Wednesday, October 22, 1924 Vol. LX. No. 1555.

THE ARCHITECTS' JOURNAL & Architectural Engineer

With which is incorporated "The Builders' Journal."

FROM AN ARCHITECT'S NOTEBOOK.

MILAN CATHEDRAL.

O Milan, O, the chanting quires;
The giant windows' blazon'd fires;
The height, the space, the gloom, the glory,
A mount of marble, a hundred spires.

ALFRED LORD TENNYSON.

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

The Imperial Institute, South Kensington

The Late T. E. Collcutt, PP.R.I.B.A., Architect

The Imperial Institute was begun in 1887 and completed in 1891. By many it is regarded as the greatest work of the late Mr. Collcutt.

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Beauty or Reason?

WALTER PATER says somewhere that all art aspires towards music because in music the matter and the form are inextricably bound together so that the one cannot be considered apart from the other. This generalization might be carried further; all art is constantly aspiring towards mathematics because a mathematical problem would seem to admit of only one solution. Given the problem it is either solved correctly or it is not solved at all. Can art, and particularly architecture, be reduced to such absolute terms. Given the problem, is there one solution which is right so that all others are wrong?

In the first place, in order to make this possible, it would be necessary to state the problem in unequivocal terms. Can this ever be done? If we take the very simplest example: the division of a vertical line into two parts so that the relation of the one part to the other shall be absolutely pleasing, can we find a solution which shall be universally applicable? It has been suggested that to achieve the result which we require, the upper part of the line should contain three-sevenths of its length, and the lower part four-sevenths. Similarly it has been suggested that the most pleasing shape for a rectangular aperture is one in which the proportion of the width to the height is as the square to its diagonal. If these statements were universally true every horizontal division and every door and window aperture would be either right or wrong, and any mistake would be as indubitable as an error in the addition of a column of figures, in the computing of interest, or in any other simple mathematical calculation.

Yet we know from experience that even to such simple propositions as these there is no universal solution, for we are concerned not with abstract, but with concrete things, and we are handling them not with pure reason, but with complex senses. If our line or our rectangle be considered abstractly, as ends in themselves, unrelated to anything else: a line or a shape in infinity—for to commit them to paper is to put them into relationship with the finite limitations of the paper—it is conceivable that we might at some time discover that which we are seeking, though with our present limitations it is surely unlikely. If the arts be ranged in order of their approach to the abstract we should find that music would head the list and architecture would end it, therefore it is in music, if anywhere, that we should expect to find the absolute rules that we are seeking. Yet we do not find them. Even the diatonic scale, which we know to be but a western convention, is now no longer accepted even among western composers. If music, with a medium of pure sound, cannot evolve a set of mathematical rules, how then can architecture, which is beset by a thousand and one limitations and is subject to as many irrelevant influences, hope to do so?

It is clear that although we may accept the idea of an absolute beauty just as we accept the idea of an absolute truth, we cannot at present be guided by it. By what, then, are we to be guided? Unfortunately, by nothing more stable than our own sensations. What do we mean when we admit a thing to be beautiful? We mean, surely, that we experience a certain pleasurable sensation, but we know that everyone contemplating the same thing does not experience the same sensation. And who are we to say that a thing is or is not beautiful—except for us? The matter, however, is not even one of pure æsthetic appreciation, for moral and intellectual issues are, for the most part, involved. We cannot contemplate a building without taking into consideration its environment, the materials of which it is built, and the purpose for which it has been erected, and our appreciation—our pleasurable sensation—will be influenced by these matters. Thus, half-timber work that delights in its proper rural setting offends in a busy urban thoroughfare, but note, first, that although it offends to-day, it did not offend three hundred years ago; second, that the survival of an old timber building does not offend in the same way as does the erection of a new one. So much for environment; now as to material. If we see one material imitating another we are offended, but we are offended because we happen to know about the physical qualities of various materials. Were our standards of judgment entirely æsthetic the possession or not of such knowledge would not cause a variation in our sensations. Lastly, there is the interference arising from our knowledge of the purpose of the building. Shops require an expanse of glass for the exhibition of goods; later Gothic cathedrals are built so that the wall space between the buttresses is almost entirely glass. Would not a slight variation in the planning and internal arrangements of a cathedral provide a perfect multiple store, and if not, then why not? Most of us receive pleasurable sensations on contemplating a Gothic cathedral (although many are ashamed to admit it!). How many of us would receive pleasurable sensations on contemplating a Gothic soft-goods emporium?

Again, the sensation arising from the contemplation of a building is influenced by at least two other causes: convention or customs and association. In few matters does our instinctive conservatism show itself more clearly than in our conception of beauty. If we are shown something unlike anything we have seen before, we are guarded; we may call it original, striking, imposing, but rarely do we apply the epithet beautiful. Yet how do we know that it is not much more beautiful than any similar thing that has preceded it? As for association, however much we may try to purge ourselves of its influence we are never entirely able to do so. Certain buildings seem to live in our minds with all the past around them. Others, again, may evoke

sensations of childhood, or of certain aspects of life which we admire or which are dear to us. And so the pleasurable sensation which we experience may not be due to any qualities of pure beauty which the building may possess, but to associated visions which it evokes or thoughts which it awakens.

And so we seem to be defeated on all sides. We cannot evolve infallible rules for our guidance, we cannot rely upon a purely æsthetic judgment, indeed, we cannot achieve it if we would, and we cannot base our judgment upon intellectual standards. It would seem that the only thing left for us to rely on is our sensations—our sensations unconsciously or lightly influenced by our intellect. And in creating, too, inspiration is tempered by intelligence.

The confusion of thought which exists to-day is largely the result of an attempt to place too much reliance upon reason. A thing pleases us or it does not please us; let us be more often content to leave it at that. After all, if we attempt to consider dispassionately the human countenance, can we find anything to admire therein—an irregular expanse of soft parchment-like material, punctured with apertures, with odd protuberances and depressions, sometimes curiously fringed with hair—"a vital putrescence of dust"? Moreover, things of unreason that we be, we often find beautiful the faces that we love, be their form what they may. And who should say us nay?

Bush House

The news that the Bush Company will not be able to complete their Aldwych scheme of buildings is bad news for London. As everybody knows, the centre block is all that has materialized of this great project. What will happen with regard to the wing blocks is on the knees of the gods, now that the L.C.C. have decided to take steps to let the land "either as a whole or in plots." We must hope that the Council will keep a tight hand over the character of the buildings that must arise on these spaces. The ideal thing, of course, would be for Messrs. Helmle and Corbett's fine elevational scheme to be carried out in its entirety, for unless these wings are completed in accordance with the original design the centre block must lose much, if not all, of its significance. Whether or not our individualistic commercial people will agree to the suppression of their identity for the sake of the amenities is a question to which one would rather not hazard an answer. The idea of letting the land in separate plots is distinctly ominous, but we must hope that the necessity will not arise.

An Unlucky Site

It was in 1898 that the Aldwych and Kingsway improvement scheme was adopted by the County Council, and twenty-six years later it is still incomplete. The Aldwych "island" has always been something of a "white elephant." The original idea was to build the new London County Hall upon it, but the greater attractions of the riverside prevailed. For years the Aldwych site lay vacant, a dreary waste—except in the spring, when it became a riot of wild flowers. Then, just after the war, when everybody had come to regard this wilderness as a permanent London institution, along came Mr. Bush with his original idea of a great, central, permanent exhibition of manufactures—a rendezvous of commerce to which all seekers of supplies could repair, order all they wanted, from books to bootlaces, and take the first train home again. But the idea was too sensible, and it never "caught on"—perhaps because when the would-be buyer from the Provinces comes to London he is not disposed to transact his business in so summary a fashion. The original idea of Bush House has, of course, been abandoned, and the building is now let out as offices, and remarkably fine offices it makes. By the way, we may now assume that the great tower which it was intended to erect over the central block (a proposal that aroused a good deal of adverse criticism) will never take shape.

The Boom in Building

With the pending completion of many great new buildings in London—including those very notable structures, Sir Edwin Lutyens's Anglo-Persian building in Finsbury Circus, and Sir John Burnet's Adelaide House, London Bridge—there is no indication of any decline of activity in the building trade. On the contrary, work seems to be coming along at a steadily increasing rate. At the present moment there is hardly a street within central London without the evidence of building operations of some sort or another. Often it is the repair or reconditioning of old work; in most cases, however, it is new construction. In all directions cleared sites and Scotch derricks bear convincing witness to the healthy condition of the building industry. The outlook for the future is equally encouraging. In the City enormous new offices will shortly be erected for Lloyds (Sir Edwin Cooper, architect), while the reconstruction of the Bank of England from the designs of Messrs. Baker and Troup is already being taken in hand. In the West End one of the biggest building schemes of modern times is foreshadowed on the site of Devonshire House, rumour naming Mr. Thomas Hastings as the architect for the work in association with two English architects whose identity has not been officially disclosed. The rebuilding of Regent Street is, of course, well under way, and before long the few remaining sections of Regency work will be in the hands of the housebreaker. Many will hear with regret that the days of the County Fire Office, Piccadilly Circus, are numbered; it is shortly to be rebuilt, to the general design prepared by Sir Aston Webb, Sir Reginald Blomfield, and the late Mr. Ernest Newton. Other prospective works are the rebuilding of Messrs. Whiteley's old premises from the designs of Mr. Curtis Green, A.R.A., and the restoration of the Houses of Parliament. When the great mass of minor building operations is also taken into account, it is apparent that the immediate future holds the possibility of unexampled prosperity for the Metropolitan building industry.

Another Ancient Building Threatened

Not content with taking most of our money, our American friends continue to distrain upon our old buildings. It is now, of course, quite a well-established custom, and the news that a Tudor guildhall or a Jacobean mansion is about to be shipped to Oshkosh, Wis., or Medicine Hat, arouses little more than a polite and passing interest. The latest building to attract the attention of our acquisitive cousins is the Halle of John Halle, at Salisbury, which was built in 1470 as a banqueting hall for the Guild of Wool Staplers, and is said to remain unaltered. It is described as having "a roof of oak, with fans of plaster, and high up on the walls are figures holding shields, while the mullioned windows contain armorial bearings. At the south end is a carved screen, while a minstrels' gallery is at the north end." Apparently it is only the Jacobean screen and glass that are at the moment threatened with removal; we are to be left the shell of the building. It appears that the National Trust has considered the question of acquiring the structure intact, but the price asked—nearly £17,000—is prohibitive. Miss R. S. Perkins suggests in "The Times" that a fund should be started for purchasing the property "before it has irrevocably passed into foreign hands." We sincerely hope that the money may be raised, though the time seems to be fast approaching when we shall no longer be able to pay our debts and have enough left over to keep our old buildings. The only way out of this difficulty is to educate the owners of venerable buildings to an understanding of the nature of their possessions. If they can be brought to realize that these relics rightly belong to posterity, and therefore should be held as a sacred trust from one generation to another, they might be able to offer more resistance to the appeal of the dollar. Until such an enlightened outlook becomes general, we must either purchase our own heritage at an extortionate price or sadly resign ourselves to the loss of it.

The A.A. Excursion to Spain.

By S. ROWLAND PIERCE

(With photographs by F. R. Yerbury)

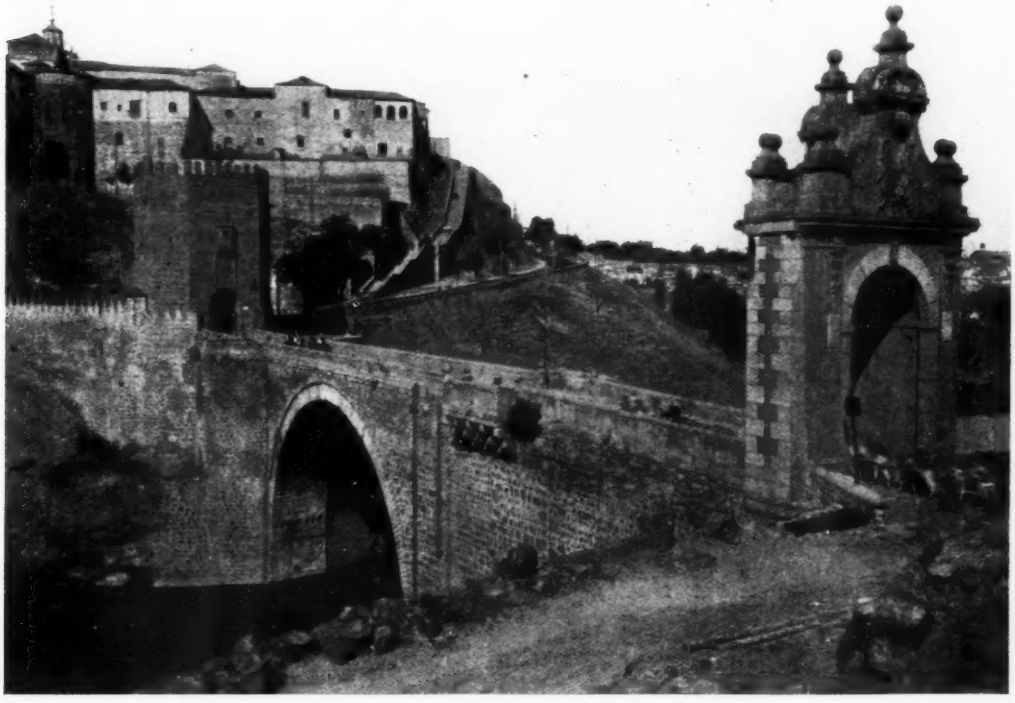
WHEN the proposition of a tour in Spain (as the annual excursion of the A.A.) was first proposed there were misgivings as to the somewhat powerful hospitality of the Spanish sunshine; the end of summer or the beginning of autumn are not the best times to visit the southern parts of the peninsula. The risks, however, were taken, and the results proved not too oppressive; except for one or two gruelling days in Seville, the dying summer was kind. There were certainly more difficulties encountered than has been the case on previous trips to the Continent; the long distances to be travelled, poor train services, and a language of which but few of the party had any knowledge; but the excellent way in which such difficulties were surmounted, without a single serious hitch, is another tribute to the organizing ability of that indefatigable secretary, Mr. Yerbury.

Before passing to a survey of the places visited, it is essential to record in general the wonderful hospitality of the Spanish people, and, in particular, to acknowledge the tremendous helpfulness and good fellowship of our colleagues, the Spanish architects. The party was officially assisted in all its movements by the Ministry of Art, which issued special instructions for the admission of the party to places not usually accessible; in every town visited, the party was officially received by the town or city officials, or by the local architectural societies (as in Cordoba, by the Andalusian Society of Architects). Special permission was granted for a visit to the Royal Palace at Madrid, under the guideship of Señor Moya (the official architect to the royal palaces).

A crowning honour was given to the party, and, it is hardly necessary to add, to English architecture in general, by a royal invitation to a delegation from the party to wait upon H.M. King Alfonso, informally, at the Palacio del Pardo, some ten miles from Madrid; the charming cordiality of the welcome on this occasion will always remain in the memories of the party. It is very difficult, among so many kindnesses, to name those to whom the party owed most on this trip, but certainly must be recorded with gratitude the names of Señor Pablo Gutiérrez, who accompanied the party on all its official visits; Señor Pedro Muguruza, who also gave so much of his time; and Señor Sancho Arcas, who helped the party considerably in Madrid. Space will not permit of further acknowledgements of the many obligations that the members of the Architectural Association acquired in "España" during this visit.

To the traveller who makes his first architectural pilgrimage to Spain, it is a country of many surprises; his general impression will be probably one of great vitality and strength throughout all the long series of architectural phases of the country. It seems strange that a country so rich in architecture and art has been hitherto so neglected in this country, especially by writers on architecture; in fact, the literature relating in any detailed way to Spanish architecture is lacking in almost any language.

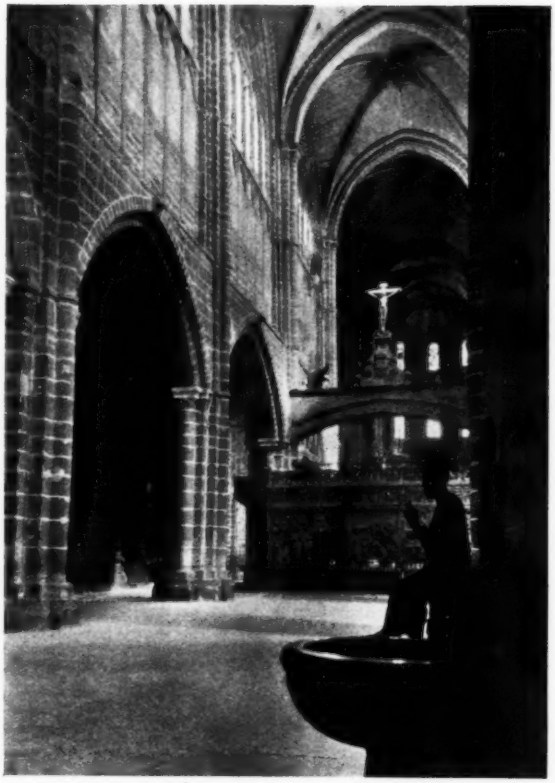
The chief results reached by first impressions (which



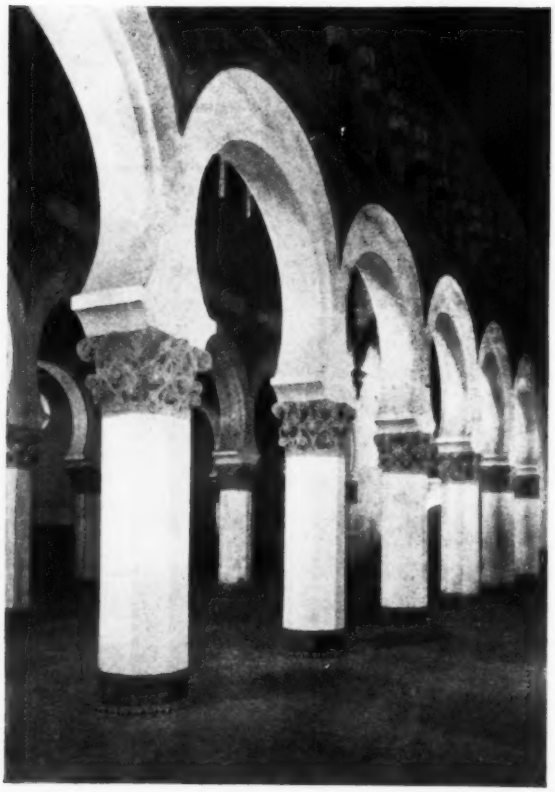
PUENTE DE ALCÁNTARA, AND THE ALCÁZAR, TOLEDO.

are often more true in essence than the laboured sophistries of analytical criticisms) are, perhaps, of a negative variety, taking the form of the correction of previously conceived ideas. One of the most important of such observations is that the baroque of Spain is not a mere debased variety of some parent stock from Italy, but is rather a live expression in the developing of the renascent style of the age, on the part of an individual nation. The Baroque of Spain is often of more interesting and truly architectural nature than that of Italy. In the latter country the "Barocco" often takes the pose of an unruly child, who, having learnt an A B C (of academic quality), is unable to express its whim without using the letters upside-down, backwards, or in almost meaningless combinations. On the other hand, while Spanish Baroque does not present such examples of brilliant and imaginative planning as we find in Italy, it does show a greater tendency to be logical as a result of plan, with a resulting harmony between plan and elevation. Its "wilfulness" is confined rather to a strong freedom in general massing and to a playful vitality in decorative adjuncts, than to those agitating flat curves, or the turning upside-down of more or less orthodox columns or balustrades that are so often seen in the Baroque of Italy.

In respect of Spanish Gothic, another adjustment of thought is also perhaps necessary. It is a style that develops through almost as many stages as that of its English parallel, and it culminates about the beginning of the sixteenth century in a phase quite as fine as that of our Early Perpendicular, though as different from it as Spanish Baroque is from Italian. True, much of the influence in the earlier periods is from the French (as at Burgos, etc.), and in the later developments a Flemish tendency is very strong (as at Segovia, or S. Tomo at Avila); whatever the foreign influences that assisted the Gothic in Spain, but few examples of the style attain to the serene grandeur of the immense interiors of such cathedrals as those of Seville or Segovia. There is, however, in almost all the cathedrals of Spain that unfortunate liturgical imposition, the cutting off of about half the nave, by screens, to form the choir; generally the floor under the crossing is left free, except for a railed processional way between the choir and the "Capilla Mayor." The latter contains the high altar and the great reredos, again closed off from the crossing by a great screen. The plea that such an arrangement is a plan of most democratic character (enabling the people to approach closer to the high altar than is usual) is not of sufficient weight to justify the stultifying effect of the encumbered nave, and the consequent loss of effect on entering the church from the west end; were it not, however, for the religious use that has brought such a plan into being, doubtless the iron and brass screens that form such a magnificent feature of these cathedrals would not have reached the pitch of development we see displayed at Seville, Toledo, Burgos, to name only three from innumerable examples. Of all the arts allied to architecture in Spain, this art of the metal workers shows the highest development; whether it be in the window-grilles of houses, in the design of a pulpit (e.g., at Avila or Seville), or in the mighty choir or sanctuary screens of the cathedrals, there is throughout a power of design and a mastery of material that is unsurpassed in any other direction.



THE INTERIOR OF THE CATHEDRAL, ÁVILA



SANTA MARIA LA BLANCA TOLEDO.

The principal visits made by the party from Madrid as a centre were, to Alcalá de Henares, Toledo, Avila, Segovia, and El Escorial.

Alcalá de Henares is the seat of a famous university, founded in 1508. The town is, perhaps, even more famous as the birthplace of the great Cervantes. The principal buildings are the university (Colegio de San Ildefonso), with its sixteenth-century church, and the former palace of the archbishops of Toledo, which contains many fine features, courtyards, ceilings, and of especial note a highly ornate early Renaissance staircase, which latter feature is very similar in general design to another example at

ALCÁLA DE HENARES—THE UNIVERSITY: THE MAIN FRONT.

THE CATHEDRAL AND THE PLAZA DE AYUNAMIENTO, SEGOVIA

THE CHURCH OF ST. MARTIN, SEGOVIA.

A TYPICAL OLD HOUSE, TOLEDO.

Toledo, in the Hospital of Santa Cruz, of somewhat earlier date.

The approach to Toledo possesses a wild and almost dreamlike quality that leads the visitor to expect the greatest within the walls towards which he is climbing, and once within he is certainly not disappointed. The view of the city, crowned by the Alcázar, from the Puente de Alcántara, which forms one of the two approaches to the city across the gorge of the River Tagus, is a *tour de force* that is not easily forgotten. Once inside the walls the visitor is immediately lost, even his guide-book plan is of no avail, for the city has no recognizable plan; its narrow and tortuous streets lead in every direction in a romantic and picturesque unreasonableness. The city owes this oriental character of plan to the occupation of the Moors between 712 and 1085, and even after this period their methods long held sway under Alfonso VI and the Cid, and their successors. Toledo Cathedral, although so closely encompassed by the surrounding buildings, is the natural centre of interest. Founded in 1227 by St. Ferdinand, its Gothic structure was in process of building until quite late in the fifteenth century. There are still later additions, as in the Renaissance cupola surmounting the hitherto unfinished southern tower of the west front; and in the Baroque, as evinced in the upper part of the main façade and the roofing of the west end, and the south side shows an addition of the neo-Classic of the early nineteenth century in a columned and pedimented entrance. The plan and much of the architectural detail of the interior has a strong flavour of French Gothic, although the recorded architects all seem to have been Spanish—(P. Perez (1285), Rodrigo Alfonso and A. Gomez (1390), etc.). The various chapels, the cloisters, the sacristy, the chapter house all contain many works of much interest—metalwork, woodwork, furniture, and painting.

Visits were also made to a number of other churches, houses, and monastic establishments in the city, but space only permits mention of the exquisite half-ruined Hospital of Santa Cruz (*c.* 1500), near the busy Plaza di Zocodovir. Its foundation was projected by Cardinal Pedro Mendoza, and the architect was Eurique de Egas, of Brussels (he also worked on the cathedral). The hospital is now in process of restoration, and will eventually house the city museum and library (much of the former being already in place); the main element of the plan consists of a huge equal-armed cross (one arm of which was used as the chapel, the others probably as the refectory, guest-rooms, etc.); the crossing is two stories in height, the first floor being disposed similarly to the entrance floor, and forming, probably, the monastic and guests' dormitories. The ceilings and roof of the whole are an excellent example of the woodwork of the period. There are two courtyards, of very interesting design and almost Italian severity, occupying the spaces east and west of the south arm of the cross, in which many of the columns of the arcades are from a Roman or Visigoth building formerly on the site. There is also the magnificent stone staircase, already noted above.

The visit to Avila and Segovia was made from Madrid, by train to the former city, where a day was occupied, the party travelling by special motor 'buses to Segovia, where the night and the next day were spent. Avila may be cited as the Spanish Carcassone, for it is a completely walled city; it occupies a ridge which rises somewhat abruptly out of the high and barren plain between the mountainous sierras of Avila and Malagón. Within the picturesque walls (of 1090), its town plan shows that tortuousness usually associated with the Moorish occupation, during which Avila reached a period of great prosperity. In general, the dominating period of its architecture is Romanesque; even the cathedral, which is now almost entirely Gothic of the thirteenth and fourteenth centuries, was originally Romanesque, as is strikingly shown by the massive apse, which, in the thickness of its walls, contains all the chapels of the ambulatory, and which projects, with bastion-like severity, through the city walls. The massive west tower is a strong piece of design, impressive in its simplicity. The interior of the cathedral, with a short but high nave and low aisles, though somewhat gloomy, is very striking, and possesses

many details of interest, as, for example, the elaborate choir stalls (somewhat Flemish in character, and dating from about 1540); the magnificent brass choir and sanctuary screens (*c.* 1560), and the rich iron pulpits (early sixteenth century).

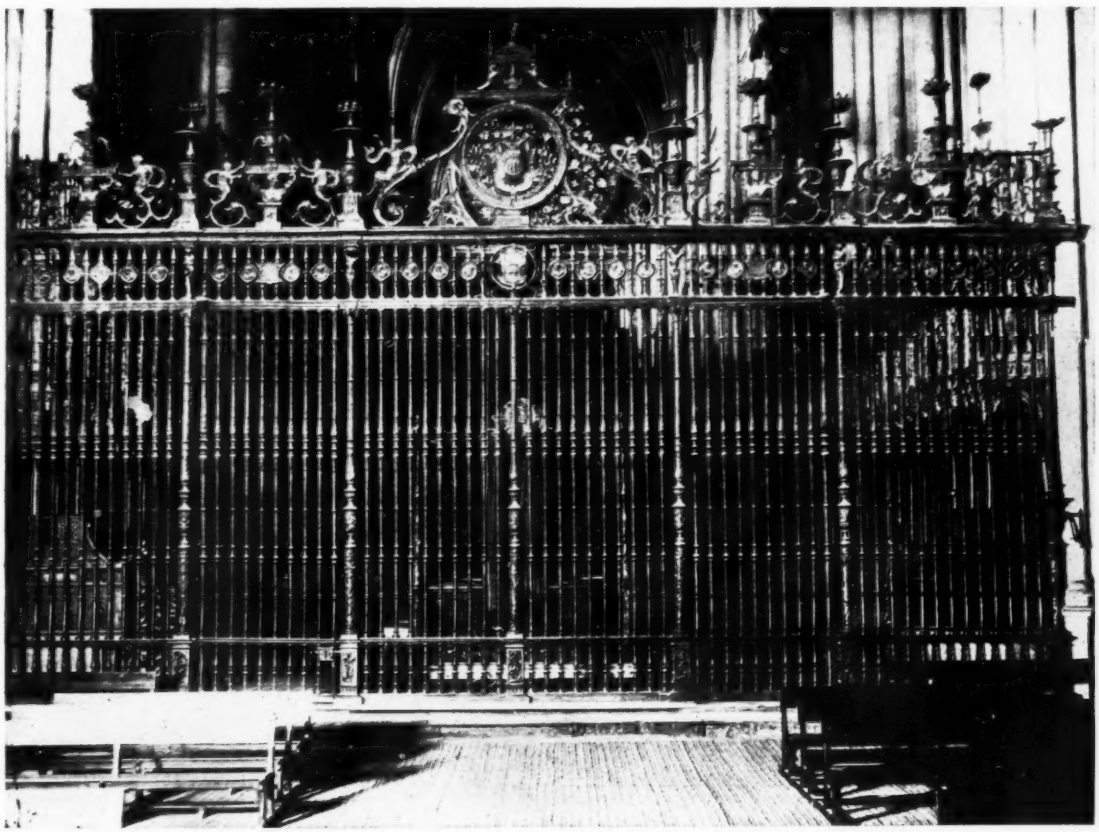
The monastery of Santo Tomás provided, perhaps, the greatest interest among the other buildings visited in Avila. The Late Gothic church (*c.* 1485) is approached through a courtyard; while its exterior is attractive, the greatest interest was found inside. It consists of a lofty nave flanked by side chapels; at the west end is the raised choir (under which the visitor enters), so common to the smaller church of Spain, but in this monastic example the altar is also raised to a higher stage, and is supported on a flat arch within the main chancel arch; the altar is thus visible from every stall in the choir, and also from almost all points of the main floor. There is a magnificent reredos, with panels that illustrate the life of the patron, St. Thomas Aquinas. The stalls of the choir are a magnificent example of wood carving, strongly influenced by northern French and Flemish work; the whole effect of the interior is curiously like certain examples of Gothic work recently erected in England.

Segovia, a somewhat larger city than Avila, rivals Toledo in its possessions of historical and artistic interest. It has, however, within its walls, a monument that has no parallel in Toledo, namely, the gigantic Roman aqueduct; although restored during the Roman occupation, and again in the fifteenth century, it still must bear, with its mortarless construction of huge blocks, materially the same appearance as in Roman days; it is nearly 1,000 yds. in length, and is about 100 ft. (at the highest point) above the valley across which it is flung, dwarfing and dominating all the modern buildings of that part of the city.

The cathedral of Segovia differs from the others already mentioned in that it was a structure planned and carried out within the comparatively short period of about seventy years. Commenced in 1522, it was almost entirely finished by the completion of the circuit of chapels at the west end in 1593. The slight Renaissance additions to the north façade, to the tower, and the crossing were carried out about 1626. It is imposingly situated in the highest part of the city, and its mass composes very satisfactorily as a climax to the city from almost any viewpoint. Internally the effect produces a great impression of serenity by the simple lines of the great piers and vaulting; in contrast to the severity of which there is the exuberant richness of the great iron screens of the choir, the "Capilla Mayor," and the secondary chapels. It is difficult to conceive of a more successful contrast both of material and form than this so often repeated Spanish one of stark stone and intricate metalwork. The cloisters and sacristy of the cathedral are also of great interest; the Gothic of the former shows, even more than the cathedral, the French and Flemish influence that affected so much the Late Gothic of Spain.

The party visited a number of houses and smaller churches of considerable interest; among others, S. Martin, with a beautifully-designed western door, Romanesque in style, bearing interesting figure sculpture on its receding jambs; the church of the Knights Templars, S. Vera Cruz; the suppressed monastery of the Parral; and the strikingly situated, but completely restored, Alcázar, which, in spite of its new appearance, provides an excellent impression of an old Castilian castle of the middle of the fourteenth century.

[Mr. Rowland Pierce's record of the Architectural Association's visit to Spain will be concluded in our next issue.]



THE CHOIR SCREEN: TOLEDO CATHEDRAL.

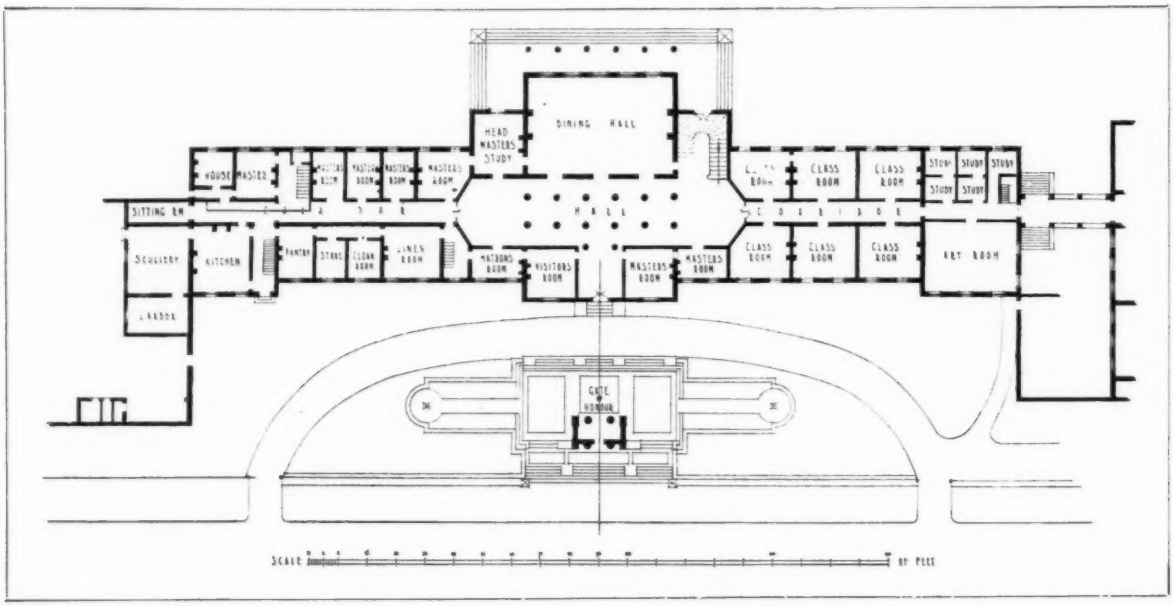
Mill Hill: A Great Public School

1. VIEW FROM TOP FIELD, SHOWING THE MAIN SCHOOL AND SCIENCE BLOCK.

IN viewing a building, or a collection of buildings, especially in an attractive or beautiful setting, there is frequently a tendency to permit charm of aspect to foreshorten the perspective of achievement. Similarly, on occasion, one may be unduly impressed by a feature germane, but quite subservient, to the main subject. I remember upon first contemplating the great Pyramid close at hand that I quite involuntarily permitted my mind to be much more occupied by speculations upon, and by wonder at, the colossal physical effort involved than by the more worthy and appropriate thoughts it deserved. So, I think, there must always be the possibility that any feature which makes instant appeal to the mind or to the senses may eclipse, or even obscure, the main and true merit of the work which logical consideration will readily recognize.

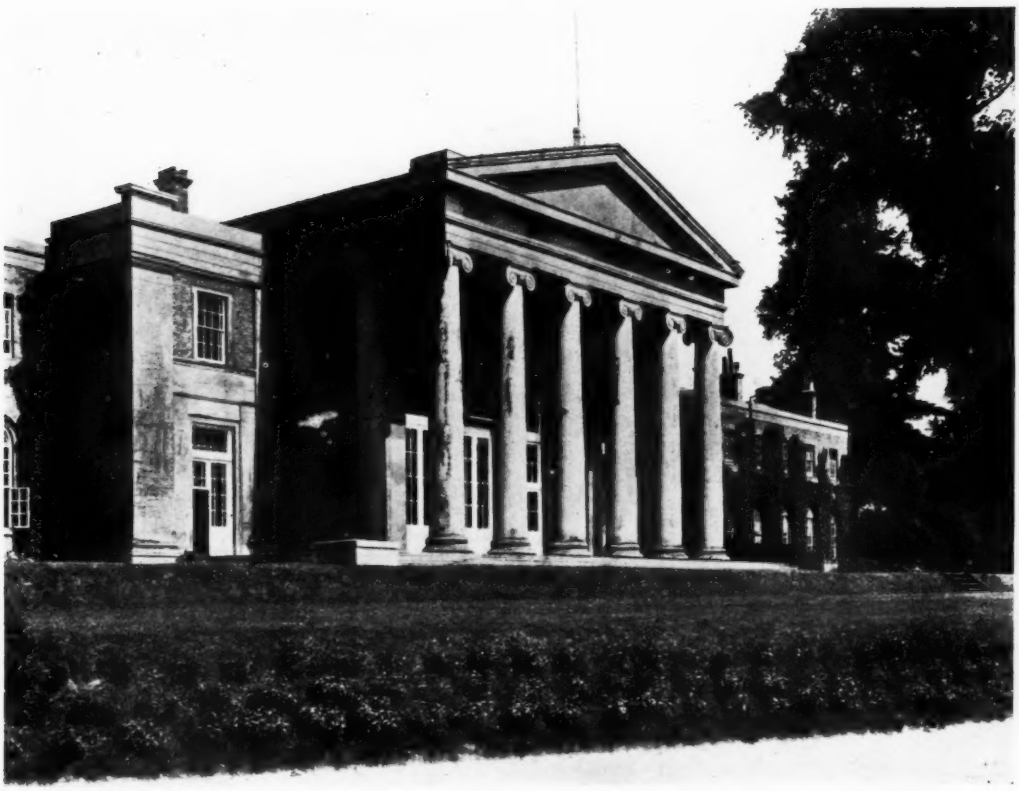
With Mill Hill School, upon my visit there on a recent summer's day, I found, in the truly beautiful setting, in the charming amenities, in the expanse of the grounds, in the trees, the flowers, and in the buildings, of types respectively dignified, stately, and picturesque—each happily in accord with its purpose—ample temptation to rest content upon its beauty, and to overlook what, indeed, it represents and stands for—a monument of accomplishment, and a treasury of edification.

To fulfil my present purpose and to do justice to my



PLAN OF THE OLD SCHOOL, SHOWING THE PLACING OF THE GATE OF HONOUR

2. THE MAIN ENTRANCE AND THE GATE OF HONOUR FROM THE RIDGEWAY.



3. THE MAIN SCHOOL : THE GARDEN FRONT. SIR WILLIAM TITE, ARCHITECT.

subject, however, I must endeavour, in recording the facts elicited, and the impressions gained in the course of the tour of the school, which I had the privilege of making, to give this aspect only its proper relative position. I hope to show that, as an educational foundation and as a great force for good, the school is entirely worthy of its beautiful setting. If I succeed I shall, I think have earned for it, as those who know its charms will corroborate, a very high meed of praise indeed.

I cannot overlook, and I should be excluding an aspect of great interest were I not to draw due attention to, the significance of the school of to-day as a testimony to the worthy purpose and perseverance of which it is the result.

BLOCK PLAN.

To contrast this magnificent collection of fair and finely-equipped buildings, which goes to form the present school with its comparatively humble and improvised beginning is alone to realize the record of steadfast zeal and indomitable progress that lies behind it. To enable this contrast to be made, and to inspire a really just appreciation of the courage and energy by which it has been brought about, I can hardly do better, as a preliminary, than outline briefly the early history of the school from its commencement.

* * * * *

Founded considerably over a century ago—in 1807—it was originally intended that it should be a day-school within the metropolis, and steps were even taken to find fitting premises in, or in the environments of, the City itself. Afterwards, for several reasons, it was decided that it should be at a distance of not less than ten miles from London, and that it should be a boarding- and not a day-school. The extension of the area of search presumably facilitated the discovery of a suitable building, for we learn that in the same year Ridgeway House, Mill Hill, in the County of Middlesex, was purchased for the purpose, and the school was there opened on January 25, 1808.

To-day the site of the old house is not marked in any way, but, in the course of recent gardening operations, certain of the foundations were discovered. By these, and by an old cedar tree now in the grounds, and shown in an early picture of the school premises, the site is proved to be south-east of the main school, and Ridgeway House faced in that direction, i.e., south-east. Detailed information of an architectural nature of the house is not available, but it appears that, prior to the opening, the stable attached to the building had been converted into a chapel, and other alterations and additions had been made to yield increased accommodation. In view of this last fact it is fairly clear that the house itself could not have been of any very great size, for the initial complement of boys amounted to only about twenty and, upon this number becoming increased to about sixty in the course of the first year, further dormitories became necessary. These were provided by adding an upper story to the classrooms, which had been previously erected at right angles to the main building.

Early in 1811 a separate house in the village was rented for the occupation of the headmaster, and in 1813 a vestry was added to the chapel. In the latter year also—the

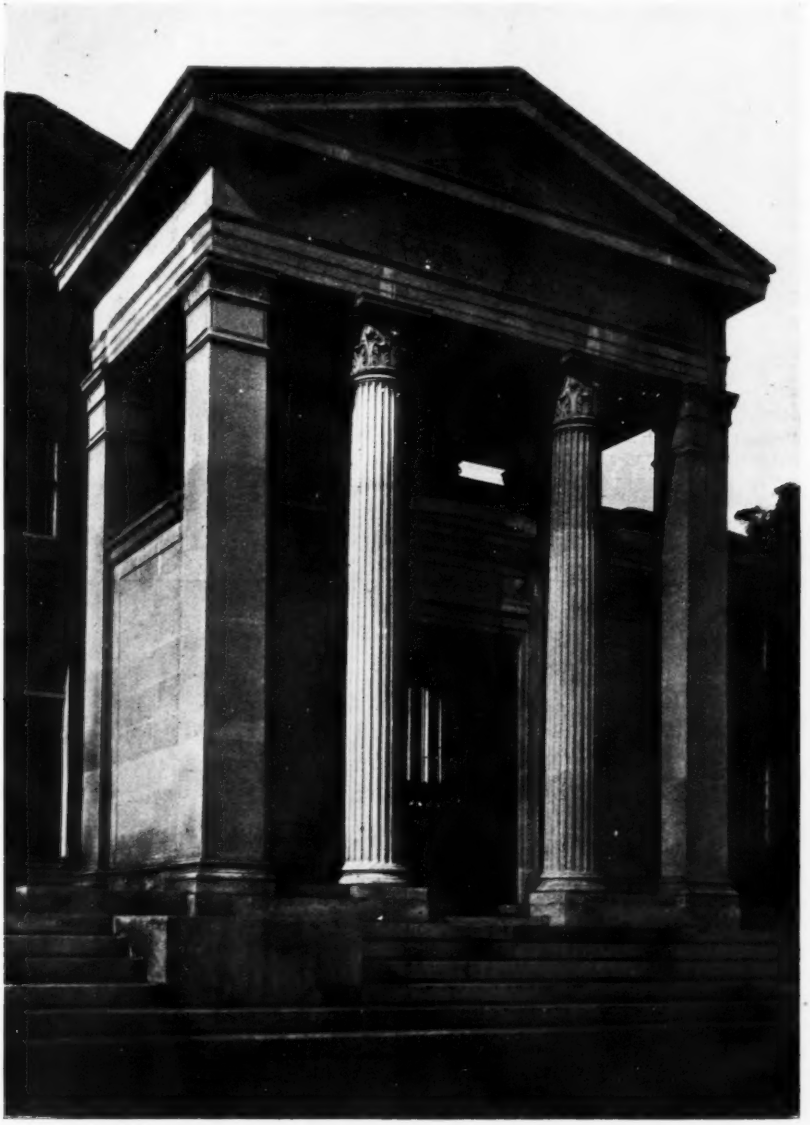
number of scholars then exceeding seventy—a new schoolroom, with dormitories over it, was erected.

From almost the commencement an arrangement had been in force by which the school chapel had been conducted, under the authority of the headmaster, to supply the spiritual needs of the village as well as of the school, and owing to the steady increase of the congregation, it was eventually—in 1820—found necessary to enlarge it considerably. This was done by joint endeavour, the school authorities contributing a sum and the members of the congregation the balance.

stone of the new school was laid on June 16, 1825, and a twelve-month later it was occupied.

For several years nothing of any particular note occurred, but in 1832, to meet the growing needs of the neighbourhood and to provide a more dignified place of worship, a new chapel was erected, and the opening services took place on the "public day" of the school (June 27) in that year.

No further additions were made, and no other developments of any importance took place, until after a date which must, from every point of view, be regarded as of the most vital importance in the history of Mill Hill School.



4. THE GATE OF HONOUR. STANLEY HAMP, F.R.I.B.A., ARCHITECT.

By the commencement of 1824 the premises had become quite inadequate for the number of pupils. In addition also, they had become dilapidated, and had been constantly requiring repair. Furthermore, it should be remembered, they had only been adapted and improvised to school requirements. It was decided, therefore, to build entirely new premises. A somewhat comprehensive design was adopted, which made provision for 120 boys, and included fairly complete scholastic and domestic requirements; but for financial reasons it seems that certain of the facilities provided for, but not absolutely essential, were eliminated, and left for completion at some future date. The foundation

From causes into which I need not enter, a crisis arrived in its affairs in 1869, and legal steps were then taken to effect a thorough and complete re-organization. The outcome of these was the "New Foundation," and it is from the time of the creation of this that the steady but astounding development to its present day proportions really dates.

It was not long after the new foundation that the beneficial influence of the re-organization became evidenced in creating the necessity for still further expansion. It had been first suggested in 1872 that a boarding house—at that period a complete novelty—should be erected and established, and this became a substantial reality in 1874, when

the building known as "Burton Bank" was first opened. This house afforded accommodation for thirty-five boys. Two years later the swimming bath and the first gymnasium were built. Further outside ground and buildings were acquired about this time, the most interesting being, perhaps, "West Grove," which provided badly needed additional accommodation. It was taken in hand in 1876, and the same year saw the erection of the sanatorium.

For a lapse of twenty years nothing worthy of mention transpired in connection with the school premises or adjuncts. This period seems to have been one of fluctuating fortunes, and things generally may be said to have "marked time." Thus, no necessity for expansion or alteration arose, though towards the end of it, those forces which were destined during the next similar period to advance the school so greatly, began to manifest themselves.

The next date of importance—and indeed of no small interest—was 1896, when the foundation stone of the new chapel was laid. For many years the need of a chapel, more in harmony with the aims and spirit of the school, and of those in present and past association with it, had been evidenced, and the erection of the present fine building may, I think, be justly attributed to the efforts of the late Lord Winterstoke, Sir Albert Spicer, and of other old Mill Hill scholars. In this same year the new headmaster's house was built. This was much more conveniently situated than former ones, and was of a character much more befitting the dignity of the office.

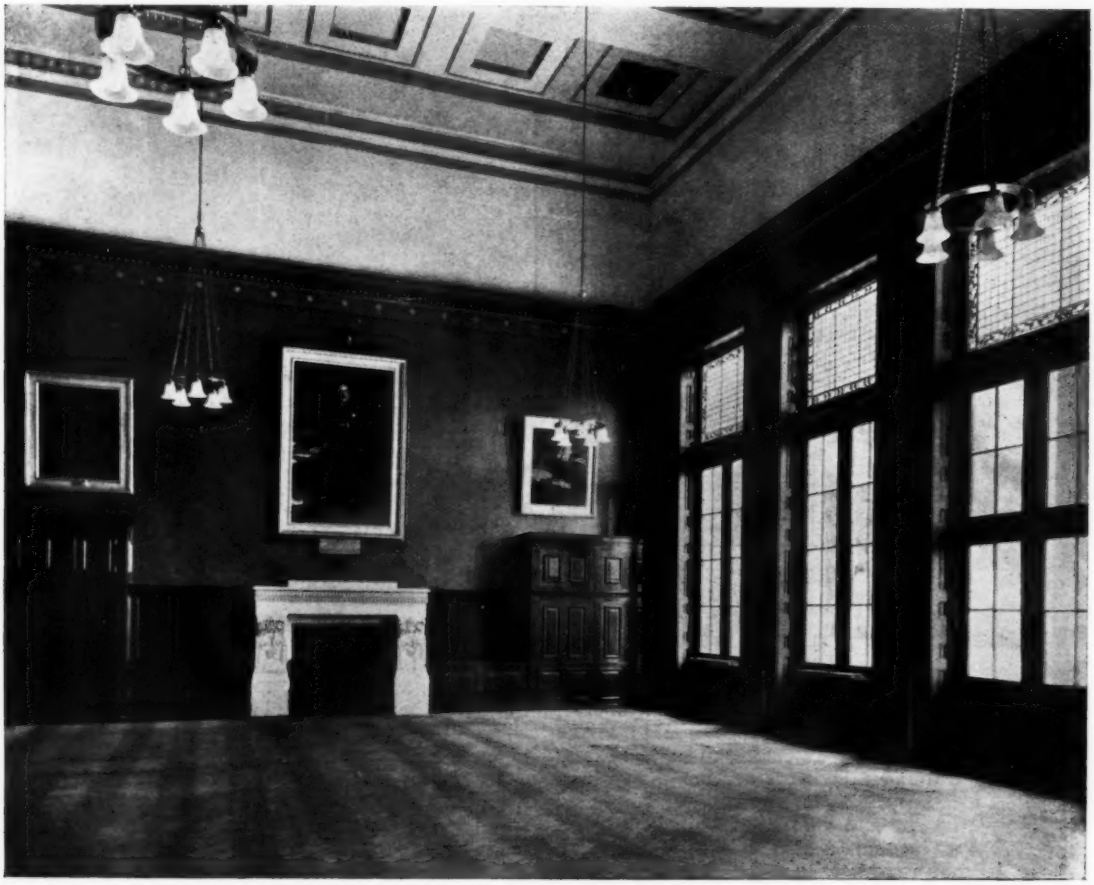
About this time affairs took a definite step forward, and the numbers of scholars increased; and between 1897 and the end of the century much was done. Upon the new chapel being opened the old one was made into the "big school," and the former large classroom was converted into a physical laboratory. In 1898 "Erlesmere," a house capable of boarding twenty boys, was taken to cope with the increased numbers, and later on, "Hazelmere," was taken for the same purpose. Other minor improvements and alterations were effected, and small additions made, perhaps the most notable among the latter being the erection of the long-demanded tuck shop.

By 1902 it had been decided to supplant the smaller boarding-houses, situated somewhat remotely from the main school, by a large boarding-house in juxtaposition to it, and in the same year the foundation-stone of Collinson House was laid. It was completed and opened in 1903, in which year, also, the new scriptorium was built.

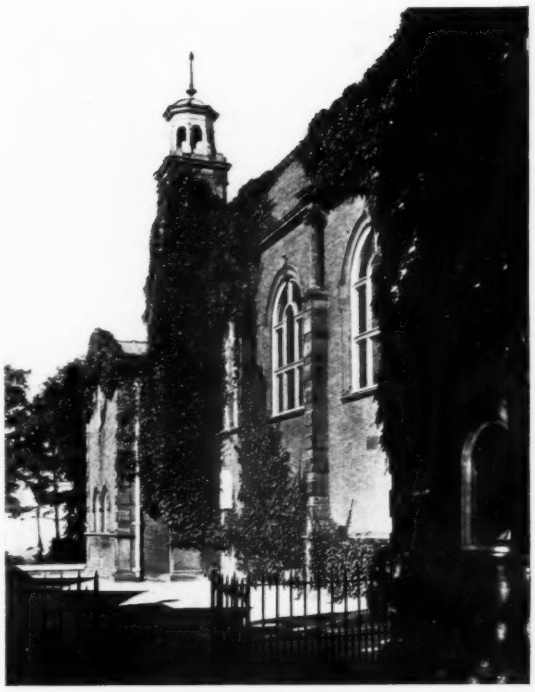
During 1905 and 1906 an important work was planned and carried out, comprising the enlargement of the big school and the erection of a number of new classrooms and offices. A loggia was also constructed joining the big school with the main school. The centenary year, 1907, is memorable for the erection of the Winterstoke Library. This is situated between the tuck shop and the scriptorium, with which it forms a small quadrangle.

In 1908 the new fives courts were built, and in the following year "The Grove" was acquired, re-modelled, and opened as a residence for the masters. The next year saw the starting of the rifle club, which formed the nucleus of the school O.T.C., and which ultimately, as may be imagined, was responsible for the provision of the rifle range.

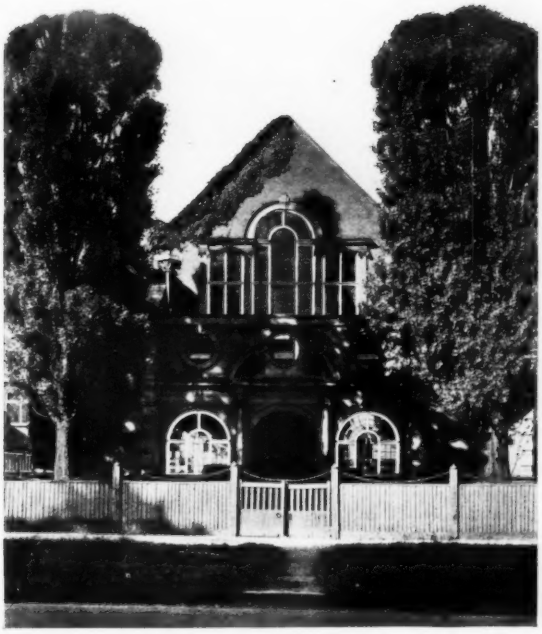
The next important event was the opening of Ridgeway House. This is situated on land on the south side of Wills Grove, and was built as a further boarding-house to meet the now steadily growing demand for accommodation. The last notable addition before the war was the McClure Art and Music schools, which were erected in 1912 to commemorate the "coming of age" of Dr. McClure, he having then completed twenty-one years as headmaster.



5. THE DINING HALL. STANLEY HAMP, F.R.I.B.A. ARCHITECT.



6. A SIDE VIEW.



7. THE ENTRANCE FRONT.

From this time there is a blank until after the termination of the war.

After the armistice a committee of governors, old boys, and parents was formed, and an appeal was made for a fitting scheme of war commemoration for the school. It was decided that this should embody three distinct objects. First, it was projected to provide war scholarships for the sons of those old boys who had fallen; secondly, to build a new science school; and, thirdly, to erect a suitable war memorial. As the outcome of this appeal the school possesses to-day the magnificent science school, and the impressive and imposing Gate of Honour.

* * *

The foregoing is a necessarily brief account of the development of the school and its gradual formation into one of our foremost public schools. Practically all the buildings which compose, and which are indispensable units of, the school to-day have been touched upon in their chronological order. It now remains to give to each its deserved individual attention, and to indicate the function it performs or the part it plays in the homogeneous and active whole.

8. THE INTERIOR.

THE CHAPEL. BASIL CHAMPNEYS, ARCHITECT.

Reference to Fig. 2 will show that the school is fronted along a straight piece of road, from which it stands back, and from which a carriage drive leads to the main entrance. This road is known as "The Ridgeway," and, as the name implies, it is situated on the ridge of a hill. Mill Hill School occupies the summit of this hill, and thus enjoys a most salubrious position and, incidentally, the most delightful views in all directions.

On approaching the school along the road from either direction the Gate of Honour stands out to catch the eye before the main school building comes fully into view; and when the two are seen in association (Fig. 2) the effect is fine indeed.

The Gate of Honour is the war memorial proper of the school, and was erected in 1920. Built of Portland stone, it takes the form of a classic portico in the Corinthian style, and has many beautiful features, all of which are, I think, clearly shown in the illustration (Fig. 4). This view

is of the side facing the school, and on the other side is the inscription: "Gate of Honour." The setting is quite simple, but the whole effect is beautiful and impressive.

The main school is, as one might suppose, the biggest building of the school, and the plan (p. 608) conveys its detail and capacity. The entrance front is shown in Fig. 2, and the fine portico in Fig. 3, in which one sees the garden front, and obtains a fine survey of a large part of the school grounds. Space does not permit me to dwell in detail upon the whole interior, and I will only mention, in passing, the fine entrance hall, the charming and interesting visitors' room, and the lady resident's room. At the dining-hall, however, I must pause, for it is of noble character and dimensions. It is extremely lofty, being 36 ft. high, and formerly, it is understood, this fact militated against its symmetrical appearance. Recently, however, it has been remodelled, and the cornice, and later the panelling (the latter presented by Dame Janet Stancomb-Wills), have rendered it a dignified and delightful room. Of the windows shown (Fig. 5) there are in all five, and these look out on to the portico. The upper part of the main school, reached by a stone staircase from the entrance hall, is devoted entirely to dormitories and to sleeping accommodation for the tutorial and domestic staffs.

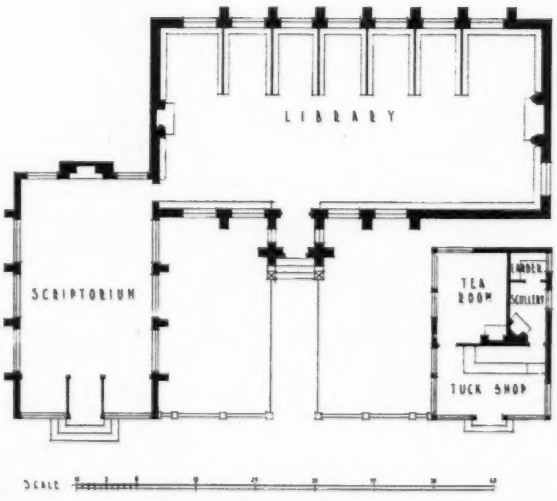
Turning to the right from the entrance hall and proceeding along the corridor to the northern end of the main school building, one crosses the loggia to the big school. In the illustration (Fig. 14) the side of the big school and the loggia are shown.

In the big school of to-day it is difficult to envisage the small school-chapel of 1832. It has now a main hall, with a gallery capable together, it is understood, of holding 700, and with fourteen splendid classrooms, a playroom, and various offices. The extensive alterations and additions involved were carried out in 1905–6 and were, as a tablet on the exterior shows, enabled by the generosity of an old Millhillian, Mr. Herbert Marnham.

Proceeding farther we come to the swimming bath (Fig. 21), in connection with which there are changing rooms, hot baths, shower baths and, recently added, the fine running water troughs so much appreciated after strenuous sport. Adjacent to these is a cloister, from which open off lecture rooms, laboratories, and a natural history museum. Upstairs we have the drawing school, which is spacious and lofty and has a good north light.

A little farther on we come to the chapel, of which the view presented to us on leaving the cloister is shown on Fig. 6. From the courtyard shown, we pass through the iron gateway, across the forecourt, and come again on to the Ridgeway, from which we have the view of the chapel, shown on Fig. 7, which is of the entrance front. This, the third chapel the school has possessed, was erected in 1896 and was built of red brick strengthened with white stone. It is a basilica in form and has an apse at the western end, with a wing on each side. It has a tall bell tower and two dwarf towers at the end fronting on the road (see Fig. 6). Space does not permit to give a detailed description; suffice it to say that the whole has a most satisfactory appearance, and much in high praise of the interior might be written. The illustration (Fig. 8) gives a good idea of this though it does not do it full justice.

Leaving the chapel we turn into the gymnasium (Fig. 22), a fine spacious and well equipped building, before returning to the playground. There, at right angles to the main buildings, we have a small quadrangle, composed of the tuck shop and the scriptorium on either side, and between them the Winterstoke library. In the illustration (Fig. 9) the last of these is shown; on the left may be seen part of the scriptorium, and on the right a corner of the roof of the tuck shop. These three buildings combine delightfully, and form, together with the little garden which they enclose, perhaps one of the most picturesque architectural gems of the school. The tuck shop includes the "shop" proper, a tea-room, and a room for stores and washing up, etc. The interior of the scriptorium is delightful, as the illustration (Fig. 10), I think, adequately shows. The Winterstoke library was erected in 1907, and was the gift of Lord Winterstoke. Both the exterior and the interior are very fine, and it seems to be generally agreed that the general effect in combination with the other two buildings is most successful.

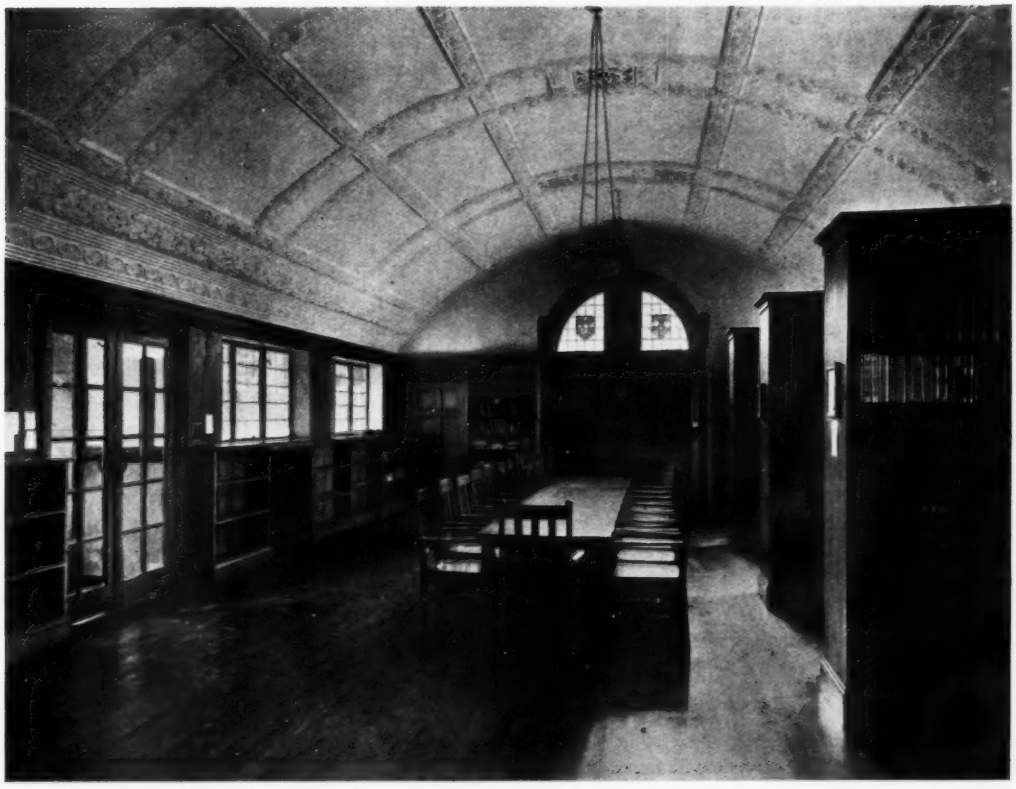


9. THE WINTERSTOKE LIBRARY.
STANLEY HAMP, F.R.I.B.A., ARCHITECT.

Next to this group we come to the art and music schools building, and this though of simpler character, is nevertheless extremely pleasing. It consists of a central hall and fourteen practising rooms, and it is built of red brick. In form it also takes the shape of a quadrangle.

Passing between the art and music schools and the Winterstoke library block we go by the farm buildings and the bailiff's office and come to the sanatorium. This is on probably the best site of all, and commands a magnificent view. Comparatively recently it has been very much enlarged by an addition, or extension (not illustrated). From the end of this building the orchards and gardens extend right to the corner

10. THE SCRIPTORIUM. THE LATE T. E. COLLCUTT, PP.R.I.B.A., ARCHITECT.



11. THE WINTERSTOKE LIBRARY. STANLEY HAMP, F.R.I.B.A., ARCHITECT.

12. A VIEW FROM THE SOUTH-EAST.

13. A LABORATORY.

THE NEW SCIENCE SCHOOLS. STANLEY HAMP, F.R.I.B.A., ARCHITECT.

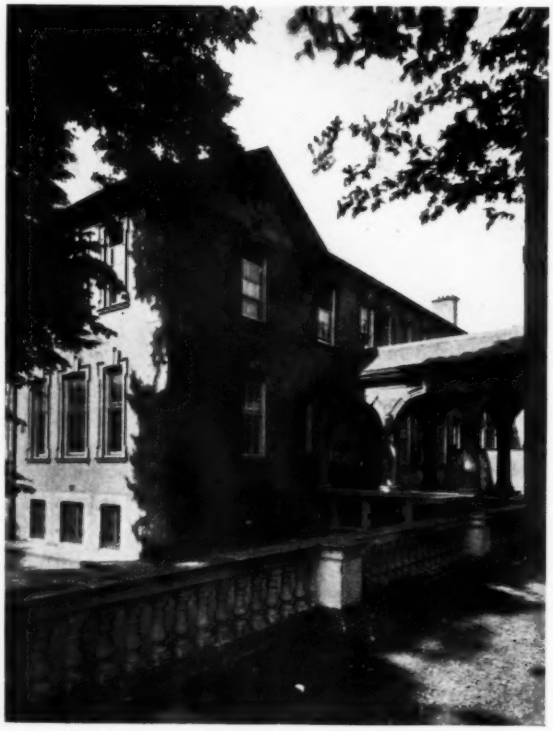
of Hammers Lane, and there are glasshouses and the usual accessories.

Returning past the farm buildings, we bear to the right down the road till we come to the new science schools, which we pass in order to view the back (Fig. 12). On proceeding round to the front we observe that this building faces the back of the chapel and the other main buildings, and is at right angles to the Winterstoke library and art and music school groups, and thus forms a quadrangle enclosing the northern portion of the playground. The illustration (Fig. 15) shows the entrance front of this imposing building and, as I think it will probably be of interest, a plan is also given. With regard to the interior and its equipment, it is difficult adequately to express one's admiration. I can readily believe that there exist no better facilities in any school than we have here. One cannot fail to be tremendously impressed by the vast scope and opportunity at hand. One of the laboratories is shown in Fig. 13 and this gives some, though perhaps scanty, idea of the wonderful standard of equipment.

We now turn to the residential buildings and, leaving the science schools behind, we strike across Top Field towards the headmaster's house. On our way we pause to glance back at the delightful view (Fig. 1) in which we have, on the one hand (left) the newest, and on the other the oldest buildings of the school—with very nearly a century between them. Proceeding, we come to the headmaster's house, situated almost on the site of the old Ridgeway House. It is a pleasant brick building, nicely placed, and surrounded by trees and flowers.

We next visit in turn each of the boarding houses and, first in point of propinquity, we come to Collinson House, the second in order of foundation. This is a fine large house (Fig. 18) lying not far from, and almost due south of, the headmaster's house. Erected in 1903, it is charmingly situated in beautiful grounds, and accommodates about forty boys.

Continuing farther south and crossing Wills Grove, we arrive at Ridgeway House. This, as the illustration (Fig. 19) shows, is of very considerable size; it accommodates between fifty and sixty boys, and is a fine example of modern domestic architecture. The grounds and gardens are charming. This house was the last to be opened, but another big boarding house is now nearing completion. The other existing boarding house is Burton Bank, and this is the farthest from the school. It was the first to be opened—indeed, it was almost an experiment, for at the time Burton Bank was acquired, the boarding house was not the tested and accepted factor in public-school economy that it is to-day. It has accommodation for thirty-five boys, is splendidly equipped, and is furnished with special facilities, which quite neutralize its comparative distance from the school.

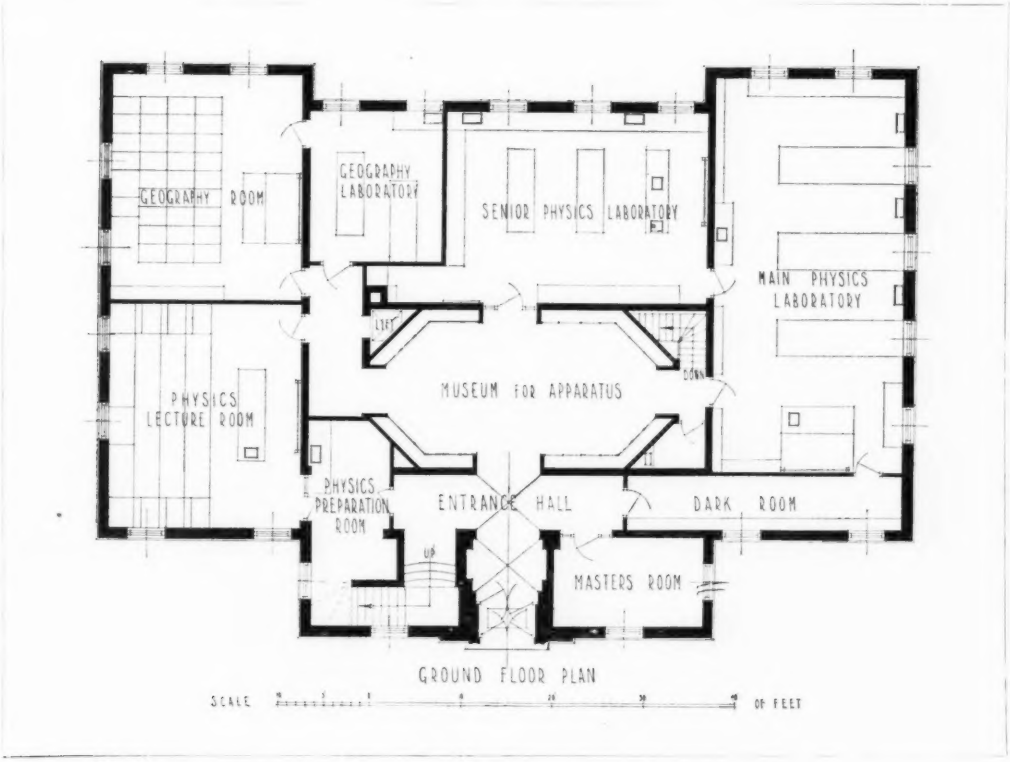


14. THE LOGGIA AND SOUTH CORNER OF THE BIG SCHOOL. THE LATE T. E. COLLCUTT, PP.R.I.B.A., ARCHITECT.

We now return to the main school and, facing the entrance, on the other side of the Ridgeway, we see "The Grove," a charming wooden house. This, formerly well known as Scott's, was acquired in 1909. It was then entirely and very successfully remodelled, and opened as a residence for masters of the school. It is a house of peculiar charm and, as a wooden one, perhaps of more than ordinary interest. The illustration (Fig. 17) shows the entrance front and Fig. 16 gives a back view from the garden. It will probably also be of interest to ascertain how an apparently inadequate house can have been made to yield such charm and service. This house, by the courtesy of the architect, is also shown in plan.

Before closing, it seems difficult to forgo mention of many minor but interesting features of the school—the cricket field and pavilion—the rifle range—the carpenter's

15. THE ENTRANCE FRONT.



THE SCIENCE SCHOOLS. STANLEY HAMP, F.R.I.B.A., ARCHITECT.

16. THE GROVE, BACK VIEW FROM GARDEN.

shop, and other items offering edification and recreation; but my tour must needs end here, and I will close with the hope that it may have inspired an appreciation of Mill Hill School as a virile force in the educational world, for progress and for good, and as such, therefore, a great national asset.

X.

Following are some constructional particulars of the new buildings, together with the names of the contractors and sub-contractors who were connected with the work. Mr. Stanley H. Hamp, F.R.I.B.A., of Collcutt and Hamp, was the architect for the Gate of Honour, the new science school, the Winterstoke library, and for the alterations and decorations to the entrance, and dining-halls in the main block; the late Mr. T. E. Collcutt, PP.R.I.B.A., of the same firm, for Collinson House and Ridgeway House; and Mr. John C. S. Soutar, Licentiate R.I.B.A., was the architect for the additions to "Belmont" (to be illustrated in our next issue).

The Gate of Honour.—The ceiling is in cedarwood with colour decoration, and the gates are in bronze. The sculptor was Mr. P. G. Bentham, and the colour decoration of the ceiling was executed by Mr. George Murray. The general contractors were Messrs. G. E. Wallis and Son, of Maidstone and London, who were also responsible for the stone work. The sub-contractors were Charles Smith, Sons & Co. (door furniture—locks, electric bell plates, bronze gates).

The New Science School.—The structure generally is of brick, with hollow external walls. The external face of the brickwork is rendered in stucco, and the cornices and strings are in the same material. The floors throughout are of fire-resisting construction, finished generally with wood blocks; the staircase is in artificial stone. The entrance hall is paved with stone. The roofs are covered with red tiles. The windows are in wood, and the roof-lights are in metal. The main entrance window over is carried out in Monk's Park stone. Mr. P. G. Bentham was the sculptor. Messrs. Miskin and Son, St. Albans and London, were the general contractors, and the sub-contractors were as follows: Thos. Faldo & Co., Ltd. (asphalt lining work); Miskin and Son (stone, plumbing, and sanitary work); H. W. Cullum, Ltd. (steelwork and girders, fireproof floors and partitions); Haywards, Ltd. (patent glazing); Acme Flooring Co. (wood block flooring); Halstead Bros. (gasfitting, gas fixtures, and special furnishings); Hendon Electrical Supply Co. (electric wiring); T. R. Rudd & Co. (plaster work); General Electric Co., Ltd. (electric light fixtures); Yannedis, Ltd. (door furniture, locks); W. Richardson & Co. (railings, handrails, balusters, etc.); Bradford & Co. (stair); Waygood-Otis, Ltd. (lifts); James Gray, Ltd. (heating and ventilating).

The Winterstoke Library.—The general contractors were Messrs. F. Tribe & Co., and the sub-contractors were: W. Richardson & Co. (casements and casement fittings and gas fixtures; G. P. Bankart (plaster work); James Gibbons, Ltd. (door furniture—locks, electric bell plates, etc.).

Alterations and decorations to the entrance and dining-halls in the main school block. In the dining-hall a new cornice was carried round at the level of the window-heads in order to do away with the effect of undue height. This gave greater scope for the new colour-scheme. An oak dado (the gift of Dame Janet Wills) was fixed round the dining-hall, containing cutlery and plate cupboards, and enclosures for service lifts. Electric light was installed by means of pendants from the ceiling. The whole of the general decorative work to the walls and ceilings of the entrance and dining-halls was carried out by Messrs. Osborne's, Ltd., of Grafton Street, W. The sub-contractors were: Francis Polden & Co. (electric wiring); G. Jackson and Sons, Ltd. (plaster work); J. P. White and Sons (special woodwork); General Electric Co. (electric light fixtures); Smith, Major and Stevens (lifts).

Collinson House—A new boarding house. General con-

17. THE GROVE, THE ENTRANCE FRONT.
STANLEY HAMP, F.R.I.B.A., ARCHITECT.

18. COLLINSON HOUSE.
THE LATE T. E. COLLCUTT, PP.R.I.B.A., ARCHITECT.

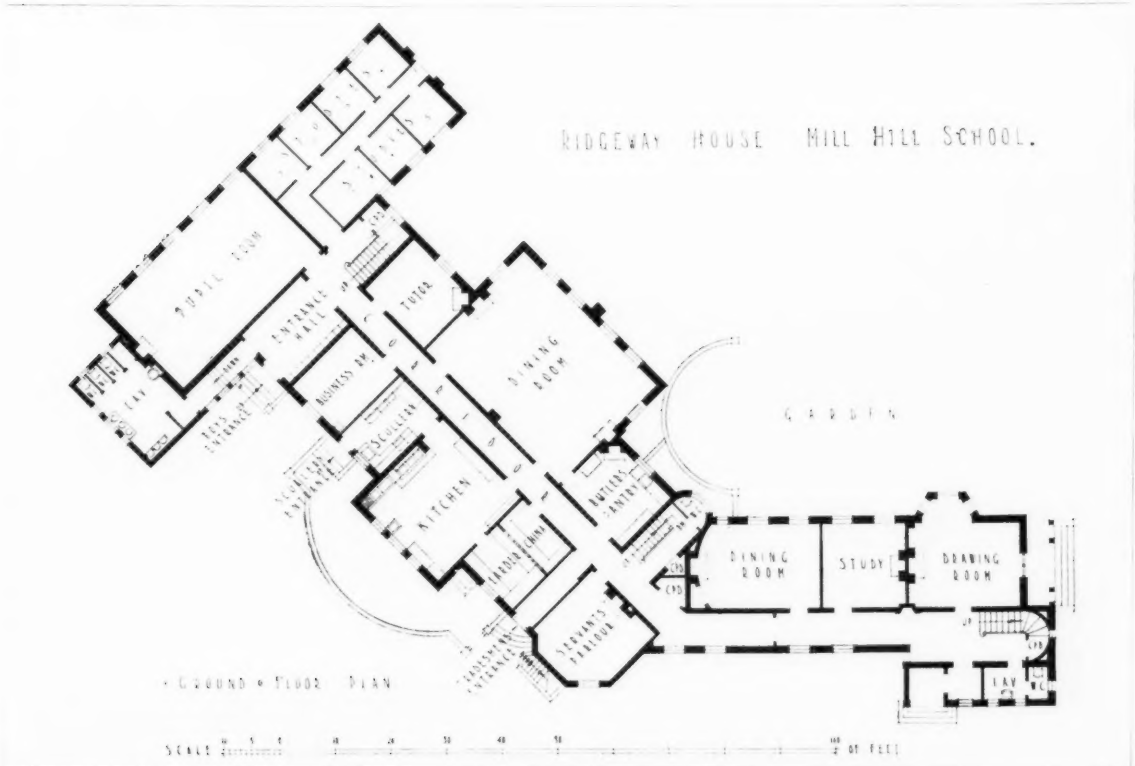
tractors, Messrs. Bentley. Sub-contractors: Thos. Lawrence and Sons (bricks); Van Straaten (tiles); J. Reekie and Sons (plumbing and sanitary work); Benham and Sons (heating apparatus, cooking and laundry machinery); Juni Sase (bells).

Ridgway House.—General contractors, Messrs. Wm. Moss and Sons, Ltd. Sub-contractors: Taylorson (carved stonework); Bradford & Co., Ltd. (fireproof stairs); Thos, Elsley, Ltd. (casements and casement fittings; stoves, grates, mantels); J. Reekie and Sons (plumbing and sanitary work); Burke & Co. (mosaic flooring); Higgins and Griffiths (electric wiring and bells); Shaw and Carter (door furniture—locks, electric bell plates, etc.); Wontner Smith, Gray & Co. (heating apparatus, cooking machinery).

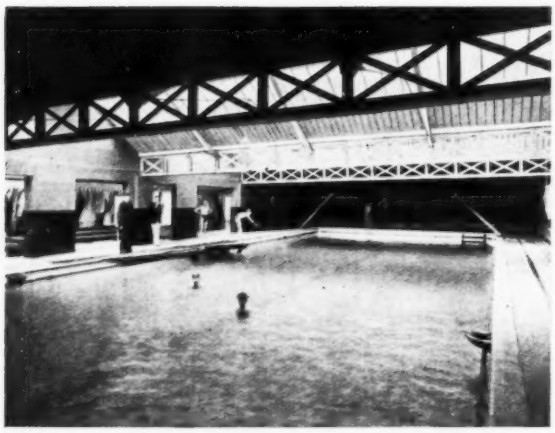
Additions to "Belmont."—The original "Adam" house known as "Belmont" was acquired for use as a school, and additions were necessary to provide dormitory and other accommodation. The new building faces south-west, and the subsoil is sand and gravel. The additional accommodation included new kitchen quarters, a large dining-room, and classrooms, etc. The buildings serve as a preparatory school to Mill Hill Grammar School. The additions involved considerable alterations to the existing premises, but care was taken not to interfere with the architectural treatment of the

19. THE BACK VIEW.

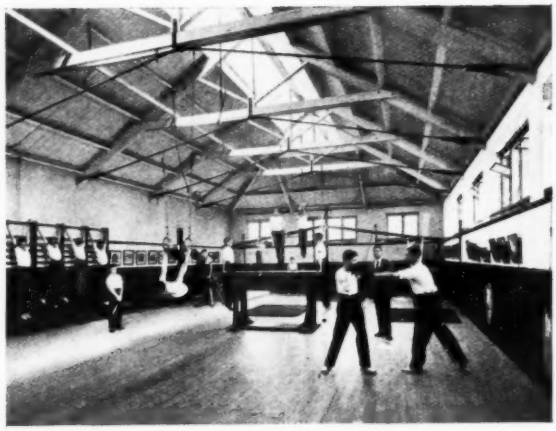
20. THE ENTRANCE FRONT.



RIDGEWAY HOUSE. THE LATE T. E. COLLCUTT PP.R.I.B.A., ARCHITECT.



21 THE SWIMMING BATH.



22. THE GYMNASIUM.

original house as designed by Adams, and the lines of the new building were to some extent governed by those of the old building. The purposes of the new building required larger windows than were necessary in the case of the original house. The new building is of brick, with reinforced concrete floors and flats. The external walls are faced with brindled Sussex stocks, with Portland stone plinth and dressings. The roofs are covered with rustic grey and green slates laid in diminishing courses, and the sash windows are in pitch pine. The whole of the rooms are centrally heated by means of radiators. The staircase is in reinforced concrete, with teak treads and panelled wood balustrade. The carving was carried out by Mr. Sidney Laughton, of London. The general contractors were Messrs. C. Miskin and Sons, Ltd., of St. Albans who were also responsible for the cloak-room fixtures, Portland stone dressings and fireplace, and the tiling to walls and floors, plumbing and sanitary work, special woodwork, stair-treads in teak. Sub-contractors were as follows: Val de Travers Asphalte Paving Co. (flat roofs); Trussed Concrete Steel Co., Ltd. (floors); J. J. Etridge, Junr., Ltd. (slates); J. Binder (casement and casement fittings and leaded lights); The Luxfer Co. (roof lanterns); Bratt, Colbran & Co. (stoves, grates, mantels); H. Pontifex and Sons, Ltd. (sanitary ware and fitt ngs); W. Macfarlane & Co. (lead down pipes and R.W. heads); The Acme Flooring Co. (wood-block flooring); The Hendon Electric Supply Co., Ltd. (electric wiring and electric light and bell fixtures); J. W. Singer & Co. (art metal work); Yannedis & Co. (door furniture — locks, electric bell plates, etc.); The Hardware Trading Co. (heating apparatus and boilers).

"The Younger Generation"

In a recent article in "The Weekly Westminster," upon "The Younger Generation," Professor C. H. Reilly says: In his article on the younger poets Mr. Humbert Wolfe claimed that all poets are young. Of course they are, and I can make the same claim for the architects, as, indeed, one could for creative artists of any sort. The architects who are not young are no longer architects. Their work is still-born. Their buildings may stand up and be tricked out with garlands—they generally are—but they have no life of their own within them, and their designers do not, therefore, deserve the name of chief builders.

Unfortunately, such men and such buildings are in the vast majority. If the men were ever architects as such they died young, though one cannot believe that even then the gods loved them. They were probably just professional men from the start, dealing with one of the many aspects of real property, and have remained so ever since becoming more and more professional, and, from a worldly point of view, more and more successful.

As we walk through the streets of the town, how many of the new buildings which we pass seem imbued with any vitality of their own, or seem to have any message to give beyond pompous ostentation or dull triviality? Occasionally a new structure arises stark and strong, like Adelaide House, by London Bridge, or graceful, serene, and elegant, like Britannia House, Finsbury Circus; and we find that they are by two old-young men who will never grow up, Sir John Burnet and Sir Edward Lutyens. The great interior of the Westminster Cathedral, which has done more to revitalize religious buildings in this country than any other design, was the work of a man old in years but young in spirit. Wren, like Michelangelo, did his greatest work when in the 'seventies. The very act of creation, if one can manage it at all, implies youth.

Our concern, however, is with the men young in years, to whom the war came at the worst time in their lives for their work. How has it affected them? What are they doing—those that came through at all?

To answer so general a question is obviously very difficult. It is complicated by other conditions. There is the new fact that in architecture this new generation is a trained generation in a sense in which the ones immediately preceding it were not. Schools of architecture have been in existence in the chief centres of population only for the last quarter of a century or for less.

Now schools will not make artists, but they will enable those who take their training seriously to envisage more clearly the problems before them. In the schools the men are trained by building one after another a series of castles in the air, each answering to a more and more difficult programme. Unless the problem is a dictation one, in which definite style and type of solution is laid down beforehand, the only sound way to estimate results is to choose the most logical solutions—both physically and spiritually.

The young architects to-day, while all modernists in a way their parents were not, may be divided into those who carry modernism so far as to discard all traditional forms, and those who use such forms where they still seem to have meaning, though even then, of course, striving to give them new vitality.

The first group seems to centre round the London schools of architecture, and the second round the northern ones of Manchester and Liverpool. The young men referred to may not, of course, belong to any school, but these schools, through the published work of their students and the known point of view of their teachers, necessarily become the foci round which they revolve.

That there should be such movements and such foci for them is a very healthy sign. It shows that the war, if it has had any effect at all, except that of setting back the clock for the individual and of depriving men of their legitimate opportunities, has not dispirited them.

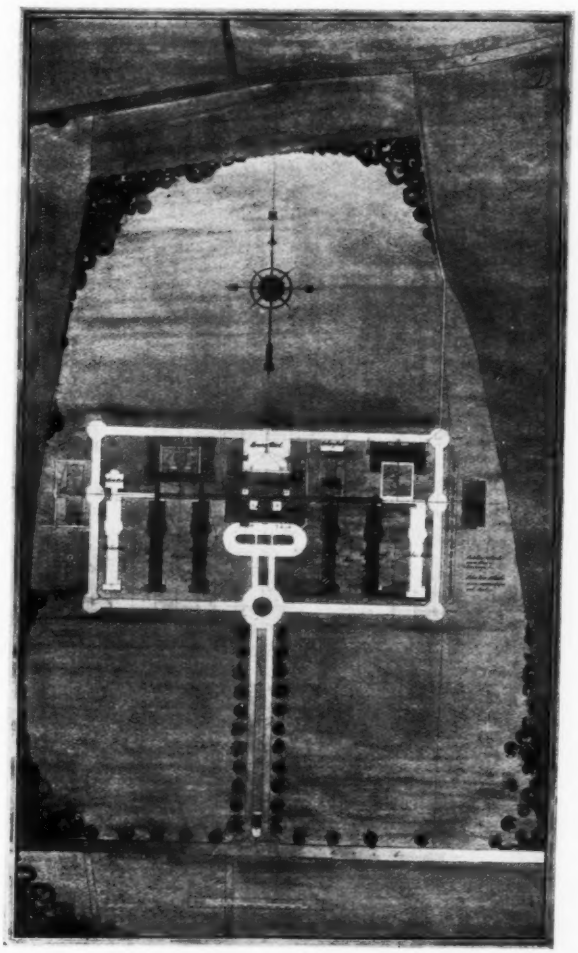
The Davyhulme Hospital Competition

The Winning Design

THE Guardians of the Barton-upon-Irwell Union, Manchester, invited designs for a hospital to accommodate 308 beds in the first section of the work. The competitors were, however, asked to indicate how provision might be made for a subsequent extension by means of which 500 beds might be provided. The site selected is situated in the area of the Barton-upon-Irwell Union at Davyhulme, and extends from Moorside Road to Davyhulme Road.

The assessor was Mr. William A. Pite, F.R.I.B.A., and the following architects were invited by the Guardians to submit designs in competition : Messrs. Adams and Holden, of London; H. V. Ashley and W. Newman, of London; E. B. Bailey, of Liverpool; Elcock and Sutcliffe, of London; Gibson and Gordon, of London, Halliday, Paterson, and Agate, of Manchester; A. W. Kenyon, of London; W. and T. R. Milburn, of Sunderland; T. A. Pole, of London; Rees and Holt, of Liverpool; Alfred Saxon Snell and Phillips of London; Young and Hall, of London; and Paine and Hobday. Premiums of £150, £100, and £50 were offered respectively, to those placed second, third, and fourth by the assessor.

The conditions stated that the wards were to have axes running, as usual, north and south, a sun balcony at the south end, about 15 ft. deep, and balcony and escape stairs extending beyond the width of the ward on either side.



THE BLOCK PLAN.

The entrance from the wards to the balcony was to be wide enough to allow beds to be wheeled through with ease. It was stated that the surgical cases should be accommodated on the upper or theatre floor, that the convalescent cases should be accommodated on the ground floor, and that a day room should be provided. The wards were to be 24 ft. wide—with the beds spaced 8 ft. apart from centre to centre—and not more than 12 ft., or less than 11 ft. high. The sanitary offices were to be assembled as far as possible at the northern end of the wards, so as to avoid obstruction of sunlight. Side wards of eight beds were to be provided on each floor. A ward for healthy children under three years of age and to contain thirty-six cots, was also required. In addition to other units an electrical and X-ray treatment department was to be provided.

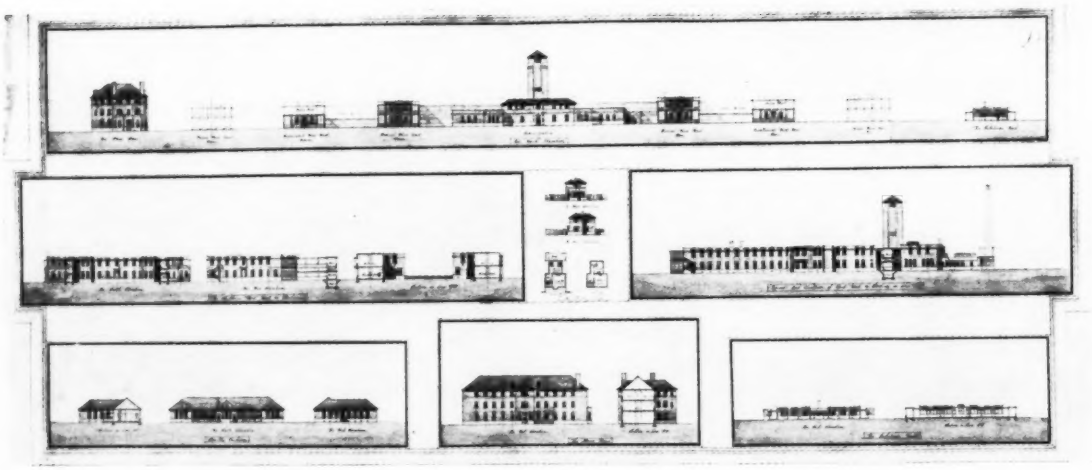
The designs were submitted on July 31 last, and the assessor's awards are as follows : First, Messrs. Elcock and Sutcliffe; second, Messrs. Adams and Holden; third, Messrs. H. V. Ashley and Newman, and fourth, Mr. E. B. Bailey.

The designs submitted are exceptionally good as a whole, and show a very intimate knowledge of the requirements. That of Messrs. Elcock and Sutcliffe is, however, particularly compact and economical in arrangement and general grouping. The plan is approximately symmetrical, and very carefully considered. The assessor was doubtless attracted by the possibility of easy and rapid administration afforded by the selected design. The design allows for easy extension, and the buildings would receive an ample amount of sunshine and fresh air all round each unit. Messrs. Elcock and Sutcliffe have placed their reception unit close to the main entrance, and a short main corridor, 8 ft. wide, connects the whole of the wards and administration departments. Under the corridor is the main duct for the heating and the water supply service. In this way a minimum walking length for administration purposes has been provided. The main corridor is to be glazed on the north side, but left open on the south, where there would be a high parapet wall and a well projected roof. A ward unit, two stories high, has been placed on each side of the administration building, and beyond that on each side, a ward unit one story high. The proposed additional wards could be erected beyond these on each side. The children's unit of six wards is shown to the north of the main corridor on the ground floor, and is arranged to admit of easy supervision over the whole of the wards, and with an abundance of sunshine. The ward sections would be divided by plate glass partitions, and each sub-division would form a sub-unit with the necessary duty room, day room, larder, linen room, and sanitary offices. In all cases the larder would have a north light. The sister's room and the clinical room are both placed centrally. The healthy children's unit is shown also on the north side of the main corridor as an isolated block. It has two dormitories, which it is suggested are better than a single room in the case of very young children. A large day room is shown facing south, and folding screens divide the veranda from the day rooms, so that in suitable weather the whole may be thrown open to the air. A kitchen is provided in the centre with small tables for meals. The sister in charge has her office immediately in the centre, supervising the whole unit.

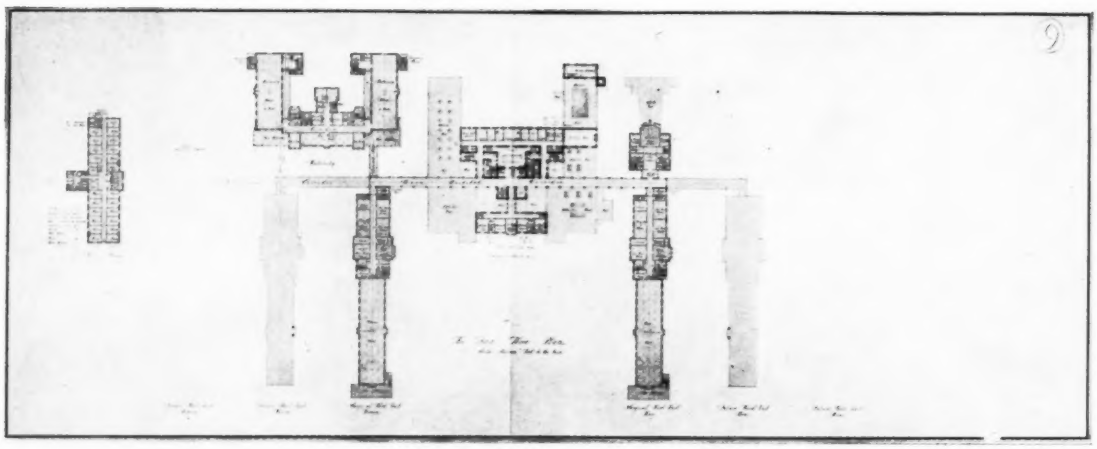
The isolation unit is on the eastern portion of the site, directly opposite the end of the main corridor, and would be easily accessible for supervision from the central administration offices. It could also be readily approached by ambulances in order to convey patients to the district fever hospital. This building consists of two wards of six beds, which are segrated by plate glass partitions, and easily

The Davyhulme Hospital Competitio

Elcock and Sutcliffe, F. and A.I

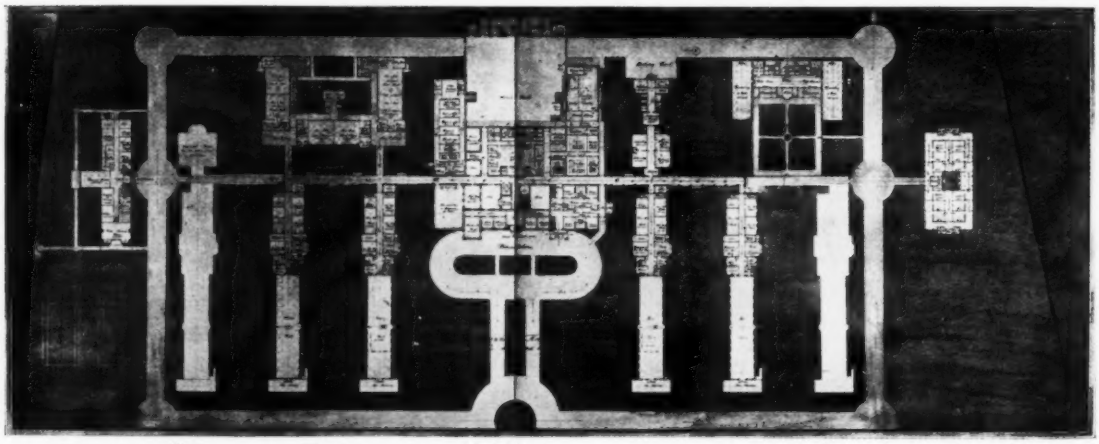


ELEVATIONS AND SECTIONS.



THE FIRST FLOOR PLAN.

Children's and Maternity Block. Workshops. Mortuary. Healthy Children.

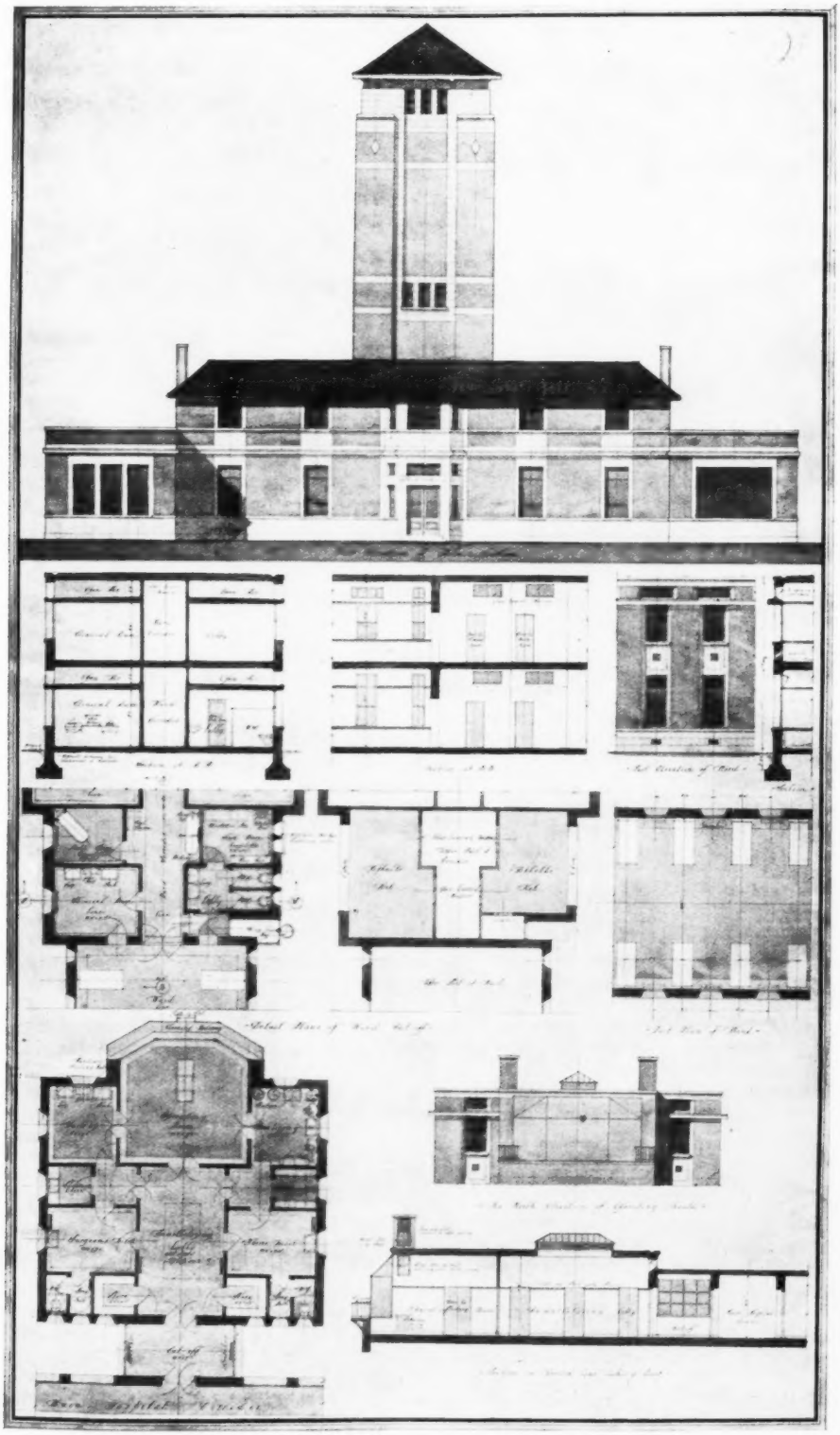


Nurses' Home. Future Unit. Women's Wards. Administration Block. Men's Wards. Future Unit. Isolation Block.

THE GROUND-FLOOR PLAN.

Competition : The Winning Design

fe, F. and A.R.I.B.A., Architects



DETAILS OF ELEMENTS.

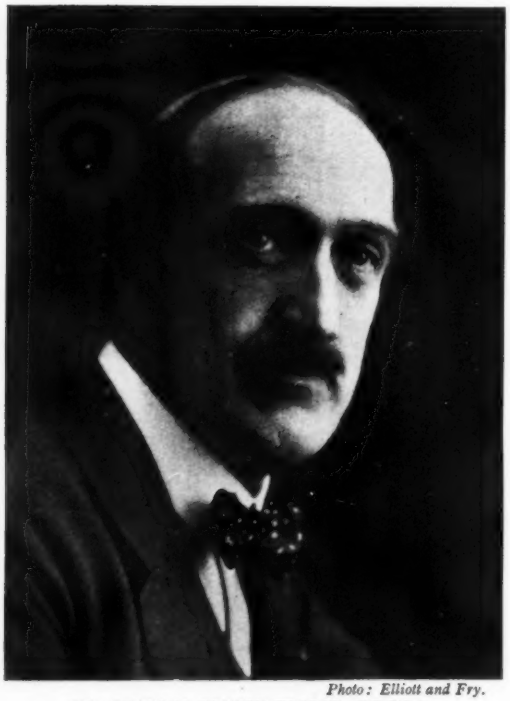


Photo: Elliott and Fry.
MR. CHARLES ERNEST ELCOCK, F.R.I.B.A.

Photo: Pollard Crowther.
MR. F. SUTCLIFFE, A.R.I.B.A.

THE WINNERS OF THE DAVYHULME HOSPITAL COMPETITION

overlooked from the central duty room. A covered glass veranda surrounds the whole unit, and lavatory basins are provided in the veranda for the use of the visiting doctor. The maternity unit has been very carefully designed so as to incorporate the latest ideas in this department. Large duty kitchens with larders are shown facing north, and ample sunlight and air are admitted on all sides of the maternity wards. The ward sister would have immediate control of the entire unit.

The operating theatre is shown on the first floor, on the north side of the main corridor, and over the laboratory and dispensary. This unit is in a separate wing, with a cut-off lobby. The lobby enters directly into the anæsthetising lobby, which opens into the operating room. A wash-up room is provided on the left-hand side of the operating area, and a sterilizing room on the right-hand side. These are connected to the operating room by swing doors. The operating room has a large north light, and special arrangements for ventilation and heating. The electric treatment unit is on the ground floor, on the north side of the main corridor, in the central portion of the buildings, and has been designed so that either sex can occupy the treatment rooms by means of separate corridors. The storekeeper's department is situated on the south side of the kitchen service court. All goods coming into the hospital would come under the supervision of the storekeeper. Large stores are provided for hardware, dry goods, linen, blankets, foods, etc. A weighbridge also has been installed. The central kitchen is placed in the middle on the north side of the main corridor, and is separated from it by a large service lobby containing trolly lifts to the first floor. All the food larders are placed on the north side of the building, and would be cooled by the refrigerating plant in the basement. An air-lock passage is shown running along the front of the food stores, preventing air from the outside entering the separate compartments. In addition to cooling the rooms and the mortuary, the refrigerating plant would be used for the manufacture of ice. Storage for ice is also provided. Small suites for the resident medical officer and the steward have been arranged on the first floor of the administration block, facing south. The administration offices are also on the south side of the main corridor in a central position, and the main entrance to the hospital passes through them. Rooms are shown for the medical officer, the chaplain, the steward, and the committee, and an ante-room has been provided, which might also form a separate committee room. A staff dining-room with forty seats is shown between the main corridor and the administration corridor, and has an entrance from both. Folding doors are shown opening to the large day room, so that it might be used as a refreshment room when entertainments are given.

The nurses' home is on the western portion of the site. It is entirely self-contained, with a kitchen and stores supplied from the central kitchen department of the hospital. It is suggested that some portion of the cooking might be done in the main hospital kitchen. The home sister's office is placed on the ground floor, overlooking the main entrance to the home, and a study is provided for the matron. A large apartment is also reserved as the nurses' recreation room, with a separate sitting-room for sisters, and a lecture room with a small demonstration counter and blackboard. A dining-room has been provided to seat forty. On the first and second floors bedrooms have been provided for the sisters and nurses, and four extra bedrooms with fireplaces for use in case of sickness.

The servants' quarters have been located on the first floor of the administration block in proximity to the kitchen department. The laundry occupies a central position, and is entered from the main corridor. Soiled linen would be passed direct into the receiving room of the laundry. A large drying closet is shown with a blanket-airing room on the upper floor at the north end of the laundry block. The mortuary is detached from the main hospital, and lies to the north of the main corridor, and a little to the east of the laundry block. Cells for cold storage have been provided communicating with the refrigerating plant to admit of the circulation of brine. The porter's lodge, situated at the entrance, gives full oversight over the entrance gates on both sides of the central avenue. It is proposed that the building should be erected with plum-coloured facing-bricks, and either artificial or "reconstructed" stone dressings. The tiled roofs shown would be covered with brindled pantiles. J. S.

The Winners of the Competition.

Mr. Charles Ernest Elcock, F.R.I.B.A., is the senior partner of Messrs. Elcock and Sutcliffe. He was articled to Messrs. J. J. Phillips and Son in Belfast, and later entered Sir John Burnet's office in Glasgow (1901–5), where he acted as one of the senior assistants. He was here very largely engaged in hospital work. In 1905 he took charge of Messrs. Matear and Simon's office in Liverpool. He entered into practice on his own account in North Wales, and was afterwards in partnership with Mr. John Brooke in Manchester in 1912, which partnership was broken by the death of Mr. Brooke. Mr. Elcock then opened practice in Yorkshire, and came to London in 1923 in association with Mr. Sutcliffe.

Mr. F. Sutcliffe, A.R.I.B.A., was articled to Mr. Elcock in 1908. In 1912 he was senior assistant to Mr. R. M. Butler, F.R.I.B.A., in Dublin, and was largely engaged on the work connected with the drawings for the National University of Ireland, Dublin. From 1914 to 1919 Mr. Sutcliffe served with H.M. Forces, and on demobilization was in the London office of Messrs. Graham Anderson, Probst, and White, being particularly engaged on the drawings for Messrs. Selfridge's new premises. His partnership with Mr. Elcock was formed at the beginning of 1923.

The firm have already formed a large connection, and have been responsible for the design of a number of banks. The announcement of Messrs. Elcock and Sutcliffe as winners of the Davyhulme competition followed within a few days of that of their winning the Harrogate Infirmary competition.

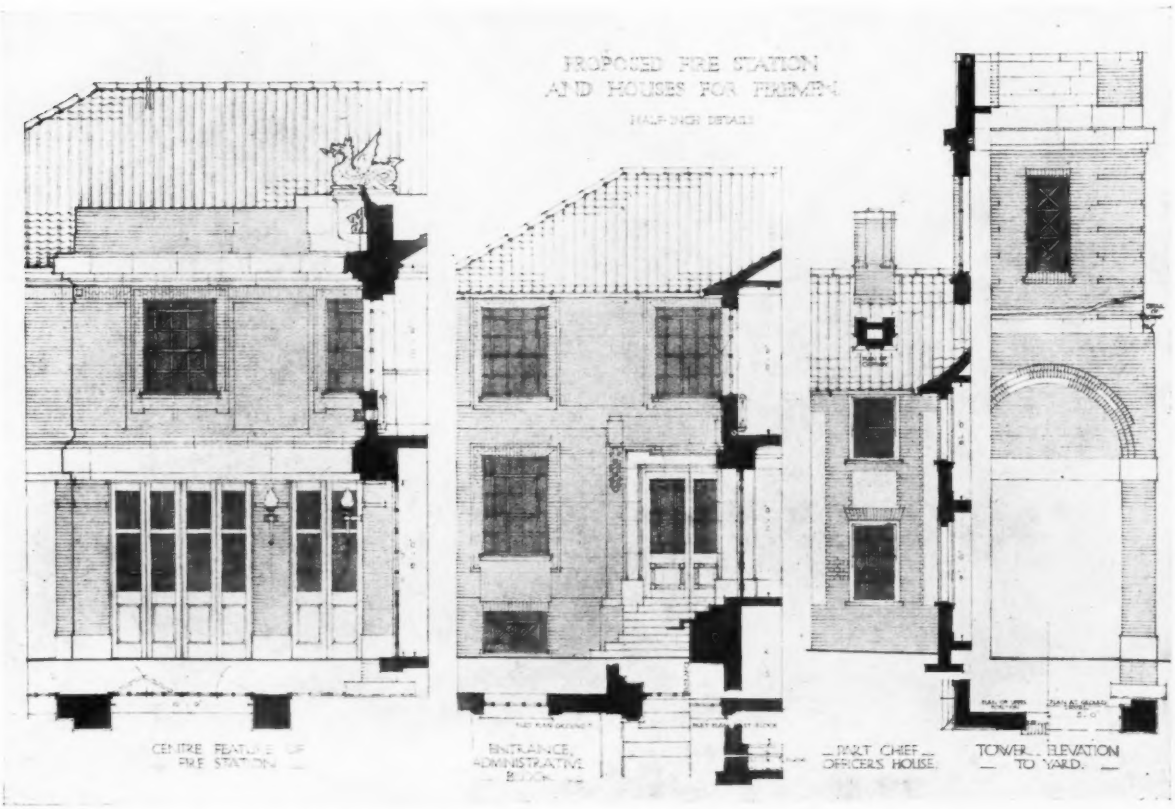
The Leicester Fire Station Competition

The Winning Design

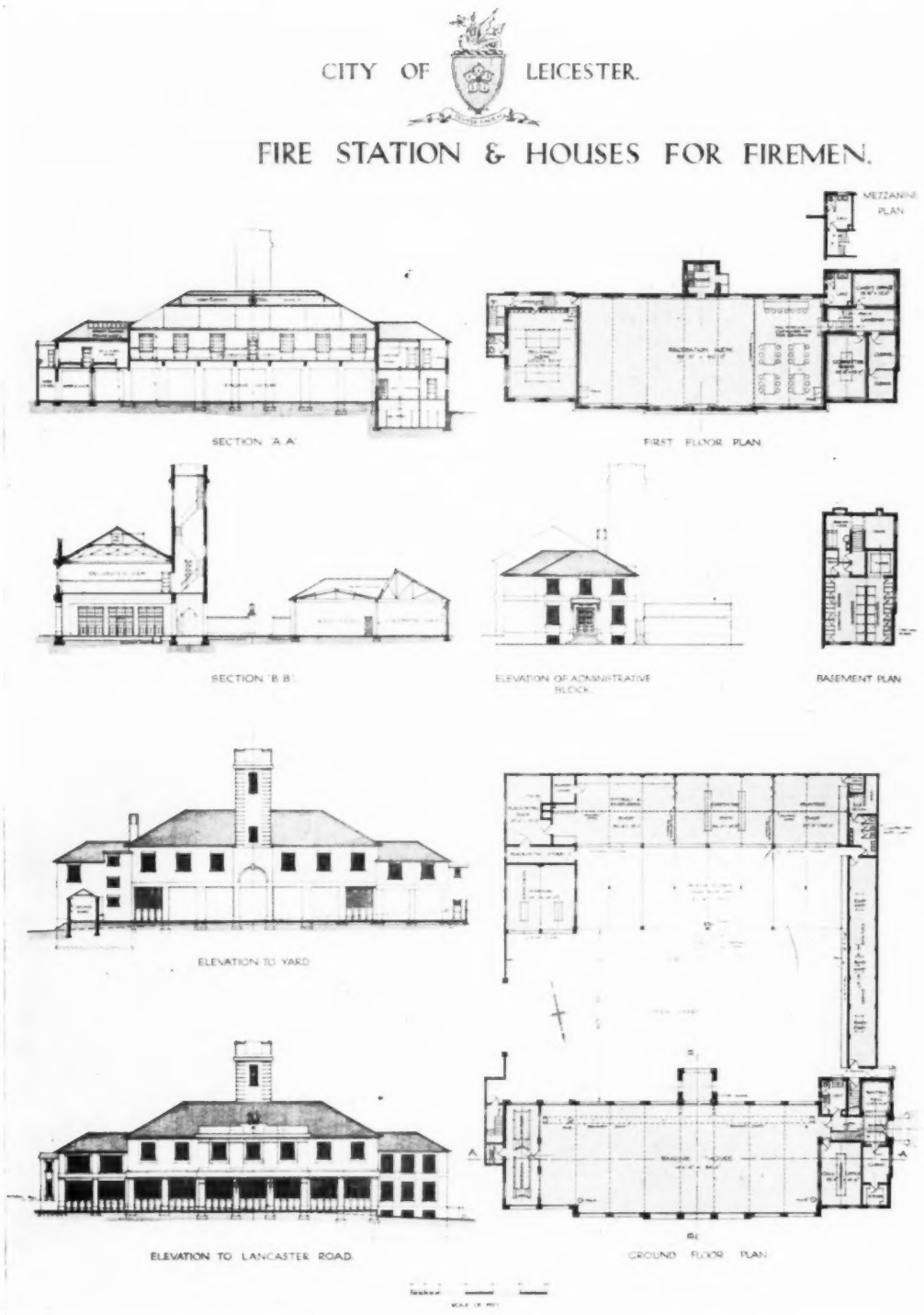
THIS week we illustrate the design of Messrs. A. E. and T. Sawday, of Leicester, architects, which has been placed first in the Leicester central fire station competition. Mr. Stockdale Harrison, F.R.I.B.A., and Mr. E. G. Mawbey, City Surveyor, were the assessors. The designs of Mr. Arthur J. Wood, A.R.I.B.A., and Messrs. Moore and F. H. Morley, A.R.I.B.A., all of Leicester, were placed second and third respectively.

The site has an area of $3\frac{2}{3}$ acres, and is situated on the Lancaster Road. The conditions required a central block, containing the administrative offices and an engine-room to accommodate eight engines on the ground floor, with further offices and a recreation room, etc., on the first floor. Workshops were also required for blacksmiths, carpenters, fitters, engineers, painters, etc., garages for motor ambulances and other purposes, a hose trench, a shed for drying hose, a tower 20 ft. higher than the main building for practice purposes, cottages for thirty-nine firemen, and a chief officer's house.

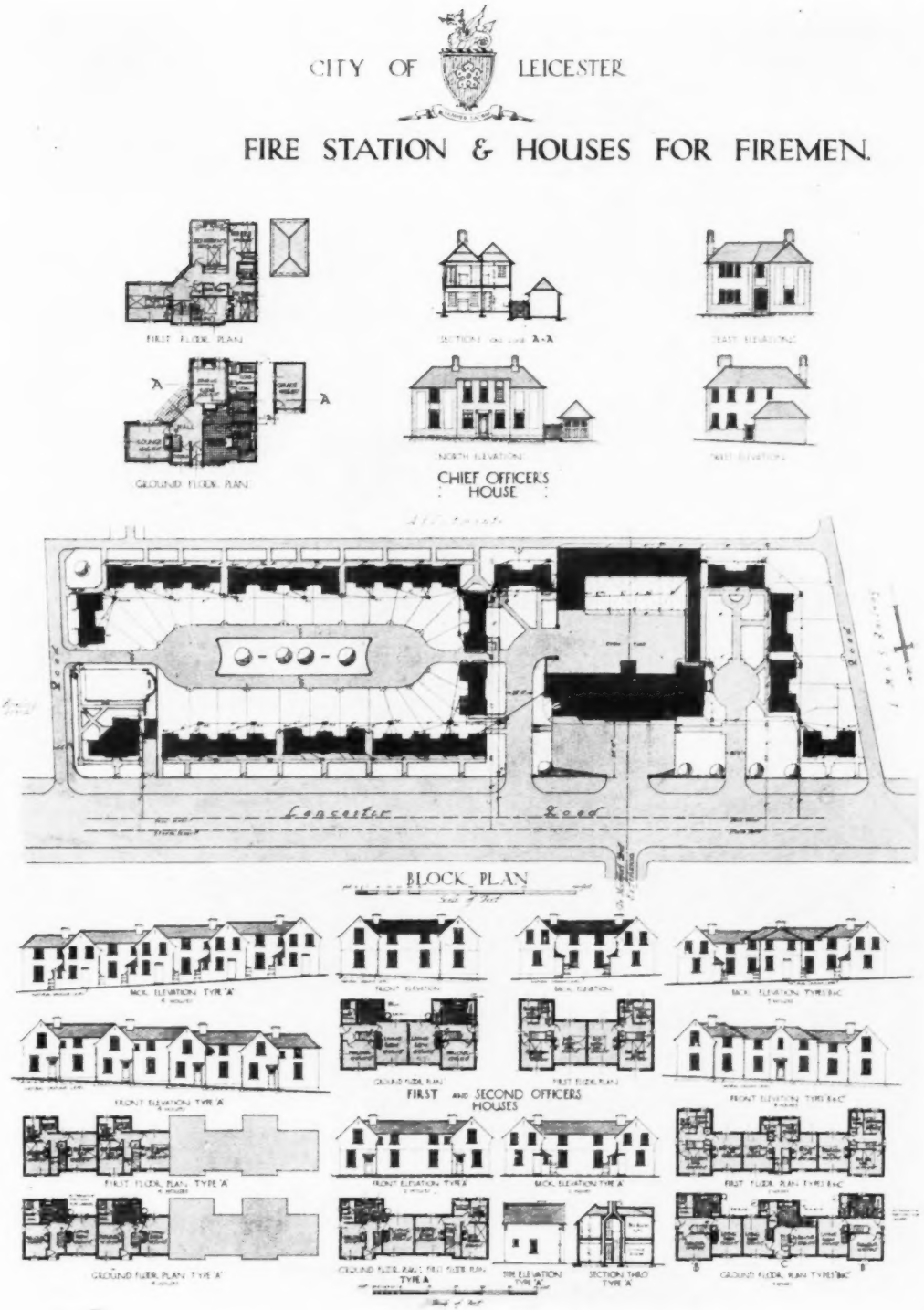
The winning design is estimated to cost, irrespective of roads, lay-out, etc., £39,049. It is proposed to carry out the main central building in $2\frac{5}{8}$ Staffordshire brindled bricks, with the cornice strings and dressings in artificial stone suitably reinforced, and the roof covered with pan-tiles. The cottages are in accordance with the requirements of the Ministry of Health, and are designed in brickwork, with a brindle brick plinth, rendered walls, and pan-tile roofs. Simplicity of design was necessary to keep down the cost.



THE LEICESTER FIRE STATION COMPETITION: THE WINNING DESIGN. A. E. AND T. SAWDAY, ARCHITECTS.



THE LEICESTER FIRE STATION COMPETITION: THE WINNING DESIGN.
A. E. AND T. SAWDAY, ARCHITECTS.



THE LEICESTER FIRE STATION COMPETITION: THE WINNING DESIGN.

A. E. AND T. SAWDAY, ARCHITECTS.

Little Things That Matter—40

The Construction of Shingle Roofs

By WILLIAM HARVEY

A CORRESPONDENT writes: "It is proposed to roof a building with cleft oak shingles, the average size of which will be 12 in. long by 5 in. wide, tapering in thickness from $\frac{1}{2}$ in. to $\frac{1}{4}$ in. The roof will be covered first with 7 in. by 1 in. red V-jointed matchboard one side. The pitch is about 45°. Please tell me the best way to lay the shingles, how they should be secured, and what lap should be given them."

—Shingles are nailed to the roof boarding with stout galvanized nails, and the work can be done satisfactorily by any carpenter who takes the trouble to experiment with the material at his disposal. Shingling is a normal practice in both Australia and North America, but special roofing firms are not by any means exclusively entrusted with the work.

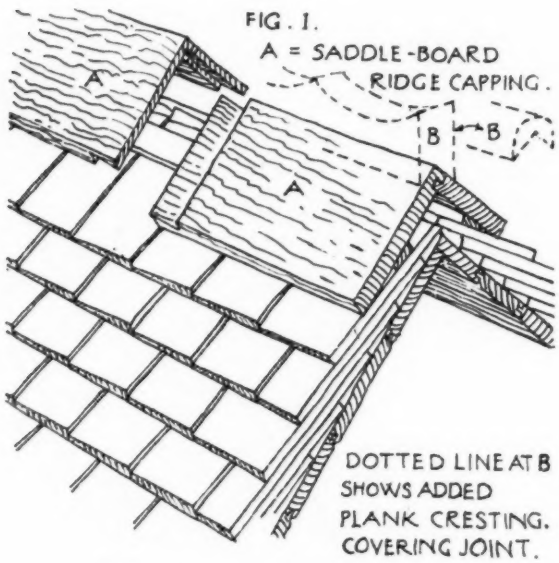
The length of 12 in. is unusually short, as shingles range in length from 14 in. to 27 in. in the ordinary stock sizes. The lap is arrived at by deducting 2 in. from the length of the shingle and dividing the remainder by three. In the present instance, this would give a lap of $3\frac{1}{3}$ in., e.g.—$\frac{(12-2)}{3}$ $= 3\frac{1}{3}$ in. with very long shingles a safety deduction of $2\frac{1}{2}$ in. to 3 in. is made instead of 2 in.

The taper of $\frac{1}{4}$ in. across the width of the shingle is also somewhat unusual, but while some such irregularity is permissible in cleft stuff it adds to the difficulty of laying and of making a neat and weathertight roof.

A layer of waterproofed paper or felt should be tacked over the surface of the roof boarding to maintain an equable temperature within the building and to resist the driven snow which will enter through the gaps of the rough shingles.

The work of laying is commenced with a double or triple course at the eaves. A vigorous tilt is necessary at this point as the shingles are not cambered like plain tiles and require the tilt to make them lie close at their exposed butt ends. Otherwise they will lift and clatter in a wind, and be stripped off the roof by a gale. The courses of shingles are set with their butts (i.e., bottom or exposed ends) against a builder's line or against the edge of a straight batten temporarily tacked into position on the course below.

Each shingle is fastened with two nails placed at a distance of about 8 in. from the butt. With the short 12 in. shingles and a $3\frac{1}{3}$ in. lap this position would bring the nail within an inch of the end of the shingle in the course below and might split the wood, a distance of $7\frac{1}{2}$ in. might, therefore, be adopted. The length of nail selected depends upon the position chosen, and if it is desired to preserve the underside of the roof boarding free from nail holes, experiment must be resorted to in order to determine the longest and strongest nail that it is possible to use under the proposed conditions. The stoutness of the nail is important as an oak shingle generally outlasts the nails that fasten it to the roof.



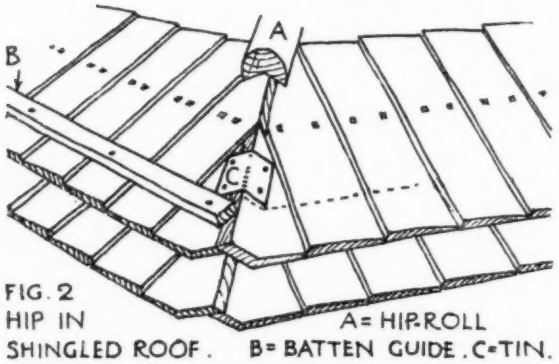


FIG. 2
HIP IN SHINGLED ROOF.

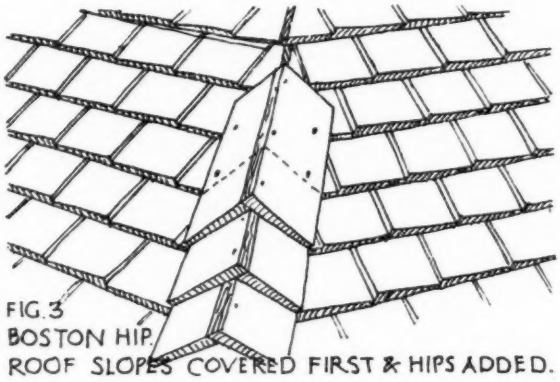
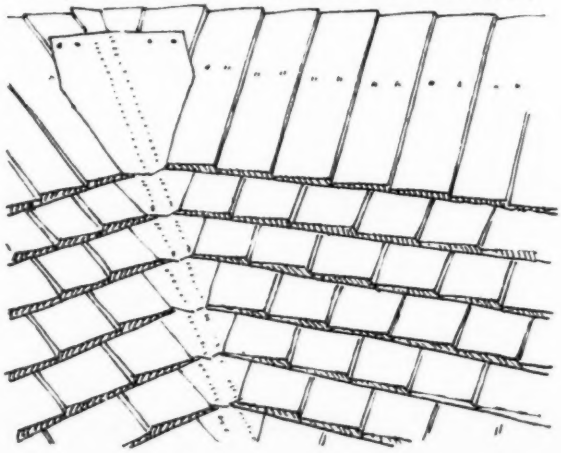


FIG. 3
BOSTON HIP.
ROOF SLOPES COVERED FIRST & HIPS ADDED.

FIG 4 VALLEY FORMED WITH SOAKERS.



The ridge of the roof may be covered with a pair of grooved and rebated oak saddle boards set together at right angles. The saddle boards are made in long lengths and where end to end joins are necessary a dovetail lap joint should be made (see Fig. 1).

Hips are formed by cutting extra wide shingles to shape, shown in Fig. 2. Each pair of shaped shingles is bound across the hip with a 5 in. square of tin, bent over the angle, and nailed with two nails on each side. A hip roll with its underside rebated to the true angle between the roof slopes is nailed on top of the hip. A rougher shingled hip can be made by running the courses of shingles straight out to a mitre at the hip and covering the joint with pairs of shingles nailed together to form an inverted "V" in section (see Fig. 3).

Valleys are sometimes made with an exposed valley gutter of tin, zinc, or lead, or by means of shaped soakers cut out of either of these materials and laid in the courses of shingles up each of the adjoining roof slopes (Fig. 4). Swept valleys are also practicable in shingled roofs at the expense of a little trimming of the shingles.

Junctions at parapets and chimneys are formed with rectangular soakers from 7 in. by 7 in. to 7 in. by 9½ in., bent at a right angle, and laid with one half on the shingle, and one half against the vertical wall, where its upper edge is protected by a separate cover flashing let into and wedged into the bed joints of the brickwork or into grooves cut (in masonry) for the purpose.

In view of the prevalence of insect pests affecting woodwork and of dry rot in timber at the present time, it would be advisable to treat the shingles with a fire-proofing and germ-resisting preservative before laying.

Enquiries Answered

Enquiries from readers on points of architectural, constructional, and legal interest, etc., are cordially invited. They will be dealt with by a staff of experts, whose services are specially retained for this purpose. If desired, answers will be sent direct through the post. In no case is any charge made for this service. Whenever diagrams accompany an enquiry, they should be clearly drawn and lettered and inked in.

A SEPTIC TANK FOR A COUNTRY HOUSE.

"H. R." writes: "With further reference to my inquiry an answer to which was published in your issue for October 8. Although the plan (*a*) is a good one, it is impossible to adopt it because there is no place on the owner's land where the desired free outfall could be obtained, and the adjoining owners would hardly give their sanction to the use of their land for this purpose. The second plan (*b*) is impracticable, owing to the very sodden state of the ground, which is already a network of field drains. Please give me your view on the following alternatives: (i) To abandon the filter bed as such and transform it into a cesspit to be cleaned out from time to time; (ii) to allow the settling tank and filter bed to function in the usual way; take a *glazed socket* effluent from the filter bed to, and form, a new sump or cesspit farther away from the house. The effluent arriving at this cesspit would, theoretically, be pure, and would not have the same objections as the ordinary cesspit or scheme (i) above, but it would be expensive, as the cesspit would have to be very deep below the existing ground level.

—One would rather suppose that in this particular situation the septic tank system is a failure, and yet it should not be such. It seems a very ignominous solution to the difficulty to transform the septic tank into a cesspit, and yet—failing the drainage of the land—I confess I see no alternative.

F.S.I.

SLIPPERY PAVING.

"F. H." writes: "The mosaic paving, laid to a fall, of a large lobby to a shop recently fitted with a new front has proved to be slippery. What treatment would you suggest to render it nonslipping? The paving is on concrete, 3 in. or 4 in. thick, on corrugated iron supported over a cellar under. It was desired that no step should be made to the entrance, but a 2 in. or 3 in. step, formed by a stone curb, from pavement to lobby, was put in which made the fall of paving about 1 in. per foot. This is not an exceptionally steep fall as lobbies go. The owner complains of the slipperiness, and that people trip at the curb."

—Mosaic, though good to look at, is not a good surface for such an entrance. I know of no remedy for such a hard surface, and doubt if it is possible to make it safe for the customers to walk over. What do the makers of the mosaic say? It would undoubtedly have been much better if laid flat, but the fall mentioned is not a great one, and should not in itself constitute a danger. Personally, I should pull all the paving up, put in a step, and lay a new non-slippery flooring flat, or nearly so, or I should accept the present mosaic and humbly cover it with cork carpet or a huge indiarubber mat, covering the whole space, or a fitted tesselated paper rubber might be fixed down on the top of the mosaic. F.S.I.

On the legal aspect of the above question, "F. H." writes: "Paving laid to a fall in a large lobby to a shop recently fitted with a new front has proved to be slippery. In the event of the owner refusing to pay the cost of any additional work which might be necessary to abate the nuisance, who would be liable in the following circumstances: The work was introduced to me as architect by an assistant of the owner. The assistant dealt with the matter, giving all instructions, and the owner paid. It was desired that no step should be made to the entrance, but a 2 in. or 3 in. step formed by a stone curb, from pavement to lobby, was put in which made the fall of paving about 1 in. per foot. This is not an exceptionally steep fall as lobbies go. The owner also complains that people trip at the curb."

—So far as we can judge from the materials before us responsibility lies, not with the architect, but with the owner. The assistant appears to have acted as the agent of the owner, and we see nothing to suggest that it is open to the owner to repudiate the authority of the assistant, and to allege that the architect is responsible. The facts, as stated, appear to free the architect from pecuniary liability. S.J.S.

A CONTRACT FOR LAND.

"S. A." writes: "Recently I paid a deposit on a parcel of land, and a contract for sale was drawn up, and the date of completion fixed. The date arrived, but my vendor could not give completion as it turned out that he had not yet been able to get completion from his vendor. I still have not got completion, and owing to the delay I now want to back out, but I understand that as the delay has arisen over the title (not between my vendor and myself, but between my vendor and his vendor), I have no claim, and shall lose my deposit, and, further, if I await his convenience I cannot recover any of the loss to which I have been put through his delay. Is this so?"

—No definite reply can be given without making an examination of the contract. Writing, however, upon the information before us, it seems that it is not open to you to cancel the contract upon the ground of delay. S.J.S.

ITALIAN MARBLE FOR OPERATING ROOM FLOOR.

"Reader" writes: "Is there any objection to the use of white Italian marble for an operating-room floor? Will there be any risk of stains from blood or fluids used at operations?"

—If it is intended to use the material in slabs the joints would be one objection. I should think, unpolished, it would stain badly with antiseptics, etc., and if polished would be slippery.

H. A.

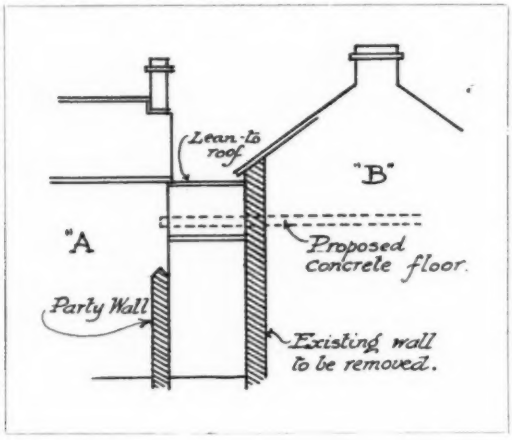
GAS IN CEMENT PIPES, SEWERS, AND TANKS.

"A. B." writes: "Can gas formed in cement pipe sewers and septic tanks cause any damage to the pipe?"

—Yes, it is quite conceivable that it might form an accumulation and explode as it occasionally does in a public sewer, or it might burst a joint by pressure. Such occurrences are, however, so rare that in practice their possibility may very reasonably be forgotten. F.S.I.

RIGHT TO PARTY-WALL.

"J. D." writes: "The accompanying sketch shows a new concrete floor which it is proposed to rest on an existing gable of a dwelling-house A. At present there are two purlins of a lean-to roof resting on this gable. Permission by word of mouth was given by B to the previous owner of property A to build on the entire thickness of the party-wall marked. At present a passage exists between the properties with the lean-to roof between A and B. Presumably B can cut a chase in A's gable to take his concrete floor? Even if he has attained a right to use B's half of the wall at this part (the wall having existed so for twenty years,) has not B an equal right to use his half when his purlins of the lean-to have rested on the party-wall?"



—Twenty years' use seems to have established A's right to continue to use the wall for the support of his building, and to have established B's right to such part of it as is covered by his lean-to roof. Further, the case of the Sheffield Improved Industrial and Provident Society *v.* Jarvis indicates that the use by B of the wall as a support for the purlins of his lean-to roof gives him the right to put upon the wall any amount of weight which does not endanger its stability. This might be interpreted into permission to cut a chase and insert a concrete floor provided that B holds himself responsible for all damage to A's property. W. H.

THE REMOVAL OF PAINT FROM STONE.

"D. B." writes: "The reredos of an altar constructed of Caen stone is painted in oil colours. How can the paint be removed to show the old stone surface as formerly?"

—We can recommend "Klenostrip," or one of its associated products, for the removal of paint from Caen stone. Our correspondent should get into touch with the British and Colonial Chemical Company, of 6 Smith Street, Chelsea.

THE APPROXIMATE COST OF HOSPITAL WORK.

"Architects" write: "Kindly give me: (1) the approximate rate per bed; (2) the approximate rate per cubic foot of hospital work. It is proposed to extend an existing hospital by the addition of six surgical wards, each of which will accommodate twelve beds, on the lines indicated on the accompanying sketch. The scheme includes a new operating theatre, but no new administrative offices."

—I would suggest the following: Assuming that the new buildings are to be of brick, with slated roofs, and the interior of glazed brick, and composition floors, the costs would be:—

(1) Per bed, £425; (2) per foot cube, 2s. approximately.

It is also assumed that the site is within four miles of a goods siding, and that the material and labour supplies are normal.

Some minor economies appear possible. I suggest them without a knowledge of the local conditions and, perhaps, they might be considered in such light.

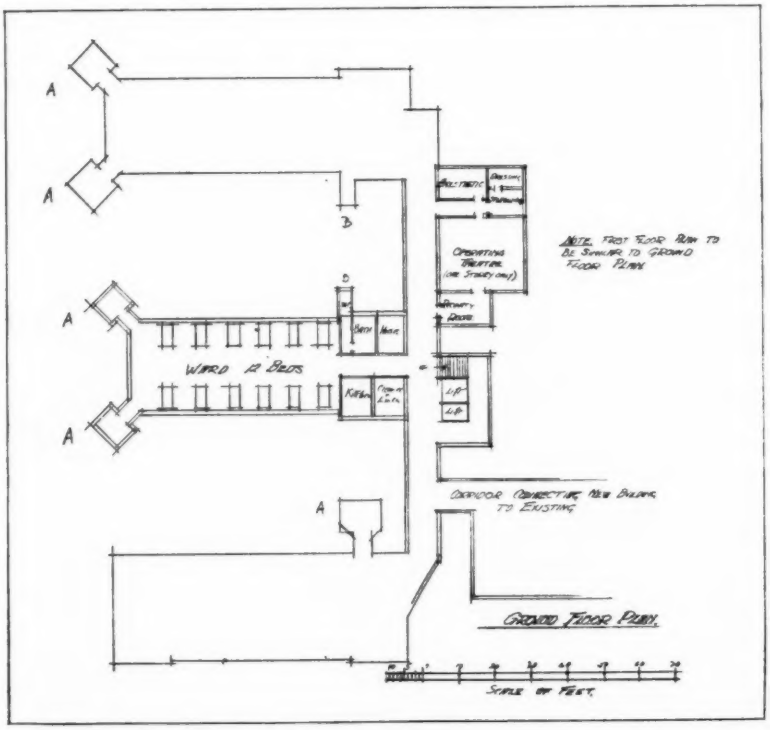
1. The features at A and the outbuilt w.c.s at B add considerably to the cost. The proportion of brickwork, etc., to floor area in these portions is very high.

2. If either of the two rooms, "kitchen" or "cleaner" is to have water supply and sink, it might be exchanged for the "nurses'" room, and so keep the plumbing in one stack.

3. Could not the operating theatre portion and the staircase be built as one block, thus saving brickwork without great sacrifice otherwise?

4. Keene's or Sirapite on Portland, internally painted four coats, finished enamel, would be much cheaper than glazed brick in first cost, but there would, of course, be a recurrent maintenance charge for repainting, etc.

E. C. I.



"The Approximate Cost of Hospital work." See answer to "Architects."

The Town Planning Institute

Sixth Annual Country Meeting at Leeds

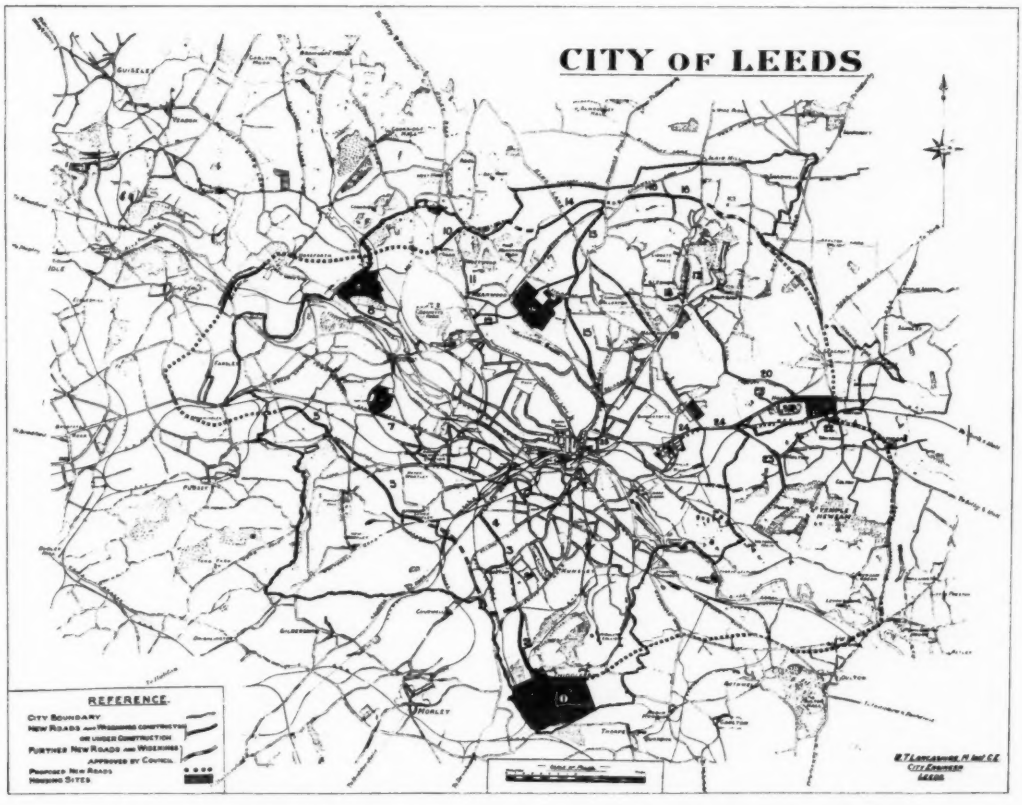
THE choice, once again, of a large industrial city as the place of the annual country meeting was not a little influenced by the fact that the President, Mr. W. T. Lancashire, is also City Engineer of Leeds, and that an honorary member, Alderman Charles Lupton, occupies the dual positions of chairman of the Improvements Committee of the Leeds City Council and chairman of the Leeds and Bradford Region Joint Town Planning Committee. To both these gentlemen and to the Improvements Committee, the members of the Town Planning Institute are indebted for a most hospitable welcome, and for a thoroughly enjoyable and instructive experience.

The predominant impression that remains is one of a sturdy, vigorous people, living in a region—of much natural beauty—which retains evidences in stone of a proud past, that, alas, was temporarily forgotten on the advent of the age of steam, but is now being recaptured. Much of value slipped from men's minds when they became enthralled in developing and exploiting the new forces just harnessed to their service; and this is not to be wondered at, in view of the amazing new vistas that were opened out. Most unhappily, this absorption in the material created cities that were in truth blots on the landscape, and that, at the same time, failed to meet satisfactorily man's material needs either of livelihood or living.

The City of Leeds bears sad marks of this forgetfulness, but happily they are clearly of the past, and are outweighed by the evidences of a splendid new spirit that is determined to make the city not only supremely efficient, but also increasingly healthy and comfortable to live in, and with fair open places for rest and recreation.

After Alderman Charles Lupton had welcomed the delegates, Mr. W. T. Lancashire, the City Engineer, gave an account of the city, and of the efforts towards its improved development that have been carried out, and are now being undertaken, by means of town planning. He referred in particular to the improvement of the communications with a view to facilitating circulation of traffic, and thereby relieving congestion. Many improvements have been planned both for the centre and the outskirts, and a number have recently been put in hand as a means of relieving unemployment. Levels are difficult, and connection between the radial arteries deficient: a form of ring road is, therefore, essential, but difficult to provide. A ring road has been planned, however (and several sections of it completed), that will link up with a similar road projected round Bradford, the whole forming roughly a large figure eight.

Present-day Leeds has inherited an unfortunate legacy of back-to-back houses, and therefore much reconstruction will be required. Some of this work has already been undertaken, and more is being planned so that the centre may be opened out and provided with more elbow-room. The new housing estates are placed amidst pleasant surroundings on the outskirts. The Middleton housing scheme stands on a high plateau to the south of the city, and is approached from the main industrial zone, through a splendid park. It is an outstanding example of municipal enterprise, not, alas, worthily expressed in the architecture, and therefore not appreciable as it should be.



A PLAN OF LEEDS, SHOWING NEW ROADS, WIDENINGS, HOUSING SCHEMES, ETC.
W. T. LANCASHIRE, M.INST.C.E., CITY ENGINEER.

The city has every reason to feel proud of its parks, present and projected. It is better provided for in this respect, in proportion to population, than any other city in England. Roundhay Park has long been famous, and now has been added the historic mansion of Templenewsam, which is surrounded by 900 acres, and linked to the city by tram. The town-planning projects show an interesting development in the proposal to establish parkways that will serve partly to link up the great parks, partly to break up unending continuity of development, and partly to bring green verdure to the vision of the citizen as he moves about his daily business.

Mr. R. H. Mattocks (Member), chief surveyor to the Leeds and Bradford Region Joint Town Planning Committee, has not long taken up his duties, but he was able to give interesting information as to the method of approaching the problem. The engineers to the forty authorities that comprise this region are now happily working in co-operation in order to ensure its most productive development. Mr. Mattocks's share in the Sheffield Civic Survey makes it sure that the ground will be systematically surveyed, and the facts of the case mastered before proposals for development are put forward.

Plans and models of the city, of the joint regions, and of the town-planning studies and proposals were exhibited at the Art Gallery, where the Lord Mayor most kindly received and entertained the delegates; and they will remain on show for the general public for some days.

The Improvements Committee most hospitably conveyed the members of the Institute to inspect the principal parks, road works, and housing schemes, and acted as their hosts and guides. Leeds is happily a city of many and varied industries, and has more resistance to phases of trade depression than has a place dependent only on one or two staple industries. Unfortunately, the present phase is largely national, so that times are none too good. It was therefore particularly heartening to find so much evidence of determination to put the place in order, so that when the tide turns it may be taken at flood to lead on to victory.

G. L. P.

The Drainage of Roofs—5

By ERNEST G. BECK, Wh.Ex., Assoc.M.Inst.C.E.

IT is commonly supposed that a slope in a gutter increases its drainage capacity, permits more rapid drying of the gutter after a fall of rain, and prevents the formation of "puddles" which cannot be removed otherwise than by evaporation; but even a little consideration will show that these suppositions are not justified by the facts. Even with rainfall of the utmost severity, the surface of the water in a gutter is sensibly horizontal; and therefore, the prime effect of slope in a gutter is to render useless a considerable part of the storage capacity which would otherwise be available. As to the supposed drying influence of slope, it is only necessary to observe that, by reason of surface tenacity, raindrops are left clinging to a windowpane, and to compare the clearing tendency of smooth glass, standing vertically, with that of a gutter floor inclined at 1 : 120, to see that the supposition is absurd. Regarding "puddles," it is obvious that if the lengths of gutter be so far from straight as to form puddles when laid horizontally, the puddles will not be reduced appreciably, either in number or extent, by a gradient of 1 : 120.

All the results of observation tend towards the inference that slope does not in any way render gutters more effective as regards drainage, while, on the other hand, it does often reduce their storage capacity to such an extent that a gutter which would be capable of dealing with its load were it laid horizontally, overflows continually through being inclined.

In practice there is much inconsistency regarding the question of gutter gradients, gutters being always laid horizontally in some classes of work, and always laid with gradients in others. There can be no reason for supposing that the need for gradients in gutters depends upon the character or user of the buildings upon which they are fixed; and it would appear that many important advantages might be secured through the establishment of uniformity in practice, eliminating gradients for gutters in all but exceptional circumstances.

There is little difficulty in deducing trustworthy inferences as to the sectional area of waterway necessary in a gutter to clear the drainage water from a roof of known area under specified conditions; but it is not possible to formulate a single rule which will be equally and properly applicable to all cases. The foundation of true designing is, and must always be, a sense of proper fitness based upon well-proven experience—and this cannot be rendered in mere formulæ and rules. The argument which the writer has developed as a basis for practical design is quite simple and straightforward in character, but it would occupy some little time in reading; and as the writer is anxious to avoid being tedious, the argument is not described here. Some of the inferences which are of more or less general applicability in ordinary circumstances are given, however, in the hope that they may be of interest and service; but it is to be understood that variations from them—in the direction of reduced provision where the loading is light, and in the direction of increased provision where the loading is severe—are desirable or necessary to suit particular cases.

For estimating the required cross-sectional area of waterway in gutters, and the number and diameter of downpipes, the "roof area" in the accompanying tables should be taken as that *horizontal* area over which the rain would be distributed were it not delivered into the gutter.

For a roof having a total area (in square feet).	Maximum roof area (in square feet) to be allowed for each square inch of cross sectional area in waterway of gutter.
Less than 500	50
500 to 1,000	45
1,000 to 5,000	40
More than 5,000	35

These allowances are for roofs with sloping surfaces inclined not more steeply than 30 deg. with the horizontal, and with few "concentration points" (such as that indicated in Fig. 11, Article 2); the gutters horizontal, and having few changes of direction.

For roofs with sloping surfaces inclined between 30 and 75 deg. with the horizontal, the waterway cross-sectional area in the gutter should be increased by 2 per cent. for each degree of inclination above 30 deg. For roofs which slope more steeply than 75 deg. with the horizontal the provision for slopes of 75 deg. will suffice. Vertical roof surfaces, such as glazing and slate-covered enclosures, require special treatment.

For each "concentration point," and for each change of direction in the gutter, an increase of 10 per cent. should be allowed in the waterway cross-sectional area, unless they be sufficiently remote from the outlet to warrant either a less generous allowance or the assumption that they will not retard the main flow appreciably.

Gutters should be of widths not less than twice the dia-

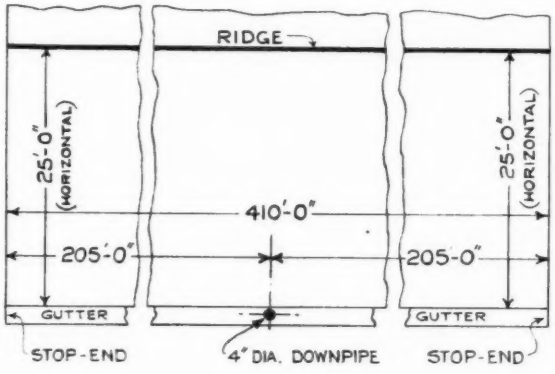
meter of the largest outlet from them; but after providing this relative width *at the horizontal floor* of a gutter, it is preferable that the waterway section be deep and narrow, rather than wide and shallow—for the velocity of flow through the outlet increases as the *depth* of water in the gutter becomes greater.

Downpipes should be not less than 3 in. diameter in any case. If square downpipes be more suitable than circular for a particular case, the conduction capacity of a 4 in. square pipe may be taken as rather more than that of a circular pipe 4 in. diameter.

For a roof having a total area (in square feet).	Maximum roof area (in square feet) to be allowed for each downpipe 3 in. diameter.	Maximum roof area (in square feet) to be allowed for each downpipe 4 in. diameter.
Less than 500	500	—
500 to 1,000	800	900
1,000 to 2,000	1,000	1,200
2,000 to 3,000	1,500	2,000
3,000 to 5,000	2,000	5,000
More than 5,000	3,000	10,000

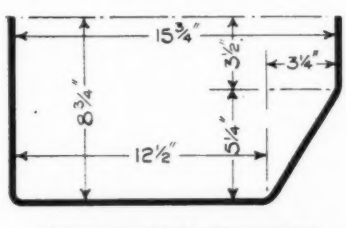
The inclinations of sloping roof surfaces and changes of direction in gutters do not affect the necessary provision of downpipes.

In support of these inferences—at least in so far as regards large roofs—one actual case (among many concerning which the writer has obtained particulars) may be mentioned. The roof—situate within the County of London—is about 410 ft. long and 50 ft. in span, the sloping surfaces being inclined at slightly less than 30 deg. with the horizontal. The gutter (horizontal throughout), which receives the drainage water from one slope of this roof is of pressed steel, and has a total cross-sectional area for waterway about 128 sq. in. There is a stop-end at each extremity of the gutter, and a single downpipe, 4 in. diameter, midway between the ends. The arrangement is indicated in Fig. 20, and the cross section of the gutter is approximately as shown in Fig. 21.



PLAN

FIG. 20.



CROSS SECTION OF GUTTER

FIG. 21.

It will be seen that the horizontal area drained by each stretch of the gutter (i.e., to right and left of the outlet) is about 205 ft. by 25 ft.=5,125 sq. ft., giving about $\frac{5125}{128}$ =40 sq. ft. of "roof area" per square inch of waterway cross section in the gutter. The "roof area" cleared by the single 4 in. diameter downpipe is approximately 410 ft.×25 ft.= 10,250 sq. ft.

This gutter has been working for about fifteen years—and the fact provides excellent testimony in favour of pressed steel gutters, since it is in perfectly good condition still—and has never been known to overflow, even with the most severe rainstorms. The circumstances are such that it could not have overflowed without leaving clear and unmistakable evidence.

(*Concluded.*)

[The previous articles in this series appeared in our issues for July 23, August 13, September 10, and October 1.]

Mediæval Town Planning

The lectures on historical town planning at Birmingham University by Mr. William Haywood, F.R.I.B.A., have been abridged this session to make room for additional lectures on the sociological and architectural aspects of the subject. This modification may be regretted at a time when public interest in ancient town planning is being rapidly extended by the publicity given in the Press to many new discoveries; but there can be no doubt that the practical value of the course as a whole will be enlarged by the new programme.

In his first lecture Mr. Haywood said that a brief consideration of town building during the period 2500 B.C. to the fall of Rome showed that where towns were contemporary with the early and unaided struggles for the security of their inhabitants, no ordered planning was to be expected, and as a matter of fact the street plan of such towns was usually as casual as that of a nineteenth-century industrial city which had been neglected for struggles of another kind. Hundreds of towns, however, were built during this period to a regular plan (always some variation of the gridiron pattern), and these are either military settlements or cities built by vigorous and mature communities which had reason to abandon their original settlements.

The first notions of formal town planning appeared to have originated in the East. (Hippodamus, an Ionian of the fifth century B.C. was the first professional town planner known to us.) Many towns were fully planned and built in Asia Minor after the Alexandrian wars, and there were building by-laws of that period which anticipated the very latest modern practice. There was a law, for instance, which banished obnoxious trades beyond the city walls; another for fixing the widths of new roads and charging road maintenance upon adjoining owners, and so on.

The eastern origin of town planning was supplemented by evidence of formal town structure found in the North Italian Terramara, i.e., fortified settlements of supposed lake-dwellers, dating back to 1400–800 B.C. Those settlements were as precise in plan as a Roman military camp, and by tradition or discovery may have influenced Roman methods.

From about 200 B.C. onwards, Rome founded some hundreds of colonial cities in which streets and buildings were planned as a whole. Turin, built by Augustus about 28 B.C., was one of many Italian cities in which a Roman street plan was still retained as an essential part of the modern town. Timgad, Ostia, and Pompeii were examples of Roman planned cities in which the actual roads and materials of the period had been preserved without intermediate use.

The City of Rome grew slowly and irregularly; and was always badly planned; despite costly efforts to replace its central congestion by a wonderful series of fora. The licence of irregular growth was first checked by Augustus, who limited the height of buildings to not more than 70 ft. Trajan reduced this to 60 ft., and Nero not only fixed the height of future building at not more than twice the road width, but required new streets to be wider, and compelled private owners to build more substantially.

Contemporary Art

The Royal Institute of Oil Painters.

As in most human affairs, there are good and bad elements in the Institute exhibition; good things by good men, and bad things by good men, and the fate of the latter is assured. I wish the fate of the good things could be as certain; the deserved fate, that is to say. There are at least a dozen important works that should be acquired for public galleries. For example, the landscapes of Alfonso Toft, "A July Afternoon," and "Ludlow." There is a little one of breaking surf, called "Roker," too, and all these are compact of real beauty of observation and execution, and they have a quality which is rare in modern work; and there is "A Cornish Beach," by J. A. Park, an impressive thing. The wish becomes even stronger in front of works like Davis Richter's "Vegetarian Feast," a horrid title to a sumptuous large still-life of rich colour and consummate craftsmanship; like Herbert Budd's strong and vivid "Piccadilly Circus Flower Sellers"; like the clever "After the Ball," by James Quinn, and Fred Leist's "Witchball," and "Mrs. de Vargas." It so happens that admirable works of a decorative character and architectural pieces no less admirable form the bulk of the better exhibits; they have purpose in place of the aimlessness of many of the subject pictures and the stereotyped transcripts from nature. An ostensible work of mural decoration by Charles Simpson gives considerable promise; W. B. E. Ranken's "Flower Piece for an Overmantel" fulfils its declared purpose very well; and Harold S. Power's "Sketch Design for Mural Decoration in Melbourne Public Library" should result in a fine work. There are two feathered subjects which are splendidly decorative, with fine colour and drawing: Helen Mackenzie's "Corner of a Farmyard," and Herbert Budd's "Boy and Hen." In an allied class I place the three pictures by Hesketh Hubbard, whose flat colour patches in "Over the Bridge," and in two architectural studies of Antwerp and Malines indicate an ornamental application. To this class belong Bernard Munn's two figure pictures with their indications of the style of the new primitives of the Birmingham school, and James Clark's studies of black men in "Confabulations," another feeble title. The architectural works are certainly led by Davis Richter's "City Beautiful" (the title is unsuitable) in which buildings are squeezed to yield their last drop of pictorialism; Isobel Dods-Withers contributes a charming picture of "The Aqueduct, Segovia"; S. Buckingham Pocock "The Generating Station," a modern subject; Will Ashton "A Street in Madrid," and Terrick Williams "Le Pont Neuf, Paris," all really excellent things.

Ivan W. Brooks, at the St. George's Gallery, proves himself a capable artist working in an alien style. In spirit he must be all right, for some of his pictures indicate a real feeling for effect—a snow scene, for example. For the rest he intimates that the smeary, sketchy kind of work that is current coin in Paris and Berlin is quite unsuitable to his powers.

Although smudgy in colour, dauby in execution, and confusing in composition, the pictures of the late Henrietta Irvine, shown at the Arlington Gallery, have a distinct individuality and indications of a live, penetrating vision, both as exhibited in building studies and in portraits.

Water-colour and Other Drawings.

A most attractive exhibition at the Gieves Gallery included a hundred items by Claude Torry and Lenny Norsworthy. The drawings of the former were mostly made on grey paper, producing a low, monotonous but most pleasing general effect; those of the latter were brighter in colour, a result achieved mainly by broad flat washes. In subjects they were practically identical: Honfleur, Caen, St. Malo, Dinan, Dinard, with a few at Oxford by Claude Torry, and some English churches by Lenny Norsworthy—almost all studies of buildings.

At the Fine Art Society the exhibition of drawings by Walter H. Allcott reveals a new sense of the value of architecture: the welding of buildings into a landscape, and the massing of buildings in such a way as to forcibly suggest the coinage of a word—building-scape. There are some half-dozen of the Italian subjects at Assisi, Capri, Siena, and some in England, at Knaresborough, for example, which give the former impression, and the latter is made by such drawings as "Florence," "Notre Dame, Paris," "Siena, Morning," and "Ferentillo," one of the Apennine Hill towns. The drawings are most pleasing and accomplished, with a beautiful characteristic tone.

The series of large drawings of interesting and somewhat desolate places in the western islands of Scotland, by Mary Holden Bird, at the same gallery, are striking as an indication of temperament expressed by sympathetic subjects. The impression of this individual work is definitely truthful and idiomatic. Cutting into the hanging of these drawings were groups of humorous pictures by Fougasse, of "Punch," which, admirable in themselves, modified the personal effect of the islands studies.

KINETON PARKES.

Book Reviews

A Prophet of No Importance

Herr Mendelsohn is, we believe, a prophet without much honour in his own country, wherefore he seeks it abroad. But we must deny him the fame his own shores refuse when he comes to us in all seriousness with a book like this. For the designs illustrated herein are not, by any stretch of the imagination, architecture; they are building run mad. Whether some of the projects could possibly be built we do not know, though Herr Mendelsohn talks much and grandiloquently of the "freedom"—as of wings!—which has been bestowed upon architecture by the reinforcing of concrete with steel, and, with a great display of cantilevered masses, his creations hop from the ground prodigiously in an attempt to fly.

No; we do not care for Herr Mendelsohn's designs in the very least. "They may be modern manners, but they seem to us like old-fashioned impudence." J.

Erich Mendelsohn: Structures and Sketches. Translated from the German by Herman George Scheffauer. Ernest Benn, Ltd., London. 21s

Biblia a-Biblia.

Elia affirmed that he could read anything which he called *a book*. But there were things in that shape which he could not allow for such. And in this catalogue of *books which were no books* he reckoned Court calendars, directories, pocket-books, draught boards, bound and lettered on the back, scientific treatises, almanacks, statutes at large.

And we, too, must confess that, despite an *Outline of the History of the College* (by the late Dr. G. Carey Foster) forming a preface, we must rank this book among the rather dolorous *biblia a-biblia*, that have their uses, just like the chopper or the coal hammer, but should not be brought into the comfortable apartments of any man's home.

This book, among the *biblia a-biblia*, we particularly dislike. It presents us with syllabuses of all the subjects on which our ignorance is most profound—jurisprudence, eugenics, Egyptology, Assyriology, physics, and zoology—and, by Jove! there are *examinations* in all these. Let us shut the book and take ourselves off with all speed! J.

"The University of London University College Calendar, Session 1924–5."

Small Family Houses.

The small family house, for the purpose of this book, has been defined as one with two living-rooms on the ground floor and four or five bedrooms on the first floor. The author, Mr. Randal Phillips, thinks the three-bedroom house is usually inadequate, but as in a certain number of cases it meets requirements, a few examples are included.

The houses illustrated range in price from £1,000 to £3,000, and by the provision of a useful table what may be had for a certain outlay is readily seen. It is well that the examples chosen should demonstrate to the popular reader that cost has practically nothing to do with appearance. Indeed, in the case of a house of limited size, much money has, from an architectural point of view, often proved its ruin.

However, these houses have been chosen more for their plans than for their architectural effect, and the kitchen fitments have a practical interest that will appeal to the many lady-readers Mr. Phillips's book is sure to have. Some beautiful gardens are also hinted at.

The book is well produced, and is one of the best there can be "to help the client make up his mind."

"Small Family Houses." By R. Randal Phillips, Hon. A.R.I.B.A. London: "Country Life," Ltd. Price 10s. 6d. net.

The British Institute of Industrial Art

The conclusion reached after reading the report, just issued, of the British Institute of Industrial Art is that the Institute has been able during the first five years of its existence to perform a large amount of useful and varied work under extremely difficult conditions, and that a programme of steady and promising development has been established, which, if realized, will do much to assist in the solution of some of the most perplexing problems of modern industrial art. The first steps towards the accomplishment of this programme have been taken and nothing but financial difficulties now stand in the way of further advance. The work carried out by the Institute divides itself under four main headings: (1) The organization of exhibitions; (2) the supply of information; (3) the conduct of research; and (4) the giving of advice to public authorities. The five years period covered by the present report may be divided into three main sections: (1) The preparatory period which preceded the formal constitution of the Institute; (2) the experimental period, covering the year 1920, and marked by the establishment of a "permanent" Gallery of Industrial Art at Knightsbridge; (3) the definitive period (1921 to the present time) which followed the discontinuance of the first experiment, and which, in spite of drastic financial retrenchment, has been characterized by a number of new developments, e.g., the organization of provincial exhibitions, the election of a body of Fellows, the systematic conduct of research, the assumption of advisory duties towards departments of State, and the establishment of co-operative arrangements with other similar organizations. During the last period the Institute has been able to utilize the experience thus obtained by inaugurating a definite and well-considered programme of activities, the practical carrying out of which has only been limited by the very slender financial resources at its command.

Copies of the report can be obtained, price 1s. net, from H.M. Stationery Office, or from the offices of the Institute, 18 Grosvenor Gardens, S.W.1.

Sir Banister Fletcher's Lectures

The Genius of the English Cathedral.

Sir Banister Fletcher, F.R.I.B.A., delivered a lecture at the Central School of Arts and Crafts, Southampton Row, on the origin and design of the cathedral, which was gradually evolved from earlier building types through successive periods and was enlarged and enriched as the ritual needs and devotional spirit grew. He said that the plan might hail from several sources in remote pagan days. Sometimes an ancient temple was adapted, the chancel being fitted up at one end, the side columns being destroyed or walled up as occasion served. Many believed that the Roman basilica, or law court and exchange, served as a model for its plan, with colonnaded aisles and semicircular "apse" at the end, closely resembled the earliest basilican churches. Some, again, believed that the small "scholæ," for discussions among the learned, as at Pompeii, or the atria of Roman villas, with their transeptal wings, were adapted to the purposes of worship when these earlier types were discarded as places of meeting and the Christians could build edifices for themselves. At all events, such early Christian "basilican churches" were the first stage of a continually changing process of plan development which could be traced in the Romanesque plans of St. Gall and the early churches of Western Europe, and culminated in the great structures erected in the mediæval period and now regarded as triumphs of English architecture—our cathedrals. Sir Banister gave a synoptical description of the chief features of the cathedrals of Western Europe, and concluded with some vivid glimpses of typical home and continental cathedrals, showing the magnificent interiors, the wide stained-glass windows, the lofty towers, and other features indicative of the religious aspiration which formed their essential genius and remains the source of inspiration to the present day.

Structural Science in Mediæval Times.

In his third lecture at the Central School of Arts and Crafts, Sir Banister Fletcher, F.R.I.B.A., gave a graphic description, with the aid of lantern views and wooden models, of the structural principles of Gothic cathedrals. He dealt more especially with the building-up of the "vaulting," buttresses, and flying buttresses. These features, originally purely scientific in their purpose, came to be designed in such a way as to combine æsthetic values with the constructive ones, and thus threw a glorious mantle of elaborate vaulting and framework over the mediæval churches. The weight of a building was now, instead of being distributed over solid walls, as in earlier periods, concentrated on isolated supports, thus leaving free spaces for vast coloured windows. Only small units of rough stone were now usually obtainable, and this evolved a totally different method of building. Building thus became an experimental science of effectively balancing small stones on one another, thus producing a new principle of lateral thrust and counter-thrust. The old Roman building stood solid on the ground, and the Gothic structure soared lightly into the air. Thus the Christian cathedral of Rheims, in all its panoply of lacework panels, statues, portals, and windows, was borne aloft by pier and buttress at a tremendous height.

Labour and Materials for House Building

In pursuance of undertakings given when the Housing (Financial Provisions) Act of 1924 was before the House of Commons, the Minister of Health has taken steps to appoint committees of the building industry and of the manufacturers and suppliers of building materials to advise and assist him in carrying out the scheme embodied in the Act, particularly as regards the development and co-ordination of the supply of labour and materials for house building.

The Building Industry Committee has been constituted as follows:—

Representatives nominated by employers in the building industry—Messrs. A. Andrews, J. H. Barker, J. Carse, J. Clark, J. P. Cox, C. E. France, A. J. Forsdike, J. C. Gilchrist, F. G. Hodges, H. T. Holloway, E. W. King, H. Matthews, A. Melville, Wm. H. Nicholls, H. R. Selley, J. Somerville, E. J. Strange, and A. G. White.

Representatives nominated by operatives—Messrs. T. Barron, G. Haines, H. M'Pherson, D. Merson, S. Sigsworth, G. Waddell, W. Turner, S. Taylor, A. G. Cameron, G. Hicks, W. Coles, R. Wilson, J. F. Armour, W. Cross, and R. Coppock.

It is contemplated that representatives of the manufacturers and suppliers of building materials shall be added to the above committee. A separate committee representative of the manufacturers and suppliers of building materials is in process of formation, and provision will be made for co-ordinating the committees by means of a small joint committee.

The Builders' Benevolent Institution

We have received a copy of the seventy-seventh annual report, with rules and regulations, of the Builders' Benevolent Institution. The Committee of Management, in their report, record their sincere gratitude to Mr. George M. Burt for the great service he has rendered to the Institution as its president during the past year. The generous response to his appeal has enabled the committee to again grant gifts to the pensioners at Christmas and Midsummer of £5 each, all of whom have expressed their thanks in such terms as to show how much this gift is needed and how greatly it is appreciated. The grateful thanks of the committee are also accorded to the subscribers and donors, by whose support the committee have been able to assist every eligible candidate during the past year, and sincerely trust they may be permitted to continue to do so. The committee report that Mr. George Perry Nash (Messrs. Hall, Beddall & Co., Ltd.) has consented to act as president for the ensuing year, and they earnestly trust that all the donors and subscribers will support him at the annual dinner, to be held on November 13, at 6.30 p.m., at the Hotel Victoria, Charing Cross. Dinner tickets, excluding wines, cigars, etc., at 15s. each, can be obtained direct from the secretary, 48 Bedford Square, W.C.1.

Coming Events

Wednesday, October 22.

Devon and Exeter Architectural Society.—"The Romance of Steel." By Mr. W. J. M. Thonasson.

Thursday, October 23.

Institution of Welding Engineers, at the Lecture Hall of the Engineers' Club.—"Steel Wire: Its Manufacture, Properties, and Uses for Welding and other Purposes." By Mr. E. A. Atkins, M.I.Mech.E. 8 p.m.

The Week's News

Housing at Sunbury.

During the next two years 100 houses are to be erected at Sunbury.

Plymouth Barracks for Housing Purposes.

Elphinstone Barracks, Plymouth, are to be used for housing purposes.

Upper Norwood Building Developments.

In the Upper Norwood district 1,337 houses have been built since the war.

Weston-super-Mare Marine Parade Improvement Scheme.

At Weston-super-Mare the marine parade is to be improved at a cost of £28,000.

Private House Building at Croydon.

£72,500 has been advanced by the Croydon Corporation for private house-building.

Infant Welfare Centre for Llandudno.

Llandudno is to have a new infant welfare centre. The cost is estimated at £4,000.

Nelson Housing Scheme.

The Nelson Town Council have decided to erect fifty additional municipal houses.

The Repair of Herefordshire Bridges.

£25,000 is to be spent by the Herefordshire County Council on the repair of bridges.

Stockport Baths Improvements.

Alterations are to be made at the Stockport Corporation baths at a cost of £12,000.

Road Widening at Ilford.

The Ilford Urban District Council propose to widen Cranbrook Road at a cost of £32,000.

Hendon Road Widening Scheme.

Over £12,000 is to be spent on widening Queen's Road, leading to Hendon Central Station.

Bromley Rural Housing.

A scheme for the erection of 150 dwellings is being considered by the Bromley Rural District Council.

A New Infirmary for Hemsworth.

Plans are being prepared for the erection of a new infirmary for the Hemsworth Board of Guardians.

Newport Market Remodelling Scheme.

Newport (Mon.) propose spending between £100,000 and £200,000 in remodelling the town market.

A New Institute for Derby.

A new institute is to be built at Derby for the London Road Wesleyan Church The cost is estimated at £25,000

A New Hotel for Balby.

A new hotel is to be erected at Balby from the designs of Messrs. Wilburn and Atkinson, of Doncaster, architects.

Housing at Wigston.

At the last meeting of the Wigston Urban District Council plans were passed for the erection of eighty-four houses.

£25,000 Skegness Scheme.

The Skegness Urban District Council have sanctioned a £25,000 scheme for the development of the Marine Gardens.

A New Church for Doncaster.

A new church is to be built for the Doncaster Spiritualist Society. The architects are Messrs. J. Simmons and Son, of Doncaster.

One Hundred Houses for Twickenham.

The Twickenham Urban District Council have decided to submit proposals to the Ministry of Health for the building of another 100 houses.

More Houses for Stockton.

The Ministry of Health have sanctioned the erection by the Stockton Corporation of another 100 houses. The cost is estimated at £41,240.

Big Dock Extension Scheme for Southampton.

The Southern Railway Co. have decided to begin work on the extension of Southampton Docks. The complete cost is estimated at £13,000,000.

The West Front of Belfast Cathedral.

The plans of Sir Charles A. Nicholson, M.A., F.R.I.B.A., for the completion of the west front of Belfast Cathedral have been adopted by the Board.

Southwell Rural Houses.

The Ministry of Health have sanctioned the application of the Southwell Rural District Council for a loan of £40,500 for the erection of miners' houses.

More Houses for Featherstone.

The Ministry of Health have approved a scheme for the erection of 200 houses by the Featherstone Urban District Council during the next two years.

More Houses for Hackney.

The Hackney Borough Council have decided to erect twenty-four new houses, equipped with electrical labour-saving devices. The cost is estimated at £36,000.

An Old Salisbury House in Danger.

The ancient Halle at Salisbury, built by John Halle in 1470 as a banqueting hall for the Guild of Wool Staplers, is in danger of being mutilated, and in parts carried off to America.

Cambridge Infirmary Extensions.

Plans are being prepared for a new block at the Cambridge Infirmary to provide additional accommodation for the female infirmary patients and children, and for a new mortuary. The cost is estimated at £9,645.

Architects' Donation to Acton Hospital.

Messrs. H. C. G. Monson and E. C. P. Monson, architects to the Acton Hospital Council for the extension of the hospital premises, in rendering their account for fees, have made a donation of £500 to the hospital funds.

The R.I.B.A. Intermediate Examination.

The centres for this examination will be London and Leeds. At both centres the examination will be held on November 21, 24, and 25. At the London centre the oral examination will be held on November 27, and at the Leeds centre on November 26.

Housing at Sunderland.

In Sunderland sixty-two houses are to be built on the Spark Farm estate. Plans for the erection of forty-eight four-roomed houses upon a site adjoining Reginald Street were approved at the last meeting of the Corporation. More than 4,000 houses are needed in the district.

Hull Church Schemes.

Church extension schemes at Hull include the erection of a permanent church of St. Columba (£15,000), the addition of a chancel, vicarage, and an institute at Dairycoates (£7,000), the completion of St. Michael's, Sutton (£3,200), and the provision of a temporary church on Cottingham Road (£2,000).

New Artificial Silk Factory for Wolverhampton.

Messrs. Melville Dundas and Whitson, of Glasgow, have obtained the contract for the erection of a large new factory at Bushbury, Wolverhampton. Messrs. Courtaulds, Coventry, for whom the work is being undertaken, are said to be spending £1,500,000 on the building, which will be used for the manufacture of artificial silk. Work is to begin at once.

The Dr. Ludwig Mond Collection at the National Gallery.

The collection of pictures bequeathed to the nation by Dr. Ludwig Mond is now being arranged at the National Gallery in Room XXVI. The works comprise the whole of Dr. Mond's most generous bequest to the Gallery, with the exception of the Mantegna "Imperator Mundi" and two panels by Cima, which remain in possession of members of the testator's family during their lifetime.