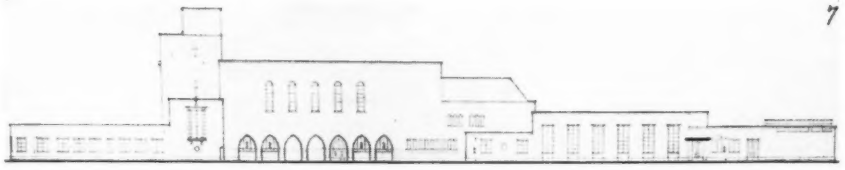
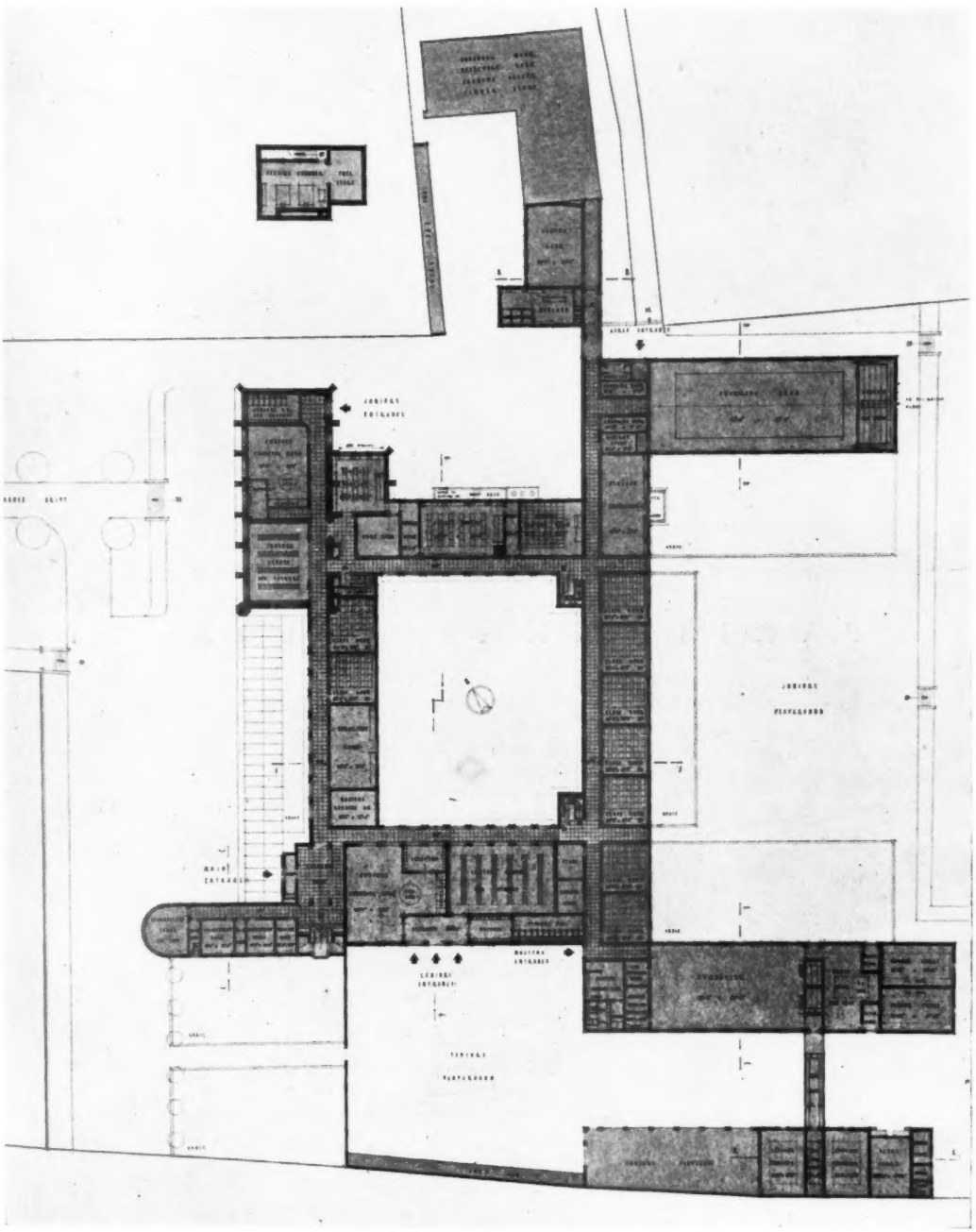
THE DONCASTER COMPETITION

WINNING DESIGN

7

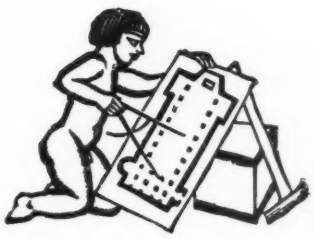




SOUTH-WEST elevation and ground floor plan of the winning design, by J. R. Leathart, in the competition for the Doncaster Grammar School. *See page 109.*

THE PARIS EXHIBITION, 1937

A model of the complete exhibition superimposed upon a photographic map. Opposite the Eiffel Tower are the new buildings on the site of the former Trocadero which will be retained as permanent museums. Between these two wings is the main entrance to the exhibition (a concert hall being below the entrance terrace) from which the central avenue leads across the widened Pont d'Iéna to the pavilions along the river front.



TWENTY-YEAR-LIFE FOR SCHOOL BUILDINGS

THE Board of Education have published a small but very remarkable book.*

That it is about schools, in which only a limited number of architects are immediately interested, is only one part of its significance and by no means the most important. Its interest and its encouragement to architects exist in its showing that the attitude of mind of a Government department can be in advance, and in some ways immensely in advance, of general architectural practice.

The associations of the word education carry for the average architect little that is refreshing. It has about it flavours of committees and reports, financial wrangles in local newspapers, a procession of the dreary angularities of drearier buildings, and dark mutterings of sound classical curricula, meat for breakfast and lady matrons.

With these associations the State schools of the past have seemed to be much of a piece. Architects have no doubt assumed that these buildings have resulted from conformance with some out-of-date regulations of the kind they know so well. And though this JOURNAL has outlined during the past months the great changes and developments which have taken place in educational policy since 1918, it may have been thought with casual cynicism that by the time such changes had percolated through the Board of Education to the actual school buildings, they in turn would be far out of date.

The Board of Education has now proved such conjectures wrong. Even in the title of its new publication it has shown how fortunate Britain can occasionally be in its civil servants. Not only does it acknowledge a continuing change in the title of *Suggestions* but also avoids a minimum standard of "Regulations" becoming a maximum beyond which few education committees move an inch.

Suggestions includes every major development for which progressive education experts have been asking: Large sites, open-air planning, gardens, as many "active" rooms as ordinary classrooms, adequate libraries, and, lastly, halls which can really be centres for wider education in its fullest senses—these attributes of a modern school are all recommended to education authorities who are contemplating building. Even the battle of the styles leaves the Board unafraid: "Nor is it necessary to follow architectural styles which are often needlessly costly and difficult to adapt to changing ideas of hygiene and education."

It is not only in their reference to schools, however, that *Suggestions* are worth study. The chapter on construction and materials has a far bigger significance, of which the problem of schools is only one peculiarly suitable example. Behind the clauses of this chapter hovers the question of how long buildings should last. The modern building of brick walls, reinforced concrete floors and well-made flat or pitched roofs will, with reasonable expenditure on upkeep, probably be quite sound at the end of a hundred years. And for a great many buildings, particularly those built for special but not monumental purposes, this length of life is quite unnecessary.

Particularly is it unnecessary for schools. All over Britain to-day education committees are confronted with schools, built perhaps thirty years ago or less, which are sound constructionally but are absolutely unfitted for contemporary educational methods.

Yet, despite this warning constantly before education committees, new schools are still being built in permanent materials—schools which themselves will be out of date in twenty years but will still have a vigorous half-century before them.

The reason for this state of affairs is, or was, very strong. It has been found in the past that once a building has been well enough built to be economical in upkeep for twenty years it will also be economical in upkeep for eighty. And so with an eye to maintenance for twenty years the structure of schools today is being designed for a century.

Suggestions contains many hints of the question whether this practice should continue. It suggests that the possibilities of new materials should be considered, it mentions temporary structures and the needs of future extensions. It does not, however—with a rare lack of the prophetic—make the definite statement that even if the school building is still tolerable in twenty years, its mechanical equipment and special room equipment will be certainly intolerable.

And if all the equipment, most of the finishes, and almost certainly the plan form of the school is to be out of date in 1956, what is the use of the carcass?

The school of today needs a structure which can be altered or extended easily, which is weather-proof and warm when closed and as open-air as possible in all save desperate weather. But that structure must be good in appearance and economical in upkeep for twenty years.

With all the resources now obtainable in the building industry such a building ought to able to be supplied by architects without their also presenting to education committees fifty years of obsolescence.

This is the wider challenge of the Board of Education's *Suggestions*. Once accepted, the solution of the problem behind it will come in useful for buildings very different from schools.

* *Suggestions for the Planning of Buildings for Public Elementary Schools. Board of Education Pamphlet No. 107.* H.M. Stationery Office. *Price 2s.*

The Architects' Journal
Westminster, S.W.1
Telephones: Whitehall
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NOTES & TOPICS

PUBLIC HEALTH BILL

THE new Public Health Bill has passed the House of Lords, with but minor drafting amendments. Surprisingly little interest has been taken of this Bill by the building industry, and still less, apparently, by architects.

*

Yet it is one of the most important pieces of law-making we have had to deal with. It affects not only our everyday lives as citizens but our everyday work as architects.

*

True, B.I.N.C. (the Building Industries National Council) has considered drafts of the Bill and made analytical and critical comments on it from time to time, but that is not enough. The country should automatically find means of benefiting from the contribution which architects could obviously make—and architects alone—to the drafting of a new Public Health Bill.

*

The Ministry of Health has now issued an explanatory memorandum of the Bill, which provides, among other things, that local byelaws should cease to exist in ten years' time.

CERTIFICATES AGAINST JERRY-BUILDING

Meanwhile, the National Federation of Building Trade Employers decides not to await the influence of a new P. H. Bill in cleaning up jerry-building, but has put a scheme before the Minister of Health to protect the public and its own crafts.

*

The idea is not a new one, but it is encouraging to see it begin to take a definite form. It should certainly not be too difficult to set up some central board which would issue certificates for buildings erected to an approved standard of construction.

*

Byelaws, with all their unbalanced restrictions, have failed to ensure a minimum standard which prevents jerry-building, and there is a strong case for the certificate idea, controlled broadly by the building industry in its own and the public's interests.

*

Design and appearances, however, contribute as much to a house's promotion above the line of jerry-building as do points of construction . . . and design is likely to be the rock on which the certificate idea will sink to ineffectiveness—unless we have men who will tackle the entire question with better courage and better convictions than we have seen before.

CARAVANS

Swimming pools are to be controlled by the new powers, and very welcome supervision is to be given to caravans, tents and other movable dwellings. Local authorities are to be given powers to grant licences to landowners or to caravan owners to ensure appropriate treatment for these mobile dwellings.

*

England, we are told, developed the caravan. She has certainly been a pioneer in perfecting the motor trailer types. But from all accounts Americans now demand the most luxurious pantechnicon to house their travelling existence.

*

And if it is correct that these monster caravans propose to travel to our shores in monster ships and have a monster tour of our more historical lanes, then the new clauses of the P. H. Bill have been drafted none too soon.

MOVING HOUSE

Still talking of peripatetic houses, stories of the encrusted glories of English, and no doubt Scottish and Welsh, architecture being transported to far distant sites have been with us for a long time. Such journeyings, indeed, richly entangled with associations of snobbery, heart burnings, archæological unreason and false modesty, have even drawn the thrilling attention of the film industry. So that in *The Ghost Goes West* more than bricks and mortar crossed the Atlantic in carefully numbered packing cases.

*

But, except in the case of luxury caravans, the idea of taking one's house with one about England has not been catered for very largely by the unimaginative purveyors of English housing accommodation. The L.N.E.R., and the late chief constable of Ipswich, now hold out a brighter example to a restless generation.

*

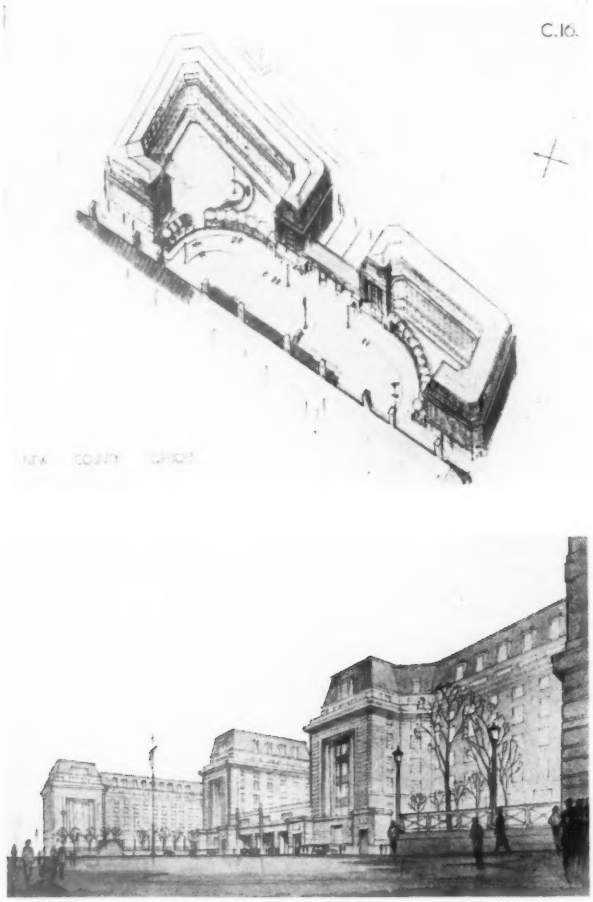
The chief constable, wishing on retirement to live in Somerset, was unable to find any house which he liked as much as Brooks Hall, his Georgian home near Ipswich. At last, when almost in despair no doubt, an Ipswich builder suggested to him that it was possible for Brooks Hall, modernized but still graciously itself, to accompany its master into retirement.

*

And so 17 wagon loads of masonry, " various fruit trees, bins and outhouses " moved by L.N.E.R. to Somerset.

*

Students of the R.I.B.A. who desperately need new ideas



Plans of the proposed extension to the London County Hall were placed before the L.C.C. on Tuesday last. The new building is to be erected on a site behind the County Hall. The illustrations show : (top), axonometric sketch ; and (bottom), perspective showing the elevations to Belvedere Road and Crescent. The architect responsible for the design is E. P. Wheeler ; associated architect, F. R. Hiorns ; consulting architect, Sir Giles Gilbert Scott, R.A.

for a thesis or an essay might describe for the profession exactly how much work and how much money is needed for such ventures. And, of course, the railway companies can now substitute for the Scotch terrier in " Don't Leave Me Behind " a charming series of the smaller (or larger) homes of Britain.

CORAM'S FIELDS

The Foundling Hospital site has long been a popular field for the more urban projects of our student architects, and its potential value has for a decade or so challenged the skill of speculative brethren.

*

Aided by a hard-working committee, the site has won, and this week saw Coram's Fields rejuvenated and reinhabited by thousands of joyous children.

*

If you have not seen the site for some time, then it demands re-visiting. Great lawns of meadow grass link together the magnificent plane trees through which one catches long glimpses of the eighteenth-century colonnades, conserved, extended and re-vitalised with good colour by Mr. L. H. Bucknell, whose central pavilion is a masterpiece of appropriate detailing.

RADIO INTERFERENCE

Last year I pointed out on more than one occasion the risks which architects were running in omitting proper provision for radio reception, especially in blocks of flats. One particular point was that all new electrical installations, from lifts down to electric refrigerator units, should be fitted with adequate suppressors.

*

The R.I.B.A. issued a clear statement of what it considered, quite rightly, to be the architect's responsibility in the matter and the B.B.C. gave more than adequate publicity to the pamphlet.

*

The voluntary efforts of architects and builders and building owners do not appear to have been sufficiently supported, and now legislation is strongly advised to make it an offence to instal any electrical apparatus which will cause interference with radio reception.

*

We must look to our specification clauses.

PENSIONS

The Civil List, as many writers have recently pointed out, allow disgracefully small amounts to men whose works in the arts or in letters have deserved well of Britain.

*

The existing allowances seem to date only from the industrial triumphs of the last century, when anything of an unmaterialist nature was considered to have no value.

*

Perhaps in this more enlightened Edwardian age we may hope for a sounder and fairer appreciation of human activities—or must we resort to some contributory and State-aided pensions scheme, and put a premium on the safe, ordinary good fellow ?

FIRE !

Returning one day last week from Greenwich, where in " The Yacht " I had witnessed the most stirring eight-a-side darts championship ever seen, when in the most awful silence old Bill got in the first double and . . . Oh well, I suppose I must not.

*

As I was saying, returning from Greenwich, near upon midnight, I ran into a hose pipe on Holborn Viaduct and after a polite interlude with a charming fireman, witnessed the peak performance of the Farringdon Street fire.

*

The " match-boarded gloom," as Montague would have called that printing house interior, made a grand blaze. Everyone in the building being rescued promptly, some 300 firemen began with dramatic skill to reduce the fire to a cooler and darker frame of mind.

*

It was a wonderful show.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

GUILDFORD CATHEDRAL

Yesterday, the Archbishop of Canterbury laid the foundation stone of the new Guildford Cathedral, the architect of which is Mr. Edward Maufe. The first stage of the erection of the building, which is estimated to cost £94,000, consists of the transepts, the crossing, choir, presbytery, children's chapel, temporary sacristy, the vestures for the Bishop, Provost and Chapter, and the first part of the tower, up to the height of the ringing chamber floor. The final height of the tower will be 157 ft.

TOWN PLANNING

Dr. E. Kaufmann, speaking last week at the Liverpool University School of Architecture Summer School, said that most practitioners at present treated town-planning as a matter of decorative design, engineering problems, and "so many houses to the acre." As a human being and citizen, the town-dweller still received very poor service. The towns in which we lived—their shape and principle of growth—no longer conformed with the structure of present-day society, and still less with our ideals of living, working, and passing our leisure hours.

Legislation should not stop at defining minimum standards, however valuable such an achievement might be. It should pave the way for a radical replanning and rebuilding of large parts of our cities; and at present there was a unique opportunity, which might not occur again for a long time, for doing such work on a large scale, because slum clearance and overcrowding legislation had, in any case, placed upon local authorities the responsibility for re-housing a large section of the population.

The new elements to be planned for were group needs. They had to study, in percentages of the total population, the two most obvious groups, families and ages. The size and composition of families would determine the forms of dwellings most suitable for each group and the proportions in which the various forms had to be supplied. The size of the different age groups would determine the number and nature of the necessary institutions of public welfare and education. There we had the main elements of a "neighbourhood unit," the dwellings, institutions, communal technical services, playgrounds and open spaces.

Such units could, he said, be planned on areas whose size was determined between fairly accurate limits by transport considerations, and the arrangement of all such buildings and open spaces could, to a certain extent, be standardized. "We thus arrive at a new element of town-planning more adapted to modern needs than any of the traditional elements. The idea is not to plan a framework of roads only, the filling-in of which would be left to the discretion of any casual future leaseholder or owner, but to plan the whole of a large area at once, with all its buildings, services, and spaces, in a way which would allow of repetition and addition without any fear of monotony. Within such a 'neighbourhood-unit' there would be group life and a development of civic responsibility."

THE ARCHITECTS' DIARY

Thursday, July 23

ROYAL ACADEMY, *Burlington House, Piccadilly, W.1. Summer Exhibition. Until August 8.*
ROYAL SCOTTISH ACADEMY. *At Edinburgh. Until September 5.*
FRANCO-BRITISH UNION OF ARCHITECTS. *Annual Conference. At Edinburgh. Until July 26.*
CHEMICAL ENGINEERING EXHIBITION. *At the Central Hall, Westminster, S.W. Until July 28.*
ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C. Exhibition of Students' Work.*

Monday, July 27

LONDON SOCIETY. *Visit to the Paint and Varnish Works of Messrs. Lewis Berger & Co., Morning Lane and Berger Road, Homerton, E.9. 2.45 p.m.*

Tuesday, July 28

R.I.B.A., 66 *Portland Place, W.1. Exhibition of Drawings submitted in the competition between Students of French and British Schools. Until July 31. Also August 4 and 5.*

ARCHITECTURAL ASSOCIATION

The annual prize distribution of the Architectural Association School of Architecture took place at 36 Bedford Square on Friday last. Mr. L. H. Bucknell, F.R.I.B.A. (President), occupied the chair; and the prizes were distributed by the Rt. Hon. Viscount Esher.

Mr. Bucknell, after describing the work accomplished by members of the School during the past year, pointed out that, in connection with the Coronation next year, the A.A. School had been selected to design the decorations for Bond Street. He thought that that was a great compliment, because Bond Street was still one of the best shopping streets in the world, and a street which deserved very fine treatment. It was proposed to run the competition on a group basis rather than for individual architects—groups of four or six working together. Prizes would be given up to about £150.

Viscount Esher, in the course of his address to the students, said: "I hope that I shall not get myself into trouble with your elders if I say that I think almost everything that was constructed in England between 1840 and 1914 could be destroyed without a qualm. The dreary industrial towns, with their ugly factories and still uglier slums, are awaiting your bright ideas. I do not wish to throw any doubt at all on your having the ideas; I feel sure that all of you can visualize what you would like to build—clean white factories, schools of light and air with their swimming pools and gymnasia, and houses in which it will be a pleasure to be poor, and I feel convinced that the emergence from your eager minds will produce this Brave New World. All that I should like to point out to you is one of the major difficulties with which I think you will be faced—and that is the smallness of the scale on which you will be allowed to plan. You will be asked to design a house, but you will not be permitted to design a street, much less a town.

"I belong to a body called The Hundred New Towns, which is endeavouring to deal with the problem—which is essentially an economic one. It is always because one has not enough money that one is obliged to put up with the second-best; but unless there is some bold, and I hope extravagant, solution of this problem, you will always be faced with this severe and baffling limitation in the exercise of your art.

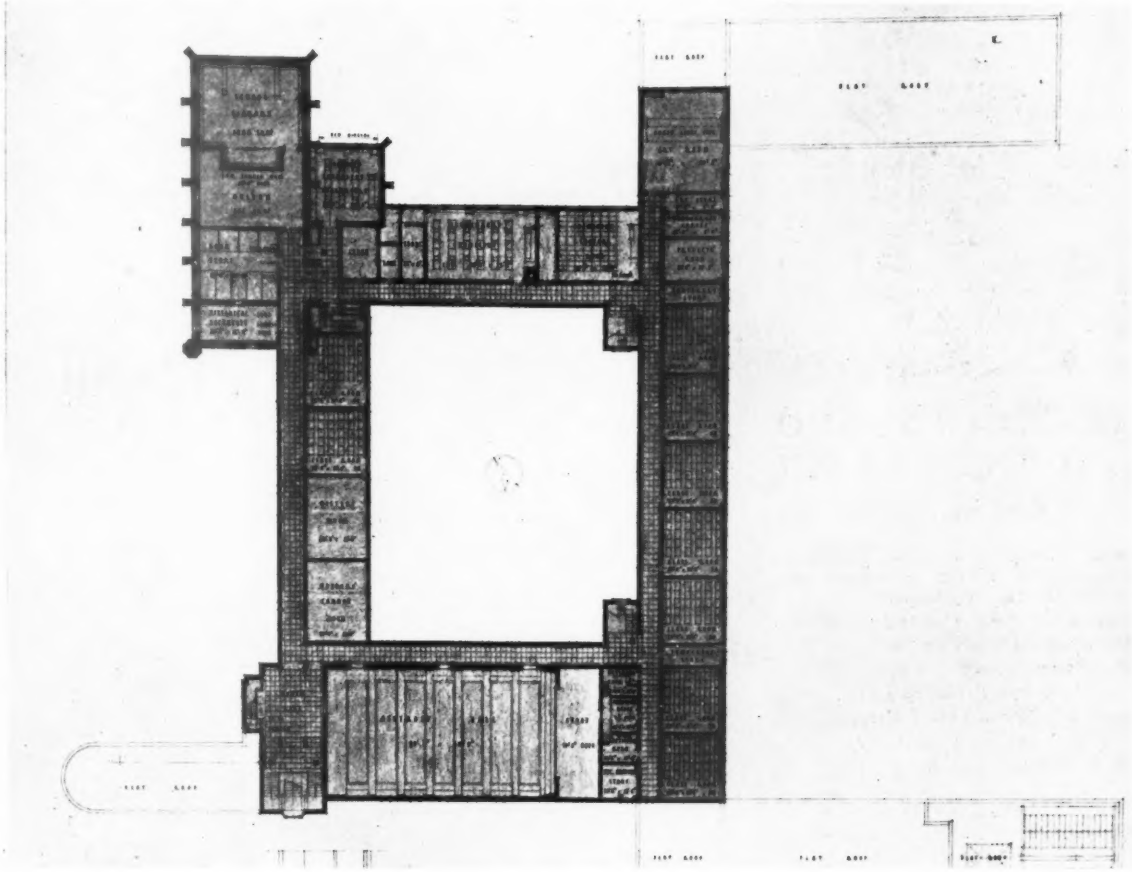
"I hope you think that it is an art, and not a trade. It was the monstrous nineteenth century with its utilitarian philosophy that degraded architecture into a trade. The people who lived in those times did not like the arts because they could not be put to any use; but, when it came to building a house, as a house was a necessity of life, it was clear to them that the man who designed the house must be a tradesman and not an artist. Although we are emerging from that attitude of mind, there are still traces of it lying about."

The vote of thanks was proposed and seconded by Professor H. S. Goodhart-Rendel, F.R.I.B.A., and Mr. F. L. Sturrock, respectively.

OVERCROWDING: SCOTLAND

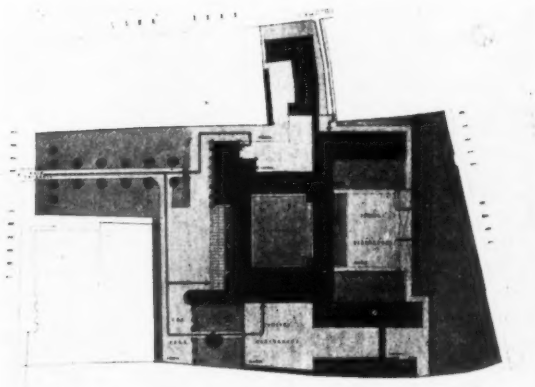
The Department of Health for Scotland has just issued a statement dealing with the progress—up to June 30—of local authorities in carrying out their surveys of overcrowding, as required by the Housing (Scotland) Act, 1935. The statement was received too late for inclusion in the "Table of Principal Housing Events: Jan.–June 1936" published in last week's issue (writes W. P. Keen). The statement records that at June 30, 195 town councils and 24 county councils had completed their surveys and submitted reports. In all, 1,047,778 houses have been surveyed (813,098 in burghs and 234,680 in counties); and of these, 23·9 per cent. (193,929) in the burghs and 21·6 per cent. (50,613 houses) in the counties were found to be overcrowded. The number of families living in overcrowded houses was 220,644 in burghs and 55,014 in counties—a total of 275,658 overcrowded families. The numbers of new houses which local authorities show to be required (after making allowance for full use of existing houses) are 122,943 in burghs and

COMPETITION FOR GRAMMAR SCHOOL, DONCASTER



WINNING DESIGN: BY

J. R. LEATHART



Site plan and first floor plan of the winning design in the competition for the Doncaster Grammar School. The main elevation and ground floor plan are reproduced on page 103.

31,076 in counties—a total of 154,019 new houses.

BESANT HALL

Messrs. A. T. Snell and Partners were the consultants for Besant Hall, Baker Street, W.1, illustrated in our last issue.

OBITUARY

Mr. A. Douglas Clare, whose death was announced in last week's issue, was first articled for two years to the Bedford Borough Surveyor, Mr. Norman Greenshields. At the end of that period he was articled to Mr. John Belcher, R.A., of the firm of Belcher and Joass, London.

At the outbreak of war, he enlisted in the Public Schools Battalion and obtained a commission in the 3rd Royal Berkshire Regiment. He reached the rank of Captain and, as Acting Adjutant, was retained for Military Training work at Wool, Dorset, during the earlier years of the War. He was later sent to the Western Front and gained the Military Cross for gallantry at Villiers Brettoneux.

At the end of the War he was admitted as an Associate of the R.I.B.A., and for some years was assistant to Mr. J. J. Joass, the surviving partner of the firm in which he had been articled. Following five years as junior partner in the firm of Messrs. J. Stanley Beard and Clare, Mr. Clare began practice on his own account at 44 Bedford Row, W.C., and he soon established a considerable connection in domestic and commercial work, and latterly in work for public authorities.

He was elected a Fellow of the R.I.B.A. in June, 1935.

Mr. Clare was responsible for the design of "Clarewood Court" Flats and the Luxor Cinema, Eastbourne (with Mr. Beard), the Pavilion, Sandown, Isle of Wight, several private houses, reconstruction work to churches, and the new

Winter Garden, Ventnor, Isle of Wight, and Odeon Cinema, Northwood Hills, now approaching completion.

●

We regret to record the death of Mr. Frederick Aubrey Norris, of F. A. Norris & Co., Ltd., and Norris Warming Co., Ltd. He was sixty-three years of age.

COMPETITION NEWS

THE LLANDUDNO COMPETITION

The Conditions Reviewed

SCHEME : Complete Hospital Buildings, including provision for extensions, for Llandudno and District Hospital.

PROMOTERS : The Committee of the Llandudno and District Hospital.

COST : About £42,250.

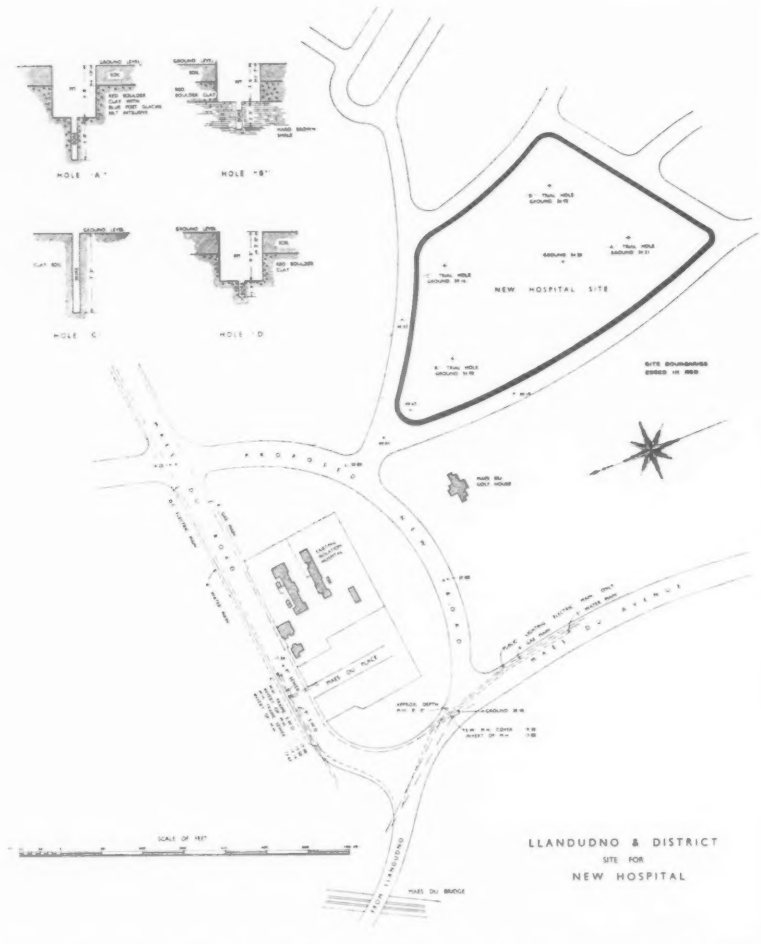
PREMIUMS : £250, £150 and £75.

ASSESSOR : R. Norman Mackellar, F.R.I.B.A.

QUESTIONS : August 21, 1936.

SENDING-IN DAY : October 31, 1936.

DEPOSIT : £1 1s. 0d. Conditions obtainable from The Honorary Secretary, New Hospital Scheme, Town Hall, Llandudno.



COMING fresh, as the writer does, from the consideration of another competition (this time for a New Town Hall which is to be erected at a cost of £160,000 and has to have a Tower and a Clock) with a site surrounded by the back yards of adjoining houses, 35 feet from the building line, where the city fathers may inspect the Monday's wash, it is refreshing, to say the least, to turn to the site for this hospital.

This *is* a site, an island site, with its widest front facing due West, of really adequate size even when the extensions proposed are carried out. It has a gradual fall of about 1 in 60 from south to north ; and about 1 in 100 from east to west.

To quote from the Conditions—it sounds almost too good to be true—" the west frontage overlooks the Maes Du Golf Course and beyond Conway Bay and the coast headlands. To the north the land is open. The prevailing wind is west and south-west." Why do so many promoters of building schemes select their site *before* expert architectural advice is called in, instead of after ?

In the case of Llandudno we have an Assessor who, so far as the writer is aware, has not acted in this very important capacity before ; and for that reason is all the more likely to be unbiassed in favour of any special type of planning, and if the selection of this site is in any way due to him, we may look forward to his award with some confidence.

Here and there, however, the conditions seem a little too definite in stipulations :

" A sun balcony *at the end* of the large Wards—is desired."

" The Committee is in favour of Wards of the Verandah type———"

" The Committee is not in favour of flat roofs throughout."

" Bed lift and Staircase to be provided," thus presupposing a two-floored scheme on an ample site.

Would not all these matters, and several others, be much better left to the judgment of the competitors ? It seems a pity to tie the hands of architects at the outset in this manner, when what is wanted is a compact plan, giving the accommodation asked for, which may far exceed in merit anything at present thought of by either the committee or the assessor.

The all-important question of Cost must not be disregarded. Here again the Committee stipulate the cost. £42,250 for 67 beds, including the abundant Special Departments asked for, is not large; about £266 per bed.

SCHEDULE OF ACCOMMODATION

Female Ward	20 Beds.
Male Ward	20 ,,
Children's Ward	8 ,,
3 Single Rooms (Maternity) each 140 sup. feet ..	3 ,,
4 Semi-private Wards, each 250 sup. feet for 2	8 ,,
4 Private Wards (Single rooms) each 140 sup. feet.. (Not near Children's Ward)	4 ,,
Isolation (Single Rooms) each 140 sup. feet	2 ,,
Observation Wards (single rooms) each 140 sup. feet..	2 ,,
	67 Beds.

Each of the principal ward groups is to be provided with full subsidiary accommodation : kitchen, sister's office, treatment room, stores, bathrooms, etc.

The remaining accommodation desired is very comprehensive and

well-equipped. A summary is as follows :—

(1) Operating theatre suite.
(2) Special rooms : X-ray, electrical, dental, ophthalmic, dispensary, accidents.
(3) Administration.
(4) General kitchen.
(5) Matron.
(6) Maids.
(7) Nurses' home.
(8) Boiler house, laundry, mortuary.
(9) Caretaker's cottage and garage.

It is important to note that the schemes are to be planned so that the number and type of beds in the schedule " can easily be duplicated " for future extensions.

DRAWINGS REQUIRED

$\frac{1}{16}$th scale unless otherwise stated. One ward block to be drawn to $\frac{1}{8}$th scale.

(*a*) Block plan to a scale of 1/500th showing the complete site, indicating the proposed buildings coloured pink, the general lay-out, etc., and the future extensions by dotted lines.

(*b*) Plans of each floor of the buildings. Drainage and roof plans are not required.

(*c*) Elevations and sections fully to illustrate the design.

(*d*) Half-inch detail of any portion of the design.

(*e*) The selected competitor shall prepare, without fee, a perspective drawing of the buildings for the use of the Committee and, if required, this drawing shall be supplied before the Exhibition of the designs.

Competitors' reports and estimates of cost are asked for in a more detailed manner than usual.

Materials and elevational appearance (except the roofs) are left to the choice of the competitors.

Grammar School, Doncaster

Professor W. G. Newton, F.R.I.B.A., the assessor of the Competition for the Doncaster Grammar School has made his award as follows :—

Design placed first (£200) : Mr. J. R. Leathart, F.R.I.B.A., 39 Gordon Square, London, W.C.1.

Design placed second (£100) : Mr. G. B. Drury, A.R.I.B.A. (of Drury and Reakie), 7 Gower Street, London, W.C.1.

Design placed third (£75) : Messrs. Crabtree and Freeman, AA.R.I.B.A., of 45 Berners Street, London, W.1.

Banned Competition

The following notice has been issued by the R.I.B.A. :—Members of the R.I.B.A. and of its Allied Societies must not take part in the competition for municipal offices, Louth, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

RECOLLECTIONS

UNITED STATES 1893—1920

BY FRANK LLOYD WRIGHT

This is the second of the series of recollections by Mr. Frank Lloyd Wright of the state of architectural development in the U.S.A. at the end of the nineteenth century, and of the influences and observations which brought about his efforts to introduce a more rational approach to architectural design.

HITHERTO all " classical "—that is to say, ancient Western or pagan buildings, have been greater or lesser blocks of building material, sculptured into shape outside, hollowed out within and " decorated " so they might be looked upon with pride by those who lived in them. At least that is the inner sense or æsthetic effect of them all. But here came to light a new sense of building—building as an organism with complete release for such architectural opportunities as may be characteristic of our machine age. This interior concept takes architecture entirely away from sculpture which has stayed behind, also away from painting—although painting has tried to come along—and so entirely away from architecture in the antique that that architecture ceases to exist except as a curiosity. The organic building accepts the hard conditions of modern life, becomes creative by way of the nature of materials and machine methods of building and stands, humane, as the enclosure of liveable interior space.

In the light of this sense of interior space as the reality, the building begins to work out, as entity in new materials, walls as walls fall away. The vanishing wall is on the way to join the disappeared cave. Enclosing screens or projecting features of architectural character grouped about the space, or pre-fabricated screens of glass and wood or metal woven about the space as enclosure, take the place of the solid walls. Sculptural mass as building is antique, and the skyscraper in its young steel strength does not even know it. Why, then, after the engineer has finished with it should we consider it modern architecture ?

BUILDING CONSTRUCTION

More and more, so it seems to me, light is the beautifier of the building. Light always was the beautifier of the building in the matter of shadows, but now it is the beautifier of the building as a circumstance in itself, becoming the blessing of the occupants. Building construction naturally becomes lighter and stronger as " integument " takes the place of " mass." Our arboreal ancestors in their trees seem more likely precedent for us at the present time than savage animals who " hole in " for protection. But properly to put it on a human level, a higher *order* of the spirit has dawned for modern life in this interior concept of lived-in space playing with light, taking organic form as the reality of building ; a building an entity by way of materials and methods of structure ; forms naturally significant of ideal and purpose, ultimate in economy and strength. An ideal the core of which pervades the whole realm of creative man and that, as I now know, dates back at least to Laotze, 500 B.C. The building era that Louis Sullivan ushered in is developing beyond the limitations that marked it, aside from its splendid efflorescence, into the higher realm where, as a human creative ideal throughout all culture, form and function are one.

PLASTICITY

Architectural forms might grow up ! Yes, but grow up in what image ? Here came concentrated appeal to pure imagination. Gradually proceeding from generals to particulars in the field of work with materials and machines, " plasticity " (become " continuity ") began to grip me and work its own will in architecture. I would watch sequences fascinated, seeing other sequences in those consequences already in evidence. I occasionally look through such early studies as I made at this period—a number of them still remain—fascinated by implications. They seem, even now, generic. The old architecture, always dead for me so far as its grammar went, began

literally to disappear. As if by magic new effects came to life as though by themselves, and I could draw inspiration from Nature herself. I was beholden to no man for the look of anything. Textbook for me—the Book of Creation. To be a wanderer among the objects and traditions of the past, picking and choosing my way by the personal idiosyncrasy of taste, guided only by personal predilection—from this hell I had been saved. The world lost an eclectic—an imitator—and gained an interpreter. If I did not like the gods I could make better ones.

PRACTICAL WORKING TECHNIQUE

Visions of simplicities so broad and far-reaching would open to me and such building harmonies appear that I was tireless in the search for new ones. In various form researches, with all my energy, I concentrated upon the principle of plasticity working as continuity. Soon a practical working technique evolved, and a new scale within the buildings I was building in the endeavour more sensibly and sensitively to accomplish this thing we call architecture. Here, at work, was something that would change and deepen the thinking of the modern world. So I believed.

Nevertheless, it was some years later that I took the æsthetic, "continuity" into the physical method of constructing a building. Then the changes came along slowly because, to eliminate the post and beam as such (the old order) I could get no help from the engineer. By habit, engineers reduce everything in the field of calculation to post and girder before they can calculate anything or tell you where and just how much of what. Walls that were part of floors and ceilings all merging together, reacting within each other—the engineer had never met in buildings. And so the engineer had not yet enough scientific formulæ in any handbook to enable him to calculate for continuity. Slabs stiffened and used over supports as cantilevers to get planes parallel to the earth, such as were now necessary to develop emphasis of the "*third dimension*" (as I myself had been calling it), were new. But the engineer soon mastered the element of continuity, which we call the cantilever—in these floor slabs. The cantilever thus became a new feature in architectural form. As used in the Imperial Hotel in Tokyo it was one of the several features that insured the life of that building in the subsequent terrific "trembler." After that "practical" demonstration a great new *economic stability* had entered building construction, proving the *æsthetic* safe and *sound economics-of-structure*. Form and function were one.

From some laboratory experiments being made at Princeton by Professor Beggs, which I saw while there delivering the Kahn lectures in 1929, it appears that æsthetic "continuity" at work in the practice of physical structure is concrete proof of the practical usefulness of the æsthetic ideal in designing architectural forms, and, I hope, may soon be available as structural-formula in the "handbook." Welding instead of riveting steel is one new means to this new end, and other plastic methods are constantly coming into use. But that and other possibilities—they will, I hope and believe, never end—are ahead of our story.

There were no symbols at all for these ideas then. But I had already objectified most of them. Were architecture bricks, my hands were in the mud of which bricks were made.

INTERPRETING MATERIALS

An idea soon came from this stimulating, simplifying ideal—ideas breed, especially in actually making them work—that to be consistent or, indeed, if all was to be put to work as architecture successfully, this new element of plasticity must have a new *sense* as well as a new *science of materials*.

It may interest you to know—it surprised me—that there is nothing in the literature of the civilized world upon that subject! Nothing as *interpretation* of the nature of materials. Here was another great field for concrete endeavour—neglected. So I began, in my fashion, to study the nature of materials—life is short. Lieber Meister had not reached this study. I began to learn to see brick as brick. I learned to see wood as wood and learned to see concrete or glass or metal each for itself and all as themselves. Strange to say this required uncommon sustained concentration of uncommon imagination (we call it vision); demanded not only this new conscious approach to building but opened a new world of thought that would certainly tear down the old world completely. Each different material required a different handling, and each different handling as well as the material itself had new possibilities of use peculiar to the nature of each. Appropriate designs for one material would not be at all appropriate for any other material. In the light of this ideal of building-form as an organic simplicity, most architecture fell to the ground; that is to say, the buildings were obsolete in the light of the idea of space determining form from within, all materials modifying, if indeed they did not create, "form"—when used with understanding according to the limitations of process and purpose.

Architecture might begin life anew.

(To be continued)

R.I.B.A.

FINAL AND SPECIAL FINAL EXAMINATIONS

The R.I.B.A. Examination Board in India has arranged to hold the R.I.B.A. Final and Special Final Examinations in Bombay from November 20 to 28th, 1936. The last day for receiving applications, which should be sent to the Hon. Secretary of the R.I.B.A. Examination Board in India, 43 Apollo Street, Fort, Bombay, is November 6.

COUNCIL MEETING

Following are some notes from a recent meeting of the Council of the Institute:—

Examiners for the R.I.B.A. Statutory Examination for District Surveyors.—The Board of Architectural Education reported that as a matter of urgency it had appointed Mr. Cecil Kennard to act as an Examiner in place of Mr. W. G. Perkins, who was unable to serve.

Joint Committee of the Architectural Profession and the Electric Lamp Manufacturers' Association.—On the recommendation of the Science Standing Committee, Mr. L. W. Thornton White (A.) was appointed as one of the R.I.B.A. representatives on the Joint Committee of the Architectural Profession and the Electric Lamp Manufacturers' Association in place of Mr. G. Grey Wornum (F.).

The Studentship of the R.I.B.A.—In April, 1927, the Council passed a resolution that a Student of the R.I.B.A. should only hold the Studentship so long as he is a bona-fide student of architecture and not engaged in any other occupation.

On the recommendation of the Board of Architectural Education it was decided to delete the words "not engaged in any other occupation" from this resolution.

It was also decided on the recommendation of the Board to make it a regulation that if a Student is engaged in professional work as an architect he shall be subject to the regulations governing professional conduct to which Corporate Members of the R.I.B.A. are subject.

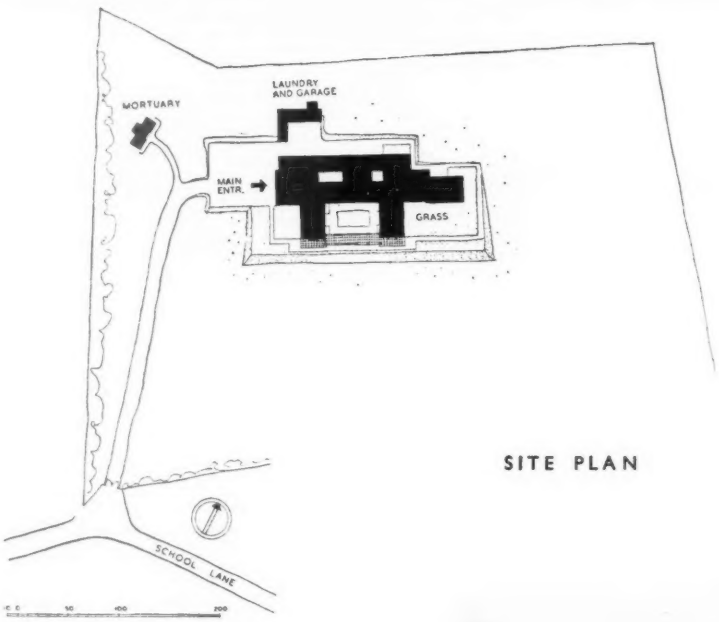
The Housing Centre

The promise of £500 yearly for three years to the Housing Centre by the directors of the Gas Light and Coke Company was reported to the centre's annual meeting on Wednesday, July 1, by Sir Reginald Rowe.

Sir Reginald said that in pursuit of the aim of assuring the centre's future certain large undertakings were being approached to ask for a start.

Professor Patrick Abercrombie was in the chair, and congratulated the centre on the report which it was able to show at its first annual meeting. Mr. E. Holland Martin's report as honorary treasurer showed that the centre was established on a sound financial basis, while the needs for its continued and growing usefulness, especially in the matter of research, were indicated.

WELWYN COTTAGE HOSPITAL



SITE PLAN

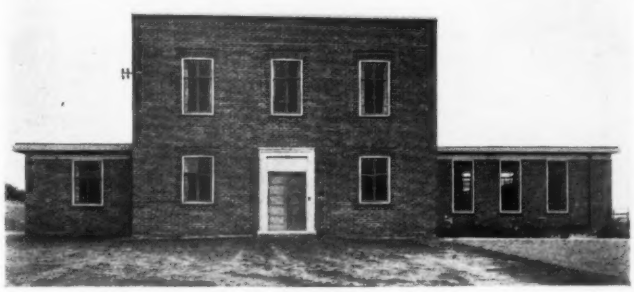
GENERAL PROBLEM — *Cottage hospital, known as the Queen Victoria Memorial Hospital.*

SITE—*At Welwyn, Herts. The site has an area of about five acres and slopes fairly rapidly towards S.S.E. It commands a fine outlook on all sides except towards the north.*

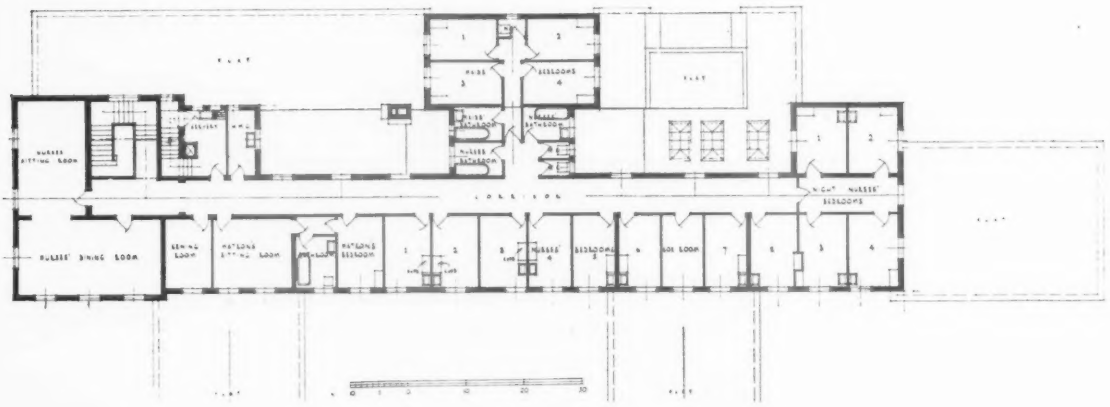
CONSTRUCTION — *Hollow brick walls, with hollow tile flat roofs and floors. The roofs are covered with wallboard bedded in mastic and finished with asphalt. The elevations are faced with sand-faced bricks.*

The photographs show : above, a view from south-west; below, the main entrance.

ARCHITECT:
H. G. CHERRY
CONSULTING ARCHITECTS:
ADAMS, HOLDEN AND PEARSON



WELWYN COTTAGE HOSPITAL:



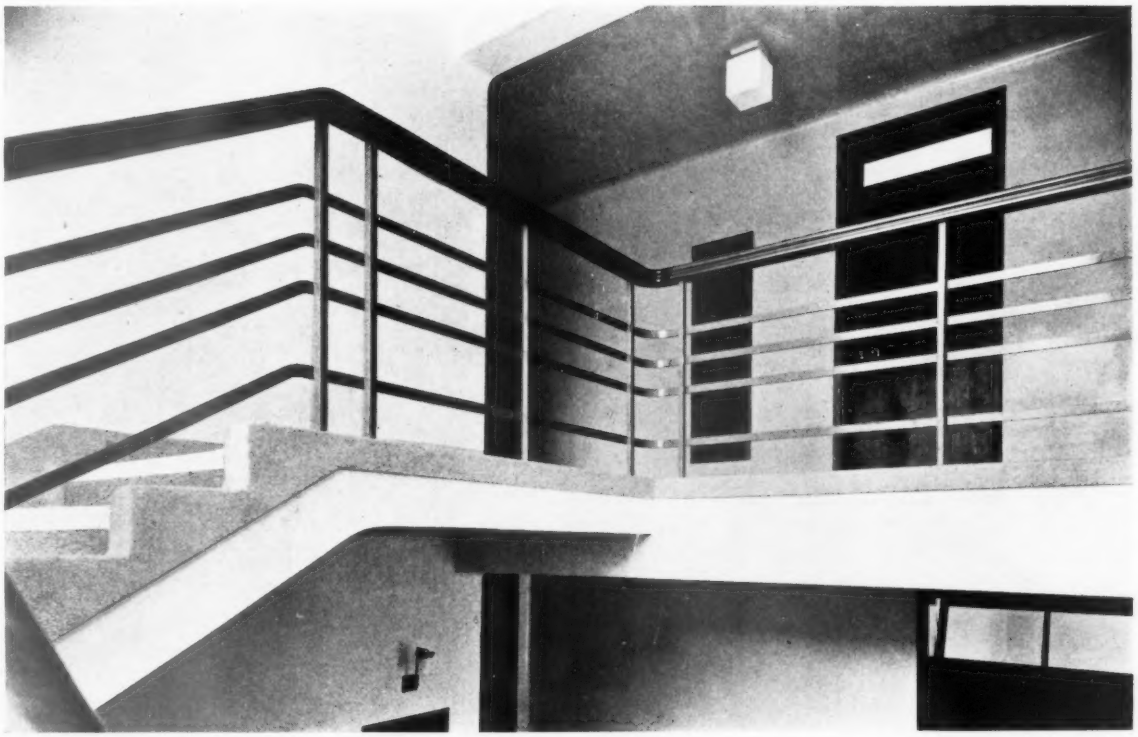
FIRST FLOOR PLAN

The men's ward

A private ward

GROUND FLOOR PLAN

ARCHITECT, H. G. CHERRY



PLAN—*The hospital is planned with the long axis east and west, the direction following the contours. On the ground floor, on the south side of the corridor, are the general wards, and on the north side the out-patients' department and the operating suite. At the extreme east end are wards for paying patients. A covered verandah connects the projecting ends of the general wards, the courtyard behind it being arranged as a paved garden. On the first floor are the matron's flat, nurses' sitting and dining rooms, and nurses' and maids' bedrooms.*

INTERNAL FINISHES—*Walls generally are plaster, painted or distempered. The floors of the wards are Rhodesian teak blocks, those of the corridors cork composition with teak margins. The operating theatre has a terrazzo floor and enamelled walls; the sanitary rooms have terrazzo floors and tiled walls.*

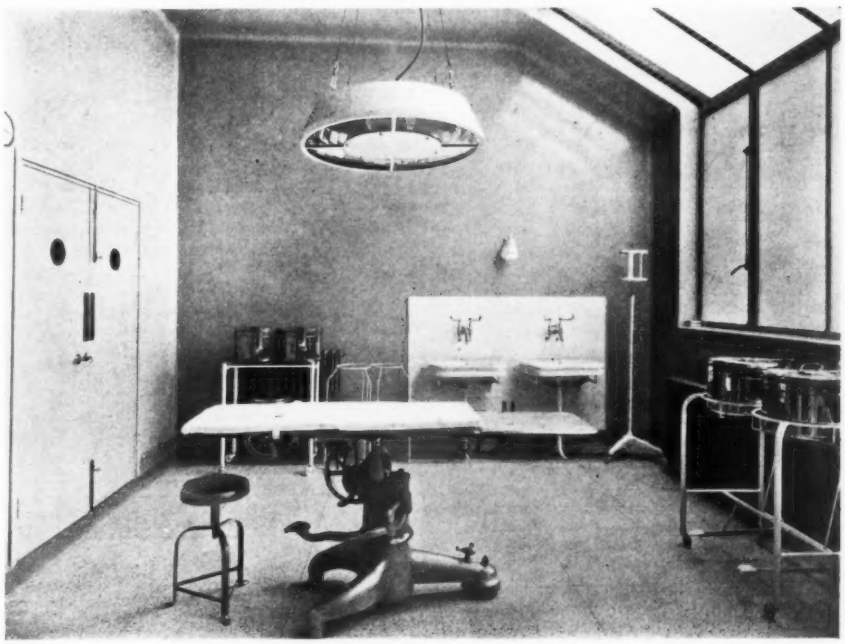
COST—*£18,085.*

For list of general and sub-contractors see page 131.

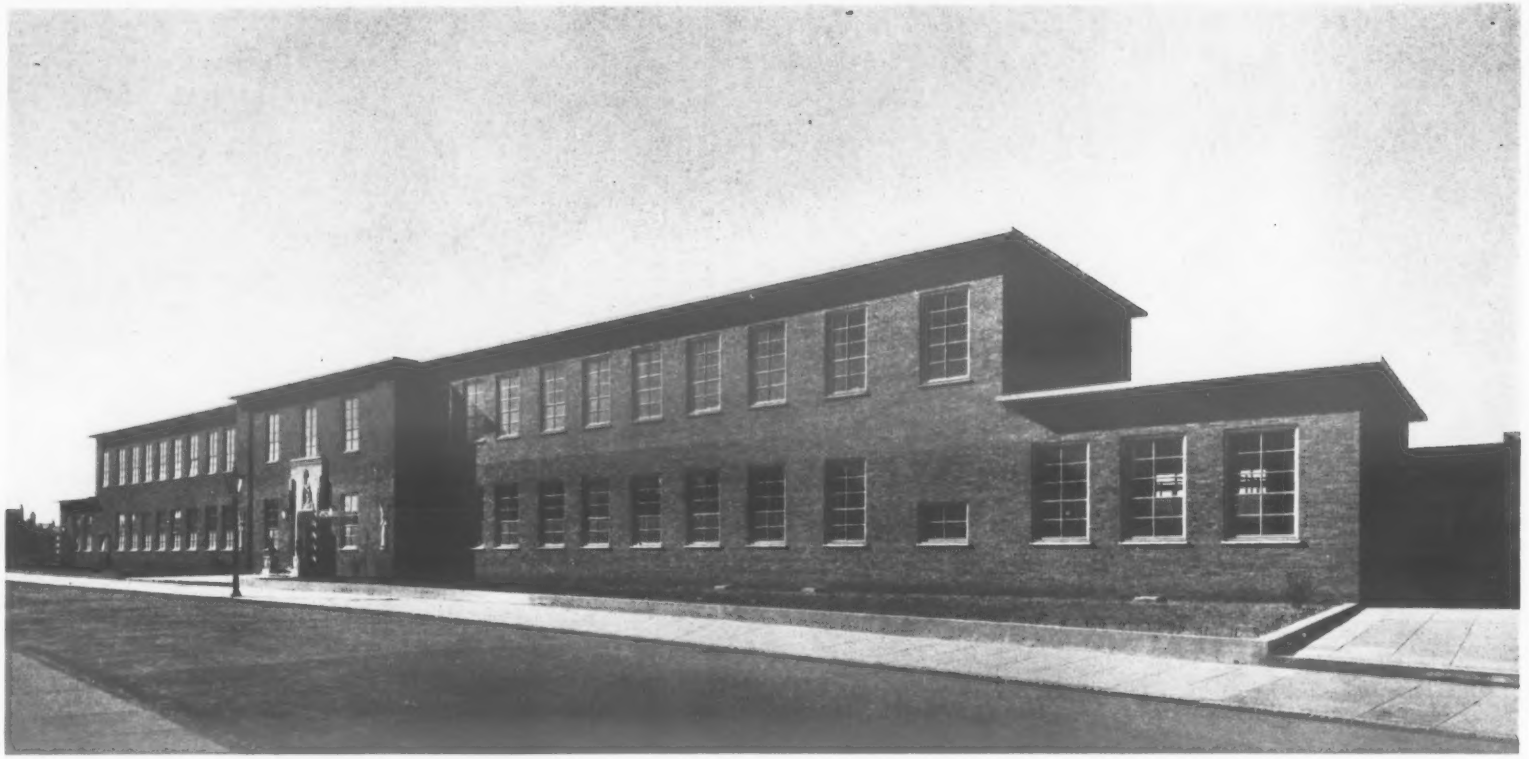
The photographs show: above, the main staircase at first-floor level; below, the operating theatre.

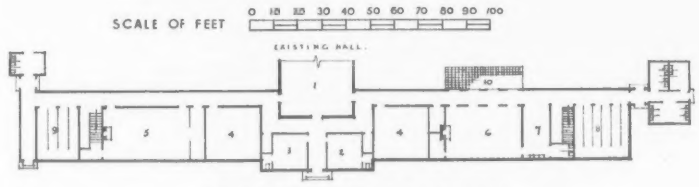
CONSULTING ARCHITECTS:

ADAMS, HOLDEN AND PEARSON

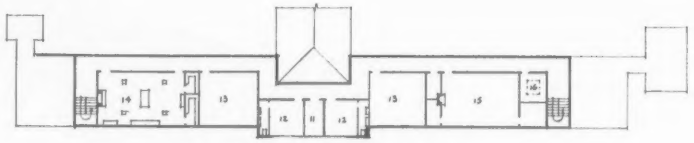


OUR LADY OF LOURDES ELEMENTARY SCHOOL, SOUTHPORT





GROUND FLOOR PLAN

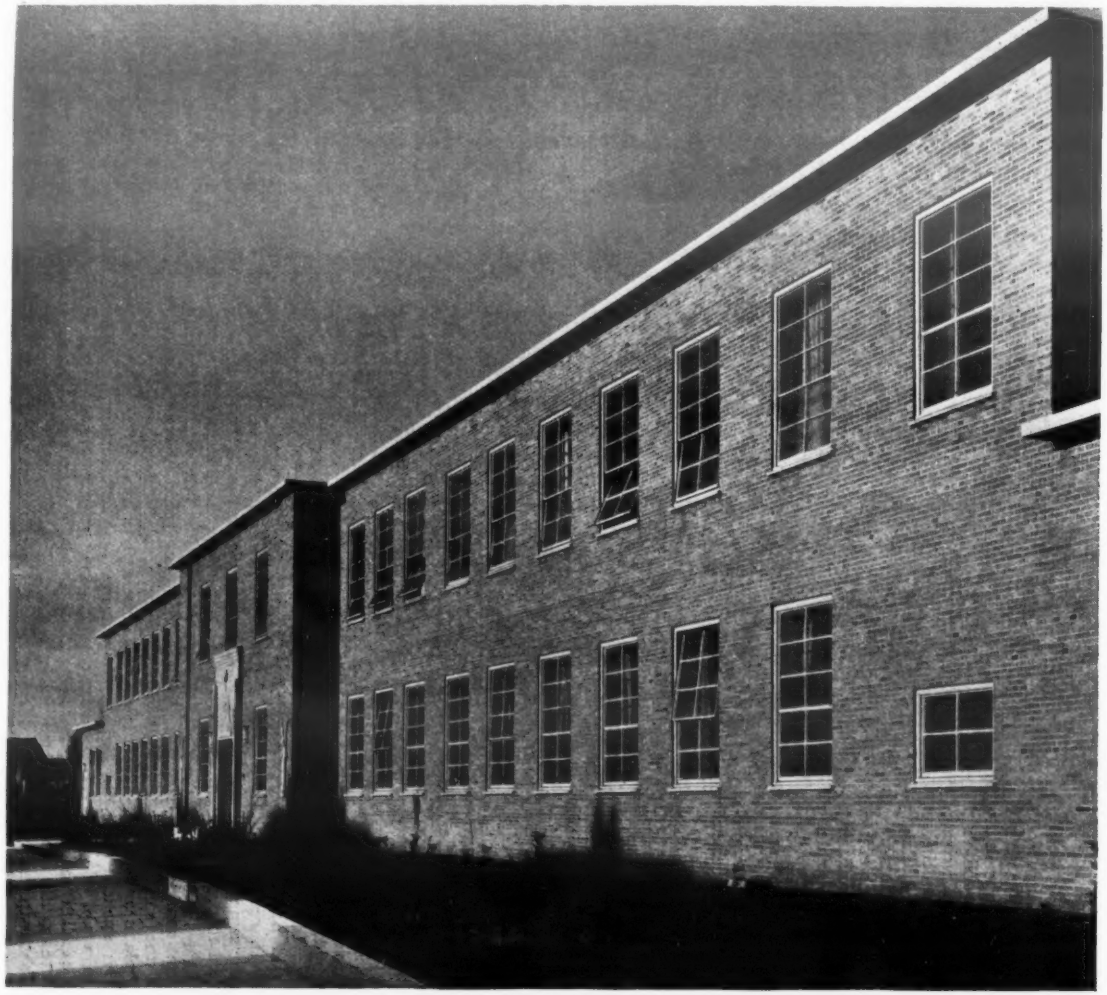


UPPER FLOOR PLAN

KEY TO ACCOMMODATION

Ground floor : 1, existing hall ; 2, head's room ; 3, medical room ; 4, classroom; 5, manual room ; 6, babies' room ; 7, babies' cloaks ; 8, girls' and infants' cloaks ; 9, boys' cloaks ; 10, terrace. First floor : 11, store ; 12, staff ; 13, classroom ; 14, cooking room ; 15, classroom and practical ; 16, head junior mistress's room.

5, manual room; 6, babies' room; 7, babies' cloaks; 8, girls' and infants' junior mistress's room.



D E S I G N E D

B Y F. X.

V E L A R D E

GENERAL PROBLEM—*Mixed school accommodating 300 pupils, and symmetrically planned to give a long, simple façade to the street, enriched only by sculpture over and around the central entrance. An existing hall had to be absorbed into the design as an assembly hall. The photographs show two views of the main front and the main entrance.*

CONSTRUCTION—*Reinforced concrete frame construction, with flat concrete roofs. The walls are faced with 2 in. pinkish-grey sand-faced bricks, with flush, rough-textured mortar joints. Dressings are Portland stone; windows are wood. The class-rooms and other departments have been sound-proofed with wall-board insulation.*
For list of general and sub-contractors, see page 131.

IN THAT CONTINGENCY

The following abstracts of enquiries represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each enquiry, and are not necessarily suitable for application to all similar problems. Crown Copyright reserved.

Lightning Conductors

¶ *AN architect asked for information as to the desirability of fitting a lightning conductor on a large flat-roofed reinforced concrete building. The building stands on an elevated site and is a dominating feature (with regard to height) for some considerable distance around. The horizontal dimensions of the building are large compared with the height, and the enquirer wished to know whether a lightning conductor would be as necessary in this case as with structures such as towers and spires.*

No original work on the subject of lightning protection has been undertaken at the Building Research Station, but a certain amount of information based on published works is available. The opinions of writers differ in certain respects, but agreement is fairly general on the points discussed below.

It is true that lightning conductors are more generally used on spires, chimney stacks and towers than on other structures, but in the case of any building in an isolated position a certain amount of risk is involved by omitting this form of protection.

In the majority of cases, however, a single aerial terminal and conductor, such as might be used on a spire, is inadequate to ensure complete safety, and cases have been reported where the provision of an inadequate system has been thought to have done more harm than good. In nearly all cases a multiple system of aerial terminals and conductors is considered essential, the ideal being to obtain a network of horizontally connected conductors completely surrounding the building.

The practice generally adopted in this country in the case of large buildings is to provide a terminal at every important projection both on the roof and other parts of the building, and to connect these to earthed vertical conductors. At least two such conductors, as far apart as possible, should always be provided and should be connected together horizontally near the top and bottom of the building, and in some cases more frequently. In the case of a flat roof terminals should be provided around parapets at 35-40 ft. centres and on the flat itself at about the same distance apart; they should be fixed to projections where such occur.

Possibly the most important consideration of all is the earthing of the conductors. Various types of earthing plates and tubes are recommended, but it is essential that they should be bedded in a soil of good conductivity. Wet clay is excellent for this purpose, but in such grounds as dry chalk or dry sand special precautions are necessary. The conductors themselves must be of durable material and have efficient riveted and soldered joints. Sharp bends must be avoided.

All large metallic masses inside the building should be connected to the conductor system or be separately earthed, since otherwise fire may be started by side flashes jumping from a conductor to parts of a building such as lifts, iron stairs, rain-water pipes, metal roof coverings, etc.

It might be mentioned that the steel framed building presents a special problem. Most authorities agree that the frame itself forms an adequate conductor system and that, provided it is effectively earthed and all projections are fitted with terminals connected to the frame, no further conductors are necessary. Metallic masses must, however, be dealt with as in the case of masonry or concrete buildings.

Efflorescence on Internal Wall Surfaces

¶ *A FIRM of builders stated that they had experienced considerable trouble through efflorescence and paint failure on the plasterwork of new houses erected last winter. The walls were of common brick, and the plaster consisted of lime and sand for the undercoat, and lime, sand and plaster of Paris for the finishing coat. Decoration was carried out with an oil-bound water paint. It was stated that the plaster surface appeared to have become rough where efflorescence had occurred and the enquirer wished to know whether renewal of the skimming coat at these points would effect a cure and enable the walls to be repainted.*

Efflorescence of salts and failures of decorations where such salts appear are common phenomena in new buildings. The trouble is, of course, due to deposition of soluble salts on the surface during the process of drying out and may thus be more severe in the case of buildings erected in wet weather.

The efflorescent salts may be derived from either the plaster or the backing. It appeared from an examination of the specimen of plaster submitted that the sand was somewhat dirty, and it is thought that salts might have been introduced in this way. Common bricks, however, frequently contain appreciable proportions of soluble salts of a type which may produce efflorescence and which, in the presence of the free lime in new lime plaster, may produce paint failure and discoloration. Renewal of the skimming coat would thus in itself be no safeguard against further efflorescence, though it may be necessary to re-plaster any parts of the wall which show defective finish.

It is difficult to make recommendations for the most suitable time for renewal of the plasterwork and decorations, but continued appearance of efflorescence indicates that further drying is necessary. If there is evidence of long-continued dampness in the walls, penetration or a defective damp-proof course must be suspected and appropriate precautions taken. By brushing the surface clean at regular intervals it may be judged whether the efflorescence is gradually diminishing.

It is to be noted that more thorough drying is necessary where an oil-bound distemper is used than is the case with a more porous finish such as a non-washable (water-bound) distemper. The work might therefore be hastened in this case if it were convenient to apply a temporary finish in water-bound distemper.

Failure of Old Plaster on Walls and Ceilings

¶ *A FIRM of architects reported an unusual case of failure of plaster in a house erected over twenty-five years ago. The whole of the work had remained in good condition until a few weeks previous to the time of the enquiry, when small patches of plaster commenced to fall from walls and ceilings. It was stated that there was no sign of structural damage in any part of the building. Samples of fallen plaster were submitted for examination.*

A simple qualitative analysis of one of the samples was carried out, and while this was insufficient to determine accurately the nature of the lime it suggested that the material used was an eminently hydraulic lime or, possibly, a magnesian lime. The sand extracted by acid proved to be reasonably well graded, though somewhat fine.

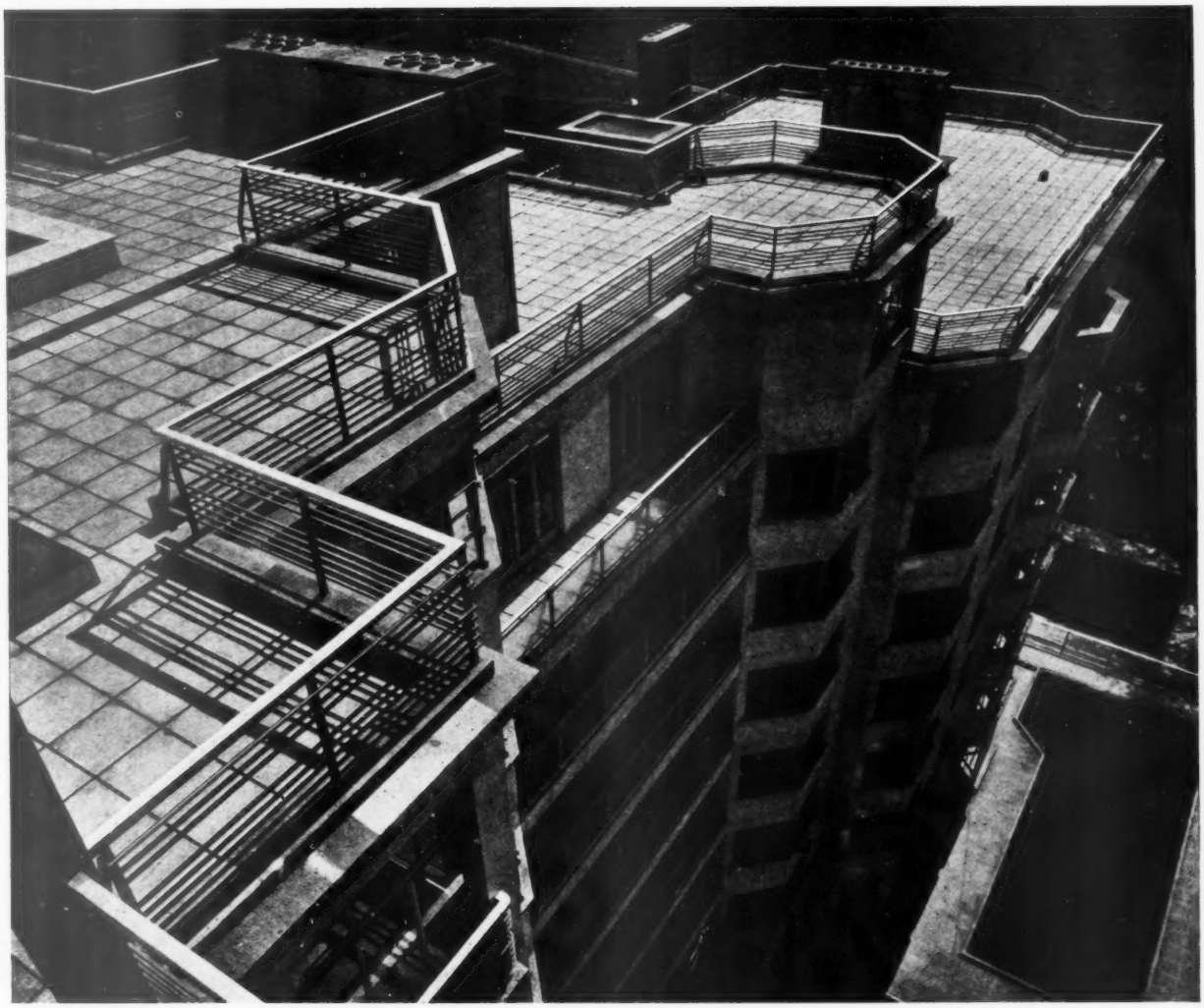
One of the slabs submitted was subjected to a steaming test for three hours to determine the possible presence of unsound lime. No expansion was recorded so that the lime is now sound, but this does not by any means eliminate the possibility of earlier unsoundness. As it appears that an eminently hydraulic lime has been used and it is known that such limes (and magnesian limes) may exhibit unsoundness (evidenced by a slow general expansion) over long periods, it is possible that such a factor has been operative. If, for example, the walls have become rather more damp than usual after the recent severe winter the resulting expansion, in addition to that which had probably occurred previously and which had already subjected the plaster to compression, has finally been sufficient to cause the bursting effects observed.

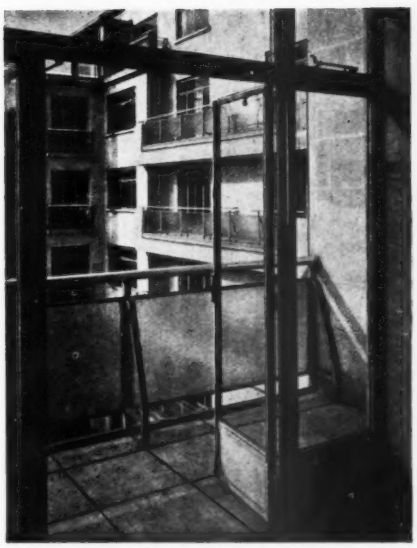
In connection with this problem it may be of interest to mention that a case has been reported to the Building Research Station in which failure was caused by expansion of hydraulic lime concrete in a floor laid some fifty years. This was described in a previous Note from the Information Bureau of the Building Research Station.

As a preliminary to making good in the present instance it is suggested that the walls be tapped with a light hammer. This might reveal other patches which are in a weak condition and, since there were no indications of unsoundness in the sample submitted, it is possible that re-plastering the " burst " patches will now be sufficient.

WORKING DETAILS : 459

RAILINGS • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER

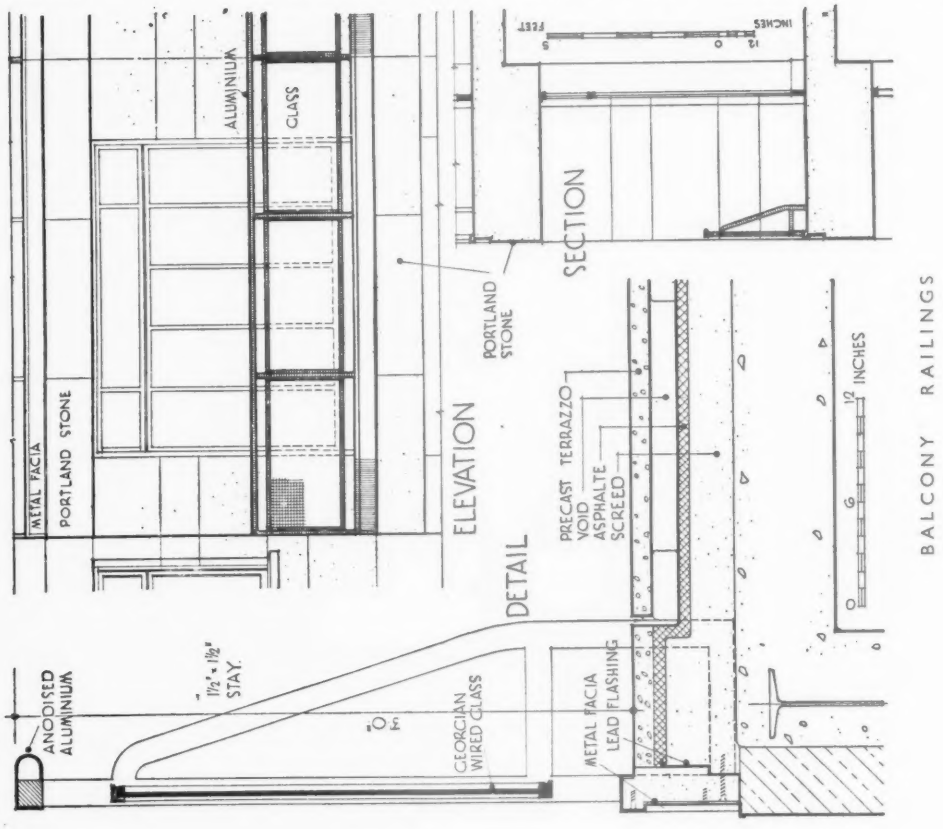




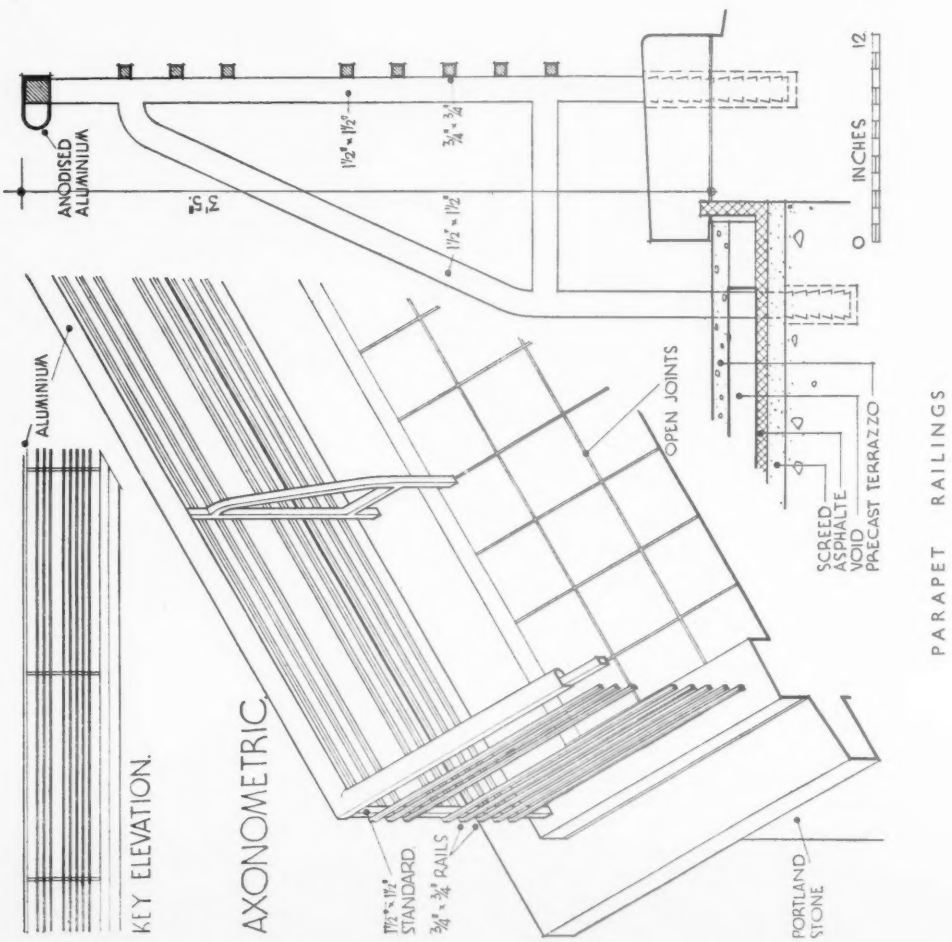
The photographs show two types of railing used at Arlington House. In both cases anodised aluminium has been used for the handrail, the standards and lower rails being of wrought iron, painted light brown. Details are given overleaf.

WORKING DETAILS : 460

RAILINGS • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER



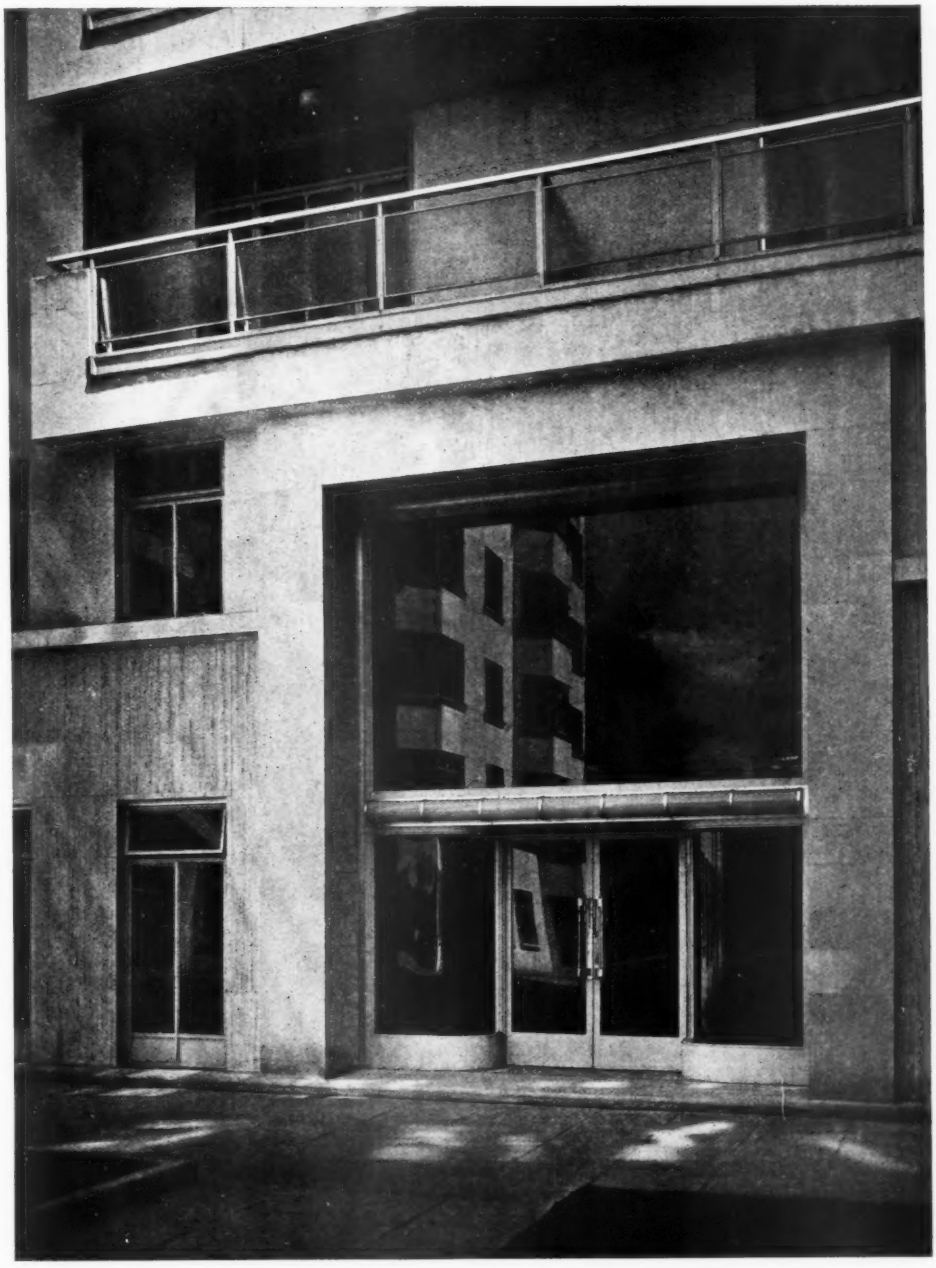
BALCONY RAILINGS



PARAPET RAILINGS

WORKING DETAILS: 461

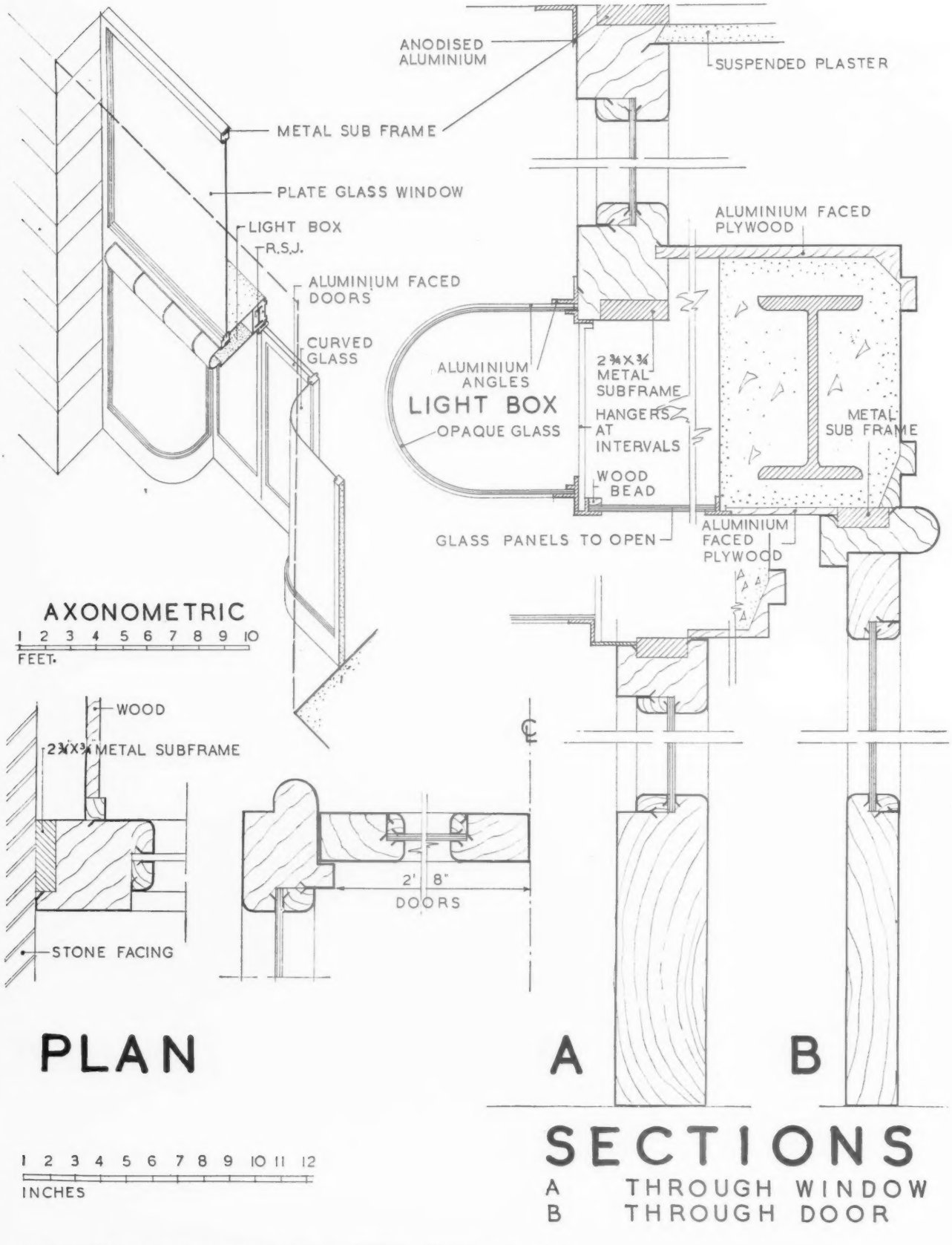
ENTRANCE DOORS • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER



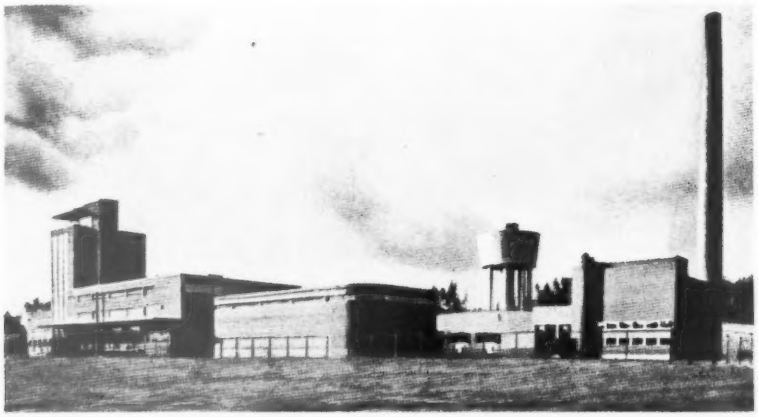
The doorway illustrated above is the entrance from the garden court into the main hall. The doors are of wood sheathed in anodised aluminium. A metal sub-frame is used, however, to strengthen the jambs and lintols. The ground floor of this façade is faced with travertine, the door surround and upper part being carried out in Portland stone. An axonometric and details are given overleaf.

WORKING DETAILS : 462

ENTRANCE DOORS • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER



Axonometric, plan and section of the doorway illustrated overleaf.



Alcohol distillery in Finland. Architect, Erkki Huttunen. From "Arkitekten."

PERIODICALS

JUNE ANTHOLOGY

AMERICA

American Architect.

(Monthly, $1. 572 Madison Avenue, New York)

MAY. The first of a series of numbers devoted to "The Better House." Some sensible arguments: useful type plans and room lay-outs, some less happy samples of executed work, but a very useful client's questionnaire compiled by William Lescaze and F. A. Pawley.

Architectural Forum

(Monthly, $1. 220 East 42nd Street, New York)

June. The first instalment of a series of articles on the technique of apartment planning, the problem attacked from the rent which the tenant can pay. Notes on the design of broadcasting studios, illustrated by various B.B.C. designs and the new Columbia studios by William Lescaze. Illustrations of current buildings and remodelling schemes.

Architectural Record

(Monthly, 50 cents. 115 West 40th Street, New York)

June. Schools number: excellent general articles, fifteen examples of recent work—all in America—good technical articles, one of particular interest on ramps *v.* stairs, ramps apparently winning.

Pencil Points

(Monthly, 35 cents. 330 West 42nd Street, New York)

June. George Nelson's series of articles on European architects continues with the work of Raymond McGrath. Carl Snyder examines various problems of prefabrication, and twenty additional designs from the Portland Cement Association's 24,000 cubic foot house competition are also illustrated.

FINLAND

Arkitekten

(Monthly, 15 fmk. Ainogatan 3, Helsingfors)

No. 4. An alcohol distillery by Erkki Huttunen.

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FRANCE

L'Architecture

(Monthly, 6 fr. 51 Rue des Ecoles, Paris 5e)

June. Architecture and interior decoration at the 1936 Salons reviewed by P. Olmer; a "groupe scolaire" by P. Sardou.

La Technique des Travaux

(Month, 10 fr. 54 Rue de Clichy, Paris 9)

June. An open air swimming pool at Westende by Govaerts and Van Vaerenbergh—a large scheme with good sun terraces and cafés; a multi-floor municipal garage for Venice with spiral ramps at each end and having a capacity of 1,200 cars. The replanning of the Slussen crossing in Stockholm—an excellent article giving schedules of traffic flow, full plans and constructional data.

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GERMANY

Baukunst und Städtebau

(Monthly, 1m. 90. Bauwelt Verlag, Berlin, S.W.68)

June. Houses by Emil Schuster in the suburbs of Berlin, and two houses on the Rhine by Ernst Meller: other small houses by various architects and two well-illustrated articles on wrought ironwork.

Baumeister

(Monthly, 3m. Georg Callwey, Munich)

June. Several pleasing shops and restaurants in Basle by Paul Zehntner and the usual good working drawings.

Bauwelt

(Weekly, 90 pf. Ullstein Verlag, Berlin, S.W.68)

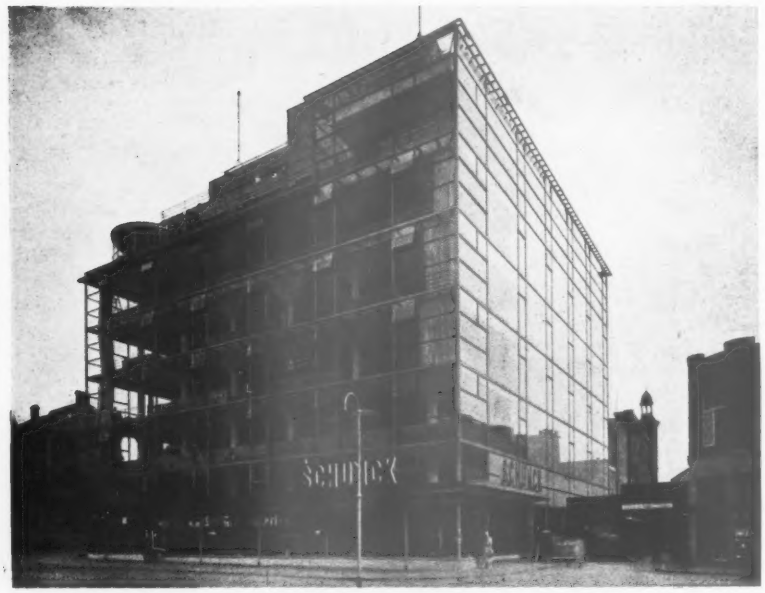
June 4. Country houses near Berlin and Potsdam by Otto von Estorff and Gerhard Winkler.

June 11. Two schools with simple and straightforward plans, traditionally elevated.

June 18. The design of bomb-proof shelters, under and overground types compared, with various constructional details.

June 25. Houses, restaurants and lay-outs for the Olympic Games, designed by Walter March.

Municipal baths at Chemnitz. Architect, Fred Otto. From "Deutsche Bauzeitung"



Shop at Heerlen. Architect, F. P. J. Peutz. From "Bouwkundig Weekblad Architectura."

Deutsche Bauzeitung

(Weekly, 3 m. 40 per month. Seydelstrasse 6, Berlin, S.W.19)

June 3. Municipal Swimming baths in Chemnitz by Fred Otto. (See illustration.)

June 17. The work of Hans Schmarje.

Innen Dekoration

(Monthly, 2m. 50. Neckarstrasse 121, Stuttgart)

June. Current productions of the Deutsche Werkstätten. A large country house by Josef Margold.

Moderne Bauformen

(Monthly, 2 m. 25. Julius Hoffmann, Stüttgart)

June. A mountain inn in the Swabian Alps, three country houses near Zürich by Moser and Kopp.

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HOLLAND

Bouwkundig Weekblad Architectura

(Weekly, 15 florins per annum. Weteringshaus 102, Amsterdam)

June 6. A post office and telephone exchange at Bussum by J. Crouwel.

June 13. A new shop at Heerlen, by F. P. J. Peutz. (See illustration.)

June 20. The Dutch pavilion at the Paris Fair—a good plan with easy circulations for display.

de 8 en opbouw

(Fortnightly 30 cents. Amstel 22, Amsterdam, C.)

May 30. An appreciation by Le Corbusier of the late L. C. van der Vlugt; various *projets*, including one of a road tunnel under the Maas.

June 13. Villa at Wiessel by J. P. Kloos.

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ITALY

Architettura

(Monthly, 18 lire. Via Palermo 10, Milan)

May. A well-illustrated article, by Siegfried Theiss, on recent work on Austria; a small mausoleum at Padua by Giuseppe Tombola.

Rassegna di Architettura

(Monthly, 15 lire. Via Podgora 9, Milan 105)

May. An extremely good new railway station at Florence, the work of no fewer than six architects, who have combined with remarkable success; a pavilion for the display of artificial silk at the Milan fair by Eugenio Faludi.

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SWEDEN

Byggmästaren

(Weekly, 20 kr. per annum. Kungsgatan 32, Stockholm)

No. 14. Two articles on Art in Industry, by E. G. Asplund and Uno Ahrén.

No. 15. A good article on insulation by Gunnar Pleijel.

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SWITZERLAND

Schwerizerische Bauzeitung

(Weekly, 1 fr. Dianastrasse 6, Zürich)

June 6. Interesting competition schemes for an open-air swimming bath at Zürich.

June 13 and 20. Mainly civil engineering.

June 27. The theoretical design of sundials, an interesting article on the mathematical side of the problem, with an explanation of the inherent errors.

Werk

(Monthly, 3 fr. 60. Muhlebachstrasse, 59, Zürich)

June. Good poster designs—mostly Swiss.

LAW REPORT

CASE UNDER THE HOUSING ACT, 1930

The Irthlingborough (Northants) U.D.C. (No. 4) Clearance Order. Application by E. P. Allin.—King's Bench Division. Before Mr. Justice Swift.

IN this case Mr. Ernest Percy Allin, the owner of a number of houses in Gosham Road, Irthlingborough, appealed against a clearance order made by the Irthlingborough U.D.C. on the ground that the Council, in making the Order, had not complied with the requirements laid down in section I of the Housing Act, 1930, in that it had not satisfied itself that the most satisfactory method of dealing with the property concerned was by demolition. Mr. Allin alleged that the Council had not considered all the alternative methods so as to satisfy itself as to the most satisfactory method to adopt.

Mr. R. E. Manningham Buller appeared for the appellant, and Mr. Valentine Holmes for the respondent, the Minister of Health.

Mr. Buller contended that the Council should have considered all the methods of dealing with the property permitted by the various sections of the Housing Act, 1930, and if that were not done the whole proceedings became null and void and the resolution of the Council declaring a clearance order was *ultra vires*.

Proceeding, counsel said that in June, 1935, the Council passed a resolution declaring the area in question a clearance area, and in the following September the order was made. Notice of objection was given by Mr. Allin in November, and on December 3 an inquiry was held by the Inspector appointed by the Minister of Health. At that inquiry the case for the Council was presented by Mr. Wilson, the clerk to the Council, and the first witness called was Mr. Geo. Clark, the chairman of the Council. In an affidavit, Mr. Allin stated that at the inquiry Mr. Clark, in his evidence, said there was no other method of dealing with the houses except by making a clearance order. Mr. Allin, in his affidavit, stated that his belief was that if the other methods of dealing with the houses had been considered by the local authority, it would not be decided that the making of the demolition order was the most satisfactory method of dealing with the houses. Without considering other methods the Council could not properly determine that the most satisfactory method of dealing with the conditions was by demolition. Mr. Allin was ready and willing to execute considerable alterations and repairs to his premises. It was not enough for the Council merely to adopt the advice of its sanitary inspector. It had to go further and exercise a judicial discretion in the matter.

His lordship said the Minister of Health was the person who had to decide whether the local authority had properly decided that this area ought to be a clearance area. It was not a matter for the Court. He could not go behind the decision of the Minister.

Mr. Buller replied that the Act conferred great rights on the Minister and local authorities, empowering them to take any person's property, and in those cases surely it was a condition precedent that the authorities should proceed and bring themselves within the provisions of the Act.

Continuing, Mr. Buller said that Mr. Allin would have raised no objection to the order in question if the Council had duly considered other alternative methods first. At the inquiry an architect, who had prepared a scheme for dealing with the defects in the property, was called.

His lordship said the architect had not made a report to the Council or its

committee, and he could not consider his report.

Mr. Buller submitted that the possibility of repairs of the property should have been considered by the Council.

Mr. Valentine Holmes, supporting the order of the Minister, said that in January, 1935, the Council's sanitary inspector had made a report on the property, and in May the General Purposes Committee, consisting of the whole Council, considered the area concerned, and its attention was called specifically to the three possible methods for dealing with the property under section 19 of the Act. The General Purposes Committee was satisfied that a clearance order was the most satisfactory method to adopt, and that order was made later. There was abundant evidence before the Inspector on which he could decide that the Council had taken the necessary steps and had adopted the right method of dealing with the houses in question.

His lordship, at the conclusion of the arguments, dismissed the appeal. He said he was satisfied that the local authority had had the advice of its medical officer and all the necessary materials enabling it to come to the conclusion it did come to. He did not think there had been any failure by the local authority to comply with the requirements of the Act. There was nothing wrong in the method it had adopted, and he dismissed the appeal with costs.

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

Reviews of housing progress in Scotland and England were given in the House of Commons last week.

Sir G. Collins, Secretary of State for Scotland, said that private enterprise in the building of small houses in Scotland had during the past year produced the highest number, with one exception, in any year since the war. There was a shortage of labour in many parts of Scotland, particularly of bricklayers. He had met representatives of the employers and hoped shortly to meet representatives of the workers to consider that problem. In February, 1935, he stated to the House that by December thirty-five local authorities would have placed contracts to build 60 per cent. of their needs to replace slum houses in their areas during the next five years. That had been amply secured. Within the five-year period, if the present rate of progress continued—and he saw no reason why it should not—all the slums would have been destroyed. More slums had been destroyed and new houses built for the accommodation of the slum dwellers during the last three years than in the previous 30 years. The other side of housing policy was the measures for dealing with overcrowding. The local authorities had been very prompt in making the survey of their needs throughout Scotland. To abolish overcrowding the estimated need was 150,000 houses. The programmes submitted by the local authorities covered 37 per cent. of the need. In no case would one or two-roomed houses be built to deal with the overcrowding problem. There had been a distinct movement among local authorities to secure the services of outside architects for their housing estates, and he hoped that movement would go farther. He regretted that during the last few months some local authorities in Scotland had refused to utilize the services of outside architects, and he thought that it would be the wish of the House that the best brains which money could secure should be engaged for the improvement of housing conditions.

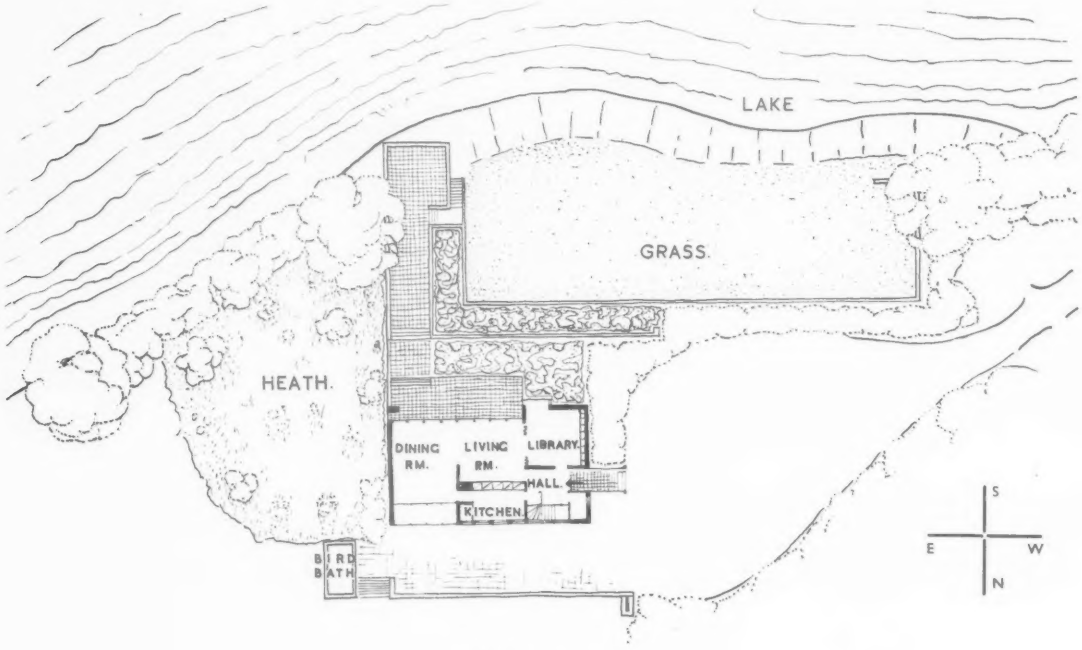
Chapel of the Community of the Resurrection, Mirfield, Yorks. Modified Scheme. By Michael Tapper. (Royal Academy Exhibition No. 1413.)

Sir K. Wood, the Minister of Health, said that, in England, there had been an unprecedented output of houses since the war. It had played an important part in the national recovery and in the increase of employment which it had provided. Well over 3,000,000 houses had been erected in this country since the Armistice, and the gratifying feature in recent building activity had been the increasing proportion of houses built for people of moderate means. Out of 323,926 houses built last year, 271,389 were built by private enterprise without assistance, and 90 per cent. of that total were houses up to £26 rateable value. It was remarkable how these figures had risen, because in 1926 the figure was 70 per cent., in 1930 the proportion had risen to 74 per cent., and now it was 90 per cent. Only in the last two years had statistics been obtained by his Department which enabled the Department to distinguish houses built for letting and houses of a rateable value not exceeding £13. During that period unassisted private enterprise had been building small houses of this type at the rate of 100,000 a year, and one-third of these had been built to let.

Returns of those built by local authorities were equally satisfactory. He wanted to encourage both. The last half-year was the best building half-year they had ever had in this country, no fewer than 174,000 houses having been built for the half-year ended March 31, 1936. The best previous figure was 168,000 for the half-year ended March 31, 1935. The real and greatest housing needs were for small houses and houses to let. For the half-year ended March, 1936, the local authorities and private enterprise had provided 80,000 small houses, which was easily a record for this country. Houses to let were now being built at the rate of 100,000 a year, which was another record. It was advisable that his Department should have further information regarding rents, and he was asking local authorities to supply him with it. It was one of the most encouraging signs of the times that private enterprise was now beginning to build small houses and houses to let.

A HOUSE NEAR BERLIN

PURPOSE—*A house near Berlin for a client with interests in the important farming district around. The architects were asked to make the most of the house's setting and especially to provide views over the farmland across the lake.*



LAY-OUT PLAN

BY THE BROTHERS LUCKHARDT

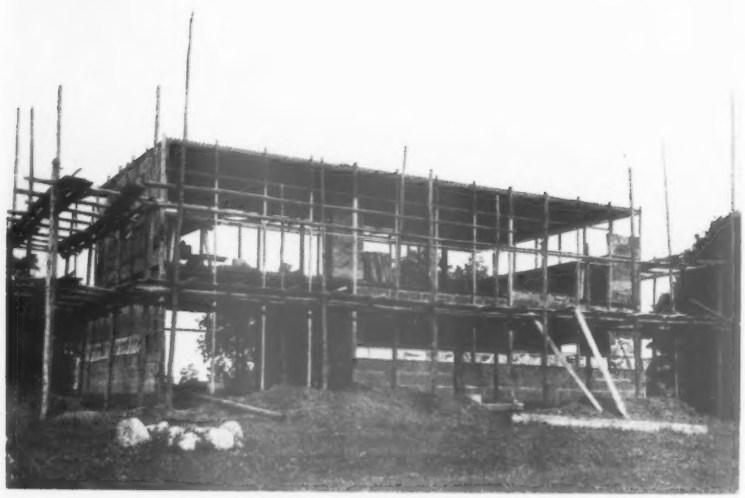
SITE—*The house was raised above terraces in order that a wider view could be obtained, and so that the flower gardens could form a foreground to it.*

PLAN—*The plan form is of a straightforward open air type. The ground floor windows are recessed under the first floor to avoid extreme glare. The first floor balcony can be cased with glazed sliding panels and heated in winter.*

CONSTRUCTION—*The house is of light steel frame construction of standard units, stabilized by two brick internal walls and a large stack. Infilling panels are of pumice slabs insulated with zinc sheets and finished externally in small buff tiles. Floors and roof are of corrugated asbestos sheets floated with three inches of pumice concrete ; when finished they retain a certain amount of springiness, and, perhaps because of this quality, are fairly sound proof. The larger windows are of wood, clear varnished in a vermilion frame, and metalwork is also in vermilion. Doors internally are flush, painted black, and balcony walls are terracotta red.*

Above is a detail of the South front.

A HOUSE NEAR BERLIN



DESIGNED BY THE BROTHERS LUCKHARDT

HEATING—*The house is heated on the low pressure system and the radiators (one of which is shown above) are of fine copper-gilled pipes in a casing of polished aluminium. This type is very efficient and takes up little room.*

The photographs show : top, a detail of the living-room windows. On the edge of the transomes can be seen the spring metal-strip draught-excluders which are fitted to all the sliding casements. Bottom, a constructional photograph showing the light lattice framing, pumice-slab walls and the zinc sheet insulation partially draped over them. The corrugated asbestos sheeting, which forms both the centering and a constructional element in the floors, can also be seen in position.

SOCIETIES AND INSTITUTIONS

TOWN PLANNING INSTITUTE

Following are some extracts from a paper entitled "London's Green Belt," read by Alderman Ewart G. Culpin, F.R.I.B.A. (Chairman of the Greater London Regional Planning Committee), at a recent meeting of the above Institute.

IT is perhaps difficult to say anything new about the various legislative proposals that were made centuries ago for the provision of an open space around London, but it may be well briefly to enumerate the most important of these in order to appreciate the actual position which has been arrived at today in consequence of the efforts of the London County Council to provide some sort of "Green Belt."

In the days of Queen Elizabeth the buildings of London were, for the most part, confined within the old city walls, where there were still large areas of unbuilt land. There was a suburb outside the wall between Moorgate and Newgate, and Holborn was built as far as Little Turnstile. The Strand was bordered with houses as far as Charing Cross, but there was nothing connecting these west of Chancery Lane. St. Giles was indeed in the Fields! There were enclosed fields as far as Covent Garden and north and west was open country which stretched east to Clerkenwell. Stepney Fields touched the wall on the N.E., and no house within the city was more than 15 minutes' walk from fields.

But even that rural condition did not satisfy the Government of the day, and Her Majesty, "having the principall care under Almightie God to foresee aforehand" commanded "all maner of persons, of what qualitie soever they be, to desist and forbeare from any newe buyldings of any house or tenement, within three miles from any of the gates of the sayd Citie of London." The full preamble of this proclamation was issued from Nonsuch in 1580.

In 1593 this prohibition was embodied in a Public Act, but 5 years later the Privy Council complained that "the slacke and negligent oversight of the justices dothe deserve some sharp and severe reprehension."

In 1602 there was another Proclamation. James I and his successors continued practically the same policy. In 1657 an Act was passed "for the preventing of the multiplicity of buildings in and about the suburbs of London, and within 10 miles thereof." The major provision in this Act may be useful as a precedent in any appeal against the normal provision in our new schemes providing for one house to five acres in the agricultural zone, because under this Act anybody building a house "not having four acres of land at least," should pay heavy fines "unto His Highness the Lord Protector for the use of the Commonwealth." It may also encourage timid authorities who are dubious of exercising their power in regard to infringement of interim permission to know that there is considerable evidence of the enforcement of the penal clauses, and large numbers of houses were ordered to be pulled down. Many cases were remitted to the Star Chamber, with dire results. In many cases, however, it is to be feared that the royal coffers were replenished by means of licences to build on prohibited land.

In 1760 the great chance of a Green Belt occurred when the old city wall and its gates were pulled down, but there would not appear to be any record of a suggestion of this kind having been made.

When we contemplate what has been done at Cologne, in Vienna, and other places, there must be another sigh of regret.

In 1661 John Evelyn made a proposal for the "Improvement and Melioration of the Aer of London" by the utilization of the ground lying round the city for the formation of plantations. All the low-lying land near to the city should be divided up and planted "with such Shrubs, as yield the most fragrant and odoriferous Flowers, and are aptest to tinge the Aer upon every gentle emission at a great distance." A catalogue of suitable trees and plants is enclosed, "but above all Rosemary, the Flowers whereof are credibly reported to give their scent above 30 leagues off." "All the herbs which breathe out and betray their ravishing odours" were to be planted, and by this means "the whole city would be sensible of the sweet and ravishing varieties of the perfumes."

A century later John Gwynn proposed that the new road, now known variously as City Road, Pentonville Road, Euston Road and Marylebone Road, should be the great boundary for restraining any further building north of London. He proposed a new thoroughfare from Seymour Place to the Thames near Victoria as the western boundary, "beyond which no buildings should be permitted on any pretence whatsoever." No building was to be allowed on the new road nearer than 120 ft.—so that there was historic precedent for the Restriction of Ribbon Development Act. It was proposed that this belt of grass should extend round the whole city.

1829 saw the most ambitious proposal. Building had, of course, advanced, but the Regent's Canal formed the limits of building to the North and East, though at Edgware Road and Islington ribbon development had spread. Sloane Square was growing up and Chelsea was merged with Pimlico. Nine Elms and Camberwell were in a built-up area, but even in Bermondsey and Rotherhithe large areas were open. An attempt to enclose Hampstead Heath gave rise to a proposal to have a circle of turf and gravel in the centre of the city around St. Paul's, half a mile in diameter. In this were to be situated the Government buildings. For a depth of one mile development should be allowed, and then a half-mile zone of country, which should include Hyde Park, Regent's Park, and so on. Then came another zone of town one mile broad, containing Kensington, Bayswater, Paddington, Clapton, Limehouse, Deptford and Chelsea, with a further half-mile zone of country and another mile of buildings until the zone touched the sea. The ambitious author of this scheme presumed that it could not be carried into execution in less than fifty or one hundred years. Provision was made for pulling down existing buildings to make a start, and there were penalties for repairing any that would find themselves in a green belt.

We have to travel nearly another century to find a concrete scheme. This was that of Sir William Bull, who in June, 1901, submitted to the Parks Committee of the London County Council a suggestion for the purchase of land to link the existing parks and open spaces on the outskirts of the County into a continuous chain. This proposal was reported on in January, 1903, by the Chief Officer of Parks. The proposal itself was found to be impracticable, although the germ of the idea was applauded. It would have comprised a green girdle half a mile in width connecting the existing open spaces and forming a practically continuous belt about 47 miles long. It would include a considerable portion of the northern and southern heights, parts of the Thames Valley and large areas of marsh land. About 11,000 acres would have had to be purchased and the estimated cost was £12,000,000. Sir William Bull's scheme included, however, 8 square miles of land occupied by buildings, such as Acton, Brentford, Tooting, Streatham Norwood, Forest Hill, Lewisham, Tottenham, Hornsey and Willesden. That, of course, was quite impracticable. An alternative scheme of about 19 square miles or about 12,000 acres was suggested. Plans were proposed of a more remote belt greater in extent but of much less value. One of 24,000 acres was estimated to cost about £100 an acre. This matter was adjourned for 12 months, and in 1904 was abandoned.

In 1906, when I had just succeeded Mr. Thomas Adams as Editor of the *Garden City Magazine*, the scheme of Lord Meath's was published showing his plan and schedule for a green belt.

In 1909 Mr. Davidge proposed a "ring street" which would have connected the principal parks by a broad tree-lined avenue, with grass and gardens at frequent intervals.

In 1912, Mr. Paul Waterhouse, in writing on the new circular roads, advocated that these should be so planned as to bring all the parks and open spaces within their reach. By these means he thought it possible to girdle London with a "cheerful and definite garden four or five hundred yards in width."

In 1926 the Town Planning Committee of the L.C.C. considered a resolution of the Council "that it be referred to the Special Committee on Town Planning to consider and report whether or not the preservation of a Green Belt or unbuilt-on zone or zones within the boundaries of or adjacent to Greater London is desirable and practicable, and if so, what steps can be taken to effect this." The Committee had reports before it giving the whole history of the previous proposals and indicating a concrete case for dealing with the suggestion.

A plan was prepared at this time and submitted to the Committee, showing a proposed inner and outer belt.

The average distance of the inner belt from Charing Cross was about 12 miles and its length approximately 75 miles and, assuming an average width of half a mile, its area would be about 24,000 acres, or 37½ square miles. Excluding existing open spaces and those proposed under Town

Planning Schemes at that time, together with certain breaks in the continuity of the belt by existing development, about 17,300 acres, or 27 square miles, would have had to be acquired to carry this scheme through.

The outer belt proposed was at an average distance from Charing Cross of about 19 miles, its length was about 118 miles and, with an average width of about half a mile, its area was about 38,000 acres or 59 square miles, of which, excluding existing public open spaces, etc., about 36,000 acres, or 56½ square miles, would have had to be acquired. This was the consideration of the proposal in its general aspect in 1926.

The L.C.C. had already considered the question of a Green Belt before the formation of the Greater London Regional Committee in 1927. Then however, the matter was taken up with considerable vigour, and Sir Raymond Unwin's proposals are too recent to require further examination here.

These proposals having been approved by the Greater London Committee, were remitted to the constituent authorities, and conferences were called of the local authorities to see what could be done. The practical proposal then put forward by Sir William Ray, who was Chairman of the Conference, was that steps should be taken to secure the area in the Regional Committee's report, and that it should be paid for by contributions of 1d. in the £ for 60 years on the rateable value of property within the Greater London Region, that is, within 25 miles of Charing Cross. The produce of this rate was estimated in 1933 to be about £400,000. Before any decision had been come to on these points, or it was known whether the various authorities would accept the proposal, and even before any decision had been come to as to what authority should administer the scheme, the financial conditions which arose in 1931 led to the proposal being adjourned *sine die*.

In 1934, when I became Chairman of the Greater London Regional Committee, Mr. Hardy Symes prepared further reports on the proposals still before that Committee, and I prepared a memorandum as to the legal position of acquiring and administering the Green Belt. Difficulties at once became apparent, both as to acquisition and administration. It appeared likely then that a special Act of Parliament would be required to give the Regional Committee power to purchase and hold, but innumerable difficulties kept cropping up as to the obtaining of the funds from constituent authorities and the practical difficulty of the importance of not disclosing the areas it was proposed to acquire. In this regard I had some very practical help from Sir Gwilwyn Gibbon.

While all these matters were being investigated and negotiations were going on as to calling together the Counties and the County Boroughs, the L.C.C., under the inspiration of Mr. Herbert Morrison, came to the rescue with a scheme which avoided all the difficulties with which we had been fighting for so many years. His proposal, which was eventually adopted by the Council and is now being put into actual practice, was that the London County Council would make grants to the County Councils of Buckinghamshire, Essex, Hertfordshire, Kent, Middlesex and Surrey, and to the County Borough Councils of Croydon, East Ham and West Ham, towards the approved cost of acquiring, or where legally possible sterilizing, approved lands for recreational purposes or for inclusion in the green belt.

The grants made by the Council would vary according to the value to London of the lands proposed to be preserved but in no case would the Council's contribution exceed 50 per cent. of the approved cost of preservation. The offer would be open for a period of three years from April 1, 1935, and the Council's total commitment in that period would be limited to £2,000,000. The lands would be acquired and sterilized by agreement whenever possible within the existing powers of the authorities concerned and no part of the cost of laying out or maintaining the lands would be borne by the London County Council.

It will be seen, therefore, that the essence of this scheme is direct contact between the London County Council and the County authority in whose area is situated the particular piece of land to be preserved, and the necessity for the setting up of any Joint Committee or other authority or the provision of a central fund, and the difficulties attendant thereon, are entirely avoided. The scheme depends for its success on the co-operation of the County authorities and I am glad to say that I find this co-operation has been distinctly encouraging and that the County Councils appreciate in full measure the main object of the scheme, which I may repeat, is to establish a real break in the mass of building development which is at present spreading into Greater London.

Negotiations have been proceeding day by day and in the majority of the Counties substantial progress has been made. Tens of thousands of acres have been considered on proposals from various quarters and already a huge area is the subject of contracts to purchase. The land is of all categories—forest land, down land, agricultural land, golf courses, private parks and even marsh land.

The following details, without being sufficiently definite to interfere with any negotiations going on at the moment, will give a fairly good idea of what is now included, while the map which is now exhibited will drive home the lessons.

It will be seen that in little over twelve months a great step forward has been taken in providing this green lung around our great metropolis. There is, fortunately, no need nowadays to argue the advantage of open space and the danger of the ever-spreading mass of built-up towns. That has been accepted as an axiom of town growth, but some of us can remember when it was not so easy to get acquiescence in the principle. And when the principle was agreed that was not the same thing as getting it put into practice.

In working out the details of the proposal all hope of a continuous open belt which had been dreamed of years ago had to be abandoned. A hundred years ago it could have been done and a quarter of a century ago there was opportunity. Even 20 years ago something approaching it was possible, but the post-war development ate up land at such a rate that in addition to the evils of the houses themselves—that is one which the next generation of our Institute may have to deal with—open spaces in general and the green belt in particular were wholly sacrificed to the mad get-rich-quick developer who has in many places blasted the countryside with his foul erections.

Advantage has been taken of all existing public and private open spaces and any area which would stem the tide of advancing brick and mortar and serve as some link with other areas. Large institutions and hospitals, which in many cases have their own grounds and farms, aerodromes, reservoirs, water-ways and lakes all help to constitute this open barrier.

I have endeavoured to avoid figures and statistics in the course of this review of the position, but it is worthy of note that in 1930 a survey was made of the area of land within a radius of eleven miles of Charing Cross which might be suitable for playing fields and it was then found that in the few preceding years no fewer than 5,500 acres of suitable land had been used for building purposes. There were then left some 26,000 acres which were still available, but three years later another 3,000 acres had gone and there is little doubt that at least a thousand acres of potential playing fields is being swallowed up every year.

We have been so busy regretting the lost opportunities of previous generations that this generation has been unmindful of this evil happening before its own eyes. Members of this Institute have an honourable record of what they have done to advance these ideals, but all the legislation has been unavailing to secure some of those things which a generation ago seemed so sure if only we had the power. Now we have the power but not always the will, and some types of local government bodies have been more adept in obstruction than action. Hesitation to act has even in the last two years lost vital parts of our green belt and one has been amazed to realize that within 20 miles from Charing Cross there are Councils who have declined to preserve open space even when assured of adequate financial support.

To turn to what has been done, a number of comprehensive proposals have been considered, and these comprise the preservation of land which stretches roughly from Egham to Rickmansworth in the west, thence eastwards towards Chipping Barnet and Epping Forest and southwards from there to the north bank of the Thames in the neighbourhood of Rainham. A comprehensive scheme south of the River Thames might include some thousands of acres of the North Downs in Surrey and Kent.

The following table indicates approximately at the end of March, 1936, the total areas provisionally approved by the appropriate Committee of the London County Council in the Counties concerned.

	Acres.
Buckinghamshire ..	2,740
Essex	7,070
Hertfordshire	629
Kent	2,320
Middlesex	4,408
Surrey	1,131
Total, say	18,300

The estimated expenditure for securing these approved areas is very substantial and

the aggregate contributions which the various Committees concerned have agreed to recommend the London County Council to make is about three quarters of a million pounds.

It will be appreciated that the London County Council does not itself initiate proposals under the scheme, all applications for grants being submitted for consideration by the various County and County Borough Councils respectively, and in order not to hamper the negotiations which are being carried out by the County authorities it is essential that all matters in connection with the Green Belt scheme be treated in a private and confidential manner.

Owing to the great size of London and its suburbs, practically the whole if not all of the Green Belt will have to be found outside the London County boundary. This means that relatively very little can be done within a distance of say 12 miles from Charing Cross.

It is not even possible to have an agriculture belt of any size or to have a number of well-planned "satellites" such as at Letchworth, Welwyn and to a lesser degree perhaps, the London County Council's Becontree Estate.

THE BUILDINGS ILLUSTRATED

QUEEN VICTORIA MEMORIAL HOSPITAL, WELWYN, HERTS (pages 113-115). The general contractors were J. Wilmott and Sons (Hitchin), Ltd., and the principal sub-contractors and suppliers included Excel Asphalte Co., Ltd., asphalt; Daneshill Brick Co., Ltd., bricks; Caxton Floors, Ltd., fireproof construction; Acme Flooring and Paving Co., Ltd., wood block flooring; James Slater & Co. (Engineers), Ltd., central heating; The Shoolbred Electrical Co., Ltd., electric wiring; Shanks & Co., Ltd., sanitary fittings; Williams and Williams, Ltd., casements; A. J. Shingleton, sunblinds; W. B. Simpson & Son, Ltd., tiling; Aldous and Campbell, Ltd., lifts.

OUR LADY OF LOURDES SCHOOL, HILLSIDE, SOUTHPORT (pages 116-117). The general contractors were W. Tomkinson and Sons, and the principal sub-contractors and suppliers included: Blockleys, Ltd., sand faced bricks; Trussed Concrete Steel Co., Ltd., Reinforced Concrete Engineers, floors; Richard Crittall & & Co., Ltd., heating (concealed panel radiation); Celotex Co., of Great Britain, Ltd., acoustics; Stic B. Paint Sales, Ltd., Stic B. finish; Cellon, Ltd., Cerrux paint—to doors and windows; Shanks & Co., Ltd., sanitary fittings; G. M. Callender & Co., Ltd., Ledkore dampcourses; John Dickinson & Co. (Bolton), Ltd., asphalt; Northern Artificial Stone Co., stairs and cills; Conway & Co., terrazzo to lavatories; Pilkington Bros., Ltd., glass; Mitchell Bros., wood block flooring; Southport Gas Co., gas fixtures and gas fittings; Parrys, electric wiring, electric light fixtures, electric heating, bells, telephones, clocks and wireless installation to all classrooms; Campbell & Mabbs, Ltd., door and window furniture; George Lowe & Sons, Ltd., handrails and metalwork; John Wallace and Sons, tiling; E. A. Clarke, Ltd., mantels; James Gibbons, Ltd., cloakroom fittings.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 miles radius)

LEWISHAM. *Flats.* Plans passed by the B.C.: 72 flats, Chinbrook Road, for Messrs. Godfreys, Ltd.; two factories, Worsley Bridge Road, for Commercial Structures, Ltd.; flats, Honor Oak Road, for Messrs. G. E. Clare and Son; houses, Ewelme Road, for Mr. E. W. Wallis; houses, Thorpewood Avenue, for Mr. E. C. Christmas; flats, The Avenue, Grove Park, for Mr. Morris Joseph; rebuilding, 10 Lee High Road, for Mr. C. W. Box; flats, 48 Sunderland Road, for Ashford Trust, Ltd.; houses, Beckenham Lane estate, Bromley Road, for Mr. A. Frampton.

MIDLAND COUNTIES

BIRMINGHAM. *Law Courts.* The Corporation has obtained sanction to borrow £102,054 towards the cost of the erection of New Victoria law courts.

CHESTERFIELD. *Houses, etc.* Plans passed by the Corporation: Two houses, Brookside, for Mr. Clifford Bond; shop and house, Mary Road, for Mr. Clover; business premises, Knifesmith Gate and Cavendish Street, for Mr. G. Bradley; four houses, Heathfield Avenue, and six houses, Walgrove Road, for Mr. E. Shentall; two houses, King George Road, for Mr. Fairburn; two houses, King George Road, for Mr. J. W. Revill; four houses, Swaddale Farm estate, for Messrs. Revill and Beresford; two houses, Langer Lane, for Mr. W. Marriott; office alterations, Tapton Lane, for Manchester Unity of Oddfellows; development, Brookside Farm estate, for Mr. W. H. Hancock; rebuilding restaurant, Falcon Yard, for Mr. J. Boden; estate development, Highfield Road, for Mr. A. Heath; works extensions, Clayton Street, for Messrs. R. Hyde and Son, Ltd.; workshop, Hollis Lane, for Scarsdale Brewery Co., Ltd.

HINCKLEY. *School.* The Leicestershire Education Committee is to erect an elementary school at Hinckley, at a cost of £30,998.

NORTHERN COUNTIES

BRADFORD. *Baths.* The Corporation recommends proceeding with the scheme for the extension of the Lister Park open-air baths, at a cost of £19,890.

BLACKPOOL. *Houses, etc.* Plans passed by the Corporation: Eight houses, Mansfield Road, for Messrs. Ramsden Bros.; two houses, Napier Avenue, for Pre-Cast Stone Co.; 17 houses, Faringdon Avenue, for Messrs. I. Fletcher, Ltd.; two houses, Whitegate Drive for Mr. J. E. Dugdale; six houses, Shaftesbury Avenue, for Messrs. R. Fielding and Sons; 22 houses, Collyhurst Road, for Messrs. Beardshaw & Co.; 12 houses, Norcliffe Road, for Mr. R. Jackson; 12 houses, Salmesbury Avenue, for Mrs. P. P. Taylor; Sunday school, Warbreck Drive, for Congregational Church trustees; workmen's club, Watson Road, for Mr. J. Eastwood; four houses, Lindale Gardens, for Mr. R. Bant; four houses, Torsway Avenue, for Mr. A. Wilson; four houses, Dunes Avenue, for Mr. W. B. Snape; two houses, St. Bernards Avenue, for Lucky Houses, Ltd.; four houses, Preston New Road, for Mr. James Gregson; four houses, St. Walburgas Road, for Mr. W. S. Wild.

CARLISLE. *Extensions, etc.* The Corporation has approved plans for extensions at the Fusehill institution.

CUMBERLAND. *Extensions.* The Cumberland C.C. has approved a scheme for extensions at the county infirmary, at a cost of £115,900.

HUDDERSFIELD. *Extensions, etc.* The Huddersfield Education Committee is to enlarge the technical school at a cost of £67,177.

LEEDS. *School.* The Leeds Education Committee has obtained sanction to borrow £62,505 for the erection of an elementary school on the Gipton housing estate.

OSSETT. *Houses, etc.* Plans passed by the Corporation: 56 houses, Town End, for Mr. S. B. Nettleton; extensions, Highfield Mills, for Messrs. Walter Walker and Sons, Ltd.; six bungalows, Pildacre Lane, for Mr. E. Ashton.

OSSETT. *Houses.* The Corporation is to erect 28 houses on the Swithenbank estate.

SHIPLEY. *School.* The U.D.C. has approved plans for the erection of a Roman Catholic school in Carr Lane, Windhill.

STRETFORD. *Houses, etc.* Plans passed by the Corporation: Five houses, Ryebank Road, for Mr. A. Wallwork; three flats, Edge Lane, for Firs Building Estate; labour exchange, Brunswick Street, for H.M. Office of Works; works extensions, Ayres Road, for Stuarts Granolithic Co., Ltd.; laboratory extensions, Westinghouse Road, for Metro-Vickers, Ltd.; office extension, Park Road, for Messrs. D. Anderson and Son, Ltd.

STRETFORD. *Houses.* The Corporation is to prepare plans for the erection of 434 houses at Lostock.

STRETFORD. *School.* The Stretford Education Committee has approved plans for the erection of an elementary school for 400 at Lostock.

STRETFORD. *Clinic.* The Corporation is to prepare plans for the erection of a clinic at Lostock.

ST. HELENS. *Schools.* St. Helens Education Committee is to erect new elementary schools, at a cost of £22,567.

WAKEFIELD. *Additions.* The Corporation has asked the borough architect to prepare a scheme for the provision of further accommodation for all the departments of the Corporation.

WAKEFIELD. *Redevelopment.* The Corporation is to prepare plans for the redevelopment of the Little Westgate area.

WAKEFIELD. *Houses.* Mr. Ledgar Holdsworth is to erect 32 houses on the Woodthorpe Park estate, Wakefield.

WAKEFIELD. *Houses, etc.* Plans passed by the Corporation: Three houses, Dewsbury Road, for Mr. James Taylor; two houses, Farne Avenue, for Mr. H. Walton; alterations, Victoria Mills, for Messrs. J. and J. Archer, Ltd.; alterations and additions, Wheatsheaf P.H., Kirkgate, for Messrs. Beverley Bros., Ltd.; shop, Kirkgate, for Messrs. Preston Jenkinson, Ltd.; two houses, St. John's Grove, for Messrs. A. Turner & Co., Ltd.; 12 houses, Cyprus Street, for Mr. J. R. Lister; two shops, Kirkgate, for Prices Tailors, Ltd.

SOUTHERN COUNTIES

EPSOM, ETC. *Schools.* The Surrey Education Committee has obtained sanction to borrow sums of £31,790, £31,530 and £15,640 for the erection of schools at Epsom, Kingston and Cheam, respectively.

HASTINGS. *Houses.* Plans passed by the Corporation: Seven houses, St. Helen's Down Road, for Mr. H. W. Coussens; additions, St. Augustine's nursing home, Upper Maze Hill, for Mr. J. B. Menaham; two houses, The Ridge, for Mr. J. Vine; additions, Convent, St. Saviour's Road, for Mr. J. S. D. Hicks; additions, Glenroyde Hotel, Wellington Square, for Mr. E. W. Jackman; two bungalows, Park Crescent, for Mr. A. Radcliffe; additions, Royal East Sussex Hospital, for Messrs. Callow and Callow; alterations, 41 Eversfield Place, for Messrs. Oxley and Burleigh; two houses, Cliftonville Road, for Hastings Developments, Ltd.; flats and shops, Tivoli estate, Battle Road, for Mr. D. Padgham; additions, New Palace Pier, St. Leonards, for Mr. W. Wylton Todd; additions, Southside Bridge Club, The Green, for Mr. F. Gordon Watford; 16 bungalows, off Parker Road, for Messrs. Jeffery and Wyatt; shop, 51 Havelock Road, for Mr. F. L. Crew.

WALES

CARDIFF. *Exhibition Hall.* The Ministry of Health is to hold an inquiry into the application of the Cardiff Corporation to borrow £150,000 in connection with the erection of an exhibition hall.

CARDIFF. *Open-air Baths.* The Corporation is to consider sites at Cathays and Maindy for the construction of open-air baths.

CARDIFF. *Community Centres.* The Corporation has asked the city engineer to prepare plans for the erection of community centres on the housing estates.

RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule. Column I gives the rates for craftsmen; Column II for labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

			I s. d.	II s. d.
A_1	ABERDARE ...	S. Wales & M.	1 5½	1 1½
A	Aberdeen ...	Scotland	1 6½	1 2
A_1	Abergavenny ...	S. Wales & M.	1 6	1 1½
A_2	Abingdon ...	S. Counties	1 5	1 0½
A	Accrington ...	N.W. Counties	1 6½	1 2
A_2	Addlestone ...	S. Counties	1 5	1 0½
A	Adlington ...	N.W. Counties	1 6½	1 2
A	Airdrie ...	Scotland	*1 6½	1 2
C	Aldeburgh ...	E. Counties	1 2½	11
A	Altrincham ...	N.W. Counties	1 6½	1 2
B_3	Appleby ...	N.W. Counties	1 3	11½
A	Ashton-under-Lyne	N.W. Counties	1 6½	1 2
B_1	Aylesbury ...	S. Counties	1 4	1 0
B_1	BANBURY ...	S. Counties	1 4	1 0
B_1	Bangor ...	N.W. Counties	1 4	1 0
A_2	Barnard Castle	N.E. Coast	1 5	1 0½
A	Barnsley ...	Yorkshire	1 6½	1 2
B	Barnstaple ...	S.W. Counties	1 4½	1 0½
A	Barrow ...	N.W. Counties	1 6½	1 2
A	Barry	S. Wales & M.	1 6½	1 2
B_1	Basingstoke ...	S.W. Counties	1 4	1 0
A_2	Bath	S.W. Counties	1 5½	1 1½
A	Batley ...	Yorkshire	1 6½	1 2
A_2	Bedford ...	E. Counties	1 5½	1 1½
A_2	Berwick-on-Tweed	N.E. Coast	1 5½	1 1½
A_2	Bewdley ...	Mid. Counties	1 5½	1 1½
B_3	Bicester ...	S. Counties	1 3	11½
	Birkenhead ...	N.W. Counties	*1 7½	1 2½
A	Birmingham ...	Mid. Counties	1 6½	1 2
A_1	Bishop Auckland	N.E. Coast	1 6	1 1½
A	Blackburn ...	N.W. Counties	1 6½	1 2
A	Blackpool ...	N.W. Counties	1 6½	1 2
A	Blyth	N.E. Coast	1 6½	1 2
B_1	Bognor ...	S. Counties	1 4	1 0
A	Bolton ...	N.W. Counties	1 6½	1 2
A_2	Boston ...	Mid. Counties	1 5	1 0½
A_2	Bournemouth...	S. Counties	1 5½	1 1½
B_3	Bovey Tracey	S.W. Counties	1 3½	11½
A	Bradford ...	Yorkshire	1 6½	1 2
A_1	Brentwood ...	E. Counties	1 6	1 1½
A	Bridgend ...	S. Wales & M.	1 6½	1 2
B	Bridgwater ...	S.W. Counties	1 4½	1 0½
A_1	Bridlington ...	Yorkshire	1 6	1 1½
A	Brighouse ...	Yorkshire	1 6½	1 2
A_2	Brighton ...	S. Counties	1 5½	1 1½
A	Bristol ...	S.W. Counties	1 6½	1 2
B	Brixham ...	S.W. Counties	1 3½	11½
A	Bromsgrove ...	Mid. Counties	1 5½	1 1½
B	Bromyard ...	Mid. Counties	1 3	11½
A	Burnley ...	N.W. Counties	1 6½	1 2
A	Burslem ...	Mid. Counties	1 6½	1 2
A	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury	N.W. Counties	1 6½	1 2
A	Buxton ...	N.W. Counties	1 6	1 1½
A_1	CAMBRIDGE	E. Counties	1 6	1 1½
B_1	Canterbury ...	S. Counties	1 4	1 0
A	Cardiff ...	S. Wales & M.	1 6½	1 2
A	Carlisle ...	N.W. Counties	1 6½	1 2
B	Carmarthen ...	S. Wales & M.	1 4½	1 0½
B	Carnarvon ...	N.W. Counties	1 4½	1 0½
A	Carnforth ...	N.W. Counties	1 6½	1 2
A	Castleford ...	Yorkshire	1 6½	1 2
A_2	Chatham ...	S. Counties	1 5	1 0½
A	Chelmsford ...	E. Counties	1 5	1 0½
A	Cheltenham ...	S.W. Counties	1 6	1 1½
A	Chester ...	N.W. Counties	1 6½	1 2
A	Chesterfield ...	Mid. Counties	1 6½	1 2
B_1	Chichester ...	S. Counties	1 4	1 0
A	Chorley ...	N.W. Counties	1 6½	1 2
B_1	Cirencester ...	S. Counties	1 4	1 0
A	Clitheroe ...	N.W. Counties	1 6½	1 2
A	Clydebank ...	Scotland	1 6½	1 2
A	Coalville ...	Mid. Counties	1 6½	1 2
A_2	Colchester ...	E. Counties	1 5½	1 1½
A	Colne	N.W. Counties	1 6	1 1½
A_2	Colwyn Bay ...	N.W. Counties	1 5½	1 1½
A_1	Consett ...	N.E. Coast	1 6	1 1½
A_2	Conway ...	N.W. Counties	1 5½	1 1½
A	Coventry ...	Mid. Counties	1 6½	1 2
A_2	Crewe	N.W. Counties	1 5½	1 1½
A	Cumberland ...	N.W. Counties	1 5	1 0½
A	DARLINGTON	N.E. Coast	1 6½	1 2
A	Darwen ...	N.W. Counties	1 6½	1 2
B	Deal	S. Counties	1 4	1 0
A_2	Denbigh ...	N.W. Counties	1 5	1 0½
A	Derby	Mid. Counties	1 6½	1 2
A	Dewsbury ...	Yorkshire	1 6½	1 2
B	Didcot	S. Counties	1 4½	1 0½
A	Doncaster ...	Yorkshire	1 6½	1 2
B_1	Dorchester ...	S.W. Counties	1 4	1 0
A	Driffield ...	Yorkshire	1 5	1 0½
A_2	Droitwich ...	Mid. Counties	1 5½	1 1½
A	Dudley ...	Mid. Counties	1 6½	1 2
A_2	Dumfries ...	Scotland	1 6	1 1½
A	Dundee ...	Scotland	1 6½	1 2
A	Durham ...	N.E. Coast	1 6½	1 2
A_2	EASTBOURNE	S. Counties	1 5½	1 1½
A_1	Ebbw Vale ...	S. Wales & M.	1 6	1 1½
A	Edinburgh ...	Scotland	1 6½	1 2
A_1	Glamorgan-shire, Rhondda Valley District ...	S. Wales & M.	1 6	1 1½
A_2	Exeter ...	S.W. Counties	*1 5½	1 1½
B	Exmouth ...	S.W. Counties	1 4½	1 0½
A_3	FELIXSTOWE	E. Counties	1 5	1 0½
A	Filey	Yorkshire	1 5	1 0½
A	Fleetwood ...	N.W. Counties	1 6½	1 2
B_1	Folkestone ...	S. Counties	1 4	1 0
A	Frodsham ...	N.W. Counties	1 6½	1 2
B_3	Frome ...	S.W. Counties	1 3½	11½
A	GATESHEAD	N.E. Coast	1 6½	1 2
B	Gillingham ...	S. Counties	1 4½	1 0½
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 5½	1 1½
A_2	Goole ...	Yorkshire	1 5½	1 1½
A_2	Gosport ...	S. Counties	1 5½	1 1½
A_3	Grantham ...	Mid. Counties	1 5	1 0½
A_1	Gravesend ...	S. Counties	1 6	1 1½
A	Greenock ...	Scotland	*1 6½	1 2
A	Grimsby ...	Mid. Counties	1 6½	1 2
B	Guildford ...	S. Counties	1 4½	1 0½
A	HALIFAX ...	Yorkshire	1 6½	1 2
A	Hanley ...	Mid. Counties	1 6½	1 2
A	Harrogate ...	Yorkshire	1 6½	1 2
A	Hartlepools ...	N.E. Coast	1 6½	1 2
B	Harwich ...	E. Counties	1 4½	1 0½
B_1	Hastings ...	S. Counties	1 4	1 0
A_2	Hatfield ...	S. Counties	1 5½	1 1½
B	Hereford ...	S.W. Counties	1 4½	1 0½
A_2	Hertford ...	E. Counties	1 5½	1 1½
A	Heysham ...	N.W. Counties	1 6½	1 2
A	Howden ...	N.E. Coast	1 6½	1 2
A	Huddersfield ...	Yorkshire	1 6½	1 2
A	Hull	Yorkshire	1 6½	1 2
A	ILKLEY ...	Yorkshire	1 6½	1 2
A	Immingham ...	Mid. Counties	1 6½	1 2
A_2	Ipswich ...	E. Counties	1 5½	1 1½
B_2	Isle of Wight ...	S. Counties	1 4½	1 0½
A	JARROW ...	N.E. Coast	1 6½	1 2
A	KEIGHLEY ...	Yorkshire	1 6½	1 2
A_1	Kendal ...	N.W. Counties	1 5	1 0½
A_3	Keswick ...	N.W. Counties	1 5	1 0½
A_1	Kettering ...	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 5½	1 1½
B_1	King's Lynn ...	E. Counties	1 4	1 0
A	LANCASTER ...	N.W. Counties	1 6½	1 2
A_1	Leamington ...	Mid. Counties	1 6	1 1½
A	Leeds	Yorkshire	1 6½	1 2
A	Leek	Mid. Counties	1 6½	1 2
A	Leicester ...	Mid. Counties	1 6½	1 2
A	Leigh	N.W. Counties	1 6½	1 2
B	Lewes	S. Counties	1 3	11½
A_2	Lichfield ...	Mid. Counties	1 5½	1 1½
A	Lincoln ...	Mid. Counties	1 6½	1 2
	Liverpool ...	N.W. Counties	*1 8	1 3
A_2	Llandudno ...	N.W. Counties	1 5½	1 1½
A	Llanelly ...	S. Wales & M.	1 6½	1 2
	London (12-miles radius)		1 8	1 3
	Do. (12-15 miles radius)		1 7½	1 2½
A	Long Eaton ...	Mid. Counties	1 6½	1 2
A	Loughborough ...	Mid. Counties	1 6½	1 2
A_1	Luton	E. Counties	1 6	1 1½
A	Lytham ...	N.W. Counties	1 6½	1 2
A_1	MACCLESFIELD	N.W. Counties	1 6	1 1½
A_3	Maidstone ...	S. Counties	1 5	1 0½
A_3	Malvern ...	Mid. Counties	1 5	1 0½
A	Manchester ...	N.W. Counties	1 6½	1 2
A	Mansfield ...	Mid. Counties	1 6½	1 2
B_1	Margate ...	S. Counties	1 4	1 0
A	Matlock ...	Mid. Counties	1 5	1 0½
A_1	Merthyr ...	S. Wales & M.	1 6	1 1½
A	Middlesbrough	N.E. Coast	1 6½	1 2
A_2	Middlewich ...	N.W. Counties	1 5½	1 1½
B_3	Minehead ...	S.W. Counties	1 3½	11½
B_3	Monmouth ... & S. and E. Glamorganshire	S. Wales & M.	1 3½	11½
A	Morecambe ...	N.W. Counties	1 6½	1 2
A_2	NANTWICH ...	N.W. Counties	1 5½	1 1½
A	Neath	S. Wales & M.	1 6½	1 2
A	Nelson ...	N.W. Counties	1 6½	1 2
A	Newcastle ...	N.E. Coast	1 6½	1 2
A	Newport ...	S. Wales & M.	1 6½	1 2
A	Normanton ...	Yorkshire	1 6½	1 2
A	Northampton	Mid. Counties	1 6½	1 2
A	North Shields...	N.E. Coast	1 6½	1 2
A	North Staffs ...	Mid. Counties	1 6½	1 2
A_1	Norwich ...	E. Counties	1 6	1 1½
A	Nottingham ...	Mid. Counties	1 6½	1 2
A	Nuneaton ...	Mid. Counties	1 6½	1 2
A	OAKHAM ...	Mid. Counties	1 5	1 0½
A	Oldham ...	N.W. Counties	1 6½	1 2
A_2	Oswestry ...	N.W. Counties	1 5	1 0½
A_1	Oxford ...	S. Counties	1 6	1 1½
A	PAISLEY ...	Scotland	*1 6½	1 2
B_3	Pembroke ...	S. Wales & M.	1 3	11½
A	Perth	Scotland	*1 6½	1 2
A_1	Peterborough	E. Counties	1 6	1 1½
A	Plymouth ...	S.W. Counties	*1 6½	1 2
A	Pontefract ...	Yorkshire	1 6½	1 2
A_1	Pontypridd ...	S. Wales & M.	1 6	1 1½
A_2	Portsmouth ...	S. Counties	1 5½	1 1½
A	Preston ...	N.W. Counties	1 6½	1 2
A	QUEENSFERRY	N.W. Counties	1 6½	1 2
A_2	READING ...	S. Counties	1 5½	1 1½
B	Reigate ...	S. Counties	1 4½	1 0½
A	Retford ...	Mid. Counties	1 5	1 0½
A_1	Rhondda Valley	S. Wales & M.	1 6	1 1½
A	Ripon	Yorkshire	1 5	1 0½
A	Rochdale ...	N.W. Counties	1 6½	1 2
B	Rochester ...	S. Counties	1 4½	1 0½
A_1	Ruabon ...	N.W. Counties	1 6	1 1½
A	Rugby ...	Mid. Counties	1 6½	1 2
A_2	Rugeley ...	Mid. Counties	1 5½	1 1½
A	Runcorn ...	N.W. Counties	1 6½	1 2
A_1	ST. ALBANS ...	E. Counties	1 6	1 1½
A	St. Helens ...	N.W. Counties	1 6½	1 2
B_3	Salisbury ...	S.W. Counties	1 3½	11½
A_1	Scarborough ...	Yorkshire	1 6	1 1½
A	Scunthorpe ...	Mid. Counties	1 6½	1 2
A	Sheffield ...	Yorkshire	1 6½	1 2
A	Shipley ...	Yorkshire	1 6½	1 2
A_2	Shrewsbury ...	Mid. Counties	1 5½	1 1½
A_2	Skipton ...	Yorkshire	1 5½	1 1½
A_2	Slough ...	S. Counties	1 5½	1 1½
A_1	Solihull ...	Mid. Counties	1 6	1 1½
A_2	Southampton	S. Counties	1 5½	1 1½
A_1	Southend-on-Sea	E. Counties	1 6	1 1½
A	Southport ...	N.W. Counties	1 6½	1 2
A	S. Shields ...	N.E. Coast	1 6½	1 2
A_1	Stafford ...	Mid. Counties	1 6	1 1½
A	Stirling ...	Scotland	1 7	1 2½
A	Stockport ...	N.W. Counties	1 6½	1 2
A	Stockton-on-Tees	N.E. Coast	1 6½	1 2
A	Stoke-on-Trent	Mid. Counties	1 6½	1 2
B	Stroud ...	S.W. Counties	1 4½	1 0½
A	Sunderland ...	N.E. Coast	1 6½	1 2
A	Swansea ...	S. Wales & M.	1 6½	1 2
A	Swindon ...	S.W. Counties	1 5	1 0½
A_1	TAMWORTH ...	N.W. Counties	1 6	1 1½
B	Taunton ...	S.W. Counties	1 4½	1 0½
A	Teesside Dist....	N.E. Counties	1 6½	1 2
A_2	Teignmouth ...	S.W. Coast	1 5½	1 1½
A	Todmorden ...	Yorkshire	1 6½	1 2
A_1	Torquay ...	S.W. Counties	1 6	1 1½
B_2	Truro	S.W. Counties	1 3½	11½
A_3	Tunbridge Wells	S. Counties	1 5	1 0½
A	Tunstall ...	Mid. Counties	1 6½	1 2
A	Tyne District	N.E. Coast	1 6½	1 2
A	WAKEFIELD	Yorkshire	1 6½	1 2
A	Walsall ...	Mid. Counties	1 6½	1 2
A	Warrington ...	N.W. Counties	1 6½	1 2
A_1	Warwick ...	Mid. Counties	1 6	1 1½
A_1	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 6½	1 2
A_2	Weston-s.-Mare	W. Counties	1 5½	1 1½
A_2	Whitby ...	Yorkshire	1 5½	1 1½
A	Widnes ...	N.W. Counties	1 6½	1 2
A	Wigan ...	N.W. Counties	1 6½	1 2
B	Winchester ...	S. Counties	1 4½	1 0½
A_2	Windsor ...	S. Counties	1 5½	1 0½
A	Wolverhampton	Mid. Counties	1 6½	1 2
A_2	Worcester ...	Mid. Counties	1 5½	1 1½
A	Worksop ...	Yorkshire	1 5	1 0½
A_1	Wrexham ...	N.W. Counties	1 6	1 1½
A	Wycombe ...	S. Counties	1 5	1 0½
B	YARMOUTH ...	E. Counties	1 4½	1 0½
B	Yeovil ...	S.W. Counties	1 4½	1 0½
A	York	Yorkshire	1 6½	1 2

* In these areas the rates of wages for certain trades (usually painters and plasterers) vary slightly from those given.

The rates for every trade in any given area will be sent on request.

CURRENT PRICES

The wages are the standard Union rates of wages payable in London at the time of publication. The prices given below are for materials of good quality and include delivery to site in Central London area, unless otherwise stated. For delivery outside this area, adjustment should be made for the cost of transport. Though every care has been taken in its compilation, it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry. The whole of the information given is copyright.

WAGES

		s.	d.
Bricklayer	per hour	1	8
Carpenter	"	1	8
Joiner	"	1	8
Machinist	"	1	8
Mason (Banker)	"	1	8
" (Fixer)	"	1	9
Plumber	"	1	8
Painter	"	1	7
Paperhanger	"	1	7
Glazier	"	1	7
Slater	"	1	8
Scaffolder	"	1	4
Timberman	"	1	4
Navvy	"	1	3
General Labourer	"	1	3
Lorryman	"	1	5½
Crane Driver	"	1	7
Watchman	per week	2	10

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	16	6
Hydrated Lime	"	3	0	9
Portland Cement, in 4-ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	"	2	5	0
White Portland Cement, in 1-ton lots	"	8	15	0
Thames Ballast	per Y.C.		6	6
¾" Crushed Ballast	"		7	0
Building Sand	"		7	6
Washed Sand	"		8	6
2" Broken Brick	"		8	0
¾" "	"		10	3
Pan Breeze	"		6	6
Coke Breeze	"		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	d.	6" s.	d.
Straight Pipes	per F.R.	0	11	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	6
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS:					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	"		5		—

BRICKLAYER

		£	s.	d.
Fletton	per M.	2	15	0
Grooved do.	"	2	17	0
Phorpres bricks	"	2	15	0
" Cellular bricks	"	2	15	0
Stocks, 1st quality	"	4	11	0
" 2nd "	"	4	2	6
Blue Bricks, Pressed	"	8	17	6
" Wirecuts	"	7	17	6
" Brindles	"	7	0	0
" Bullnose	"	9	0	0
Red Sand-faced Facings	"	6	18	6
Red Rubbers for Arches	"	12	0	0
Multicoloured Facings	"	7	10	0
Luton Facings	"	7	10	0
Phorpres White Facings	"	3	17	3
" Rustic Facings	"	3	12	3
Midhurst White Facings	"	5	0	0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality:				
Stretchers	"	21	0	0
Headers	"	20	10	0
Bullnose	"	27	10	0
Double Stretchers	"	29	10	0
Double Headers	"	26	10	0
Glazed Second Quality, *Less*	"	1	0	0
" Buffs and Creams, *Add*	"	2	0	0
" Other Colours	"	5	10	0
Breeze Partition Blocks	per Y.S.		1	7
2½" " " "	"		1	10
3" " " "	"		2	1
4" " " "	"		2	6

MASON

The following d/d F.O.R. at Nine Elms:		s.	d.
Portland stone, Whitbed	F.C.	4	4½
" " Basebed	"	4	7½
Bath stone	"	2	10
York stone	"	6	6
" " Sawn templates	"	7	6
" " Paving, 2"	F.S.	1	8
" " 3"	"	2	6

SLATER AND TILER

First quality Bangor or Portmadoc slates d/d F.O.R. London station:

		£	s.	d.
24" × 12" Duchesses	per M.	28	17	6
22" × 12" Marchionesses	"	24	10	0
20" × 10" Countesses	"	19	5	0
18" × 10" Viscountesses	"	15	10	0
18" × 9" Ladies	"	13	17	6
Westmorland green (random sizes)	per ton	8	10	0
Old Delabole slates d/d in full truck loads to Nine Elms Station:				
20" × 10" medium grey per 1,000 (actual)		21	11	6
" " green " "		24	7	4
Best machine roofing tiles	"	4	5	0
Best hand-made do.	"	4	17	6
Hips and valleys	each			9
" hand-made	"			9½
Nails, compo	lb.		1	4
" copper	"		1	6

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" 2nds	" "			4
Mahogany, Honduras	" "		1	3
" African	" "		1	1
" Cuban	" "		2	6
Oak, plain American	" "		1	0
" Figured "	" "		1	3
" plain Japanese	" "		1	2
" Figured "	" "		1	5
" Austrian wainscot	" "		1	6
" English	" "		1	11
Pine, Yellow	" "		1	0
" Oregon	" "			4
" British Columbian	" "			4
Teak, Moulmein	" "		1	3
" Burma	" "		1	2
Walnut, American	" "		2	3
" French	" "		2	3
Whitewood, American	" "		1	1
Deal floorings, ¾"	Sq.		18	6
" 1"	"	1	1	6
" 1¼"	"	1	2	0
" 1½"	"	1	5	0
" 2"	"	1	10	0
Deal matchings, ¾"	"		14	0
" 1"	"		15	6
Rough boarding, ¾"	"	1	4	0
" 1"	"		16	0
" 1¼"	"		18	0
	"	1	6	0
Plywood, per ft. sup.				d.
Scotch glue	lb.			8

Plywood, per ft. sup.

Thickness	¼"			½"			¾"			1"		
Qualities	A	B	BB	A	B	BB	A	B	BB	A	B	BB
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	–	11–	9	–

SMITH AND FOUNDER

Tubes and Fittings

(The following are the standard list prices, from which should be deducted the various percentages as set forth below.)

		¼"	½"	1"	1½"	2"
Tubes, 2'–14' long	per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"–23" long	each	10	1/1	1/11	2/8	4/9
" 3"–11½" long	"	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long	"	11	1/3	2/2	2/10	5/3
" " 3" M–½" long	"	8	10	1/5	1/11	3/6
Bends	"	8	11	1/7½	2/7½	5/2
Springs not socketed	"	5	7	1/1½	1/11½	3/11
Socket unions	"	2/–	3/–	5/6	6/9	10/–
Elbows, square	"	10	1/1	1/6	2/2	4/3
Tees	"	1/–	1/3	1/10	2/6	5/1
Crosses	"	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples	"	3	4	6	8	1/3
Diminished sockets	"	4	6	9	1/–	2/–
Flanges	"	9	1/–	1/4	1/9	2/9
Caps	"	3½	5	8	1/–	2/–
Backnuts	"	2	3	5	6	1/1
Iron main cocks	"	1/6	2/3	4/2	5/4	11/6
" with brass plugs	"	—	4/–	7/6	10/–	21/–

Discounts	Tubes. Per cent.		Per cent.
Gas	65	Galvanized gas	52½
Water	61½	" water	47½
Steam	57½	" steam	42½
	Fittings.		
Gas	57½	Galvanized gas	47½
Water	52½	" water	42½
Steam	47½	" steam	37½

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ¾"	"	10	6
" " ½"	"	10	3
" " ¾"	"	10	0

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ¾"	cwt.	9	6
" " ⅞"	"	9	6
" " 1"	"	9	6
" " 1¼"	"	9	6
" " 1½"	"	9	6
Cast-iron rain-water pipes of ordinary thickness metal	F.R.	4" s. 8	d. 10
Shoes	each	2	0
Anti-splash shoes	"	4	6
Boots	"	3	0
Bends	"	2	7
" with access door	"	—	
Heads	"	4	0
Swan-necks up to 9" offsets	"	3	9
Plinth bends, 4½" to 6"	"	3	9
Half-round rain-water gutters of ordinary thickness metal	F.R.	5	
Stop ends	each	6	
Angles	"	1	7
Obtuse angles	"	2	0
Outlets	"	1	9

		3" s.	d.	4" s.	d.	6" s.	d.
Cast-iron rain-water pipes of ordinary thickness metal	F.R.		8		10		
Shoes	each	2	0	3	0		
Anti-splash shoes	"	4	6	8	0		
Boots	"	3	0	4	0		
Bends	"	2	7	3	9		
" with access door	"		—	6	3		
Heads	"	4	0	5	0		
Swan-necks up to 9" offsets	"	3	9	6	0		
Plinth bends, 4½" to 6"	"	3	9	5	3		
Half-round rain-water gutters of ordinary thickness metal	F.R.	5			6		
Stop ends	each	6			6		
Angles	"	1	7	1	11		
Obtuse angles	"	2	0	2	6		
Outlets	"	1	9	2	3		

PLUMBER

		s.	d.
Lead, milled sheets	cwt.	24	6
" drawn pipes	"	24	6
" soil pipe	"	30	0
" scrap	"	16	0
Solder, plumbers'	lb.		9½
" fine do.	"	1	0
Copper, sheet	"		8½
" tubes	"		11

L.C.C. soil and waste pipes:		3"		4"		6"	
Plain cast	F.R.	1	0	1	2	2	6
Coated	"	1	1	1	3	2	8
Galvanized	"	2	0	2	6	4	6
Holderbats	each	3	10	4	0	4	9
Bends	"	3	9	5	3	10	3
Shoes	"	2	10	4	4	9	6
Heads	"	4	8	8	5	12	9

PLASTERER

		£	s.	d.
Lime, chalk	per ton	2	5	0
Plaster, Coarse	"	2	10	0
" fine	"	4	15	0
Hydrated lime	"	3	0	9
Sirapite	"	3	6	0
Keene's cement	"	5	0	0
Gothite Plaster	"	3	6	0
Pioneer Plaster	"	3	6	0
Thistle plaster	"	3	6	0
Sand, washed	Y.C.		11	6
Hair	lb.			6
Laths, sawn	bundle		2	4
" rent	"		3	9
Lath nails	lb.			3

GLAZIER

		s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.	s. F.S.				2½
" " 26 oz. " "	"				3
Flemish, Arctic, Figures (white)*	"				7
Blazoned glasses	"			2	6
Reeded: Cross Reeded	"				11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"				6
Crown sheet glass (n/e 12" × 10")	"			2	0
Flashed opals (white and coloured)	"	1	0 and	2	0
¼" rough cast; rolled plate	"				5½
¼" wired cast; wired rolled	"				9½
¼" Georgian wired cast	"				11
¼" Polished plate, n/e 1 ft.	"		†10 to	‡1	1
" " 2	"	†1	2 "	‡1	4
" " 4	"	†2	3 "	‡2	6
" " 8	"	†2	9 "	‡3	2
" " 20	"	†3	1 "	‡3	9
" " 45	"	†3	3 "	‡4	0
" " 100	"	†4	0 "	‡4	10
Vita glass, sheet, n/e 1 ft.	"			1	0
" " " 2 ft.	"			1	3
" " " over 2 ft.	"			1	9
" " plate, n/e 1 ft.	"			1	6
" " " 2 ft.	"			3	0
" " " 5 ft.	"			4	0
" " " 7 ft.	"			5	0
" " " 15 ft.	"			6	0
" " " over 15 ft.	"			7	6
"Calorex" sheet 21 oz., and 32 oz.	"	2	6 and	3	6
" rough cast ¼" and ½"	"		8½ "	1	0
Putty, linseed oil	lb.				3

* *Colours, 1d. F.S. extra.*
† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	"		2	9
Turpentine	"		4	1½
Patent knotting	"		14	0
Distemper washable	cwt.	2	6	0
" ordinary	"	2	0	0
Whitening	"		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	0
Flat varnish	"		14	0
Outside varnish	"		16	0
White enamel	"	1	15	0
Ready mixed paint	"		13	6
Brunswick black	"		7	6

CURRENT PRICES FOR MEASURED WORK

The following prices are for work to new buildings of average size, executed under normal conditions in the London area. They include establishment charges and profit. While every care has been taken in its compilation, no responsibility can be accepted for the accuracy of the list. The whole of the information given is copyright.

EXCAVATOR AND CONCRETOR

		£ s. d.
Digging over surface n/e 12″ deep and cart away	Y.S.	2 9
,, to reduce levels n/e 5′ 0″ deep and cart away	Y.C.	8 6
,, to form basement n/e 5′ 0″ and cart away	,,	9 0
,, ,, 10′ 0″ deep and cart away	,,	9 6
,, ,, 15′ 0″ deep and cart away	,,	10 0
If in stiff clay	add ,,	6
If in underpinning	,,	4 0
Planking and strutting to sides of excavation	F.S.	1 0
,, ,, to pier holes	,,	5
,, ,, to trenches	,,	5
,, ,, extra, only if left in	,,	3
Hardcore, filled in and rammed	Y.C.	10 0
Portland cement concrete in foundations (6–1)	,,	1 6 0
,, ,, (4-2-1)	,,	1 12 6
,, ,, underpinning	,,	1 16 0
Finishing surface of concrete, space face	Y.S.	7

DRAINLAYER

		4″ s. d.	6″ s. d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1 6	2 3
Extra, only for bends	Each	2 8	3 9
,, junctions	,,	3 9	4 6
Gullies and gratings	,,	16 6	18 0
Cast iron drains, and laying and jointing	F.R.	4 9	6 9
Extra, only for bends	Each	10 6	15 6

BRICKLAYER

		£ s. d.
Brickwork, Flettons in lime mortar	Per Rod	26 10 0
,, ,, in cement	,,	27 12 6
,, Stocks in cement	,,	34 0 0
,, Blues in cement	,,	50 0 0
Extra only for circular on plan	,,	2 0 0
,, backing to masonry	,,	1 10 0
,, raising on old walls	,,	2 0 0
,, underpinning	,,	5 10 0½
Fair Face and pointing internally	F.S.	1½
Extra over fletton brickwork for picked stock facings and pointing	,,	8
,, ,, ,, red brick facings and pointing	,,	11
,, ,, ,, blue brick facings and pointing	,,	1 4
,, ,, ,, glazed brick facings and pointing	,,	3 6
Tuck pointing	,,	7½
Weather pointing in cement	,,	3
Slate dampcourse	,,	10
Vertical dampcourse	,,	1 1

ASPHALTER

		s. d.
½″ Horizontal dampcourse	Y.S.	4 9
½″ Vertical dampcourse	,,	7 9
½″ paving or flat	,,	6 3
1″ paving or flat	,,	7 6
1″ × 6″ skirting	F.R.	1 0
Angle fillet	,,	2½
Rounded angle	,,	2½
Cesspools	Each	5 6

MASON

		£ s. d.
Portland stone, including all labours hoisting, fixing and cleaning down, complete	F.C.	17 9
Bath stone and do., all as last	,,	13 6
Artificial stone and do.	,,	13 0
York stone templates, fixed complete	,,	10 6
,, thresholds	,,	13 6
,, sills	,,	1 0 6

SLATER AND TILER

		£ s. d.
Slating, Bangor or equal to a 3″ lap, and fixing with compo nails, 20″ × 10″	Sqr.	3 10 0
Do., 18″ × 9″	,,	3 7 0
Do., 24″ × 12″	,,	3 17 0
Westmorland slating, laid with diminished courses	,,	6 0 0
Tiling, best hand-made sand-faced, laid to a 4″ gauge, nailed every fourth course	,,	3 0 0
Do., all as last, but of machine-made tiles	,,	2 16 0
20″ × 10″ medium Old Delabole slating, laid to a 3″ lap (grey)	,,	2 16 0
,, ,, ,, ,, ,, ,, ,, (green)	,,	4 15 0

CARPENTER AND JOINER

		£ s. d.
Flat boarded centering to concrete floors, including all strutting	Sqr.	2 2 6
Shuttering to sides and soffits of beams	F.S.	7
,, to stanchions	,,	7
,, to staircases	,,	1 6
Fir and fixing in wall plates, lintols, etc.	F.C.	3 9
Fir framed in floors	,,	4 6
,, ,, roofs	,,	6 6
,, ,, trusses	,,	7 6
,, ,, partitions	,,	8 6
¾″ deal sawn boarding and fixing to joists	Sqr.	1 14 6
1″ ,, ,, ,, ,, ,,	,,	1 17 6
1½″ ,, ,, ,, ,, ,,	,,	2 3 0
2½″ × 2″ fir battening for Countess slating	,,	9 6
Do., for 4″ gauge tiling	,,	12 0
Stout feather-edged tilting fillet	F.R.	4½
Patent inodorous felt, 1 ply	Y.S.	2 3
,, ,, ,, 2 ,,	,,	2 9
,, ,, ,, 3 ,,	,,	3 3
Stout herringbone strutting to 9″ joists	F.R.	10½
1″ deal gutter boards and bearers	F.S.	1 2
1½″ ,, ,, ,,	,,	1 6
2″ deal wrought rounded roll	F.R.	8
1″ deal grooved and tongued flooring, laid complete, including cleaning off	Sqr.	2 1 0
1½″ do.	,,	2 10 0
1¾″ do.	,,	2 17 0
1″ deal moulded skirting fixed on, and including grounds plugged to wall	F.S.	1 6
1¼″ do.	,,	1 9

CARPENTER AND JOINER—*continued*

		s. d.
1¼″ deal moulded sashes of average size	F.S.	1 9½
2″ ,, ,, ,, ,, ,,	,,	1 11½
1¼″ deal cased frames double hung, of 6″ × 3″ oak sills, 1¼″ pulley stiles, 1¼″ heads, 1″ inside and outside linings, ⅜″ parting beads, and with brass faced axle pulleys, etc., fixed complete	,,	3 7
2″ ,, ,, ,, ,, ,,	,,	3 10
Extra only for moulded horns	Each	6
1¼″ deal four-panel square, both sides, door	F.S.	2 0
2″ ,, ,, ,, ,, ,,	,,	2 8
1¼″ ,, but moulded both sides	,,	2 4
2″ ,, ,, ,, ,, ,,	,,	3 0
4″ × 3″ deal, rebated and moulded frames	F.R.	1 0
4½″ × 3½″ ,, ,, ,,	,,	1 4
1¼″ deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1¼″ deal treads, 1″ risers in staircases, and tongued and grooved together on and including strong fir carriages	,,	2 6
1¼″ deal moulded wall strings	,,	2 1
1½″ ,, outer strings	,,	2 4
Ends of treads and risers housed to string	Each	1 9
3″ × 2″ deal moulded handrail	F.R.	1 3
1″ × 1″ deal balusters and housing each end	Each	2 0
1½″ × 1½″ ,, ,, ,,	,,	2 9
3″ × 3″ deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	,,	6 0

SMITH AND FOUNDER

		£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt.	16 6
Riveted plate or compound girders, and hoisting and fixing in position	,,	1 0 6
Do., stanchions with riveted caps and bases and do.	,,	19 0
Mild steel bar reinforcement, ½″ and up, bent and fixed complete	,,	17 6
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g.	F.S.	11
Wrot-iron caulked and cambered chimney bars	Per cwt.	1 10 0

PLUMBER

		£ s. d.
Milled lead and labour in flats	cwt.	1 18 6
Do. in flashings	,,	2 2 0
Do. in covering to turrets	,,	2 7 6
Do. in soakers	,,	1 13 3
Labour to welted edge	F.R.	3½
Open copper nailing	,,	3
Close ,, ,,	,,	4

		½″ s. d.	¾″ s. d.	1″ s. d.	1¼″ s. d.	2″ s. d.	4″ s. d.
Lead service pipe and fixing with pipe hooks	F.R.	10	1 0	1 3	2 0	2 10	—
Do. soil pipe and fixing with cast lead tacks	,,	—	—	—	—	—	5 6
Extra, only to bends	Each	—	—	—	—	2 0	6 9
Do. to stop ends	,,	6½	8	9	11	1 0	—
Boiler screws and unions	,,	3 3	3 9	5 0	8 0	—	—
Lead traps	,,	—	—	—	6 3	8 9	—
Screw down bib valves	,,	6 9	9 6	11 0	—	—	—
Do. stop cocks	,,	7 0	9 6	12 6	—	—	—

		£ s. d.
4″ cast-iron ½-rd. gutter and fixing	F.R.	1 0
Extra, only stop ends	Each	1 0
Do. angles	,,	1 6
Do. outlets	,,	2 9
4″ dia. cast-iron rain-water pipe and fixing with ears cast on	F.R.	1 2
Extra, only for shoes	Each	1 3
Do. for plain heads	,,	5 6

PLASTERER AND TILING

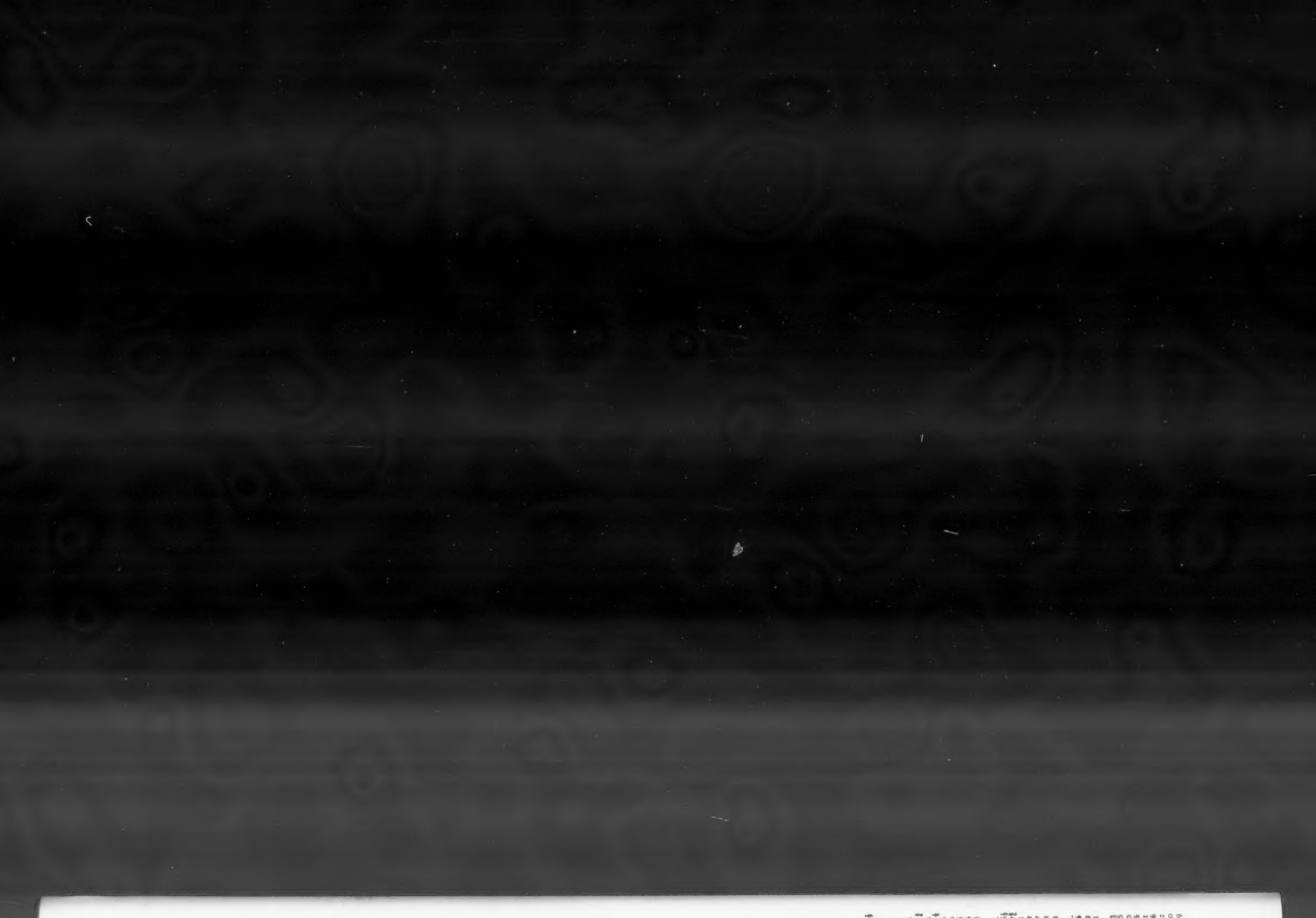
		s. d.
Expanded metal lathing, small mesh	Y.S.	2 0
Do. in n/w to beams, stanchions, etc.	,,	2 9
Lathing with sawn laths to ceilings	,,	1 3
½″ screeding in Portland cement and sand or tiling, wood block floor, etc.	,,	1 5
Do. vertical	,,	1 7
Rough render on walls	,,	1 2½
Render, float and set in lime and hair	,,	1 9
Render and set in Sirapite	,,	1 11
Render, backing in cement and sand, and set in Keene's cement	,,	2 9
Extra, only if on lathing	,,	4
Keene's cement, angle and arris	F.R.	6
Arris	,,	1½
Rounded angle, small	,,	3
Plain cornices in plaster, including dubbing out, per 1″ girth	,,	1½
1″ granolithic pavings	Y.S.	3 6
1½″ ,, ,, ,, ,,	,,	4 6
6″ × 6″ white glazed wall tiling and fixing on prepared screed	,,	17 6
9″ × 3″ ,, ,, ,, ,,	,,	1 2 6
Extra, only for small quadrant angle	F.R.	8

GLAZIER

		s. d.
21 oz. sheet glass and glazing with putty	F.S.	6½
26 oz. do. and do.	,,	7½
Flemish, Arctic Figured (white) and glazing with putty	,,	1 1
Cathedral glass and do.	,,	1 2
Glazing only, British polished plate	,,	7
Extra, only if in beds	,,	2
Washleather	F.R.	4

PAINTER

		s. d.
Clearcolle and whiten ceilings	Y.S.	6
Do. and distemper walls	,,	9
Do. with washable distemper	,,	1 1
Knot, stop, prime and paint four coats of oil colour on plain surfaces	,,	3 3
Do. on woodwork	,,	3 6
Do. on steelwork	,,	3 0
Do. and brush grain and twice varnish	,,	5 6
Stain and twice varnish woodwork	,,	1 11
Stain and wax-polish woodwork	,,	4 6
French polishing	F.S.	1 2
Stripping off old paper	Piece	2 0
Hanging ordinary paper from	,,	2 9



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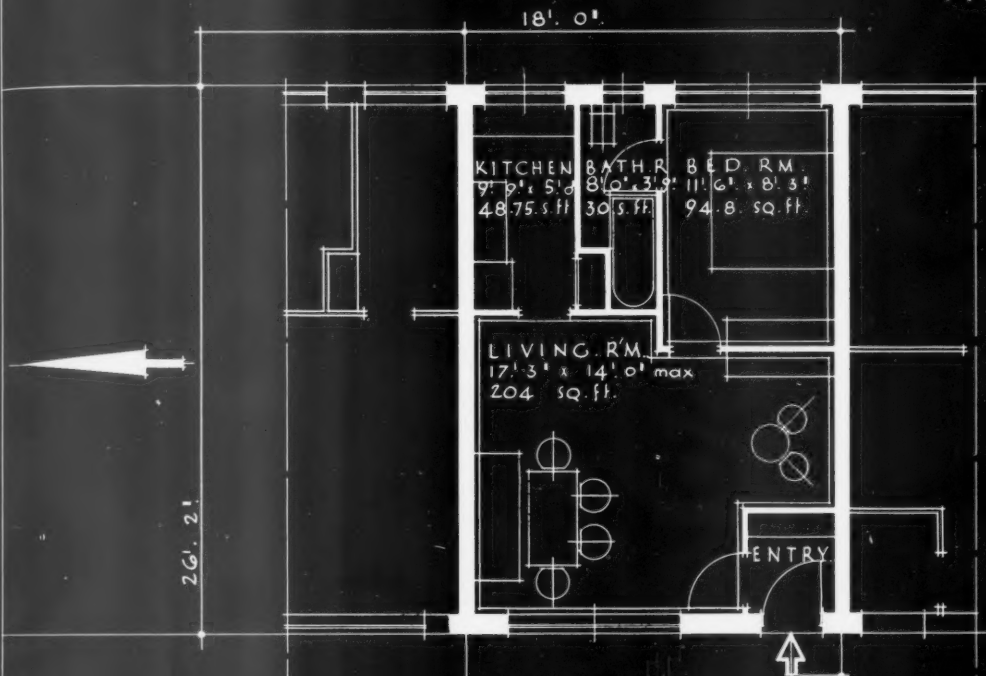
TYPES OF FLAT UNIT : HAMBURG.

'A'. ACCESS : Balcony.
TYPE : 2 - room, bathrm, and Kitchen.

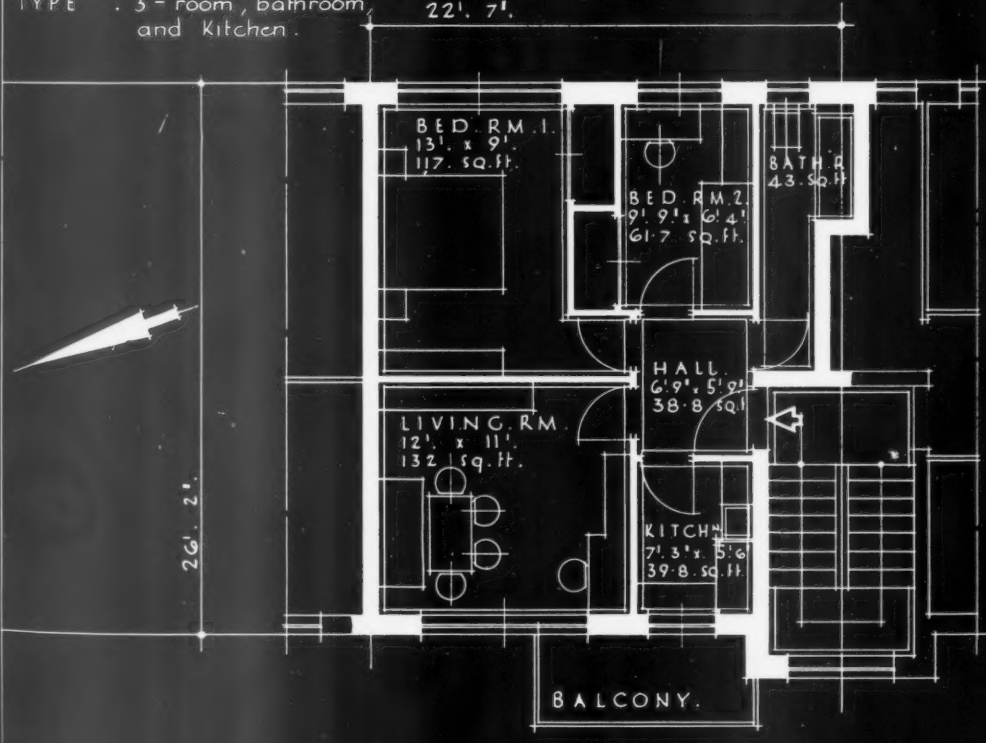


Total area of unit : 471 sq.ft.

Service area 99 sq.ft.

Habitable area 298.8 sq.ft.

'B'.
ACCESS : Internal Staircase
TYPE : 3 - room, bathroom, and Kitchen.



Total areas given include,

The external walls,

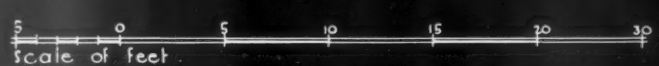
half the division walls between flats.

Balconies are not included, but area of unit 'B' includes ½ the area of the stair.

Total area of unit : 591 sq.ft.

Service area 185 sq.ft.

Habitable area 310.7 sq.ft.



INFORMATION SHEET : INDUSTRIAL HOUSING.16.
SIR JOHN BURNET. TAIT AND LORNE ARCHITECTS, ONE MONTAGUE PLACE BEDFORD SQ LONDON.W.C.1.

Supplement to THE ARCHITECTS' JOURNAL for July 23, 1936

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INDUSTRIAL HOUSING UNITS—XVI

The two- and three-room units illustrated are from Hamburg Housing schemes, the upper having balcony and the lower plan internal staircase access.

The access balcony of scheme "A" is planned to run past only two flats, ending at the projecting flat of the third unit, so that the opposite façade can be recessed at intervals for architectural effect. The entrance doors of these third flats necessarily now have to be at the side of the hall, facing the balcony, but otherwise all internal planning is similar. This arrangement, however, allows only three flats to each side of the common staircase which is therefore provided between each run of six units.

The entrance in this instance is through the hall directly into the Living Room with other rooms having access from the latter. The Bathroom is entered only from the bedroom. The Dining Recess is formed in the Living Room behind the entrance hall, and although needing artificial lighting, is provided with cross ventilation by way of the sliding door to the kitchen. Generally the scheme relies on minimum planning to the secondary rooms to give maximum living quarters.

The lower plan example "B" is planned more on the lines of the small house, with all rooms of medium size. As built the staircase serves only one pair of flats, each of which has access to all of its rooms from a centrally placed Hall. The Living Room serves as a Dining Room in addition, and has egress to a balcony abutting the staircase. It should be noticed that the narrow area behind the Staircase is adequately converted into adjacent bathrooms by inverted planning. The Kitchen is of minimum dimensions and is not connected with the living room.

The service area includes all that space which is not used as living accommodation for the occupants, i.e., kitchens, wardrobes, baths, w.c.'s and lobbies.

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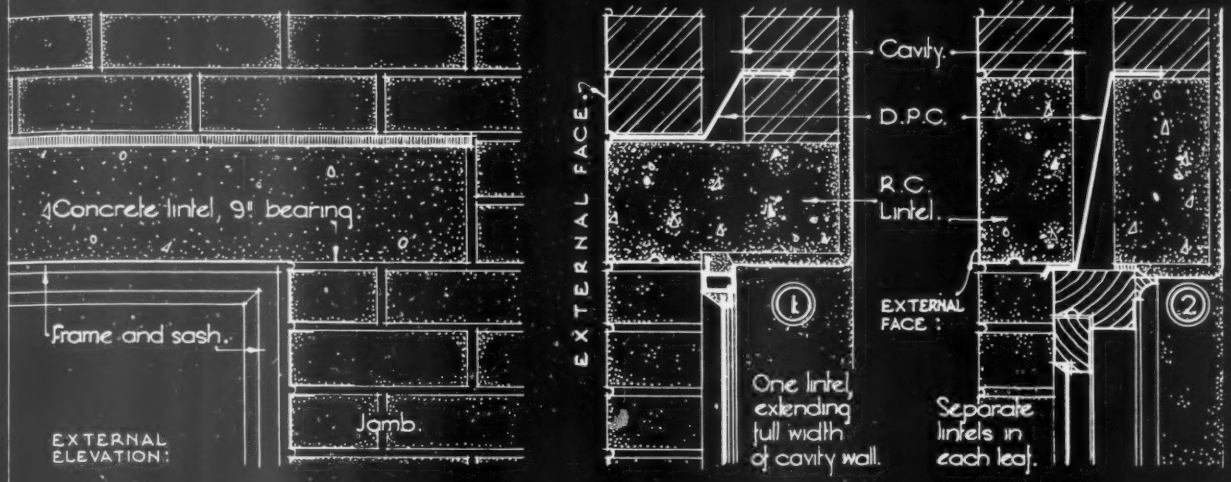
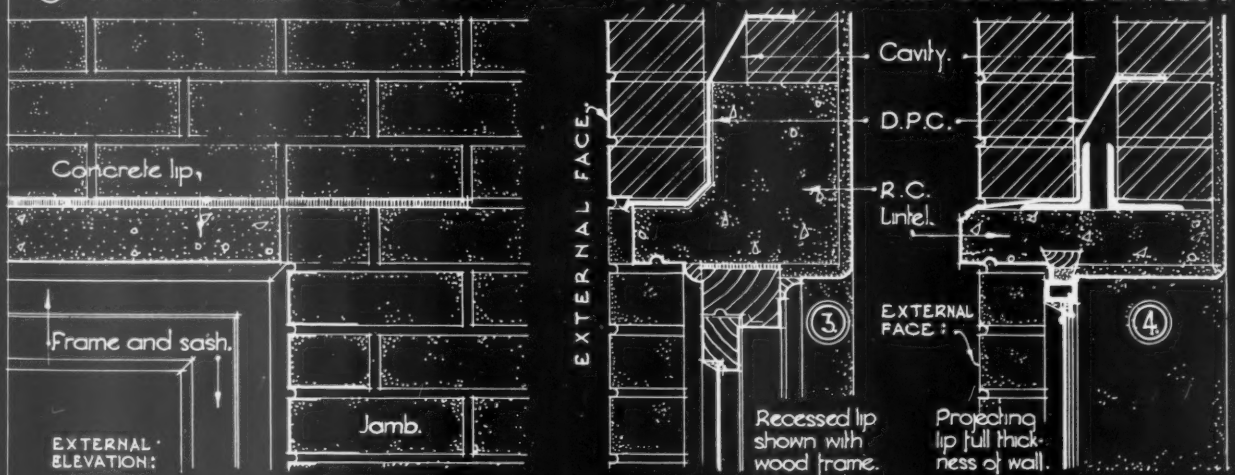
TYPES OF CONCRETE AND TILE LINTELS IN CAVITY WALL CONSTRUCTION :
For notes on the construction of each type & common variations see back of this sheet.

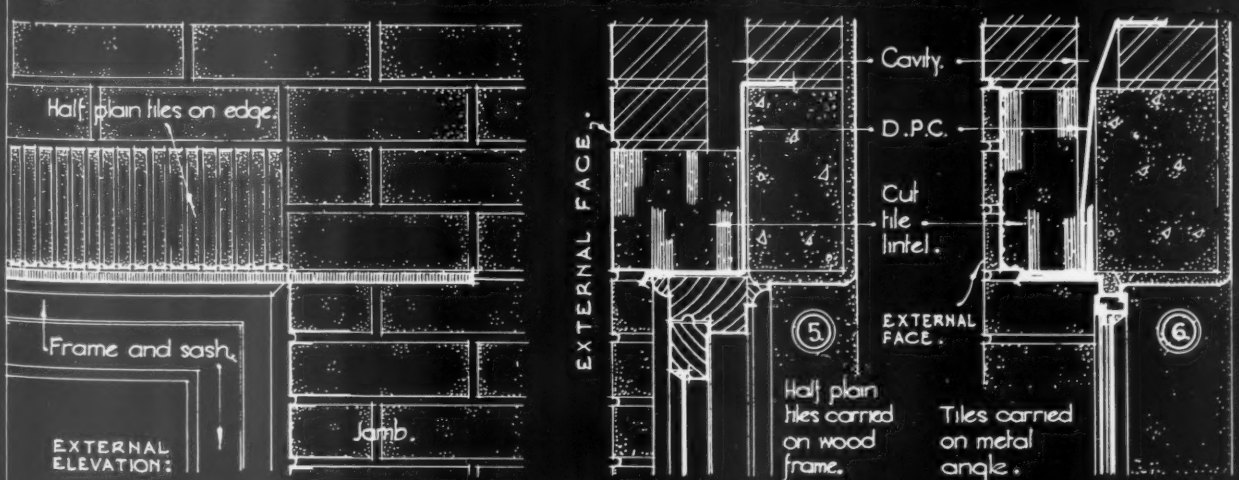
Ⓐ ELEVATION AND TYPICAL SECTIONS OF REINFORCED CONCRETE LINTELS :



Ⓑ ELEVATION AND TYPICAL SECTIONS OF LIP TYPE REINFORCED CONCRETE LINTELS :



Ⓒ ELEVATION AND TYPICAL SECTIONS OF PLAIN TILE FACED LINTEL :



Information from Clay Products Technical Bureau of Great Britain.

INFORMATION SHEET : CAVITY WALL CONSTRUCTION · 5 · CONCRETE AND TILE LINTELS :
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne.

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CAVITY WALL CONSTRUCTION

Heads of Openings :

This is the fifth of a series of Sheets devoted to the details of cavity wall construction, and shows various methods of constructing concrete and tile-faced heads to openings in cavity walls.

General Principles Governing Design :

In addition to its appearance, any such head treatment must also be adequate as regards :—

(i) The support afforded to the brickwork above the head of the opening ; and

(ii) the measures taken to waterproof the head.

1. Brickwork or Tile Support :

As shown in the various sections overleaf, the load at the head of the opening may be carried on:—

(*a*) either separate concrete lintels, or on a lintel the full thickness of the wall ;

(*b*) metal angles, or camber bars ;

(*c*) the frame of the door or window which closes the opening.

(*a*) *Concrete lintels* should be of good impervious concrete, especially when continuous from exterior to interior, and well matured in air to obviate subsequent opening of the vertical joints with the adjacent brickwork at each end due to shrinkage of the concrete.

Such lintels are normally reinforced along their base, and the depth of cover under the reinforcement should not be much less than 1 in. The reinforcement may, however, be omitted, provided the lintel is of adequate depth and its clear span does not exceed 3 ft. The depth of concrete lintels is usually equivalent to two or three brick courses (6 in. to 9 in.) except where it is desired that only a narrow band of concrete shall be visible, in which case either a lintel of reduced depth or an L-section lintel can be used to give either a flush, recessed or projecting lip on the outer face.

It is essential that all such lips be reinforced, unless, as is shown in detail No. 4, the actual load is carried on metal angles. The length of a concrete lintel should normally be such as to give a 9 in. bearing at each end, except where the lightness of the load to be carried justifies a reduction, when the bearing may be reduced to 4½ in. In the example given (3) where a lip of reduced depth used to carry the outer leaf is stopped off at the jambs, the bearing of the main back portion which is carrying all the load should be at least 9 in.

(*b*) *Metal angles* or camber bars should be of adequate section and, unless of incorrodible metal, should be given a good protective coat of iron oxide paint, since the thickness of the cement finish usually applied over these supports is not enough to prevent corrosion.

(*c*) The practice of supporting the brickwork of the outer leaf above the head of the opening on the wood door or window frame, although very common in this country, is open to the following objections :—

(1) any shrinkage or movement in the wood frame will tend to open the joints in the brick or tile work above and even to cause definite cracking ;

(2) the wood frame must be kept near the outer face of the wall, and hence is unnecessarily exposed to the weather.

These objections may be overcome to a large extent by using heavy frames of hardwoods such as oak, teak, etc., with mullions at frequent intervals in the case of wide openings.

II. Waterproofing the Head of an Opening :

Since the construction of any type of head to an opening in cavity walls involves contact between the outer and inner leaves, it is essential that an adequate damp-proof course (D.P.C.) be interposed between the two leaves at this junction. For this purpose a D.P.C. of flexible material such as lead is most suitable. It should, however, be noted that, where hardwood frames are used in conjunction with lead D.P.C.'s direct contact between lead and the wood must be avoided, since lead tends to corrode in contact with hardwoods : a strip of bitumen-coated paper between the D.P.C. and the frame suffices to overcome this difficulty.

Alternative D.P.C.'s are sheet copper (which, being springy, is, however, somewhat difficult to place) and bituminous felts with or without a lead core. Bituminous D.P.C.'s are only satisfactory if of the best quality and, even then, must not be placed in direct contact with the wood frame owing to the tendency of the bitumen to "bleed" through the timber subsequently and mar the decoration.

Detail A :

The elevation given here is that of the common concrete lintel, 6 in. deep, with 9 in. bearing. Variations on the face are made by slightly recessing or projecting the lintel, or by exposing or tinting the aggregate.

The sections (1) and (2) show two common methods of constructing this type of head, the first by use of a single full-width lintel with the flexible D.P.C. above, and the second section by the use of a separate lintel in each leaf of the wall, the D.P.C. being carried down between, to the exterior.

Detail B :

This elevation shows a shallow lip type lintel with no apparent bearing.

In the first of the sections (3) the lip is shown as an integral part of the main back lintel at the ends of which 9 in. bearing is obtained. The outer brick leaf is supported on the reinforced lip, the junction between the brick and concrete being sealed by the D.P.C.

The second section (4) shows the use of two metal angles as the support for the brickwork in lieu of the shallow lintel whose function is solely decorative.

Both the angles should be built at least 9 in. into the brick jambs at either end. In this case the flexible D.P.C. is stepped across the cavity as before and dressed inside the outermost angle and over the projecting lip.

Detail C :

The elevation shows a common method of tile facing a concrete back lintel, the outer brick leaf and the tiles being carried on the wood frame. The tiles should be cut accurately to size and set in good cement mortar. Rough textured tiles give the best results, and only reasonably flat tiles should be used for this work. To obtain sharp edges to the soffit of the tiles, they should be worked down into a half-inch bed of sand on the centreing and, after the removal of the forms, brushed and pointed.

The first section shows the method of construction, with the flexible D.P.C. carried down the back of the tiles and out over the head of the frame.

In the second section the tiles are shown placed lengthwise and slightly recessed, support for both the outer brick leaf and the tiles themselves being obtained by the use of a metal angle with the flexible D.P.C. carried behind and beneath the tiles as before.

Note.—In all cases camber bars may be employed in place of angles if desired.

Previous Sheets :

The following Sheets dealing with bricks and brickwork have already been issued by this Bureau:—

No. 331. British Standard Sizes of Bricks.
No. 334. Cost of Building.
No. 343. Cost of Retaining Walls.
No. 359. Cavity Wall Construction No. 1.
No. 361. " " " " 2.
No. 367. " " " " 3.
No. 452. " " " " 4.

Information from : The Clay Products Technical Bureau of Great Britain.
Address : 19, Hobart Place, Eaton Square, S.W.1.
Telephone : Sloane 7805.

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TYPE PLANS FOR GYMNASIUM LAYOUTS:

Scale • 3/64th inch = 1 foot.

ANCILLARY ROOMS:

Ancillary rooms, which need not be more than 9ft. high, may conveniently be lighted by high level windows or by roof lights where there are no outside walls.

Adequate ventilation will be possible by means of opening windows and by extracts at ceiling level.

CONSTRUCTION:

All three types may be constructed of brick or by any other method which may be suitable & economical. Roofs may be either pitched or flat.

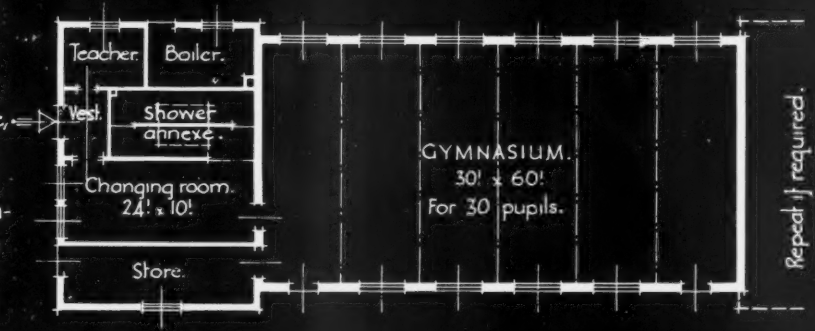
If timber construction is adopted it will probably be necessary to stiffen the structure with steel stanchions & roof framing. Corrugated iron covering externally should be avoided. Whatever methods of construction are adopted they should be as light as possible compatible with rigidity and strength, and the design should be kept as simple as possible.

TYPE : A :

Type.A. is a gymnasium 30! x 60! at one end of which is a changing room with shower annexe, teacher's room, store, and boiler room.

Similar accommodation could be arranged at the other end of the gymnasium to cater for both boys & girls or when the changing accomodation is to be used for classes from the gymnasium & playing fields at the same time.

The shower compartment may be arranged for girls as in type.B.

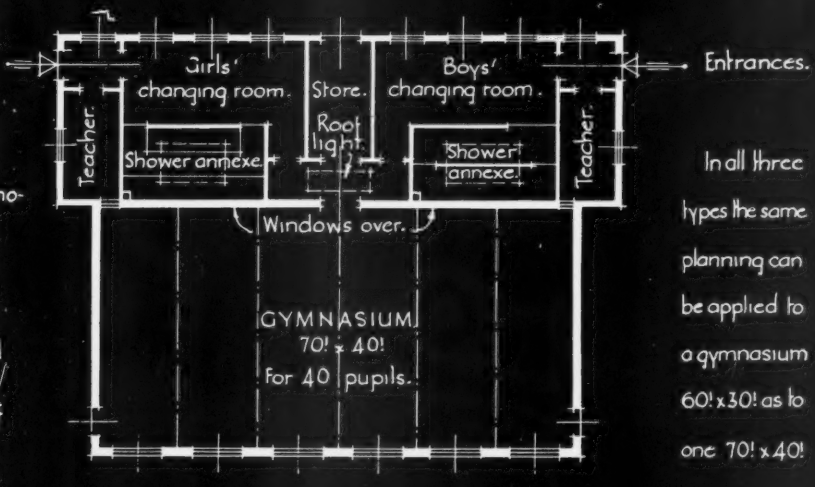


TYPE : B :

Type .B. is an alternative plan wherein double changing room accommodation, shower annexes, teachers' room and store are placed together on one side of the gymnasium. The boiler room would be underneath.

With this arrangement high level windows should be provided for the gymnasium above the level of the roof of the changing rooms, etc.

Changing room for 30 pupils to be 24! x 10! min. for 40 pupils, 24! x 14! min.



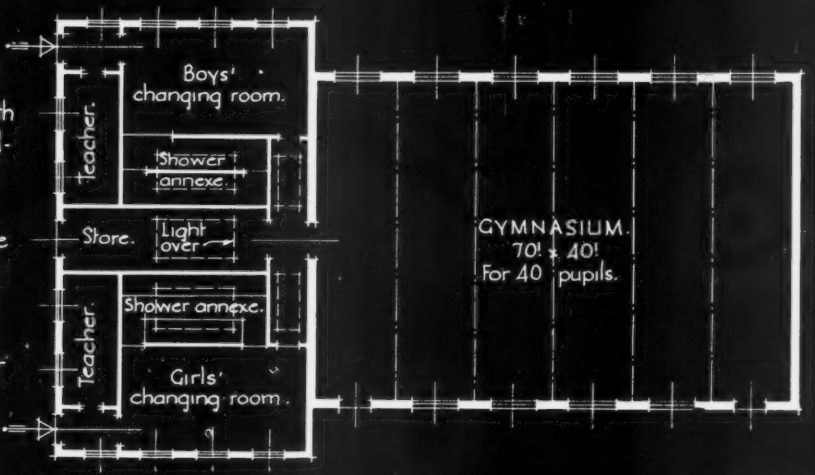
In all three types the same planning can be applied to a gymnasium 60! x 30! as to one 70! x 40!

TYPE : C :

Type.C. is a variant of type B. with much the same arrangement of ancillary rooms placed at one end instead of along one side of the gymnasium.

This type like .A. has the advantage over .B. of leaving the two longer sides of the gymnasium free for windows to be brought down to a low level.

On the whole types .A. & .C. appear to be more suitable than type .B.



Data from Board of Education Physical Training Series. No. 14, by Permission of the Controller H. M. Stationery Office.

INFORMATION SHEET: GYMNASIUMS: 2: TYPE LAYOUTS FOR ANCILLARY ROOMS.

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

Supplement to THE ARCHITECTS' JOURNAL for July 23, 1936

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GYMNASIUMS

Planning.

The accompanying plans of gymnasiums illustrate three types, all of which embody the principles recommended. They may, however, need such modifications as circumstances demand, and are designed for the use of classes of boys and/or of girls.

Type "A" is a gymnasium 60 ft. by 30 ft., at one end of which is a changing room with shower annexe, teachers' room, store, and boiler room. Similar accommodation could be arranged at the other end of the gymnasium, if desired, to cater for both boys and girls or when the changing accommodation is to be used for classes from the gymnasium and from the playing field at the same time.

Type "B" is an alternative plan wherein double changing room accommodation, shower annexes, teachers' room and store are placed together on one side of the gymnasium. The boiler-room would be underneath. With this arrangement high-level windows should be provided for the gymnasium above the roof of the changing rooms.

Type "C" is a variant of "B," with much the same arrangement of ancillary rooms placed at one end instead of along one side of the gymnasium. This type, like "A," has the advantage over "B" of leaving the two long sides of the gymnasium free for windows to be brought down to a low level. On the whole types "A" and "C" appear more suitable than "B."

In all three types the same planning can be applied to a gymnasium of 70 ft. by 40 ft.

Construction.

All three types may be constructed on traditional lines of brick or of any alternative methods which may be considered suitable and economical. Roofs may be either pitched or flat. If timber construction is adopted, it will probably be necessary to stiffen the structure with steel stanchions and roof framing of the same material. Corrugated iron covering externally should be avoided. Whatever methods of construction are adopted, they should be as light as possible compatible with rigidity and strength.