its worst point a burden of fresh influx too heavy to be borne. On this ground there is something to be said for starting higher up—at the level of St. Martin's Church and spanning both the Strand and the embankment.

Again, the arrival on the Surrey shore needs thought. Unless it be decided to honour the new Charing Cross Station by making it and a great new hotel the object at which the new bridge aims, there is no great reason for insisting on a high level arrival on the Surrey shore.

For various reasons I hesitate to come forward with a definite proposal. For one thing I have been able to show suggestions that come from better men than myself. For another, I notice that definite proposals are always regarded with a cold favour not unmixed with suspicion. But I confess that it has lately occurred to me that the high-versus-low-level controversy might conceivably be solved by a combination of the two, such as would be produced by a central bridge way at the level of, say, O.D. 44, with a roadway on each side of it running from embankment to embankment and only touching the 44 level at a point over the central arch.

There are many objections which can be immediately levelled against such a notion. The first is that whatever level is adopted as the revised embankment level there would necessarily be a fairly stiff gradient up and down from embankment to embankment. To this I reply that the bridge having optional routes no vehicle is compelled to cross at a gradient which its horse or its gear-box finds inconveniently exhausting.

As to width, 100 ft. has been by most designers assumed as the proper dimensions for the new over-river roadway, on the ground (*a*) that width adds to dignity; (*b*) that it eases traffic. I wonder if either of these assumptions is reasonable. Personally, I believe that the narrower a bridge is, in reason, the finer it is in effect, and as to the second argument, I believe experience is against its universal application.

I bring these compressed remarks to a conclusion, and I merely summarize them by reiterating:—

1. That C.C.B.M.G. (Charing Cross Bridge must go).

2. That the position of Charing Cross Station is neither logically nor rationally fixed where it is.

3. That traffic needs demand even now a roadway at this point or near it.

4. That they will demand it infinitely more as the near future approaches.

5. That the dispute between high-levellers and low-levellers is or may be capable of solution by combination; and,

6. Finally, that money spent upon this bridge will be no bombastic expenditure on luxury but a stately measure of economy, part in fact of that considered development of the Surrey side to which there is no alternative but the desperate and terribly probable course of leaving the Surrey side problem to chance and (coupled with this *laissez-aller*) some lavish expenditure on an at present unwanted bridge at St. Paul's.

The paper was illustrated by lantern slides of the various schemes put forward from time to time.

Housing from a New Point of View

Major Barnes at the Birmingham A.A.

MAJOR HARRY BARNES, V.P.R.I.B.A., F.S.I., in giving an address before the Birmingham Architectural Association, said that the dilemma in which we stood to-day was that a standard of housing had arisen which never had been in the past, could not be in the present, and did not appear likely to be in the future provided for a considerable section of the population of the country. The reason in all cases was that such a house as the present standard demanded could not be provided at a rental within the capacity to pay of a considerable and increasing proportion of the wage-earners of the country.

The present housing problem was not the result of the war, but of a steady accumulation of arrears extending over the whole century. The increase in houses in each decade had always been less than the increase in families.

1811	Houses	221,581	..	Families	245,424
1821	,,	290,652	..	,,	351,276
1831	,,	393,388	..	,,	418,451
1871	,,	519,612	..	,,	557,492
1881	,,	572,402	..	,,	584,076
1891	,,	619,978	..	,,	487,809
1901	,,	809,355	..	,,	905,867
1911	,,	880,929	..	,,	968,422

The result was that there had been a steady increase in the number of surplus families, that was to say, families for whom no separate dwellings were provided. In 1801 the amount of that surplus was 310,800. In 1911 it had increased to 865,309, i.e., that more than half-a-million additional families were without separate dwellings in 1911 than in 1801. There had been a steady accumulation of arrears, which had been precipitated like an avalanche by the almost complete cessation of houses for the working classes during the war years.

With regard to the question as to whether, in estimating the number of houses required, population should be taken as the basis or the number of marriages in each decade, he said that if population was taken as the basis, the increase in population during the last decade had only been half of that in the former decade, and on that basis it might be argued that only half the number of houses were required.

During the decade ended 1911, there had been an increase in houses amounting to 840,649, and if population were taken as the test it might be assumed that the number required for the decade ending 1921 would be about 420,000. If those who took this view added to it the fact that in 1911 the number of empty houses was over 400,000, they came to the conclusion that the occupation of these empty houses practically solved the housing problem by finding accommodation for the people who would otherwise have been provided for by the increase in the number of new houses of the amount stated before, viz., 420,000.

Against this he pressed the view that the proper basis for calculation in determining the number of houses which were required from decade to decade was the number of marriages in the decade—that it was the marriage which created the demand for the new dwelling. A mere increase in population might be satisfied by increasing the number of rooms in existing dwellings. On this basis he pointed out that though, in the decade ended 1921, the increase in population had been only half of that which took place in the decade ended 1911, the number of marriages in the later decade was nearly half-a-million more than in the former one, the figures being 2,640,515 for the decade ended 1911, and 3,075,903 for the decade ended 1921.

For the decade ended 1911 there had, in fact, been an increase of 840,640 houses, and if the marriage basis was the proper one it was clear that the number required to satisfy the marriage claims in the decade ended 1921 was approximately 950,000. Taken over a hundred years, the census figures showed that for every hundred persons there resulted eight marriages in a decade, and that for every hundred marriages there were provided about thirty-one new dwellings. In other words, that about 70 per cent. of the marriages found the accommodation required thereby in existing dwellings, only 30 per cent. being provided for by an increase in new dwellings, and if this percentage were taken of the number of marriages in the decade ended 1921, it would produce the result that about 900,000 dwellings were required, which figure compared closely to that shown in the former calculation.

The lecturer proceeded then to discuss the capacity of the building industry to produce during the present decade (that ending in 1931) the number of houses that were required. Before dealing with these figures, however, he pointed out that the figures available from the returns of the Commissioners of Inland Revenue only gave the increase in the number of houses existing and did not, of course, show how many houses were built to replace houses that were demolished. He discussed the question as to the life that should be allowed to the houses that had been built since the Industrial Revolution began, and pointed out that whatever figure was taken, it meant that we should in any decade not only provide for the natural increase, but also for the replacement of the houses in the decade to which the figure taken as the life of the house brought us, e.g., if it were suggested that sixty years was a proper life to take, it meant that in the decade ending 1931 we should replace the houses which were built in the decade ending 1871, which were at least 500,000. If the figure were taken at a hundred years, it meant that in the same decade we should replace the number built in the decade ended 1831, a figure of about 400,000. This figure, taken together with that based upon what was actually done in the decade 1911, a figure round about 900,000, showed that the total number of houses that should be built during the decade ending 1931 to provide for the natural increase and to allow for a good replacement programme, was round about 1,200,000 houses.

With regard to the capacity of the building industry, he said that on an examination of the census returns, in so far as the number of men engaged in the building industry were concerned, compared with the number of houses produced in each decade, the result showed that the average over sixty years was one house, one man, one decade. He quoted the following figures :—

Year.	Men.	Houses.	Average houses per man.
1851	463,491	492,666	1·06
1861	472,103	596,263	1·26
1871	581,903	697,733	1·2
1881	685,112	605,486	·88
1891	698,839	886,103	1·27
1901	952,093	840,649	·88

Or an average over the sixty years of 1·09.

On that basis, if it were adopted for the purpose of estimating, and it seemed a sufficiently broad basis for that purpose, it might be expected that for every man in the building industry in 1921 we might get an additional house by 1923. The latest figures of men in the industry were for February, 1923—625,400. Therefore on that basis, unless exceptional activity were shown and extraordinary means

employed, the normal output for the decade was not likely to exceed 700,000 houses, leaving us with a shortage of anything up to half-a-million.

As regards the question of the output in the building industry, he said that on the figures that were the result of recent housing experience, a round figure could be taken: the number of houses that could be produced was equal to one man, one house, one year; that was to say, that for every man engaged upon house building they might expect to get one house in the course of a year. The figures already given showed that what was obtained was one house, one man per decade, the conclusion of which was that during the past there could not have been more than one-tenth of the men in the building industry employed upon house building for the working classes. He pointed out that the task of the building industry was first of all the maintenance of the existing buildings; secondly, the provision of the buildings that were required for commercial and industrial premises; and only, thirdly, the provision of dwellings, and that in respect of dwellings those that would be provided in the first instance were those for those persons who were able to pay for them, either their cost of construction or an economic rent. The burden of maintenance grew every year; in 1801 there were less than 2,000,000 houses to maintain, while in 1911 there were over 8,000,000, and it was obvious, therefore, that an increasing number of men in the building industry must be engaged upon maintenance and repair.

If normal conditions, therefore, prevailed, it could not be expected that more than one-tenth, or 70,000, of the men engaged in the building industry at the present moment would be engaged on the erection of houses for the working classes, and on the basis of one man, one year, one house, it would give us 700,000 in the decade—a figure again closely related to the one already obtained.

On all the facts that could be ascertained, the situation in 1931, so far as housing was concerned, was likely to be worse than that of 1921.

The Pavillon Gabriel, Versailles

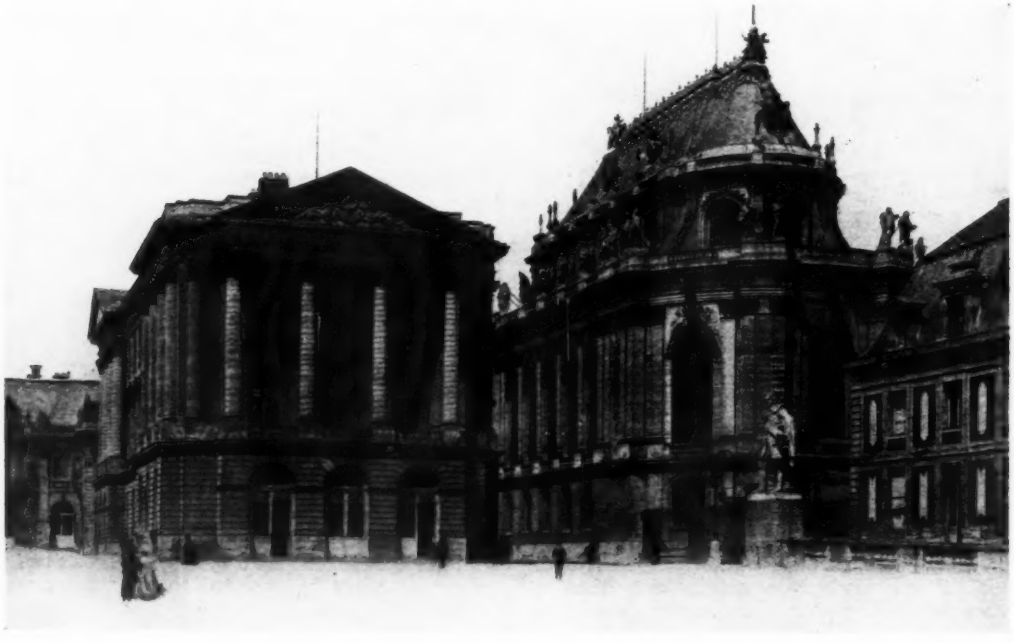
A J. GABRIEL, Architect

WHEN the two blocks designed by Le Vau to enclose the forecourt of the Palace at Versailles began to decay, A. J. Gabriel proposed the recasting of the whole of the east front of the palace in stone. The scheme was later abandoned, but in 1771 he completed the right-hand block (illustrated); the corresponding left-hand block was finished later under the Empire.

The Pavillon Gabriel has a finely-proportioned façade which would look extremely well anywhere but at Versailles, where its ashlar treatment and huge order are very out of keeping with the delicate design and colouring of the rest of the forecourt. Its very dignified classicism composes none too well with Mansart's Chapel on the right, with its picturesque silhouette and rather florid detail.

Gabriel, of course, was also responsible for the magnificent lay-out of Place Louis XV (Place de la Concorde), which remains one of his greatest achievements. Commenting upon his career in "A History of French Architecture," Sir Reginald Blomfield writes: That he was a great artist is shown by his works, and the rare glimpses that one gets of his life suggest that his was a fine, upstanding personality, a strong man who went his way, undeterred by menace or intrigue, loyal to his friends, and just to his subordinates. Ange Jacques Gabriel was the last of the old guard in French architecture. A generation had already risen that abjured the living faith of its fathers, and thought that it had found salvation in the graveyards of the past.

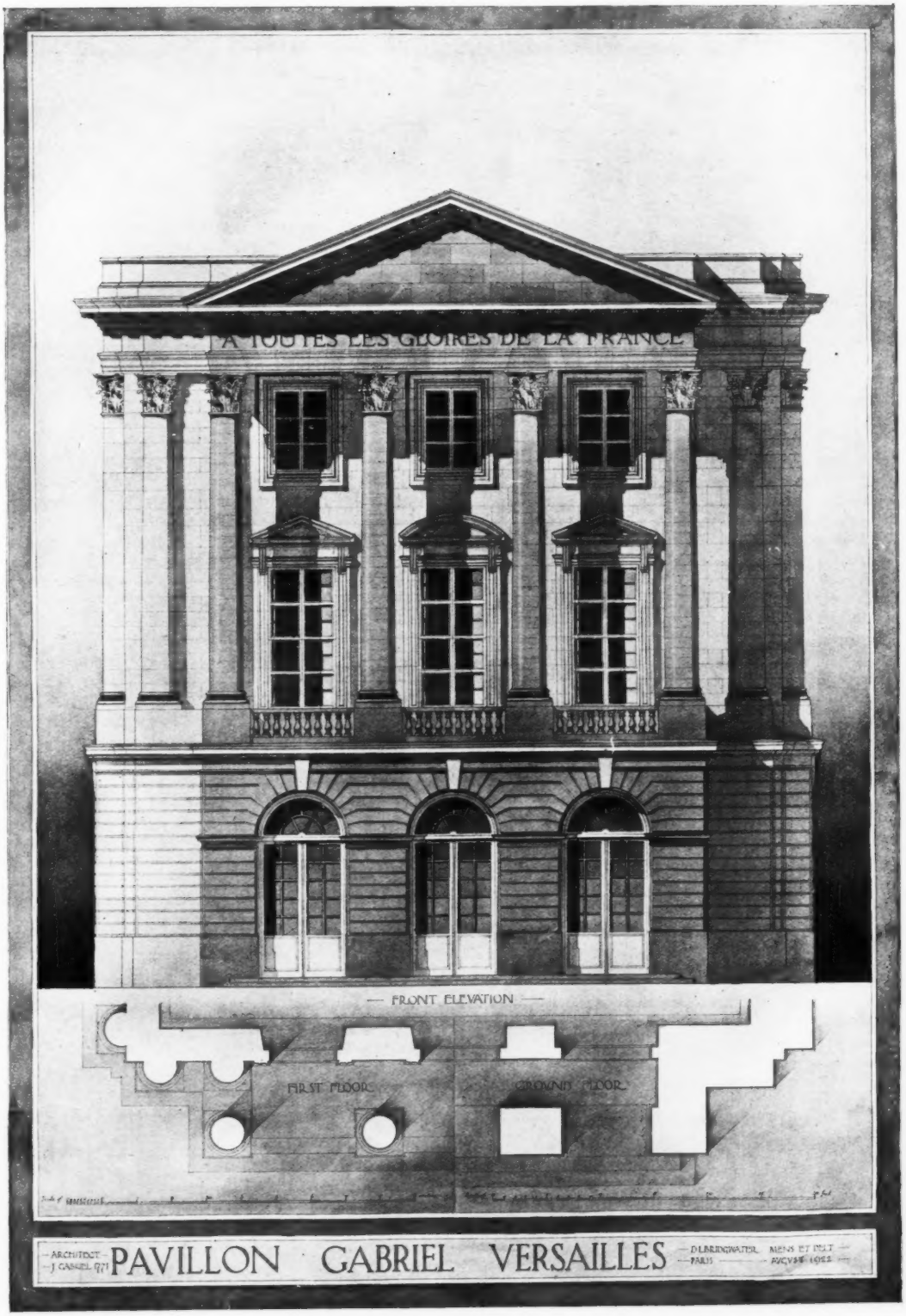
Mr. D. L. Bridgwater, from whose measured drawing the illustration on the facing page is reproduced, won, in 1922, the Holt travelling scholarship of the Liverpool School of Architecture.



THE PAVILLON GABRIEL, VERSAILLES.

Measured Drawings. 45.—The Pavillon Gabriel, Versailles

Measured and drawn by D. L. Bridgwater



The above drawing represents the right-hand pavilion of the forecourt to the Palace of Versailles. It was completed in 1771, from the designs of A. J. Gabriel, the corresponding left-hand block being added later under the Empire. Mr. Bridgwater was the Holt Travelling Scholar of Liverpool University for 1922.

The Building Trades Exhibition

How to Interest the Architect

By a Publicity Expert

The following article, based upon many years' experience of building and allied exhibitions, contains a number of practical suggestions that will be of value to firms proposing to be represented at the forthcoming Building Exhibition at Olympia.

THE growth of the Building Trades Exhibition, both in size and popularity, is a sure sign of its value to the profession. Thousands of architects and their assistants visit it, and many of them make a point of examining in detail the various exhibits. There are, of course, great numbers of visitors who are neither architects nor builders, and, generally speaking, it is these non-professional visitors who take up most of the time of the stallholders, especially as it is not always possible to discriminate between genuine enquirers and those who are merely interested for the moment.

For the exhibitor whose aim it is to attract and interest the architect, there are a number of important details which, I suggest, should receive careful consideration, if the fullest advantage is to be taken of the opportunities afforded by the exhibition.

The Stand

The importance of remembering that architects are essentially men of cultured taste cannot be too strongly insisted upon; their training teaches them to appreciate what is simple and beautiful, and consequently anything in the nature of ostentation is certain to arouse feelings of prejudice and dislike.

The wise business man will therefore be careful to see that his stand is (1) a suitable and effective setting for the materials displayed; and (2) architectural in treatment and conforming to sound principles of architectural design. To secure these two essential requirements the wisest course is to entrust the designing of the stand to a competent architect. This would add but little to the total expenditure on the display, and if the practice were generally adopted it would add enormously to the interest of the exhibition. The name of the architect responsible for the design could be mentioned in the exhibition catalogue. Judging by some of the stalls I have seen at past exhibitions, I should say it is highly probable that considerable savings would be effected by calling in the skilled assistance of the architect, for in many instances, in former exhibitions, the stands which aroused the most scathing criticism were precisely those upon which money had been most freely lavished.

Preliminary Work

The next point worthy of consideration is the best method of ensuring that architects will visit the stand. There are now so many exhibits that it is almost certain that a busy architect will make a selection, and it is here that the architectural Press may render an essential service. In many cases the exhibitor has advertised regularly in the professional papers, so that the architect is already familiar with the principal qualities claimed for his materials. For a few weeks just before and during the run of the exhibition an exhibitor's advertisements should take the form of a direct invitation to the advertiser's own stand at the exhibition. They should set out in clear and simple language the salient features of the exhibit—and should indicate its precise location. The writer has regularly attended this exhibition and others for the past twenty-five years, and it has frequently been his experience to meet exhibition visitors who have jotted down in their notebooks the numbers of the stands they particularly wish to visit. Such visitors may, of course, be attracted by other exhibits while they are in the building, but it is clearly a great advantage to be included in a previously prepared list.

Personnel

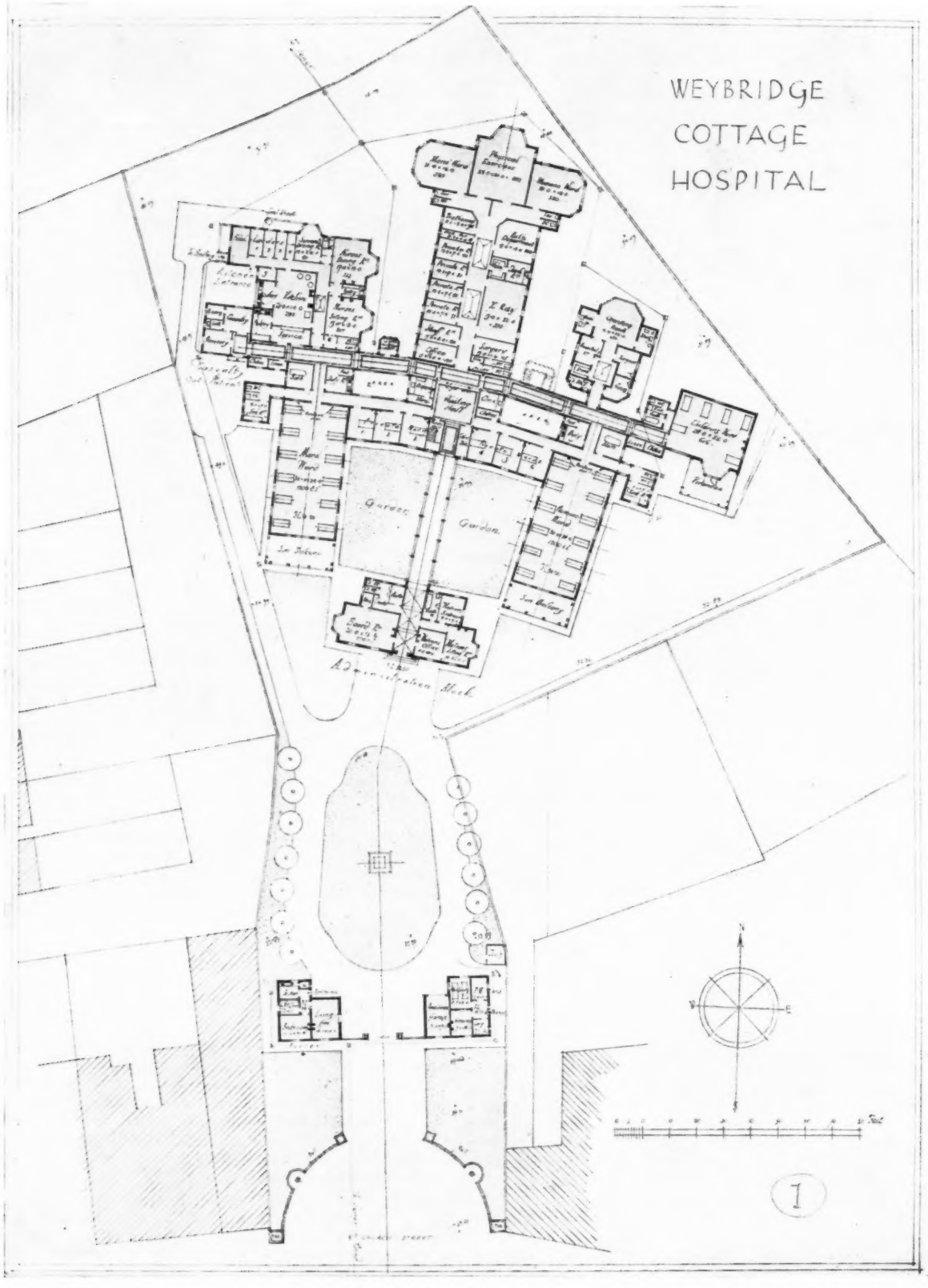
Then there is the question of the personnel at the stand itself. The writer has often found that temporary assistants, without technical knowledge of the business, have been engaged to look after the firm's stand and presumably to further their interest! This surely is a mistake, for there is nothing more likely to lead to disappointing results where professional men and experts are to be dealt with. It ought to be a rule that at least one fully qualified member of the staff or a principal of the firm should be in attendance at a stand so that an architect can be met on his own ground and talked to intelligently upon technical subjects. It will in most cases be necessary, of course, to have other assistants whose duty it is to attend to the ordinary visitors and to pass on to the principal those who are likely to prove valuable clients. If, as so often happens, an architect sees an opportunity of using the exhibited material in a building actually in hand, he will probably want to discuss prices and other details, and it is therefore of the first importance that a principal, or at least a fully qualified assistant, should be in attendance to give him accurately and fully every detail of exact information that may be wanted.

Literature

Another point of some importance is the provision of advertising literature for distribution. It is desirable, and, indeed, necessary, in the majority of cases, to have some printed matter available; but this should always be rather in the nature of a reminder than of a catalogue. It is unlikely that an architect will burden himself with a number of weighty booklets and catalogues, and yet such publications are frequently pressed upon him. On the other hand, as anyone who has had experience of such exhibitions knows, there are many members of the general public who make a point of collecting anything in the nature of samples, illustrated booklets and catalogues, and the like. They make excellent playthings for the children! There is always much waste in this direction, and the ideal course is probably to print for distribution a quite modest folder or pamphlet, and to see that, wherever possible, the name, address, and profession of every visitor is secured by the assistants, so that catalogues and samples, where necessary, can be sent along after the exhibition.

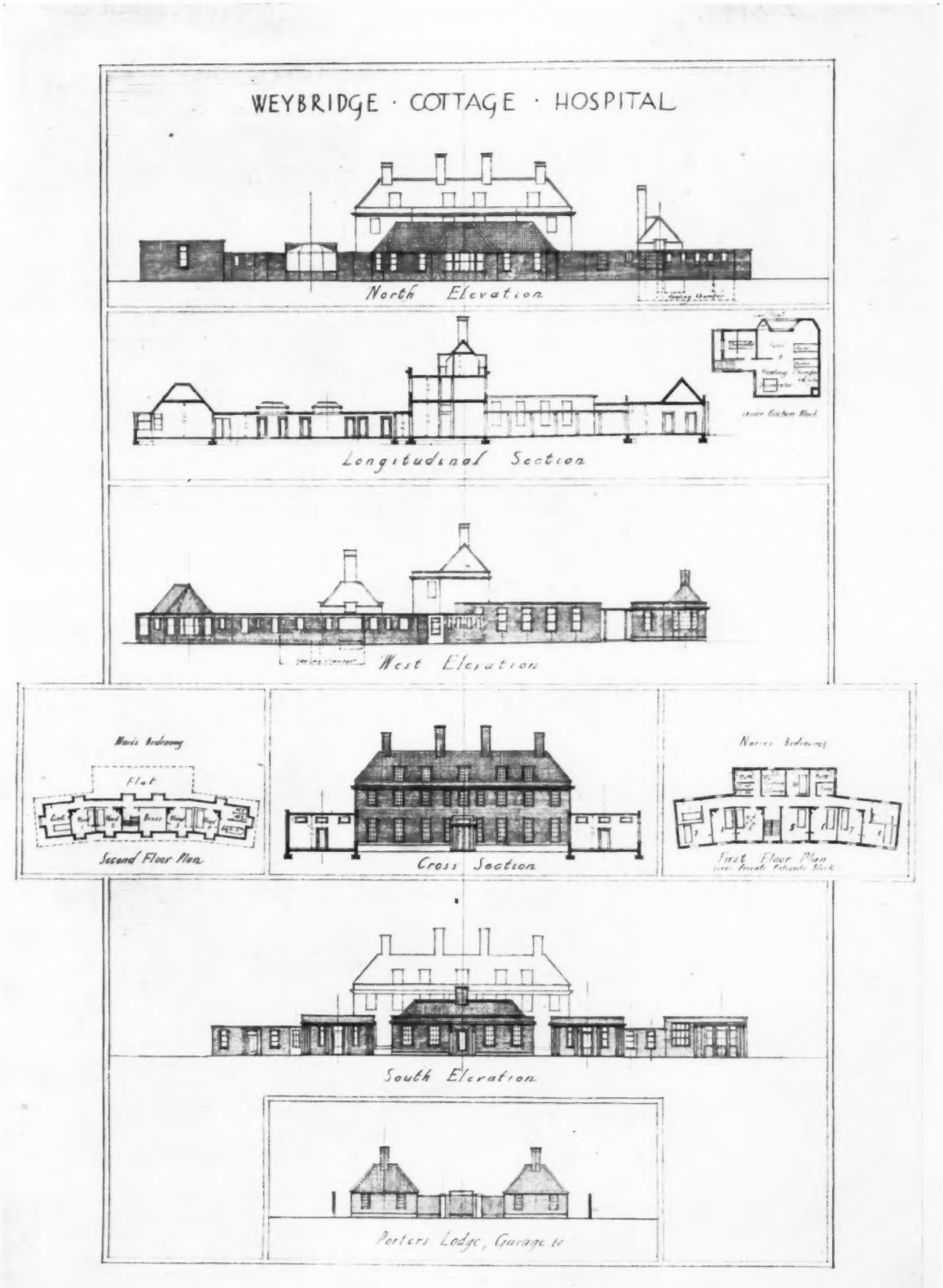
The great value to the architect of an exhibition of this kind is that it enables him in a comparatively short space of time to gather a general impression of the activities of manufacturers and craftsmen. He has an opportunity of seeing new materials and machinery and new methods of building; he meets old friends and probably attends some of the special functions which are now so important an adjunct to the exhibition.

To the manufacturer or the craftsman the exhibition is no less valuable; but the results he obtains from it will largely depend upon the preliminary preparation, and upon how the spade work done at the exhibition itself is subsequently followed up. The good impression made there may easily be forgotten, and it is the merest business prudence to meet the strenuous competition which exists in all branches of the building trade to-day, and to keep the claims of the firm prominently before architects by taking full advantage of the powerful help offered by the advertisement columns of the professional Press



WEYBRIDGE COTTAGE HOSPITAL COMPETITION: THE WINNING DESIGN. KENYON AND LIVOCK, ARCHITECTS.

This competition was limited to seven competitors, the award of the assessor, Mr. William A. Pite, F.R.I.B.A., being as follows: (1) Messrs. Kenyon and Livock. (2) Mr. Percy J. Westwood. (3) Messrs. Lanchester, Lucas, and Lodge.



WEYBRIDGE COTTAGE HOSPITAL COMPETITION. THE WINNING DESIGN. KENYON AND LIVOCK, ARCHITECTS.

The conditions required a hospital of thirty-six beds—twelve each for men and women, a children's ward for six cots, and six private wards. An electrical and radio-therapeutic department is incorporated.

The Royal Masonic School Competition

The Winning Design

As announced in our last issue, the design of Mr. Henry C. Smart, F.R.I.B.A., of Messrs. Davis and Emanuel and Henry C. Smart, architects, has been placed first in the competition promoted by the Royal Masonic Institution for Boys, for a junior school at Bushey, Herts.

In the winning design the buildings have been planned on the high ground, the axis of the plan taking a north-westerly direction from the highest portion of ground at the junction of London Road and Falconer Road.

The central feature of the scheme is a large quadrangle with cloisters around, having the big school and entrance on the south, the classrooms on the west, the dining-room block on the east, and the boys' houses on the north side spreading east and west on a curved front, following, to some extent, the contours of the ground; the headmaster's house being placed on the axis. The whole of the boys' houses and the headmasters' residence overlook the playing-fields.

The entrance is from the London Road, opposite Merry Hill Road. This is nearer Bushey railway station, is more suitable for the level than if placed on the axis, and has the further advantage of preserving the beautiful old-world garden of the present house for the use of the school. The power-house is at the extreme east of the site, with entrance from Finch Lane.

The whole of the foregoing buildings are connected by covered ways or cloisters, beneath which is placed the main subway for pipes, etc., thus giving a direct run from the power-house for heating, hot water, and electric mains, etc., with branch subways north and south to feed the several buildings. The assistant-masters' residence is placed to the west of the classrooms. The infirmary and sanatorium are placed well away from the houses and schools, next Falconer Road and Finch Lane, but sufficiently near to the kitchen department to be served by it. The entrance to the sanatorium is from Finch Lane.

MR. HENRY C. SMART, F.R.I.B.A., THE SUCCESSFUL ARCHITECT.

The design of the buildings has been kept simple, collegiate in character, depending for effect upon the grouping and proportion of the several buildings. The materials proposed are Luton facing bricks with red-brick dressings and quoins, and red-tile rustications. The small quantity of stone used would be Portland. The roofs would be covered with sand-faced Broseley tiles.

The houses and schools have been planned to comply with the requirements of the Board of Education and of the committee in the matter of cross ventilation by windows with low sills.

The boys' houses have been planned as semi-detached houses, and arranged on a curved front, with all the day rooms overlooking the playing fields. The accommodation provided is in accordance with the schedule. The dormitory provides a superficial area of 65 ft. per boy, as required by the code of the Board of Education. The present senior school provides 56¾ ft. super per boy. Escape stairs are provided to the dormitories in the cross ventilated approaches to the lavatory spur buildings, thus giving direct communication between the dormitories on first floor and the lavatories on ground floor. The accommodation asked for on the first floor is so much in excess of that on the ground floor that the box-room and clothes room are placed on the ground floor instead of the first floor, a portion of the ground floor being used as the covered playground, thereby avoiding the provision of unsightly shed buildings. Each sanitary kiosk is conveniently placed to serve four houses, with easy access from each.

The condition that all classrooms must be cross ventilated by windows with low sills determines the type of plan. This makes a costly type of building owing to the increased length of corridor.

The music school has been placed to the east of the big school. It is within easy reach of the classrooms, but well separated from them by the big school. It is also conveniently placed in relation to the platform in the assembly hall.

Special care has been taken in designing the dining and kitchen block to make the kitchen department the hub to the various dining-rooms. The larders and stores are all conveniently placed and within easy access of the kitchen. The kitchen would be fitted with gas roasters, boiling plates and griller, with steamers and boilers fed by live steam from the power-house. The servery would have steam hot-closet and carving-table. The domestic staff quarters are arranged in conjunction with the dining and kitchen department.

The infirmary and sanatorium have been planned to get a maximum amount of sunshine in the wards, and with special regard to easy supervision.

Excepting where fireplaces are shown on the plans, the whole of the buildings will be warmed by low-pressure hot-water pipes and radiators. The positions of radiators are shown on the plans.

The whole of the buildings, covered ways, and principal roadways are to be fitted for electric light for a total of approximately 1,500 lamps of an average consumption of 40 watts per lamp.

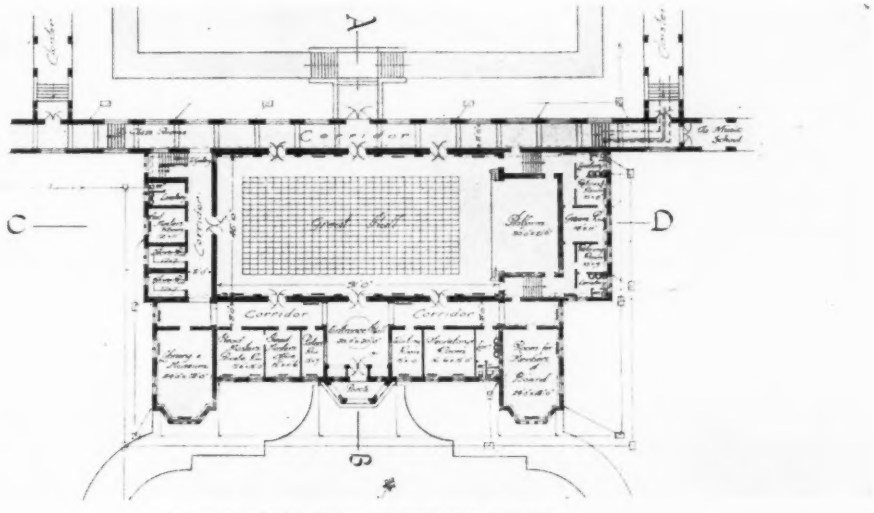
The Winner.

Mr. Henry C. Smart, F.R.I.B.A., was educated privately. He entered the office of John Wimple in 1870, and subsequently that of John Johnson at 9 Queen Victoria Street. In 1887 he went to the office of Davis and Emanuel as chief assistant, and fifteen years later was taken into partnership. Mr. Emanuel died in 1904.

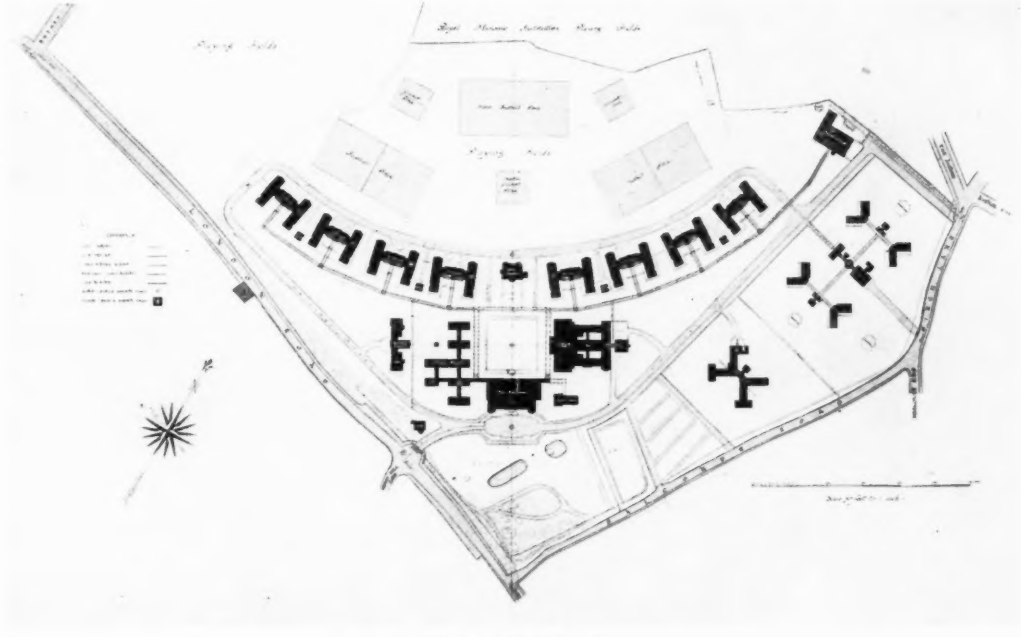
Mr. Frank T. Baggallay, F.R.I.B.A., the assessor, in his report says: The seven designs submitted are exhibited by 580 drawings and 197 typewritten folios; and it has been necessary to study these closely, for though most of the designs have some excellent features, there is none that I can confidently recommend you to carry out as it stands in a satisfactory manner for less than a 10 per cent. addition to the £240,000 allowed.

The competitors have evidently found difficulties in dealing with the site: in the large amount of accommodation required on the first floor of the boys' houses, as compared with that below, and, on combining adequate cross-ventilation in the kitchen department with a convenient and labour-saving concentration. But it is evident that the limit of cost has been the chief difficulty, and has generally resulted in cramped dimensions, inferior construction or underpriced estimates. My examination of the designs has convinced me that the required accommodation in a convenient form, and in buildings of sound construction and materials, must involve a larger expenditure than £240,000.

The design marked (D), though not a perfect solution of the problem set by the "Instructions and Conditions," approaches, in my opinion, more nearly to such a solution than any other. An injudicious desire to preserve the existing gardens has led the competitors to place the buildings farther down the hill than necessary, and you will probably desire a more permanent form of covered-way than a timber-framed one. But in other respects the arrangements are generally good, and in several departments are the best proposed. The specification of materials and construction are particularly full and satisfactory; my check of the estimate makes this one of the least costly designs, and the architectural character of the buildings is simple and pleasing without extravagance or superfluous ornamentation.

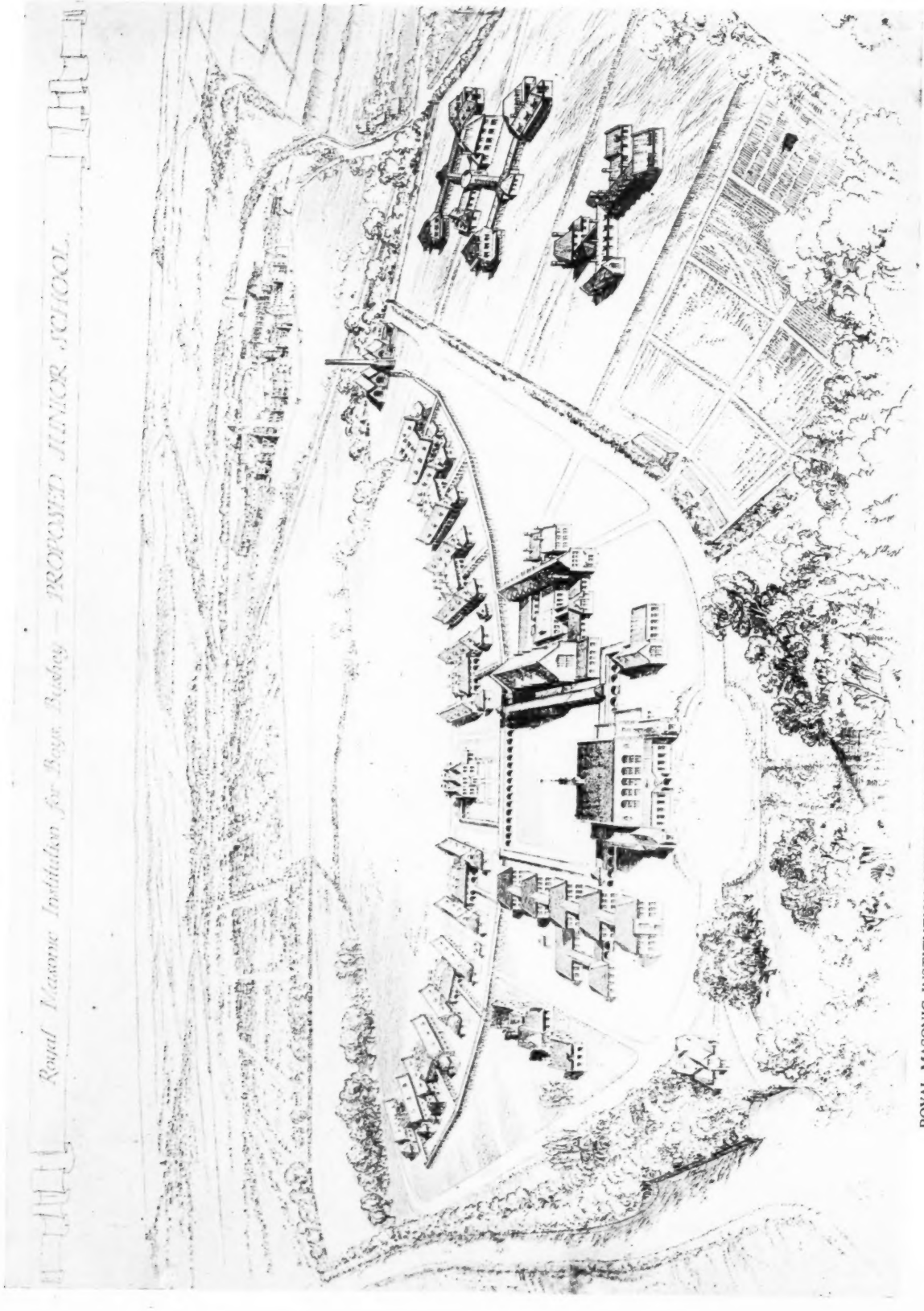


GROUND FLOOR PLAN OF THE BIG SCHOOL.



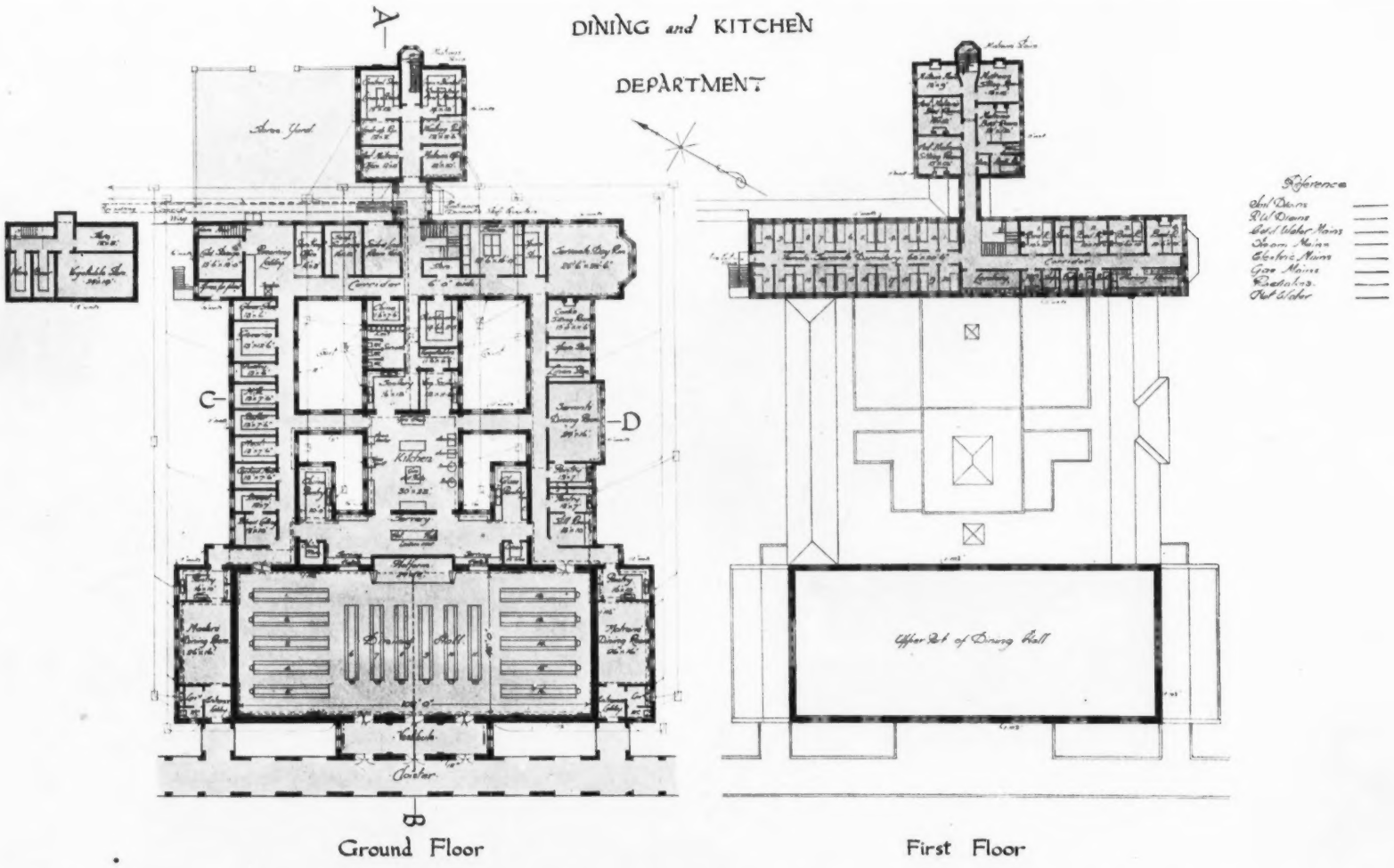
THE LAY-OUT PLAN.

ROYAL MASONIC INSTITUTION JUNIOR SCHOOL FOR BOYS COMPETITION. BUSHEY, HERTS: WINNING DESIGN.
HENRY C. SMART, F.R.I.B.A., ARCHITECT (DAVIS AND EMANUEL AND HENRY C. SMART).

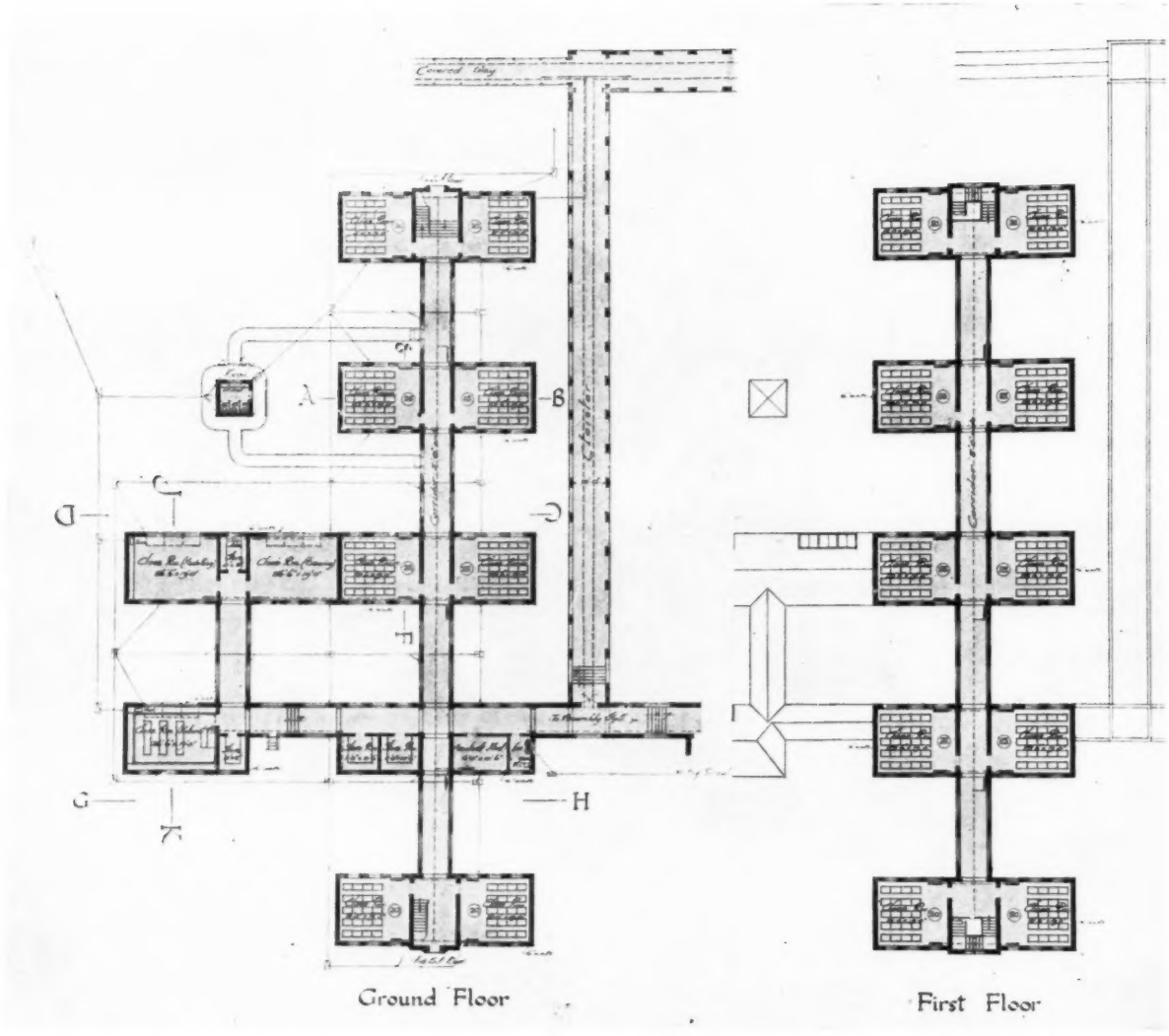


ROYAL MASONIC INSTITUTION SCHOOL FOR BOYS COMPETITION, BUSHEY, HERTS: BIRD'S-EYE VIEW OF WINNING DESIGN.
HENRY C. SMART, F.R.I.B.A., ARCHITECT (DAVIS AND EMANUEL AND HENRY C. SMART).

HENRY C. SMART, F.R.I.B.A., ARCHITECT (DAVIS AND EMANUEL AND HENRY C. SMART).



ROYAL MASONIC INSTITUTION SCHOOL FOR BOYS COMPETITION, BUSHEY, HERTS: PLANS OF DINING AND KITCHEN DEPARTMENT. WINNING DESIGN.
HENRY C. SMART, F.R.I.B.A., ARCHITECT (DAVIS AND EMANUEL AND HENRY C SMART).



ROYAL MASONIC INSTITUTION SCHOOL FOR BOYS COMPETITION, BUSHEY, HERTS: CLASS ROOMS.
HENRY C. SMART, F.R.I.B.A., ARCHITECT (DAVIS AND EMANUEL AND HENRY C. SMART).

The Rome Scholarships

The Faculties of Art of the British School at Rome have selected the following candidates to compete in the final competitions for the Rome Scholarships of 1924.

Architecture.

C. T. Bloodworth	University of Liverpool.
D. L. Bridgwater	University of Liverpool.
Donald Brooke	University of Liverpool.
J. H. L. Owen	University of Liverpool.
Elsie Rogers	University of Manchester.
H. S. Silcock	University of Liverpool.
M. A. Sisson	University of London.
Herbert Thearle	University of Liverpool.
Francis X. Velarde	University of Liverpool.

Sculpture.

J. Barbara Hepworth	Royal College of Art.
Pamela V. Harris	Mr. C. S. Jagger's Studio.
Emile Jacot	Slade School.
John R. Skeaping	Royal Academy Schools.

Decorative Painting.

Henry M. Carr	Royal College of Art.
Barbara Cayley-Robinson	Royal Academy Schools.
Robert Lyon	Royal College of Art.
John E. Nicholls	Royal College of Art.

Engraving.

Edward B. Hoyton	Goldsmiths' College.
W. E. C. Morgan	Slade School.
Edward C. Prust	Slade School.
G. V. Sutherland	Goldsmiths' College.

The works executed by the successful and unsuccessful candidates in the open stages of the competitions will be on exhibition at the Royal Academy, Burlington House, till March 1.

Little Things that Matter. 26

The Planning and Arrangement of Furniture in Living Rooms (3)

By PERCY V. BURNETT, A.R.I.B.A.

The Lounge Hall.

THE term "lounge hall" has been abused so much by estate agents and speculative builders that it is now regarded with considerable suspicion, but I use it to distinguish between a hall that can be used as a sitting room, and one which is nothing more than a glorified passage. Possibly the modern lounge hall is a survival of the reception hall, which was so beloved by our forefathers, and which in turn developed from the baronial hall of the middle ages. Where a lounge hall is required it should still be the central point around which we plan our house. But from the start we must differentiate between a hall that can be used as a sitting-room, and one required to be planned "en suite" with the other living rooms for entertaining purposes, as it is difficult to design the room successfully for both these uses.

A hall that can be thrown into the adjacent living rooms for entertaining is usually very draughty when used separately, and many halls which appear delightfully convenient and symmetrical on plan are really most uncomfortable for this reason. Fig. 1 shows a lounge hall of the type one sees illustrated in the technical Press with frequency, but such a room is quite useless alone. However, one can sympathize with the designers because many clients insist upon this arrangement, and there is often no alternative between a draughty hall and making the room into a completely separate sitting-room, which may not be required. A better arrangement is obtained by the use of a folding screen with a lift-up cill. This screen can be folded out of the way when it is required to inter-connect the various rooms, and can be used to divide off the lounge as a separate room when necessary. A lounge hall should never be used as a service passage, and maids should be able to approach the other living rooms without passing through it. There should always be a service hall (which can also be the entrance lobby), quite apart from the lounge hall. Fig. 2 shows how a folding screen can make a lounge hall meet these requirements.

Some clients ask for an imposing staircase starting up from the lounge hall, but this arrangement seriously aggravates the draught trouble without providing any special advantages. Even where the same temperature is maintained throughout the house by central heating, a staircase leading off a living room will cause a very bad draught. For the same reason a multiplicity of doors tends to destroy its usefulness as a sitting-room.

Lounge furniture will normally consist of settees, small tables, armchairs, and cabinets for bric-à-brac, but it is unwise to provide for any formal arrangement. The floor should be of wood blocks covered with loose rugs, and where there is no library or study in the house it is preferable to provide book storage in the lounge than to encumber the dining-room and drawing-room. Whereas the furniture and decoration should be informal to make a comfortable lounge, we must remember that if the room is to be thrown into the adjacent living rooms at any time, the contrast, particularly of colour, should not be too violent, and should rather be a contrast of shape than of decoration. The dimensions of a lounge hall cannot be fixed by its uses, but a minimum of 150 ft. super is desirable.

Nurseries.

The position of the nursery in a house plan must be dictated first by aspect, and secondly by the intended working arrangements of the house. Too much importance cannot be given to the question of aspect, sunlight being an essential ingredient to the healthy growth of a child, not only because of its rays, but also because sunlight is the greatest enemy of disease germs. A night nursery should have a south-east aspect, and never south-west, where the rays in summer evenings will keep the children awake. A day nursery can have any aspect from south-east to west.

If a nurse is to be employed, the nursery is best placed on the first floor, well away from the living rooms; but if the housewife intends to minister to the needs of her children the nursery should be situated where a watchful eye can be kept upon it by a person on the ground floor. When it can be afforded, day and night nurseries should be provided, with a nurse's room adjacent, but in the majority of small houses one room will have to suffice.

A night nursery should be of sufficient size to allow 750 ft. cube per child, and should have its own ventilated linen cupboard. The furniture required will consist of cots, a small dressing-table, a washstand or lavatory basin, and plenty of enclosed shelving. Cots are usually 2 ft. 3 in. by 4 ft. 6 in., and are better without the hood draperies of which mothers are so fond. Where possible the night nursery should communicate directly with the day nursery. Children, especially when very young, are extraordinarily

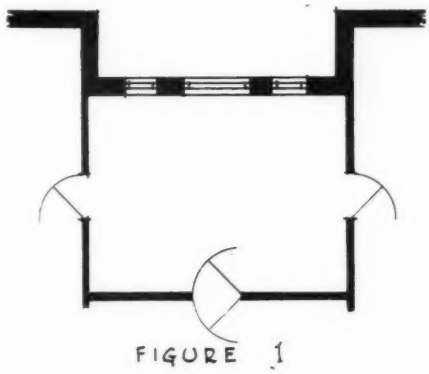


FIGURE 1

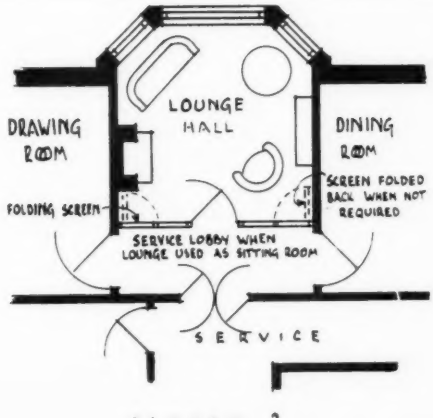


FIGURE 2

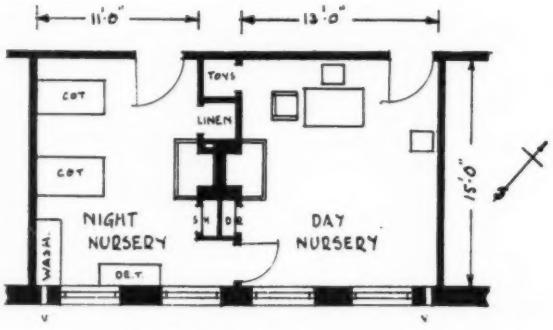


FIGURE 3.

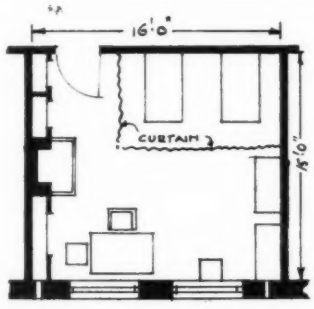


FIGURE 4

susceptible to colour, and this must be borne in mind when decorating the night nursery, because reds, orange, and yellows will promote wakefulness instead of sleep. Too much white is also not advisable, as it strains the young eyes.

A day nursery should be as large and airy as conditions permit, should have a larger window area than a living room of the same size, and the glass line should be low. The less furniture installed the better, because a child delights in crawling round the floor with his toys, and as much floor as possible should be unobstructed. A table, small chairs, baby chairs, and a small dresser with a toy cupboard underneath, provide all that is normally required. Simple painted furniture, devoid of mouldings, is the most suitable. It can be washed, and many varieties can be obtained at a reasonable cost. The floor covering must be soft and washable, cork carpet or sawdust composition being especially suitable. Where the heating is by a coal fire, a guard fence, 3 ft. high, should be provided as a fixture, and firmly screwed to the floor. A gas ring will save the nurse many journeys to the kitchen, but the tap must be well out of reach of the children. A vent grating should be provided high up in the external wall. For preference it should be of a type that cannot be closed, as nurses are apt to consider their own comfort before the health of their charges.

In decorating a nursery it must be remembered that dust is responsible for many of the children's ills, consequently moulded architraves, skirting, etc., must be avoided, and all corners should be rounded. Walls should be distempered a cheerful colour in preference to white, and children will appreciate a stencilled or paper frieze depicting scenes from fairy stories. In America, where they seem to spend more money on small houses than we do, it is not uncommon to find tiled nurseries with frieze designs in faience, but in England the cost is prohibitive, and it is not intended here to comment upon such expensive types of decoration, of which there are many. Fig. 3 shows a simple day and night nursery plan embodying the foregoing.

When one room has to serve as a day and night nursery, an alcove for the cots, which can be screened off in the daytime, gives a better appearance to the room. If this cannot be arranged a corner curtained off is better than leaving the cots exposed and giving the children the feeling that they live continually in their bedroom. (Fig. 4.)

In a large house a separate bathroom adjacent to the nurseries is a great advantage, and a mixing valve and spray on a short length of hose should be provided, because a child is best bathed in running water, so that all soapy water goes straight to waste and is not re-used.

Linen and Sewing Rooms.

The storage of linen is worthy of more consideration than it normally receives, and the provision of a small properly fitted linen-room is essential in every house, the old-fashioned linen press being inadequate for modern needs. A warm atmosphere and free circulation of air are necessary, and where possible there should be a small window, not only for ventilation but also for daylight. Warmth may be provided by a radiator, a hot-water storage cistern, or a coil of pipes, but care should be taken not to overheat the room, as too much warmth gives the linen a "fusty" smell, and will in time affect the flax. The most economical and efficient method of heating to adopt in a small house is to carry the hot-water circulation flow-pipe round the room against the wall, a few inches below the bottom shelf.

Where there is an external wall a small vent grating should be provided, or if the room is internal it may be possible to carry up a 9 in. by $4\frac{1}{2}$ in. flue. When neither of these alternatives is possible, ventilation may be over and under the door, but this is not to be recommended, as it admits too much dust to the room.

Shelving should be of 2 in. by 1 in. wrot. battens 1 in. apart at right angles to the wall, and hardwood should be used if it can be afforded. The shelves should be 15 in. deep, and 1 ft. 9 in. apart vertically, the top shelf not being higher than 5 ft. 6 in. The free edge of the shelf should be finished with a rail with rounded nosing. The amount of shelving required for average houses may be taken as 15 ft. run of 15 in. shelf for four persons, increasing 2 ft. 6 in. (i.e., 10 in. if three tiers) for each additional person to be housed. Fig. 5 shows a suitable linen-room for a house occupied by seven persons.

If space is available, airing hangers will be found very useful. These consist of cantilever brackets, with a projection of 18 in. from the wall. They should be fixed 5 ft. 6 in. above floor level, and about 2 ft. 3 in. apart. Where there is not room for them, a few $1\frac{1}{2}$ in. rounded battens carried across from wall to wall about 6 ft. 3 in. above floor level will be almost as useful.

In a large house, where the quantity of linen to be stored is considerable, a small sewing-room adjacent to the linen-room should be provided. This little room need not be larger than 10 ft. by 5 ft., and should contain an ironing table (with gas ring or plug for electric iron) with a cupboard underneath for work boxes, etc., and there should also be room for bins for sorting soiled linen. Fig. 6 shows a linen-room with small sewing-room adjoining, suitable for a household of twelve persons.

[The previous articles on the "Planning and Arrangement of Furniture," appeared in our issues for January 30 and February 20.]

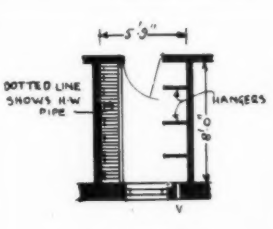


FIGURE 5

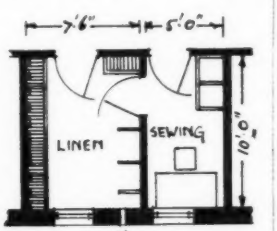


FIGURE 6

Correspondence

The correspondence of readers is welcomed. It is naturally preferred that a letter should bear the name of the writer, but the use of a pseudonym is permissible. The Editor does not necessarily associate himself with the views expressed. Anonymous letters cannot be published.

The Defence League Circular

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—The Defence League circular signed by Mr. Cross and Mr. Perks, with which members of the R.I.B.A. have been favoured, indicates clearly that the policy of this League is now definitely anti-registrationist for reasons set out in the circular, as well as against any real reconciliation with the Society of Architects.

Every vote given for the League is therefore a vote given against Registration.

Whatever the policy of the present Council may be, its members were certainly not elected by an overwhelming vote at the last election to give up in so half-hearted a manner the attempt to find a solution of this difficult problem, and it is therefore to be hoped that members will wait until the proposals of the Council are announced before lending their suppprt to such a retrograde movement as is foreshadowed in the Defence League circular.

MAURICE E. WEBB.
Hon. Secretary, 1922 Emergency Committee.

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—I have received another circular letter from the R.I.B.A. Defence League. The points therein seem to me to lack the force and reason that a previous document anent registration possessed. For instance, the fact that we have not a "public case," and are unable to put one before our Parliamentary Agents on such a vital matter to the profession as registration, leads me to think we had better put an end to dissension and try to make the Institute an harmonious and live body, of real assistance to its members.

Why should we trouble about such items as :—

(1) The temporary loss of dignity, because a few probably quite capable, but unqualified men, are admitted to its ranks.

(2) Considering whether it is consistent with professional etiquette to draw public attention by notice boards to the fact that plans of new buildings can be seen at an architect's office.

(3) Endeavouring to make its members dress up in gowns or pose as artists, when the majority are struggling professional men trying to make a bare living, some even as assistants.

Objects that are "purely defensive" do not lead to progress.

One of the few practical matters taken up by the R.I.B.A., which has led to good results for its members and the public, is the banning of unfair competitions, and *this* was the result of united action.

With regard to the need for registration or unification, in a suburban town at a recent meeting of the General Purposes Committee, out of forty-seven sets of plans submitted for approval by the local authority, only eight sets were prepared by architects. In this same town there is a builder whose office windows are filled with drawings of "villas" and "bungalows" of questionable design, and who further offers to submit plans for intending clients, of whom, incidentally, he obtains a great many. These are facts which it is useless to dream over or pass by.

Our Institute has long aimed to improve the public taste and raise the dignity of the profession, and it is not by its present methods or by public lectures that it will quickly and satisfactorily attain these ends, but by a scheme of registration or unification by Act of Parliament which will effectually prevent the present scandalous methods, which are a disgrace to the architectural world. No building can be erected without consent of the local authorities; therefore, why not make it compulsory for all plans submitted to local authorities to be prepared by an architect qualified by Act of Parliament ?

Times are changing, and a sane and vigorous policy is needed, otherwise the position of the architect will become worse instead of better. A. ARCHER-BETHAM, A.R.I.B.A.
(Rees and Archer-Betham).

Modern Knight-Errantry

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—Your readers will be likely to wonder what Miss Frances Prewett is referring to in her article under the above heading published in your last issue. May I explain then, that in one of the articles "Karshish" contributes to this JOURNAL I touched the subject of posters and sky-signs, and also, it seems, touched the conscience of the secretary of the Publicity Club of London, who rang me up on the telephone to ask if I would address the club upon a subject which lay so closely upon all our hearts.

The Publicity Club thoroughly understood my hostility to most of the activities of publicity agents, and it was impossible for me to refuse a proposal made in so sporting and generous a spirit; but Miss Prewett is wrong in supposing that I regarded my appearance at the Hotel Cecil as that of a knight-errant. I did not. I felt like a rat at a dog show, and I was, accordingly, the more impressed by the friendly welcome I received and the not less friendly protestations with which I was allowed to depart.

I am so much in sympathy with all exploits of the pen that I will make no protest against Miss Prewett's witty version of the event, but I think she will agree with me that the evening was well worth while. Frankness is always worth while when it is met frankly, and I at least am a gainer in finding that what I have observed to be true in other controversies is revealed of this one: namely, that all men are "brothers under their skins," and that men are commonly far better than the systems they serve.

A forgotten proverb which I came across in Defoe the other day says: "If you take the devil aboard you've got to sail with the devil." That is very much the sense of the last paragraph of Miss Prewett's "modern commentary," which, to my mind, reaches the heart of the whole uproar; and I am impressed by the fact that, in the last speech made, the club's secretary, Mr. Douglas Mugford, struck the same note in proclaiming that the organization of the Publicity Club was directed against commercial falsities, that the law had been invoked to support that policy, that truth was the watchword of the club.

It appears, therefore, that our differences are not in principle, but in degree only, and that by calling attention to the invasion of life by low commercial standards in the hope of speeding the reaction which has already, it seems, begun in America, I am serving the ideals of the Publicity Club as well as the interests of my profession and the welfare of the community.

Miss Prewett speaks of my "attack," though it is, in fact, a defence. My utterances on this subject were provoked by the attempt of a commercial man to subvert the principles of my profession, and have been sustained by the continued evidence of trade influences subtly directed to undermining a calling which alone among "open" professions has maintained a compact and effective front against infection of its code with the germ which has diseased commerce. My opponent is quite right in discerning that the difference between the two codes does not lie in any difference in the innate principles of individuals, but in the fact that the professions have protected themselves with a self-imposed discipline which supports the innate principles of individuals, while commerce, to a large extent, has neglected to do so.

If the profession of journalists owned the papers, if that of publicity agents enforced the ideals of the Publicity Club and established a professional code, I should have no incentive to be quarrelsome. On the other hand, suppose the law divested of its professional code! Who, then, could hope to get other justice than the paid for?

It must not be supposed from the foregoing that the difference in point of view is the less real because it is thus reduced to a narrower compass. I have not written hastily, and I have nothing to withdraw, but I hope Miss Prewett and others who fall foul of my views will accept my earnest assurances that I do not assail men, but certain things men do, the system they serve, the perversions they express, the fake motives that actuate them.

I have just one serious protest to make. Miss Prewett describes me as *jeering* at those unhappy victims of cupidity who are in the tragical position of having to violate their principles or face starvation. *I* jeer at the most pitiful and devastating result of the tyranny I abominate! *I* deride the pain of those in sympathy for whom I squander my time and multiply my enemies! *I* hold in contempt those whose injuries are the utmost wrong wrought by the stupid, soulless, pig-march of modern commercial enterprise!

There must be some confusion in my opponent's mind if she supposes anything of the sort possible. Nothing so moves me as the knowledge of the state of affairs she indicates (which is familiar enough to clergy and missioners of the people), the bitter laugh and shrug of men embroiled in the mess of the commercial system, the discontent and, worse, the cynical sophistication of the heads of firms themselves.

If Miss Prewett will use the cold, clear thought she commends to me, I think she will agree that she admits the actuality of the picture I have shown, the justice of my attacks, and the well-meaning of my purpose.

H. B. CRESWELL.

The Unwanted Prizes

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—May I, as a student of Glasgow School of Architecture, be permitted to summarize frankly what I consider is the root of the whole trouble? My effort is penned with that alacrity which is intended to help by suggestion the R.I.B.A. in their attempt to win back the apparent lost enthusiasm of the present-day student of the mother art, and my views are those felt by, and seen through the unbiased eyes of, a student.

To begin with, in my opinion our architectural education requires revision. I feel that I frankly and truthfully voice the opinion of the mass when I say that the training of the young architect in the schools to-day is, unless perhaps to a few highly-artistic students, futile. The strong, practical, and sensible student who refuses to fall into the slap-dash, sometimes ridiculously over-rendered, work necessitated by school work is, by his own conscience, chased out of the schools. To be concise, we must have some line drawn whereby students must be constructionally sound before they are allowed to render their drawings at all. In our own school, for example, as in many others no doubt, far too much stress is laid on rendering, and it is quite a common occurrence to see a first-year student, with little or no constructional knowledge, splashing blue backgrounds, trees, etc., on to his sheet to make up for his vagueness of effort as regards solidity and design itself. This system in the schools is weakening the student, so much so that that self-same student, whilst being able to turn out a nice, first-impression drawing, finds that that alone does not carry him forward with the confidence he requires for competing towards bigger objectives. In short, he sees his shortcomings sufficiently enough to deter him from making an attempt at all for the big prizes. His incompetence does one good thing, it makes him modest.

Secondly, the courses themselves are overcrowded with a diversity of classes unparalleled in the history of architectural education. Physics are about as much good to an architect as botany. This diversity and crowding of classes demands hustle, hustle demands shoddy work, highly rendered to screen practical deficiencies. In the concise, again, students have no time left to compete for the Institute prizes. Cut out the unnecessary classes and time would be found. A bricklayer need not build half-a-mile of brick walling to convince one of his efficiency as a builder.

Thirdly, statistics tell their own morbid stories in the schools. Average the annual numbers of students attending these courses and place these figures side by side with the figures of those who complete their courses. The percentage would astound one. Surely all these unenthusiastic people who drop off are not lost to architecture? Are they all failures? I think not. What then, is the matter? Are they sick of the present system, sickened so much as to give a cold shoulder to their opportunities of winning something worth while?

It is of vital importance to the world of architecture that our system should be changed as regards architectural education. Only close touch with the schools can drive this home. The student is losing his confidence. It is up to the R.I.B.A. to win it back for him and assure him that the training he gets at the schools can aid him in the bigger things of life. An apple may have a very rosy and shining, yea, healthy-looking coat, but if the core is diseased that apple cannot be expected to lift a prize at a horticultural show when it is cut open. Students trained under the present system are like apples in this respect. "SCRIBE."

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—My son is articled to a firm of architects and has one and a half years to serve. He has been working at the drawing-board for eight hours per day, and is expected to qualify as A.R.I.B.A. during his leisure. Each winter he has studied closely, working five and six evenings per week, and has won prominent prizes and certificates for his subjects. Intensive study is now being undertaken for the intermediate examination (if he survives the pressure). If the profession desire their pupils to win prizes, surely some respite from continuous pot boiling would make for double-edged efficiency. "PATER."

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—The unfortunate architectural students who cannot afford to attend the schools will certainly feel uncomfortable when reading such matter about the suppression of the articled pupil appearing in your issue for February 13. It must be remembered that the pupilage system is not without its advantages, and if given a little more encouragement, would probably bring forth many entrants for the prizes and studentships. Who can wonder at the lack of enthusiasm amongst assistants under the existing conditions? V. A. J.

Furniture in Living Rooms

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—If sliding shelves in a man's wardrobe are foreign to Mr. Burnett, I can only suppose him to be a foreigner, for if he studies examples of the best English furniture he will find that men's wardrobes were never made in any other way. They invariably combine a range of drawers and a cupboard with a range of sliding shelves. Moreover, if he consults any West End tailor he will be told that the proper way to keep suits is not by the foreign method—a recently imported method—of hanging them, but by laying them, properly folded, on shelves.

Mr. Burnett's first paragraph is an odd one. The presence of books in a room does not invalidate that room's use for "resting, entertaining, or eating," except, perhaps, for those to whom the mere presence of anything so serious as a book has a disagreeable effect. It is surely fairly obvious that since books must—with a few exceptions—stand against a wall, their accommodation presents difficulties that do not occur with furniture free from such a restriction.

"AJAX."

Societies and Institutions

Birmingham Architectural Association.

The annual dinner of the Birmingham Architectural Association was held under the chairmanship of Mr. Rupert Savage, F.R.I.B.A., the president. Among those present were the President of the R.I.B.A. (Mr. J. Alfred Gotch, F.S.A.), Mr. T. R. Milburn (Northern A.A.), Mr. E. P. Warren (Berks, Bucks, and Oxon A.A.), Mr. Stockdale Harrison (Leicester Society of Architects), Mr. J. M. Dosser (York Architectural Society), Mr. John Bellis, and Mr. W. J. Wainwright, A.R.A. (Royal Birmingham Society of Artists).

The toast of the City of Birmingham was proposed by Mr. William Haywood, F.R.I.B.A., who said there were certain institutions in the city of which they were all justly proud. Amongst these was the Repertory Theatre, and it was with consternation that they had learnt of the intention to close it. He hoped that even at this late hour steps would be taken to prevent Birmingham from losing it.

The R.I.B.A. was proposed by Mr. Rupert Savage, who said that the Institute recognized that if architects were to receive the public support and appreciation which was desired they must fit themselves to justify their claim, and there were now established all over the country schools of architecture directly under the control of, and largely supported by, the Institute. He hoped that the presence of these schools would tend to correct the great ignorance of architectural matters which existed amongst the general public, which was due to some extent to the failure of the Press to give to architecture the prominence that they gave to the other arts of which it was certainly equally deserving.

Mr. Gotch, in reply, said that it was with the greatest satisfaction that he observed the large part now being played by the allied societies, more particularly by the committee of presidents of allied societies. There was no doubt that as a result the policy and scope of the Institute's activities were being considerably broadened and a new spirit of enterprise was apparent. The part played by the allied societies had been large,and he hoped it would be larger still. The Institute had done much in the last few years to awaken public interest in architecture, and he felt that its efforts were now beginning to bear fruit.

The Surveyors' Institution.

At the last meeting of the Surveyors' Institution a paper was read by Mr. Alan Paull, F.S.I., on "Approximate Estimates," and one by Mr. J. J. Done, F.S.I., on "Approximate Estimating for the Development of Building Land." Dealing with the "cubing" of new buildings, Mr. Paull pointed out that the cost per cube ft. could only be safely arrived at by experience and by a comparison with the actual cost of similar work. He said to attempt to make a schedule as to the prices for various classes of building would be absolutely misleading and valueless, as practically every job had to be viewed, so to speak, from its own angle. Not only had size to be considered, but position, whether the site was easy of access, whether the materials proposed to be used were easily obtainable in the locality, the general character of the finishings, and many other points. It might sound a heresy to many, but success in deciding on the amount for approximate estimates depended largely on "intuition," and no rule-of-thumb could be laid down without becoming a trap for the beginner. After deciding the price per foot cube for the building, in many cases the cost of central heating, electric wiring for lighting and heating, drainage, fencing, and paths had to be considered. In the first two cases it was advisable to pass on the approximate estimates to specialist firms, and in the remainder to take out the quantities roughly and price them at current rates. The cost of all these having been ascertained, the additional price per foot cube could be calculated and the report made out.

Mr. J. J. Done, in his paper, estimated that to develop building land would cost £750 per acre, compared with £300 in 1914. He mentioned that in July, 1914, he received an estimate of £1,129 for the construction of a road 730 ft. long and 50 ft. wide, and that in May, 1922, another estimate for the same road came to £2,621.

The York and East Yorkshire Architectural Society.

Amongst those present at the annual dinner of the York and East Yorkshire Architectural Society were: Messrs. Stephen Wilkinson (president of the York and East Yorkshire Architectural Society), J. Alfred Gotch (P.R.I.B.A.), W. T. Jones (president of the Northern Architectural Association), Ian MacAlister (secretary of the R.I.B.A.), J. E. Reid (hon. sec. York Society), E. A. Pollard (hon. treasurer York Society), George Benson, F. T. Penty, J. Oldham, J. M. Dossor (Hull), S. R. Kirby, L. Kitchen (Hull), Dudley Harbron (Hull), A. B. Burleigh, J. S. Syme, S. G. Highmoor, A. Cowman, S. Needham, C. W. C. Needham, W. E. Parkinson. R. Jackson, C. Leckenby, J. Vause, H. Monkman, T. Snowden (Hull), and T. E. Cliffe.

Mr. Gotch, outlining one or two points which might possibly be considered by the Institute in the near future, hinted at the possibility of fusion with the Society of Architects. Personally, he saw no reason why the two bodies should not work as one for the benefit of architecture. The Institute was not run by architectural politics, the members were really striving single-heartedly for the benefit of the profession. United and widespread action would vastly advance the interests of architecture and architects.

The Architects' and Surveyors' Assistants' Professional Union.

The Metropolitan branch of the Architects' and Surveyors' Assistants' Professional Union paid a visit to Britannic House, Finsbury Circus, now being built from designs by Sir Edwin Lutyens, R.A., F.R.I.B.A. The visitors were especially interested in the original carving of the keystones, both on the exterior face in Finsbury Circus, in Portland stone, and in the entrance hall on the ground floor, in marble.

The building consists of ten floors. In the basement are placed three oil-fed boilers to supply all the hot water required throughout the building, and for heating the building in the winter with radiators placed at various points. The rooms and entrance halls on the ground floor will be lined with marble. The absence of columns about the building upon the upper floors was very noticeable, the floors being carried by deep beams running across the whole width of the building from one external wall to the other.

The site was in olden times just outside the city walls, close to the Moorgate entrance. A stream ran through a culvert under the city walls. This culvert in time became choked up, causing the land outside the walls to become flooded, and to deteriorate into marsh land, hence the name of Moorgate. A trial hole sunk upon the site revealed a considerable depth of damp waste ground, so the foundations of the stanchions carrying the building were encased in concrete tanks, the grillage foundations being placed therein and filled in with asphalt in order to make them watertight. Numerous curiosities, old coins, etc., were discovered when excavating for the foundations. These were all handed over to the City authorities, and now form a special collection in one corner of the Guildhall Museum.

A vote of thanks to Mr. Parsons for showing the party round was proposed by Mr. Lionel E. Wheble, and seconded by Mr. Norman H. Cooper.

Acoustic Demands in Auditorium Design.*—4

By G. A. SUTHERLAND, M.A.

(*Concluded.*)

THE comparative absorbing value of different materials is also shown in Fig. 15, where curves are drawn showing how the absorbing powers vary with pitch.

Curve 1 is for a painted brick wall.
Curve 2 is for plaster on tile with a finishing coat.
Curve 3 is for wood panelling ($\frac{5}{8}$ in. pine on studding at 14-in. centres).
Curve 4 is for a special tile called Akoustolith.
Curve 5 is for a special hair felt.
Curve 6 is for hair cushions covered with canvas ticking and thin leatherette.
Curve 7 is for elastic cotton (cotton wool?) cushions covered with canvas ticking and short nap plush.
Curve 8 is for audience, per square foot or square metre as ordinarily seated.

The table given was compiled by Sabine as a result of his experiments. The absorbing power of a particular cushion was first determined by finding what area of it was required to produce the same effect on the reverberation in a room as was produced by 1 sq. ft. of open window. These open window experiments were difficult, because of extraneous sounds, and once this particular type of cushion was standardized the absorbing powers of other materials were found by comparison with it. The table enables calculation to be made in advance of construction or it enables us to specify the remedy for an unsatisfactory room already built, assuming that excessive reverberation is the fault. Certain materials commonly used in England do not appear in the table. Figures for such materials will probably be available shortly. Meanwhile in the case of hard materials it is sufficiently accurate to assume the co-efficient for the substance nearest the one under discussion, since, as is seen, the hard surfaces normally contribute so small a proportion of the total absorbing power of a room.

The method of using the table will be evident from the following example :—

A Room to be used for Chamber Music.

Volume : $20 \times 30 \times 15 = 9{,}000$ cu. ft.

Material.	Area. sq. ft.	Co-efficient.	Units of Absorbing Power.
Wood (floor)	600	0·03	18
Wood (panelling) ..	350	0·06	21
Plaster	1,750	0·034	60
Oil paintings	40	0·28	11
Curtains	120	0·23	28
Persons (scattered) ..	30	5·5	165
			303

According to Sabine's investigation the desirable period of reverberation in such a case is 1·1 seconds.

By Sabine's formula $t = 0{\cdot}05\ V/A$

i.e. $1{\cdot}1 = 0{\cdot}05 \times 9{,}000/A$

or $A = 0{\cdot}05 \times 9{,}000/1{\cdot}1 = 409$ units.

Units already present = 303. Additional units required = 409 − 303 = 106.

Heavy Oriental rugs provide 0·26 units per sq. ft., allowing for the floor space they cover up.

Therefore number of sq. ft. of Oriental rugs required = 106/0·26 = 408.

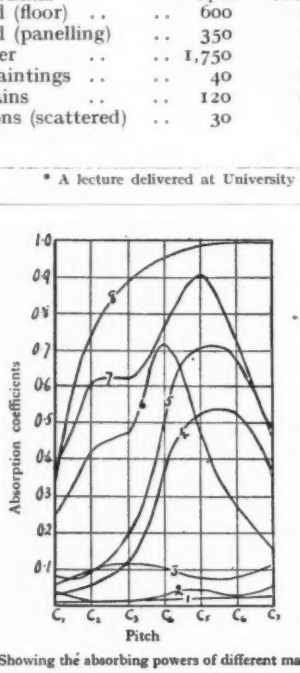
As the floor area is 600 sq. ft., this is a possible corrective to apply, but the cost would be about £100. It would probably be cheaper to use heavy curtains.

Our treatment of the musical aspect of the question must necessarily be sketchy. It has already been pointed out that the crispness desirable for speech will in music produce a staccato effect which is unpleasant, and that on this account a longer period of reverberation is desirable. The fixing of the desirable period and its attainment are complicated by the fact that the absorbing power of a given material is different at different pitches, as was clear from the diagram in Fig. 15. The bearing of this factor on the question of the accurate rendering of music will be clear from the following example :—

"In an empty room with hard walls such as a church the reverberation for a violin (middle register) and a double bass viol are about the same. The introduction of cushions reduces the reverberation for both, but in different proportions, so that the reverberation for the double bass is now twice that for the violin. The presence of an audience increases the disproportion still further. Since a difference of 5 per cent. in reverberation is a matter for the approval or disapproval of musicians of critical taste, the importance of considering these points is obvious."

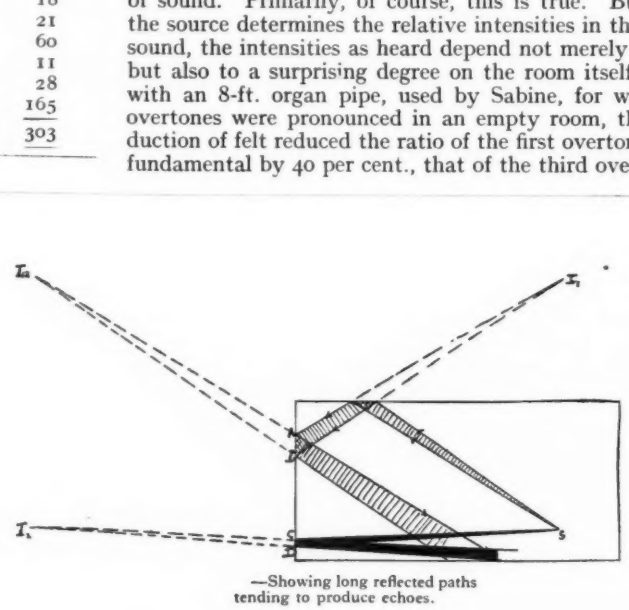
A further point of which account must be taken is the composite character of a musical tone. The quality of a tone depends on the relative intensities of the overtones present, and it has been customary for physicists to regard these relative intensities as dependent simply on the source of sound. Primarily, of course, this is true. But, while the source determines the relative intensities in the issuing sound, the intensities as heard depend not merely on that, but also to a surprising degree on the room itself. Thus, with an 8-ft. organ pipe, used by Sabine, for which the overtones were pronounced in an empty room, the introduction of felt reduced the ratio of the first overtone to the fundamental by 40 per cent., that of the third overtone by

* A lecture delivered at University College.



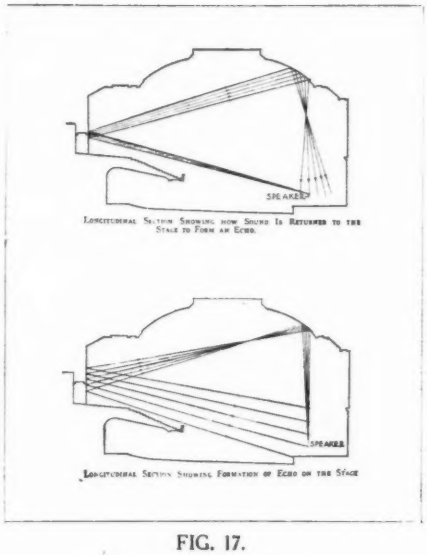
—Showing the absorbing powers of different materials

FIG. 15.



—Showing long reflected paths tending to produce echoes.

FIG. 16.



Longitudinal Section Showing how Sound Is Returned to the Stage to Form an Echo.

Longitudinal Section Showing Formation of Echo on the Stage

FIG. 17.

50 per cent., and that of the fourth by 60 per cent. With a 6-in. pipe, on the other hand, the effect was to accentuate the overtones; whereas all notes below the 6-in. fundamental were purified. The effect of an audience was still different, viz., to purify all notes up to C4, 512, and to have very little effect on tones above this. For C1, 64, the first overtone was decreased 65 per cent. relative to the fundamental, and the second 75 per cent.

The musical effect will thus be injured or improved according to circumstances. The mixture stop in an organ is designed to be rich in overtones, the night-horn stop to be specially pure; and it may happen that the room in which they are sounded will completely alter the intended effects. To determine the balance must lie with musicians, and it is important that the judgment of musical authorities should be gathered in available form. So far as I know this has never been attempted.

Provided that it is not actually covered, absorbent material, wherever it is placed, is in general equally effective in reducing reverberation, an exception being that where curved walls produce marked differences of intensity at different points it is more effective at a point of concentration than at a point of deficiency of sound. Its best location in practice is determined by the necessity of producing the best initial distribution of intensity and of avoiding defects other than reverberation. The general principle to be followed is to have hard reflecting surfaces near the speaker and absorbent material in the neighbourhood of the audience, the reflecting surfaces being arranged to throw the sound to the absorbent ones, including the audience, in as short a time as possible. If any wall be curved, then that is an obvious place for absorbent material.

Besides reverberation and the unevenness of distribution produced by curved surfaces, the commonest fault in large halls is echo. If the difference in path between the sound arriving directly and the sound reflected from a hard surface or surfaces be greater than 70 ft., then the reflected sound arrives more than one-fifteenth of a second after the direct sound, and, unless it is greatly enfeebled by absorption, will be heard as a distinct separate sound, i.e., an echo. Long reflected paths of this sort will usually include the back wall, which is therefore a suitable place for absorbent material. A diagram in illustration of this is shown (Fig. 16). It may be remarked that the lower of the two paths shown would be eliminated at once by sloping the floor upwards to the rear of the hall. Where hard curved walls and long reflecting paths are combined the echo sound may be as intense as the direct one, and in this case hearing is impossible. One of the worst known examples of this occurred in the auditorium in the University of Illinois. Here a speaker could hear ten echoes of his own voice. Two of these are illustrated in Fig. 17. In both these cases the echo sound will be seen to be more intense than if the wall surfaces had been flat. The Pantheon furnishes another marked example of this phenomenon; if it were not for the opening in the dome it would be considerably worse than it is.

Except in large halls the necessity for calculating out the intensity at selected points according to the 50 ft. rule to which reference has been made will not arise. Occasionally, however, it does, and the following is the method of its application for flat walls:—

If I (unknown) is the intensity of the direct sound at a distance of 50 ft., then the intensity of the direct beam at a distance d is $\frac{I\,50^2}{d^2}$. If the sound suffers reflection, then it is diminished in the ratio of the reflection coefficient R of the surface it strikes, the reflection coefficient being given by 1–A, where A is the absorption coefficient. The formula for intensity at a point after one reflection is thus: $\frac{R_1 I\,50^2}{d_1^2}$ where d_1 is the distance of the point from the image I_1 in the surface considered. If there are two reflections, then the formula is $\frac{R_1 R\,I\,50}{d_{12}^2}$ where d_{12} is the distance of the point from I_2 the image of I_1 in the second surface.

Thus the total intensity at any point will be:—

$$I \times 50^2\left(\frac{1}{d^2}+\frac{R_1}{d_1^2}+\frac{R_2}{d_2^2}+ \text{ - - - } +\frac{R_1R_2}{d_{12}^2}+ \text{ - - - }\right)$$

This will be adequate if it is at least equal to I.

The summation is taken only for early reflected beams, i.e., those arriving at the point in question within one-fifteenth of a second after the direct sound.

In conclusion we may give some attention to that type of auditorium where the problem is usually most difficult and which in the past has provided many of the notable acoustic failures. I refer to the council chamber, where speaking may be from any part of the floor of the house, where the speaker is not always a practised orator, and in any case expects to address his audience intimately and flexibly, an expectation which presupposes less careful enunciation than is usual in the formal address of a large audience, and where, moreover, the lack of respect of his fellow councillors may mean an accompaniment of conversation in undertones and the entering and leaving of members during a speech. Further, the speaker, besides always having part of the audience behind him, seldom faces in the same direction all the time, but will direct his venom first at one section of the audience and then at another, with the result that a portion of his address will tend to be lost by some of his hearers in his turning of the head from side to side. It is clear that in this case we must aim at exceptional loudness and exceptional distinctness. As we have seen, the attainment of the short reverberation period on which distinctness depends involves a reduction in intensity, so that the shape of the room must have special consideration and the disposition of our absorbent material must be carefully arranged.

In the first place we should so arrange that a speaker in any part of the house could, merely by turning in his place, have an uninterrupted view of the ears of every member of his audience, including visitors and members of the Press. This rules out the possibility of overhanging galleries with potential speakers far underneath them. Second, surfaces should be arranged so that for every member of the audience there is some early reflected beam to supplement the direct sound. The ceiling is the natural surface to use, at any rate as regards the floor of the house. It has the additional advantage that it is equally effective however a speaker's head may be turned. If the ceiling is to be a reflector its height must be not greater than about 35 ft. Otherwise sound from the ceiling will arrive at a listener near the speaker more than one-fifteenth of a second after the direct sound, and will thus constitute an echo. This is a

difficulty that does not arise in the same way in a hall where the speaker has a fixed position and the nearest member of the audience is some distance from him. If the ceiling be at a height exceeding 35 ft., if it be a good reflector, there will be sharp echo; if it be a partial reflector there will be confused after-effect; if it could be made perfectly absorbent then all sound proceeding from a speaker above the horizontal would be lost to the floor of the house.

In a room of this type absorbent material will naturally be placed on the floor of the house and on the upper parts of the walls, including the back walls of galleries. This leaves the ceiling free to act as a reflector for direct sound, but there will be no sound reflected from wall to wall coming back from the ceiling after a long interval, because it will be absorbed by the material on the walls. The lower parts of the walls will normally be reflectors if the seating is on a level, to throw extra sound on to the absorbent floor of the house. An illustration of this is afforded by the interior of the House of Representatives, at the Rhode Island State Capitol, in Providence. Here the walls were originally hard all the way up to the ceiling, with the effect indicated above. On Sabine's advice the upper parts were lined with an absorbent felt covered by a decorative tapestry. Such a decorative scheme would not be possible in every type of building, but it is to be noted that had the building been properly designed from the acoustic point of view in the first instance, the necessity would not have arisen. In that case the upper part of the walls would have been executed in the special Akoustolith stone previously mentioned, assuming that it was already invented when this building was erected. It is to be noted that if the absorbent material had been placed on the lower part of the walls the defect would not have been cured. The whole floor in our ideal council chamber will be carpeted, and gangways will be covered with specially heavy carpets laid on undermats. The seats will be made of the most absorbent type of upholstery. Galleries will also have upholstered seats and, when not in use, may be cut off by heavy curtains. Seats will preferably be arranged in some sort of hollow square formation and will be raised slightly as we proceed towards the walls. A well in the centre with separate exit staircase has been suggested as a suitable place for members of the Press, provided, of course, that it is desired that these gentlemen should have a good chance of hearing what is said.

While it has not been possible to give anything like an adequate treatment of the subject, and while much work still remains to be done, particularly on the musical side and with special reference to the problem of accurate rendering, where our critical faculties will doubtless be educated by improved conditions so that we shall aspire to further heights, yet enough has been said to show that success is not the matter of chance that it has often been supposed to be, but is assured in all ordinary cases if the architect is willing to add yet another to the many factors which must influence design from the beginning, and if suitable building materials are as easily obtainable in this country as they are in America. That architects are now alive to the importance of the question there is no doubt, and the Science Standing Committee is, I believe, collaborating with a Government department in the test and manufacture of the sound-absorbing materials that are needed. The building in which these tests are being carried out was in the first instance, I understand, made available only for six months, but it would be a disaster if the work were then to be abandoned. For the promised land is in sight and experiments on these lines are the road and the only road by which we can pass on to possess it.

Contemporary Art

Whitechapel Art Gallery.

Again we are indebted to the authorities of the Whitechapel Art Gallery for a view of the English painting of to-day. It is a fairly representative collection, but the forward policy is in the ascendant. The men and women of the modern school or schools are here, but here, too, are Mrs. Swynnerton and Charles Shannon. An extraneous interest has been created by the presence of the eight lunettes by students of the four leading London art teaching establishments, which has nothing to do with art *qua* art. They have been judged, or rather considered, by the London County Council, which has formed the opinion that they will not do. The basis of the whole matter is wrong. In connection with an architectural monument of the consequence of the County Hall it was inexpedient to encourage students in thinking that decoration of a character commensurable with that of this great structure could be the product of any teaching academy, no matter how brilliant the genius of the students might be; no matter how brilliant the genius of the masters of such an academy. The County Hall is the work of an architectural master, and if wall-decorations are required to add to its art value and general impressiveness, they should be the work of masters of mural painting.

In point of fact, there has of late been too much obvious flattery of the work of the clever art students of London. It is most admirable, and, as a generalization, there is nothing to complain of in the teaching, but a better mental perspective should be inculcated; a greater reverence for works of mastership. The time will come when the students who have made these lunettes will, if they persevere in this direction, produce master work of their own, and that will be the time to welcome them to the County Hall; the time when their works will find a fitting place in the public galleries. They themselves will feel grateful in that time that their immature work, however good it is as the product of immaturity, was not made permanently representative of their talent. In the meantime there are the established masters to be called upon.

The Edwin Bale Exhibition.

Walker's Galleries are occupied with a memorial exhibition of water-colour drawings by a talented and well-loved artist of the Victorian period, the period of "The Magazine of Art" and other much-missed artistic journals. The catalogue is prefaced by Mr. M. H. Spielmann, for twenty years Bale's co-editor and friend, and an affectionate picture is portrayed. A proportion of the drawings here brought together not only for memory's sake, but for sale, are of architectural subjects. They are admirably rendered, and many of them are Italian: Assisi, Fiesole, and Florence afforded the artist an unending succession of beautiful subjects for his soft, subdued manner of treatment.

Etchings and Engravings.

Architecture again affords its aid to the artist—in the exhibition of etchings and drypoints at the Greatorex Gallery, and wood engravings at the Little Art Rooms in Adelphi. At the former there are examples of such well-known etchers as J. R. K. Duff, A. F. Affleck, A. B. Simpson, Percy Robertson, and Winifred Austen. As a reminder that reproductive work is not yet dead, and that there are still fine exponents of mezzotint portrait engraving, there is Arthur Hogg's "George Washington." A charming set of twelve etchings of North Brittany is contributed by W. Douglas Macleod.

At the Little Art Rooms are most interesting examples of continental wood engravers, together with some English artists, including several by Frank Brangwyn, and by J. F. Greenwood, Gwendolen Raverat, C. C. Webb, and Charles Ginner. The more we see of modern foreign prints the more necessary it becomes for British print-makers to gird up their loins.

KINETON PARKES.

Parliamentary Notes

[BY OUR SPECIAL REPRESENTATIVE.]

The Housing Policy.

During the concluding stages of the debate in the House of Commons on the Government's policy, the Prime Minister's housing proposals were referred to on several occasions. Sir Kingsley Wood said that during last year no fewer than 77,000 houses were erected, which was more than the average annual number for the ten years before the war. That was not a bad result. This year, according to the Director-General of Housing, no fewer than 105,000 houses would be erected, or a number equal to the largest number ever erected in one year in this country. It was perfectly true that a large number of these houses had been built for sale, but their erection had undoubtedly helped to solve the housing problem. The Prime Minister had stated that houses were going to be erected at £500 each, and let for 9s. a week, including rent and rates. But of that £500, 25 per cent. would be required for roads and drainage, and, therefore, these houses would have to be built at less than £400 each. He would be glad to hear what employers and employed in the building trade had to say to this. Further, he understood that it would be necessary to deduct from the 9s. a week rent at least 60 per cent. for rates and maintenance. That would leave only £11 10s. per annum for rent, and how, therefore, was the Prime Minister's scheme to be worked?

Mr. P. Harris, a Liberal member, submitted that what was required was a seven years' programme. Mr. George Edwards, formerly an agricultural labourer, criticized the scheme from the rural point of view, stating that to ask a farm labourer to pay 9s. a week rent out of a wage of 23s. 7d. a week was a mockery.

Lt.-Col. Fremantle, a former chairman of the L.C.C. Housing Committee, urged that, in addition to paying attention to the question of employers' profits, the Government would do well to look also to the matter of the employees' output.

Dilutees in the Building Industry.

At question time, Captain Terrell asked the Minister of Labour how many dilutees had been introduced into the building industry since the war.

Mr. Shaw replied that he assumed the question referred to adults who had entered the skilled classes in the building industry direct, and not through the ordinary channel of apprenticeship. He was not in a position to say how many of these men had entered or were working in the industry. The whole object of the augmentation of skilled workers in the building industry was at present the subject of consideration with the building trade employers and operatives. He was glad to say that both bodies had promised loyally to co-operate with the Government in their desire to deal with the present housing shortage.

The Density of Houses.

In reply to Mr. T. Thomson, who asked whether the Health Ministry had intimated to any local authority that there was no need for it to secure the Minister's sanction as to the maximum density of houses qualified to receive State assistance under the 1923 Act, Mr. Wheatley said that local authorities, generally, had been notified that they would not be required to submit for approval details of their housing schemes under the 1923 Act. In a circular issued last August they were informed that it was not proposed to prescribe a maximum density, and that it was considered that a discretion might properly be exercised by them in this matter in view of the particular circumstances of their district. The opinion was expressed, however, that a density of approximately twelve houses to the acre represented a desirable standard, and that, as a rule, a local authority should not approve the building of more than twenty houses on any one acre. It was not his intention to modify this policy.

State-aided Houses.

Answering an enquiry as to payment of the subsidy, the Minister said that in cases in which he was satisfied that builders, on the faith of assurances given by or on behalf of local authorities, had proceeded with building in anticipation of the approval of the local authorities' scheme for assisting private enterprise, the equivalent of the Government grant under the Act would be paid in respect of houses which would otherwise be eligible for assistance.

As a safeguard against the use of shoddy materials, Mr. Wheatley informed Mr. Hardie that for houses which were to qualify for assistance under the Act of 1923, the local authority must be satisfied that the materials used were of good quality, such as were ordinarily specified by a local authority in a contract for working-class houses, and the local authority was required to certify by a duly authorized officer that the requirements as to materials and type of construction had been complied with, and that the houses had been constructed in a proper and workmanlike manner.

Housing Progress.

Mr. Wheatley informed Mr. Meller that during 1923 tenders were approved for 4,796 houses under the scheme authorized by the Housing Act of 1919, and 85,036 houses were included in schemes authorized by the Housing, etc., Act, 1923. Statistics were not available as to the number of houses which would provide for more than two bedrooms, but it might be taken that the majority of the houses were of the three-bedroom type.

Mr. Wheatley informed Mr. Simon that up to February 1, 22,600 houses had been commenced under the Housing, etc., Act, 1923, and 4,680 had been completed. There were also 4,634 houses under construction on this date under the previous housing scheme. The corresponding annual rate of construction was difficult to estimate, but might be put at from 36,000 to 40,000 houses a year.

Mr. Wheatley informed Lord E. Percy that the following table showed the increase in the number of houses since 1900 :—

Increases during each year in number of houses.

Year.	Annual Value of £20 or over charged to Inhabited House Duty.	Under £20 Annual Value.	Total.
1900	32,413	90,165	122,578
1901	40,677	76,469	117,146
1902	29,933	78,101	108,034
1903	81,920	36,761	118,681
1904	27,402	88,007	115,409
1905	29,937	99,905	129,842
1906	29,754	71,920	101,674
1907	18,247	40,946	59,193
1908	21,145	105,424	126,569
1909	14,294	81,957	96,251
1910	23,719	5,813	29,532
1911	10,611	79,167	89,778
1912	12,218	44,821	57,039
1913	13,680	45,632	59,312
1914	14,573	53,004	67,577

In reply to Lieut.-Com. Kenworthy, Mr. Jowett, the First Commissioner of Works, said that in connection with the Addison housing scheme, arrangements were made for the Office of Works to undertake the construction of 5,334 working-class houses on behalf of local authorities. Of this number, 5,178 were completed, 136 were under construction, and the remaining twenty would be started as soon as possession of the site could be obtained. There was no proposal at present for the Office of Works to erect any further houses.

Modern Wallpaper as Decoration

In reading a paper entitled "Modern Considerations attaching to Wall Paper Decoration" before the Incorporated Institute of British Decorators, Mr. Henry G. Dowling said that from all indications it seemed that there would be a reaction of the public in favour of patterned walls. When they thought of the quest after realism during the Victorian period, the present return to simplicity was remarkable. They might be thankful that it had come via the jazz period, for to-day they had gay but ordered colour with a delight in frank and simple patterns. There seemed an eagerness for better things in home surroundings —an understanding that art was not limited to pictorial bounds, but that its application was infinitely wider—that beauty need not be divorced from usefulness. Craftsmanship to-day meant the production of efficient things—it stood for art service—of service bringing grace and beauty to the accessories of everyday life

Decorators had every reason to be thankful for such a change, but strangely enough, while the public taste generally had improved, there was apparently a deterioration in the taste of those who professed to be experts. The average home-owner wanted his home to be a pleasure to him and to reflect his interest in its decorative treatment. And while he would refrain from the vulgar display of possessions, the home-owner would not go to the opposite extreme and live between bare walls, for he had found that there was an added warmth and comfort when the walls were covered with a carefully selected textured or patterned wallpaper. They would do well to remember that overstudied simplicity might become as baneful as the overelaboration of yesterday.

Patterned wallpaper was again coming in—old designs were being revived and new designs prepared to meet the appreciative re-awakening for design and colour. Even the Chinese hand-painted and landscape papers were reappearing—evidence surely that the present generation was inclining to the view that, given good line and colour, wallpapers were good decorations in themselves. Nevertheless, however high their intrinsic qualities, wallpapers must be considered in relation to the objects in proximity to them. And here was the decorator's problem and opportunity. Whether drawing-rooms, music rooms, halls, living-rooms, bedrooms, or studies were in question, or whether they were considering plain papers and borders, patterned papers or stilings, or over-all designs, it was essential that the particular apartment should be properly considered in relation to the choice of a background. The functions of the room should be considered, the method of lighting, the architectural features, and general immediate surroundings.

The following mental questions were suggested as useful aids in determining the choice of wallpaper for any apartment :—

1. Was the wallpaper to be the decorative feature or only a background for pictures and other decorative accessories in the apartment ?

2. What description of wallpaper-filling design would best accomplish the main object ?

3. Was it fitted for the purpose for which the apartment was used ?

4. Would the pattern scale and colouring be in harmony with furnishings, *objets d'art*, etc. ?

5. What method of treatment would be most suitable to the general features of the room and to the character of the filling design under consideration ?

6. Did it also materially enhance the beauty of the filling design as well as of the room as a whole ?

With the use of wallpaper the too lofty room might be apparently lowered, the low ceiling raised, the narrow room made to appear wider, and the room that was too wide narrowed.

Some Aspects of the Ventilation Problem

Mr. Ronald Grierson, A.M.I.E.E., A.M.I.Mech.E., in delivering a lecture at the Northern Polytechnic Institute on "Some Aspects of the Ventilation Problem," said that the art of the successful ventilation of offices, hotels, ships' cabins, theatres, workshops, and similar occupied spaces wherein human beings were, relatively speaking, crowded together, was probably one of the most difficult branches of engineering. In bridge building, dynamo and ship construction and railway work, the materials with which the engineer works were inanimate and consistent, and the finished products were more or less independent units. In ventilation work the engineering equipment must be applied as an accessory to a structure designed for a specific purpose, and compromise was not infrequently necessary. Further, it had only been possible hitherto to judge the result by the human senses and, as everyone knew, individuals varied greatly. For a very long time, indeed, certain localities had had the reputation of being bracing, and other localities had had the reputation of possessing a relaxing atmosphere, but so far the physiologists had not been able definitely and clearly to indicate to the ventilating engineer wherein laid the fundamental difference between the atmospheric conditions in the two localities.

In many other branches of engineering the scientific side was leading the applied side, but in ventilation it would probably be admitted that engineers were leading physiologists. Responsible ventilating engineers were prepared artificially to supply and to maintain in any enclosed space, given the necessary facilities, practically any type of weather from the coldest day in winter to a warm, humid day in summer, and they were only waiting for the physiologists to standardize the air conditions that it was really desirable to maintain in given circumstances in order to ensure the physical comfort and the health of the occupants.

Two points regarding which the majority of mistakes had been made were :—

1. The failure to realize the old tag that you cannot both eat your cake and have it. This, applied to the ventilating problem, meant that with an exhaust system only, you could not exhaust air from a room with standard equipment unless you made ample provision for fresh air to flow in and take its place. If it were otherwise, a vacuum would be created. In cases of this kind, the roof extractors simply did not function, or the fan ran round, using electrical energy and did no useful work.

2. The failure to realize that air had weight, and that, therefore, when it was in a state of rest or in motion, it must obey the laws of mechanics applicable to gases, just as a bullet, a shell, a train or a motor-car did. A room 10 ft. by 10 ft. by 10 ft. contained 1,000 cub. ft. of air, and since air at standard temperature and pressure weighed 0·076 lb.-cub. ft., it was clear that that room contains 76 lb. weight of air, and if it was to be changed eight times per hour, 5 cwt. of air must be moved.

R.I.B.A. Council Meeting

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

Arterial Roads.—On the recommendation of the Town Planning Committee a memorandum was approved for submission to the Minister of Transport.

International Cement Congress.—Mr. H. D. Searles-Wood and Mr. C. Stanley Peach were appointed to represent the R.I.B.A. at the meetings of the International Cement Congress in April.

Tribunal of Appeal (London Building Acts).—Mr. John Slater was re-appointed to represent the R.I.B.A. on the tribunal of appeal.

Retired Fellowship.—Mr. F. O. Lechmere-Oertel and Mr. Arthur Edmund Street were transferred to the class of retired Fellows.