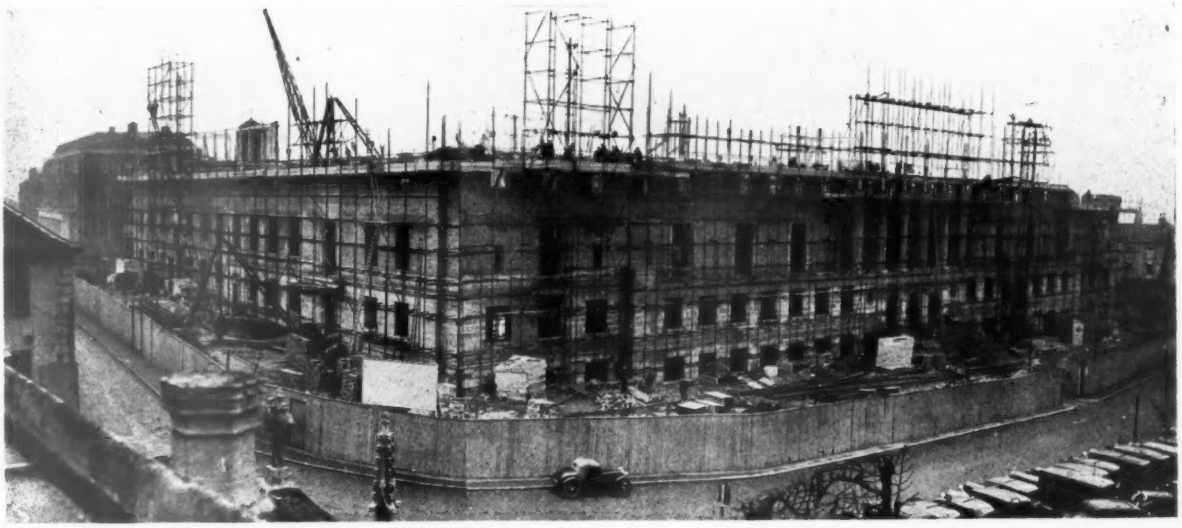
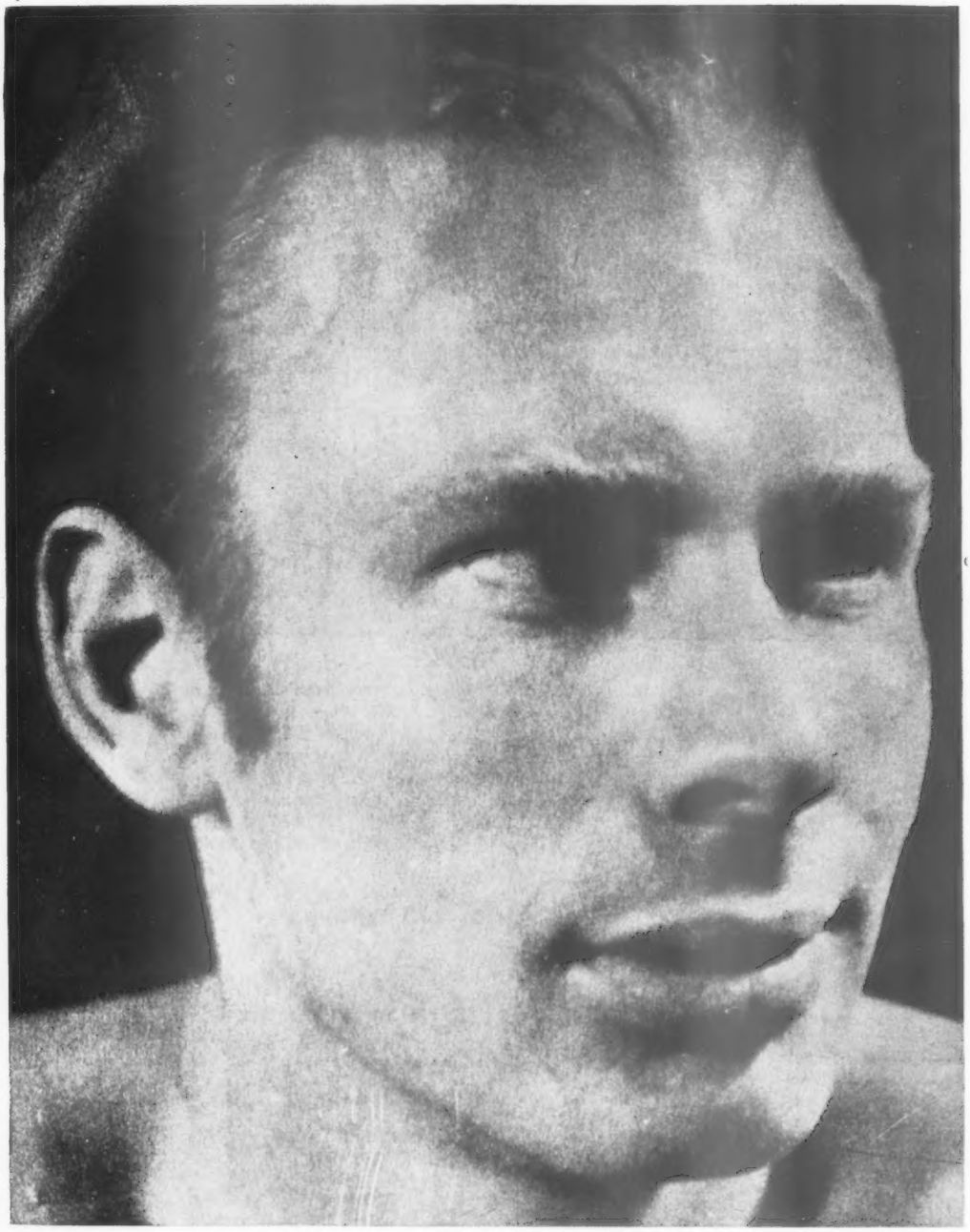
UNDER CONSTRUCTION: NORWICH MUNICIPAL BUILDINGS

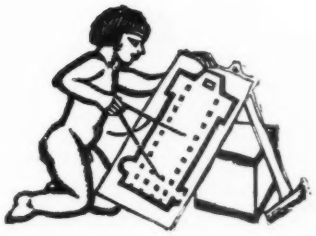


A PROGRESS photograph of Norwich Municipal Buildings, taken from the roof of St. Peter Mancroft Church. The architects for the building are C. H. James and S. Rowland Pierce, whose design was placed first in an open competition held in 1932.



D E N I S C L A R K E H A L L

The author of the design placed first in Section A of the "News Chronicle" Schools Competition.



THE I.A.A.S. OBJECTS

WITH dismay and irritation architects will by now have heard of the Memorandum sent by the Incorporated Association of Architects and Surveyors to members of Parliament. The whole business of Registration has been so long and complex with manœuvres and counter manœuvres that most competent architects may feel that they would almost rather hear no more of the matter than enquire into any new fuss.

But there is one drawback to the attitude of paying no attention and of waiting till one more storm in a teacup dies down : it is that the Commons are now very near granting architects powers of self-government and self-protection. In these technical matters the habit of the House is one of commonsense expediency. If the technicians petitioning are unanimous, they get what they want ; if they are divided amongst themselves, the easiest course for the House is to wait till they are unanimous, and to reject the Bill before it.

Because of this danger, trivial though it may seem when public opinion is very favourable to the present Bill, the I.A.A.S. Memorandum asking for the Bill's rejection in its present form takes on something like importance. And if because of crowded Parliamentary time the Bill does not pass this Session it is the more necessary for architects to examine the complaints of the I.A.A.S., both in order that any justifiable remedies may be set in hand at once and equally that unjustifiable demands should be thoroughly understood and if necessary refuted publicly.

What then does the I.A.A.S. want? In their Memorandum they appear to make four principal claims : that the 1931 Act is bad and ought to be revised before it is extended ; that the Architects Registration Council has treated the I.A.A.S. unfairly; that the R.I.B.A. is trying to create a professional monopoly under cover of the A.R.C.; and that the A.R.C., by R.I.B.A. influence, has unfairly refused recognition to the I.A.A.S. final examination.

It is worth taking these in order. No architect will deny that the present Act is imperfect, but its greatest fault is so obviously that the Registration Council has no power over those whom it is supposed to control that it is very difficult to feel that the I.A.A.S. seriously consider minor blemishes to be a valid reason for now opposing the removal of the fundamental defect. Surely the key to their objections cannot lie here.

The next two complaints are really the same. When two principal societies are represented on a body controlling a profession, and one is ten times as old and several times as large as the other and contains five out of every six of the ablest practitioners in the country, the smaller body may feel that it is occasionally treated with discourtesy and high-handedness ; but it cannot well maintain that the larger society's numerical dominance is unfair. Or at least such a belief would seem to be poor grounds for a petition to the Commons. No one who knows the ability and untiring efficiency of the I.A.A.S.'s service to their members can believe that it is on these grounds that the present Bill is being opposed. The remaining objection is that the I.A.A.S. final examination has not been granted recognition by the Registration Council as qualifying for admission to the Register. Is it possible that here the real core of a long dispute is reached? An underlined clause in the Memorandum runs :—

> " It (the I.A.A.S.) hopes that Parliament will determine the matter once and for all by seeing that provision is made in any Amending Bill for the recognition of the I.A.A.S. Examinations."

Here is something obviously of really vital importance to the I.A.A.S. If the present Bill passes and the I.A.A.S. examination does not gain recognition, the Association must inevitably face eventual extinction. It therefore seems beyond question that the main reason for the I.A.A.S. opposition to the present Bill lies in their claim that through R.I.B.A. influence the Registration Council have " unfairly " refused recognition.

The temptation for the R.I.B.A. to get rid of a rival by such a method, should they really desire to do so, is manifestly so great that this dispute must be settled with a justice that is beyond question either by architects or the general public. How is it to be done?

The Registration Council maintains that the examinations recognized by it demand from candidates the minimum all-round qualifications necessary for those who practise architecture. The I.A.A.S. imply that their examination has been " unfairly " refused recognition — from which the further deduction must be made, though the I.A.A.S. do not appear to claim it explicitly, that their examination is of an equal standard to the recognized examinations.

Now, it is obviously difficult to judge such a claim with an impartiality beyond question. For each and every expert jury appointed to decide the matter might find itself accused of bias in one way or the other. A solution, nevertheless, would appear quite possible. An Examining Board of the Registration Council might set, and mark, exactly the same papers for all examinations for recognition, the I.A.A.S. being as free to hold such an examination as any other body. This arrangement might be difficult and expensive, but it would dispose finally of possibilities of unfairness and would presumably remove all the objections of the I.A.A.S. to the present Bill.

If, however, such an offer still failed to satisfy the Association, architects in general would be forced to believe that the I.A.A.S. do not really want equal recognition for an equal examination—that what they really want is recognition for an examination, held and managed by themselves, of lower standard than that now demanded. And this, bluntly, it will never get.

The last thing wanted by architects is a Register of the future divided by any form of snobbery, whether intellectual or otherwise. Of that at least they have had enough.

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NOTES & TOPICS

"NEWS CHRONICLE"

THIS column is not the place to say very much about the *News Chronicle* Schools competition when so much is being said on other pages, but I feel that I cannot let the occasion pass without some sort of comment.

*

If the *News Chronicle* headline—"It was a Great Win"—savoured more of the morning after the boat race than of an architectural competition, that competition was, nevertheless, a very public-spirited and lively affair, conducted in the best traditions of the competition system.

*

When I say the "best traditions," I mean the best traditions, and not all the traditions, because in many ways this competition has set an example to such local authorities as may be considering the promotion of a competition. It set out to discover a designer with ideas and ideals, not to discover the best solver of the usual technical jig-saw puzzle—how to fit certain specified requirements into a specified space.

*

In other words, if only some authorities will have the good sense to give jobs to some of the winners, we might see established a new outlook on school design. Another idea would be to have a similar competition for other types of building—hospitals, for instance, or better still, municipal buildings. Surely there is room for a fresh outlook there—the right sort of competition might produce, in England, a new and even better Hilversum; it would certainly be welcome.

REAL HELPFULNESS

Amongst the excitement and the compliments, and the cash rewards, which the fortunate in the *News Chronicle's* competition are now or will soon be enjoying, we must not forget hard work put in by those who, in this competition, had no hope of a cash reward. These really disinterested enthusiasts are the engineers and quantity surveyors who collaborated.

*

Mr. Cyril Sweet, for instance, looked after the "dreary side" for three premiated and commended schemes; Messrs. Helsby, Hamann and Samuely did even better: five of their protégés were rewarded or complimented. When the younger brigade get the big work, I hope that the staying-power of gratitude will not prove to have been under-estimated.

PROFESSOR REILLY

One of the happiest ideas which the *News Chronicle* had was to get Professor Reilly to write on this, essentially a young man's competition. Professor Reilly starts off with the words "This competition, which has excited all young architects—young in mind, that is, whatever their age . . .," words which certainly include Professor Reilly himself.

*

What an astonishing man he has been—not always, perhaps, a great architect, but a great critic, a great educationist and a great opportunist in the best sense. In my correspondence with Professor Budden last week, I mentioned the fine traditions of the Liverpool School, and I cannot put down Professor Reilly's name without mentioning them again. That the man who did so much to found those traditions on the Michael Angelo *via* McKim, Mead and White basis should write as he does of this rather Corbusier competition shows how very wide his outlook can be.

P.R.I.B.A. IN AMERICA

Mr. Percy Thomas had a good story to tell, àpropos of McKim, Mead and White, when he was recounting his impressions of America at the A.A. last week. Harry Thaw, it will be remembered, was the murderer of Stanford White—as a matter of fact he murdered him in his own job, Madison Gardens. Harry Thaw has now emerged from prison and one of the first things he did was to visit Radio City. "Crikey," he said, "I shot the wrong architect!"

*

Mr. Thomas had a rather astonishing time in America, and this was not his only wise-crack. Ostensibly he went to see railway stations—a preliminary to his Euston job, but in the course of a whirlwind tour round New York, Philadelphia, Chicago and Cincinatti, he seems to have done lots of things besides look at buildings.

*

Mechanical stunts have fascinated him, and he found lots of them in the stage arrangements of Radio City. Rising, falling, revolving platforms; and orchestras that knock Stratford-on-Avon into a cocked hat. On one of the stages Mr. Thomas discovered a beauty chorus and brought back a slide for the benefit of the A.A. He also discovered a drink called mint dewlip—he told us exactly how it felt.

*

By the way, I had not heard before the reason for not using the mooring mast on the Empire State Building. It seems that the upward current of air against the face of the 102 storey block forces up the tail of the airship and so, since you can't drop an anchor into Fifth Avenue, the

Under construction: a boating pool at Bognor Regis, designed in the form of a map of England and Wales.

mast remains *hors-de-combat*. Incidentally it is, in itself, a little higher than the tower that Mr. Thomas built at Swansea.

TITE PRIZE AGAIN

Professor Budden was not my only correspondent on this matter, and a friend in Leeds writes to tell me that Leeds did yesterday what Liverpool and the A.A. are thinking of doing to-morrow. I am very glad to hear it; because the more schools that strike against anachronistic prizes the sooner will the matter be put right.

*

The fact is, of course, that the R.I.B.A. ought to set up a commission of teachers and even students' representatives to discuss the whole matter. The funds at its disposal are considerable, and the conditions of bequest are not so rigid as we have been led to imagine. Single representatives of the schools can do little by means of their votes, and in the meantime the "rendered" pseudo-Palladian scenery of the Tite drawings and the healthy, sensible, sunlit, garden classrooms of the *News Chronicle* Schools are a thousand worlds apart.

HUMAN TEST LOADS

There is plenty of precedent for the now popular habit of using the Army as a test load for the coronation stands, for did not the sappers perform the same useful service at the time of the Great Exhibition? Marching, doubling, and marking time up and down the galleries to demonstrate that the deflections of the cast-iron beams were only what Mr. Paxton expected them to be. The Navy, too, provided its own test load for that colossal grandstand put up some years ago for the Greenwich Pageant.

*

So far I cannot make up my mind which I respect more, the people who dance up and down on top and believe in the designers' skill, or the designers themselves who wander about underneath with extensometers making quite sure they haven't left out a 2 in their calculations.

LOUD NOISES

Did anybody hear the chorus of hoots, wails, bangs, shrieks, and howls that the Home Office organized last week in Acton? Just a try-out to discover what the population can and cannot hear come air-raid time. Having heard nothing at all I can make no helpful suggestions; one or two of Chance's marine diaphones ought to do the job, but then half London would be too deaf to hear anything but the first warning.

THE DEFENCE OF EROS

So the police, instead of linking arms and making a continuous chain to stop people (generally *not* undergraduates, by the way) from climbing up Eros on boat-race night, have decided to build a nice strong hoarding all the way round, this same hoarding to be in sections and to be used for such things as coronations or at any other time when people are in danger of getting too cheerfully mountaineering.

*

I haven't the least idea if there is any complicated reinforcement to prevent Eros falling over bodily if ever anyone climbs far enough—probably not—but I don't much like the idea of balancing precariously on one cast aluminium wing. Eros, I should imagine, would snap off short at the ankle.

*

And did the medieval masons, I wonder, ever imagine anybody climbing their crockets? The enterprising souls who decorate King's Chapel or the Latimer and Ridley Memorial with assorted chinaware show a touching but so far justifiable faith in the reliability of college stonework.

ASTRAGAL

This issue is devoted to the "News Chronicle" Schools Competition. Some of the usual features—Shops, Rates of Wages, Current Prices, etc.,—have therefore been held over; they will be resumed next week.

NEWS

POINTS FROM THIS ISSUE

LUMPS FORT SITE, PORTSMOUTH

A second meeting was held at Portsmouth last week to protest against the increase of the local rate from 10s. 6d. to 11s. 6d. in the pound, the expenditure of £225,000 on the laying out of Lumps Fort as a pleasure centre at Southsea, and the scheme recently adopted by the Council for constructing an Empire airport at Langstone Harbour. Captain J. H. H. Ireland, who presided, said they had formed a protest association, and it was intended to fight the question of Lumps Fort and the air base to the bitter end.

NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY

At the annual meeting last week of the National Joint Council for the Building Industry, the retirement was announced of Mr. W. E. Collier, J.P., of Reading, who has been chairman for twelve years, and of Mr. Thomas Barron, J.P., who has been vice-chairman for a similar period. In their stead the Council appointed Mr. George H. Parker, of London, as chairman, and Mr. George Hicks, M.P., as vice-chairman. The Council also appointed its committees for the ensuing year.

Among other business it was reported that, in regard to certain constitutional amendments proposed by the operative bodies, the employer bodies were taking steps to obtain information from their membership as to the existing position and attitude in the localities.

In regard to demolition work it was decided that this comes within the building industry and that appropriate rates and allowances under the national working rules apply to such work.

THE ARCHITECTS' DIARY

Thursday, March 25

BUILDING CENTRE, 158 *New Bond Street, W.1. Exhibition: "Science and Building." Last day. 10 a.m. to 6 p.m.*

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. Exhibition of linocuts, organized by the A.A. Students' Art Club. Until April 3.*

R.I.B.A. EXHIBITION OF BRITISH ARCHITECTURE. *At the Derby Art Gallery. Until April 13.*

Tuesday, March 30

IDEAL HOME EXHIBITION. *At Olympia. Until April 24.*

Wednesday, March 31

INSTITUTION OF STRUCTURAL ENGINEERS. *Midland Counties Branch. At the James Watt Memorial Institute, Birmingham. "A Revolution in the Technique of Concrete." By A. T. Gueritte.*

Arising from an application by the building section of the Transport and General Workers' Union for a variation amendment in London of 4d. in lieu of 1d. above the labourers' rate for qualified benders and fixers of bars for reinforced concrete work, the council decided to increase, in the London region, the extra payment from 1d. to 2d. above the labourers' rate. This decision applies to men satisfying the employer than they have been employed on this description of work for three months. It is to come into operation on May 1, 1937, and is subject to the condition that no further application for an increase of this London extra payment shall be in order during the currency of the existing agreement on basic rates.

BRICKLAYERS COMPANY'S MEDAL

The annual award of the gold medal to be presented by the Tylers and Bricklayers Company to the architect of the building judged to have the most merit within a radius of eight miles from Charing Cross will be announced next June.

The building is to be one of brick and tile. (buildings having a small amount of stone or other dressings will not necessarily be precluded), and must have been completed within the last three years ending December 31, 1936. The Company states that any practising architect is at liberty to nominate any buildings, including his own, for the consideration of the assessors; that no special form is necessary, and that the following information only should be given: name, situation, and architect of building, signed by the nominator.

Nominations must be sent to the Clerk of the Tylers and Bricklayers Company, 6 Bedford Row, E.C., before April 20.

YORKSHIRE ARCHITECTS AT DINNER

Mr. H. Andrews, President of the York and East York Architectural Society, speaking at the Society's annual dinner at York last week, stated that better official recognition should be given by the Government, not only to architecture, but to art as a whole.

"I suggest," he said, "that this may be done by the setting up of a department—a Ministry of Arts—with its own minister responsible to Parliament, and so divorce matters of architecture from the Ministry of Health. A nation that can afford to spend vast sums upon its Navy, Army and Air Force ought to be able to bear the cost of this special department."

Also referring to the Government, he said it ought to be a matter for regret that it did not take more definite steps to arrest the destruction of the natural beauty of the countryside, instead of leaving the question in voluntary hands.

The Ribbon Development Act and the Housing and Town Planning Acts did not deal effectively with the indiscriminate development of the land speculator and jerry builder.

A very good sign of the times was the readiness with which local authorities were availing themselves of the Institute's services. During the past two years the number of local government authorities seeking advice had established a record.

More could be done, however, by municipalities in utilizing the services of the architectural profession. The rapidity with which towns and cities were developing as a result of more efficient transport made one wonder whether local municipal councils were taking a long range view in their planning for the future.

He believed a Public Relations Committee could function to a considerable extent and with many advantages to the authorities concerned, by offering suggestions in connection with the great problems of layout and planning that from time to time arose.

CREWE HOUSE

Crewe House, the eighteenth-century mansion in Curzon Street, Mayfair, which it was feared was to be demolished and replaced by flats, has been bought by a transport company for use as offices. The exterior will not be changed.

CHANGE OF ADDRESS

Mr. Serge Chermayeff, F.R.I.B.A., is moving his office to 19 Grosvenor Place, London, S.W.1 (Telephone: Sloane 9129), as from today, March 25.

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

In the House of Lords, Lord Brocket drew attention to the necessity for a definite policy to prevent the further decay of the countryside, and which would not only have as its object the preservation of amenities and buildings of architectural or historic interest, but also the maintenance of employment in the villages and the encouragement of increased production of food and timber as part of the home defence programme.

Lord Brocket, who moved for papers, said that it was impossible that the National Trust could own all the beautiful spots in England and it was better that the owners should preserve such places. The Housing (Rural Workers) Act, which was intended to bring about the reconditioning of old houses, had not been employed, in England, at any rate, as much as it should have been.

Members of all parties were beginning to realize that the large country house was a particularly English institution which was well worth preserving. It seemed to be impossible to put the clock back, but there was in this country a large number of beautiful houses

still in the hands of their owners and put to their proper use as country houses. He asked the First Commissioner of Works to consider very fully if he could prevent too many of those houses from becoming ruins and coming under his care later on. Villages should be made as attractive as possible, and employment should be provided all over the country and not only in the large towns.

The Earl of Onslow suggested the formation of a national park. He said also that it was sometimes forgotten that the present rural economy was quite new. He recalled that the report of the Royal Commission over which Lord D'Abernon presided suggested the establishment of "folk museums" or open-air museums, which would preserve representations of rural life and industry. Part of the "green belt" which was being created round London might be devoted to such a museum. The example of the Surrey County Council in preparing a list of interesting buildings worthy of preservation should be followed.

Lord Amulree suggested that a committee should be set up to deal with the whole question of the disfigurement of the country.

Earl Stanhope, First Commissioner of Works, said that the creation of a national park of 100,000 acres anywhere in these islands would be a large undertaking.

Under the Housing (Rural Workers) Act, £1,000,000 had been expended on the reconditioning of houses and over 13,000 cottages had been reconditioned during eleven years. More advantage was being taken of the Act year by year. A large number of bodies, both governmental and others, were taking an interest in the amenities of the countryside. The National Parks Committee, to which Lord Onslow referred, reported before the Town and Country Planning Act, 1932, was brought into operation, and it had largely done what the Committee suggested. Planning schemes covering 22,000,000 acres, or nearly two-thirds of Great Britain, if not actually in operation, were under consideration, mostly on a regional basis. All their lordships would agree in what Lord Bledisloe had said in objecting to straight trunk roads.

As to the preservation of open spaces, a great deal of magnificent work had been done by the National Trust; and this work had been supplemented by the public-spirited actions of such private landowners as Lord Gage, Lord Astor, and Lord Desborough in preserving portions of their estates from building in perpetuity. These examples had been followed in many directions and he thought that if this movement extended we should go as far as was needed in preserving unspoiled the most beautiful areas of the country.

He was a little doubtful about the suggestion for a Commission on the preservation of the countryside. It would be difficult to know who to appoint to such a Commission. He would be a little afraid, of appointing some of the great architects. He was old-fashioned, but when he saw illustrated in the architectural papers, as examples to follow, what he regarded as atrocities in concrete and glass cages he could only say: Heaven forbid that we should have many of them about in the country. He was not sure that if they were to employ architects to supervise ribbon-building would be less objectionable than much of it was today. He agreed that some of the appalling buildings that were being put up should not be permitted and he could only hope that they would fall down before they were very much older.

With regard to the preservation of historic buildings, local authorities were being encouraged by the Minister of Transport to follow the example of the Surrey County Council in making a schedule of such buildings in their areas. The Government had a policy for the preservation of the countryside. It did not go as far as many people would like, because that would be extremely expensive, but they were endeavouring to carry it out and it was having considerable effect.

R. I. B. A.

THE BRITISH SCHOOL AT ROME

Papers devoted to "the British School at Rome" were read by Professor W. G. Holford, B.Arch., Liverpool, A.R.I.B.A., and Mr. A. G. S. Fidler, B.Arch., Liverpool, A.R.I.B.A., at a general meeting of the Institute on Monday last. Extracts from the papers are printed below.

A. G. S. FIDLER

I believe this is the first talk which has been given to the R.I.B.A. on the Rome Scholarship, which has come to be regarded as the premier prize for young architects. We propose between us to try to give you some idea of the work done by a Rome Scholar in Italy and of the general life of the British School.

The scholarship was founded as an indirect result of the Great Exhibition of 1851. The Royal Commission entrusted with the surplus funds of that Exhibition decided in 1911 to supplement its scholarships in science with valuable scholarships in sculpture, painting and architecture on the lines of the Prix de Rome awarded by the French Academy of Fine Arts, the Commission's intention being that these scholarships, which would offer unique opportunities for advanced study and travel abroad, should be regarded throughout the Empire as the crowning point of an art student's career. It was agreed that we should follow the example of France, America and other nations in founding a school in Rome, which was considered the ideal centre for final training in the arts.

In 1911 the municipality of Rome generously offered to the British Ambassador, for the purposes of an institution of national interest, the site of the pavilion erected to contain the British Fine Arts section of the International Exhibition then being held in Rome. In 1912 a Royal Charter granted full powers for the reconstruction and maintenance on a national footing of the existing British School at Rome, whose government was now vested in a president and council and in faculties representative of archæology and the fine arts. The building of the school was considerably delayed by the war and, although the first Rome Scholarship in Architecture was awarded in 1913, it was not until after the war that the work of the school was developed to its present extent.

The Rome Scholarship in Architecture was founded as a research scholarship for the study of the architecture of Italy and the countries of the Mediterranean basin. It was intended that students should study the technique and scholarship of great architecture and develop the systematic study of the art in its widest sense as an art of great planning and fine construction.

The student lives for two or three years in this most pleasant building in the Valle Giulia, near the Borghese gardens, free to travel throughout the loveliest countries in the world, Italy and Sicily, Greece, etc., in contact with the scholars in painting, sculpture and engraving, with the archæologists and historians at the school, and with the students of other academies in Rome.

Most students in their first year are content to make a few measured studies while breaking ground and formulating plans for their major subject of research. In this connection it seems to me, and I find that other former scholars are of the same opinion, it would be an advantage to the student before he leaves this country to discuss possible fields of study with someone well acquainted with the ground for, on arrival in Rome, he may easily be confused and overwhelmed by the wealth of possible subjects. The tradition in all the academies in Rome has been that the major work of an architect should be a restoration of some great architectural scheme.

The scholarship is awarded to an architect when he has completed his training in a school of architecture and is actually ready to begin practice. This means that he must be prepared to devote two or three more years to study at a time when he is very eager to slip the leash and begin to build, so that he does ask himself rather seriously whether this time is going to be worth while. I have put this question to a number of past scholars, and they are unanimously agreed that it is.

The study of a great architecture, and the thorough understanding of the principles of its construction and decoration as representative of the true spirit of its age, are surely of lasting value. I think you will agree that the training in accuracy, precision, clear and logical thinking which is involved in the research subjects carried out must help to produce master-craftsmen with ideals of perfection in design and the right use of materials. It is the exercise of these faculties which is important rather than the actual face value of the work completed.

W. G. HOLFORD

It is a remarkable fact that Rome, which—in spite of all that Nero or Mussolini may have done—is still an unplanned urban spread, vast, disordered, congested and difficult to traverse, should yet be able to impress its monumental civic quality on its pilgrims and visitors to an extent that London, Paris, Constantinople or Athens cannot rival. There is something of the old atmosphere of Roman domination still alive, and it is difficult even to imagine that there was once a Rome of the Dark Ages, derelict and depopulated, with half the evidence of its greatness buried underground, and the remainder no longer a focus of interest for the Western world.

One does not need to be reminded that Rome was not built in a day; one has to consider rather how much of it can be studied in a year—or even in two years: on the face of it very little. Nevertheless, Rome is the key to the greater part of the rest of Italy. The plan of Rome and plans of the colonial towns like Turin or Aosta, are complementary. And one is better equipped for future travel and exploration, by being steeped at first in the atmosphere of the capital city.

I should now like to mention, in very loose chronological order, some of the other architectural problems that have interested, or may interest in future, the architects who visit Italy.

The list goes back a very long way. For those interested in early town planning, it goes back to the Bronze Age, a thousand years B.C., to the curious *terremare* of Lombardy, with their straight streets and regular plots that may have been the forerunners of Pompeii, and the arch type of later Roman towns. More interesting and more mysterious still is the art and architecture of the Etruscans. Just below the British School is the Etruscan Museum in the Villa of Papa Giulia, and there can be seen the famous Apollo of Veii, the archaic sarcophagi of Etruscan nobles and their wives, and the terracotta fragments of the revetments of Etruscan temples, which moved the first of our Rome Scholars to attempt their restoration. The tombs of Tarquinia and Cervetri are no less remarkable; there is hardly a fresco or an ornament that is not without the distinction and freshness that archaic work so often possesses.

In the South of Italy stand the remains of the Greek cities; Paestum and Metapontum in Basilicata, and Segesta, Selimonte, Agrigentum and Syracuse in Sicily. Paestum is one of the finest sites of all, so remote, so finely situated,

and so well preserved, that it fires the imagination as no other group of early Greek Temples can. Pompeii and Herculaneum, together with the museum at Naples, present in themselves a vast field, more suited, however, to the archæologist than the architect alone. The same can be said of many other early Roman sites, where rough traces of the foundations and a few collected fragments form the sum total of visual evidence on which to work. It is at this point that the architect gives free rein to his creative faculty, and, without heeding the careful and plodding steps of his archæological partner, races on to imaginative reconstructions of his own. The French Academy indulges frequently in these exercises, the German scarcely at all. Provided there is a distinction made between fact and fancy, the practice remains a useful one, both to the architect and the public. No one could look down from the high cliffs of Capri without conceiving a vision of the Villa of Tiberius and without giving it an architectural grandeur to match the natural grandeur of the scene.

But there is also the large and partially unexplored field of Roman structure. Here, the practical problems often defeat the imagination. How, for instance, did they roof the huge hall in the Palace of the Cæsars on the Palatine Hill? The study of vaulting, of the structural systems of the huge amphitheatres, of the aqueducts and bridges throughout the whole length of Italy, is not a purely academic pursuit. Single notable buildings such as the Pantheon, the Basilica of Maxentius, or the Augusteum, can hold the interest of scholar, archæologist and architect alike. And for those who prefer the bird's-eye view of Roman civilization (to which, by the way, the worm's-eye view of the excavator is often a necessary prelude) there are the town plans—those Roman bones that lie behind so many civic features—with their typical details, house plans, fora, walls, gates and triumphal arches.

A complete contrast in feeling, though not in form, the Early Christian and Romanesque churches must appeal to all those who see a serious and genuine simplicity in architectural design as its greatest value. In a certain sense, the awful stillness of an interior like that of S. Maria in Cosmedin is the antithesis of everything Roman.

Ravenna represents a civilization in itself: an inner life of religious conviction. The buildings glow internally with mosaic, alabaster and porphyry; and present plain brick exteriors to the outside world.

The influence of the East can be seen contemporaneously in the north and south of Italy on the Adriatic side; in Byzantine and Oriental Venice as well as in Apulia. The latter province also boasts, in the Suabian castles of Lucera and Castel del Monte, examples of military engineering that are also remarkable works of art. They match Urbino and Verona; and but for the fact that they are off the beaten track they would have had volumes written about them before now. With the architectural interest of the Renaissance I need not deal at length, since it is familiar ground to all of you. This is the period when personalities emerge; so that the student, if he wishes, can investigate the life and works of an individual architect, or of a school. Vasari in hand, he can choose a maestro of three or four centuries ago, and track him down, detective fashion. It may be the irascible Brunelleschi, Alberti, or the pioneer antiquarian, or the workmanlike family of Sangallos, or Michelangelo whom the Italians call "divine and terrible." He can call on the ghost of Palladio at Vicenza (clad, one imagines, in a respectable toga), or on Sanmichele at Verona, Luciano Laurana at Urbino, Bernini at Rome, and Vanvitelli all over Campania.

Alternatively, he can interest himself in garden design, in fountains and civic decorations, in piazzas, in churches, in fortified towns like Palmanova, which is still a perfect stellar decoration on the breast of the Venetian plain,

Professor W. G. Holford, author of a paper read before the R.I.B.A on Monday last.

in palace types and palace doorways, in domes, or in any other aspect of many-sided Renaissance art.

I need not go into detail. Since the time of Henry VIII Italian influence has been constantly with us in this country and will remain with us so long as the impetus of the Renaissance lasts. Our banking houses have not yet found a more fitting demeanour to adopt than that of the later Italian palaces; and it is safe to say that every English architect, though he may never have studied Italian buildings at first hand, has nevertheless an indirect acquaintance with their outward forms. It is therefore only fitting that I should close with some account of another influence by which every architect at Rome must be in some degree affected. I mean the influence of contemporary Italian architecture and thought. No one who goes through Rome with his eyes open can fail to notice that a new Rome is being built on top of the old ones. This is not the Terza Roma, of which the Palace of Justice is such an unpleasant example, but a twentieth century Rome which, while it is in the line of tradition of the classical city, is by no means an imitation of it. A good deal of this new work is a simplified and rather inadequate representation of the Imperial manner; it is grandiose even in its nudity. Here and there, particularly in the north, buildings can be found with that quiet air of belonging to all time, because they are so properly of their own time. I remember watching an Italian *ingeniere* superintending the erection of a village hall or headquarters for an agricultural community in the Roman Campagna. The workmen, in the course of excavations, kept digging up ancient fragments of marble and travertine, which they laid carefully by the side of the trench. "Roba antichissima," the *ingeniere* explained to me, and there were occasional shouts of "Bello, bello!" from the workmen. Later, watching them strip the formwork from the wide concrete balconies, I wondered what had happened to these venerable fragments. Perhaps they had been pounded down to make marble plaster. But in the cortile, where the beginnings of a garden were already showing, I found all of them preserved. Ancient and modern seemed to agree perfectly. *Simpatica*, they called it; and one realized that the tradition was in their blood and that they had no need to perpetuate superficial resemblances. One could see that there was no conflict between their appreciation of the old and their enthusiasm for the new. I am sure that this is the spirit in which to build; and those who sensed this historic continuity of experience in a time of changing requirements and changing resources, and in a country with a different climate and a different culture to our own, estimate at a high value the years they were privileged to spend at the British School at Rome.

VISIT OF STUDENTS TO ROME

In the course of the past year the president, of the R.I.B.A. invited the presidents of the allied societies to collaborate in a scheme for sending each year a party of selected architectural students to Rome for four weeks.

The president's idea was that, apart from the recognized scholarships, it would be of great value to the profession if as many students as possible were encouraged at an early stage in their career to come into actual contact with the great buildings of the past, and to cultivate the habit of travel. The proposal was cordially received and arrangements are now being completed for sending the first party to Rome during the coming Easter vacation.

SOANE MEDALLION AND THE TITE PRIZE

In the United Kingdom 117 students took part in the preliminary competition for the Soane Medallion, and 164 students took part in the preliminary competition for the Tite Prize.

The following have been selected to take part in the final competitions:—

The Soane Medallion

John A. Ashworth (Liverpool School of Architecture); F. Woodhouse Bickerton (Armstrong College School of Architecture, University of Durham, Newcastle-on-Tyne); Hubert H. Castle (Leeds School of Architecture); W. N. B. George (Liverpool School of Architecture); H. N. Hoskings (School of Architecture, The Polytechnic, Regent Street, London); N. William Johnson (Leeds School of Architecture); J. Tenniswood Lupton (Leeds School of Architecture); John Needham (Leeds School of Architecture); John Ogilvie (School of Architecture, Edinburgh College of Art); J. D. Sephton (Liverpool School of Architecture); R. V. Ward (Liverpool School of Architecture); Peter Whiston (School of Architecture, Edinburgh College of Art); Frank White (Leeds School of Architecture); J. T. Wilkinson (Department of Architecture, University of Sheffield); and A. B. Williams (Liverpool School of Architecture).

The Tite Prize

Lawrence F. Baker (Bartlett School of Architecture, University of London); Frank Booth (Leeds School of Architecture); Harold E. Burton (Birmingham School of Architecture); Frank A. Evans (Royal Academy School of Architecture); C. R. Fowkes (Department of Architecture, Northern Polytechnic, Holloway, London); Ronald Harrison (Glasgow School of Architecture); John R. Penoyre (School of Architecture, Architectural Association, London); Jean P. Reid (School of Architecture, Edinburgh College of Art); Andrew Renton (School of Architecture, Edinburgh College of Art); Eric Ritter (Department of Architecture, Northern Polytechnic, Holloway, London); William L. Roworth (School of Architecture, Edinburgh College of Art); F. William Smith (R.W.A. School of Architecture, Bristol); Austyn G. Snowden (Leeds School of Architecture); Matthys Tauté (School of Architecture, Architectural Association, London); Phipps Turnbull (School of Architecture, Edinburgh College of Art); and I. F. Warwick (School of Architecture, The Polytechnic, Regent Street, London).

INFORMATION SHEET

SUPPLEMENT

The Architects' Journal Library of Planned Information

RECENT developments have brought up for reconsideration the question of the looseness of Information Sheets.

When the series was first started, it was felt that readers of the Journal would have some grounds for complaint if in a feature that was clearly meant for it, no facilities for filing were provided: and the Sheets were therefore inserted loose in the paper.

This method has obvious advantages for filing, but it has also obvious disadvantages, which our readers have not been slow to point out.

As a permanent feature, loose inserts are a nuisance in a paper, since they have a way of dropping out in the street or the train, if not before they get into the reader's hands (we have periodical complaints that Information Sheets for such a week have not been delivered with the paper).

Or, what is nearly as bad, they have a way of sticking out slightly, and getting bent or torn.

Furthermore, those architects who collect the sheets, and there are a great many, are often human enough to delay the act of filing for several days after receiving their copies, in which time the sheets again have a good chance to commit literary hara-kiri.

For all these reasons, it has been decided to make an obvious improvement.

By binding in the Information Sheets in the Journal so that they cannot fall out, their powers of self-destruction will be curtailed. And to insure that they can be as readily filed as before, the pages are now being perforated.

INFORMATION SHEETS

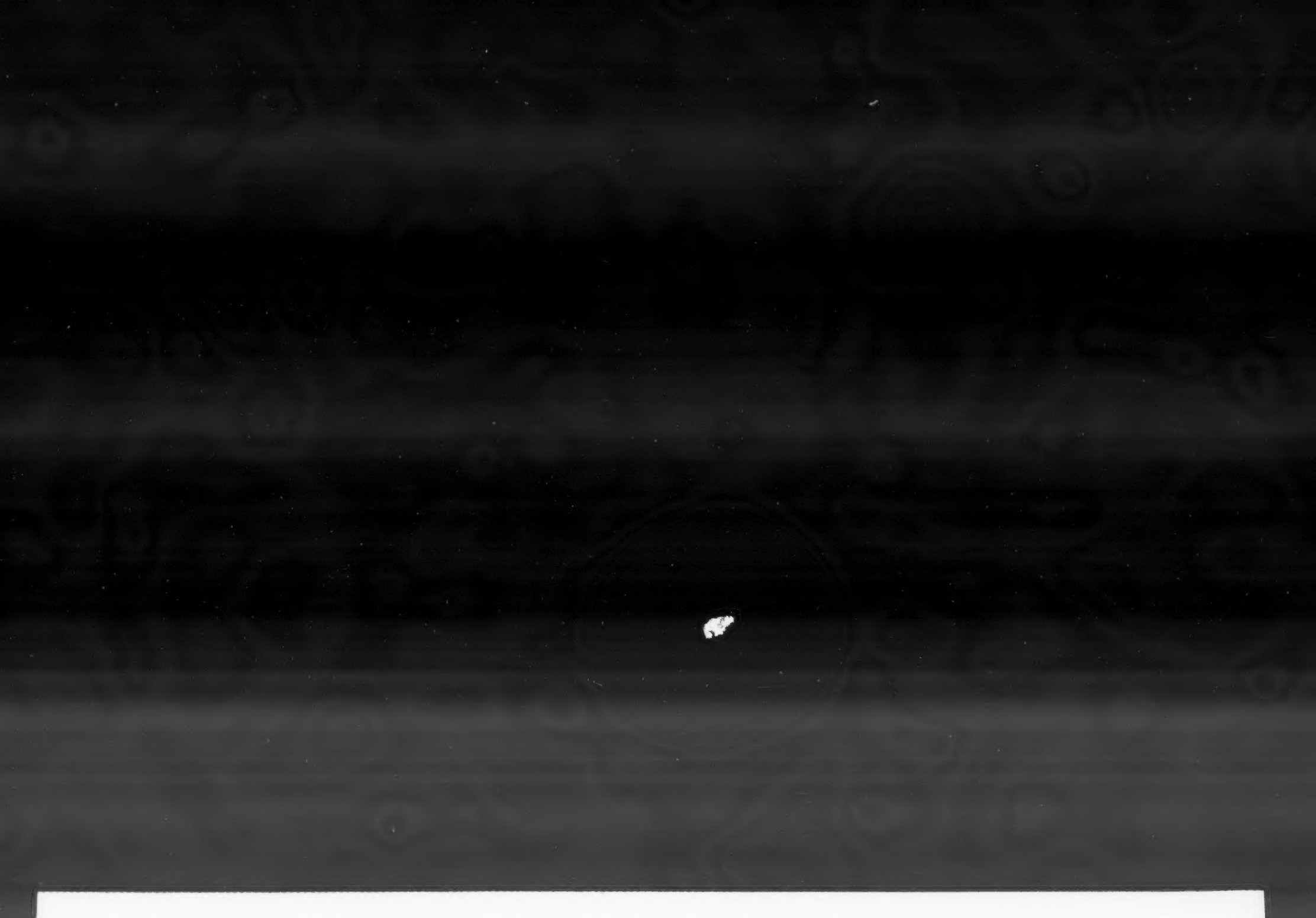
487 Plumbing

488 Approximate Estimating—VIII

489 Sliding and Folding Windows

Sheets Issued since Index :

401 : Plumbing to Baths
402 : Waterproofing
403 : Asbestos-aluminium Foil—I
404 : Roofing
405 : Joinery
406 : Asbestos-aluminium Foil—II
407 : Roofing
408 : Joinery
409 : Rubber-faced Building Slabs
410 : Places of Public Entertainment—II
411 : Electric Switchgear
412 : Lead Soakers to Valleys
413 : Plumbing in Welded Copper Pipe
414 : Electric Switchgear
415 : Electric Switchgear
416 : Insulating Board
417 : Work on Glass
418 : Plumbing in Welded Copper Pipe
419 : Places of Public Entertainment—III
420 : Tentest Metal Cover Strip
421 : Wood Preservatives
422 : Welding Sheet Copper Work
423 : Garages and Drives—II
424 : Roof Glazing
425 : Places of Public Entertainment—IV
426 : Asbestos-cement Roofing Tiles
427 : Asbestos-cement Roofing Tiles
428 : Welding Sheet Copper Work
429 : Flat Roofing
430 : Asbestos-cement Roofing Tiles
431 : Automatic Boilers
432 : Plumbing
433 : Places of Public Entertainment—V
434 : Plumbing
435 : Lifts—I
436 : Lead Soakers to Hips
437 : Coloured Cement Renderings
438 : Wallboards
439 : Wall Finishes
440 : Roofing
441 : Sash Operating Gear
442 : Roofing
443 : Wallboards
444 : Rainwater Goods and Fittings—I
445 : Roofing
446 : Rainwater Goods and Fittings—II
447 : Bathroom Cabinets
448 : Roof Glazing
449 : Places of Public Entertainment—VI
450 : Telephone Cabinets
451 : Hardboard
452 : Escalators
453 : Automatic Boilers
454 : Places of Public Entertainment—VII
455 : Places of Public Entertainment—VIII
456 : Ellipses
457 : Roofing
458 : Sanitary Equipment
459 : Hoods and Canopies
460 : Expansion Joints
461 : Roof Pitches, etc.
462 : Gas Refrigerators—I
463 : Asbestos Cement Rubber Floor Tiles
464 : Approximate Estimating—I
465 : Gas Refrigerators—II
466 : Approximate Estimating—II
467 : Gas Refrigerators—III
468 : Approximate Estimating—III
469 : Gas Refrigerators—IV
470 : Stopstara Glazing Compound
471 : Gas Cookers
472 : Lead Insulation against X-Rays
473 : Electrical Equipment—I
474 : Asbestos-Cement Ventilating Ducts
475 : Asbestos-Cement Glazed Panels
476 : Approximate Estimating—IV
477 : Monel Metal Sink Units
478 : Approximate Estimating—V
479 : Roofing
480 : Approximate Estimating—VI
481 : Lead Flashings
482 : Approximate Estimating—VII
483 : Flue Linings
484 : Plumbing Systems
485 : Partition Blocks
486 : Elementary Schools—I

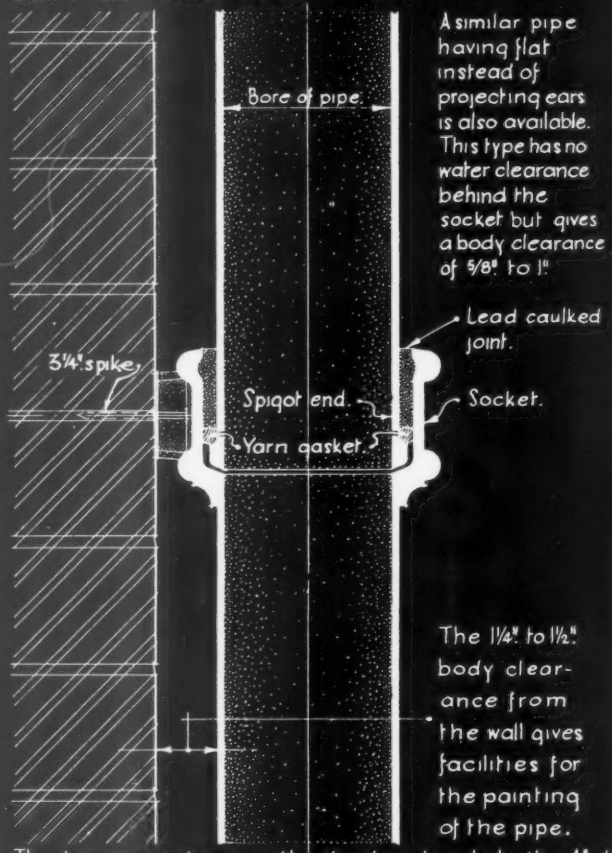


592.

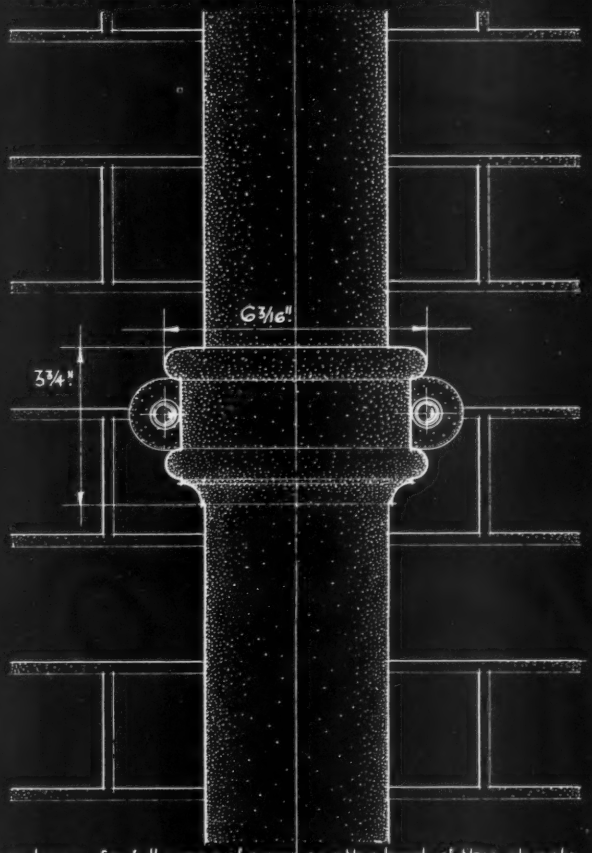
592. THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

QUARTER FULL SIZE DETAILS OF B.I.A. (Melt-on) CAST IRON PROJECTING EARS.

SECTION THROUGH JOINT.

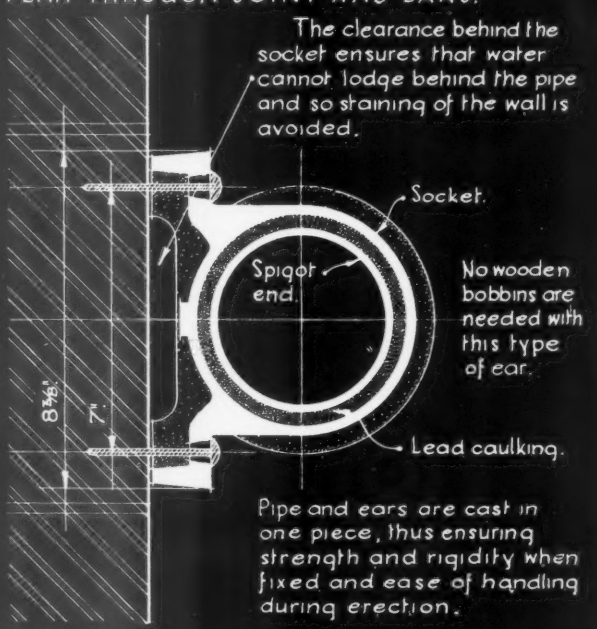


FRONT ELEVATION OF JOINT AND EARS.



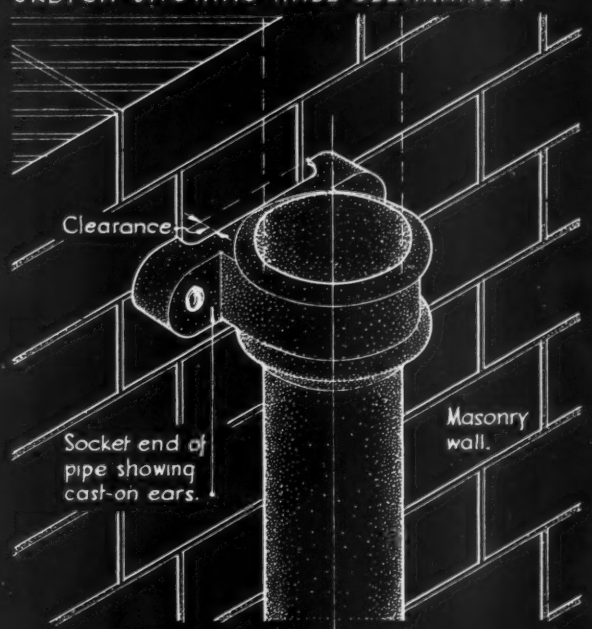
The dimensions shown on this sheet apply only to the 4" dia. soil pipe. For full range of sizes see the back of this sheet.

PLAN THROUGH JOINT AND EARS.



Pipe and ears are cast in one piece, thus ensuring strength and rigidity when fixed and ease of handling during erection.

SKETCH SHOWING WALL CLEARANCE.



Information from British Ironfounders Association.

INFORMATION SHEET: CAST IRON SOIL PIPES WITH CAST-ON PROJECTING EARS.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

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PLUMBING

Product : Cast Iron Rainwater and Soil Pipes with Cast-on Ears

On this Sheet are shown various details of B.I.A. Melt-on projecting eared soil pipes, which are obtainable in the following sizes :

Dia. (Bore)	Projection of body of Pipe from Wall
2″	1¼″
2½″	1¼″
3″	1¼″
3½″	1⅜″
4″	1½″
5″	1½″
6″	1½″

Overall Dimensions

Pipe Size	Depth	Width over Ear	Fixing holes c. to c.
2″	3⅛″	5¾″	4⅝″
2½″	3⅜″	6⅜″	5¼″
3″	3½″	6⅞″	5¾″
3½″	3¾″	7⅜″	6⅜″
4″	3¾″	8⅜″	7⅛″
5″	4″	9½″	8⅛″
6″	4¼″	10¾″	9¼″

Sockets are British Standard sizes

Special Features

General

This is a cast iron pipe having the socket and ears cast in one piece with the pipe. This gives strength and rigidity to the pipe when fixed, simplifies fixing, and avoids a joint at which the ears are liable to be broken off.

Ears

The ears are deep enough to hold the body of the pipe at a distance of 1¼″ to 1½″ from the wall face (the clearance varies with the size of pipe) which facilitates painting, and makes the use of wooden bobbins unnecessary. There is a cut-away section between the projecting ears and behind the pipe, giving a clear space from ¾″ to 1″ (depending on size of pipe) between the pipe and the wall, which never come into direct contact. The advantage of this feature is that any moisture on the pipe surface will flow past the joint instead of being transferred to the wall surface and staining it, whilst owing to the design of the ear, any water on the ear itself tends to flow away from the wall.

Fixing

The pipes are fixed with 3¼″ galvanized spikes through the holes provided for them in the ears. Where possible, the pipe joints should be spaced so that the spikes may be driven between joints in the wall-surface.

Jointing

The spigot and socket joints of the soil pipe should be sealed with lead wool or with a gasket and lead caulking, in the usual manner.

The B.I.A. Melt-on Flat Ear Pipe

This pipe is similar in general specification to the B.I.A. Melt-on projecting ear pipe, but differs in that the ears are not deep and have no cut-away section between them, but are connected by a continuous flange. In this type the body of the pipe is not held so far clear of the wall face as in the projecting-ear type. The clearance ranges between ¾″ and 1″. In the case of the Melt-on flat ear, also owing to the design, any water on the ear itself tends to flow away from the wall.

This pipe is obtainable in the following sizes :—

Dia. (bore)	Projection of body of Pipe from Wall
2″	¾″
2½″	13/16″
3″	⅞″
3½″	7/8″
4″	15/16″
5″	15/16″
6″	1″

Overall dimensions

Pipe size	Depth of socket	Width	Fixing hole c. to c.
2″	3⅛″	5¾″	4¾″
2½″	3⅜″	6⅜″	5⅜″
3″	3½″	6⅞″	5⅞″
3½″	3¾″	7⅜″	6⅛″
4″	3¾″	8⅜″	7⅛″
5″	4″	9½″	8⅛″
6″	4¼″	10¾″	9¼″

Sockets are British Standard sizes

Fixing and Jointing

The methods of fixing and jointing are the same as for the B.I.A. Melt-on projecting ear pipe.

Rainwater Pipes with B.I.A. Melt-on Ears

In addition to the information regarding soil pipes the Melt-on Ear, both flat and projecting, is obtainable with rainwater pipes in the following sizes :—

2″, 2½″, 3″, 3½″, 4″, 5″, 6″

Information from : B.I.A. (Patents), Ltd., associated with the British Ironfounders' Association

Address : 145 St. Vincent Street, Glasgow, C.2

Telephone : Central 4950

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DOORS.

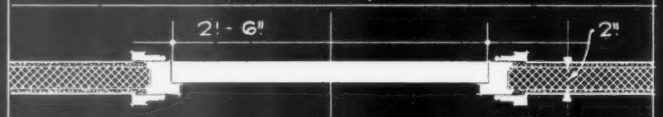
PRICES ARE THOSE CURRENT DURING JANUARY, 1937.

APPROXIMATE ESTIMATING:

The following are approximate prices for doors with frames, linings, architraves, ironmongery, lintols and arches etc. complete. Prices are for a medium sized job in the London area, and include for overhead charges and profit.

INTERNAL DOORS.

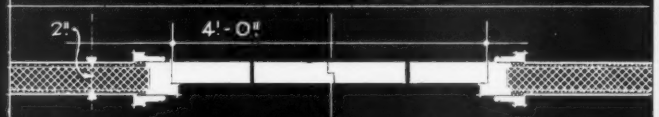
TYPE A: 100/- EACH.



2" FLUSH DOOR P.C. 29/-, 2'-6" x 6'-6" WITH DEAL FRAME FOR 2" PARTITION AND 3" x 1" MOULDED ARCHITRAVES, BOTH SIDES, ALL PAINTED, MORTICE LOCK AND FURNITURE, P.C. 15/-, AND IRON BUTTS.

TO TYPE A, ADD FOR:	each
Deal frames and architraves, painted, for 3" partition	2/1.
Deal linings and architraves, painted, for 4" stud partition	10d.
ditto for 4½" wall	5/-.
ditto for 9" wall	22/10.
ditto for 13½" wall	40/8.
Austrian oak frames and architraves, wax polished, for 2" partition	50/9.
ditto for 3" partition	57/-.
Austrian oak linings and architraves, wax polished, for 4" stud partition	41/2.
ditto for 4½" wall	45/4.
ditto for 9" wall	84/1.
ditto for 13½" wall	122/6.
Wax polish on door in lieu of paint. (Each side)	2/7.

TYPE B: 154/- EACH.

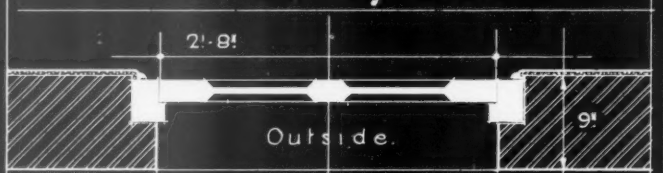


PAIR OF 2" FLUSH DOORS P.C. 55/- THE PAIR, HUNG FOLDING, 4'-0" x 6'-6" OVERALL, WITH DEAL FRAME FOR 2" PARTITION AND 3" x 1" MOULDED ARCHITRAVES, BOTH SIDES, ALL PAINTED, REBATED MORTICE LOCK AND FURNITURE AND DUMMY HANDLES AND BOLTS P.C. 25/- AND IRON BUTTS.

TO TYPE B, ADD FOR:	each
Deal frames and architraves, painted, for 3" partition	2/3.
Deal linings and architraves, painted, for 4" stud partition	1/9.
ditto for 4½" wall	7/5.
ditto for 9" wall	27/5.
ditto for 13½" wall	47/7.
Austrian oak frames and architraves, wax polished, for 2" partition	57/1.
ditto for 3" partition	63/11.
Austrian oak linings and architraves, wax polished, for 4" stud partition	45/8.
ditto for 4½" wall	51/4.
ditto for 9" wall	94/5.
ditto for 13½" wall	137/6.
Wax polish on door in lieu of paint. (Each side)	4/3.

EXTERNAL DOORS.

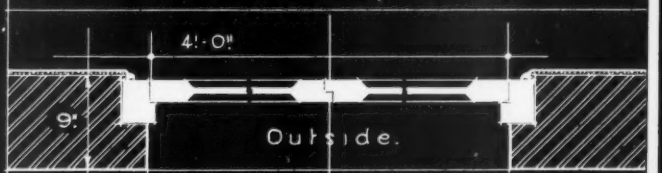
TYPE C: 153/- EACH.



2" DOOR P.C. 40/- 2'-8" x 6'-8" WITH 4" x 3" DEAL FRAME AND COVER FILLET INTERNALLY, ALL PAINTED. YALE LOCK AND BOLTS, P.C. 20/- AND IRON BUTTS. BRICK ON END ARCH WITH ARCH BAR, CONCRETE LINTOL INTERNALLY, FINISHES TO REVEALS, AND 3" YORK STONE THRESHOLD IN 9" WALL.

TO TYPE C, ADD FOR:	each
Door etc. in 11" wall	13/6.
ditto in 13½" wall	7/4.
ditto in 18" wall	12/-.
Austrian oak frame and cover fillet, wax polished in lieu of deal painted	41/7.
Wax polish on door in lieu of paint. (Each side)	3/3.

TYPE D: 201/- EACH.



PAIR OF 2" DOORS P.C. 60/- THE PAIR, HUNG FOLDING, 4'-0" x 6'-8" OVERALL, WITH 4" x 3" DEAL FRAME AND COVER FILLET INTERNALLY, ALL PAINTED, REBATED MORTICE LOCK AND FURNITURE AND DUMMY HANDLES AND BOLTS P.C. 25/- AND IRON BUTTS. BRICK ON END ARCH WITH ARCH BAR, CONCRETE LINTOL INTERNALLY, FINISHES TO REVEALS, AND 3" YORK STONE THRESHOLD IN 9" WALL.

TO TYPE D, ADD FOR:	each
Door etc. in 11" wall	19/10.
ditto in 13½" wall	9/-.
ditto in 18" wall	14/11.
Austrian oak frame and cover fillet, wax polished in lieu of deal painted	45/7.
Wax polish on door in lieu of paint. (Each side)	4/8.

Figures by Davis and Belfield, P.P.A.S.I., Chartered Quantity Surveyors.

INFORMATION SHEET: UNIT SYSTEM FOR APPROXIMATE ESTIMATING: 8.

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

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INFORMATION SHEET

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APPROXIMATE ESTIMATING—VIII

Subject : Unit System for Approximate Estimating

This series of Sheets, taken as a whole, forms a complete system for the preparation of detailed estimate. Alternatively, less detailed estimates can rapidly be made, merely by multiplying the areas of quantities of the different component parts of the building by the appropriate unit prices, varied by judgment alone.

For all normal estimates, and whenever time permits, account should be taken of the difference in cost of the various types of finish, etc., shown with each typical form of construction. These have been kept to a minimum for the sake of simplicity, but other materials, if the prices are known, may easily be compared.

Such items as windows, stairs, services, etc., which cannot be priced per yard super, will be dealt with in later Sheets.

The system is not intended to replace the complicated pricing data necessary for a very close estimate, but it should, in all cases, prove more accurate than cubing, and it should be found particularly useful in alteration work, or work where the price per foot cube is not well established. An additional advantage is that firm estimates obtained for lifts, plumbing or other services, fittings, etc., can be used in conjunction with this system much more readily than with the cubing method.

This Sheet deals with typical examples of internal and external doors including frames, linings, architraves, ironmongery, lintols and arches, finish to reveals (including sealing cavity in hollow walls), flooring through the openings, in the case of internal doors, and thresholds in the case of external doors. The deduction of partitions or walls for door openings (measured between reveals and to the underside of lintols) should have been taken into account when dealing with the partitions and walls themselves.

It has been assumed in the case of external doors that the frame is 4½ ins. from the external face of the wall. The work externally to the reveals and arch, being only extra labour and pointing, will not be affected by a variation in cost of facing bricks. Similarly, the finish to the internal reveals, being in narrow widths, is largely a labour item (for ordinary finishes) and the cost will not be greatly affected by the type of plaster used.

Ten per cent. has been allowed on the P.C.'s for overhead charges and profit and this should be taken into account when varying P.C.'s.

The cost of an oak external (single) door P.C. 50s., with oak frames and cover fillet, all wax polished, and ironmongery P.C. 30s., in a 13½-in. external wall would, therefore, be worked out as follows :—

Cost of Type " C "	£7	13	0
Increase in amount of P.C.'s for door and ironmongery (+10 per cent.)	£1	2	0
Extra for being in 13½ in. wall ...	0	7	4
Extra for frame and cover fillet being in oak, wax polished ...	£2	1	7
Extra for wax polish on door both sides	0	6	6
	£11	10	5

Sheets Nos. 1 to 7 dealt with ground floors, upper floors, roofs, parapets and eaves, foundations, external walls, and internal walls and partitions respectively, and future Sheets will show the cost analysis of windows, staircases, etc.

458.

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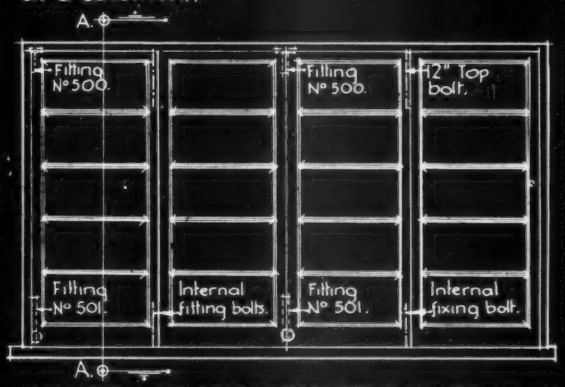
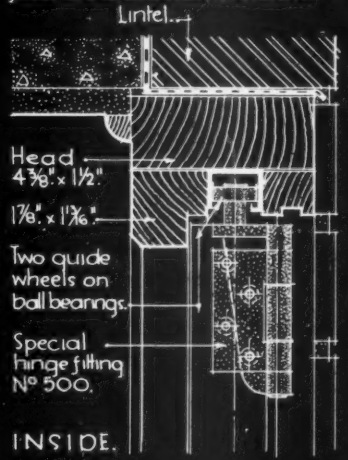
DETAILS OF CONSTRUCTION AND OPERATION OF THE ESAVIAN 5001. WINDOW.

The Esavian 5001 window is a wooden sliding and folding window to open in or out (preferably outward). In windows with an even number of lights all sections run on the track. In windows with an uneven number of lights one section swings free and may be used as a casement.

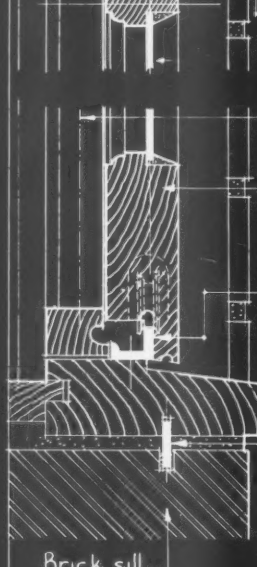
Solid drawn steel safety channel.

Fanlights and hoppers can be fitted to the Esavian window.

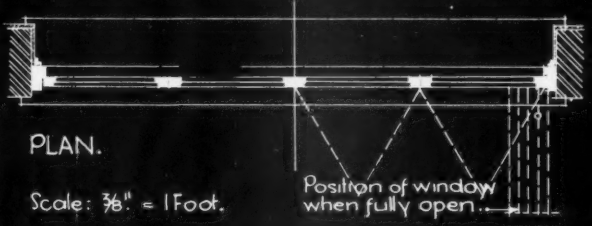




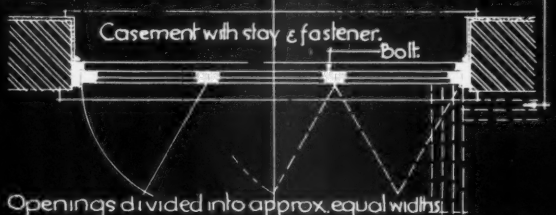
ELEVATION OF AN ESAVIAN FOUR LIGHT WINDOW.
Window secured internally by bolts at top & bottom when shut. May open from the centre, i.e. two leaves each way.



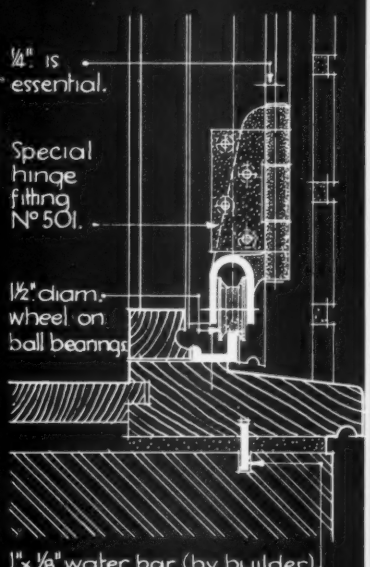
QUARTER FULL SIZE DETAIL THROUGH WINDOW AT A-A.



Alternative folding position for window when frame is fixed on the outside face of the wall.



Openings divided into approx. equal widths.
PLAN OF AN ESAVIAN THREE LIGHT WINDOW.

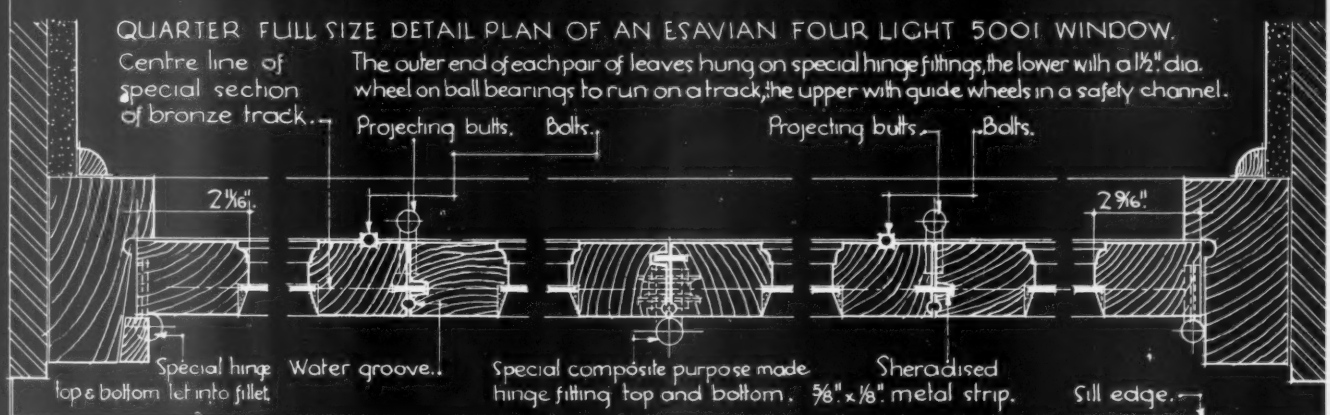


QUARTER FULL SIZE DETAIL OF TOP AND BOTTOM FITTINGS.

QUARTER FULL SIZE DETAIL PLAN OF AN ESAVIAN FOUR LIGHT 5001 WINDOW.

Centre line of special section of bronze track.

The outer end of each pair of leaves hung on special hinge fittings, the lower with a 1½" dia. wheel on ball bearings to run on a track, the upper with guide wheels in a safety channel.



Information from The Educational Supply Association Ltd.

INFORMATION SHEET: WOOD FRAMED SLIDING AND FOLDING WINDOWS.

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

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INFORMATION SHEET

• 489 •

SLIDING AND FOLDING WINDOWS

Product : Sliding and Folding Windows

Description :

Esavian 5001 Morlite sliding and folding windows are constructed entirely of wood, and are suitable for application in any position where maximum opening area is required. All windows are specially made to fit the particular size of the opening, and can be supplied to fold either inwards or outwards, although it is recommended that wherever possible they should be made to fold outwards, as this permits more efficient weathering to head, jambs and cill.

Leaves :

The width of the opening should be divided into leaves of approximately equal width, and these are hung together in pairs with suitable butt hinges. When the opening is divided into an odd number of leaves, the odd leaf is fitted with a casement stay and fastener, and can be used independently as an ordinary casement. In windows with an even number of leaves all sections run on the track. If required, the leaves can be fixed to the face of the opening and be made to fold in the same plane as when shut (three leaves folding to one side, or six leaves with three going each way). Fanlights above the leaves, and hoppers below or self-contained can be fitted.

Runners and Guides :

The outer end of each pair of leaves is hung on a purpose-made composite hinge fitting, with a 1½-in. diameter wheel running on ball bearings at the bottom. This fitting runs on a special section bronze track fixed to the cill. The top fitting has two horizontal ball-bearing guide wheels running in a solid drawn steel safety channel and guide track.

The entire weight of the sashes is carried on the bottom runners, the top fitting, channel, guides, etc., acting solely as controls for the movement. No strengthening of the lintel is therefore necessary.

Fixings :

Special fixing bolts are fitted to the bottom of alternate leaves, and skeleton top bolts are fitted when necessary. Stock finishes for external fittings are bronze or iron, the latter being blacked or sherardized according to position. Polished brass or gun-metal, chromium plate, matt silver, copper oxidized and Fescolized cadmium for rust resistance can also be supplied to order.

Construction :

Head and cill are specially built-up to accommodate the various fittings and mechanism, and sash rails and stiles are made out of 2-in. timber sufficiently dimensioned for the cutting in of the metal parts. Due to the fact that the leaves fold to one side of the track and not across it, both the head and the cill can be rebated for waterproofing purposes. Cills are out of 6-in. by 2-in. teak, rebated, weathered and throated, and provided with groove for water bar under.

The leaves are prepared for either putty or loose bead glazing, with a deep bottom rail for additional strength.

Woodwork is finished with spray brush, or hand priming to requirements.

Prices :

Prices of the windows depend upon the sizes of the openings to be treated, and quotations are furnished immediately upon receipt of particulars as to width, height, finish, etc., and the type of fitment which is required. All such quotations are drawn up in the form of the standard building contract as issued by the Royal Institute of British Architects, the usual discount being reserved for builders. Either the complete job or fittings only can be supplied.

Manufacturers : The Educational Supply Association, Ltd.
Address : 171/181 High Holborn, London, W.C.1
Telephone : Holborn 9116
Works : Esavian Works, Stevenage, Herts
Telephone : Stevenage 197

NEWS CHRONICLE

SCHOOLS COMPETITION

The result of the competition (promoted by the "News Chronicle") was announced last Thursday as follows:

SECTION A

(A large senior mixed elementary school for 480 children in an urban district)

DESIGN PLACED FIRST (£500): No. 143—Denis Clarke Hall, A.R.I.B.A., Upminster Common, Essex.

DESIGN PLACED SECOND (£200): No. 140—Birkin Haward, A.R.I.B.A., 9 Tanza Road, Hampstead, N.W.3.

DESIGN PLACED THIRD (£100): No. 136—H. Spence-Sales and John Bland, 14 Buckingham Street, London, W.C.2.

HIGHLY COMMENDED: No. 144—Wells Coates, Denys Lasdun and Associates, 15 Elizabeth Street, Buckingham Palace Road, London, S.W.1.

COMMENDED:—

No. 93—Praxis Architects, 7 Southampton Street, High Holborn, W.C.1.

No. 95—Greville Rhodes, 52 Ossulton Way, London, N.2.

No. 135—W. N. B. George and J. B. Ellis, Liverpool School of Architecture, Liverpool University, Liverpool.

No. 137—A. S. Morris, A.R.I.B.A., and D. E. Morrison, 61 South Molton Street, London, W.1.

SECTION B

(A smaller senior mixed elementary school for 160 children in rural surroundings)

DESIGN PLACED FIRST (£300): No. 299—Harry Durell, Colin Penn, A.R.I.B.A., and Felix Walter, 49 Greek Street, W.1.

DESIGN PLACED SECOND: (£100): No. 303—John Earley, B.A., A.R.I.B.A., 18 Buckland Crescent, London, N.W.3.

COMMENDED: No. 309—Walter Segal, 22 Brunswick Square, London, W.C.1, and Eva Bradt, 19 South Hill Park, London, N.W.3.

The assessors were: W. G. Newton, M.A., F.R.I.B.A., G. E. Kendall, O.B.E., F.R.I.B.A. (Architect to the Board of Education) and Brian O'Rorke, M.A., A.R.I.B.A.

On the pages following are the assessors' and winners' reports, a critical survey of the competition and illustrations of the premiated, commended and a selection of the other schemes submitted.

Colin Penn, one of the three authors of the design placed first in section B.

THE ASSESSORS' REPORT

GENERAL CONSIDERATIONS

THE purpose of this competition, as stated at the beginning of the issued Conditions, was to test the possibilities of improvement in the planning and design of Elementary School buildings, and to illustrate those types of schools which were likely to be familiar objects of everyday life in the near future. It was hoped to obtain designs which, while conceived in less restricted circumstances than are usually met with in practice, would afford valuable object lessons and lead to new ideas and fresh lines of thought in this particular sphere of building.

These ideals have been kept in mind by the assessors, and so far as in them lies they have judged the two hundred and fifty entries from this point of view.

While it is obvious that, in order to have a competition at all, it was necessary to invent and describe particular sites in each case, the actual treatment of the given site has been allowed less weight than it would have been allowed in judging a standard competition. It was not, therefore, felt to be inconsistent that entries which have been premiated for their merits under various heads should differ in placing the school-buildings on the site.

Nor must it be supposed that the assessors' award implies that any one of the premiated designs could be, under existing conditions of educational policy, built without modification by a local authority. Here the assessors have had to the best of their ability to use their judgment in deciding what preponderance should be given to the condition which asks for new ideas and the condition which says that a scheme should not be plainly beyond the means of an education authority. On the whole, they have felt justified in leaning rather towards rewarding new ideas ; but in no case has a scheme been recommended for a premium where it would appear out of the question for any modifications and economies to bring it within the means of a local authority. It was felt that competitors were not being asked to submit proposals for fundamental changes in educational policy and practice ; but rather to open the way to further development by schemes which would be rich in ideas and yet within the competence, by the temporary omission it may be of some features and the scaling down of others, of those who have to find the money for such buildings today.

In a competition of this kind the reports of competitors are of greater importance than in an ordinary competition. All the reports of the thirty-eight competitors who reached the second stage of the competition were copied by the industry of the promoters, so that each assessor was able to have his own set for study at leisure.

METHOD OF ASSESSING

The method adopted was for each of the three assessors to examine the drawings independently, bringing his own views to a joint discussion at the end of each period.

In the judging there were three stages. At the end of the first stage the numbers were reduced to thirty-eight. These were then re-hung, and further reduced to some twelve or fifteen. These last were meticulously examined on the following method. The lay-out plan was judged under five heads, and the building-plan under nine. To the plan verdict was added the consideration of the external appearance, of new ideas either of plan-arrangement or of new features, of the type of construction, of the report, of the cost and cube, and of any serious defect. Each assessor's summary, thus obtained, was then considered in committee, and the final award agreed.

SECTION A

No. 143 : Denis Clarke Hall

This is a striking scheme, full of gaiety, movement and thought. Here are quiet and sunny insulated teaching cells, the corridors full of rushing and boisterous childhood in the intervals. The hall is good for school use and for concerts and other functions where the audience comes from outside. The playground area is clean and clear, and with so glassy a building between it and the sun the disadvantages of its northerly siting are not great. The buildings are set about with gardens and garden-courts. It was felt that the latter would need enthusiastic care and attention if they were to fulfil the architect's ideal. The administrative quarters are well-placed for visitors' use and for school access. The arrangement for evening classes is good. Food distribution seemed likely to prove a chilly affair in the winter months, even if "children are warmer-blooded than adults." The gymnasium, overshadowed by the hall, is the defect of the scheme ; the grandstand over the visitors' changing-room is well placed. There is likely to be some criticism on the planning of the teaching rooms, that they are too near the road, and that the class-rooms turn their backs to the S.E. aspect. As to this second point, this lessens the force of the first criticism. On the second, it was felt that the open terraces on either side are flooded with the south-east sun (when it shines), and with windows each side the rooms on a sunny day always, except at 9 a.m., have sunshine in at one window or the other until 3 in the afternoon. As to the ground-floor teaching rooms, for some of them external noise is possibly of less importance. There is, moreover, a 9 ft. wall at the road boundary, to lessen sound. And they each have an alternative outlook into a quiet court, so that it might be possible, at peak hours, to curtain out the noisy side. Nevertheless, though the winners in both sections place their building at the lower end of the sites, this would probably have been thought a more important

defect in a normal competition. It is, however, fair to add that it was a stated condition (of which competitors were entitled to take advantage) that neither road carried much traffic.

So much for the plan. As to external appearance, the photographs of the model probably give a truer idea of this than the elevations. With its breaks and the clean emphasis on each unit which arises from the method of planning, and its hints of greenery and sunlight within the building, it seems adequately full of imagination and charm.

On the question of new ideas, the plan and the masterly report must be closely studied for a full appreciation of them. The light construction suggested, a framing of metal T pieces, covered externally with expanded metal and rendering, divided into panels (to take up shrinkage) by copper strips, has the merit of lightness and simplicity, if only it can be kept from going shabby. The ideal material of construction, which is cheap and needs no upkeep for forty years, and can then disappear, has no doubt still to be found.

On the question of cube and cost, the winner's very reasonable way of dealing with the matter in his report is to give in parallel columns the accommodation he provides and the minimum requirements of the Board of Education. It is thus easy to see in what particulars and why his building will cost more than the minimum accommodation. It will be evident that if certain items such as hall and stage, entrance hall, changing-rooms, laboratories and workshops were brought down to the least permitted area (which could be done without stultifying the plan arrangement, though not, of course, without marring the plan proportions) the cube cost could be reduced by something like a quarter.

No. 140 : Birkin Haward

This it is proposed shall be built in timber, and might look very well. The building seems to sprawl somewhat on the site, though the interspaces are well filled with playgrounds and gardens. The class-rooms are freshly treated in pairs, with windows on each side of the room. Two classes emerging at the same moment might cause some congestion, though there is an alternative balcony corridor. The main entrance is friendly and genial, the hall well placed. The 7 ft. headroom of the handicraft room and the dead-end of the corridor here would require reconsideration.

No. 136 : H. Spence-Sales and John Bland

This scheme shows a building which can be expanded from a school to hold 160 to one holding 320, and eventually 480. The playgrounds, food arrangements, and housecraft facilities are all good. The administration block would be cold, and the junction of this part with the teaching portion is externally a little confused. The exits from the hall on the first floor are hardly adequate as shown. It has been found that, generally speaking, a hall on the first floor has been difficult to plan. In cube it is compact.

No. 144 : Wells Coates, Denys Lasdun and Associates

This contribution is brimful of ideas, and the report should be studied. The layout has been conceived as far as possible from the child's point of view, and its gardens and theatre and avoidance of an institutional flavour are admirable. The class-room arrangement, whereby one can become two, would be a help towards an eventual ideal of smaller numbers. The system of construction, too, as described in the report, sounds novel and interesting.

Unfortunately, there are serious plan faults which make it impossible to recommend the author for a premium, though his proposals are highly commended.

No. 93 : Praxis Architects

This is a widely dispersed open-air scheme. It was felt that it would have been better with a more closely planned arrangement of practical rooms and class-rooms, though this is plainly not the author's opinion. Such open-air class-rooms seem to suffer from the defects of glare, wind disturbance, inclemency, and the difficulty of isolating one group of learners from the sight and hearing of those adjoining.

No. 95 : Greville Rhodes

A friendly scheme for a bungalow type, to be built in wood. The playground arrangements were thought excellent.

No. 135 : W. N. B. George and J. B. Ellis

Another delightful playground arrangement with a garden interposed. The elevations are charmingly suggested. The headmaster seems isolated. The scheme would have suited better a site with the entrance road to the north.

No. 137 : A. S. Morris and D. E. Morrison

An attractive class-room solution. The building stands, like many others submitted, on legs, with an open play-space under. Its great height and cramped circulation are defects.

SECTION B

No. 299 : Harry Durell, Colin Penn and Felix Walter

This is put first for an excellent plan and layout ; the welcoming entrance, the gardens, playgrounds and playing fields are all well managed. Externally it seems unhappily bald for village surroundings. No competitor, in fact, in this section seems quite to have risen to the possibilities of friendly and intimate charm, combined with freshness of planning and outlook, which a small building-group of this nature might be expected to suggest.

No. 303 : John Earley

The suggested entrance hall for displays, and the class-room treatment are good points. The cloak-rooms a little invite congestion. The buildings would look well in most English villages.

Harry Durell, one of the three authors of the design placed first in section B.

Felix Walter, one of the three authors of the design placed first in section B.

No. 309 : Walter Segal and Eva Bradt

This is commended for the idea contained in the plan. It is both adaptable and modest in expression.

The assessors also noticed favourably No. 274, a carefully thought-out scheme with much logic and some new ideas.

CONCLUSION

It would seem in conclusion fitting to consider what "new ideas and fresh lines of thought" emerge from the labours of all those who have sent in designs.

Primarily, both in plan and report, new emphasis is laid upon the importance of the child—its habits, its point of view, its potentialities. In the school of tomorrow it is suggested that there should be less drilling of the mass, more freedom for the development of personality and, of course, smaller teaching units. If, occasionally, we feel that the child of these theories is unlike the child of today, it is only fair to remember that the basis of these theories is the power and influence of environment.

Secondly, the school of the future is to be more than a place for the teaching of children. It is to be a centre of culture for the community, and as such is to be one of the best and not the least distinguished building in the neighbourhood.

On the question of teaching-rooms, the fully open-air class-room seems, for reasons already given, to have too many disadvantages to compete with a class-room with windows on either side looking out upon its own terrace or courtyard, which shall be both sunny and sheltered. The size of a class-room and the numbers of a class plainly depend upon questions of staffing and finance. The ideal building must be adaptable in this respect. The design of the practical rooms, and in particular the housecraft unit, is in many cases imaginative and suggestive.

Playgrounds are to be something more than hard areas of riot (though some riot must be catered for), and lead to quieter spaces, among trees and gardens. Much has been made of gardens, and this is probably right. But it is not always June, and beds which will not be tended so as to look well all the year are best kept in the background. There is also a marked tendency to lift the buildings up, and make use of the ground floor space thus available for covered play-spaces and similar activities. Unless carefully managed, this may put the whole building too high, with consequent difficulties of inter-communication.

The treatment of corridors, terraces, stairs and ramps is various and interesting, and well repays close study.

The question of the midday meal shows a wide variety of suggestions. There is little doubt that a habit of this kind cannot be dictated, so that the most adaptable scheme will be the best.

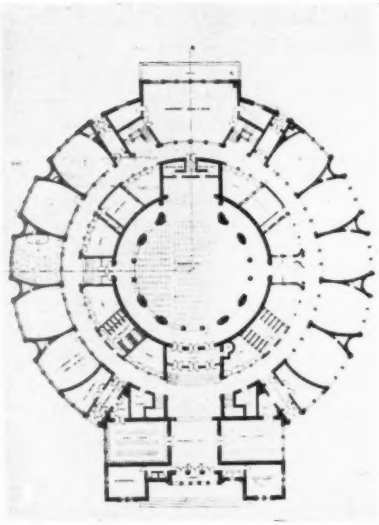
For the teaching staff most of the better plans make good provision, allowing them privacy, quiet and a pleasant outlook, as they well deserve but too seldom get.

The assembly hall has been promoted from a periodic gathering-place for teachers and taught, to become the centre of school life and of a wider life outside. This involves increase in area and dignity, and seems further to demand a generous entrance-hall or other space for the collection, converse and disposal of a crowd.

The crucial question of structure, of a material which, as we have described it above, shall be cheap and light, require no upkeep, be easily added to and altered, and be removable at the end of a forty-year period, cannot be said to have been solved : probably the ideal is unattainable.

On the whole it may be said that the labours of all concerned have been well worth while ; and the assessors would like to take this opportunity both of warmly commending the keenness and enterprise of all competitors, whether they have been mentioned or not, and in particular of paying a tribute to the public spirit of the *News Chronicle* in promoting the whole undertaking. It only remains for architects and education authorities to weigh its many suggestions and profit from them.

John Earley, author of the design placed second in section B.



One of the schemes submitted.

THE DESIGNS REVIEWED

By R. Gardner-Medwin, B.Arch., A.R.I.B.A.; Bryan Westwood, A.R.I.B.A.; Colin Penn, A.R.I.B.A.; Brian Herbert, M.A., A.R.I.B.A.; and H. Myles Wright, M.A., A.R.I.B.A.

[*With the exception of additional notes on the winning designs this review and the notes accompanying each scheme were written before the announcement of the awards*]

WHEN the *News Chronicle's* competition for two senior elementary schools was first announced, several hundred highly-qualified younger architects put in a great deal of hard thinking. Here was a competition to their own specification: the assessors were right, the subject could not be bettered, "progressiveness" was openly invited. Now what, exactly, was wanted?

And that was the real catch. What *did* assessors want, who by their *No Questions* clause had so cleverly said: "No, no, dear friends, that is what you are going to tell *us*." Naturally, the competitors did not expect to be guided to any particular plan form or material or to have the single v. several floor question solved for them. Any rigidity of that kind would have spoilt the whole point of the competition. But those who knew something of the turmoil in which every single question affecting the planning and building of schools is in today could not help seeing that there were two ways in which the competition might be looked at, both very important yet so fundamentally differing, that the whole value, as well as the actual result of the competition, might well turn upon which viewpoint was held by the assessors.

These two possible attitudes, these two ways of attempting to win the competition, seemed to be the Great Idea method and the Stride Forward method. More exactly, the competitor could try to design an entirely new kind of school—paying little attention to the site, less to cost and very little to present educational policy and methods—incorporating one or more new ideas which would subsequently prove of value to school planners and be generally adopted by them; even if his complete school was not an entirely satisfactory conception. This was the Great Idea or entirely original, method.

The second way was to consider the site, current building costs and methods, and modern educational policy very carefully, and to try to get the greatest possible number of advantages in the school *as a whole*—to tackle and eliminate one by one the noise, smells, dinginess, cramped circulations and echoing quadrangles which are the faults of contemporary schools without foregoing the reasonable compactness and low cost which are the strong points of existing schools. In short, this second way was to try to design a complete school scheme which might be the standard by which to judge all schools during the next five years. This was the Great Stride Forward method of tackling this competition.

It may be maintained that a design was possible which would be the best of both these types, but in practice any attempt to combine the two methods of approach seemed to transform all sketch schemes into the half-breed who is supposed to inherit the defects of both his parents. One could begin from what the competitor thought ought to be done, or from what was actually being done, but any attempt to check one against the other promised a final unhappiness.

The competitor was therefore driven back to his question: which method of solution did the assessors favour? Or, if these gentlemen were determined to be tiresomely open-minded, which solution *ought* they to favour?

Let us see what the Conditions say:

From the competition it is hoped to obtain designs which, while conceived in less restricted circumstances than are usually met with in practice, will, none the less afford valuable object lessons for the planning and architectural treatment of the modern elementary school.

This is non-committal, but vaguely seems to be on the side of the Great Stride Forward.

With these aims in view new ideas and fresh lines of thought will be welcomed and competitors may consider themselves unfettered by tradition or convention of plan, elevations, interior finish, materials and methods of construction.

Definitely Great Idea, here.

Competitors are invited to read the Board of Education's recently issued pamphlet entitled "Elementary School Buildings." In it they will find general guidance on the requirements of modern elementary schools and schedules of accommodation in Appendix III suitable for the types and sizes of the schools in the two above-named sections of the competition. They need not, however, nor will the assessors, feel bound in any way by the recommendations contained therein, or by any building regulations or bye-laws, but of course the interests of safety and health must be observed.

This is just plain sitting on the fence.

Notwithstanding the freedom from the general restrictions the assessors in making their award will satisfy themselves that a school which might be erected from plans of a premiated design would: fulfil satisfactorily the functions of a school; maintain the present accepted standards of safety and health of the children and the staff; be economical, taking into account first cost with cost of running and upkeep; encourage appreciation of fitness and beauty.

A more cautious note has now crept in. "The functions of a school"? In Britain during 1937-47?

No actual limits of cost are laid down, but a scheme should not be plainly beyond the means of an Education Authority. For the guidance of competitors it may be said that the average costs of recently-built senior elementary schools containing the accommodation suggested in

the Board of Education's schedules have been £50 per head for the school of 480 and £55 per head for the school of 160, excluding the cost of furniture and equipment and of the preparation of playing fields.

This lets the cat out of the bag. Education authorities consider a school to be beyond their means if they can get anything the Board of Education will pass for less money. Naturally such an attitude must be altered, and to do so is one of the primary objects of the competition. Nevertheless, cost, in conjunction with present constructional methods and procedure, is of enormous importance if the schools we ought to have are ever to be built under our present system of local education authorities. Say to a local authority : " This is a far better thing and you can have it for less money (or the same money)," and they will have it. Say that it will cost a quarter or half as much again and progress in schools will be delayed for twenty years.

This is the state of affairs amongst the clients of school planners, and its lessons to those who studied this competition's Conditions seemed obvious. They were that the best results could only be achieved if the winning designs at least were clear-cut, complete schemes, closely designed to the site, showing the greatest advance for the smallest increase in expenditure ; and that Great Ideas embodied in schemes otherwise not beyond reproach, or requiring a complete revolution in school circles to get them adopted, should be rewarded in smaller measure.

Such a conclusion may not seem very brave, and less exciting. Modern architects, especially the younger of us, rarely get a field-day —rarely indeed get assessors who understand what is meant to be happening. Surely this was the time to show what could be done, if only on paper.

The competitor who took the other view may be something of a renegade, but he seems more of a realist. He believes in the inevitability of gradualness. Once in a hundred years a Crystal Palace may take the public by storm ; at other times it likes to be led slowly. In schools the practical man can only be made to like progress by being taught that progressive schools are more practical : in cost, planning and form. From the point of view of the effects of this competition on the schools that will be building in 1940, it therefore seemed that the Stride Forward designs *ought* to be placed highest.

And in the principal winning design this has been wonderfully achieved, but the great idea has not been forgotten.

INCOMPREHENSIBILIA

But before an attempt is made to consider some of the schemes submitted, it is felt to be the plain duty of someone to draw pointed attention to the following clauses in the Conditions :

> Lettering must be plain and legible. The superficial areas of all rooms are to be indicated on plans and heights from floor to floor on sections. The drawings are to be as simple as possible, consistent with clearness and legibility.

Indulging in methods of presentation which make a scheme stand out from its neighbours when hung for judging is perfectly permissible ; in a big entry it is even a wise precaution. But there are limits. And when a scheme departs from the *clearness and legibility* which are the essential qualities of all architectural drawings to an extent which would bring it into the front rank in a display of " abstract " posters, it is time for disciplinary action. Several of the schemes in the last thirty odd at the Building Centre are presented in a way that may be called thrilling, stimulating, striking or what not : but with equal justice may be called irritating and silly to the point of being almost incomprehensible — particularly those which employ numbers and a key (dotted all over the plans or attached in typescript) in such a way as to put as much strain on the spectator's neck as umpiring a tennis match. We all hope the *News Chronicle's* competition will have a good effect on schools ; let us pray with equal fervour that it will mark the end of keys, numbers and statistico-dramatic presentation.

THE SCHEMES

The assessors, in their award, have made a great effort to blend the unblendable, with an admitted bias towards the Great Idea, and almost every conceivable plan form finds a place amongst the 240-odd schemes. For amassing such a volume of research the *News Chronicle* deserves much more gratitude than it is likely to get from an ungrateful country, and even from the world of education. But the promoters are not to be discouraged. School architects for many years will study the ideas this competition has given to

Birkin Haward, author of the design placed second in section A.

them—and will realize something of the difficulties before the assessors.

After examining the awards in detail, even those competitors who backed the advanced, but still very practical, horse with a too-great single-mindedness cease to feel annoyance. Mr. Clarke Hall not only has a Big Idea, but his scheme is as nearly as possible free from all defects. In fact, the more one studies this idea for getting the advantages of ground-floor classrooms on a first floor, the greater seem its possibilities. Almost by this idea alone is the competition justified.

The second scheme in section A has more drawbacks, but counters them with another Great Idea—that of getting rid of the noise-locker-cloakroom problem with one large blow and a flourish of staircases ; as well as having admirably placed changing-rooms.

And so it is in all those schemes which got rewarded. There is the Great Idea, but in the winners of each section at least this idea is combined very closely with a practical and economical stride forward.

It is not possible here, or even in the notes which accompany the illustrations of each design, to deal with the second objective of the competition : new ideas in construction. A very close study will be needed, and should be made, of the suggestions of nearly 250 progressive architects. Some form of prefabrication is very commonly suggested ; it so obviously must come. And there cannot be the least doubt that several of the systems advocated, if organized by manufacturers and builders in conjunction could not only make building schools more economical, but might transform all our conceptions of building technique.

From such a competition anything might come. The younger architects have shown what they can do, what they are prepared to do freely, in the way of stupendous labour and imaginative design if only they are asked in the right way. The *News Chronicle* has been big enough to ask in the right way. And it is rather gratifying that no one will be able to complain of the poverty in the results.

From this strong start, one comes to the detailed ideas in the individual schemes.

[This review is continued in the notes accompanying the illustrated schemes.]

THE WINNER'S REPORT

[Slightly abbreviated]

PART I

1. *Use of a School*

Before any work was done it was necessary to discover all the uses a school is put to and the type of education employed.

(1) Schools of the past were used only for teaching, and this was often done under appallingly bad conditions.

(2) J. E. Barton sums up the whole trend of present ideas of education. He writes : " External dignity and internal serenity offer a background for cultured influence as distinct from scholastic instruction."

(3) A school should not only be used for the education of children, but also for other training.

(4) The building should be used as a social and educational centre for the community.

(5) The hall should be used for educational films, amateur theatricals and social meetings, etc.

(6) The laboratories and workshops should be used for evening classes open to people of all ages to improve their position in life.

(7) The gymnasium and playing fields should be used as a physical training centre if no other such centre is near.

2. *Psychological Reaction*

(1) A child thinks mainly in the form of mental pictures ; these are very vivid and can change the whole outlook of the child. These pictures are directly affected by environment.

(2) Too much book work produces a state of pseudo-fatigue, limits the imagination and retards the mental development owing to the difficulty of forming mental pictures.

(3) Physical discomforts retard the working efficiency of the brain in direct proportion to the degree of discomfort.

(4) Much time is spent sitting when the body cannot react normally to heat and cold, e.g. fanning and moving about ; this causes fidgeting and divided attention.

(5) Far more concentration is needed to learn a new thing than is needed to go over familiar ground.

(6) Comfortable clothing leads to ease of mind.

(7) Mental depression is caused by blue light.

3. *Appearance*

(1) All rooms must have a different colour scheme : this takes away from monotony and acts as a stimulus.

(2) Bright colours should be used but sparingly.

(3) Texture of materials must be carefully considered.

(4) The use of trees and shrubs and flowers against the texture and lines of the building must be carefully considered.

4. *Designs of Furniture*

(1) The tops of desks and benches must have a matt surface to avoid glare.

(2) No books should be kept in the working rooms, but in lockers outside.

(3) As little as possible of the furniture should be fixed.

5. *Acoustics and Noise*

(1) All rooms must have good acoustics for their purpose. In classrooms excessive reverberation causes great strain and irritation. In corridors, etc., a banging door can disturb the whole school.

(2) Sudden loud noises must be avoided as they cause a complete break in the train of thought not so noticeable in practical work.

(3) All noisy places, such as workshops, corridors, playgrounds, gymnasiums, etc., must be right away or screened from the classrooms.

6. *Heating and Ventilation**

(1) Hardships of temperature—too high or too low—are increased by lack of free activity which results in restlessness, distraction, or strain on both teacher and child, and also in physical fatigue.

(2) Bad ventilation causes the spread of epidemics, respiratory diseases, or fall in working power, mental fatigue and restlessness.

(3) The past ideas on stuffiness were based on the assumption of an excess of CO_2 and that the body gave off poisonous gases ; also that the heating of a room depended on the temperature of the air only. These ideas are still a popular belief.

(4) The body creates internal heat which has to be cooled and kept in a state of equilibrium.

(5) The cooling of the body is done naturally by three methods :—

(*a*) Radiation from the body (about half).

(*b*) Evaporation from the lungs and skin.

(*c*) Convection.

(6) The rate of cooling, or cooling power† depends on three conditions of environment :—

(*a*) Temperature of the surroundings which affect the radiation.

(*b*) Humidity of the air affecting evaporation.

(*c*) Speed of the air movement which affects both the evaporation and convection.

(7) The rate of cooling varies with the amount of physical movement.

(8) In corridors, etc., natural movement can respond to atmospheric conditions so that artificial means are not necessary.

(9) Classrooms, etc., where physical movement is restricted must have the cooling power regulated artificially.

(10) The regulation of cooling power is the essence of heating and ventilation.

(11) Slight momentary variation in the rate of cooling acts as a stimulus and reduces mental fatigue to a minimum.

(12) The most ideal condition known is in the open air with hot sun and cool air moving at a rate that is just perceptible to the human skin. This applied artificially means that :—

(*a*) The air must be cool so that all heating which heats the air only must be avoided.

(*b*) The air movement must be maintained at a minimum rate. This minimum varies with the temperature and a slight variation in the speed of the air will be sufficient for the variation necessary in the rate of cooling.

(*c*) Heating must be in the form of radiant heat.

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* The best forms of heating and ventilation have shown an increase of 7 per cent. in mental output over the forms in normal practice today.

† Cooling power is the number of millicalories given off from 1 sg.Cm. per sec., a unit of C.P. is 1.2 Mill. Cal. from 1 sg.Cm. per sec.

(*d*) Humidity must not be in extremes but is comfortable over a very wide range.

(13) An air velocity below that which is noticeable to the skin and causes stuffiness and mental fatigue—too high it causes discomfort.

(14) All working places must be affected equally by even distribution.

(15) A hand temperature below that of 70° F. results in a slowing down of muscular movement.

(16) All local air movement (draughts) above 30 ft. per minute must be avoided.

(17) The temperature gradient must be as low as possible. The temperature at head level must not be higher than that at floor level. A high temperature gradient causes draughts.

(18) Children require a lower temperature than adults.

(19) Too sudden change of temperature is bad but a small change is stimulating.

(20) Surrounds should be warmer than the air.

(21) Radiant heat penetrates the skin and excites flushing and transpiration that is beneficial to the system.

7. *Natural Lighting*

It is essential that natural lighting should be used as much as possible and for as long as possible.

(1) Bad lighting causes decrease in visual activity—10 ft. candles give an increase of time perception of 50 per cent. over that of 2 ft. candles.

(2) The eye has an enormous range and can see from ·0001 ft. and upwards.

(3) Visual activity increases rapidly up to 10 ft. candles and then only slowly.

(4) The eye judges the intensity of light by the brightest light visible and not by the candle power.

(5) Sky exposure must be as wide as possible to receive the therapeutic radiation which the sky gives off in great quantities.

(6) Glare is caused by a bright light against darker surroundings and can be direct or reflected.

(7) Light must be evenly distributed on matt surfaces to avoid glare.

(8) The contrast of light and shadow must be as small as possible.

(9) A minimum of 8-10 ft. candles must be had on all planes of work.

(10) An allowance of 20 per cent. must be allowed for the accumulation of dirt between cleanings.

(11) The light reduction factor must be as great as possible to maintain the minimum light of 8 ft. candles for as long as possible.*

(12) Window glass should be chosen for the quality of light which it transmits.

(13) All rooms must receive sun for a large part of the day.

(14) Low sills take away from a cell-like appearance.

8. *Artificial Lighting*

Most of the notes on natural lighting apply to artificial light. In addition, the following rules must be noted :—

(1) Lamps must be evenly distributed.

(2) All places where fine detailed work is done and objects looked at from a distance must have extra lighting.

(3) An astigmatic eye needs about 30 per cent. more light than the normal.

(4) The eye receives blue light in great quantities, but the nervous reaction is the least efficient.

(5) Light acts as a magnifier of objects.

(6) Unglazed paper should be used.

9. *Circulation*

(1) As the whole school moves into the corridors at fixed periods during the school hours and not in the form of even distribution, it is essential that the corridors must be adequate to carry these peak periods without congestion.

(2) Distance moved between periods is of no importance owing to the beneficial results of exercise.

Note.—Artificial ventilation heats the air and as well as being too expensive is not so satisfactory as good natural ventilation.

PART II—Application of Part I

1. *Heating and Ventilation*

As most of the time in school is spent in the classrooms and laboratories, these were considered the most important and the plan evolved round their designs. To fulfil all the requirements in Part I, paragraph 6, the following or similar methods must be employed :

(1) Heating must be radiant. This is best done by low temperature radiant panels in the ceiling. If placed in the floor local draughts are produced. High temperature heating of any sort also causes draughts. These ceiling panels are easy to maintain and economical to run and heat the surrounds evenly.

(2) To maintain the minimum air movement (especially in the summer) it is necessary to have opening windows on both sides as low as possible.

(3) The humidity can be ignored.

(4) To avoid draughts from joints in the windows and down draught from the ventilators, supplementary heating in the form of small low temperature hot-water pipes should be fitted below the windows. The rising hot air deflects all draughts upwards. This hot air does not cause stuffiness as it is taken out of one of the ventilators.

(5) Windows should be so regulated that so long as the external air velocity is above that required, the internal velocity can be kept above the minimum. This is done very effectively by having :—

(*a*) Centre-hung ventilators at the ceiling.
(*b*) Casements in the middle.
(*c*) Hoppers on the lower half.

The hoppers direct the air slightly upwards.

(6) The variation always present in external conditions suffices to give the variation necessary for stimulation.

(7) Corridors require no heating (paragraph 6, section 8).

(8) W.c.s and basins should be slightly warmed by radiant heat and left as open as possible.

(9) The hall must be provided with sufficient ventilation and supplementary ventilation for cinema shows, when the natural light is excluded.

(10) The heating of the hall should be in radiant panels in the floor.

(11) Adequate cross ventilation must be supplied.

(12) The gymnasium does not need heat, but as much ventilation as possible.

(13) The canteen should be heated to within the comfort zone.

(14) All rooms, such as libraries, studies, common rooms, etc., must be heated by radiant panels in the ceiling and by supplementary electric panels. All rooms used by more than one or two people should have cross-ventilation if more than 12 ft. wide.

(15) The hot-water heating is supplied by central boilers and distributed by steam pipes to calorifiers which supply heat to the panels. This has a great saving in fuel and efficiency.

(16) Lobbies should be placed between the open corridors and the classrooms to prevent excessive blasts of air.

(17) Drying-rooms in cloakrooms.

2. *Natural Lighting*

(1) Any lighting below the dado or behind the black-board causes glare.

(2) Any lighting on the back walls causes shadows and also glare to the teacher.

(3) Lighting over the left should not be of less intensity than that of the right (looking at black-board).

(4) The only place for natural lighting is on either side from ceiling to dado. As great an area as possible is desired. It should go from one end wall to the other with as few and as thin glazing bars as possible.

(5) All corridors should receive sun some time during the day and as much light as possible.

(6) The hall must receive a minimum of 7 ft. candles on a plane 3 ft. above floor level. The maximum use of daylight is not essential as the hall will be in darkness during a lot of its use.

(7) All courtyards, etc., must receive sun during part of the day.

3. *Artificial Lighting*

(1) Spherical general lighting fittings fulfil to the best all the requirements of Section 5.

(2) Fittings placed at a maximum of 10 ft. apart and 7 ft. above the plane of work gives smoothness of shadows with a variation of only 2 ft. candles.

(3) 100-watt bulbs placed at these centres with a ceiling reflecting 75 per cent. of light gives a minimum of 10 ft. candles on all planes of work.

(4) Black-board lighting should be chosen for its efficiency on the vertical plant. Direct light is found to be the best. Care should be taken that it does not cause glare to the teacher. This should have an intensity of 15 ft. candles on the surface. The black-board should be tilted to avoid any glare.

(5) All special supplementary lighting for fine work must be in the form of direct lighting that will not throw shadows and cause glare. An intensity of 15 ft. candles is recommended.

(6) No blue light should be used. Ordinary pearl gas-filled lamps so far produce the best results.

(7) Corridors must have a minimum light of 3 ft. candles and 5 ft. candles at all points of concentration.

(8) All notice boards must have supplementary lighting giving 7 ft. candles on the surface.

(9) Hall, 7 ft. candles.

(10) Gymnasium, 12 ft. candles.

(11) Studies, common room, 10 ft. candles.

(12) All wiring must be adequate for the load. A 5 per cent. drop in voltage gives an 18 per cent. drop in candle power.

4. *Areas*

A school of 480 pupils is best divided into 16 classes of 30 children. These can be sub-divided where necessary.

In most cases the areas suggested by the Board of Education are insufficient to fulfil the requirements of Part I.

(1) Classrooms for 30 children have a floor area of 525 sq. ft. minimum. This gives ample space between desks and between desks and walls.

(2) Classrooms should be as few as possible as book work is to be reduced to a minimum —seven being considered an adequate number.

(3) Laboratories should be ample and large as these have to accommodate varying numbers of evening classes. For this reason each laboratory should be fitted with provision for theoretical instruction. The minimum area needed for 30 pupils and the area for theoretical instruction and conforming with the requirements of Part I, is worked out at 1,100 sq. ft. excluding stores.

(4) For more advanced work there should be smaller classes of 15 so that a senior class of 30 can split. These smaller laboratories should also have their theoretical instruction combined. This area has been worked out at 550 sq. ft.

(5) As theoretical instruction is given in the laboratories, no lecture hall is needed, the main hall being used for any general lectures. *

(6) Domestic science should be divided into three sections :—

(*a*) Laundry.

(*b*) Cooking.

(*c*) Needlework and housework.

Two classes of 30 can be divided amongst these :—

(7) Ample room must be had in the workshops —about 40 sq. ft. per person.

(8) The standard size of 60 by 30 for the gymnasium is sufficient.

(9) The hall should be equipped for good theatricals and the showing of non-inflammable films. The minimum seating should be 500 so that the whole school and the staff can attend any lecture, etc. This gives a minimum area of 300 sq. ft., excluding stage. The hall should fulfil the requirements of the local authorities for places of public entertainment.

(10) Entrance hall. This should be large and open, as parents and others often wish to talk both before and after shows. It should be fitted with seats and showcases to show examples of school work.

(11) All other rooms and offices should be as generous in space as is practicable.

5. *Circulation*

Owing to the intensity of the peak periods when the whole school is in the corridors at once for short times, circulation becomes of major importance.

(1) Corridors should be able to discharge their load directly into the playgrounds; for this reason the best possible plan is for the main corridor to be parallel to the playground with large openings along its length.

(2) If classrooms are on the opposite side of the main corridor the circulation at break and lunch becomes then very short and direct, there being very little longitudinal movement.

(3) Wash basins and canteen should be directly off the main corridor and approached directly from the playgrounds.

(4) The w.c.s should also be accessible from the playground and the corridor.

(5) Laboratories, workshops and gymnasium should be approached independently to the classrooms for evening classes.

(6) Hall should have an independent entrance (combined as the main entrance) free from the circulation of the day and evening classes.

(7) All buildings used by the children should be approached by covered ways as it is detrimental to health to sit in wet clothes.

(8) Changing rooms should be within direct access of the playing fields and gymnasium.

(9) As classes often come out early if the work of the period is completed, it being pointless to keep the children in filling up time, segregation of the main corridors and playgrounds is therefore essential to prevent disturbing the whole school.

(10) Even distribution of ramps.

(11) Cloakrooms at ends to split congestion.

(12) All blind corners to be avoided where possible.

6. *General Notes*

(1) Corridor cloakrooms not suitable in mixed schools.

(2) All classes mixed.

(3) The hall being large should not project to the south owing to deep shadows cast.

(4) The gymnasium should be arranged to use as a grandstand for sports.

(5) Ample locker space must be provided outside the classrooms and especially the laboratories which are used as evening classes.

(6) Adequate storage in workshops for tools, timber, half-finished and finished work, and also for drawings.

(7) Temporary sick accommodation.

(8) Open-air schools have many advantages combined with many disadvantages. The adaption of the requirements of Part I produces a school with all the advantages of open air with a minimum of the disadvantages.

(9) Administrative block near entrance and segregated from main circulation.

(10) Separate entrances for the sexes.

PART III.

This part refers to the drawings. The final design was evolved from all the requirements needed as shown in the previous part.

1. *Plan*

(1) The children enter at extreme ends through cloakrooms. These almost form corridor cloakrooms as there is a wide passage down one side and circulation is free.

(2) They enter into a wide corridor which continues into the covered playgrounds. The south side of the corridor is glass, the north side is open to the covered and open playgrounds.

(3) From the corridor they either go up the nearest ramp to the classrooms or through the locker lobbies into the laboratories.

(4) Each laboratory has windows on both sides, the N.W. side looks on to courtyards separated by the lobbies. This gives complete segregation and adequate ventilation and light.

(5) The classrooms are all on the first floor ; above the laboratories they are at right angles to these. This is for two reasons :—

(*a*) So that the courtyards lighting the labs. will have only one storey on the S.E. side, and

(*b*) so that reflected sound from the corridor walls will not disturb either classes.

(6) Each classroom is connected to the corridor by locker lobbies and is completely isolated, looking on to a terrace on either side. This terrace cannot be overlooked by any other class and is laid out with shrubs and trees, etc., and is open on the N.W. and S.E. sides.

(7) The geography room has a terrace of its own which is protected from the noise of the workshops and playgrounds by a wall. The terrace contains a large concrete globe.

(8) The domestic science room used by girls is by the girls' entrance.

(9) The ramps are placed so as to give direct access to the playgrounds and cloakrooms and also to distribute any congestion.

(10) The workshop and gymnasium are well away from classrooms.

(11) The gymnasium is approached by a covered way behind the girls' w.c.s and changing-rooms.

(12) The washbasins and canteen and w.c.s have direct access both from the playgrounds and the corridors.

(13) The main corridors are open and all corridors and lobbies connected to any room are enclosed.

(14) The hall and administrative block are directly connected to the teaching block by the continuation of the main corridor.

(15) The hall is fitted with a stage and projection-room conforming with the L.C.C. requirements.

(16) The main entrance hall is large and contains a large showcase and ample seating.

(17) The shape of the hall has been based on acoustics and lines of vision.

(18) The book store where pencils, etc., can be obtained is placed in the main corridor in the administration block.

(19) The corridor is divided from the covered playground by a small wall 1 ft. 6 ins. high with a wooden surfacing at the top ; this acts as a seat.

(20) All doors where possible are double swing so as to maintain freedom of circulation.

(21) Stores are provided at all places where necessary.

(22) The gymnasium is connected with additional changing-rooms for use of visiting teams and non-pupils of the school. Over this are seats and a scoring-box for sports, etc.

(23) The playgrounds are the minimum size laid down by the Board of Education.

(24) All lockers are surrounded by ample space to avoid congestion.

(25) The block plan is designed to encroach as little as possible on to the playing field.

(26) The classrooms and laboratories are protected from the noise of the main road by a 9-ft. wall joining the two cloakroom blocks ; the remaining boundary wall is only 2 ft. 6 ins.

(27) The library or reading-room is placed with its terrace within easy access from the main entrance hall and from the teaching block.

(28) The staff have easy if not direct access to the whole school.

(29) An attempt has been made for the plan to be as open and free as possible and at the same time maintain a formal dignity.

(30) Proportions on plan were considered as important as on elevation.

(31) The drawings have been kept as simple as possible, only showing the essential details.

(32) Free shapes of shrubs, trees, and water have been introduced to act as a contrast to the more rigid formal lines of the building.

2. *Elevations*

(1) All elevations are kept as simple as possible ; proportions of solids, voids and the relationship of these have been considered of vital importance.

(2) The terraces of the classrooms give the S.E. elevation a feeling of openness as the sky can be seen through the openings. This is in direct contrast to the line of windows of the laboratories below.

(3) The main entrance is in the form of a large portico with glass doors opening on to the main hall ; above this is a map of the world done in coloured fresco, rather in the style of old maps with ships, etc., depicted on it. The columns tapering towards the bottom express the strength and utility of the material.

(4) All elevations are brought out by the tone contrast of solids, voids, glass and shadows.

(5) Trees and shrubs are used again to form a contrast with the severe lines of the building.

(6) Again an endeavour is made to combine freedom and openness with formal dignity.

3. *Points of View*

(1) On approaching the main entrance the strong horizontality of the windows of the administration block is broken by the verticality of the porch with its two columns. This break is only momentary as the whole line continues to the left forming the main corridor on the ground floor. This is at right angles to the projecting cloakrooms, but on the first floor it is continued in the form of an open corridor with terrace and

* Many of these can be open to the public and not only for the children.

flower boxes. The line of classrooms appears forward and parallel of this but not connected. The classroom line gives a great feeling of transparency as the amount of solid wall is almost negligible through the voids and glass. Shrubs can be seen making the classrooms and terrace appear as one.

(2) On entering the entrance hall, a view is obtained directly into the courtyard with its single tree and covered way. The tree appears against the glass of the staircase. In the foreground of this is a column seat upholstered with some bright leather. On the left a view is had across a pool on to a large expanse of lawn and tennis courts. There are two different views, one intimate and the other open and expansive.

(3) On turning to the right into the main corridor of the school, one looks down a long corridor with glass down the whole of one side. This is given life by the movement of trees and sunlight beyond and is broken by free standing ramps running up against the glass. On the left it is open to a view of the playgrounds. This is broken by columns and the wash-basin and canteen block. Division of corridor and playground is made by a low wall.

(4) On going into one of the locker lobbies, the effect is of being intimately connected with the enclosed courts, their trees and shrubs.

(5) Going up the ramp one arrives at a landing and is confronted with a long narrow open terrace with flower boxes and water punctuated by coloured columns. The opposite wall is broken only by windows just under the ceiling.

PART IV.

1. *Construction*

The fact that the useful life of the building is to be 40 years is of primary importance in the choice of construction.

(i) Reinforced concrete structure was discarded for the following reasons :—

(*a*) Period of life far greater than 40 years.

(*b*) Difficulty of demolition.

(*c*) Rigidity of structure does not lend itself to alteration.

(*d*) Difficulty of isolating structural borne sounds.

(*e*) The expense is still too high.

(ii) Prefabrication was found to be impracticable owing to the freedom of plan.

(iii) The construction finally decided upon was :—

(*a*) Exterior walls : a very light frame of "T" pieces welded together in the form of studding and bracing.

The foot of the "T" on the outside is covered with some good wallboard fixed to the grid with copper wire. Between the metal of the "T" and the wallboard is ½ in. of good insulating material to minimize pattern staining on the inside. The wallboard is covered with plaster, acoustic plaster or tiles according to its position. The outside is covered with expanded metal lathing also fixed to the grid by copper wire. This is then rendered three coats of mortar of varying consistency ; on the final coat white Portland cement is used. This coat is in the form of panels divided by strips of copper "Ts" ¼ in. by $\frac{5}{16}$ in. They are at right angles to the surface and the final rendering is flush with foot of the "T."

All hair cracks will be taken up along these joints. The size of the panels is decided by their proportions and relationship to the mass when the walls are very high and unsupported as in the hall. Main stanchions run up from foundation to roof, to which is welded a secondary grid, exactly the same surfacing being employed.

Where the walls are of glass the same structure is employed, only the spacings of the grid are fitted with glass. The projection of the foot of the "T" which the glass leaves is covered with thin pressed anodized aluminium, or wood fillets, if cost of aluminium is too high.

Room	Cubic Volume used	B. of E.	Price per cube	B. of E. cost £	Cost of design £
Gymnasium	43,200	43,200	10d.	1,800	1,800
Stage	31,320	18,000	11d.	824	1,436
Boiler House	7,200	7,200	1/–	360	360
Hall	124,750	45,000	1/–	2,750	6,328
Entrance Hall	23,100	5,600	9d.	210	866
Stairs	9,200	9,200	9d.	360	360
Admin. Block	46,280	34,716	11d.	1,455	1,941
Changing and w.c.s (no fittings)	50,700	30,000	6d.	750	1,267
Cloaks	46,500	46,500	6d.	1,162	1,162
Basins	20,250	16,000	6d.	400	506
Labs.	133,500	60,000	10d.	2,500	6,375
Tool and Bicycle Sheds	26,250	26,250	6d.	656	656
Workshops	37,250	12,750	9d.	459	1,271
Corridors	182,950	121,966	6d.	3,050	4,574
Library	6,400	—	10d.	—	266
Projection Room	2,100	—	1/–	—	100
Classrooms	44,100	44,100	10d.	1,840	1,840
				£18,576	£31,010

This type of construction gives a thermal insulation about equal to 9 in. brickwork.

(*b*) All interior partitions are constructed of "gassed" concrete blocks ; these are very light, cheap to make, and have very little moisture movement if properly cured. The partitions are double and structurally independent ; they are surfaced according to their position.

These blocks are rapid to construct and easy to remove for alterations. They are also good for air and structural borne sounds, especially if "isolated" from the main structure at floor and ceiling. Internal glass partitions are the same construction as the exterior walls.

(*c*) The ground floors are concrete on rubble surfaced with quarry tiles in the main corridor and wood blocks in the laboratories, locker lobbies and all other rooms, including the hall. The first floor is constructed with frequent small R.S.J.s running across ; these are welded to a continuous channel which is supported by the grif of the walls. The filling of the R.C.J.s is by means of precast R.C. slabs covered by 2 ins. of screeding and pressed cork blocks. An insulating board is put between the slabs and screed in the classrooms.

The ceiling of the laboratory block is structurally independent of any party walls and of the walls of the classroom above. In this way the whole laboratory block can be knocked into one huge room and subdivided to any requirements. Also the classrooms above are just sitting on the roof of the block and their light structure can be taken down, changed and added to at will.

(*d*) All roofs are constructed in the same way as the first floor. The precast slabs are covered with a thin screed on which are placed building paper and wallboard. This is in turn covered with bituminized felt set in asphalt reinforced with chicken wire. The whole is then covered with a 2-in. screeding, the final surface being whiteish, reflecting the sun. Where there are terraces 12-in. quarry tiles are used.

The wide span of the classrooms is carried by a light welded steel girder consisting of two "T" pieces joined by a continuous round rod bent to resist shear. This is strong, light and cheap. The hall span is taken by light plated girders.

Roofs to covered ways are constructed by a continuation of the floor or roof joists and filled with precast slabs, screed and asphalt.

(*e*) The ramps are constructed of two R.S.J.s on either side with subsidiary ones joining. These are fitted as the first floor and surfaced with compressed cork tiles.

(*f*) Door and window frames are of pressed steel sections. The solid doors of a standard laminated type, while all glazed doors are steel. The base and frame have a wood core.

(*g*) *Miscellaneous items.*—The columns in the main entrance are precast R.C. tapering towards the bottom.

The main stairway in the entrance hall is of precast E.C., conforming to L.C.C. regulations for places of public entertainment ; the spiral staircases are built of precast R.C. sections.

The flue to the boilers is built of precast blocks, each a complete section of the chimney and 18 ins. high, set in cement mortar and lined with fireclay.

All pillars supporting covered ways, etc., are hollow circular steel welded at the top to the steel structure and set in a cement base.

All courtyards are faced with coloured precast stone slabs 2 ft. square, laid on sand.

2. *Cost*

A similar type of planning can be used for a school of any size, and containing rooms of any area. The size and area used are the ones considered the minimum for the comfortable and efficient working of a school for 480 pupils and about 200 for evening classes.

As the school is of a purely suggestive nature a comparative cost based on the Board of Education's suggested requirements is given, as it is desired to show that the higher cost is not due to the type of plan, but to the greater areas used.

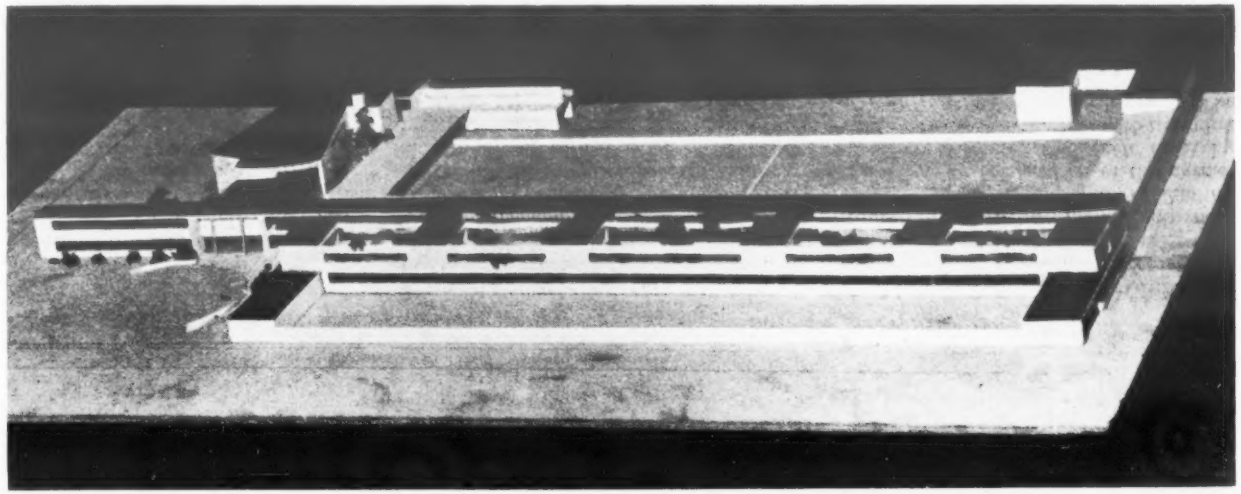
Several figures (such as the entrance hall) of the B. of E. cube are only rough estimates. It must be noted that these B. of E. cubes are the minimum and rarely put into practice. The cubing of the ground floor corridors, w.c.s and basins, etc., does not include the cost of flooring.

Average cost per cube 9d., excluding all fittings, drainage, heating, etc.

To this cube there has to be added :—

	At per Sq. ft.	Sq. ft.	£
Playgrounds	6d.	8,580	858
Terraces	6d.	6,435	160
Quarry tiling of ground floor :— Corridors (main), showers, basins, canteen, w.c.s, covered ways, etc.	6d.	24,800	640
A prime cost is allowed for :—			
Heating and water supply			600
Lighting (excluding fittings)			300
Drainage			250
Sanitary fittings			200
Fences and paths (Gardens to be developed by the children.)			
			3,308
Cubic cost			31,010
TOTAL COST			£34,318

say £34,500—about £70 per head for children or, if evening classes, etc., included, about £53 per head.



THE PLAN

Though it appears at first as a baffling array of ramps, courts and terraces, on examination this is found to be clearly the simplest and most direct of the schemes submitted. The various units are well related, arranged in good sequence so that the flow of children from one part to the other should be easy and rapid with a minimum of cross traffic. The plan is sufficiently dispersed to give an adequate feeling of openness yet sufficiently compact to simplify supervision and avoid long distances between classes. What is more, this school, unlike so many of the others, seems to be economically feasible.

The buildings are placed forward on the site. This brings the classrooms rather near the main road, but as this road was stated not to carry much traffic and details of the site were left to the imagination of competitors, this cannot be considered a serious fault.

The assembly hall is placed to one side of the group, detached from the working units of the school. Assuming that it is not used for gatherings first thing in the morning, when the girls would have a much easier approach to it than the boys, this is a perfectly logical arrangement. So placed, it can be used as a social centre, detached entirely if necessary from the rest of the school. The administration wing is isolated on the left of the assembly hall, approached from the main entrance hall, and arranged so that visitors and parents can use the staff coat rooms and lavatories during special school or independent functions.

The smooth flow of the children through the school is well worth studying. From their separate entrances at each end of the classroom block they pass through a well-arranged coat room and into the lower communicating terrace from which they have direct access to the playgrounds and to the water-closets ranged along the ends of the playgrounds—an ideal position. In the centre. where the two playgrounds join, is a canteen, and on either side of it the wash basins. These again are in an ideal position, for the children will want to run out to the playground after milk in the middle of the morning break, and after their dietetically planned luncheon at midday.

Approached through "locker lobbies" from the lower terrace are most of the practical rooms : domestic science (next to the girls' entrance), physics and chemistry, biology, arts and crafts. The boys' workshops, being noisy, are isolated at the other side of the boys' playground.

The lower terrace is connected with the upper terrace (or corridor) by two ramps, each 60 ft. long, running parallel to the terrace and immediately accessible from the boys' and girls' entrances. There are many very strong criticisms of ramps, but in this scheme they are intelligently used and the direct and intimate connection they give between the two floors is some justification for employing them. Ramps which turn corners and are confined between two walls are certainly not to be commended, but these are continuous and free on both sides.

The classroom arrangement on the upper floor is ingenious. It provides the advantages of isolated pavilion classrooms without the disadvantages of a straggling over-dispersed plan which they generally produce. The pavilions each have their own screened terrace for open-air teaching. It was annoying to find that the south-east aspect had been deliberately blocked by a blank wall, but the author has good reasons for placing the classrooms at right-angles to the generally accepted position—greater noise separation from the lower floor. morning and afternoon sun through the window walls—so this obstinacy is rational.

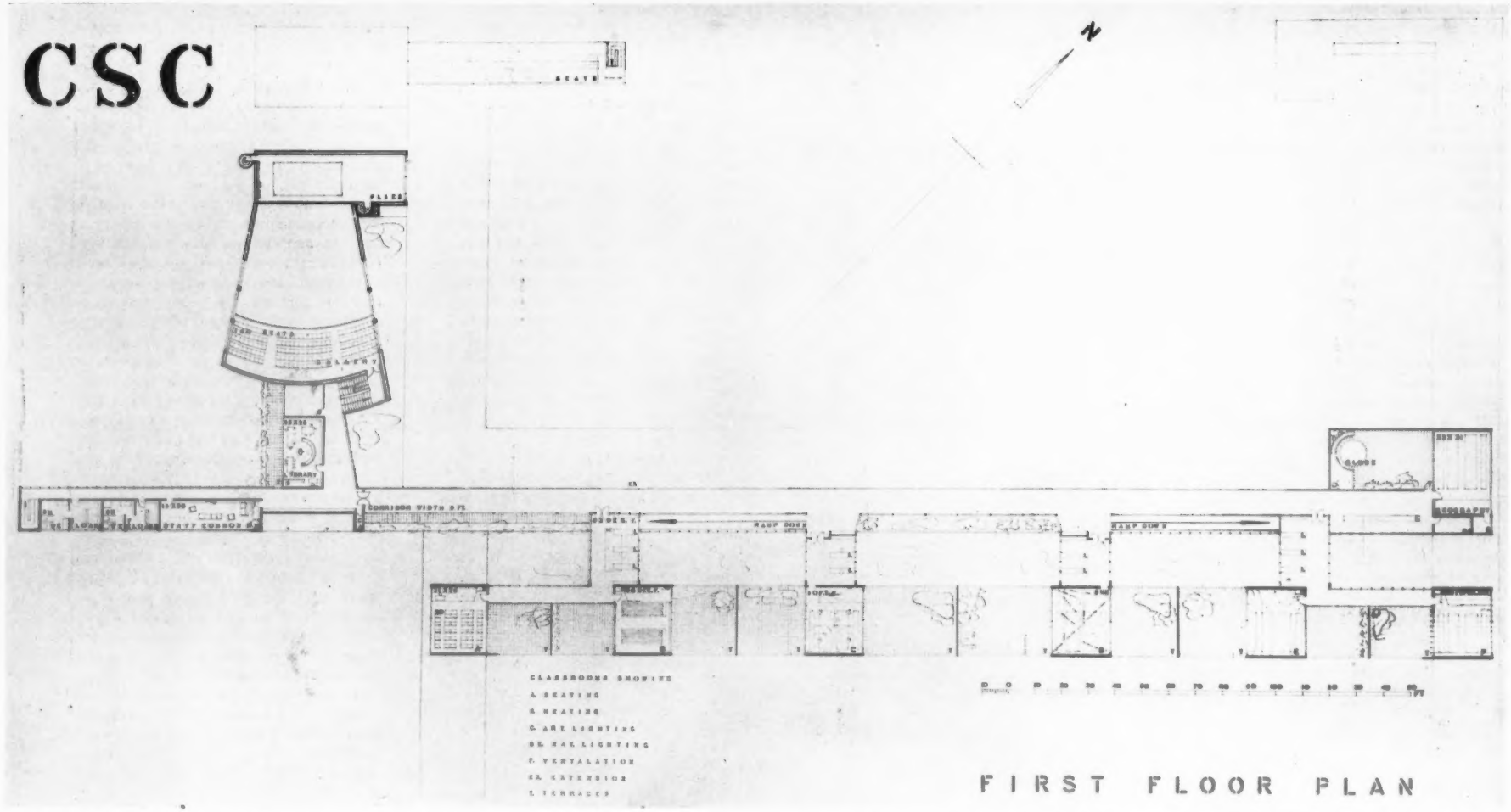
The report takes pains, great pains, to show that the scheme is devised to satisfy the physical and psychological needs of the children. But the fact that the two most noxious industries of the school, chemistry and cooking, have been placed immediately under the sunlit classrooms, is not apparently considered a distraction. However well ventilated these lower rooms may be, the open-air classes above will not always be able to rely on pure uncontaminated air to help creative impulse and concentration. And yet we are told (we might have guessed) that "physical discomforts retard the working efficiency of the brain in direct proportion to the degree of discomfort."

Although planned on two floors, classrooms and practical rooms can efficiently "discharge their loads" directly on to the hard playground and yet are quite effectively shielded from the noise of play. The relation of plan units to play spaces is unusually good in this scheme.

The elevations have a lightness and ease in harmony with the plan and structural method. The attribute of lightness, admired by most of us in any present day building, is specially admirable in a school building which can so easily oppress the children with unresponsive bulk. Here in this building children could freely run about not feeling crushed, confined. Viewpoints, too, have been carefully thought out.

*

The first 18 pages of the report (50 pages in all) describe the research on



which the plan was based. Most of it is tabulated in the form of maxims, choice examples of which illumine the site plan. Some we knew already, as "far more concentration is needed to learn a new thing than is needed to go over familiar ground." Others, as "mental depression is caused by blue light," took us by surprise and made us blink.

The report is nevertheless thorough, describes the reasons for the plan in detail, gives clear descriptions of technical points, is elaborately catalogued and reinforced with back references.

Construction

Two present day structural methods, reinforced concrete and prefabrication, are discarded. Reinforced concrete rightly because it is too permanent, too heavy, too costly. Prefabrication, with not such good reason, because it is "impractical owing to the freedom of the plan." No well devised prefabricated system need baulk the freedom of a plan. However, the system adopted is quite practical except that it would not have the advantages of easy dismantling and replacing which a dry prefabrication system would have.

There is a light frame of T-pieces welded together in the form of studding and bracing. The outside is covered with expanded metal lathing and rendered with "three coats of mortar," finished with a final coat of Portland cement, divided into panels by copper Ts which take up any hair cracks which may occur. Wallboard finished with plaster, acoustic plaster or tiles is used inside according to position. Non-structural partitions are of "gassed" concrete blocks.

First floors are formed of R.S.J.s at frequent intervals with precast concrete slabs between.

Heating is by radiant ceiling panels.

The table of cubing contains an interesting comparison of the normal cubes suggested for each unit by the Board of Education with the cubes allowed in this plan, with prices. The cost of the actual building is put at £31,010. The cost inclusive of heating, lighting and sanitary fittings, playgrounds, etc., is £34,500. This represents £62 per head as against the Board of Education's normal £50.

catalogued and reinforced with back

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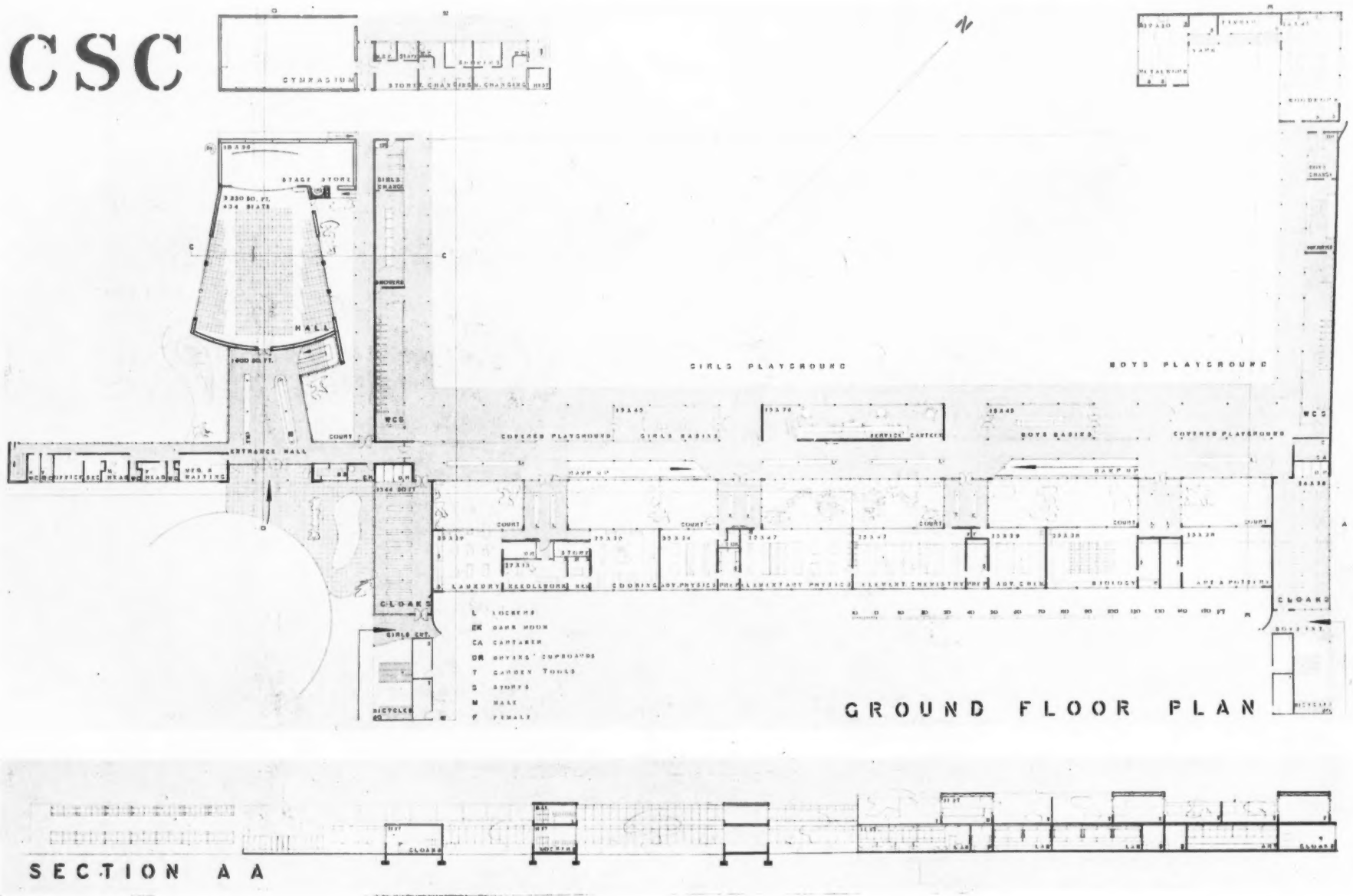
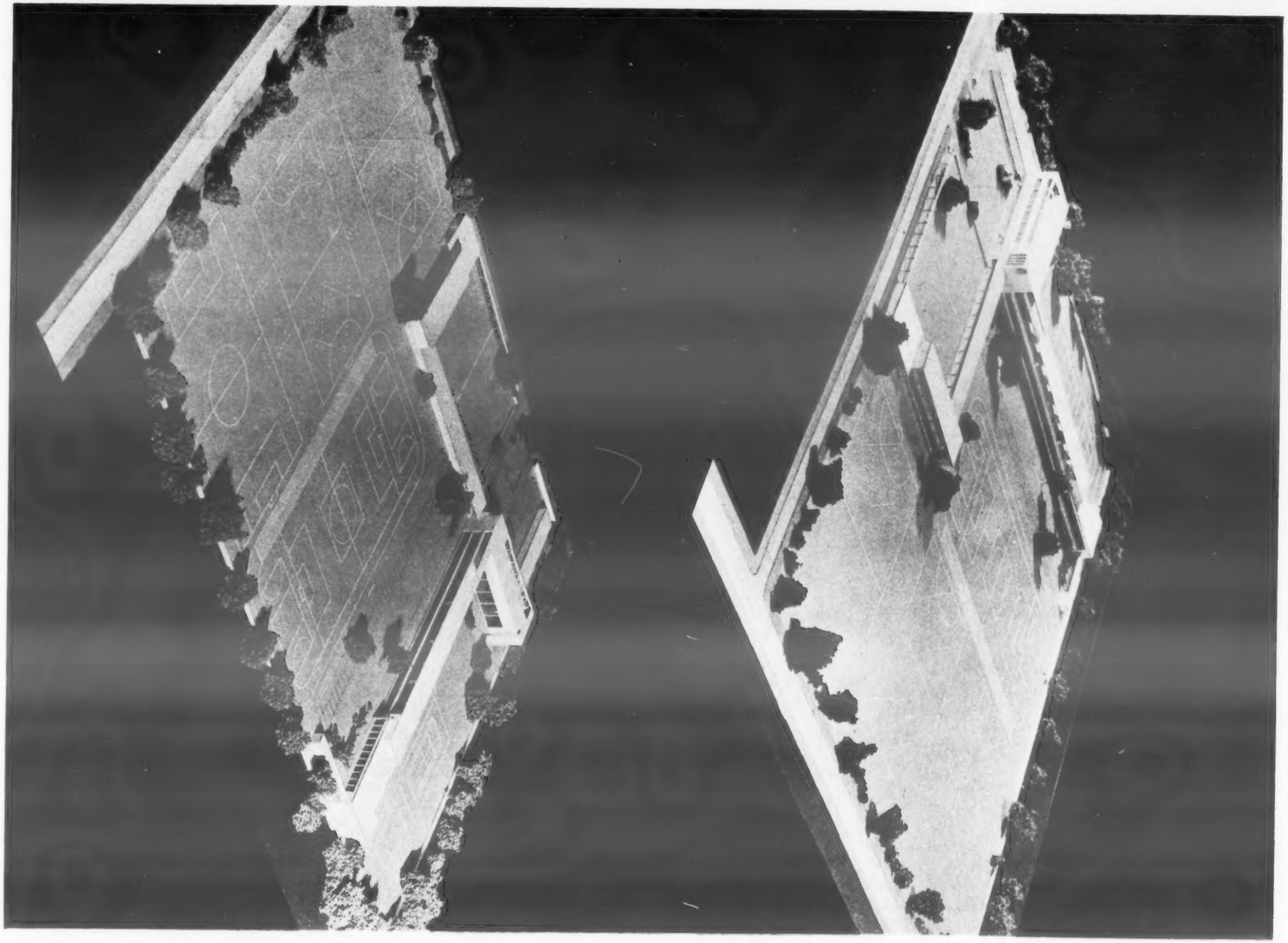


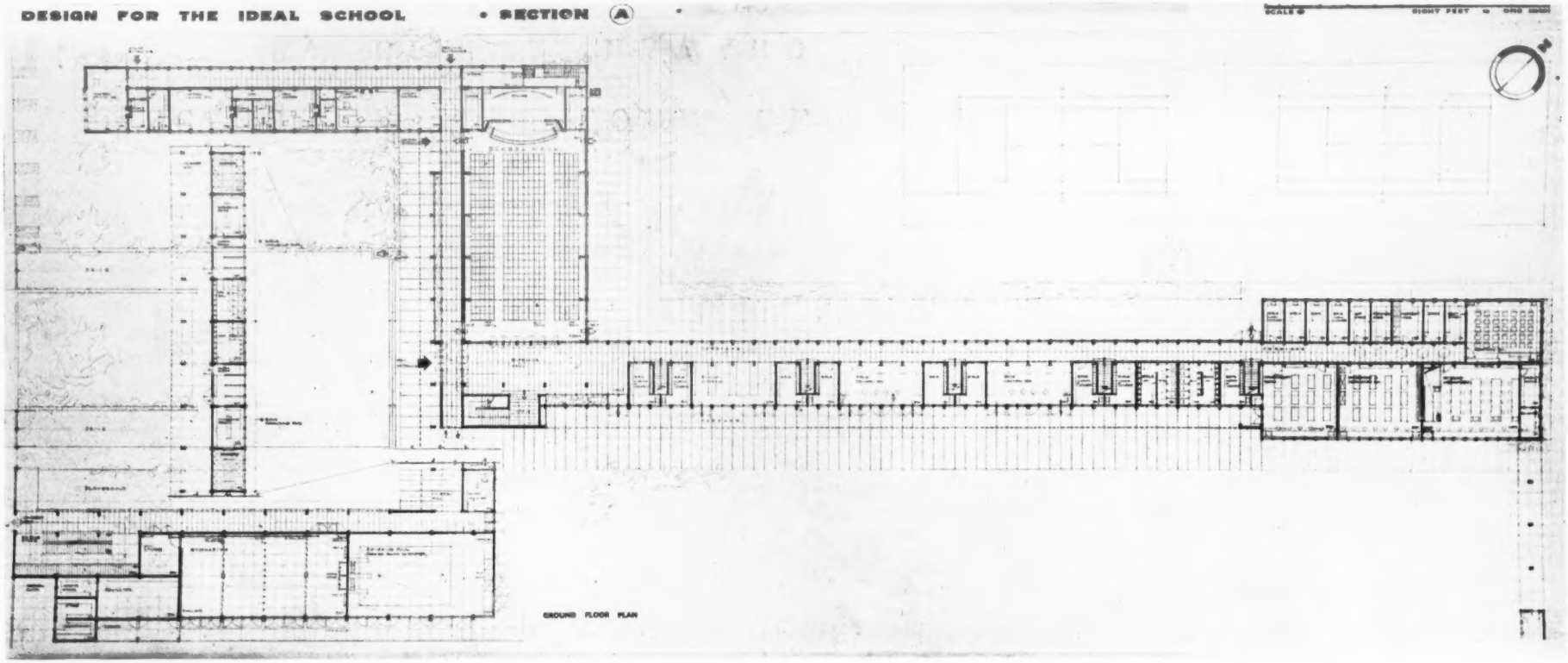
SECTION A • WINNING DESIGN, By DENIS CLARKE HALL

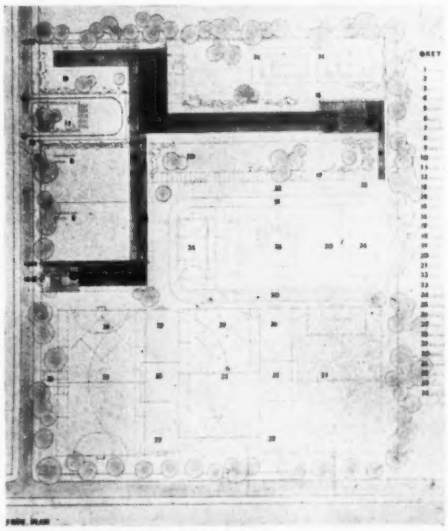
SECTION A. SECOND DESIGN: By BIRKIN HAWARD



DESIGN FOR THE IDEAL SCHOOL • SECTION (A)

DESIGN FOR THE IDEAL SCHOOL • SECTION (A)





PLAN

The very extended layout results in impressive elevations at the cost of long corridors in the building. As the blocks are well sited the playing fields are ample and are very well laid out. The planning of the classrooms on the first floor, with a staircase to each pair, results in unobstructed windows on each side. The space below is occupied by lavatories, cloakrooms, common rooms, etc. The windows on the sunny side of the assembly hall are at high level, and the stage is shallow. The dressing rooms are cramped, as is the projection room. The staff wing has a fine aspect and good access to the stage, but the visitors' entrance is poorly placed.

A separate wing of gymnasium, swimming pool, etc., is connected to the main block by a long line of changing rooms. These are well placed, but long distances are involved.

Construction

Timber is chosen for economy and elasticity, the 40-year life being borne in mind.

Externally the covering is of 4 ft. wide steel-braced panels of horizontal Western Red Cedar weather-boarding, beneath which there is a lining of bitumen felt with asbestos reinforced aluminium foil between studs. The internal lining is of ½-in. insulating board faced with thin medium hardboard.

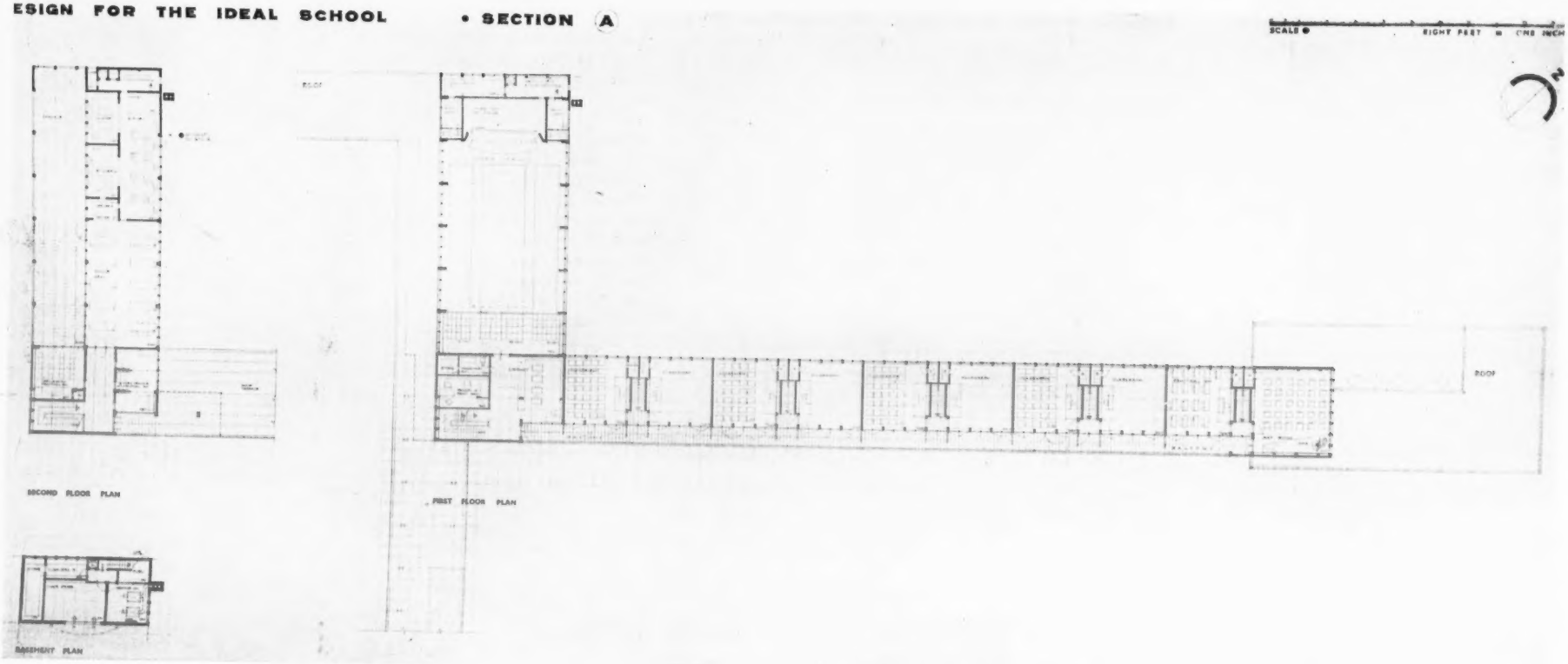
The assembly hall has wood veneers to gallery level, while science rooms, handicraft rooms and staircases are lined with asbestos-cement sheeting on insulating board, the staircases being of reinforced concrete with teak treads.

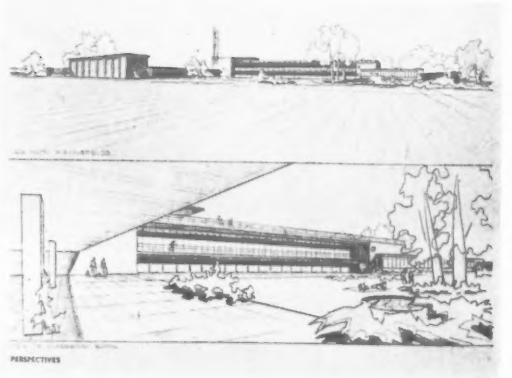
Double partitions with cork packed cavity are recommended where soundproofing is required.

Floors to classrooms are of polished cork and windows are standardized throughout.

Heating is by hot water radiators recessed flush below windows except where this proves impossible, when floor and ceiling radiant panels are to be used.

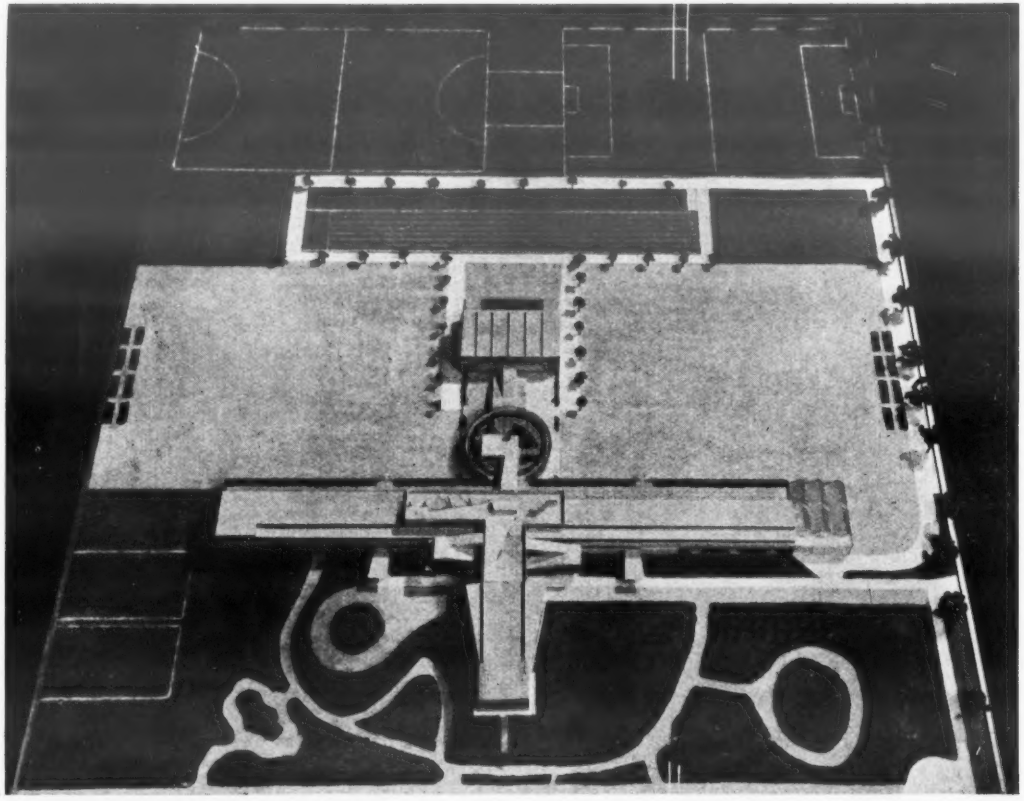
£28,668 is estimated to be the cost, or £57.5 per pupil excluding fittings. (The building's fittings— not the pupil's.)

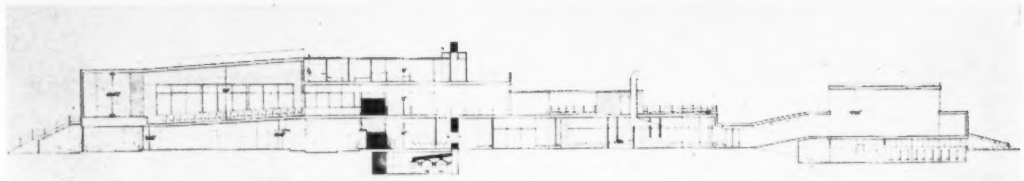




SECTION A • SECOND DESIGN: By BIRKIN HAWARD

SECTION A - THIRD DESIGN: By H. SPENCE-SALES AND JOHN BLAND





PLAN

The placing of the school buildings in the centre of the upper portion of the site, and the provision of very large paved playgrounds, results in great restriction of the playing fields.

A disadvantage of a symmetrical plan sited as this is, is that the girls have to pass the boys' entrance to reach their own, some distance farther. The planning of the entrances themselves, lavatories and cloakrooms, however, results in a really open and spacious approach to the foyer, the nucleus of the plan. The changing rooms in a semi-basement below the gymnasium are treated with similar lavishness.

This competition has shown a widespread tendency to isolate the staff rooms; in this plan they are planned below the assembly hall and are separated from the rest of the ground floor by a covered driveway for cars. This gives a fine staff suite and splendid approaches for visitors, but has resulted in poor aspect and a long distance between the teachers' rooms and the stage.

The circular refectory has a central open kitchen which it would probably be impossible to ventilate adequately.

The whole of the classrooms are on the first floor, planned for 40 pupils, and with a balcony on the south-east of each. The seating is badly arranged in the assembly hall, as many as 15 seats being entered from one end.

The roof over the central portion has been pleasantly treated with sun screens and two rest rooms. The exterior treatment generally is direct and straightforward, with colours which might be interesting in execution.

An interesting idea is expressed in the diagrams of "structural progression," the school being envisaged as being at first in a rural area which is gradually built up. In its first stage the building would accommodate 160 children, and could be increased first to 320 and then to 480.

Construction

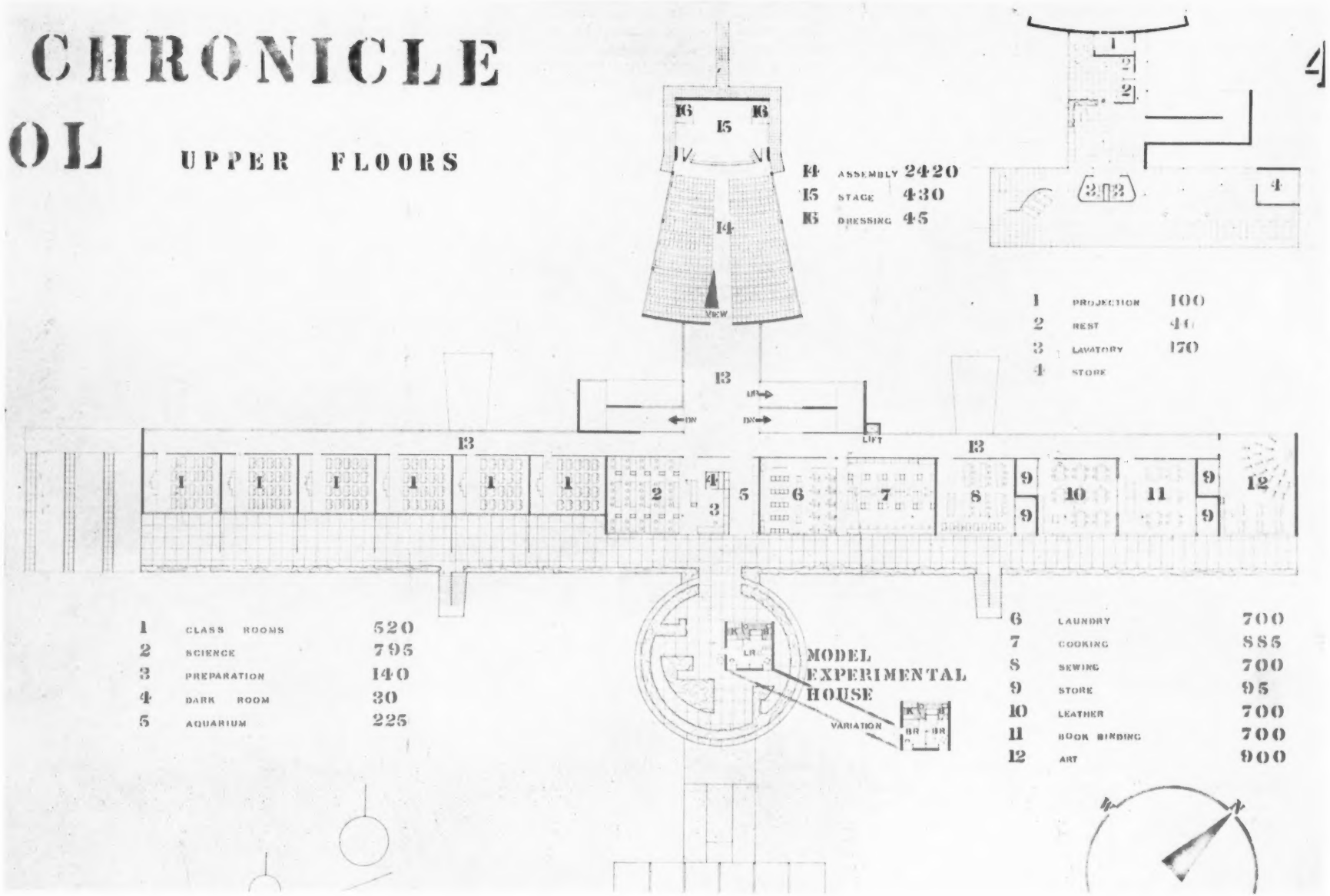
Rolled steel angles are used, welded toe to toe as square hollow columns and two channels as beams, the whole forming a welded steel structural frame. Self-supporting sheet steel forms act as hollow tiles and become the shuttering for the concrete floors and flat roofs, the continuous bottom steel plates of the forms becoming the ceilings.

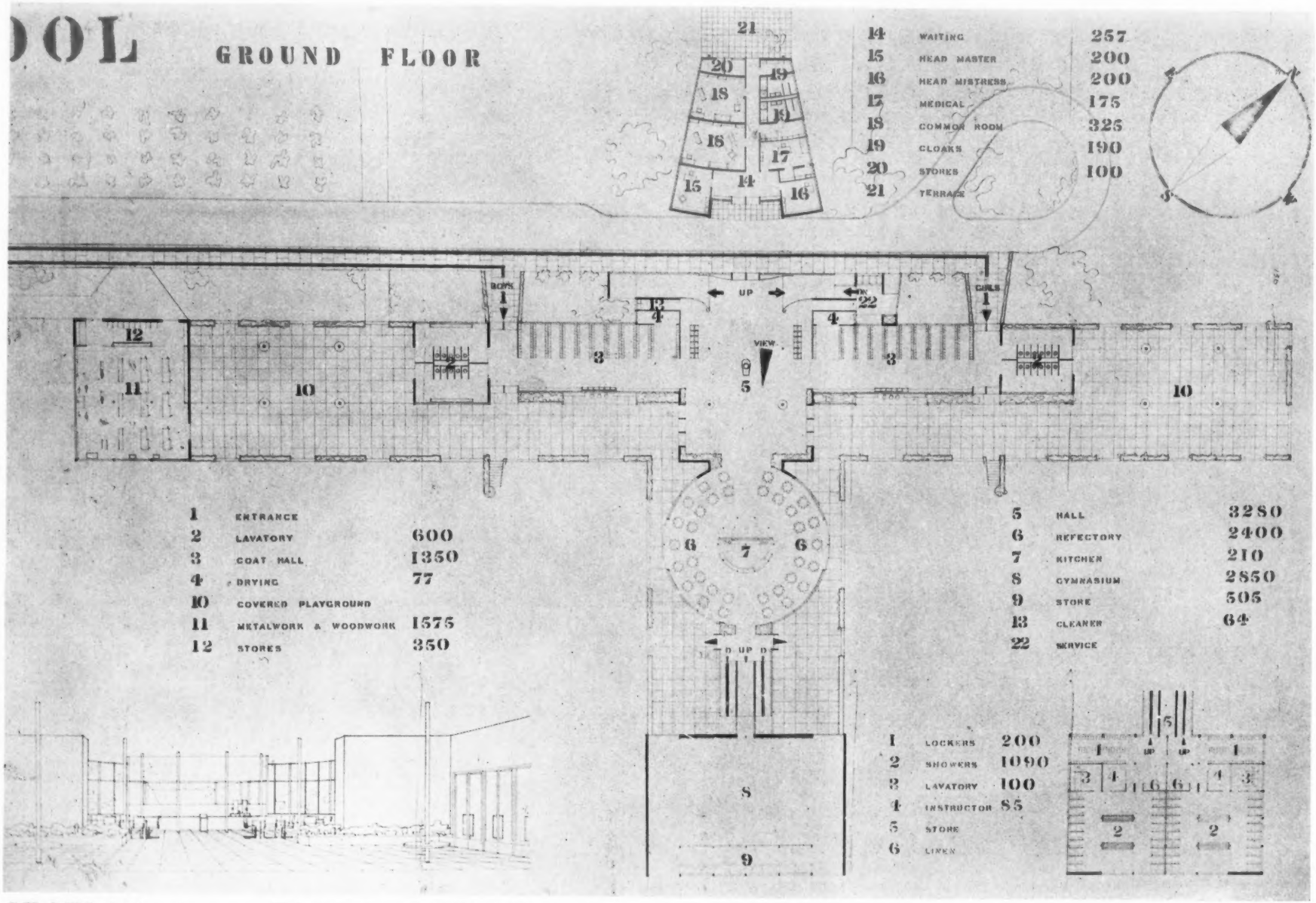
Panel fillings to the steel frame are of 4½ in. brickwork separated by a 2 in. cavity from 2 in. breeze blocks, the whole outside being rendered in tinted plaster.

Floors are covered with jointless composition and £42,532 is reckoned to cover the cost including all playgrounds, etc.

CHRONICLE

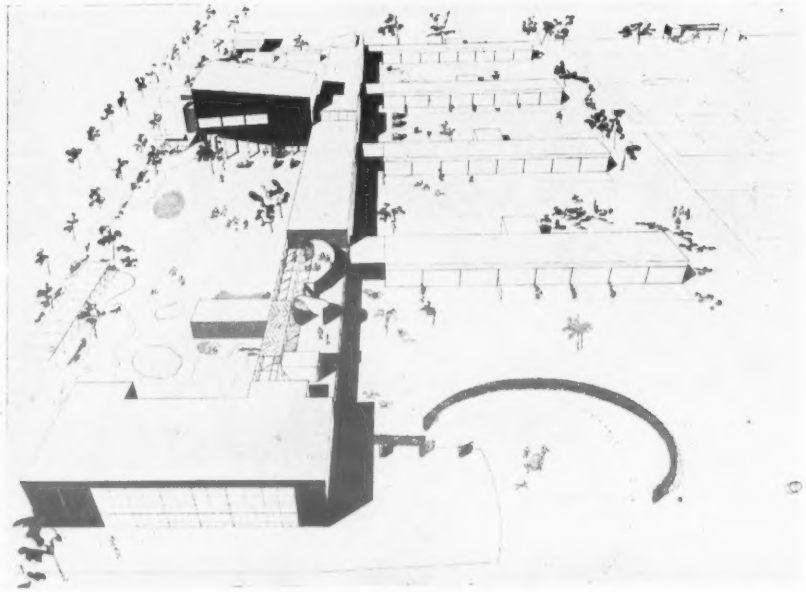
OL UPPER FLOORS

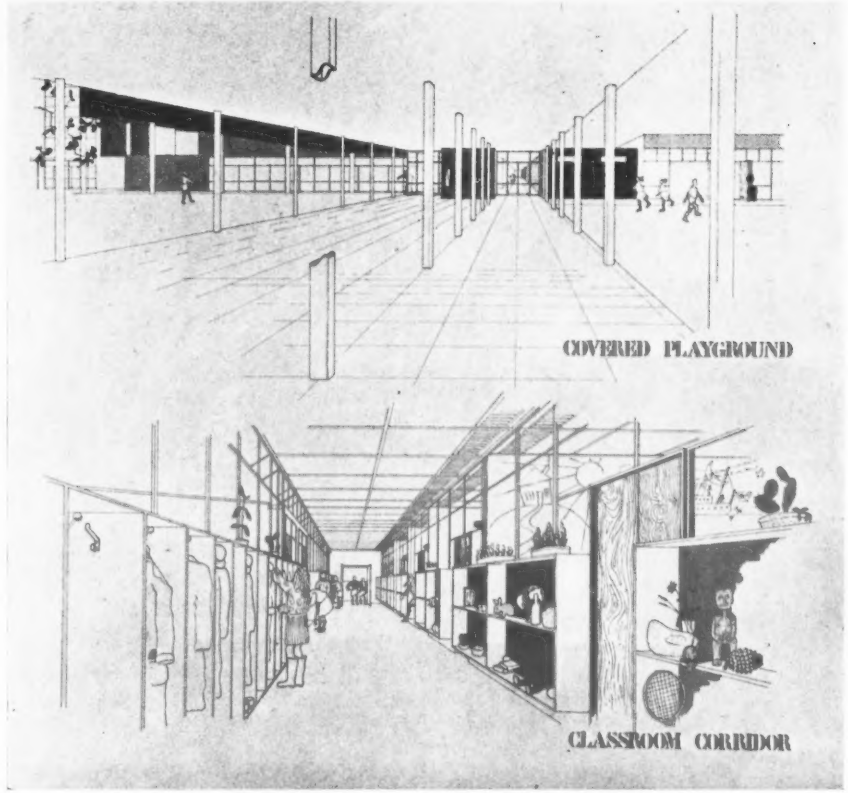




SECTION A • THIRD DESIGN: By H. SPENCE-SALES AND JOHN BLAND

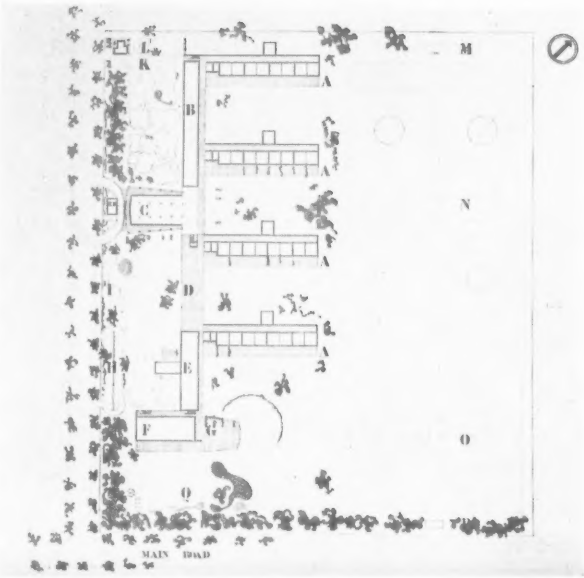
SECTION A • HIGHLY COMMENDED DESIGN • By WELLS COATES, DENYS LASDUN AND ASSOCIATES

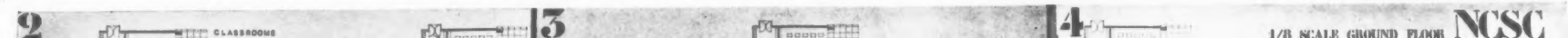


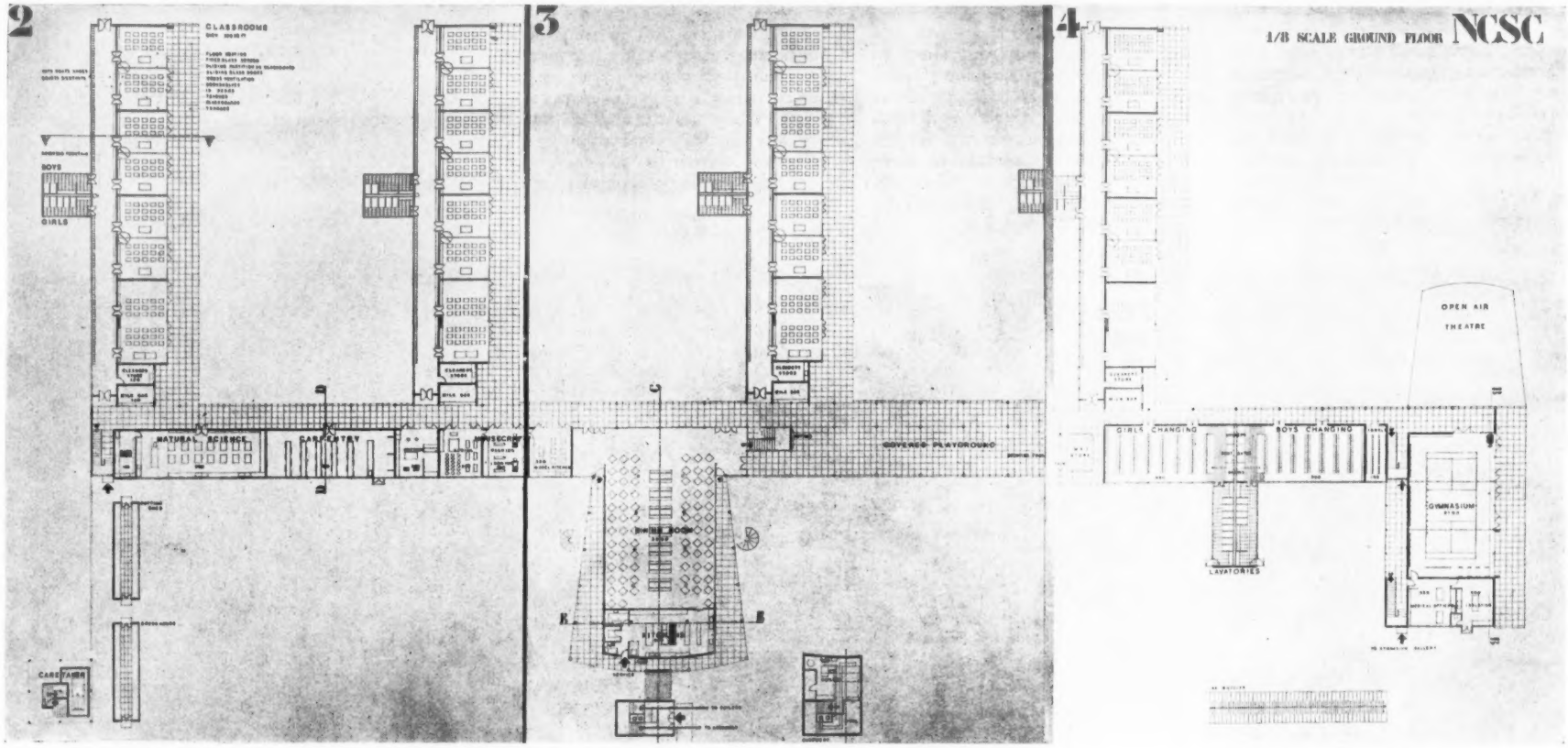


KEY

A Classrooms & Lavatories
B Handicrafts Music, Reading, Art Rooms over
C Main Entrance Kitchen, Dining Room, Assembly over
D Covered Playground Staff Rooms over
E Changing Rooms and Lavatories Solarium over
F Gymnasium and Medical
G Open Air Theatre
H Bicycle Shed
I Hard Playground
J Children's own Gardens
K Potting Shed and Greenhouse
L Caretaker's Cottage and Garden
M Pavilion & Groundsman's Store
N Large Games Fields
O Small Games Fields
P Shelter
Q Sandpits, Swings, Paddle Pool, etc.







PLAN

Messrs. Wells Coates and Associates' block plan is attractive, with a long block of changing and practical rooms parallel with the side road and four projecting wings of classrooms. The grounds are pleasantly laid out and well expressed on the drawings. The feature to which an education authority would probably object is the difficulty of supervision of entrance. There is no definite entrance, as a large portion of the main block is open and can be entered from all sides. Coats are hung in recesses along the corridors, but it would be impossible to prevent theft and some pupils would have to walk long distances inside the building in wet clothes.

The assembly hall is well planned on the lines of a public building, but has no side light and is mechanically ventilated. The projection suite is good. Dressing rooms to the stage appear to be omitted, though there is provision for an extending stage on which ambitious productions could be mounted. There is not sufficient clearance for the camera throw, and the sight angle from the front seats is too steep.

The drawings have very well applied colour and are a good exposition of the many attractive features of the building.

Construction.

In this scheme a reinforced concrete floor slab carries all loads. A light steel frame to grid dimensions that are kept to throughout is formed of box columns—3 in. by 3 in. angles welded toe to toe—which support transverse steel frames. Secondary girders at 5 ft. centres support the roof and hung ceilings. The roof is formed of corrugated asbestos sheets insulated and asphalted. All rainwater goods are of asbestos, and the down-pipes pass inside through ducts. Floors are of the pre-fabricated light steel trough type. Walls are framed up of light steel, tee sections forming a grillage to receive standardized panels of fixed glass frames, opening glazed frames or facing panels of moisture- and bacteria-proof $\frac{3}{8}$-in. plywood, the joints being pointed in mastic. These standardized panels can be interchanged at will as necessity dictates, so that flexibility is the keynote of construction and decoration. The interior coverings to walls are standardized panels of plywood or building board, with asbestos backed acoustic board ceilings and Granwood patent flooring to classrooms.

Heating is through the floors in classrooms and corridors, with convectors elsewhere.

The total cost, including a plenum system for the hall, is £57,044.

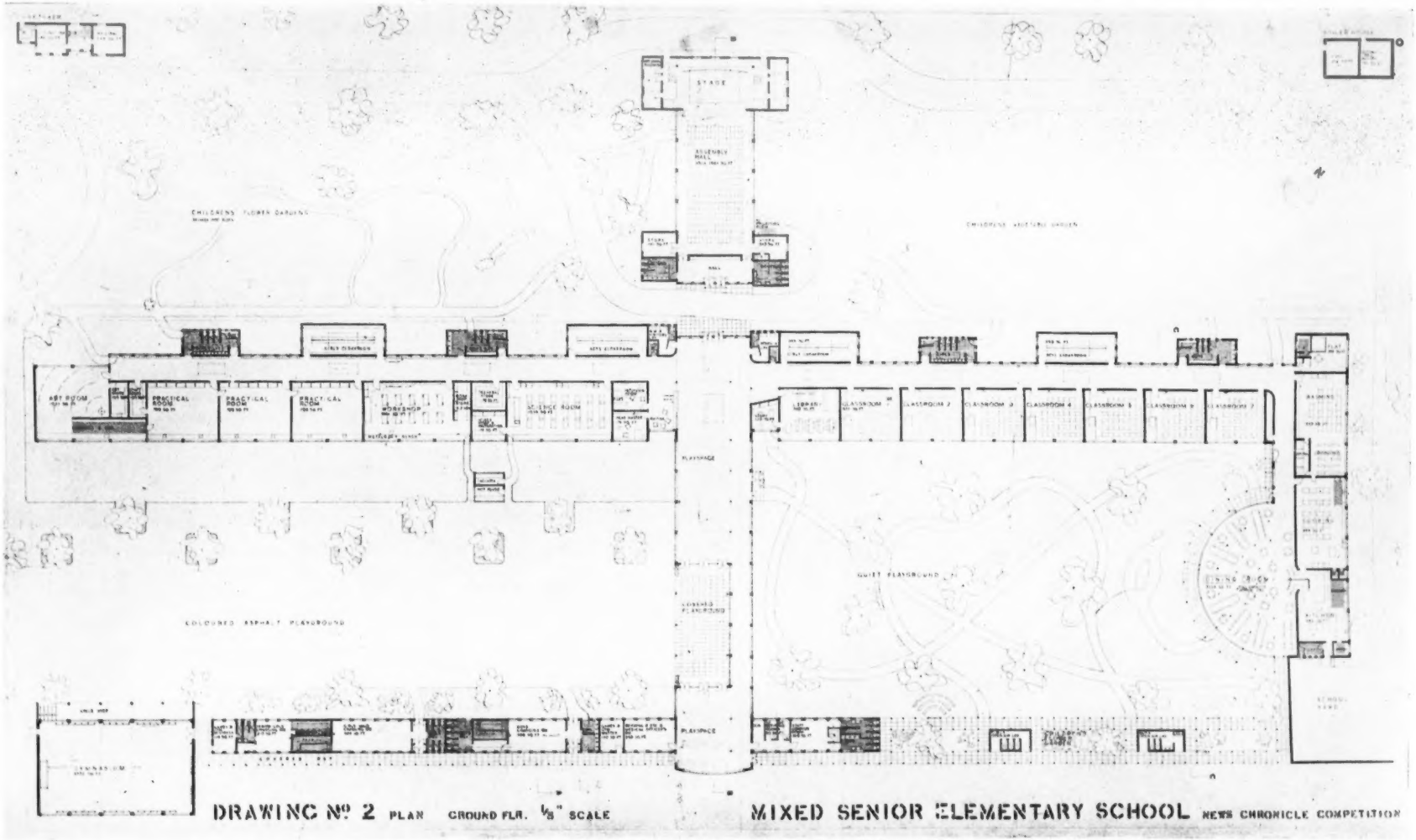
DRAWING No 5

PERSPECTIVE VIEW FROM THE SOUTH

PLAN

Mr. Greville Rhodes, No. 95, is conscious of a certain traditional double-quadrangle rigidity and is at pains to give reasons for it. Among the reasons: (1) It is better for class-rooms to look across gardens at other school buildings rather than at ugly elevations of neighbouring buildings (apparently a *sine qua non*). (2) "A flat playing-field can look very depressing on a dull day . . . but its value in creating a feeling of space cannot be overestimated," so the quiet play garden opposite the class-rooms has been enclosed by a pergola (and "open-air lavatories") which at the same time allow a rationed glimpse of the playing-fields beyond. Nevertheless, the rigid symmetry imposed on the scheme makes it somewhat constipated.

Other points: (1) Lavatories and coat rooms are divided into two for each sex and disposed along the length of the main communicating corridor. This is a definite advantage in a plan of any great length, and as the latter would be used for physical



training during school hours there would be considerable interruptions. (2) The headmaster's room looks on to this playground and is uncomfortably near the enclosed play space and the main crush hall. (3) Some of the staff accommodation appears to be missing. (4) The science room is not isolated and is likely to "smell" out a large part of the school. (5) Classrooms miss the opportunity of direct contact with the out-of-doors. (6) The plan as a whole, although very much freer than the traditional double quadrangle type, does not suggest any fundamental advance.

Construction

Construction takes the form of steel frame, with screen walls of 5 in. by 2 in. studding. These are covered throughout on the inside with building board faced with plywood. The outside skin is diagonal boarding, building paper and a facing of Canadian red cedar weather-boarding.

Flooring is of hardwood strips. The flat roofs are of ½-in. building board on top of which is a layer of building paper. Above this tongued and grooved boarding carries a double layer of 3-ply Ruberoid.

Heating is by low-pressure hot water radiators in the classrooms. The total cost is estimated at £41,091, or £85.6 per child.

SECTION A. — By S. DURIEU

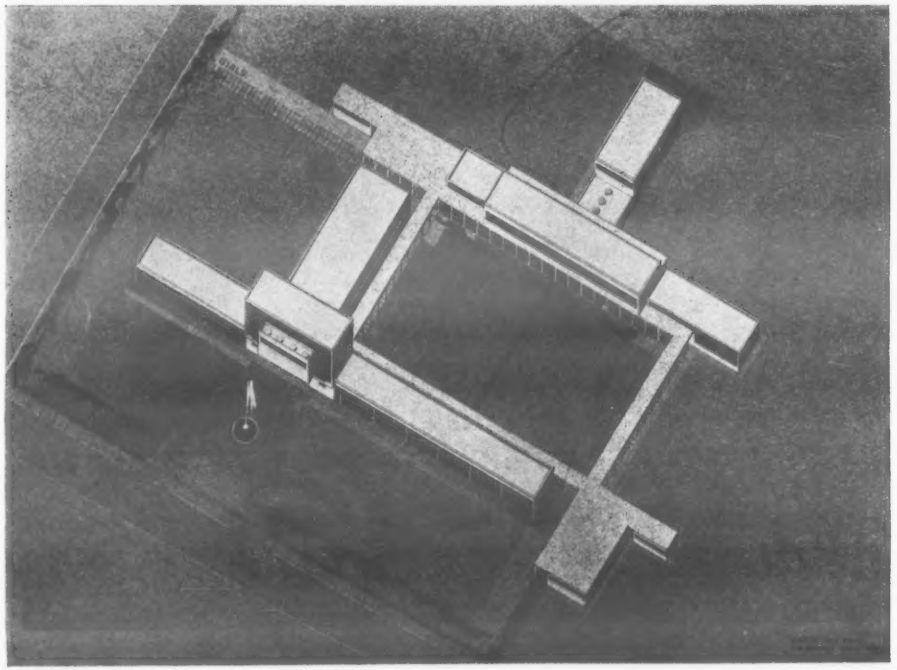
S. Durieu's scheme (below) has a ready-to-build reasonableness which comes as a relief after struggles to analyse the many extravaganzas submitted.

The buildings in this scheme are placed forward on the site. This arrangement has the advantage that it is possible to plan the assembly hall with entirely independent entrance for the public from the main road. As there is already a tendency to use school halls as social centres in the evenings, this complete separation of the hall is a worth-while feature.

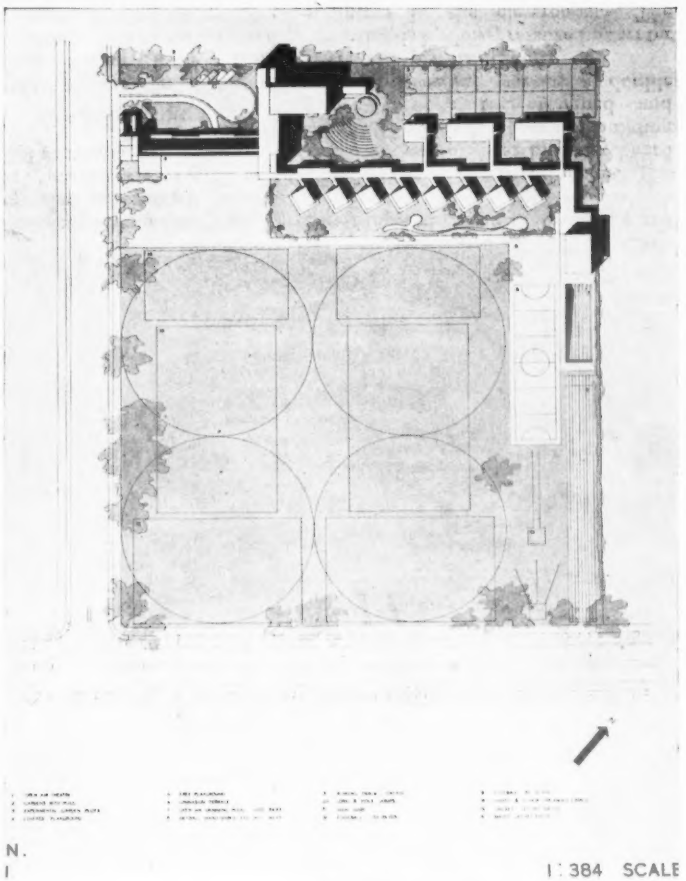
The plan is simple, but unfortunately it has several serious faults. The entrances for boys and girls have been placed at opposite corners of the building, the boys entering from the main road, the girls from the side. Since the plan assumes a co-educational system there is no need for this separation and it leads to unevenly balanced access to the various units and unnecessary cross-traffic. Even if some fetish makes it seem desirable to place girls' and boys' lavatories as far away from each other as possible, the object of such separation is lost if access to each lavatory is from centres of circulation equally used by boys and girls between school hours. Incidentally, lavatories are not well distributed and have not direct access from the playgrounds.

Other faults of the plan are: (1) Asphalt playgrounds are sandwiched between buildings, causing undue reverberation and restricting their use for physical training. (2) There is no dining-room — The constructional method is not revolutionary: lightweight welded steel and 11 in. cavity brick walls, roofs of waterproof concrete on steel decking with ceilings formed of building board on wood bearers.

Cost: £28,000.



COMMENDED: By PRAXIS



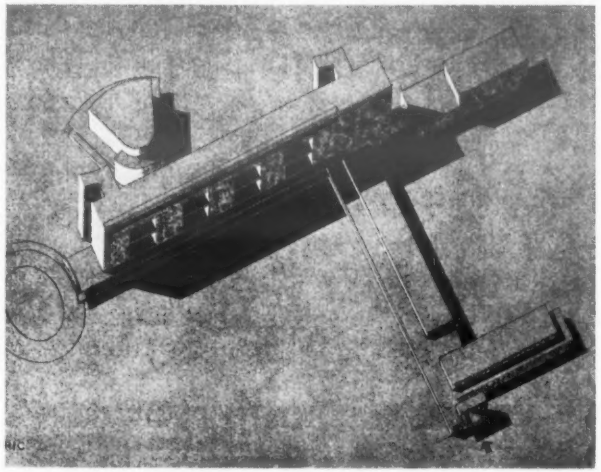
N.

1:384 SCALE

No. 93, by Praxis, is strung out along the whole of the north end of the site, leaving a wide expanse of green playing fields in front of the classrooms. This is the most popular arrangement. Advantages: it gives the school a spacious setting and removes the classrooms far from traffic noises. Disadvantage: access is restricted to one side of the site, and in some schemes, particularly the symmetrical ones, this leads to unevenly balanced circulation.

This scheme, however, solves the problem of the single approach very well. There is a direct motor road to the assembly hall which is arranged

COMMENDED: By MORRIS AND MORRISON



No. 137, by Messrs. Morris and Morrison, has the advantage that the school can be easily approached from either road, though the shape of the buildings has resulted in rather small playing fields. There is a terrace between each two classrooms, but the additional space required by this has resulted in the school occupying no fewer than four floors. This seems scarcely justifiable on such an ample site. The staff rooms and dining-room are on the third floor, but there appears to be no means of access for provisions except by the stairs.

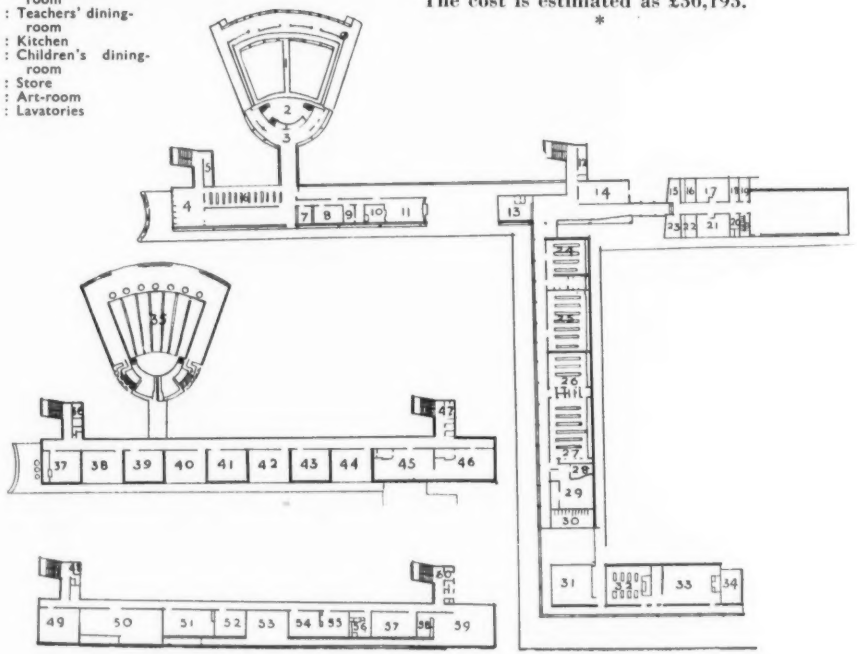
Reinforced concrete forms the skeleton, with a double filling of brick or hollow tiles rendered externally.

Floors are of hollow tiles and roofs are the same with insulating board covered with asphalt.

The cost is estimated as £36,193.

*

1 : Assembly hall
2 : Stage
3 : Foyer
4 : Entrance hall
5 : Lavatories (girls')
6 : Girls' cloaks
7 : Secretary
8 : Headmaster
9-10 : Lavatories
11 : Headmistress
12 : Lavatories (boys')
13 : Medical inspection
14 : Boys' cloaks
15 : Teachers'-room
16 : Showers
17 : Girls' changing-room
18 : Lavatory
19 : Store
20 : Lavatory
21 : Boys'changing room
22 : Showers
23 : Teachers' room
24-25 : Science-rooms
26-27 : Domestic science
28 : Kitchen
29 : Housecraft flat
30 : Bicycles
31 : Heating and fuel
32-33 : Handicrafts
34 : Garden store
35 : Upper part of assembly hall
36 : Lavatories
37-39-41-43 : Class-rooms
38-40-42-44 : Open air class-rooms
45-46 : Practical-rooms
47 : Lavatories
48 : Lavatories
49 : Music-room
50 : Solarium
51 : Library
52 : Mistresses' common-room
53 : Terrace
54 : Masters' common-room
55 : Teachers' dining-room
56 : Kitchen
57 : Children's dining-room
58 : Store
59 : Art-room
60 : Lavatories



so that it would be possible for the public to use it independently of the school. The children sidetrack to the coat rooms and lavatories which are linked by a covered play space. This play space acts as circulation to the classrooms.

Apparently for no other reason than to show that the covered play space (in case you haven't noticed) has cross ventilation, the coats and lavatories have been missed out of the main plan and planted way down at the bottom of the sheet. This seems unnecessarily confusing. Also unnecessarily confusing and exasperating to weary assessors is the numerical reference system of naming plan units.

The gym. and a small swimming pool are at the end furthest from the entrance, with changing rooms and a necessary reinforcing battery of lavatories. Even with this arrangement, the central classrooms and one of the practical rooms are some 100 yards from the nearest lavatory. Very few competitors have considered dispersed lavatory accommodation, and very few have broken away completely from the old tradition of lavatories as far removed as possible from classrooms.

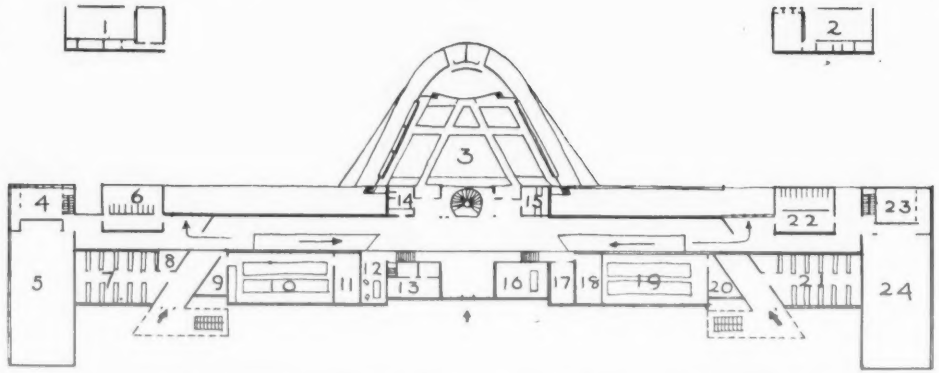
The main corridor serves as access to independent book lockers, in recesses used also for exhibition purposes, placed at intervals opposite the classroom pavilions. Arguments for isolated open-air pavilions are well known.

Administration is planned on two floors off the main entrance hall, and adequate medical inspection facilities are well placed *en route* to the class-rooms and practical rooms.

Cost : £32,207.

SECTION A — By TECTON

1 : Handicraft annexe
2 : Housecraft annexe
3 : Assembly hall
4 : Changing rooms
5 : Gymnasium
6 : Lavatories
7 : Cloak-room
8 : Drying-room
9 : Prep.-room
10 : Science-room
11 : Prep.-room
12 : Head teacher
13 : Secretary
14 : Men's lavatories
15 : Women's lavatories
16 : Medical examiner
17 : Women's staff-room
18 : Men's staff-room
19 : Geography-room
20 : Prep.-room
21 : Cloak-room
22 : Lavatory
23 : Changing-room
24 : Gymnasium

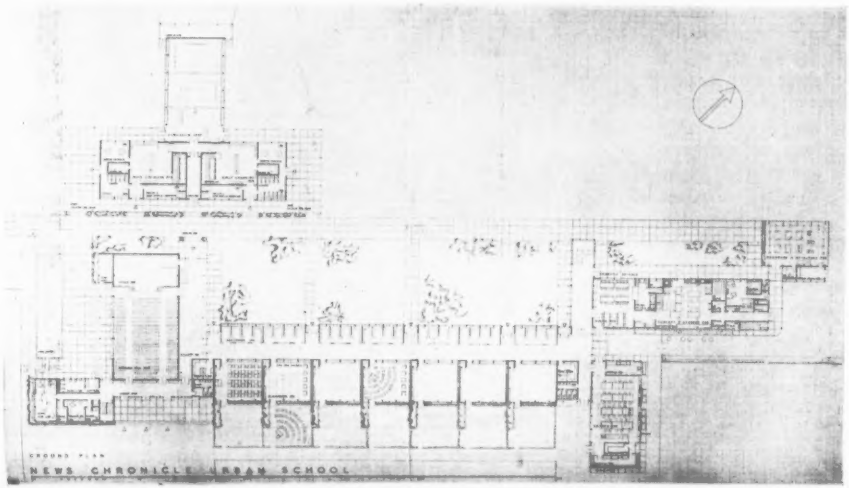


The thorough-going adoption of ramps in the design by Tecton has resulted in a good deal of complication, and seems to have confused the authors themselves to some extent. The central portion of the building is at a different level from the ends and the ramps are thus made to act as corridors. The stage is much too shallow, and the dressing-rooms, which are approached only from the stage, are quite inadequate. The drawings state that the assembly hall has "480 seats," but they are not drawn, and a rough calculation indicates about 310. The back row is 34 ft. long.

A bad feature is that the handicraft and housecraft rooms are approached across the playgrounds. There is no covered playground, but the playing fields are good. The cycle storage is well placed, but could well be larger. The dining-room appears to have been forgotten on the plans and elevations, being indicated only on the block plan.

The elevations are quite exciting, and the drawings, except the perspective, are good. The building is constructed on a reinforced concrete frame, and in view of this the pricing, by which the main block is cubed at a maximum of 1s. 1d., with lesser prices for other portions, until the gymnasium, at 6d., is reached, seems optimistic.

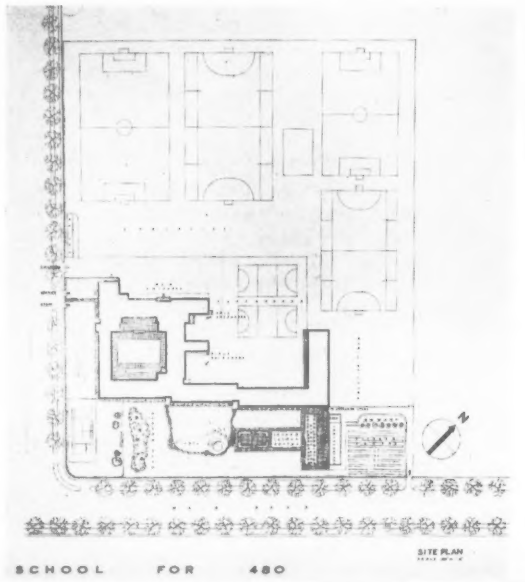
By R. GARDNER-MEDWIN AND H. MYLES WRIGHT



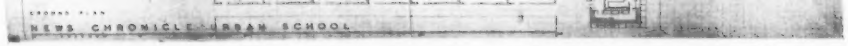
A scheme in which a determination to place all class-rooms on the ground floor in an open-air manner seems to lead to too much dispersion and site consumption. Different activities are however excellently separated and the circulations very easy. The prefabricated lattice steel, asbestos-cement and Ruberoid constructional system on a four-foot grid is very convincingly worked out.

Cost: £30,000.

By RAYMOND McGRATH



By KIRBY, SHUFFLEBOTHAM AND SHEPPARD

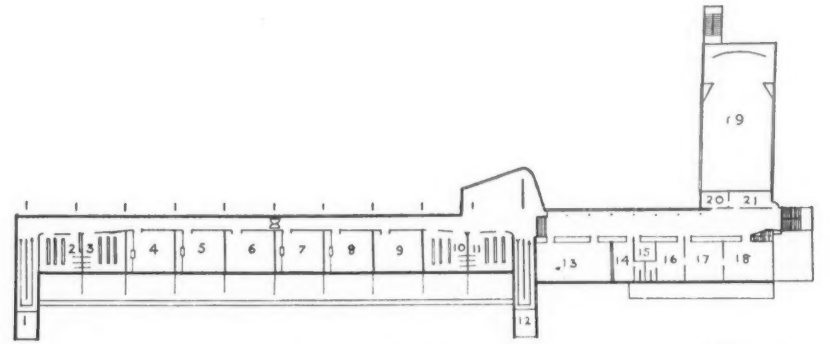


By KIRBY, SHUFFLEBOTHAM AND SHEPPERD

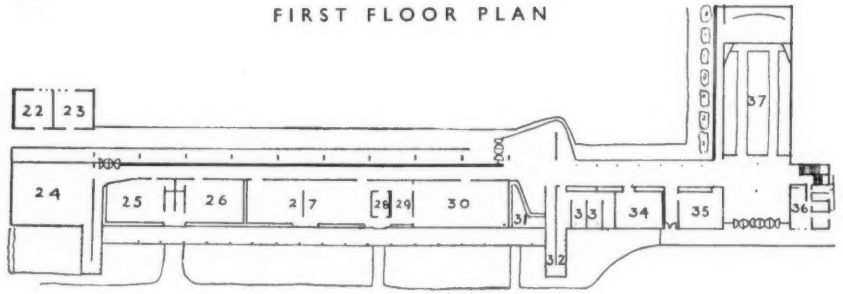
This scheme is planned on three storeys with a setback terrace formation, the roof of the lower floor forming the open-air teaching space for the floor above. It is difficult to justify a three-storey scheme on such a generous site, especially when the connection between floors is by means of bent elbow ramps on which continual cross traffic will take place. The circulation in this scheme is anything but smooth. One of the worst features is that coat rooms and lavatories are on the first floor so that children using the practical rooms on the ground floor have to come down the ramps again to get to them. The lavatories, too, are badly placed in relation to the playgrounds. There is a new idea in this scheme but not a very good one.

Construction is based on the Mopin system.

1 : Ramp
2-3 : Cloak-rooms
4-9 : Class-rooms
10-11 : Cloak-rooms
12 : Ramp
13 : Staff Room
14 : Headmistress
15 : Stores
16 : Headmaster
17 : Waiting Room
18 : Medical Officer
19 : Assembly Hall
20 : Stores
21 : Bioscope
22-23 : Changing and cloak-rooms
24 : Gymnasium
25 : Manual Training
26 : Manual ,,
27 : Domestic science
28 : Larder
29 : Kitchen
30 : Dining hall
31 : Milk dispensary
32 : Ramp
33 : Materials store
34 : Male staff cloaks
35 : Female ,, ,,
36 : Caretaker's flat
37 : Assembly hall

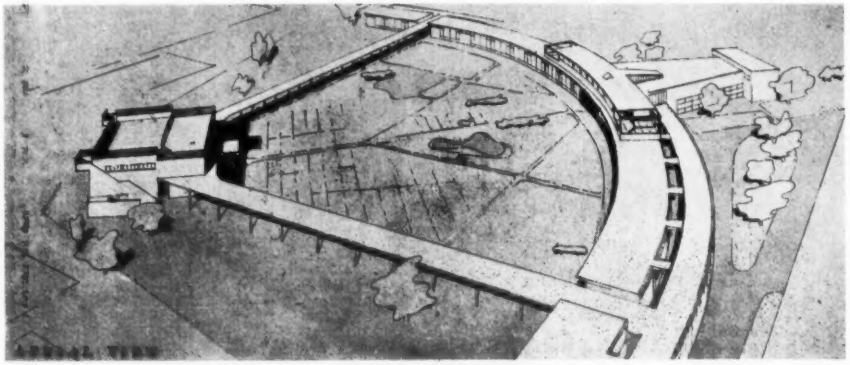


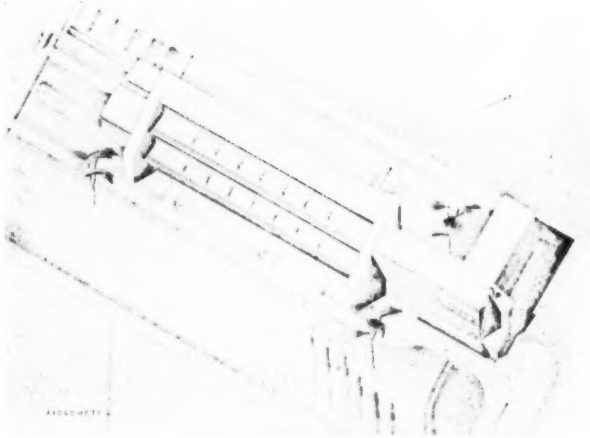
FIRST FLOOR PLAN



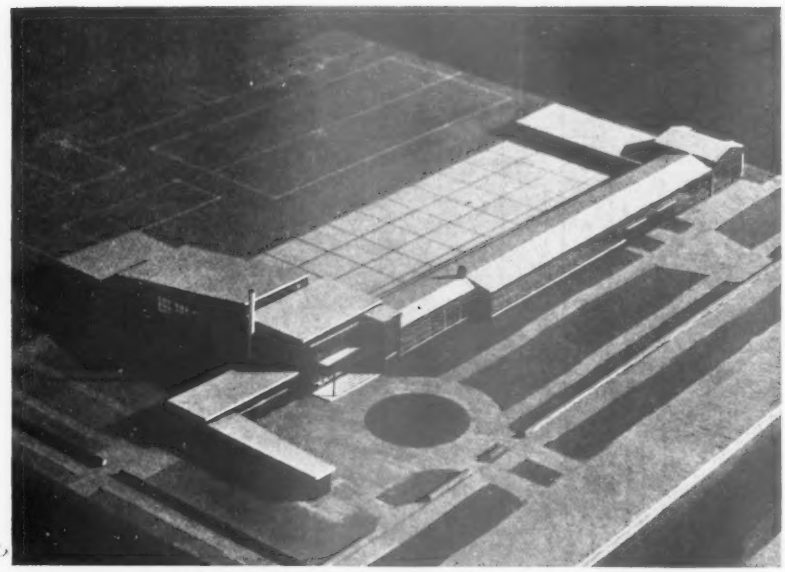
GROUND FLOOR PLAN

By MARCEL BREUER AND F.R.S. YORKE





SECTION B



A model of the winning scheme. Made in twenty-four hours.

THE WINNERS' REPORT

General Considerations

The most superficial study of the Conditions and Instructions reveals the fact that there are social and educational problems to be solved as well as an architectural one. (*a*) The social problem involves the relation of the school to the village which it serves, and the provision of amenities for common enjoyment. (*b*) The educational problem is concerned with the importance attached to the various subjects, the methods of teaching, the size of classes, and the organization of school routine.

(*a*) *The Social Problem.*—The authors consider that the school should be as far as possible an integral part of the life of the village, which should take the utmost advantage of the facilities it affords. This means not only that there should be evening classes of general and technical interest, but that the school library should be open to the public in the evenings, and that the Assembly Hall should be equipped for entertainments and social functions of all kinds.

(*b*) *The Educational Problem.*—The school has been designed as a co-educational one because the authors feel strongly that the ill-success which has attended some efforts in this direction is not a result of faults in the system, but of the way in which it has been carried out. In some "advanced" schools in this country and in many hundreds of schools in America admirable results have been attained. All the members of a small community such as this school would serve are naturally well known to each other, and the segregation of the sexes during a portion of the day can only result in unnatural feeling. Classes of 40 children have been retained, because it is obvious that a reduction of this number is impossible for all new schools on account of the expense and difficulty of staffing. Such a great reform would be instituted at once by the Board of Education if it were financially possible, but to allow for it in this design would result in a scheme of a type which could be carried out only in a few special instances and would therefore stultify the purpose of the competition.

A number of points relating to the organization of school routine are dealt with later in the report.

Site Layout

In view of the fact that the assembly hall is to be largely used by the public an approach from the main road is essential. This has been provided by placing the school at the lower end of the site, with the hall and public and pupils' entrances at the southern corner so that they are easily accessible from both roads.

The classroom block has been placed parallel with the main road, 62 ft. back from it, and screened by a line of trees. It thus obtains a south-east aspect and looks out over the school gardens instead of a noisy playground. The building is enclosed on three sides by gardens, with the paved playground in the angle formed by the classroom block and the assembly hall. Beyond the playground, and separated from it by a simple screen for climbing plants, are the playing fields of approximately 3·33 acres, the rectangular shape of which enables them to be laid out economically.

Plan of the Buildings

Entrances and Circulation.—In a co-educational school of this size it is absurd to increase the complication of the plan and the difficulties of supervision by the provision of more than one entrance and set of cloakrooms. In a building such as a theatre, where traffic is just as concentrated and less ordered than in a school, more than a single entrance would be considered ridiculous for 160 people.

The routine of a child attending the school has been visualized as follows: He enters from the main road, leaves his bicycle, if he has one, in the cycle shed, and proceeds under cover directly to the entrance. Here he passes through the cloakroom to the main entrance hall. If he is early he goes into the playground, and if not, to his seat in the assembly hall, where his name is noted in the attendance book by the person in charge of the class. After assembly the class goes to its room for the first lesson. This seems to be a more civilized procedure than the march in military formation to the assembly hall which is usual, but the plan as designed will allow of this if desired.

At the breaks the pupil crosses the corridor and goes directly into the playground. The covered play space may in wet weather be reached from the corridor without the necessity of passing through any uncovered space.

The lavatories and w.c.s have been separated from the cloakrooms, as there seems no real reason against it, and planned in a central position inside the building in accordance with modern practice in all other types of buildings. Good cross ventilation has been provided.

The classroom corridor is 7 ft. wide, and individual lockers, size 12 ins. by 12 ins. by 15 ins. in two tiers, are provided for the children, projecting from the wall so that the space beneath may be easily cleaned.

Teaching Rooms.—It is felt that the design of the normal English school classroom has now reached a point at which the physical needs of the pupils are adequately supplied, and further improvements in cross ventilation, natural lighting, etc., can be made only at considerable, and uneconomical, expense. Standard methods of ventilation and lighting have therefore been adhered to.

The number of rooms provided is in accordance with the suggestions of the Board of Education, except that a studio, or art room, has been substituted for one of the ordinary classrooms. This results in the provision of a much larger room, which need not be used at all times for the teaching of art, but which will allow the teaching of this subject under the best conditions. The large store in connection with it ensures that easels, etc., need not encumber the room when it is used for other subjects.

Stores on both sides of teaching rooms generally, provide good sound insulation and assist in the efficient running of the school.

Assembly Hall Block.—The assembly hall has windows to ground level on both sides and a clerestory at the south-east end, so that it obtains sun during the whole day. The side windows may be thrown open to a height of 7 ft. to give an open-air room.

An ample stage is provided, with removable apron stage and chair store under. No permanent proscenium was thought to be necessary, and its omission results in a great improvement in the appearance of the hall.

Very full provision has been made for the showing of lantern slides and silent or talking films. There is a permanent cinema screen, which can be covered with curtains when not in use, and the space behind it, which is occupied by the loud-speakers at high level, provides a passage across the back of the stage for use in theatrical performances. Very careful attention has been paid to sight lines and projection angles, with the result that a good view of the screen, without eyestrain or discomfort, can be obtained from any seat. The angle of sight from the front row of seats to the top of the screen is less than 27°, and the beam of the projector is above the reach of persons standing near the stage. Although these amenities have necessitated a higher roof to the hall than would otherwise have been necessary, the comfort of the audience has been thought to outweigh the additional cost.

The projection and rewinding rooms are based on the requirements of the London County Council. There is space for two full-size projectors, a lantern, a non-synchronizing machine, and television apparatus. The loud-speakers of the sound film equipment would be also used for the reception of the B.B.C. broadcasts to schools. It is felt that the future of this form of education offers such immense possibilities that every provision should be made to allow advantage to be taken of any development. One projector is essential, but the other apparatus need not be acquired until it becomes necessary.

The most that can be hoped for in schools at present is that the teachers shall have a knowledge of their subject and some ability to teach it. But by means of broadcasting it is possible for children to hear sometimes a teacher of genius, whose words may have an incalculable influence

on their lives. With the development of broadcast education this possibility will undoubtedly be realized, and its benefits should not be restricted by lack of accommodation. This is a second reason why it is suggested that children should sit instead of standing in the assembly hall.

With the apron stage in position there are seats for 168, allowing ample gangways at front, rear and sides. If the apron stage is removed it is possible to increase the accommodation to 210 without reduction in the comfort of the audience.

Behind the stage, and separated from it by an ample corridor, are dressing rooms and showers for both sexes, placed at the nearest point of the playing fields, to which doors at either end of the corridor give access. With an allowance of 15 ins. length of seat per child each dressing room has a capacity of 56. There would be more than enough space for the installation of simple dressing tables when the rooms are used in connection with the stage.

At the other end of the assembly hall are the kitchen and the medical inspection room. Milk during the morning and meals at midday would be obtained from the kitchen, which can serve directly into the hall. It would also be used during social functions, and its size is sufficient to enable it to meet all demands of this nature.

The hall itself would be used for sight testing. Parents waiting during medical examinations or to see the staff, are provided with seats in the entrance hall.

Staff Rooms.—The staff rooms are placed conveniently close to the main entrance and the assembly hall and allow proper supervision of the classroom corridor. Their lavatories could be used in connection with the assembly hall in the evenings. At these times the public would use the main doors to the entrance hall, leaving their coats if necessary in the cloak room on the left.

Library.—The library has a quiet position on the first floor, approached by stairs from the entrance hall, so that it is easily accessible to the public. There is space on the shelves or over 6,000 books, at the rate of 10 books per foot of shelving. The room has south-east and south-west aspects, and there is a terrace on which children could read in the summer.

Construction

Timber construction has been chosen because of its virtues of cheapness and adaptability, combined with good thermal insulation. A unit 9 ft. wide is carried throughout the classroom and assembly hall blocks in order to cheapen construction and simplify alterations. None of the partitions between the classrooms is load-bearing.

External Walls.—Studs are 4 ins. by 2 ins., spaced at 18 ins. centres. Main posts in the south-east wall of the classroom block, between the windows, are 6 ins. by 4 ins., and are spaced at 9 ft. centres. Walls outside are covered with paper-backed aluminium foil, diagonal sheathing, building paper, and weather-boarding showing 6 ins. on the face. Inside there is a thickness of aluminium foil and a finish of either absorbent fibreboard or plywood and linoleum. This wall has a thermal conductivity of approximately 0·07 B.T.U.s. The coefficient for an 11-in. brick cavity wall is 0·52.

Partitions.—Studs are 4 ins. by 2 ins. and are finished as described above for the internal faces of external walls, except for the omission of the metal foil.

Roofs.—Roofs to classrooms and staffrooms are supported by means of simple trusses consisting of two 7 ins. by 3 ins. principal rafters tied together with a 1-in. diameter steel rod 10 ft. above floor level. 4½ ins. by 2 ins. purlins spaced at 18 ins. centres support aluminium foil, rough boarding, and three-ply bitumen felt roofing. Below the purlins there is a second thickness of aluminium foil and finish of fibreboard. The sloping surface of the roof is thus exposed in the classrooms, but will be ceiled in lavatories and staff rooms. The additional air space which would be obtained by putting ceilings in the classrooms is valueless for insulation, but the additional height will give a greatly increased sense of space.

The roof of the assembly hall consists of 4½-in. by 2-in. joists spanning between 18 ins. by 8 ins. built-up wood beams at 9-ft. centres. The beams are supported on 12-in. by 8-in. posts.

Ground Floor Slab.—The finished level of the ground floor is 6 ins. above natural ground level. The slab is used to support the whole of the studding, but would be carried down in the form of small piers beneath the columns of the assembly hall. The walls and floor of the chair store below the stage and of the boiler house would be of concrete reinforced as necessary.

External Finish.—It is suggested that the weather boarding should be tarred, as this is the cheapest and most durable finish. Strong colours would be used on window frames, doors, etc., and the excellent appearance of this finish is shown by many buildings in the north of Europe.

Internal Finish.—The walls of all classrooms, the staff rooms, and the library are covered with linoleum to dado height. The floors are of the same material, with a cove skirting. Walls and ceilings above this level are faced with absorbent fibreboard with the butt joints emphasized by a narrow V groove. The absorbent character of both these finishes results in a great increase in the quietness and comfort of the rooms.

In the entrance hall, assembly hall, changing rooms, and corridors the floors are of hardwood boards on battens.

In the lavatories and shower rooms the walls and ceilings are faced with glazed asbestos-cement sheets, while the floors are of asphalt.

Heating.—The system used is pump-accelerated hot water, supplying "Rayrad" panels fixed in the ceilings of all rooms. Small bore pipes would be carried beneath high level windows to prevent downward draughts of cold air.

The boiler house is beneath the cloak room, so that the delivery of fuel is easy from the side road. A separate boiler is used for hot water supply, and a circular steel flue is carried up from a concrete base clear of the external walls of the building in order to obviate fire risks.

Hot water flow and return pipes from the boiler house are carried in a duct 2 ft. wide by 18 ins. deep beneath the main corridor. Branch ducts are taken from this to serve the risers for each pair of rooms. The duct to the changing and shower rooms is carried along the covered way at the side of the assembly hall, the risers for the hall itself being taken up at the ends.

Ventilating

Good cross ventilation is provided to all classrooms and lavatories. Wood windows have been used, and each 9 ft. bay is divided into three horizontally, the two upper units being horizontal pivot-hung, and the lower unit a hopper opening inwards.

The studio has a height of 12 ft. to the tie rod, instead of 10 ft. as in the other rooms, and advantage has been taken of this to provide an extra unit at the top of the windows. The windows on the south-east side of this room, and those to the classroom adjoining, are carried down to floor level, and the whole of these walls may be opened.

The assembly hall has similar windows on both sides, with a series of pivot-hung lights near to the ceiling for the clearance of stale air.

The windows to the classroom corridor are normal casements, with pivot-hung lights in the wall over for supplying cross ventilation to the classrooms.

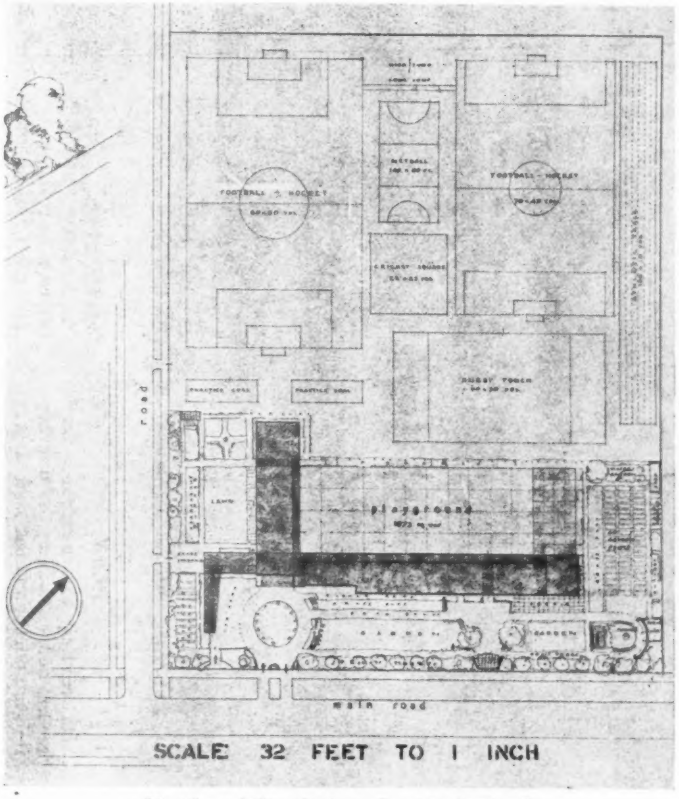
Artificial Lighting

Classrooms will be fitted with electric lighting fittings of the semi-direct type, employing good quality white opal bulbs. Special direct lighting fittings over the blackboard will be used to eliminate reflections. Daylight lamps will be used in the studio.

Lighting in the assembly hall will be indirect, with lighting plugs along the walls for the provision of stronger local illuminations where required. Provision will be made for spotlights on the stage.

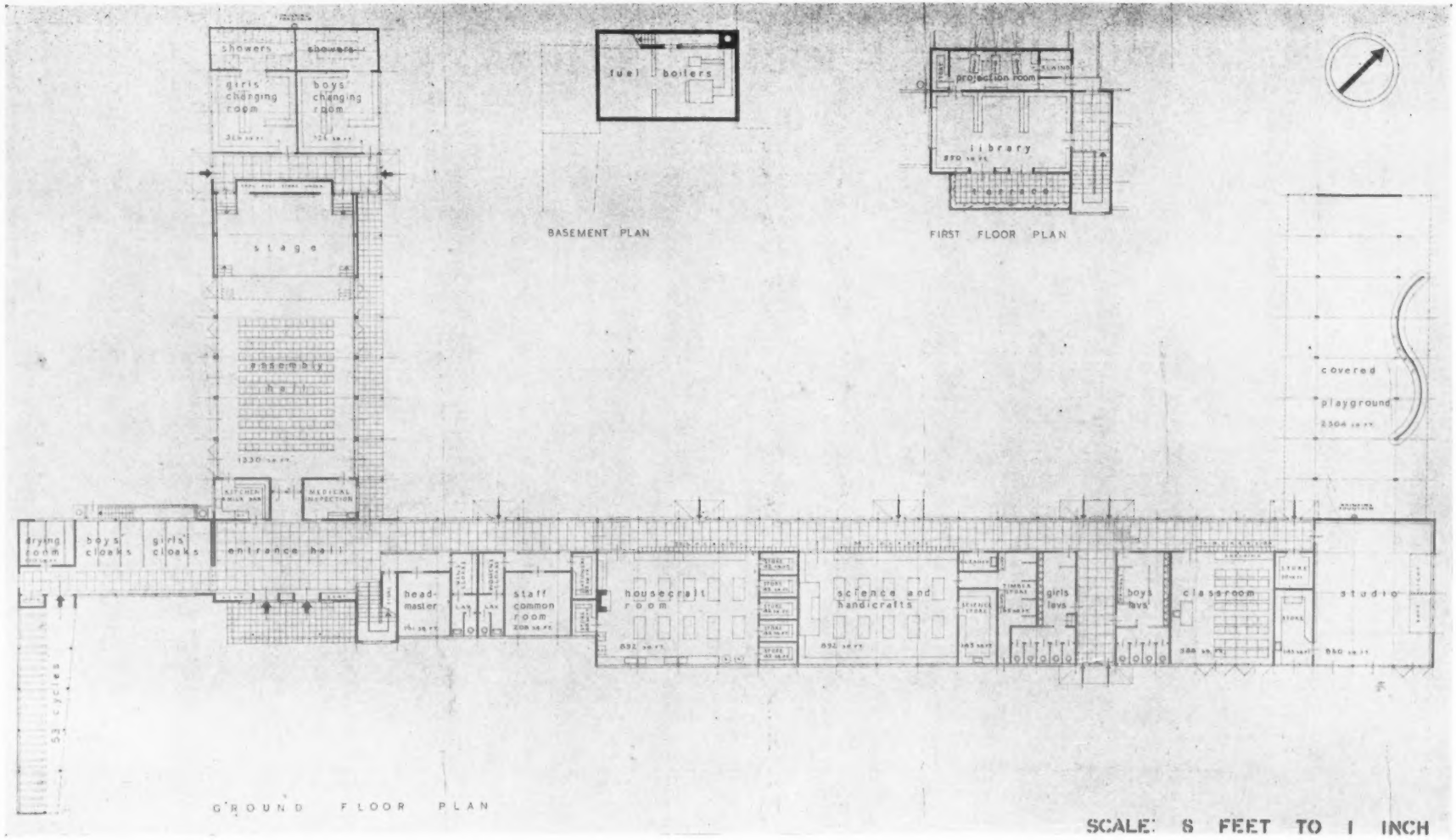
Corridors, lavatories, cloakrooms, etc., would be fitted with bulkhead lights.

Cost.—219,719 cu. ft. at 10½d. per cu. ft., £9,612; Add for fencing, playgrounds, paths, etc., £1,000; Total, £10,612.



Site plan of the winning scheme in Section B.

SECTION B • WINNING DESIGN • By DURELL, PENN AND WALTER

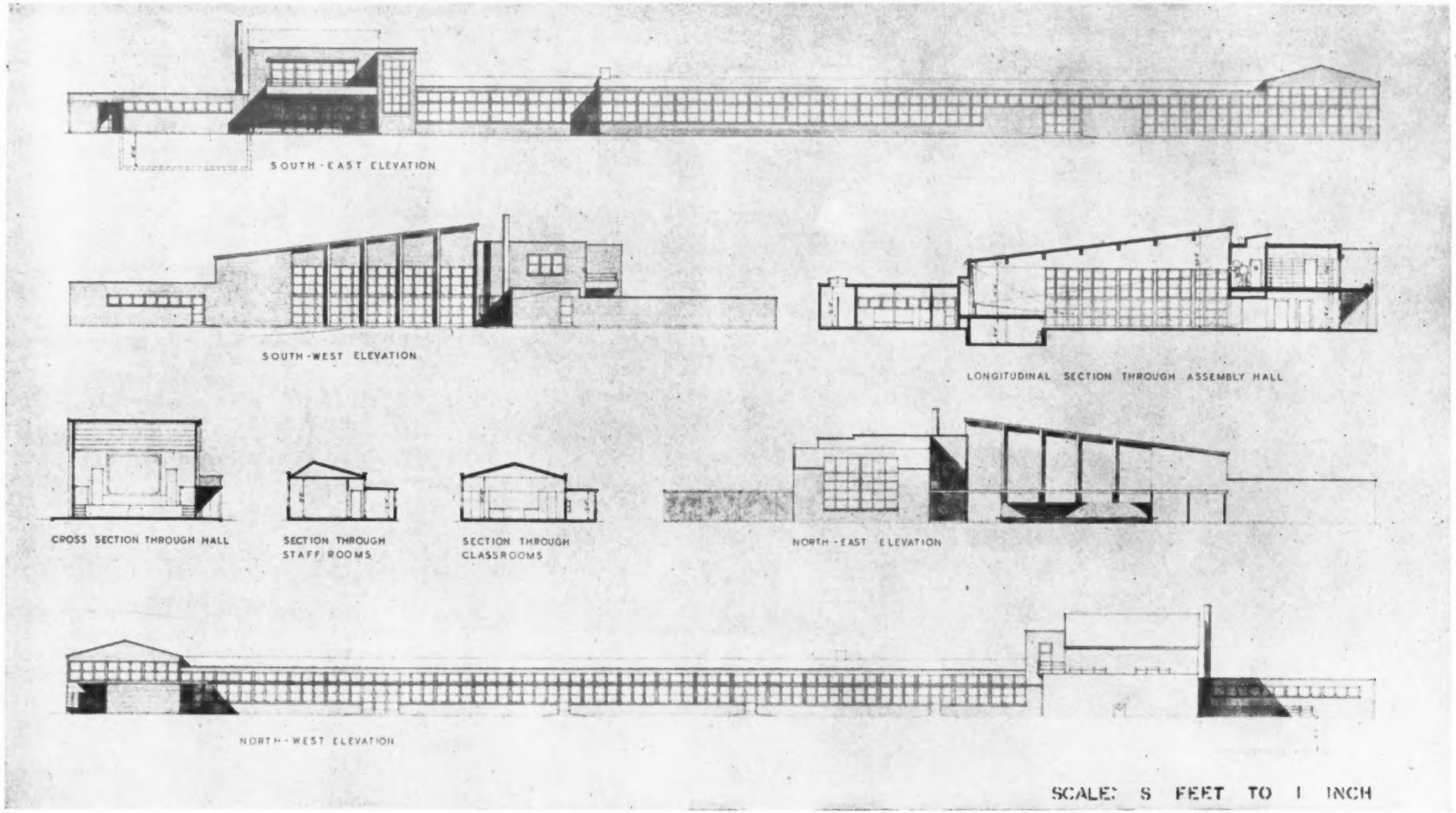


PLAN

On reading the admirably lucid report, and examining the drawings, it is at once apparent that a great deal of clear thought has been put into this design. This makes it all the more difficult to reconcile the placing of the school near the main-road frontage. Stress is rightly laid on the use of the buildings as a social centre; but their main function is still the education of children and as such the disadvantage of entering directly into the main road would seem to be so overwhelming that extra convenience of the public, given as the reason for the position of the school, is surely trivial in comparison.

All the various component parts are very thoroughly worked out and the scheme in general is simple and workable; but the single classroom might be found inadequate without a very drastic change in the usual curriculum, as there is difficulty in organizing work in the specialist rooms to keep them occupied with suitable classes all the time.

The form of the timber buildings, and especially the school hall, is pleasing and suitable for its purpose.



Construction

Timber has been chosen for its cheapness, adaptability and thermal insulation, and a 9-ft. unit has been adopted.

Outside the framing is covered with paper-backed aluminium foil, diagonal sheathing, building paper and weatherboarding. Inside the covering is aluminium foil and fibreboard. All this would seem to be somewhat excessive.

The authors point out the very great reduction in thermal conductivity that this construction effects over an 11-in. brick cavity wall, but the heat insulation properties of an 11-in. wall are surely not so negligible that they have to be bettered to this extent.

The trussed roof is covered with aluminium foil, rough boarding and 3-ply bitumen felt. Aluminium foil and fibreboard fixed beneath the purlins complete the covering to the classrooms, which have no ceiling in order to increase the sense of space.

The outside is tarred, and inside linoleum is used to dado height, which same material covers the floors. The walls and ceilings of fibreboard have V-grooved joints. Floors are of hardwood boards on battens, except in the lavatories, etc., which are asphalted.

Rayrad panels in the ceilings supply the heat, and the whole scheme, including playgrounds and fencing, etc., is estimated at £10,612.

(The consulting engineers were Helsby, Hamann and Samuely.)

SECTION B • WINNING DESIGN: BY DURELL, PENN & WALTER

PLAN

The report and the drawings both indicate that the exact function of this type of school has been very carefully analysed. While the layout is convenient for the dual purpose of a school and a community centre, the building's main function as school does not suffer. All the necessary accommodation is provided economically on one floor and by so arranging the main units that they can be used for more than one purpose.

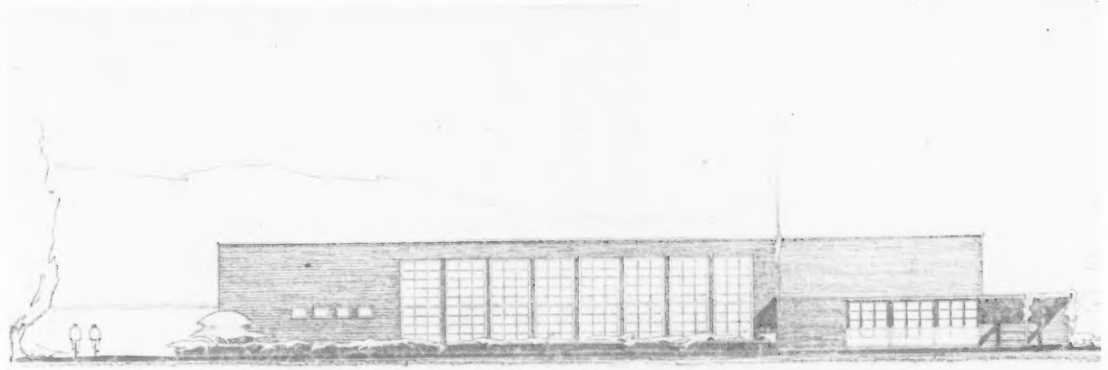
The sexes are not segregated for school work and furthermore the classrooms are used by various classes, all of whom keep their books in neatly recessed lockers outside, which do not disturb the circulation.

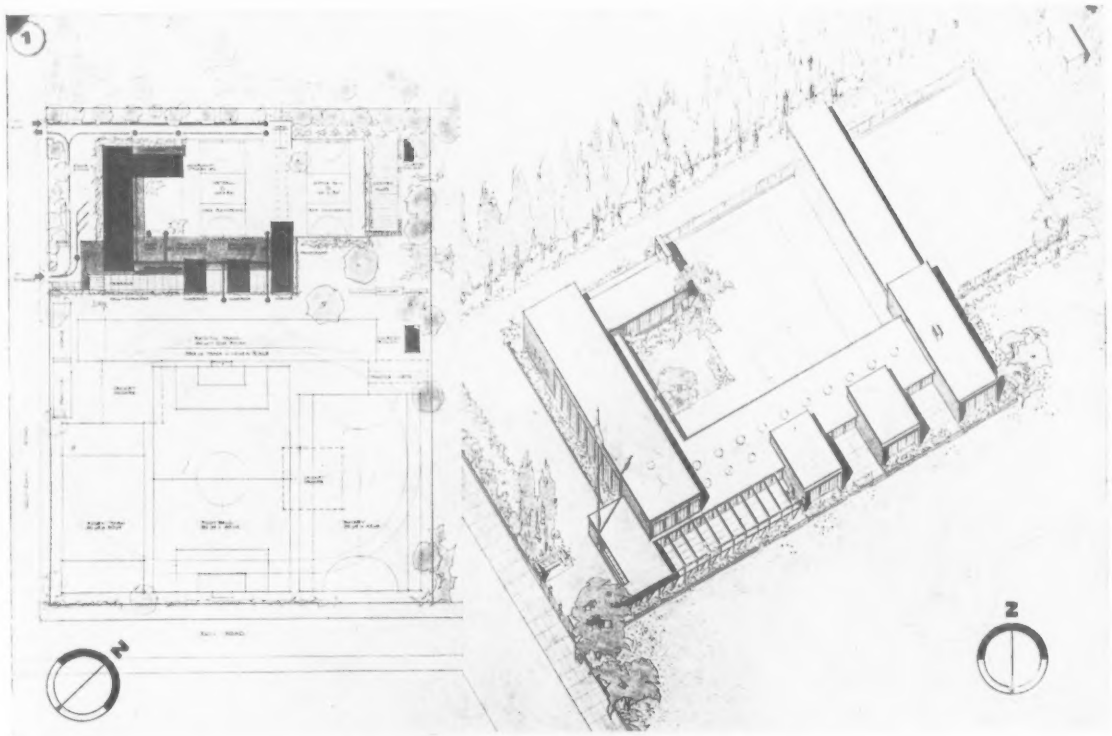
The expenditure on the large entrance hall is justified by its use as a museum and exhibition space, which would certainly appear to be a very attractive feature. The school hall and stage is convenient for the general public and is also well arranged so that the auditorium can be used as a gymnasium and the stage as a dining-room. The latter is served from the counter forming one side of housecraft room adjacent. Where the hall is used for various purposes the rectangular shape adopted here is the most satisfactory.

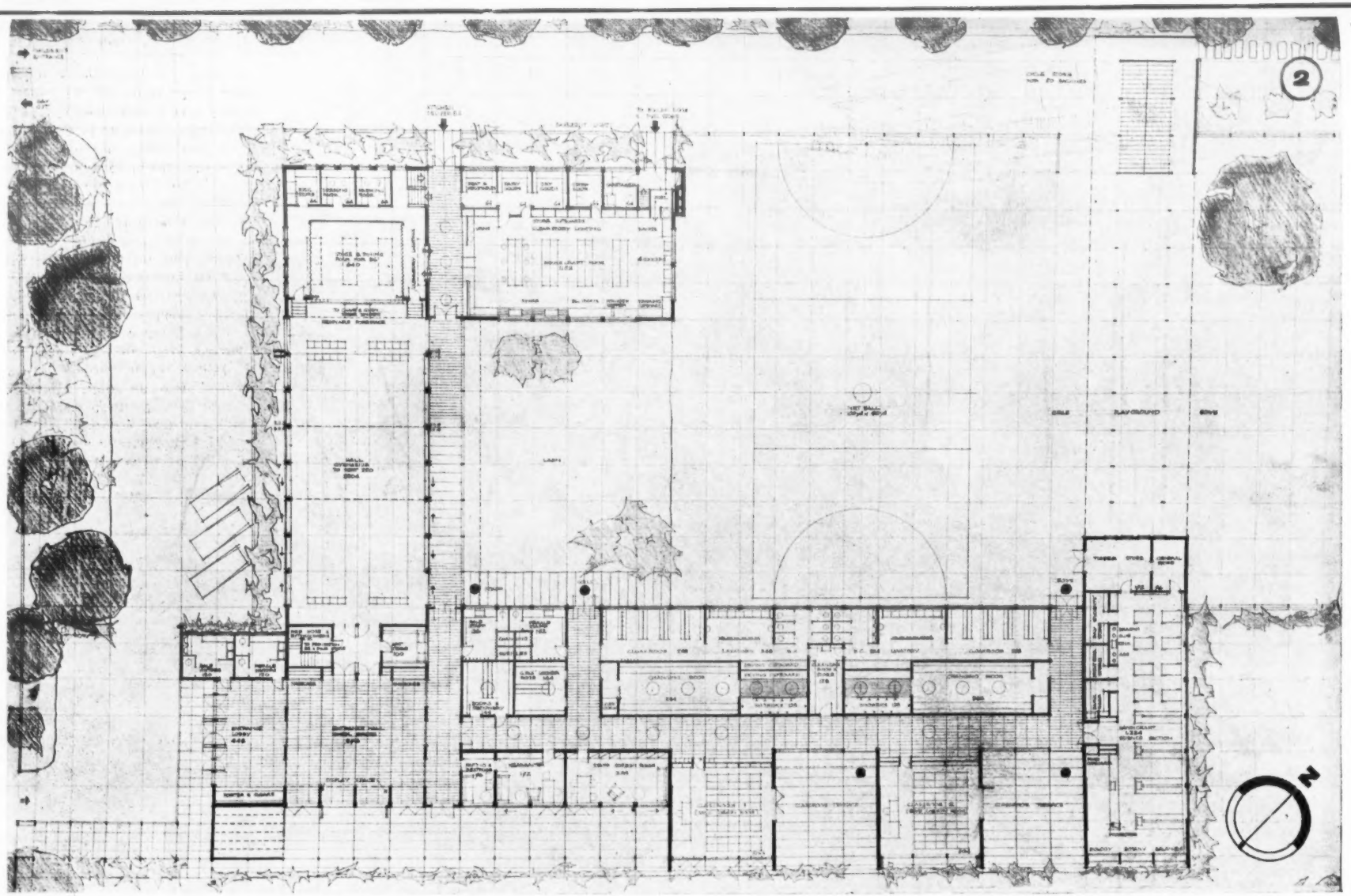
Construction is of standardized unit timber framing on a reinforced concrete wall base as it is considered that these materials are eminently suited to a building whose admitted life is probably 40 years.

Metal foil is used as thermal insulation between the vertical studding and the walls are faced internally with waxed tongued and grooved Douglas fir except in the hall, where untreated ½ in. wallboard is recommended with a dado of super hardboard, and in the housecraft and cloaks which are lined with hardboard.

Ceilings are of plasterboard and







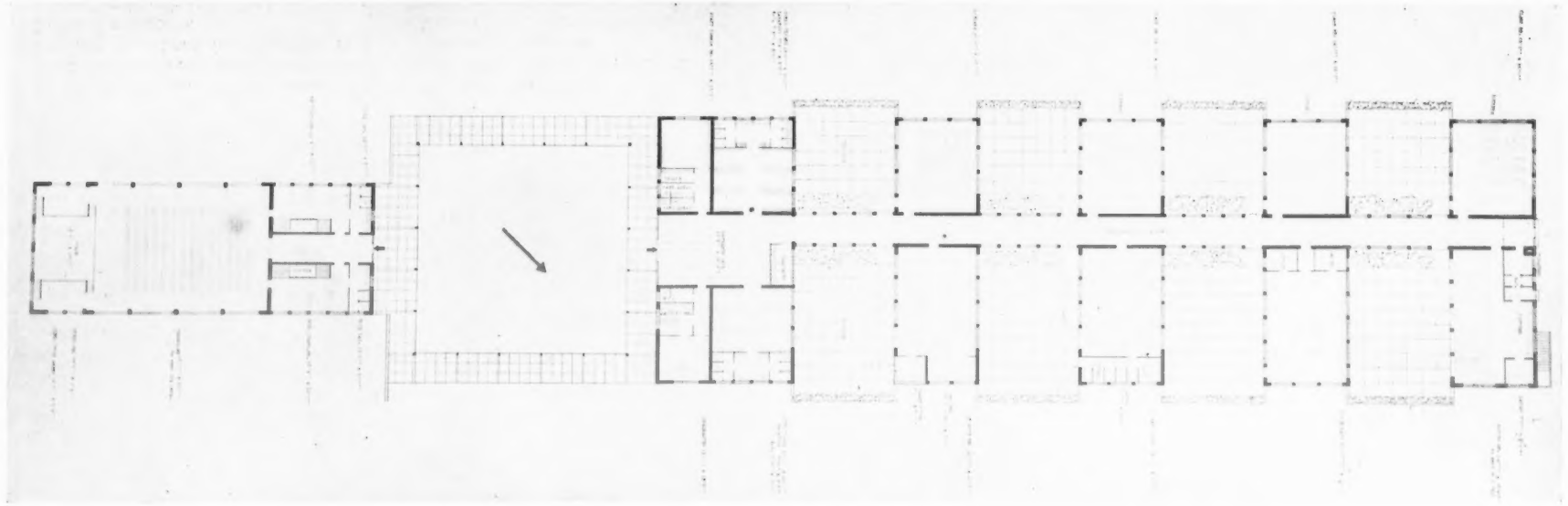
in these are set rayrad panels to heat the classrooms (cold feet?) while heating elsewhere is by pipes and hospital radiators.

Flooring is oak strip on felted joists in the hall and cork tiles everywhere except handicraft, which has wood block, and cloaks, etc., which have colourphalte, which several of the designs seem to prefer.

The roof is of 3-ply Ruberoid.

Cost is estimated at £8,974 excluding fittings and furniture. This is £56 per child.

SECTION B • DESIGN PLACED SECOND: BY JOHN EARLEY

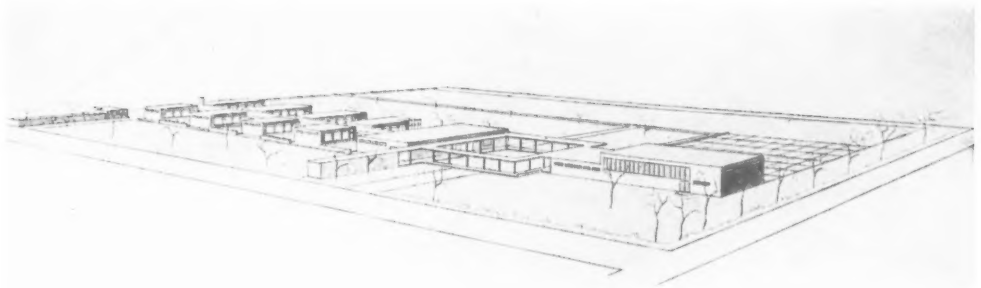


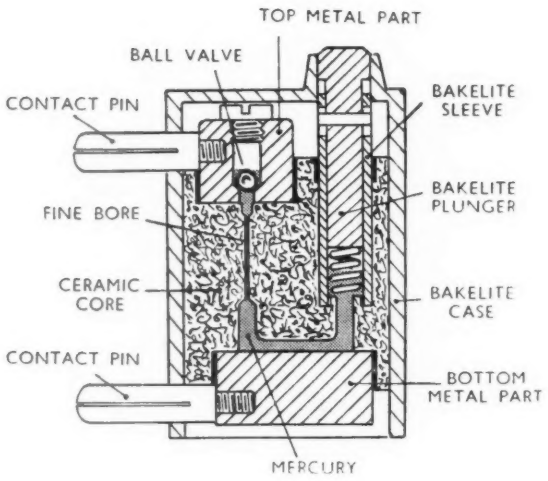
PLAN

Walter Segal and Eva Bradt's scheme has classrooms and practical rooms separated by terraces. The main windows overlook the terraces and the main block accordingly runs N.W.–S.E. instead of N.E.–S.W. as in the majority of the schemes. Clearly this arrangement would give pleasant out-of-door class spaces in the summer and quietness all the year round, but considered with the isolated school hall, the sense of light and air and spaciousness would be rather offset by the lack of convenience.

The general effect in perspective is not so loose as in plan, but the elevations are perhaps a little mean.

Construction is in brick, with wood-block on concrete floors and hollow tile reinforced concrete flat roofs covered with asphalte, but neither in the drawings nor report is the construction very detailed. Estimated cost is £9,962.





TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

Current Control

THE wisdom of using small circuit-breakers instead of the ordinary tin or copper fuse has been commented on before in these Notes. The practice first became common in America, and there are now several firms manufacturing small circuit-breakers for the comparatively light loads met with in domestic work, or in the sub-circuits of larger buildings. Price is, however, fairly high—about 10s. to 15s. each, and a new mercury circuit-breaker at prices varying from 6s. 6d. to 8s. 6d. is therefore a distinct advance.

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These new breakers are marketed by Worsdall Mercury Controls, Ltd., under the name of "U-reset" resettable fuses, a more accurate description, strictly speaking, than circuit-breakers. The headpiece to these notes shows one of these fuses in section; it consists of a thin column of mercury maintained in suspension in a U-tube under atmospheric pressure between two metal contacts in a refractory ceramic body. One arm of the U-tube is closed by a spring-supported bakelite plunger and the other arm is constricted to a fine bore to contain a thin column of mercury. This thin column is the "fuse," and its rating is governed by the length and diameter of the fine-bore tube, at the top of which is a metal cup and a ball. The ball, which is covered with a mercury amalgam, seats in the metal cup and keeps the mercury at a higher level than the other arm of the U.

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Excess current parts the column of mercury and breaks the circuit, which can then be re-established by a light pressure on the head of the plunger. The mercury is then forced up the fine bore tube and floods the ball chamber at the top, and when the pressure on the plunger head is released the mercury level drops until the ball finds its seating and maintains a full column of mercury in the fine bore.

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The description may seem rather involved, but from the section it can be seen that the whole thing is perfectly straightforward, and, as all the essential parts of the device are sealed into the ceramic body, and the complete unit then covered with a bakelite case, it is hardly possible for the careless user to interfere with it in any way. Tests by Faraday House and the National Physical Laboratory show that temperature rises under repeated breaks and resettings are well below the permissible standards, and the mercury clears a fault in about one-tenth of the time of a pure tin fuse.

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The fuse units are of the two-pin type available with bases for front entry or back-of-board mounting. Prices are low: 4s. 6d., 5s. 6d., and 6s. 6d. for the 5-, 10- and 15-amp. sizes; bases are 2s. each. Distribution boxes are also available, and may, if necessary, be fitted with a "master-button" resetting device which allows all fuses to be reset by pressing a button without opening the box at all.

Simplified Lampholders

A firm allied with the manufacturers of the resettable fuses described above has just marketed an extremely simple lampholder under the trade name of "Nixin."

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A sketch of it is shown on this page, and from this it will be seen that there are none of the usual tiresome grub screws, the wires being held by a bridge-piece which not only compresses them against the contact plates, but also nips them between its upper surface and the inside of the cap. In use the bridge-piece is lifted and turned anti-clockwise until it rests on the steps (see diagram below). The bared ends of the wires are then threaded through the holes in the bridge-piece, which is turned back and allowed to drop, the grip being provided by screwing down the cap.

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This seems an excellent idea; different thicknesses of wire may cause the bridge-piece to tilt slightly as pressure is applied, but I cannot see that this will make very much difference to its efficiency. The grip is good. So far I have not tested it with flex, but doubled pipe-cleaners, used without screwing the cap down very hard, snap off when pulled without the grip being affected in any way.

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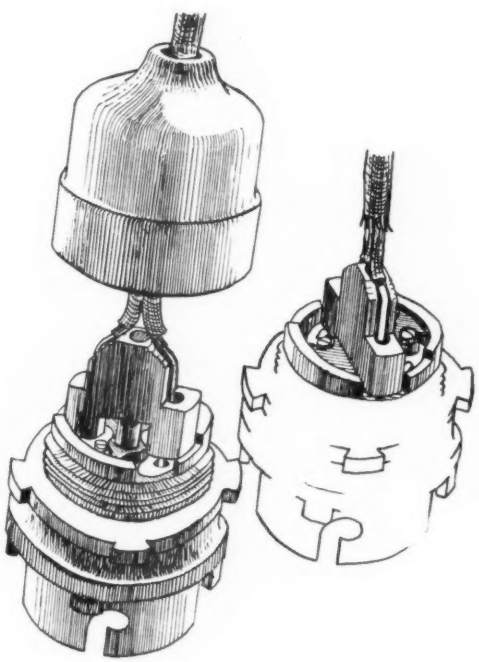
A device such as this may not make an astounding amount of difference when applied to a lampholder or plug, for both of these are comparatively easy to get at, but for ceiling adaptors, where the electrician is working overhead, they should



The Nixin lampholder.

make the job a great deal easier and save a good deal of time. Prices are very reasonable, about 5 per cent. to 10 per cent. more than the ordinary fittings.

Fireproofing Large Halls

I have just been sent a photograph of the Hammersmith Palais de Danse, the ceiling of which has recently been fireproofed by some 20,000 yards of asbestos tape, 2½ ins. wide, stretched and sewn to the trusses.

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As a means of disguising the usual bare steel trusses that one so often finds in large halls of this kind this seems an admirable idea (see illustration below); that the result should be fireproof as well makes it even better.

Fixing Problems

The Rawlplug Company have just issued a 180-page booklet called "Modern Fixing Practice." While the information given is very naturally devoted to Rawlplugs as a means of fixing, i.e. as a means of making fittings stay where they are put, there is also a lot of other information on the types of hanger used for pipes and the clips or other devices used for fixtures of all kinds.

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This is most certainly an excellent book to keep for handy reference, Rawlplugs or no Rawlplugs. All the more credit to the manufacturers of what is, after all, a subsidiary product, for taking so much trouble to make certain that it is properly used.

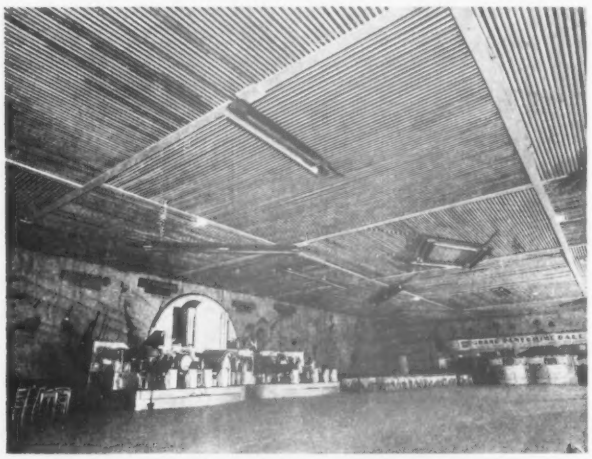
Addresses

Worsdall Mercury Controls, Ltd., Africa House, Kingsway, London, W.C.2.

Walter Johns, Ltd., Africa House, Kingsway, London, W.C.2.

Bell's Asbestos and Engineering Supplies, Ltd., 239 Upper Thames Street, London, E.C.4.

The Rawlplug Co., Ltd., Rawlplug House, Cromwell Road, London, S.W.7.



The fireproof ceiling at Hammersmith Palais de Danse.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICT (15 MILES RADIUS)

ACTON. *Fire Station.* The Acton Corporation has approved plans for the new fire station at a cost of £34,000.

ACTON. *Houses, etc.* Plans passed by the Acton Corporation: Eight houses, East Acton Lane, for Messrs. G. A. Jellicoe and Partners; factory extensions, Park Royal Road, for Messrs. Riley and Glanfield; warehouse, Vale Grove, for Mr. W. C. Leslie Carter; four houses, Albert Grove, for Mr. John E. Green.

LEWISHAM. *Houses.* Plans passed by the Lewisham B.C.: Five houses, Horniman Drive, Tewkesbury Lodge Estate, Forest Hill, Mr. John Lax; 16 houses, "The Grange," The Avenue, Mr. J. C. Anderson; flats, Halifax Street, Sydenham, Mr. G. T. Harman; car park, rear of the Classic Cinema, Sydenham Road, Mr. S. Seeman.

PADDINGTON. *Redevelopment.* The Paddington B.C. is considering plans for the redevelopment of the Clarendon Street area, and reports that the cost involved will be about £600,000.

WIMBLEDON. *Sports Pavilion.* The Wimbledon Corporation is to erect a sports pavilion at Wimbledon Park Estate, at a cost of £2,500.

WIMBLEDON. *Municipal Car Park.* The Wimbledon Corporation is to provide a municipal car park in Hartfield Road, at a cost of £7,300.

SOUTHERN COUNTIES

BRIGHTON. *Rebuilding.* The Brighton Education Committee recommends the surveyor to prepare, in consultation with Mr. Maxwell Ayrton, amended plans for the rebuilding of the proposed College of Art, at a cost of about £120,000.

BRIGHTON. *Extension.* The Brighton Corporation is to extend the Southwick power station at a cost of £241,100.

GUILDFORD. *Public Hall.* The Guildford Corporation has inspected public halls at Worthing, Hastings, Lewisham, Wimbledon and Hornsey, and recommends that provision be made in a large hall for seating 1,000 to 1,100 persons approximately, and that a balcony be provided, and that a small hall be provided for seating 400 persons, the halls to be easily accessible to each other. Mr. Charles Cowles-Voysey, has been appointed as architect for the hall.

KENT. *School.* The Kent Education Committee has purchased a site at Eastry for the proposed council school.

KENT. *Extensions.* The Kent C.C. reports that it has given careful consideration to the present position with regard to accommodation for the C.C. departments, and instructed the County architect to prepare plans and estimates in connection with additions.

KENT. *Dispensary, etc.* The Kent C.C. is to erect a tuberculosis dispensary and maternity and child welfare and school centres and clinics at Herne Bay, at a cost of £5,500.

KENT. *Extensions.* The Kent C.C. is to extend the infirmary and maternity wards at the County Hospital, Sheppey, at a cost of £7,822.

SURREY. *School of Art.* The Surrey Education Committee is to acquire land in Merton Hall Road, Wimbledon, for the purpose of a new school of art.

EASTERN COUNTIES

LOWESTOFT. *Houses.* Mr. O. E. Gray is to erect 100 houses in the vicinity of London Road, Pakefield, near Lowestoft.

NORWICH. *Provision Market.* The Norwich Corporation recommends a scheme for the lay-out of the provision market area and surrounding roads in connection with the new City Hall, at a total estimated cost of £52,109. Mr. Robert Atkinson, F.R.I.B.A., is the architect.

NORWICH. *Extensions.* The Norwich Education Committee is to enlarge Thorpe Hamlet schools at a cost of £2,970.

YARMOUTH. *Indoor Swimming Pool.* The Yarmouth Corporation has again considered the question of the provision of an indoor swimming pool, and the borough engineer is to enquire for a site in Trafalgar Road.

MIDLAND COUNTIES

BIRMINGHAM. *Public Library.* The Birmingham Corporation has purchased a site in Tower Hill, Perry Barr, for erecting a public library.

BIRMINGHAM. *School Clinic.* The Birmingham Corporation has purchased land in Maas Road, Northfield, for the purpose of a school clinic.

BIRMINGHAM. *Elementary School, etc.* The Birmingham Education Committee has purchased land in Masshouse Lane, King's Norton, for a public elementary school, and land at Bartley Green, for the extension of Bartley Green council school.

BLACKPOOL. *School.* The Blackpool Education Committee has obtained land at Arnott Farm, Marton, for the erection of a school.

BRADFORD. *Technical College.* The Bradford Education Committee has approved plans by the city architect for extensions at the technical college and at the college of arts and crafts.

CHESTERFIELD. *Branch Library, etc.* The Chesterfield Corporation is to obtain a site at Whittington Moor for clinics and branch library.

STOKE-ON-TRENT. *School.* The St. Teresa Church authorities are to erect a school at Newcastle Road, Trent Vale, Stoke-on-Trent.

STOKE-ON-TRENT. *Houses.* The Stoke-on-Trent Corporation has obtained sanction from the Ministry of Health, to the granting of a guarantee in respect of the proposed scheme for the erection of 74 houses by Mr. G. L. D. Bates, at Sandyford, Goldenhill.

STOKE-ON-TRENT. *School.* The Stoke-on-Trent Education Committee is to erect a school in Hollywall Lane, Goldenhill.

NORTHERN COUNTIES

CHESHIRE. *Houses.* Mr. W. G. West is to erect 137 houses and two shops in Dickens Lane, Poynton, Cheshire.

CHESTER. *Houses and Flats.* The Chester Corporation is to erect a further 24 houses and 24 flats on the Lache estate.

LANCASHIRE. *Relief Offices.* The Lancashire C.C. is to erect relief offices in Linacre Road, Litherland, at a cost of £1,850.

LANCASTER. *Baths.* The Lancaster Corporation has obtained sanction to borrow £57,013 for the erection of baths.

NORTHUMBERLAND. *Extensions.* The Northumberland Education Committee is to reconstruct and enlarge the Longbenton elementary school at a cost of £16,445.

REDCAR. *Library.* The Redcar Corporation is to convert the old electricity showrooms into a library.