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every issue does not necessarily contain all these contents, but they are the regular features which continually recur

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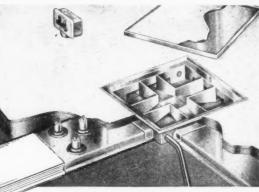
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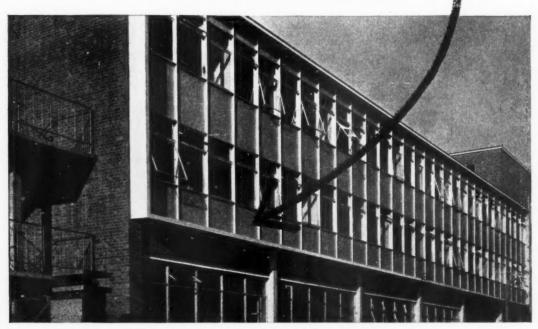
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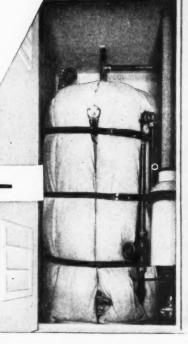
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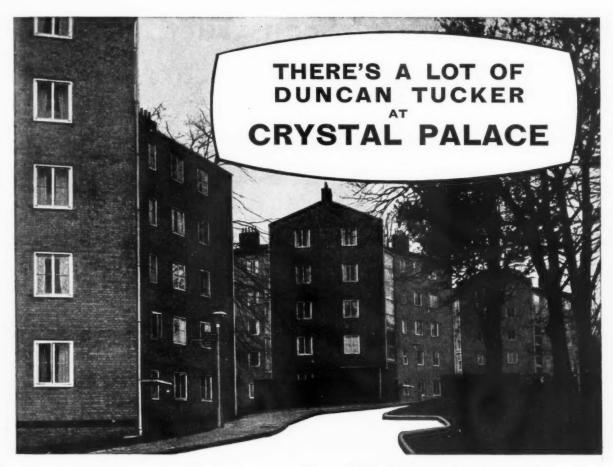
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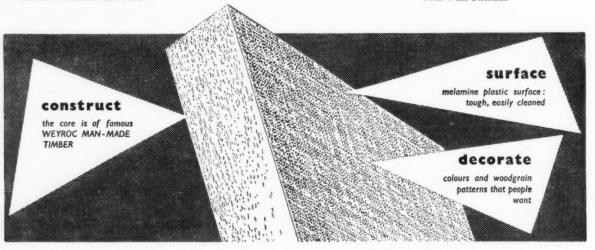
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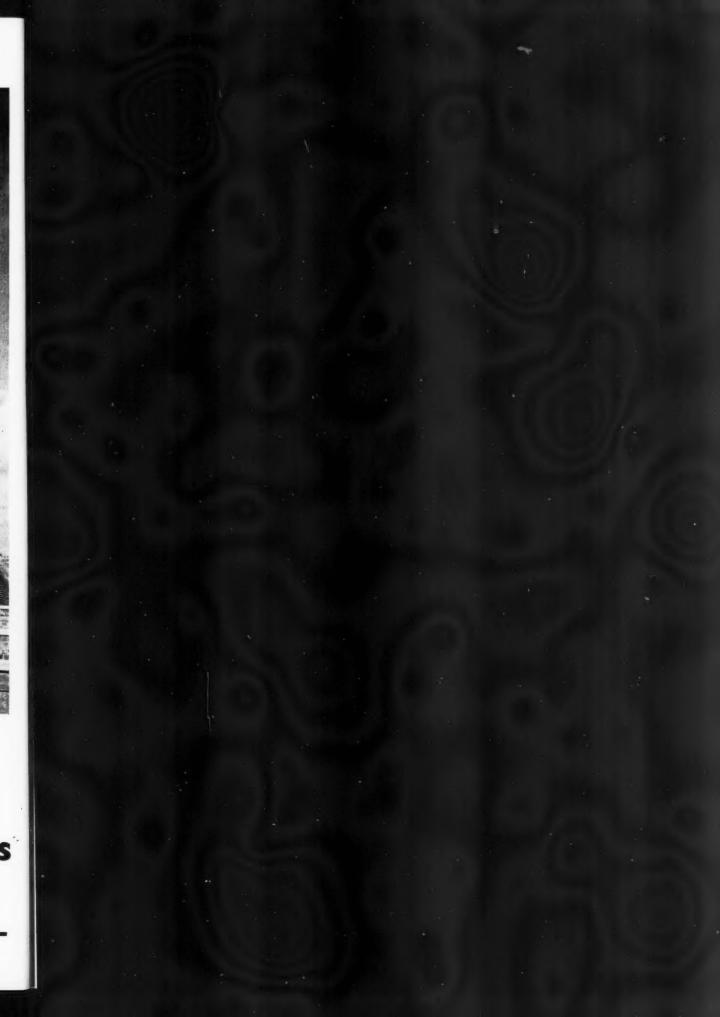
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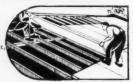




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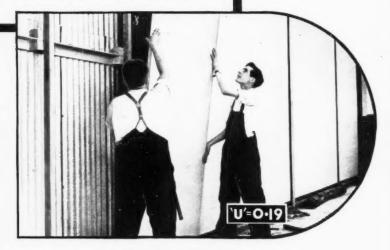
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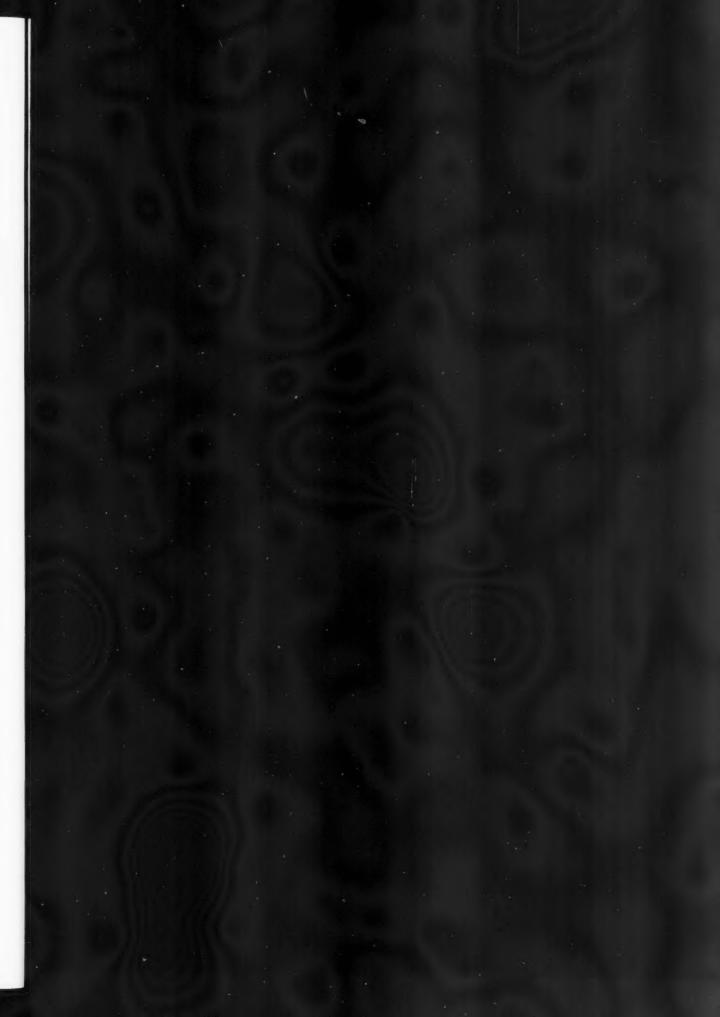
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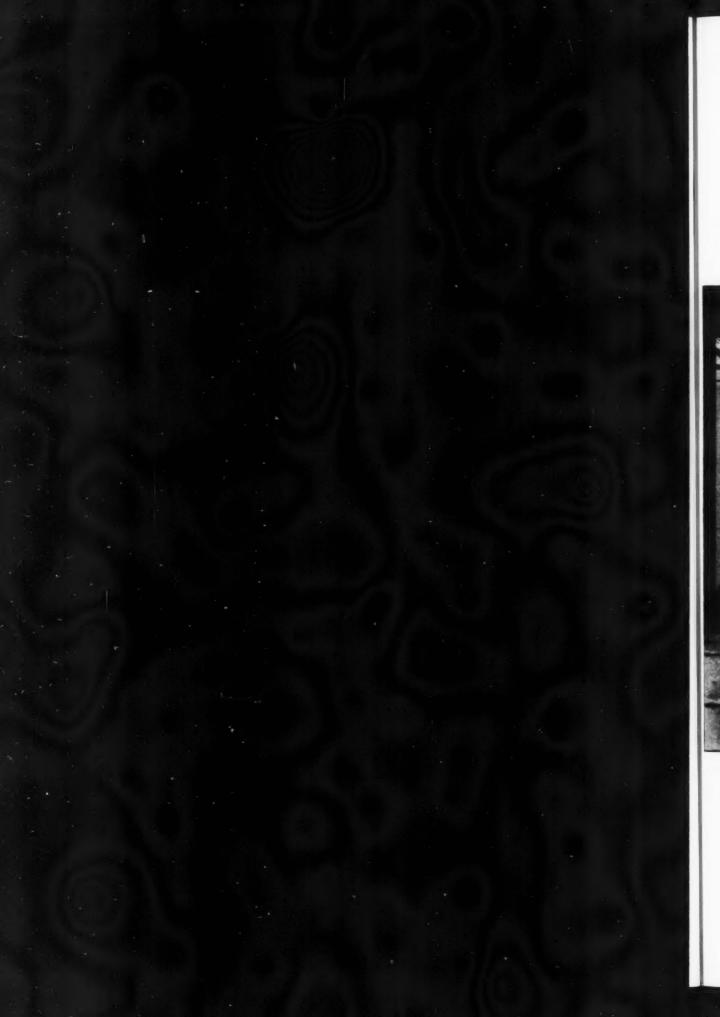
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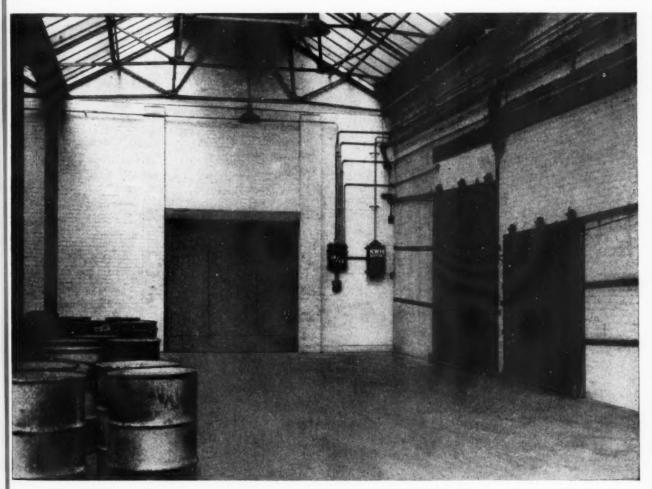


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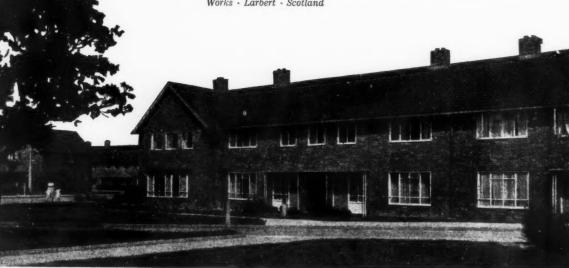
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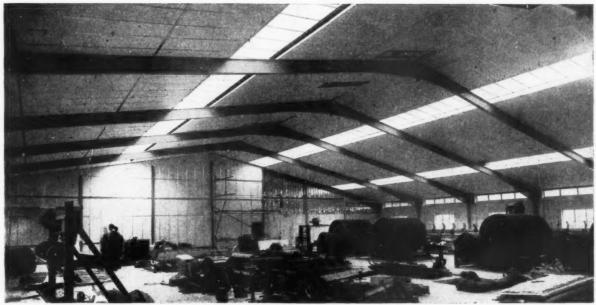
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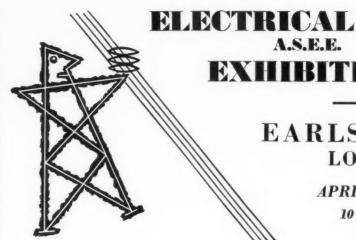
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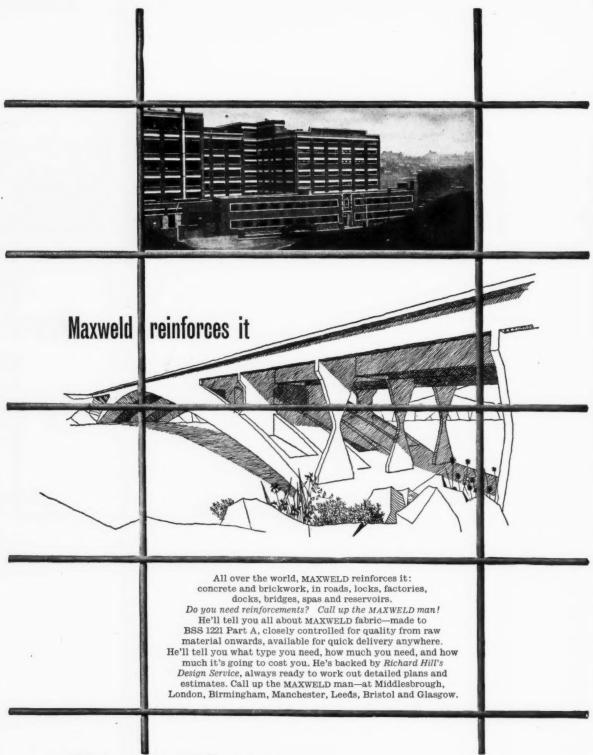
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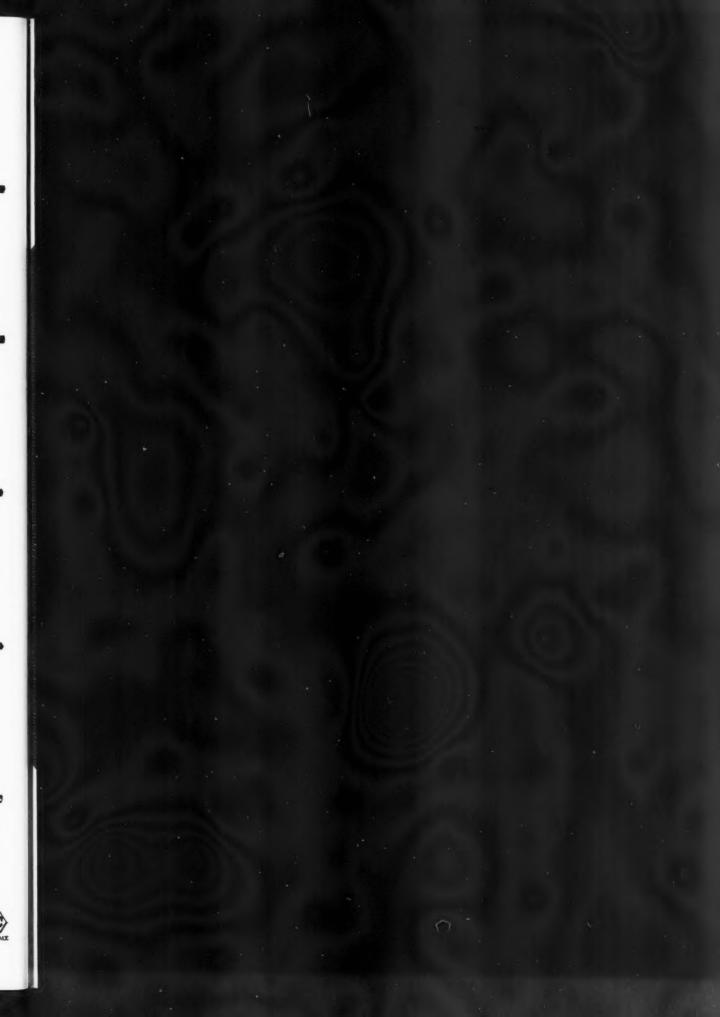


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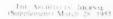
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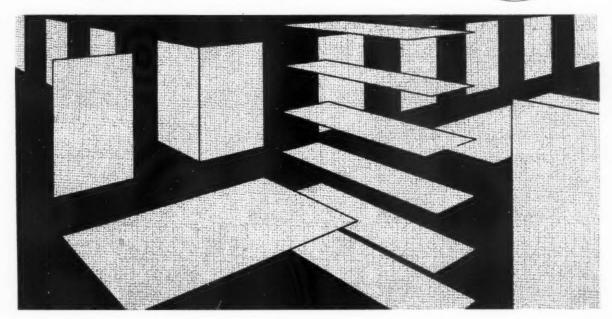
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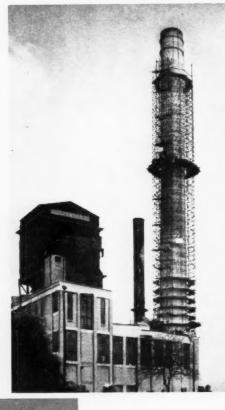
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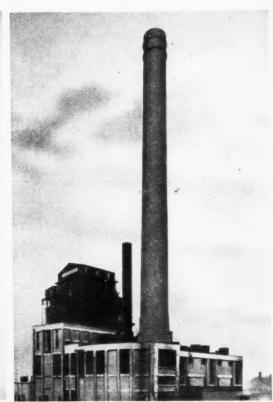
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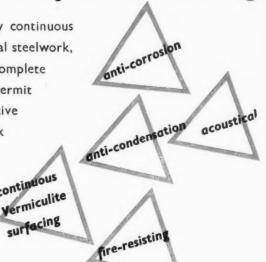


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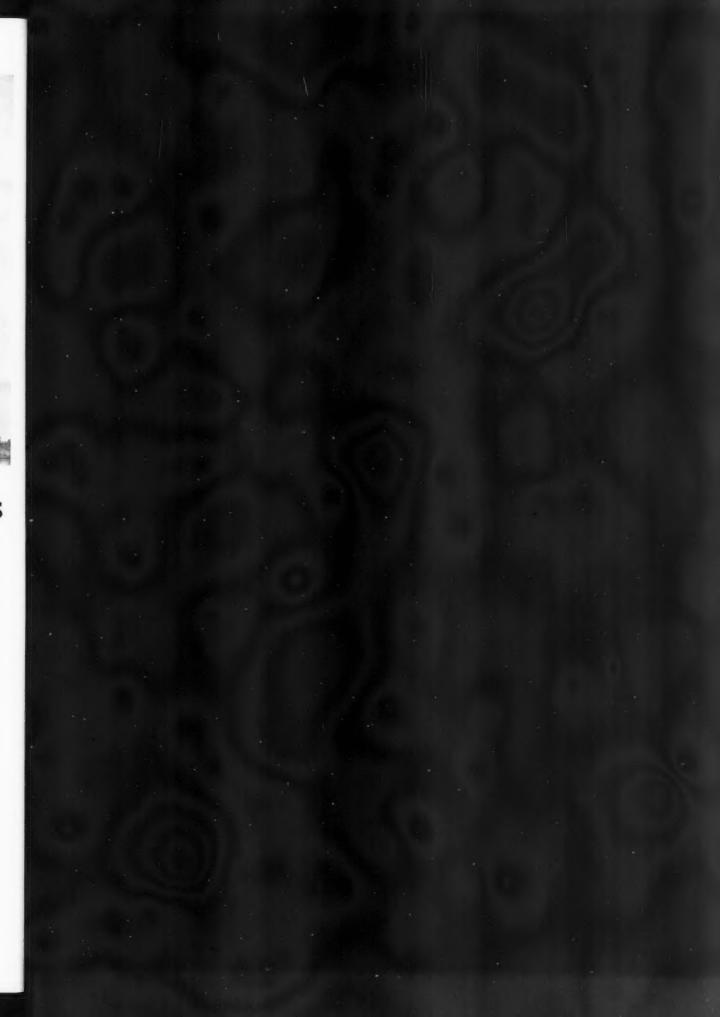


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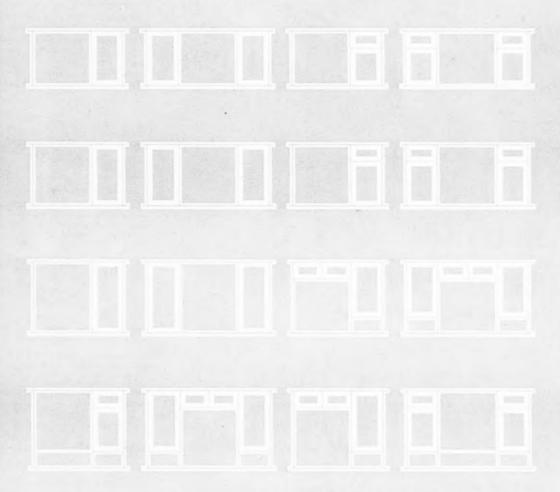
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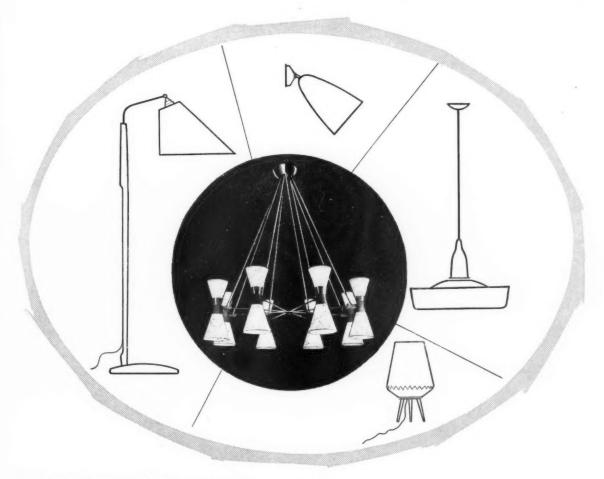
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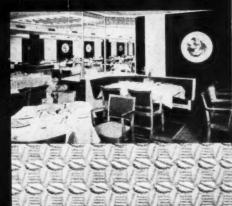
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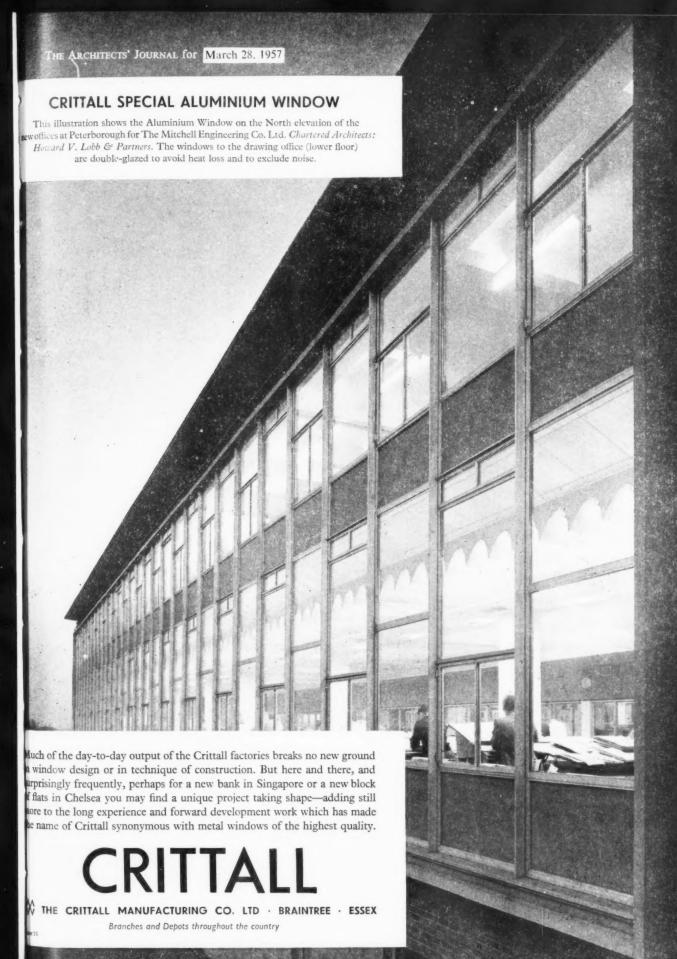


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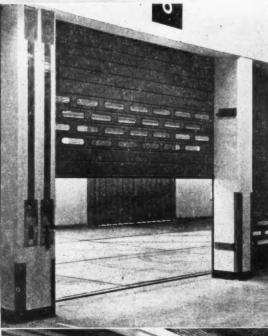
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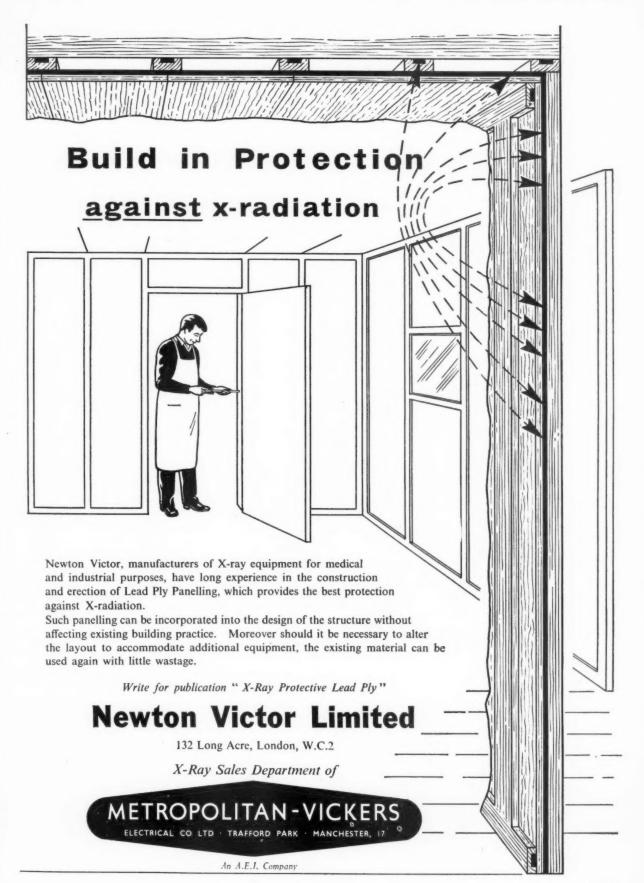
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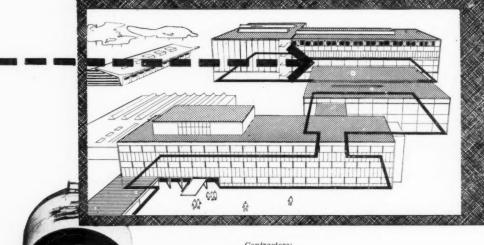
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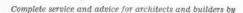
Illustration top left: Stove-enamelled units behind glass with a plinth wall of Uxbridge Flint Bricks.

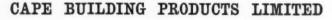
Illustration below: Water Tower with window wall frame of aluminium veneered Asbestolux infill panels.





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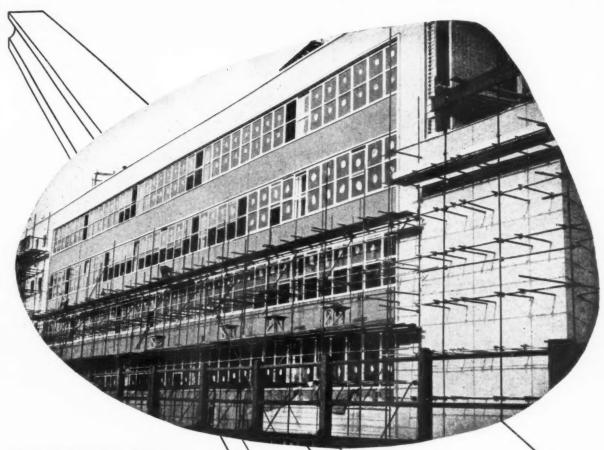
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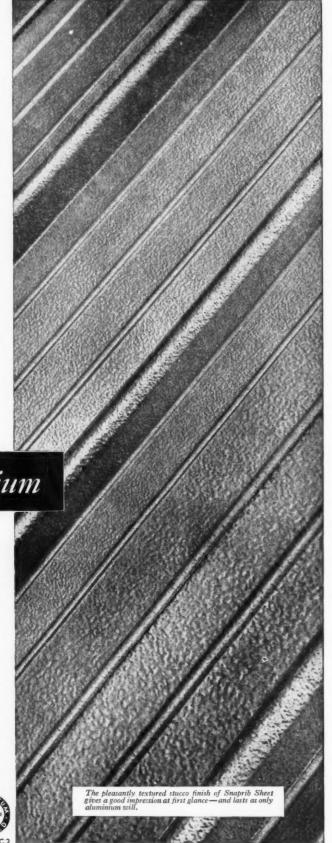
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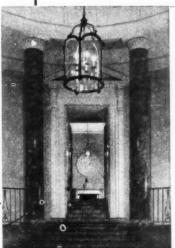
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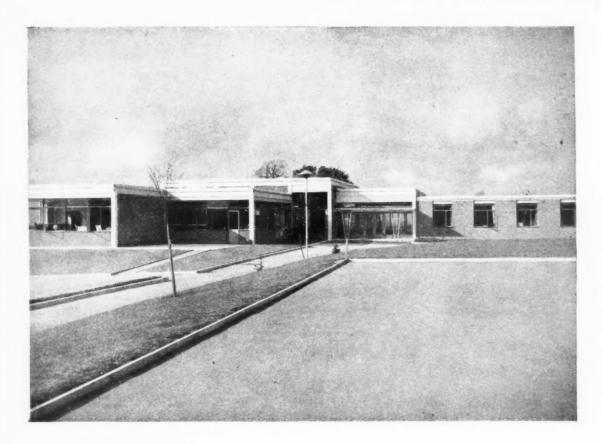
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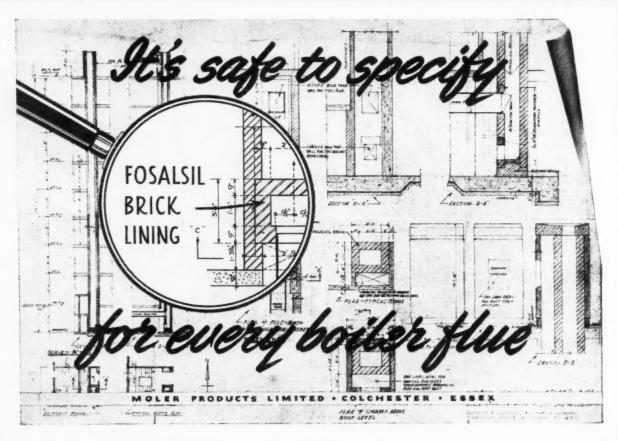
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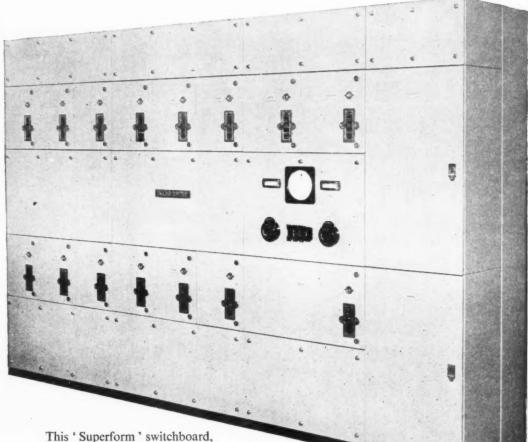
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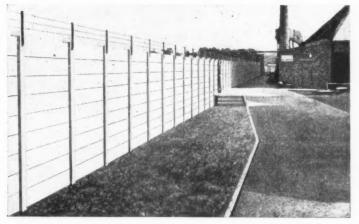


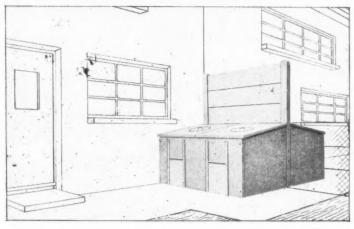
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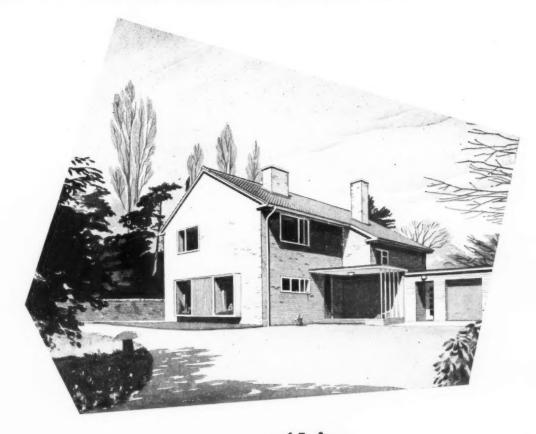
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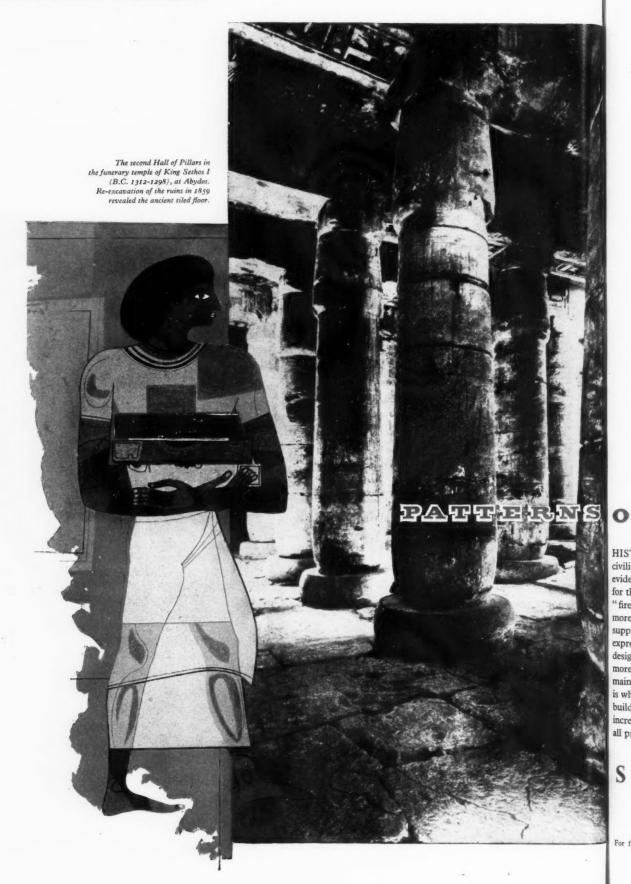
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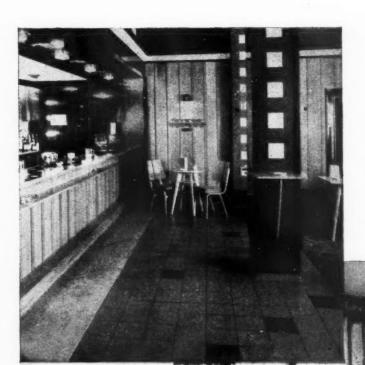
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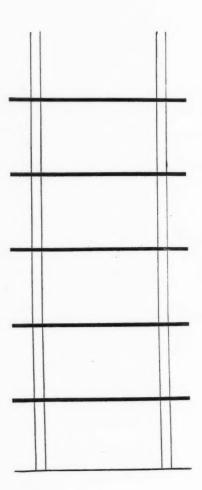
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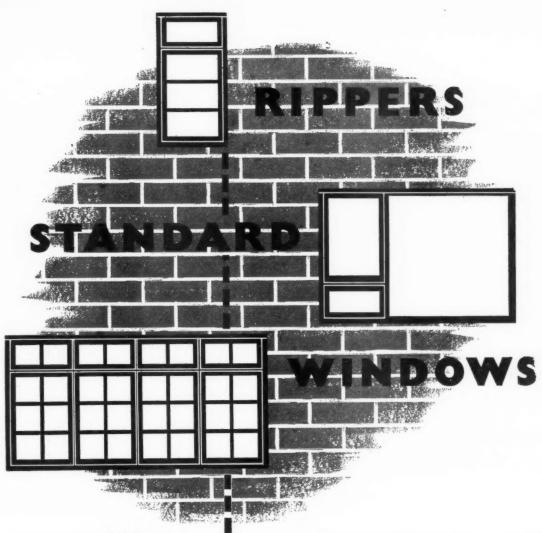
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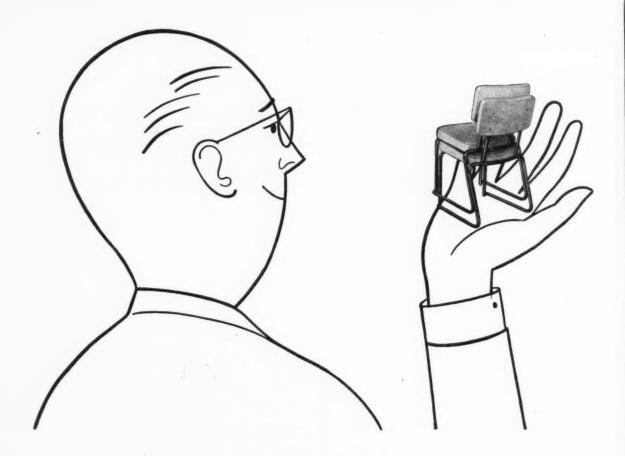
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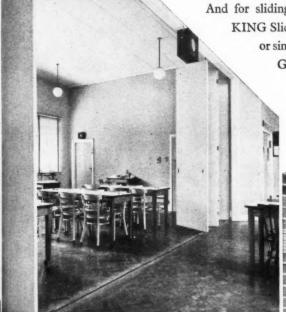
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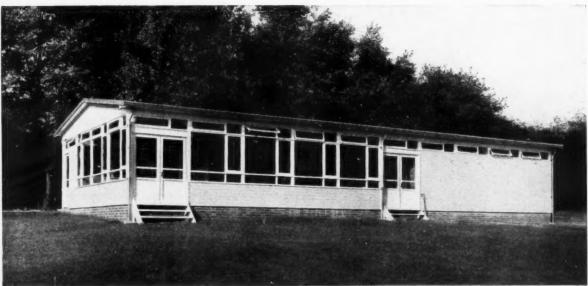


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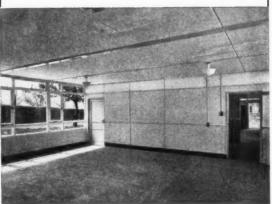
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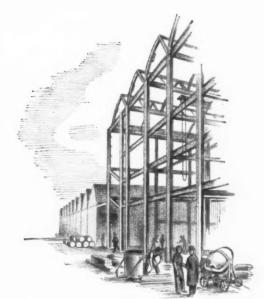


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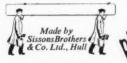
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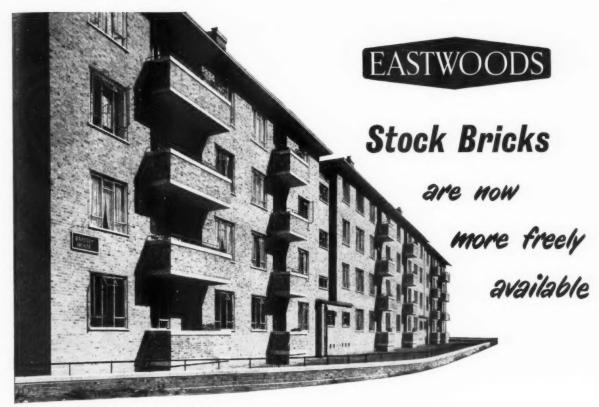
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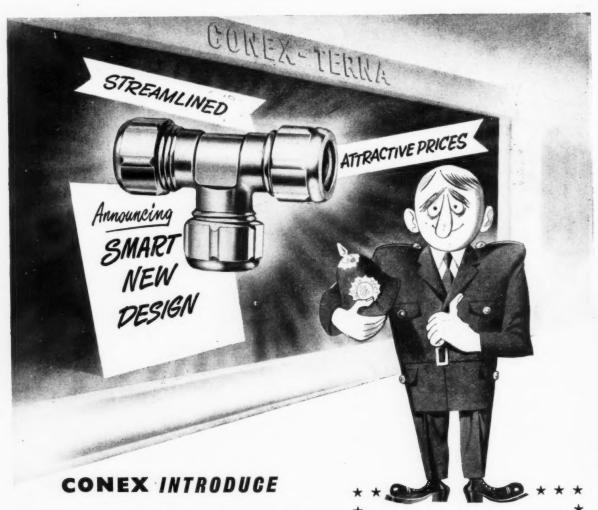
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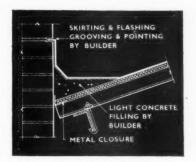
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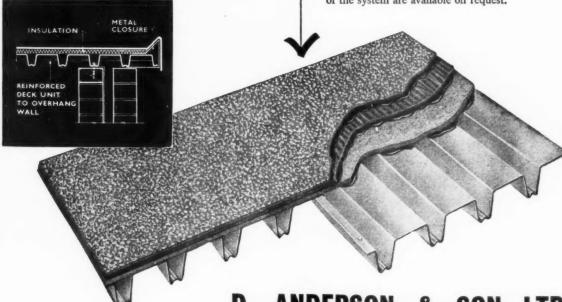
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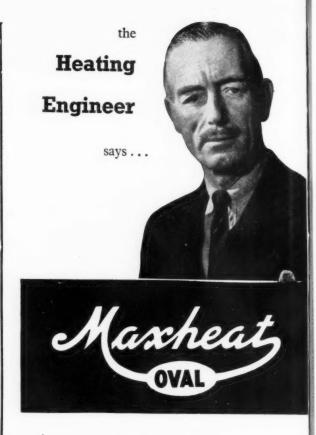
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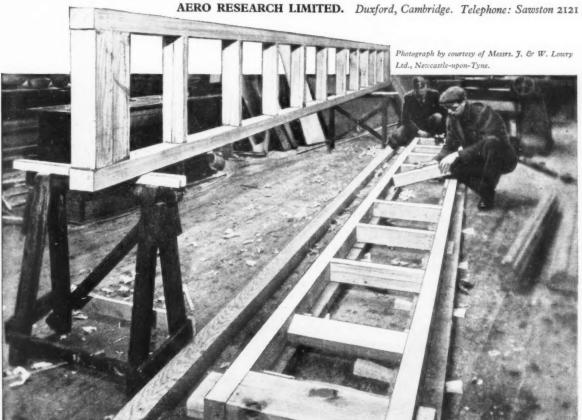
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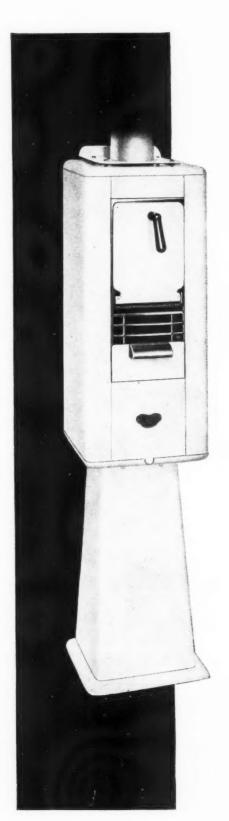
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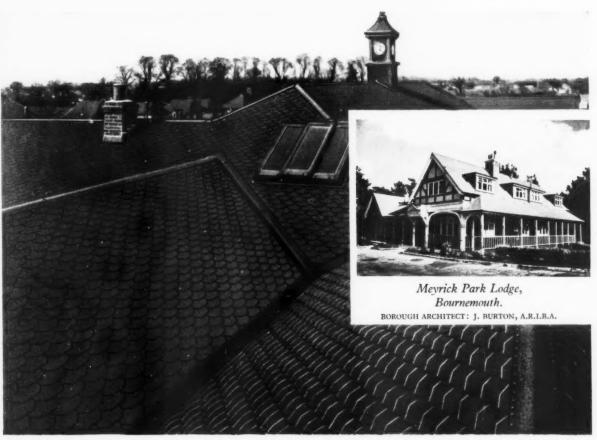
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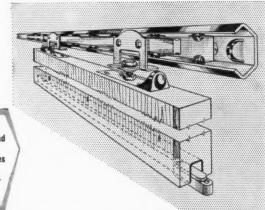
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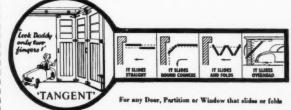


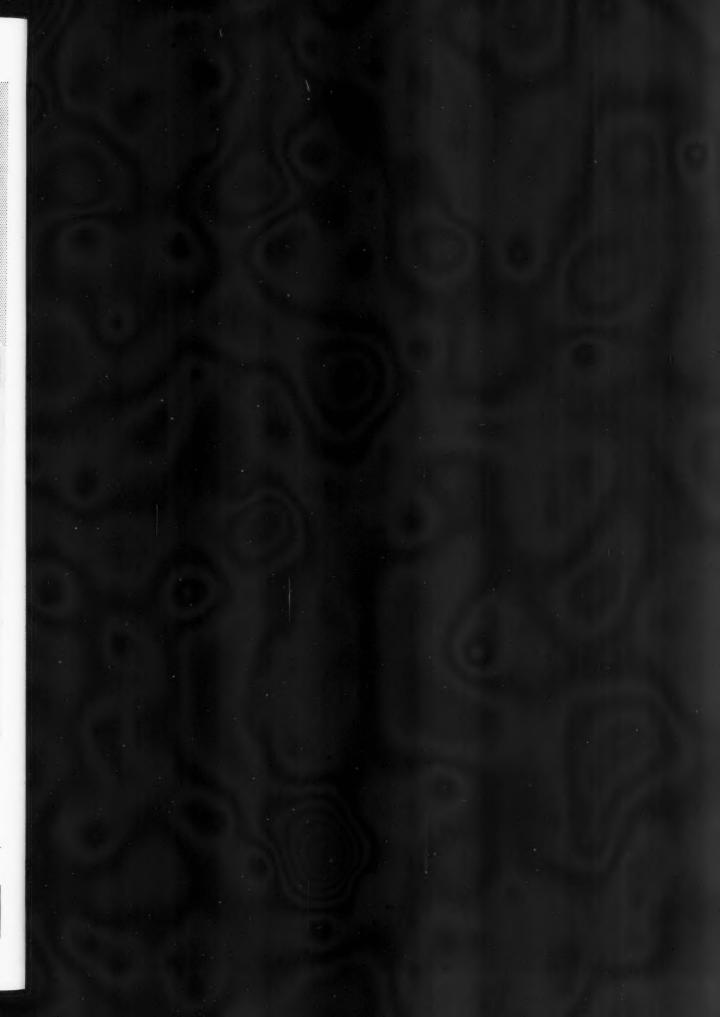


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NOT QUITE ARCHITECTURE

A SLOOP IN THE DEEP

Or, How to Rule the Waves

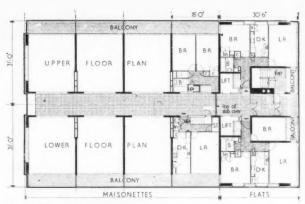
To say that a boat must float is to oversimplify. She must float at a predetermined level and fore-and-aft trim. This involves calculation of the underwater volume (Blessed be Simpson's Rule and the planimeter!) and a simple but laborious calculation of the weight and moment of each part of the structure. When the yacht comes to be launched, some designers shut their eyes and pray, and even the most experienced keep their fingers crossed, and hope that any arithmetical errors have cancelled out.

The shape of the hull is a compromise between speed and stability (power to carry sail). Most sailing yachts are designed with the measurement rule of the Royal Ocean Racing Club more or less in mind. This rule, which is used throughout Western Europe, decides the time allowance which a larger yacht must give to a smaller so that they can race on level terms. It encourages beam and depth of hull, the qualities which make for sloth and comfort, and discourages length and sail area, the speed-making factors. And it still leaves the designer plenty of scope for exercise of judgment.

Whether the hull is constructed of wood, steel, aluminium alloy, fibreglass, or even Professor Nervi's ferro-cement, it must be light, strong, free from leaks, and capable of being tossed around with several hundred square feet of canvas struggling against a few tons of lead or iron bolted to the keel. It is necessary for stability to have between 30 and 50



Ground floor plan



Typical floor plans above ground floor

High Stepney

Four 17-storey blocks of flats and maisonettes, overlooking some of the new open green spaces that are being created among the squalor and ruins of London's East End, will be the central features of two new housing schemes in Stepney approved by the LCC last week. There will be three blocks in Clive Street and one at Mountmorres Road. Their construction marks a new stage in the work that has now been going on for 10 years in the Stepney-Poplar comprehensive development area where, as we report on page 457, one can now begin to see the emergence of a definite plan amid the mess and muddle of old and new that now afflicts the eye. These new blocks may also signal the abandonment by the East London Borough Councils of the conservatism that led Poplar bitterly to oppose the 19-storey Tidey Street point block. Stepney, instead of launching into opposition, invited the LCC to explain their plans. The LCC planners and architects not only laid on an exhibition for the Stepney councillors and officials, but were able at a meeting last week to win their acceptance, and even their enthusiasm for the new project. The construction of the new blocks, which lie midway between point blocks and slabs, is straightforward: a concrete box frame, walls in brick or glazed insulated panels, balconies in aluminium and glass. A cleaner roof line has been achieved by the aid of underground water storage and the fact that the lifts do not serve the top floors (they serve the maisonette floors only, access to the flats above being by staircase); this has helped to keep the height of the tank and lift room below 8 ft. Internal planning is compact, apart from the wasted space involved in the broad internal access corridor, which rises through two floors except at the south end where an intermediate floor gives access to the flats. The only dwelling on the ground floor, which is unpopular with tenants because of noise and lack of privacy, is the caretaker's flat. On the remaining floors there are four maisonettes on the east and west sides of the broad central corridor, which is lit at both ends. Closed access gives warmth and privacy. Internal bathrooms and w.c.s keep the frontage to the minimum, reserving it for living rooms and bedrooms and reducing heat losses. The tall blocks (but not the accompanying low dwellings) have central heating and hot water supply, partially controlled by the tenants. They were designed by the LCC Architect's Department, directed by Hubert Bennett, Architect; F. G. West, Deputy Architect, and H. J. Whitfield-Lewis, Principal Housing Architect.

per cent. of the total weight of the yacht in the keel. Many yachts are built to Lloyd's Rules, which take the place of Codes of Practice and Building Bye-Laws. The recent revision of these rules has produced a sensible standard of construction, and while Lloyd's Surveyors are helpful and reasonable men, they are also imbued with Scottish caution, and are not easy to convince if you want a waiver.

Then the sail plan. Sloop? Cutter? Yawl? Ketch? Schooner? How much sail is needed to drive a given hull, bearing in mind that the different rigs differ in efficiency in different conditions of sailing? The sloop, with two sails only, is the most efficient, but the ketch and schooner with their sub-divided sail plans are easier to handle. The mast will probably be a hollow tube with walls only an inch or two thick, built up of a number of pieces of Sitka spruce scarphed and glued together. It will be supported by steel wires attached to steel fittings on the mast. The stresses run into several tons in quite a small boat, and there are no British Standards for fittings, nor can they be seen in catalogues or at a Building Centre. They all have to be designed for the job; they must be as light as the designer dares to make them, but the mast must not, repeat not, fall overboard.

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Yacht design has its aesthetic side too; there are the romantics who favour something on the model of a fishing smack or pilot cutter, regardless of the different purposes for which these vessels were employed; the Wurlitzer school who hanker after a welter of chromium plate to make their blondes happy; the "avant garde" who just wants to be different. Fortunately, the aesthetic of sailing yacht design has not become a subject for learned monographs on yellow paper, nor has it yet made the Third Programme. What might be called the classical tradition came into being about 80 years ago, when yacht form (as we know it) first began to appear. The early examples had to put up with some savage criticism, but the tradition survived and developed quietly and slowly (the sea is great leveller), and is still slowly developing as young designers succeed their elders. It consists basically of what might be termed a "vacht-like" appearance of which the elements are our old friends proportion, harmony, scale and fitness for purpose.

F. B. R. BROWN

Architect and boat designer

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

The Editors

NEW-STYLE PRICES

N pages 464-472 is the second in the series of our new-style presentation of prices. Those items that have changed since the series began on December 27 are marked with asterisks. The most startling change is in the price of structural steelwork sections, which have shot up by over 10 per cent. The February wage award is responsible for most of the other changes—although there are some decreases—in the prices of imported hardboard and some flooring hardwoods, and in the prices of those perennially unstable items, lead and copper sheet and pipe. Among prices remaining the same are those for machine excavation, drainlaying, asphalting, most floor finishes, joinery work, painting and glazing. Many of these are specialists' work in which the effect of the wage award is delayed.

The trend of tender prices may contradict the indication of our prices feature. The latter is built up from basic factors assuming a constant overheads percentage; whereas builders are beginning to be short of work. We thank Messrs. Davis, Belfield and Everest, quantity surveyors, for the hard work they have done and the ideas they have produced in working out the new style of presentation. In the next publication of prices they hope to extend once more the range of techniques

and materials.

SIR PATRICK ABERCROMBIE



Sir Patrick Abercrombie, M.A., HON. D.LIT., LL.D., F.R.I.B.A., F.S.A., Professor Emeritus of Town Planning in the University of London, died on March 23 at the age of 77.

For our generation the words Abercrombie and Planning are indissolubly linked, and rarely has any man made such a contribution to his chosen skill. It is difficult enough to prophesy who

and what will be thought worthy of record down the years when the history of our time comes to be written, but we can at least say with some assurance that Patrick Abercrombie and his work will be included in any definitive assessment of

the planning of our environment.

His contribution, although widely varied, was made mainly in two forms. First, there was Abercrombie the practical planning director, the wise and far sighted leader of the pioneer teams which prepared the County and Greater London Plans: both were documents of the first importance, and together they provided a masterly framework for the replanning of the world's largest capital city. Second, there was Abercrombie the teacher. Far and wide his former students have carried the wisdom given by him, and there is scarcely a plan of note in Great Britain and the Commonwealth that does not reflect his influence in some form.

Here, indeed, was the rare example of one who practised and preached with equal power, and, to our credit, one whose outstanding powers were recognized within his own lifetime.

Sir Patrick Abercrombie: The following contributions come from three planners who knew him.

Sir William Holford writes:-

Town Planning everywhere, as a creative, preservative and politically conscious activity, owes a very great deal to Patrick Abercrombie. This country, in particular, owes him recognition as a great teacher in the tradition of humanism, and as a notable exporter of its ideas.

It may sound odd to describe Abercrombie as a bee, for he was not fussy, nor important, nor pompous; and would never have tolerated a totalitarian régime. But he was like a bee in the way he darted from point to point; so that you could never focus on him for long. Also he fertilized plants of many kinds in many places—plants that afterwards achieved considerable growth.

He was the great catalytic agent of planning: first in urban development—as in his Dublin plan of 1913; then in small-scale regional planning, for which he wrote a whole series of pioneer reports—the Kent coalfield, Doncaster and district, Bath and Bristol, and many others; then in the preservation of the countryside and of natural resources, in which he was a founder of the CPRE; then in metropolitan plans of the largest scale—the County and Greater London, Plymouth, and Edinburgh; finally in the international field.

All through he remained a teacher. He understood the double discipline of exposition and idea which teaching offers; but he was not so much of the classroom as of the atelier. He worked with small groups of students, of assistants, of partners—even with sections of government departments, introducing them on the way to cartography, geology, residential density, the philosophy of Chinese landscape architecture, and ideas on industrial location and New Towns. He countered the ideological and statistical jargon of planning practice with a certain 18th century elegance, being an amateur of music and calligraphy and furniture, and brother to Lascelles Abercrombie, the poet.

A member of countless committees and commissions—including the Barlow Commission—Abercrombie always preserved a very individual approach. He was interested in proposals and problems, but not so much in organization. Nevertheless he organized his own life and travels to the fullest possible extent; and what this meant in domestic terms, since the death of his dearly-loved wife in 1942, is probably only known to his daughter, Mrs. Farey, and to his son, Neil, who is now Town Planning Commissioner for Tasmania

Percy Johnson-Marshall writes:-

Although Sir Patrick Abercrombie was in age someone from a previous generation, and a man who was, so to speak, in at the birth of modern city and regional planning, he was one of the few outstanding men who remained young in mind throughout his life. Whether in public meetings (and he continued to take an active part in public life right up to his death) or in private discussion, his mind remained alert and his memory clear. His attitude to planning and to life generally continued to be essentially forward-looking and progressive.

Most of his numerous activities were concerned with creative planning and the preservation of beauty in town and country. His two greatest practical works, the County of London and the Greater London Plans (the former with J. H. Forshaw) were carried out in a time of crisis when most of his former students were scattered even further than they are now. They are documents of fundamental and pioneering importance. In them were embodied for the first time all those theories of planning in space and time which had been evolved during the first half of this century, and together they stand out like a landmark in the planning literature of our time. It was Lewis Mumford who said of the County of London Plan, "As one has learned to expect from any work with which Professor Abercrombie is associated, this report has the great merit of taking an extremely complex collection of data, reducing it to manageable proportions, using it as a basis for a clear-cut and reasonable proposals that can be followed step by step." This describes well almost everything Abercrombie said and did.

His planning work in these islands goes back before the first World War, where we find him, along with Geddes, Adshead, Unwin and other great pioneers, laying the foundations of the vast new subject which is only now beginning to be properly understood. In this connection his little book Town and Country Planning, was probably the most clearly written and widely read introductory statement of planning that has ever appeared.

widely read introductory statement of planning that has ever appeared. Internationally, his name is known and respected throughout the world. Not only did he prepare planning schemes for places as far apart as Hong Kong and Addis Ababa, but editions and quotations of his works have been printed wherever plan-

ning is studied. His efforts, too, on the International Union of Architects (of which he was first President) and other such bodies should not be forgotten.

The shock of realizing that he has so suddenly passed away is great, and the memory of his vivid and lovable personality will remain in the minds of hundreds of his grateful friends and students for many years.

Sir George Pepler writes:-

It was my privilege to meet this great man early in his career in the field of Town Planning, when he was assistant to the late Professor Adshead, at the School of Civic Design, at Liverpool University, founded in 1909.

This chair occupied for 20 years before he became Professor of Town Planning at London University—a post he held until he relinquished it, in 1946.

Others will record the high distinctions conferred upon him during his brilliant career; my memories dwell happily on companionship with a warm-hearted man who devoted his talents to the development of the technique of town planning in the belief that it was a matter of supreme importance to the well-being of his fellow men.

This belief was evident in such activities as his teaching and writing and in the work he did, for example, in founding and chairing the Council for the Preservation of Rural England. Products of his teaching are to be found in the early volumes of the Town Planning Review, which he so brilliantly edited, in his exposition of theory and practice in his Town and Country Planning published by the Home University Library in 1933, just after the passing of the Town and Country Planning Act, 1932, and of his brilliant Regional Planning Reports of which he was a pioneer.

We were both disciples of Prof. Patrick Geddes and firm believers in his insistence upon the need for survey into "Folk. Work. Plan" as an essential preliminary to any plan, and Abercrombie gave a practical demonstration of the application of this principle in his Sheffield Civic Survey and Suggestions towards a Development Plan, which was published in 1924, having been begun in 1920. Our closest collaboration, however, was in the preparation of the first few of the many advisory Regional Planning Reports for which he was responsible, between the wars. His Report on the Region of the Doncaster Coalfield was the first to be published, and each of his subsequent regional plans was notable for some additional contribution to the art of planning and the development of survey and to the method of presentation.

It is true that none of these plans have been implemented in full, partly because they were ahead of their time, but essential parts of many have survived and the loss of others have been subsequently deplored. Also, they blazed the trail and developed a technique which came to full flower in his Greater London Plan, 1944.

I have referred, in particular, to Abercrombie's work in Regional Planning because in that he was a pioneer, but he contributed no less to the development of the art and science of planning cities. beginning with his plan, in collaboration with Sydney Kelly, M.T.P.I., F.S.I., for Dublin, in 1913, including plans for several of our bombed cities, during the war, and ending with his plan for Addis Ababa, in 1955. After the war, he gave advice, on the spot, in many parts of the Commonwealth.

As a man Abercrombie seemed entirely unconscious of his greatness. He was all the time seeking to learn and to share his knowledge and experience with others; whilst his ready wit and infectious laugh made him a delightful and treasured companion.



80TH ANNIVERSARY

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Coming out from a coma induced by standing in what must have been the slowest moving queue since the evacuation of Dunkirk, ASTRAGAL suddenly found himself, unlike the page in the carol, with an intriguingly wide choice of footprints in which to tread. Should he follow the richest, Nubar Gulbenkian; or the most devout, Dr. Fisher; or the most influential, Mrs. Norman Bentwich: or that arbiter of taste, Sir Gordon Russell? The occasion which brought these eminent figures, and many more, under no less a roof than that of St. James's Palace last week was a soirée held in commemoration of the 80th anniversary of the founding of SPAB.

The SPAB came into being as the result of a letter from William Morris in the Athenæum of March 10, 1877, deploring the restoration by Sir Gilbert Scott of Tewkesbury Minster. William Morris became the first honorary secretary of the Society, and it was appropriate for last Thursday's occasion that two of the Palace state rooms used had formed part of the earliest of the interior decoration schemes undertaken by Morris and his friends. The most striking is the Armoury, with black panelling and woodwork covered with leaf and geometric patterns in gold. It shows little signs of wear.

Since the SPAB was formed various other bodies concerned with preservation have come into being: the National Trust (1895), the CPRE (1926), the Georgian Group (1936), and finally, in 1953, the most significant of all, the Historic Buildings Council. This last body is perhaps the triumphant climax to the SPAB's endeavours. Nevertheless, powerful though the Council may be, the need for SPAB to continue its rôle as a watchdog for the nation's buildings is as important as ever.

FRY NIGHT

Are Science and Art Divergent? That was the subject of Maxwell Fry's talk at the ICA last week. The theme was an extension of a point that Mr. Fry had raised in talks on the Third Programme some time ago, when he reflected on the inadequacies of the ideas about architect-industry relationships that were current in the 'thirties. This time he pursued the subject into the American scene, producing some rather routine European reactions (or so it disappointingly seemed to ASTRAGAL) to such things as New York, General Motors, Exurbian shopping centres, and what not, but paralleling this with what Patrick Campbell would have called a short trot with various cultured minds, notably those of Henry (Virgin and Dynamo) Adams, Norbert (Cybernetics) Wiener, and Alfred (Down with Newton) Whitehead. To short-winded ASTRAGAL, who had difficulty in staying this course, the message seemed to be that old-time Newtonian science was running architecture to death because it had no room for human values, but that since Einstein there was now room for emotion and illogic in science, and that given some sort of super postgraduate school, variously referred to as a National Bauhaus or College of Foreknowledge-art and science could stop diverging.

A packed audience heard this with sympathy, but with how much comprehension it is difficult to say, since the subsequent discussion was largely about birds and bees, and the possible virtues of chaos. ASTRAGAL is more than prepared to give Fry maximum marks for having trodden where architects normally fear to tread, but personally would have preferred to

hear a professional philosopher rush into architecture. Could the ICA arrange a return match?

NUCLEAR POWER STATIONS

"Can atom stations blow up?" That question was asked in an advertisement for last Sunday's *Observer*. But people who bought the newspaper found no answer to the question. Instead they found replies to three other questions:—What sort of site is needed for a nuclear power station? Can such a station be good architecture? And how will the nineteen projected stations affect the British landscape?

John Davy gave the answers to the first question—answers that may not yet be common knowledge. The stations, he said, had to be sited not only where there was plenty of cooling water, but also where there was firm bedrock to bear the immense weight of the reactors. They had to be some distance both from densely-populated areas (to conform with the Government's "safety policy") and from coalfields (simply because they could be of greatest benefit in areas which find coal deliveries expensive).

What about architecture? R. Furneaux Jordan wrote that there was nothing one could d_0 to the "largest artifact since the cathedrals" to make it either better or worse. "It is not what it looks like, but where we put it that matters."

Well, where shall we put it? Who decides? Graeme Shankland reminded us that the Electricity Authorities are exempt from the need to obtain planning consent. And he pointed out that although a scheme took about nine months to get past all the public bodies which were consulted it usually emerged intact, and—this is important—without anyone having suggested an alternative site for it. There should be a Minister of Planning, he said, with the power to secure the proper use of land and to guide new projects into the right places.

Shankland had his facts wrong in one respect. He implied that the Royal Fine Art Commission had been consulted about the siting of the four stations already planned. That is not so, though I believe the Commission hopes to be consulted in future.

Observer's clarification of the whole matter may remind him that he can, at least, make a useful nuisance of himself.

GIANT ARCHITECTS: DWARF LAMP-POSTS It is good to see that people of widely different outlook in many other matters can be united in strong opposition to the evils of Subtopia. The JOURNAL has been fairly critical of Sir Albert Richardson in the last year or so. ASTRAGAL was therefore gratified, if rather surprised, to learn that Sir Albert made a special point of supporting the Architectural Review's and the Journal's denunciation of Subtopia at the annual dinner of the Guild of Surveyors last week. Lord Methuen spoke first, with quiet effectiveness, on the need to retain old and historic buildings in redevelopment schemes, and to site buildings with the eye of a townscape painter. Sir Albert, horrified by the concrete lamp-posts proposed for Ampthill, his home town, condemned town councillors as vermin, and as having (rather illogically) the lowest order of human intelligence. For good measure he went on to deplore the lack of architect giants (" only millions of chartered dwarfs") and the absence of good copy books today (" only catalogues"). ASTRAGAL wishes him well in his endeavours to get on to the Ampthill Urban Council. It is a pity more architects don't follow suit.

NOT-SO-BRIGHT BRIGHTON?

It is surprising that Brighton, a town famous for good architecture, should have turned down the proposal to appoint an outside architect to design its new College of Art. At a recent meeting of the Education Committee the proposal was quashed by twenty votes to two in favour of having the building designed in the borough surveyor's department.

Brighton Pavilion is a building of national importance, and the site of the new college is a very prominent one just opposite the pavilion. So it is no injustice to the corporation architects who work under the borough surveyor to say that its design is a matter of national importance, too, and the best possible architect should be sought.

Isn't this a case for an open competition?

ASTRAGAL

LETTERS

Control of Elevations

SIR,—The inference from your editorial of March 7, in which you comment on Dame Evelyn Sharp's speech at the RIBA dinner, that freedom from control for architects will result in better architecture, is not quite so simple as that, nor necessarily correct. In the first case there seems to be a fundamental assumption that all architects are good architects, or at least good designers. It is true, perhaps, that even an inferior architect is better than no architect at all, but the magic letters F.R.I.B.A., or even A.R.I.B.A., are not yet a guarantee of competence always to produce designs above criticism.

Perhaps the weakness lies not so much in interference by Planning Officers, though I would not deny the risk, particularly in smaller or less enlightened planning authorities, of the imposition of personal whims by the more philistine members of the general planning fraternity. More likely is it to be found in the system of delegation of planning control practised by many County Authorities, where District Councils are allowed a very free hand in control of development—providing major issues involving policy matters are not affected. Unfortunately, except perhaps in special instances, the appearances of buildings, as opposed to the broad question of land use, do not rank as policy matters, and indeed the more a particular house resembles that in which Councillor Blank lives or aspires to, the greater its prospects of approval . . . or so

it seems.

Now Councillor Blank is in other aspects of his public life no doubt a most worthy citizen, but unless he is exceptionally well informed on matters æsthetic he is likely to be cynical, to say the least, about any building proposal which does not conform to his narrow view—and, of course, that of the electorate which he represents—of what is suitable for his area. And we all know what that is.

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A point in this controversy which has, perhaps, been overlooked, is the limitations of individual architects in work involving more than a small group of houses. A good architect, especially one who has had a postgraduate planning training will, of course, be able to produce a good layout no matter what area. On the other hand, an architect whose competence lies more in his constructional knowledge than his faculty for design must be guided by the planner—always providing, of course, that he himself is competent—in how his work should take its place in the larger whole.

its place in the larger whole.

The answer, to my mind, for some years yet to come at any rate, lies not in less control but in an even stronger control, in the right places by the right people, those who by qualification, training and general outlook are capable of encouraging the best in architecture and are not afraid of criticizing inferior work—whether by architects or not—and making constructive suggestions for improvement. I regard the visual aspect of planning as one of the most important—if only because it is that aspect which has the most immediate impact on the public at large and can make all the difference between a depressing and a stimulating environment.

Southport.

Cost control in building: six lecture discussions

organized by the School of Architecture, the Regent Street Polytechnic in association with the Architects' Journal

We invite building contractors, as well as architects, quantity surveyors and students to come to this course. It is for those who would like to learn more about the techniques of cost control—or who have ideas and experience of their own to contribute to the discussion.

- 1. April 30. The Need for Cost Control. J. M. Austin-Smith, A.R.I.B.A. (architect in private practice). Chairman: Sir Thomas Bennett, F.R.I.B.A. A brief review of the present situation—what kind of information is needed and what procedures should be followed for better cost control. Brief account of techniques developed so far.
- 2. May 7. Cost Analysis. James Nisbet A.R.I.C.S. (principal quantity surveyor, MOE). Chairman: Hubert Bennett, F.R.I.B.A. A method of analysing building costs. Significance and uses of such costs analyses.
- 3. May 14 The Elemental Bill of Quantities. Clifford Nott, A.R.I.C.S. (chief quantity surveyor, Herts. C.C.) and Ivan Tomlin, A.I.B.E. (contract manager, Howard Farrow Ltd.). Chairman: P. E. Trench, B.SC. Arrangement of the elemental bill. Its purpose and uses by the architect, the quantity surveyor and the builder.
- 4. May 28. Cost Planning I. G. Grenfell Baines, A.R.I.B.A., A.M.T.P.I. (architect in private practice). Chairman: M. H. Thackray, F.R.I.C.s. Preparation of a cost plan. Its use during the design stage, at tender stage and during the contract.
- 5. June 4. Cost Planning II. John Wilkinson, A.R.I.B.A. (architect in private practice) and Arnold Towler, A.R.I.C.S. (quantity surveyor in private practice). Chairman: Cyril Sweett, F.R.I.C.S. Cost planning in practice on an actual project.
- 6. June 18. Symposium. Chairman: D. E. Woodbine Parish, F.I.O.B. Questions and discussion. All speakers will be present.

Time 6.30 p.m. Apply: The Registrar, School of Architecture, Little Titchfield Street, W.1. Registration fee: 11s. The lectures to be field at the Polytechnic, 309 Regent Street, W.1.

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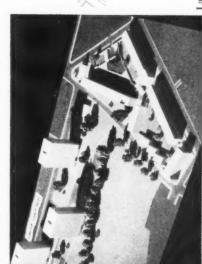
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made it possible in a morning to glimpse the "grand design" which is being put together piece by piece "to make the East End a very beautiful place," as the LCC Planning Committee's chairman put it. The design inevitably looks a great deal better in the model, shown above, than it does to put on de in the opportunity created by the new schemes at Clive Street and Mountmorres Road, Step-ney, with their "skyscrapers," to put on show the progress being made in the Stepney "community" since the Stepney-Poplar comprehensive development area was inaugurated 10 years ago. An exhi-bition, a lantern lecture, and a bus tour It was a good idea of the LCC's to take the

Above, the proposed Stepney Community (from the south-east) bounded by Whitechapel and Mile End Roads to the north-east, single tall blocks are in St. Anne's (in the Road (foreground, centre). Below, model of Clive Street with its three tall blocks (left bottom right-hand corner) and Mountmorres and Commercial Road to the south. of centre in picture above).

> when one steps out into the streets with their astonishing mixture of gasworks, viaducts, breweries, and slums inextricably mixed-up with finished post-war building There is much, unfortunately, to mar the execution of the design. It is a slow process to remove industries that ought not to be there in a residential precinct. There is an unsatisfactory legacy from the earlier postwar years of grim-faced flats with balcony

and the new work still under construction.



are scheduled for future clearance are shockingly neglected, and when the rate of development is too slow—as it is—the depressing period of decay and builders mess is far too long. The model shows

access and asphalt surrounds. Areas that

but little tree planting has yet been done— and ultimately it is the trees almost as much

the architecture that will transform the

noble trees in parks and lining the roads,

maisonettes and flats 4,5,6,8,9. 4-storey 7. 2-storey houses 10. 1-storey shops 1,2,3, 17-storey maisonettes

> the new is beginning to overshadow the old.
>
> All the seemingly disconnected buildhave gone up are beginning to a continual improvement in design which But these are not the most important The great thing is that All the seemingly disconnected vining ings that have gone up are beginning form a coherent pattern, and there form a coherent pattern. things, although they argue strongly quicker progress. East End.

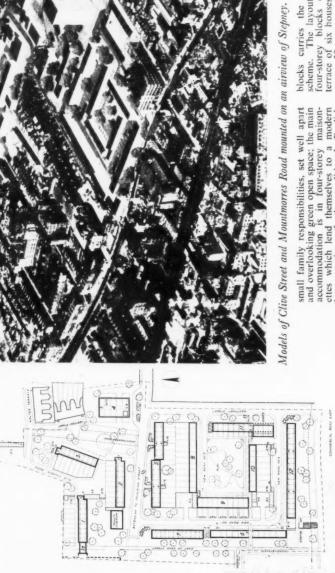
Layout plan of Clive Street

continued

rcc:

augurs well for the great mass of work that remains to be done. This is one of the few places in Britain where all new building in accordance with a threespace can be seen at King George's Fields, it will become a "green finger" linking up with Victoria Park, and it enables one to understand the enthusiasm of the guide who embraces an old timber yard and a blitzed site with a sweep of the arm and exclaims even if it looks treeless and bare as yet: The first new plan. place dimensional

"all this is green open space." During the last few years experiments in operation between planning and housing staffs, have resulted in the evolution of a conception in design that is exemplified in the two new schemes. The chief elements are the tall blocks intended for tenants with flat and house design, and the close co-





2,3,5,7,12. 4-storey maisonettes 1, 6. 3-storey flats

4. I7-storey maisonettes & flats 8,9,10. 2-storey houses

11. 4-storey shops, malsonettes & flats]

shop, playground and three toddlers' play spaces. The estimated cost is £1,218,300. The single 17-storey block at Mountmorres terrace of six houses, 3 shops, 138 tenants' stores, 38 garages, clubroom, estate workfour-storey blocks of maisonettes and a scheme. but in Clive Street this has been raised to 160 because all three 17-storey blocks over-

Road overlooks an open space by St. Dunstan's Church. There will also be five Astorey blocks of maisonettes, a 4-storey block of flats and maisonettes with four

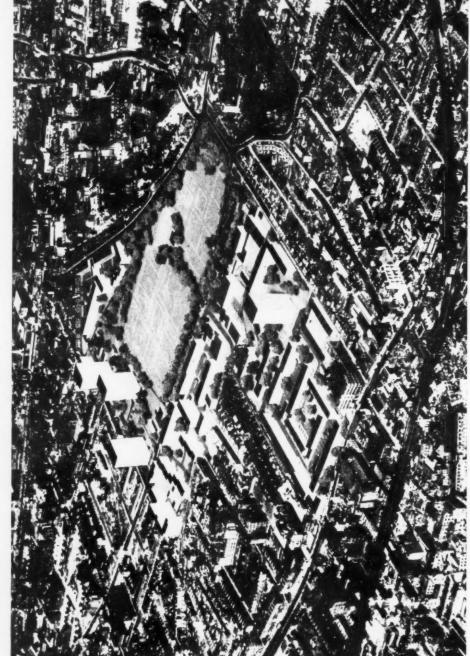
Stepney Green with football pitches and tennis courts. The open layout around the

look a large new open space south of

The layout provides also for five blocks carries the green right into the

shops below, a 3-4-storey block of flats and maisonettes, a 3-storey block of flats and three terraces of houses round a square, together with 112 tenants' stores, 32 garages and two paved play spaces. The estimated cost is £1,039,000.

The planning of the Stepney-Poplar Area is under the Architect to the LCC, Hubert Bennett, the deputy architect, F. G. West, housing Lane. Their assistants and the hou architects concerned are on page 486. Senior Planning Officer, Their assistants and the and the



small family responsibilities, set well apart and overlooking green open space; the main accommodation is in four-storey maisonettes which lend themselves to a modern interpretation of the traditional English The over-all density is 136 to the acre, square, and a few two-storey houses.

CRITICISM

by J. M. Richards

CHURCH at BASILDON NEW TOWN, ESSEX designed by BURLES and NEWTON chief assistant J. O. FOGARTY

I don't have to begin in this instance by analysing the function of the building. We all know the purpose of a church, which is a simple one in that it is fixed and unalterable and therefore does not involve the architect in a search for improvements in the programme he is initially set, as a factory often does, or a hospital. On the other hand the purpose of a church is uniquely complex in that its successful fulfilment depends not only on the practical requirements being met but on the right atmosphere being engendered. A church is a failure if it does not create a devotional atmosphere, but the architect is up against the difficulty that this cannot be done solely by æsthetic means. To the worshipper, devotion is usually associated with the gothic style and with the sense of history created by the antiquity of most church buildings.

Looking diagonally across the interior towards the Lady Chapel.



The modern architect doesn't want to simulate antiquity or revive historic styles, and one day, he hopes, the idiom he works in will be so much taken for granted by the ordinary worshipper that this barrier between modern design and design the worshipper feels ready to respond to will no longer exist. In the meantime what can the architect do?

I think he can only behave as though there was no such barrier and design the best building he can, even if he has to wait for it to be appreciated until such time as the seed he has helped to sow has borne fruit. On the other hand he must resist the temptation to substitute for the emotional content of traditional buildings too many emotional effects of his own contriving. Modern church architects aim too often at the theatrical, through trick lighting and stage-management of various kinds, and the result, though effective at first sight, is as ephemeral as the theatre itself. Modern church buildings thus often appear unnecessarily freakish.

One of the things I like about this Basildon church is that it eschews such forced effects. It relies on sincerity and simplicity of statement. In fact, the encouraging thing that arises from the dilemma I have just referred to is that although the ordinary worshipper may be only subconsciously aware of the effect architecture has on him, and does not inquire into the reasons for the particular form it takes, the qualities he does respond to, like dignity and repose, follow directly from an honest use of structure and a straightforward use of materials; so the basis of good architecture and the basis on which a public appreciation of modern architecture may gradually be built up, do in fact coincide.

The interior of the Basildon church has dignity and repose, obtained by just these means. It also possesses that magical sense of spatial equilibrium created, I suppose, by the proportions being exactly right. These are the building's principal virtues; it also has weaknesses, especially outside, but before analyzing these I must give the basic facts about it.

It is a Roman Catholic church, dedicated to St. Basil the Great, sited on the edge of the Barstable neighbourhood of the new town. Beyond it is now open country, but later it will be surrounded by housing and is designed to serve the population of four neighbourhoods. It stands on a site of six acres, accommodating, besides the church, a presbytery, convent and primary school. The presbytery, which adjoins the east end of the church, is already built and the convent is under construction. The cost of the church alone was £30,000.

The neighbouring housing is what you would expect: decent, if rather dull, two-storey houses of traditional construction, spaced rather wide apart on either side of an unnecessarily wide road. The tower of the church has been placed so that it is seen from far down this road as one comes from the neighbourhood centre. At present the road ends at this point, but later it will join a main access road which will pass across the west end of the church. The immediate surroundings of the church are still flat and unfinished, but the architects have made landscaping

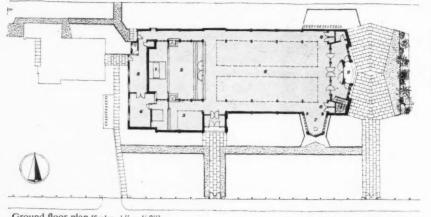


General view of the interior looking towards the altar.

plans which, when carried out, will give its setting more character than it has in the photographs.

The geometrical form of the church is simple: rectangular nave with narrow side aisles; sanctuary the same width as the nave without the aisles, with the

same roof-level continuing over both; bell-tower at one corner with baptistery at its base; main entrance through porch at the west end; single-storey wing on north side containing the Lady Chapel and side entrance; sacristy across the east end (I should per-



Ground floor plan [Scale: \" = 1' 0"]

KEY:

- Altar Sanctuary
- Lady Chapel
- Priests' sacristy Servants' sacristy
- Nave
- Baptistery
- Confessional
- Main entrance

Ske

haps say that what I refer to as the east end is only the east end liturgically; in fact it faces west).

The structure is reinforced concrete, exposed inside and out, with brick cavity walls between the concrete columns. The bricks are buff-coloured. The roofs (including the roof of the tower) are covered in copper. The columns were precast in one unit, each of the free-standing nave columns being cast with a projecting spur at the height and angle of the main roof, so that the main roof-beam could simply be dropped into place after the columns were erected. The columns forming the corners of the tower were precast in two stages. The church is lit through the clerestory windows that span between the columns in nave and sanctuary, and through a large west window. Vision is good from all seats.

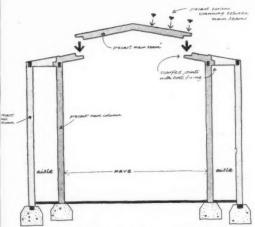
The concrete columns are left untreated in any way.

How they will weather externally remains to be seen. At present they have a very agreeable colour, which internally relates delightfully with the white plaster of the walls beneath the clerestory windows and the strong reddish-brown of the woodwork—the low pews, the furnishings of the sanctuary, the screens between the sanctuary and the Lady Chapel on one side and the passage leading to the sacristy on the other, the front of the west gallery and the screen between nave and porch at the west end—all of which are in African mahogany.

In fact the calm, cool colour-scheme contributed by these plays a large part in creating the sense of dignity and repose that, as I said earlier, the interior so notably possesses; that and the distribution of light and the general proportions of the space enclosed. All these are qualities impossible to record in a photo-



Exterior from the south-west (liturgically the north-east).



Sketch section showing erection of precast r.c. frame

graph, and readers will have to take my word for it (or go to Basildon and see for themselves) that the interior is as successful as I say.

The only criticism I have of it concerns the added colour. The architects obviously felt that the white and grey of the walls and columns and the brown of the woodwork lacked warmth and richness, so they have painted the ceiling panels and the recessed portion of the east end (behind the altar) with flat emulsion paint: the former in a bluish green; the latter in a purplish red. Both are rather arty colours, and are somewhat unsubtle compared with the colour relationship established elsewhere; but it is not so much the choice of colours I find unhappy as their use in the form of an applied grid pattern (the east wall is merely subdivided by strips of wood painted white, and the spaces between the concrete roof ribs



Above: interior of baptistery beneath the tower.



Above: the west end and tower. Below: detail of tower and its junction with the western gable-end.



are similarly subdivided) which destroys the structural purity of the interior. This may sound merely an intellectual argument, but these painted areas do, to my eye, have the effect of somewhat cheapening the otherwise calmly dignified interior (richness is better achieved by variety of texture than by contrast of colour). My use of the word cheapening reminds me, however, that the need to save money has dominated the design at all stages, and some of the defects I find in it may be due solely to this. The white strips of wood in the ceiling have been inserted, I understand, to counteract the directional effect of the long narrow panels between the beams, and the coffered effect of the sanctuary ceiling has been contrived by similar means because a change of pattern was thought desirable here. I would be interested to know whether the architects now think this argument justifies the somewhat restless effect and the confusion of the structural clarity of the interior that has resulted. Incidentally, some more softly textured surfaces would have helped the acoustics as well, which are not, I understand, as good as they might be, though I haven't attended a service in the church so cannot judge for myself. Once again, this is partly a matter of cost. The architects are aware of the need and intend to instal some absorbent wall surfaces when money is available.

Turning to the outside of the church I find much more to criticize, though the bones of an admirable building are there. One trouble, I think, is that the parts are not well articulated. This is most noticeable in the case of the nave and tower, but it also applies to the east end, where the crispness derived from the building's structural logic has been altogether lost. If, in the north-east view on the preceding page, both the tower and the east gable wall are covered up, the basic virtues of the building become apparent: it has vigour, good proportions, a clear articulation of structure and even a certain grace. The falling away at the east end is only partly due to the ordinariness of the low brick sacristy that obscures the building's main lines. Is there not also something wrong about the gable wall itself, which seems to belong to a differently constructed building? There can be no objection to a blank east wall built of brick, but the heaviness of treatment in this case breaks the rhythm of the rest, and it is significant perhaps that the east end is the least satisfactory part of the interior, having again too little relation to the wall treatment elsewhere. It is rather illogical that the recess in the east wall is expressed externally in plan but not in section. The roof line runs through. Can the architects justify this?

As to the tower, here the brick panels project from the face of the concrete columns instead of spanning between them: I would be interested to know the reason, for this may be partly responsible for the tower's lack of structural vigour. It is important that the line of the corner columns should run straight into the ground, and the interruption by the roofslab of the baptistery is unfortunate, the effect being aggravated by the hard black horizontal line of a rather thickly laid flashing. There is no reason why the base of such a tower should not be opened up to

light a baptistery, but in this case the light comes through a concrete grille that is very coarsely executed, and do not the architects agree that the scale is wrong? I include a view from within, which shows the grille more clearly.

The panels either side of the west door, of somewhat similar character to those in the base of the tower, are more successful. The background to the cross-shaped openings is random flintwork, which gives an invaluable depth of surface. The treatment of the soffit of the eaves, incidentally, does not seem to belong to this style of building.

There is one last detail I must criticize: the external treatment of the panels beneath the windows of the Lady Chapel and on the north side of the tower, where the brickwork has been rendered with a roughish surface, pale blue in colour. Apart from the lasting quality of the surface I would query whether large blank areas here do not disturb the rhythm and scale of the exterior. I am not criticizing the decoration over the north door, because I believe it is only temporary.

I fear this article is becoming a mere catalogue of defects, which is unfair to the building because defects are easy to pick out whereas the virtues of a building like this are difficult to describe and almost impossible to illustrate photographically. I began by referring to the essential difficulty of designing a modern church and should say that, internally at least, this one has overcome that difficulty more successfully than most I have seen in this country. I only hope it won't be marred later on by those tasteless enrichments to which Roman Catholic churches in particular seem to be prone. The plain glass of the windows is especially important to the present purity of effect.



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Conference on "Space About Buildings"

The RIBA is to hold a one-day conference on "Family Life in High Density Housing," with particular reference to "The Design of Space About Buildings." Professor Sir of Space About Buildings." Professor Sir William Holford will preside at the morning session (on May 24) and will speak on the subject from the town planner's point of view. Other speakers at the morning session will be a sociologist, a director of housing and a representative of the welfare and social services. At the afternoon session, which will be chaired by G. A. Jellicoe, the speakers will include H. Blom, chief of the Parks Department in Stockholm, and Peter Shepheard. A small exhibition will illustrate the conference theme.

Architects as Factory Designers

The RIBA is to have a stand, designed by Kenneth Bayes, at the Fifth Factory Equip-ment Exhibition, Earls Court, which will be held from April 29 until May 4. The

Exhibition will be open from 10 a.m. to 7 p.m. on Mondays, and 10 a.m. to 5 p.m. on Saturdays.

LIGHTING . . .

. . . Industrial Buildings

The final session, on March 21, of the current series of meetings for architects at the Lighting Service Bureau, turned out to be the best of the three. In spite of one or two irrelevant parlour-trick demonstrations, everyone was able to get down to the basic realities of the subject—"Industrial Lighting." The main speaker T. S. Jones, showed how the different types of work to be found in factories could best be lit. It was necessary, he said, not only to light an interior well, but to achieve the appearance of a well-lit interior with a combination of lighting and colour.

Mr. Jones surveyed the choice of fittings, more particularly those for special uses, such as the flame and vapour-proof type, and asked that the architect designing a factory, should, in his own interests, call in the lighting engineer at the first suitable moment. The mounting position of fittings depended on the design and deficiling of depended on the design and deficiling and desirable and the design and deficiling of depended on the design and deficiling of depended on the design and deficiling depended on the design and deficiling of the design and deficiling of the said the design and deficiling of the design The final session, on March 21, of the

in the lighting engineer at the first suitable moment. The mounting position of fittings depended on the design and detailing of the buildings, and if these took no account of the artificial lighting, the cost of the installation might be considerably increased, perhaps by as much as 20-25 per cent. The cost of re-lamping in factories could vary from 5s. to 25s. per lamp, according to the ease of access. Large sums would be a wasteful and unnecessary burden on the management. management.

management.

E. D. Jefferiss Mathews opened the discussion by getting right down to the basis of all industrial lighting. The architect designing a factory, he said, had to make a choice at a very early stage in design, between a primarily naturally-lit structure and one which had exclusively-artificial lighting. Naturally lighting would, of course, impose more restriction on the form of the building. The artificially-lit factory, or the other hand could be a simpler structure. on the other hand, could be a simpler struc ture, and good and constant lighting could be provided for the work. There were now many "windowless" factories in the U.S., some of which had been successful, others apparently comparative failures. Nevertheless, the idea was a technically possible one.

Architects, he said, would have their own views about the "windowless" factory. They would consider it either as the ultimate and logical end-product or as a dreadful nightmare. There was lack of reliable evidence on the economics of such factories and their effect upon employees.

WALLBOARD

"Hysteria" Closes Association

The Wallboard Importers', Distributors' and Merchants' Association of the United Kingdom held their last annual dinner at Grosvenor House, Park Lane, on March 19. The guest of honour was the Finnish Ambassador. Proposing the toast of the Guests, the President of WIDMA, Alexander Gourvitch, said that he preferred to describe the occasion as "The Annual Dinner of the Wallboard Trade," in order to emphasize the fact that the Annual Dinner of the Wallboard Trade," in order to emphasize the fact that the coming dissolution of WIDMA did not mean the dissolution of the good will between importers, distributors and merchants which WIDMA had built up. He expressed his confidence that the different sections of the trade would continue to meet at similar functions in the future, though under different auspices. Referring to the decision to dissolve WIDMA, he said that this had been made because of changes which had taken place in trading conditions since WIDMA was first founded after the war, but also because of the "hysteria" created by the Monopolies Commission. Later he referred to the blow which had been dealt to the wallboard industry by public reaction to the Jaguar fire, but also pointed out that the turnover of the industry in this country had been dealted. pointed out that the turnover of the industry in this country had been doubled since 1952.

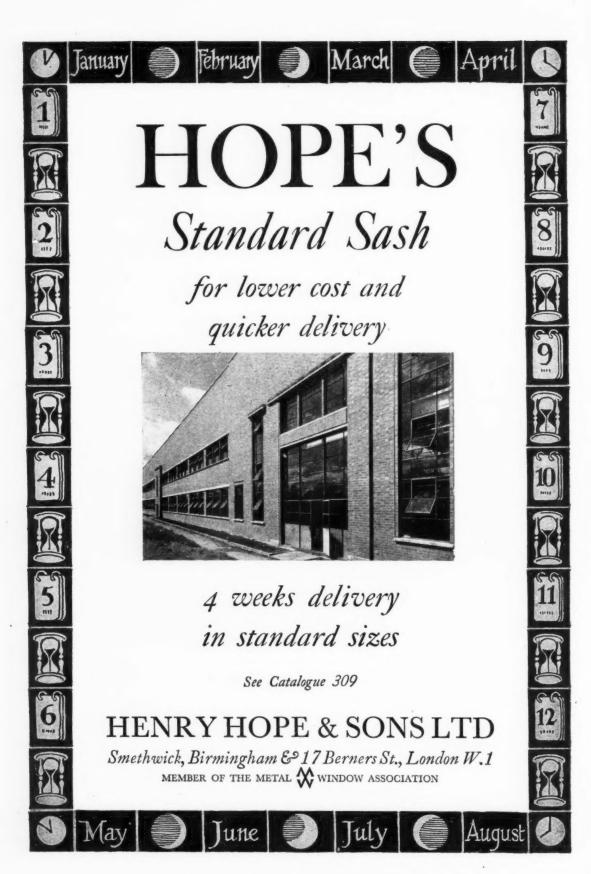
DIARY

Housing in the Middle East. Talk by Max Lock. At the HC, 13, Suffolk Street, S.W.1. 6 p.m.

Office Blocks and the Multivalence of Architecture. Talk by Erno Goldfinger. Chairman: Howard Samuel. At the ICA, 17, Dover Street, W.1. 8.15 p.m. Members 1s. 6d. Guests 3s.

RIBA Annual Discourse. Talk by Alvar Aalto. At the RIBA, 66, Portland Place, W.1. 6 p.m. APRIL 10

Exhibition of Finnish Architecture. At the RIBA, 66, Portland Place, W.1. Monday to Friday 10 a.m.-7 p.m. Saturday 10 a.m.-5 p.m. (Closed from 12.30 p.m., April 18, to 10 a.m., April 24.) APRIL 11 TO MAY 2



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technical section

8 ESTIMATING

current wage rates, market prices and measured rates

Prepared by Davis, Belfield and Everest, Chartered Quantity Surveyors. Market prices and measured rates last appeared in the JOURNAL for December 27, 1956

Wage rates

Rates of wages rose on February 4, 1957, and are now

London District Within 12 miles radius From 12 to 15 miles radius	Craftsmen s d 4 6 4 5½	Labourer s d 3 1 2 3 1
Liverpool and District	4 6	3 111
Grade classifications A A I	4 4½ 4 4	3 10 3 9½

Market prices

Prices are given for the major items in each trade, they are intended as average prices and include delivery in the outer London area. They do not include overhead charges and profit.

Measured rates

Prices are for work carried out in the Outer London area and include 10% to cover overhead charges and profit except in the case of work which would be carried out by specialists when 5% has been allowed.

The prices given in italic represent the total value of the materials included in the measured rates, including an allowance for waste and 10% for overhead charges and profit. The cost of labour included in the measured rates (including its proportion of overhead charges and profit) can be ascertained by subtracting the prices in italics from the prices in heavier type.

Abbreviations

Inches: in. Feet: ft. Yards: Y. Yards cube: YC. Yards super: YS. Feet cube: FC. Feet super: FS. Ton: T. Feet run: FR. Thousand: M. Square: Sq. Number: No. Hundredweight: C. Pound: Ib. Gallon: Gal.

Preliminaries

To all estimates based on prices for measured rates add for Preliminaries, water, insurances, etc., depending on the nature of the job, say 10%

Price changes

* Shows changes in market prices and measured rates since the last issue (December 27, 1956).

EXCAVATOR

Market prices

Carting away, up to 8 miles Hand loaded Machine loaded *7

s d

YC *10 6 Hardcore YC *11 0

Measured rates

Ashes

Hand excavation and disposal

NB: the following are applicable to excavation in heavy soil.

Excavating over site to remove top soil and veget-YS able matter, 6 in. deep As above, 12 in. deep YS *2 4

Excavating over site to reduce levels and getting out	YC	*9	6
Excavating for basement and getting out	YC		

s d

Depth up to 5 ft. *10 8
Depth between 5 & 10 ft. *15 5
Depth between 10 & 15 ft. *20 2

Excavating surface trenches and ditto

Depth up to 5, ft. *13 1 Depth between 5 & 10 ft. *17 9 Depth between 10 & 15 ft. *22 6

Excavating basement trenches and ditto YC

Commencing 5 ft. below existing ground level *17 9
Commencing 10 ft. below existing ground level *22 6 Commencing 15 ft. below existing ground level *27 3
Wheeling surplus excavated
material not exceeding 100 yards and depositing YC *4 9

Add to last for: Roughly spreading and YC I S levelling Spreading, levelling and consolidating to make up YC *3 | levelling

Returning, filling-in and well ramming excavated material around foundations YC *4 2

Loading surplus material into lorries and carting to tip, YC *15 9 not exceeding 8 miles

Excavating from spoil heaps selected top soil, wheeling not exceeding 100 yards, and not exceeding to your spreading, levelling and consolidating, not exceeding

Mechanical excavation and disposal

Excavating for shallow surface lorries or dumpers (using excavation and loading into 5 yd. cube excavator)

Excavating for surface excavation and removing, spreading and levelling not exceeding 200 yds. (using 6 yd. cube scraper) 2 61/2

Removing excavated material and depositing, not exceeding 200 yds. (using 3 yd. cube 1 111 dumper)

Planking and strutting

Planking and strutting to sides of surface or basement excavation

Depth up to 5 ft. Depth up to 10 ft. Depth up to 15 ft. Planking and strutting to sides of surface and basement trenches Depth up to 5 ft. Depth up to 10 ft. Depth up to 15 ft.

FS

Hardcore, etc. Hardcore filled-in in layers, each layer well rammed YC *21 0 Bed of ditto, 4-in. thick *3 5 Ash filled-in in layers, each layer well rammed

CONCRETOR

Market price's

Portland cement, 6 tons and T 106 0 Rapid hardening, 6 tons and T 116 6 34-in. down, washed, crushed and graded shingle YC *18 1 YC *17 2 14-in. ditto YC *22 I Sharp sand 5-in. diam. mild steel rods to BS 785 delivered station T*764 0 3-in. ditto T*856 0

Measured rates

Portland cement mass concrete in foundations etc.

1: 12, 1½-in. " all-in " aggregate *58 || 1:3:6, 11-in. aggregate *66 10 1:2:4, 3-in. aggregate *73 $1:1\frac{1}{2}:3,\frac{1}{2}$ -in. aggregate

Add for: Working around rod or mesh reinforcement

Walls not over 6-in. thick YC *23 9
Walls 6-in. to 12-in. thick YC *16 7
Walls over 12-in. thick YC *11 10 Walls over 12-in, thick

Columns not over 72 sq. YC *45 I Columns 72 to 144 sq. inches YC *35 7 Columns over 144 sq. inches

Suspended floors and roofs not over 41-in. thick

YC *28 5

Suspended floors over 4½-in to 6-in, thick YC *16 7

Suspended floors over 6-in.

Beds not over 41-in. thick YC *9 6 Beds 41-in. to 6-in. thick YC *7 2

Beds 6-in. to 12-in. thick YC *2 5

Hollow tile floor of clay tiles 4-in. thick at 15-in. centres laid on formwork (measured separately), nibs filled in with concrete (1:2:4) and finishing top of tiles with bed of concrete 11-in. thick including tamping Minim Moise reduction

—a modern problem solved the modern way, with easily fixed decorative-surface sound absorbing Armstrong Acoustic Tile on ceiling or wall. Direct fixing or suspended, according to requirements.

Illustrations show Standard and Random patterns and a view of an office ceiling which demonstrates the decorative effect of Armstrong Acoustic Tile.

Available in two patterns and two thicknesses, $\frac{1}{2}$ " and $\frac{3}{4}$ ", in 12" \times 12", 12" \times 24" or 24" \times 24" tiles. Installations can be undertaken on new or existing buildings by the Armstrong Acoustic Dept. Write for information folder Pub. No. 350.

Armstrong

ARMSTRONG CORK COMPANY LTD., Acoustic Dept., Bush House, Aldwych, London, W.C.2.

Concretor continued		S	d.			S	d		S	d
around reinforcement (me sured separately)		*17	1	$\frac{41}{2}$ -in. \times 6-in. lintols reinforced with one $\frac{1}{2}$ -in. rod	R	2	7	Second stocks	*56 34	
		10	3			2	1 2	One brick wall built fair and		
Ditto, but tiles 8-in, thick	YS	*26	10	$4\frac{1}{2}$ -in. \times 9-in. ditto with two $\frac{1}{2}$ -in. rods		3	10	pointed both sides YS Flettons	*38	4
Sundries			1	1			11/2	Second stocks	17	2
				Piling					34	10
inishing concrete with rowelled face to receive inoleum	YS	*	2 <u>1</u>	Reinforced pre-cast concrete piles, approximate prices for				Lingfield Grade B		10
Applying horizontal damp	-		1	supplying, unloading, pitching and driving	g			Sundries		
proof membrane of synthaprufe in three coats o surface of concrete and				12-in. × 12-in. up to 30 ft. long Fi 14-in. × 14-in. up to 50 ft.	R	33	6	Extra over common brick- work for internal fair face and flush pointing YS	- 1	4
olinding with sand to form	n YS	5	8	long Sheet steel piling, ditto		39	6	Horizontal damp proof course		
,		4	1	P0,		20 t	0	of two courses of slates and bedding and pointing FS		31
supplying floor clips (p.c.		* 1				20	0	bedding and pointing	2	3½ 7½
,	No.	*	11/2					Horizontal damp proof course		
Formwork								of hessian base bitumen FS		*11
Formwork including strut easing and striking:	ting			BRICKLAYER				Facings		
Vertical faces of foundatio	n			Market prices				Extra over ordinary brick-		
		*17		Soft sand	C *	18	0	work with bricks P.C. 115s.		
			6	Hydrated lime	TI	17	6	per 1,000 for facings as described		
Vertical faces of wall	YS	*18	3	Plain Flettons	м і	115	0	To solid wall in Flemish		
Soffite of floors not over	12-ft.						3	Facings P.C. 250s per M	*15	8
high			3		1 2	./7	3	Facings P.C. 350s per M	9	10
			6	Lingfield Engineering wire cuts Grade B	4+2	250	0		17	1
Sloping soffite of stairs	YS	*22	3	Partitions				Facings P.C. 450s per M	*30	5
Sides of columns	FS	*2	101	Clinker concrete, solid Y 2-ir		*3		To cavity wall in stretcher bond YS		
Sides and soffites of lintol			102	2 <u>1</u> -ir	7.	*4	6	Facings P.C. 250s per M		
and beams	FS	2	6	3-ir 4-ir		*5	8	Facings P.C. 350s per M	*18	5
		1	0	Thermalite-Ytong Y	S			Facings P.C. 450s per M		0
Add to the above for wro formwork including rubbi				2½-ir 3-ir	٦.	*7	6		18	7
down concrete	YS	*2	41/2	4-ir			1	Half brick wall in facings		
Reinforcemen:				Hollow clay Y				built fair and pointed on one side YS	*20	-
5-in. diameter mild steel				2-ir 2½-ir		4	5	Facings P.C. 250: per M	15	11
rods, hooked, bent and ti- and fixing		*61	10	3-ir	1.	. 5	5	Facings P.C. 350s per M	*34	
		46	5	Normal quality wood wool	c			Facings P.C. 450s per M	*40	
1/2-in.	C	*68	9	slabs Y 2-ir	٦.	8	0	Partitions	20	
2 -	-	50	2	2½-ir 3-ir		10	2	Clinker concrete solid		
3g-in.	C	* 75 52	0	Measured rates				partition blocks and setting in cement lime mortar YS		
1-in.	C	*88	3	Reduced brickwork in				2-in.		10
•		56	8	cement lime mortar.			1	2½-in.		5
Steel wire mesh fabric				Lingfields in cement mortar Y				3-in.	*12	6
weighing 4-32 lb. per yd. super and laying in concre				Fletton	is *	17	2	4-in.		11
	YS	*3	2	Second stock	's *	34			8	4
Ditto weighing 6.57 lb. p	er			Lingfield Grade	B *	49	2	Thermalite-Ytong ditto YS 2½-in.		6
yd. super	YS		7			31	10		8	7
		7	10	Half brick wall ditto Y		17	8	3-in.	10	4
Ditto weighing 9.32 lb. p yd. super	er YS	*7	11	Second stock		8	6	4-in.		5
		6	10			16	11	Hollow clay ditto YS		
Precast concrete				*Lingfield Grade	0 '	15	5	Hollow clay ditto YS	+9	
Precast concrete (1:2:4	1)			II-in. hollow wall with 2-in.				2½-in.	*10	8
finished fair on exposed fa and hoisting setting and	aces			cavity and wall ties Y	S *	38	4	3-in.		10
arre moracuit account and			1	· lettoi	-0	16		3-1111		10





At the end of the last century,
Luxfer specialised in the manufacture of all constructions through which daylight is admitted into a building, and in the middle of this century Luxfer still do.

from Corinthian to...

contemporary

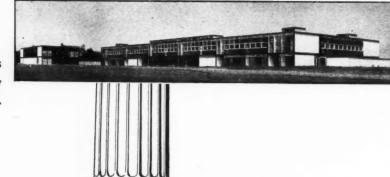
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Illustrations:

Hunstanton Secondary Modern School.

Architects

Peter & Alison Smithson, AA.R.I.B.A Metal Windows and Doors by Luxfer.







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technical sect	tion									
Bricklayer continue	ed	s	d			s	d		s	d
Wood wool slabs dit	to YS			" Best " quality salt g				Cast iron drains		
			7	stoneware drain pipes laying and jointing in	and			Cast iron spigot and socket		
	2½-in.	*14		trench	FR 4-in.	2	61/2	drain pipes and laying and jointing in trench		
	3-in.	*16			6-in.		10	4-in.	*12	
			1			2	9	6-in.	*18	1
			1		9-in.	5	$0\frac{1}{2}$	9-in.	*34	
DRAINLAYER	1		1	Extra over "Seconds	11			F		,,
Market prices				quality pipes for:				Extra over cast iron pipes for bend No.		
Salt glazed stoneware	e pipes			Bend	No. 4-in.	3	7		*30 24	4
and fittings, "Best" Standard list less 7½%	quality:				6-in.	3	1½ 2½	6-in.	*70	10
					9-in.	4	8 2	9-in.	*179	
As above "Seconds' Standard list less 7½%					Z-111.	14	6	Spun cast iron spigot and		
Pitch fibre pipe	FR			Single junction	No.			socket drain pipes and laying		
	3-in. 4-in.		9 34		4-in.	6	9	and jointing in trench FR 4-in.	*7	
	6-in.	4			6-in.	8	10	6-in.	*11	2
Cast iron s. and s. pi BS 437	pe to YR				9-in.	19	0	9-in.	*19	
03 43/	4-in.	*26		Double ivention	No.	.,				5
		*38 *72		Double junction	4-in.	10		Cast iron gullies		
Spun iron s. and s. p	ipe to				6-in.	14		Cast iron gully trap with high		
BS 1211, Class B	YR	*12	8		9-in.	29		invert and setting on and surrounding with concrete		
	6-in.	*20 *34	4			25	8	and jointing to drain No.	*42	6
Managed water	2-111.	34	1	Stoneware gullies						11
Measured rates				Salt glazed trapped gu	lly					5
Trenches and beds Excavate trenches by heavy soil, including				with galvanized gratin including setting gully and surrounding with and jointing to drain	on	:			222	
and strutting, part refilling and ramming a				6 in. × 6 in. grat		*25	2			
wheeling and spread	ing					21	2	ASPHALTER		
surplus, for pipes 4-i and 9 in. dia.	YR	*11		9 in. × 9 in. grat	outlet		5	Measured rates		
Average depth of tre	4-ft.	*21	5			36	4			
		*37		Grease and mud gully diameter with 4-in. or				Damp proof course and tanking		
Excavate trench as la				galvanized bucket and and setting gully on a	grating			½-in. vertical damp proof course in two thicknesses on brick or concrete		
by mechanical trench Average depth of tre		*12	3	surrounding with con and jointing to drain	crete No.	*87	5	BS1097	16	
	4-ft.	*16	9			77	2	BS1418	24	0
		*50		Road gully with 6-in. including setting on a surrounding with con	nd			½-in. horizontal damp proof course in one thickness on		
6-in. concrete bed as benching for 4-in. pi		*9	2	and jointing to drain 15-in. dia. 30-	No.	103	4	brick or concrete YS BS1097	11	
As above, for 6-in. p		*10	8			82	4	BS1418	17	4
		6		18-in. dia. 48-	ın. deep	171		Vertical tanking in three thicknesses YS		
6-in. concrete bed as surround for 4-in. pi		*14						BS1097 BS1418	23	
		9	3	Pitch fibre drains					33	7
As above, for 6-in. p	ipes YR	*17	11	Pitch fibre drain pipe	s and			Horizontal tanking in three thicknesses YS		
				laying and jointing in	trench FR			BS1097 BS1418		
					3-in.	2	01/2	Roofing	_	
r					4-in.	2	9			
Stoneware drains					6-in.	5	7 4½	4-in. flat laid to falls in two thicknesses on and including		
"Seconds" quality s						5	21/2	felt underlay YS BS988		2
and laying and jointi				Extra over pitch fibre for bend	pipe No.			BS1162		
er enten	4-in.	. 2		ioi bella	3-in.		2	6-in, skirting with angle		
	6-in		31/2		4-in.	*15		fillet at bottom and rounded edge at top turned into		
	9-in	. 5	4		6-in.	*30		groove FR BS988		4
		4				29		BS1162		

I knew it
when it
was a tree...

Are you calling my council dead wood?

No, your Worship! I'm talking about that partition there. That was once a tree in the forest. Then the Bowater men chopped it down . . .

What came next on the agenda?

It went through the Bowater Mill—had all the knots and nonsense taken out of it. You can see the results all over the town—that partition, council flat doors, library counters, cubicles at the public baths—why, your Borough's just brimful of Bowater Board!





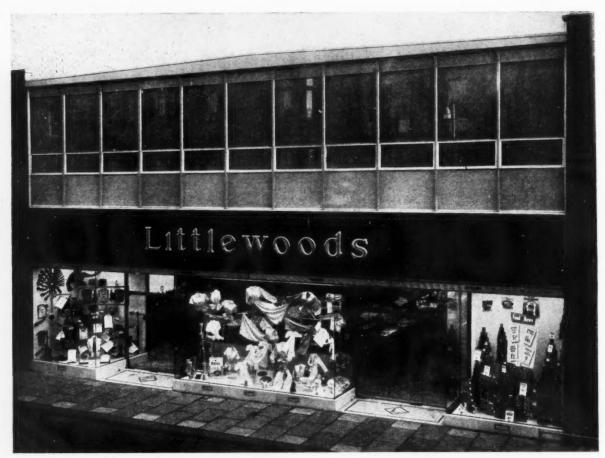
Bowater Board

Building Boards Division, Bowaters Sales Company Limited, Bowater House, Stratton Street, London, W.1. MAYfair 8080

CRC 298

80

Asphalter continued s d	s d	s d
6-in. fascia with solid water check roll at top and under-	MASON	Grey corrugaged asbestos cement sheets YS *6 6½
cut drip at bottom FR	Market prices	
BS988 4 6 BS1162 5 3	Stone in blocks in truckloads at stations in the London area:	Measured rates 16-in.×10-in. best Welsh
DAVIOR	Beer FC 8 5	slates laid 3-in. lap Sq.*287 0
PAVIOR	Portland FC 8 5	20-in. × 10-in. best Welsh slates 3-in. lap Sq.*375 0
Market prices	Woodkirk Blue building	Westmorland green slates in
Granite chippings, 4-in. to dust T *50 2	quality FC 17 2	random sizes laid 3-in. lap Sq.*620 0
Buff quarry tiles, 6 in. X	Broughton Moor slate in	Best hand made sand faced
6 in. $\times \frac{7}{8}$ in. YS 21 9 2-in. Noelite paving YS 13 11	blocks at stations in the London area FC 65 0	plain tiles, $10\frac{1}{2}$ in. $\times 6\frac{1}{2}$ in. laid to a 4-in. gauge Sq.*204 0
Measured rates	Marble in blocks at works:	Best hand made sand faced
	Dove FC 70 0	plain tiles, $10\frac{1}{2}$ -in. \times $6\frac{1}{2}$ -in.
Cement and sand floated screed to receive pavings YS	Roman stone FC 70 0	hung vertically to 4½-inch gauge Sq.*220 0
3-in. 3 II 2 3	Measured rates	Berkshire hand made sand
1-in. *4 9		faced red pantiles, 14½-in.×
1½-in. *5 4	Stone and all labours in pilasters and quoins FC	10-in. laid 2½-in. head and 1½-in. side lap Sq. 195 0
3 5	Portland *54 Beer *50 5	Grey corrugated asbestos
Cement and sand paving	Jambs FC	cement sheets fixed to wood
trowelled hard and smooth YS	Portland *54	roofs Sq.*114 0
-in. *4 5	Beer *50 5	Grey corrugated asbestos cement sheets fixed vertically
I-in. *5 3	Lintols FC Portland *55 2	Sq.*124 0
1½-in. *5 10	Beer *51 5	Cedarwood shingles laid 5-in.
3 5	Arches FC	gauge Sq. 240 0
Granolithic paving laid on	Portland *63 0 Beer *58 3	Metal roof decking and fixing
concrete YS	Beer 38 3	with hook bolts, finished with $\frac{1}{2}$ -in. insulation board
5 2 1½-in. *9 I	Ashlar average 7-in. on bed with plain dressed face FS	and three layers self finish felt roofing YS
6 9	Portland *30 9 Beer *29 3	18 gauge for spans up to 10 ft. 57 6
1-in. red composition paving		20 gauge for
laid on prepared screed YS 16 6	Extra for each additional 1-in. thickness FS	spans up to 8 ft. 6 in. 51 9
§-in. terrazzo paving laid on prepared screed YS 38 4	Portland *3 6 Beer *3 3	Two layer one ply bitumen felt and fixing with bitumen
1-1		to concrete or boarding YS *10 2
laying in rolls YS 55 2	4½ in. × 4 in. sill sunk, weathered, throated and grooved for water bar, set and	Three layer bitumen felt YS *I3 8
4-in. rubber flooring and	jointed in cement mortar FR Portland * 2	Patent ribbed aluminium
laying in rolls YS 73 6	Beer *10 6	roofing and fixing to purlins Sq. 287 6
$\frac{4}{18}$ -in. cork tile flooring, 12 in. \times 12 in. and fixing	Artificial 4 7	
with mastic and including	4 in. × 12 in. coping, weathered and twice throated	
1	FR	CARPENTER
in. thermoplastic tile flooring and laying-on screed	Portland *21 10 Beer *20 9	Market prices
YS 14 6	Artificial II 0	Softwood, carcassing quality
25 0	Marble and slate	Std. 1910 0
i-in. coloured linoleum and fixing with mastic to cement	4-in. Dove marble lining and fixing on brick backings FS 36 9	Softwood, joinery quality Std.*2160 0
screed or boards YS 28 7	2-in. Roman stone lining FS 36 9	4-in. imported insulation
in. coloured linoleum and		board Sq. *46 6
fixing with mastic to cement screed or boards YS 22 10	4-in. Broughton Moor slate lining FS 39 11	1-in. imported hardboard Sq. *40 0
7-in. buff quarry tiles laid on		Measured rates
prepared screed YS *36 3	SLATER TILER AND	Softwood and fixing in plates,
7-in, blue black quarry tiles laid on prepared screed YS *33 5	ROOFER	sleeper joists and lintols FC 15 7
	Market prices	In floor and ceiling joists FC *17 10
2-in. Noelite paving laid on prepared bed, in random sizes	Welsh slates, best quality M	In stud partitions, purlins
and mixed colours YS *19 11	16-in. × 10-in. *1026 4 20-in. × 10-in. *1896 10	and struts FC *19 10
	Best hand made sand faced	In hip and valley rafters FC *22 4
12 in. × 12 in. anchor steel plates laid complete YS *54 5	plain tiles, $10\frac{1}{2}$ -in. $\times 6\frac{1}{2}$ in. M*311 0	13 10



New Store for Messrs. Littlewoods, Dumbarton

Bison work was commenced on the 19th June 1956 and completed on the 11th August 1956, a total of 54 days.

The store was officially opened on the 4th October 1956.

LIMITED

Architects: Littlewoods Construction Department Consulting Engineers: Bingham & Blades & Partners, Liverpool Contractors: A. A. Stuart & Sons Limited, Carmyle, Glasgow



CONSTRUCTION DETAIL

FIRST FLOOR Length of beams—from 49' 7" to 58' 9". Thickness of floor beams—22\left\(^2\). Superimposed Load—80 lbs. per sq. ft. Finishes—30 lbs. per sq. ft. Partitions—15 lbs. per sq. ft. Weight—from 3 Ton 12 Cwts. to 4 Ton 15 Cwts. 2" Concrete

screed trowelled to receive thermal plastic tiles. ROOF Length—from 51' 1½" to 60' 6". Thickness—11½" at the ends, 17½ at the centre. Superimposed Load—15 lbs. per sq. ft. Finishes—24 lbs. per sq. ft. Weight—from 2 Ton 10 Cwts. to 2 Ton 15 Cwts.

False ceiling suspended on underside of 1st floor on ½"dia, bolts in the joints between beams. Inside the roof left smooth and pointed to receive decoration direct.

The finished edge to the roof (as seen in the photograph) was part of the Bison precast work.



floors, beams and precast frame structures

IN PRESTRESSED AND REINFORCED CONCRETE

LONDON: Green Lane, Hounslow, Middlesex. Hounslow 2323

LEEDS: Stourton, Leeds, 10. Leeds 75421

LICHFIELD: Dovehouse Fields, Lichfield, Staffs. Lichfield 3555

FALKIRK: Etna Road, Falkirk. Falkirk 1930

CON82

technical section		J			
Carpenter continued	s d		s d		s d
Battening and boarding		Softwood	3 2½	3-in. solid shelving on bearers FS	
Slate or tile battens $1\frac{1}{2}$ in. $\frac{1}{2}$		Oak	8° 7½	Softwood	2 31
	Sq.	Extra for grounds plugged to		Oak	4 7
16-in. \times 10-in. slating to $6\frac{1}{2}$ -in. gauge	36 0	brickwork FR Softwood	9 2	2-in. shelf bearers plugged to wall FR	
20-in. \times 10-in, slating to $8\frac{1}{2}$ -in, gauge	30 C	Windows		Softwood	7½ 5½ 1 2
$10\frac{1}{2}\text{-in.}\times6\frac{1}{2}\text{-in.}$ plain tiling to 4-in. gauge	55 0	2-in, rebated and moulded sashes divided into squares		Staircases	111
$14\frac{1}{2}$ -in. \times 10-in. pantiles to 12-in. gauge	20 0	Softwood Oak	3 8 10 9	I-in. treads and 3-in. risers	
S.E. boarding in batten wid close jointed and fixing to flat or sloping roofs	ths	Extra for side hanging Each Softwood Oak	2 8 *4 0	tongued together on and including framed carriages FS Softwood	*4 7
4-	in.* 119 0	Doors	1	Oak	13 4
I-	in.* 146 9	2-in. framed, ledged and braced doors, filled in with 1-in. T and G and V jointed		13-in. × 11-in. wall string plugged to brickwork FR	
T. & G. boarding in batten widths close jointed and fixi to flat or sloping roofs		boarding and hanging FS Softwood	6 1	Softwood	
34-	in.*137 3	Four panelled door square			9 11
, 1-	in. *168 3 129 0	both sides and hanging FS Softwood	6 8 6 0	II-in. × II-in. outer string FR Softwood	3 4
3/4-in. wrot and cross tongue eaves soffit	FS *2 2	Oak		Oak	2 10
$\frac{3}{4}$ -in. \times 6-in. wrot and grooved eaves fascia p.o.	FS 10 6	1½-in. Standard flush door, hardboard faced size 2-ft. 6-in. × 6-ft. 6-in. and hanging No.		Ends of treads and risers housed to strings No. Softwood	1 41/2
Wall and ceiling boards fixed	d			Oak	6 01/2
	YS *6 7	Linings and frames		2½-in. × 3-in. moulded handrail FR Softwood	
-in. insulation board	5 0	Window and door linings, 6-in. to 12-in. sectional area (per inch sectional area)		Oak	2 74
in. hardboard	*5 8 4 4	FR Softwood		14-in. × 14-in. square balusters FR	
$\frac{3}{16}$ -in. asbestos cement flat sheeting	*8 2	Oak		Softwood	5
1-in. asbestos cement flat sheeting	4 7 *9 8	Frames wrot all round and framed (per inch sectional		Framed ends to balusters No.	1 1
2-in. Stramit, showerproof	6 2	area) FR Softwood	31/2	Softwood Oak	
quality fixed to joists with butt joints	*15 5	Mullions, transomes and cills			
JOINER		(per inch section area) FR Softwood Oak	4	IRONMONGER	
Floors and skirtings		Mouldings, architraves, etc.		Market prices	
Tongued and grooved soft- wood flooring and nailing to	to	4-in. to 6-in. sectional area (per inch sectional area) FR Softwood	4	As prices for ironmongery vary so greatly depending upon the type and quality	
joists 7	Sq. -in.* 161 0	Oak	3 10 9	required no prices are quoted here	
1.	in.*178 3	6-in, window boards, 1-in.		Measured rates	
I-in. nominal double groov t. and g. Swedish softwood		thick with rounded nosing tongued at back and includ- ing bearers FR		The rates which follow are for fixing only and are inclusive of profit	
block flooring set in mastic and polished	YS 29 5	Softwood	1 8	3-in. steel butts Pr.	
European beech	YS *33 7	Oak	5 4 3 6½	to softwood to hardwood	
African Muhuhu	YS *41 0	Shalving and Series		Double action floor springs	
Burma teak	YS *52 6	Shelving and fittings 2-in. shelving of 2-in. slats		to softwood to hardwood	1 *21 3
Moulded skirtings, 3-in. to 6-in. sectional area planted on (per inch in sectional		spaced I-in, apart on bearers (measured separately) FS Softwood		6-in. barrel bolts to softwood	* 1 11
area)	FR	l.	1 11	to hardwood	1 *2 7

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Main foyer and corridor

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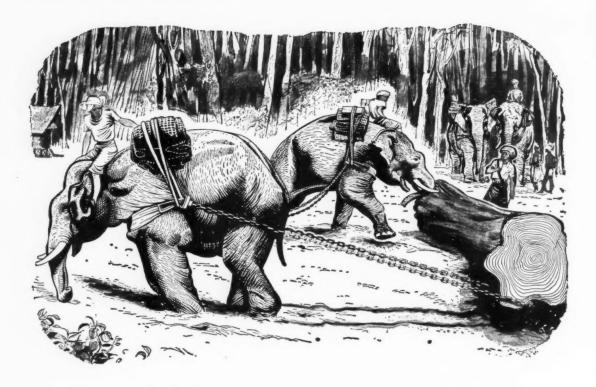
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n. For Western

lways,

Ironmonger co	ntinued	S	d	,	S	d		S	d
Cupboard locks		*4	0	Measured rates		1	EXTERNAL PLUMB	ER	
	to softwood to hardwood	*4	0	Metal lathing			Market prices Sheet lead, 3½ lb. and		
Cylinder night la	tch to softwood to hardwood			No. 24 gauge expanded metal lathing and fixing YS			upwards, in quantities of	152	9
Mortice latch	to narawood	•		To softwood soffits	*6	5	Copper sheeting, 23 gauge, in I-ton lots	330	0
	to softwood to hardwood		4	To metal	-	2 0	Zinc sheeting, 14 gauge, in I-ton lots C*	132	0
Mortice lock	to softwood to hardwood		8	Lime plaster			Aluminium sheeting 20 SWG Super purity		Я
_				Render float and set on brick			Commercial quality		
Casement faster	to softwood to hardwood		7 2	walls and partitions YS		3	Cast iron rainwater goods, standard list 3300 AB 1.2.55		
Casement stays			_	R.F. and S. on concrete including hacking YS	*8		plus 17½%		
*	to softwood to hardwood			D.E. and C. an avmandad	2	3	Measured rates Milled sheet lead C		
				R.F. and S. on expanded metal lathing YS	*7	0 41	Flat roofs Gutters and flashings		
STEEL &	IRONWO	RK	ER	Gypsum plaster			24 SWG copper sheet FS	*F	7
Market prices				Render in cement-lime-sand (1:1:6) and set in gypsum			Flat roofs Gutters and flashings		7
Structural steel sections, basis s	izes,			plaster on brick walls and partitions YS		5 8	23 SWG copper sheet FS Flat roofs		
ex mills Extras for other		T*767	6	Dandan in auraum Chard		111	Gutters and flashings	*6	41/2
basis sizes vary 10s. and 70s. pe	between			Render in gypsum fibred browning-sand $(1:1\frac{1}{2})$ and set in gypsum on concrete			14 gauge zinc FS Flat roofs Gutters and flashings		6
Measured rate	es			soffits including bonding coat YS		8 8 3 4½	20 SWG super purity		
Rsj in steel fran structures hoist	ted and			Render and set on expanded			Flat roofs Gutters and flashings		
fixed complete Riveted compo including plates	und girders	*1523 *1790		metal lathing including pricking up coat YS		8 4 3 8	20 SWG commercial quality		
Rs stanchions in bases, cleats etc	ncluding caps,	*176!		Plaster board			Flat roofs Gutters and flashings		41/2
Metal windows				3-in. gypsum plaster lath fixed to softwood soffits			Rainwater gutters and pipes		
cutting and pin brickwork and frames in ceme	ning lugs to bedding			finished to receive plaster YS		4 8 2 10 ¹ / ₂	la-in cast iron half round eaves gutter jointed and fixed to fascia with brackets FR		
_				Gypsum board finish setting		4 0	4-in	. *3	
Domestic type to BS 990	4 ft. nigh I ft. 3¼ in. wid	o *8	7 8	coat on last YS	*	1 01	6-in		111
	ft. 3¼ in. wid	7.	2 7	3-in. gypsum plaster wall board fixed to softwood			18 gauge pressed steel half	_	
	6 ft. 6½ in. wid	7	9 7	studding finished to receive decoration	s *	5 7	round eaves gutter FF		0
		12				3 3	6-in	. 4	10
"Z" range, 4 Type ZNDI 2	l ft. high 2 ft. 0¾ in. wid			Plain face				2	7
Type ZND4F	6 ft. 03 in. wid		1 8	½-in. Portland cement and sand (I : 3) plain face			Asbestos cement half round eaves gutter FR	-	
		12	5 0	trowelled smooth on brick walls	s *	6 3	4-in	1	7
PLASTER	RER			Tyrolean rendering			Aluminium half round	2	
Market price	es			Render in cement, lime sand			eaves gutter FF	. 3	10
Plastering sand	Y	C *2	2 1	(1:1:6) and finishing with three coats patent coloured	mix		Cast iron medium section	2	2 8
Plaster to BS I Class B in load				preparations applied with hand operated machine	S *	9 6	rain water pipes jointed and fixed to walls with pipe nails FI		
to 5 tons 19 cv		T ng*15	6 3	Wall tiling		_ ,	3-in	. *!	4 3
Fi	bred brownin Board finis	1g*15	9 3	6 in. × 6 in. × 3 in. standard	1		4-ir		5 6
in. plaster la		/C	2 .	quality white glazed wall tiles set and jointed on	c +-	10 1	Pressed steel F		
600 yds.		rs	2 4	prepared screed Y Egg shell matt or glossy	5 *4	18 4	3-ir 4-ir	- 2	4 3 2 10 6 0
glazed wall tile		rs 2	6 8		S !	59 10	1		4 5



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technical section		
External plumber continued s d	s d	s d
Asbestos cement FR	Main supply fixed to walls	1½-in. 5 0
3-in. *3 7	and ceilings FR	
4-in. *4 7	3 10 3-in. 11 *7 8	Class B tubing fixed to walls
Aluminium FR	1-in. 16 10 10	½-in. *2 5½ 8½
3-in. *5 1½	8 8 8 1 8 1 8 1 8	$\frac{3}{4}$ -in. *2 $9\frac{\hat{1}}{2}$
4-in. *6 1 5 4	14 11 1½-in. 35 *22 10	I-in. *2 11
Soil and ventilating pipes	18 6	14-in. 3 6
Lead soil, waste and ventilat-	Distributing pipes fixed to walls and ceilings FR	l½-in. *4 8
ing pipes (15 lb. per yd. for 3-in. and 19 lb. per yd. for	½-in. 4 *3 7 2 3	Extra for malleable Iron: Bend No.
4-in. diameter) fixed to walls with lead tacks	³ -in. 5 4 4 2 10½	
3-in. *13 5	1-in. 7 5 8 4 0	2 11
4-in. *18 7	14-in. 9 6 10½ 5 2	4 44
Cast iron soil, waste and	1½-in. 12 8 11 6 9	1½-in. *9 0 6 3
ventilating pipes with caulked joints fixed to walls with pipe	Flushing and warning pipes	Tee No.
nails FR 3-in. heavy *6 10	fixed to softwood FR	½-in. *3 0
4-in. heavy *8 5	1-in. 5 *4 11½	1 0½ 2-in. *3 4
6 3	1½-in, 6 *6 2	1 5½ 1-in. *3 11
Asbestos cement soil and ventilating pipe fixed to walls	3 3 1½-in. 7 *6 10½	1½-in. *5 4
with holder bats FR 3-in. *3 7	3 9	1½-in. *6 7
4-in. *4 7	Waste pipes and fixing to softwood FR	4 2
3 0	I 1/4-in. 6 *6 3	Copper tube
	$1\frac{1}{2}$ -in. 7 *6 $10\frac{1}{2}$	Copper tube to BS 1386 as
INTERNAL PLUMBER		supply pipe laid in trench (measured separately) to the
Market prices	Joints to fittings No.	following size and gauges FR $\frac{1}{2}$ -in. 18 2 0
Lead pipe in quantities of	½-in. *6 2	1 5 1 -in. 17 *2 10
5 cwt. to 1 ton C BS 602*155 0	3-in. *7 0 2 6	2 21/2
BS 1085*162 0	I-in. *7 8	3 3
Polythene tubing, heavy gauge, in quantities of 500 to	1 - in. *8 3 4 2	4 4
999 ft. per 100 ft. ½-in. 118 0	1½-in. *9 3 5 0	1½-in. 15 *6 6 5 9
‡-in. 160 6 1-in. 205 0	Extra for:	6
Steel tubes to BS 1387,	Bend No. 1½-in. *2 6	Copper tube to BS 659 as distributing pipe fixed to
standard list plus Class B galvanised *14½%	I 1-in. *3 7	walls FR 1-in. 19 *2 1
Class C galvanised *33%	Branch joints No.	4-in. 19 *2 7
Galvanised malleable fittings, standard list less 28% less	1-in. *7 9	1-in. 18 *3 4
61% plus 40%	/ 8 2-in. *8 II	14-in. 18 *4 3
Copper tube, basic price per lb. *2 4	2 6 1-in. *9 3	3 4 1½-in. 18 *4 11½
	3 4 I¼-in. *II 2	4 1
Measured rates	1½-in. *12 7	Extra for brass compression
Lead pipe to BS 602	5 0	fittings joining copper to copper No.
Main supply and laying in trench (measured separately)	Steel tubing to BS 1387	Coupling 1-in. 6
at the following sizes and weights in lbs.	Class C with screwed red lead joints as supply pipe	3 7 1-in. 7 0
½-in. 7 *4 8	laid in trench (measured separately)	4 5 I-in. 9 10
‡-in. 11 •7 0 5 10	½-in. *2 6	6 7
	2-in. *2 11	8 5 1½-in. *17 6
I-in. 16 *9 11	101	
1-in. 16 *9 1 8 7 1\frac{1}{4}-in. 28 16 10	1-in. *3 0 1 2	12 3

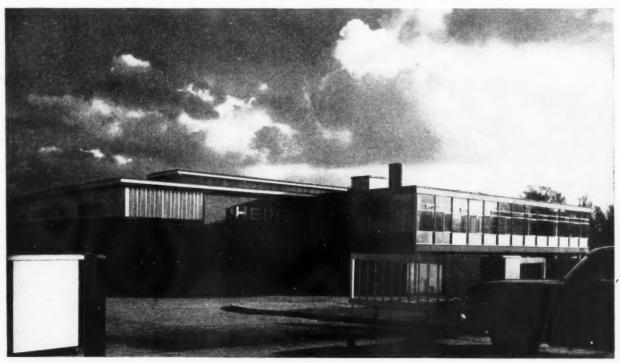
Internal plumber continued	S	d	s d	\$	đ
3-in.	9	1	Black ribbon velvet and bedding to edge of glass FR 8	*	10
I-in.	13	0 4	Patent glazing Prepare, prime and apply one		^
1 <u>1</u> -in.	16	6	coat heat-resisting paint on		
1 ½-in.	27 21	0 2	Patent glazing with rolled heating surfaces of radiators YS 8-ft. spans and glazing with Basis price	*4	0
			1/4-in. Georgian wired cast FS *4 7	1	5
Tee ½-in.	6	9	Aluminium alloy patent	*1	81/2
₹-in.	7	10	glazing FS *5 0		
I-in.	17	4 8			
1 ½-in.	24	3	Knot, prime, stop and apply one coat oil colour on		
1½-in.	18 37	5	PAINTER general surfaces YS Basis price	*3	91
	29	7	Market prices Add for each additional coat	*	7 7 1
			Washable distemper C. 120 0		102
			Emulsion paint Gal. 45 0 On work not exceeding 3-in. girth YR		
			Hard gloss paint: Gal. Basis price		6
LAZIER			Undercoat *46 0 Finishing *48 0 Add for each additional coat		21/2
farket prices			Measured rates		1
			For each additional 3-in.		
heet glass cut to size FS 24 oz.	*	93	On walls and ceilings YS girth YR Basis price		51
32 oz.	*	37	Twice whiten plastered ceilings I 4 Add for each additional coat		5 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2
in. Polished plate glass, lazing quality in plates			Two coats distemper on Stain and varnish		1
ot exceeding: FS 2 ft. super	3	10	plastered walls or ceilings *2 2		
5 ft. super		7	1 0½ Prepare, size, stain and twice varnish on general surfaces		
100 ft. super		0	Two coats distemper on of woodwork YS fair-faced brick or concrete	4	7
olled plate glass FS			walls 2 7	,	,
⅓-in. rolled plate ⅓-in. Georgian wired	5	6	I 3 On work not exceeding 3-in. girth YR		61/2
ttention is drawn to			Two coats emulsion paint on		1 1/2
eduction in certain glass rices offered by manufac-			walls or ceilings 2 9 For each additional 3-in. 1 8 girth YR		6
urers for acceptance of pecified minimum quantities			Prepare, prime and apply one		11/2
f one size and substance elivered to one address at			coat oil colour on plastered Walls Oiling and polishing		
ne time			1 9 Twice oiling general surfaces		
Aeasured rates			Add for each additional coat *1 8 of hardwood with linseed oil	1	1
Glazing to wood			0		8
Ordinary quality sheet glass			On metal On work not exceeding 3-in. girth YR		14
nd glazing with putty in quares FS			Prepare, prime and apply one coat oil colour on general		1
24 oz. O.Q.	*!	41/2	surfaces YS For each additional 3-in. Basis price *3 5 girth YR		14
32 oz. O.Q.	*!	П	1 51		12
-in. rolled plate glass	1	6	Add for each additional coat *1 7½ 10 Staining and wax polishing		
		9	On metal casements YS general surfaces of hardwood	-	0.
or 1-in, rough cast glass		-	Basis price *5 4½ / 5½		- 2
	2	71			
Prismatic glass	2	-	Add for each additional coat *2 4½ Staining bodying-in and fully		
rismatic glass -in. wired glass		-	10 French polishing on general surfaces of hardwood FS	2	61
rismatic glass -in. wired glass -in. Georgian wired	2	-	On bars, angles etc., not exceeding 6-in. girth YR	2	61
Prismatic glass -in. wired glass -in. Georgian wired olate glass -in. Polished plate glass	2	0	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Papering 3	2	61
rismatic glass -in. wired glass -in. Georgian wired late glass -in. Polished plate glass glazing quality)	7	0	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Add for each additional coat 5 Prench polishing on general surfaces of hardwood FS Papering Preparing and sizing walls and hanging plain lining		6-1
rismatic glass -in. wired glass -in. Georgian wired late glass -in. Polished plate glass glazing quality) n plates 5 to 45 ft. super	7	0 8½	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Papering Add for each additional coat 2 On small pipes YR		3 3
Prismatic glass -in. wired glass -in. Georgian wired olate glass -in. Polished plate glass glazing quality) n plates 5 to 45 ft. super Glazing to metal Add to above rates Id.	7	0 8½	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Papering Add for each additional coat 5 On small pipes YR Basis price II B	10	3 3
Prismatic glass in. wired glass in. Georgian wired late glass in. Polished plate glass glazing quality) n plates 5 to 45 ft. super Glazing to metal Add to above rates 1d, per ft. super	7	0 8½	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Add for each additional coat 5 On small pipes YR Basis price II Basis price II On small pipes YR Basis price II	10	3
a or 4-in. rough cast glass Prismatic glass 4-in. wired glass 4-in. Georgian wired blate glass 4-in. Polished plate glass glazing quality) n plates 5 to 45 ft. super Glazing to metal Add to above rates 1d. per ft. super	7	0 8½	On bars, angles etc., not exceeding 6-in. girth YR Basis price II Papering Add for each additional coat 5 On small pipes YR Basis price II 3 Add for each additional coat 5 Add for each additional coat 5	10 3	3 3

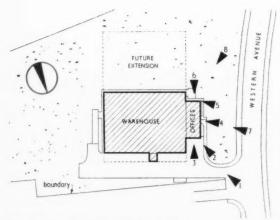
WAREHOUSE and OFFICES

in western avenue, cardiff, south wales
designed by Grenfell Baines and Hargreaves
assistant architect J. A. PADDOCK; assistants B. FINEBERG, M. R. HESKETH and
E. DUERDEN (contracts manager); consultants (structural) F. J. SAMUELY;
(heating) J. G. PROGER and SONS LTD.; (electrical) TROUGHTON and YOUNG LTD.,
quantity surveyors ARNOLD E. TOWLER

The architects of this warehouse and office building for H. J. Heinz & Co. Ltd. at Cardiff spent a considerable amount of time on research before the design was begun. For instance, moving and stacking equipment can affect warehouse design, and fork lift truck and pallet sizes determine aisle and stack dimensions. Among the conclusions reached were that (a) a square shape gives the greatest area for shortest distance travelled, (b) present equipment methods suggest reception and despatch on the same side and (c) for effective operation of fork lift trucks the warehouse floor should be at road level. This is the first combined warehouse and office block to be analysed in the Journal.

Viewpoint 1: the main entrance. On the left is the cantilevered canopy over the unloading docks.





Key plan showing photographic viewpoints

WAREHOUSE and OFFICES

in WESTERN AVENUE, CARDIFF designed by GRENFELL BAINES and HARGREAVES

Viewpoint 2 (below): the slatted hardwood screen divides the main entrance from the service entrance to the kitchen and canteen. The structure is of steelwork encased in concrete on a grid spacing of 14 ft. by 26 ft. approximately. Rainwater down pipes are concealed in the concrete casing to the stanchions. First-floor curtain walling, with aluminium framing gives a light and pleasing finish using purpose-made units based on standard sections. On the ground floor infilling panels are built up from hardwood frames with large areas of glazing and occasional solid panels faced externally with



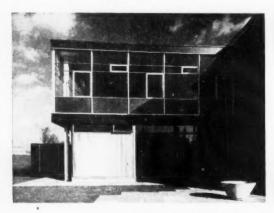
interior quality plywood or cedar boarding. Viewpoint 3 (below left): north elevation of office block. The car port gives access to the boiler house and cycle store. There is direct access from these parts of the building to the entrance hall. Viewpoint 4 (below right): the main entrance. The first floor slab is cantilevered forward and faced externally with 1-in. thick slate, used also as the permanent shuttering for the outside edge of the floor slab.





Viewpoint 5: the south-west corner of the office block, showing the canteen on the ground floor. The detail illustrates the cantilevering forward of the first floor and roof slabs permitting the curtain walling to run uninterrupted past the main structural columns. The first floor cladding and the ground floor return wall will be illustrated as Working Details in a later issue.

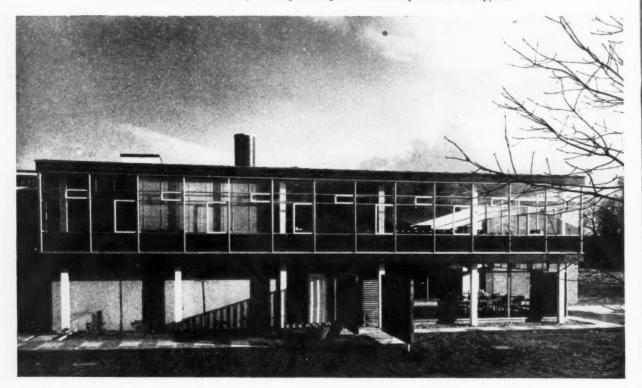






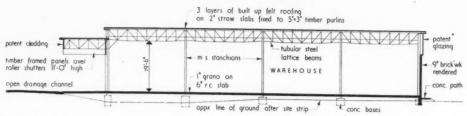
Viewpoint 6 (above left): the south elevation of office block with paved area immediately accessible from the canteen. Viewpoint 7 (below): the west elevation of the office block from the main road, the road level being some 6 ft. above the ground floor level in the building. The general office occupies the right-hand part of the first floor with the manager's office in the centre (blinds down) and a small office for interviewing on the left. Viewpoint 8 (above right): the south and west facades of the building showing the

relationship of the office block fronting the road, with the warehouse behind it. The illustration indicates the monitor system of roof lighting to the warehouse, with fascias at the higher and lower levels projected well forward of the wall face to give a strong definition to the roof form. The wall below the patent glazing is a 9-in. solid brickwork enclosing steel stanchions. This wall is finished with 3-in. waterproof cement, with a combed finished on to which two coats of emulsion paint have been applied.

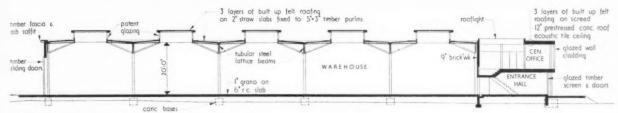


WAREHOUSE and OFFICES

in WESTERN AVENUE,
CARDIFF
designed by GRENFELL
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Section A-A [Scale: 12" = 1' 0"]



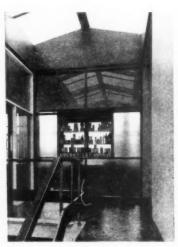
Section B-B [Scale: 32" = 1'0"]

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GENERAL OFFICE

FILING ENO RM

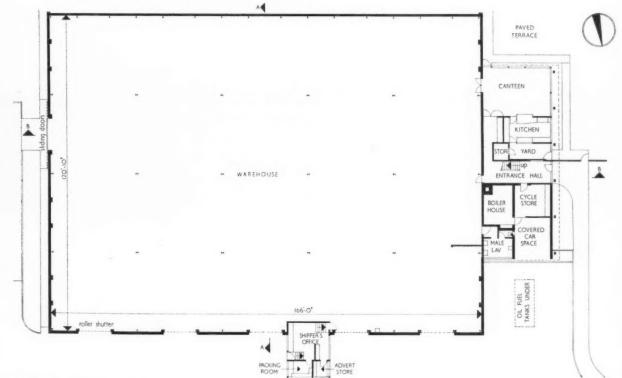
FEMALE
CLKS

MANAGER

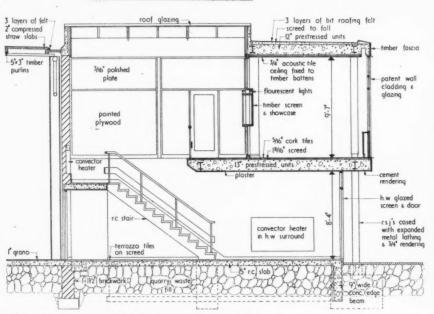
AUDIT 6
RITERVIEW

Above left: the *in situ* concrete staircase from the entrance hall to the first floor. The treads are finished with precast terrazzo slabs 1½-in. thick with black carborundum non-slip nosings. The hardwood hand rail is supported by satin-finished anodized-aluminium standards, threaded through an aluminium collar and set into the *in situ* concrete. Above right: the display case at the head of the staircase on the first floor.

First floor plan



Ground floor plan [Scale: $\frac{1}{12}$ " = 1'0"]





Cross-section through office block entrance hall [scale: 1" = 1'0"]

Above right: junction of rooflight over staircase with partitions enclosing the general office from the staircase well. This rooflight will be illustrated as a Working Detail in a later issue. Below left: the south-west corner of the general office. The ceilings are finished with acoustic tiles, stopped short of the curtain walling to form a recess for venetian blinds. Below right: detail in lavatory and wash room adjoining warehouse, showing the way in which all plumbing is concealed in ducts, which have moveable panels at strategic points for ready access.





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WAREHOUSE and OFFICES

in WESTERN AVENUE, CARDIFF

designed by GRENFELL BAINES and HARGREAVES

CLIENT'S BRIEF: his stated requirements

This building is the first of a new series of distribution centres to be set up in various parts of the country, for the purpose of distributing preserved foodstuffs. The warehouse was designed to allow for extension southwards providing ultimately 40,000 sq. ft. of storage space. The initial development was to comprise 20,000 sq. ft. of warehouse space with an office block adjoining. Every encouragement was given by the clients to produce a building of modern appearance with the single-storey warehouse designed to suit the latest methods of stacking with modern machines, and the office block fronting the main road being regarded as a unit which could be carefully designed to provide good "publicity value." A shippers' office was to be provided overlooking the warehouse and a covered loading bay.

SITE: topography, surroundings, access and planting

The fairly level site is to the west of Cardiff in a light industrial estate, bounded on its western side by a major traffic route known as Western Avenue. On the west side of this main road

Jayers of felt on 2° compressed straw slabs

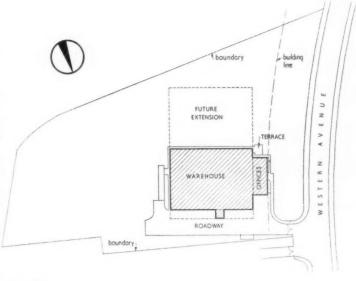
parent glazing

parent glazing

lattice beam

lattice b

Cross section through loading bay canopy [Scale: 1" = 1'0"]



Site plan

opposite the site is a municipal housing estate. The site is bounded on its southern side by the river Taff and access to it is directly off Western Avenue. Small young trees in front of the office block have been retained.

PLAN: general appreciation and relation of units

The plan is divided into two basic elements: the warehouse for the storage of preserved foodstuffs, and an office block immediately adjoining the warehouse. The warehouse is designed to give a fairly even lighting along the trucking gangways, but a high daylight factor was not required. Stacking of goods is carried out with fork lift trucks which remove the goods from the loading bay on a specially designed platform-one load being defined as a " pallet." The layout of the warehouse was designed to suit this system of storing goods in pallets. The shippers' office is strategically placed to enable adequate supervision of unloading and stacking. The 9-in, brick wall on the south side of the warehouse will eventually form the fire break with the future extension. The administrative offices provide for a fairly small staff, working in a general office, with a manager's office adjoining and a small office for interviews. There is a staff canteen on the ground floor. The offices and the warehouse are heated from oil-fired boilers situated within the curtilage of the office block.

MAIN CONSTRUCTION: general appreciation

The warehouse stanchions are placed on a 30 ft. × 33 ft. grid to suit the system of stacking in pallets. Construction is of welded steel tubing; low level trussed beams span the length of the building between columns at 30-ft. centres from which double cantilevers carry high level trussed beams forming the glazed walls of the monitor lights. The first floor and roof of the office block are of patent reinforced concrete and hollow pot construction spanning from the warehouse party wall to steel beams carried between the office stanchions. Steel supports and tie beams are contained within the depth of the floor and flush ceilings are maintained throughout. Ground floor walls are mainly glazed hardwood screens with curtain walling on the first floor.

3

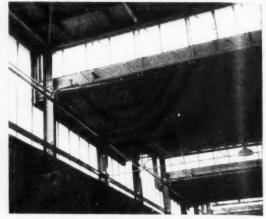
	cost	per sq.	ft.	S	d
preliminaries	and	insuran	ces	1	4
	60	ntingeno	cies		10

STRUCTURAL ELEMENTS

Work below ground floor level: foundation type Reasons and comments Location Materials Finish Simple foundations due to relatively light structural loads and good ground Strip foundations Walls Concrete Mass foundations Columns Concrete Reinforced concrete floor Waterproof cement rendered Oil storage tank pit 1/2/4 concrete work below ground floor level 4801

analysis





to be built beyond the brick wall (facing) when the patent glazing will be lattice beams.

Left: general view of warehouse structure showing low level trusses and double cantilevers carrying high level trusses. The further extension is planned the two warehouses. Right: detail of warehouse roof, showing tubular steel

					S	a
External walls and facings	Location	Materials	Finish	Reasons and comments		
101-in. cavity wall	Warehouse	4-in. foamed slag blocks, 2-in. cavity, 4½-in. brickwork externally	Red smooth-faced pressed bricks to loading bay wall and red rustics elsewhere	Simple structure providing adequate insulation		
Curtain walling	First floor offices	Aluminium capped steel mullions, asbestos fibre- board and mineral wool insulating panels with glass ply facing		Gives ample light and enables full advantage to be taken of the view. Contrasts with solidity of warehouse wall and has good "publicity value" for the Company		
Glazed hardwood frames	Ground floor offices	Meranti	Rubberized varnish	external walls and facings	3	11
Curtain walling and hardboard frames	Location	Materials	Finish	Reasons and comments		
			curtain v	valling and hardboard frames	2	3
Frame or load-bearing element	Location	Materials	Beam spans Column grid	Reasons and comments		
Light steel framework	Warehouse	R.s. stanchions and welded tubular steel lattice beams	30 ft. 30 ft. × 33 ft.	Due to scarcity of heavier steel sections at the time and for lightness of appearance. Distortions and deflections in the light steel trusses occasioned some cutting and packing of roof timbers		
R.s. framework	Office block	8-in. × 6-in. columns and main beams	13 ft. 10 in. (main)	Main beams span shorter distances in order to avoid downstands and to give flush ceilings		
		8-in. × 4-in. tie beams	27 ft. 4 in. (ties) fra	me or load bearing element	8	4
Upper floor construction	Location	Materials	Finish	Reasons and comments		
Patent reinforced concrete floor slab	Office block	Prestressed concrete planks, infilling hollow pots and in-situ concrete topping	Floor screeds for cork tiles or terrazzo. Soffit battened for acoustic tiling or plastered with lightweight aggregate plaster	No shuttering was required and the system lent itself to erection by the contractor. Production of assembly drawings by suppliers involved the design of all necessary openings, service holes and fixing clips for all ceiling battens at early stages		
				of job upper floor construction		10
Staircases	Location	Materials	Finish	Reasons and comments		
In-situ reinforced concrete	Office block		Precast terrazzo treads and risers. In-situ terrazzo skirtings	etalisasses		3
				staircases		3
Roof construction	Location	Materials	Finish	Reasons and comments		
As for floor	Office block		3 layers roofing felt, first layer asbestos based			
Timber purlins and compressed strawboard panels	Warehouse	5-in. × 3-in. purlins at 4-ft. centres, 3-in. × 2-in. cross bearers at 3-ft. 9-in. c.c's	As above	Economical construction and rapid erection		
		6.6 8		roof construction	6	1

Roof ligh Rectangu As above

Monitor External

Roller sl Plywood Framed

Glazing 32-oz. g Polished Glass p

PAR Timber

Brick

Screen Glazed

Flush

W.c. d

Intern Flush

FI

Wood

Terra Cork Gran

Gran

analysis

Roof lights						
	Location	Materials	Finish	Reasons and comments		
Rectangular lantern ight	Over staircase	Patent glazing, Georgian wired plate glass	Hardwood veneered blockboard lining			
As above	Over women's lavatories	Clear glass ply	Plastered linings	Economical construction and rapid erection		
Monitor lights	Warehouse	Vertical patent glazing	Wired roughcast glass	Even lighting along truck gangways		
				roof lights	1	
External doors	Location	Materials	Finish	Reasons and comments		
Roller shutters	Warehouse	Sheet steel	Painted	Hand-operated mechanism		
Plywood flush door	Offices entrance	2-in. skeleton frame	Painted externally, quality plywood			
Framed and glazed	Canteen and shippers'	Meranti	Varnished			
				external doors	1	
Glazing	Location	Materials	Finish	Reasons and comments		
2-oz. glass	Generally					
Polished plate	In large windows					
Glass ply	Curtain wall		Fixed coloured inside surface	Durable self-cleansing and colour fast		
				glazing		
PARTITIONIN	G					
nternal partitions	Location	Materials	Finish	Reasons and comments		
Timber studding	Generally first floor	3-in. × 2-in. softwood	Plasterboard and skim	Non-load-bearing		
Brick	Generally ground floor	41-in. common brick	Plastered or cement	As above		
			rendered	internal partitions		
icreens	Location	Materials	Finish	Reasons and comments		
Glazed timber framing	First floor landing	Georgian wired roughcast glass and polished plate in mahogany framing	Polished mahogany	Allows visual continuity of ceiling		
V.c. doors and partitions	Location	Materials	Finish	Reasons and comments		
	Location Generally	18-in. skeleton frames,	Finish Polished hardwood	Reasons and comments		
		18-in. skeleton frames, ply faced	Polished hardwood	Reasons and comments		
flush doors	Generally	1§-in. skeleton frames, ply faced w.c. doors	Polished hardwood and partitions cost (inc	cluded with internal partitions)		
lush doors	Generally Location	1§-in. skeleton frames, ply faced w.c. doors	Polished hardwood and partitions cost (ine			
flush doors	Generally	1§-in. skeleton frames, ply faced w.c. doors	Polished hardwood and partitions cost (inc	Cluded with internal partitions) Reasons and comments		
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nternal doors Finish doors ronmongery to internal oors ever handles and nortice locks FINISHINGS	Location Generally Location Generally Location Generally	18-in. skeleton frames, ply faced w.c. doors Materials 18-in. skeleton frames, ply faced Materials Alloy Materials	Polished hardwood and partitions cost (ine Finish Generally polished hardwood Finish Satin chrome	Reasons and comments internal doors Reasons and comments ironmongery to internal doors Cost per sq. yd.		
internal doors Flush doors Flush doors ronmongery to internal loors Lever handles and nortice locks FINISHINGS Floor finishes Wood block	Location Generally Location Generally	1g-in. skeleton frames, ply faced w.c. doors Materials 1g-in. skeleton frames, ply faced Materials Alloy	Polished hardwood and partitions cost (ine Finish Generally polished hardwood Finish Satin chrome	Reasons and comments internal doors Reasons and comments ironmongery to internal doors		
Itush doors Internal doors Itush doors Itu	Location Generally Location Generally Location Generally Location Canteen Kitchen, lavatories and	18-in. skeleton frames, ply faced w.c. doors Materials 18-in. skeleton frames, ply faced Materials Alloy Materials 18-in. muhuhu	Polished hardwood and partitions cost (ine Finish Generally polished hardwood Finish Satin chrome	Reasons and comments internal doors Reasons and comments ironmongery to internal doors Cost per sq. yd. s. d. 52 0		
W.c. doors and partitions Flush doors Internal doors Flush doors Fronmongery to internal doors Lever handles and mortice locks FINISHINGS Floor finishes Wood block Terrazzo Cork tiles Granolithic	Location Generally Location Generally Location Generally Location Canteen Kitchen, lavatories and corridors	1g-in. skeleton frames, ply faced w.c. doors Materials 1g-in. skeleton frames, ply faced Materials Alloy Materials 1-in. muhuhu Precast tiles and in-situ	Polished hardwood and partitions cost (ine Finish Generally polished hardwood Finish Satin chrome Finish Wax polished Polished	Reasons and comments internal doors Reasons and comments ironmongery to internal doors Cost per sq. yd. s. d. 52 0 33 0		

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	analysis				
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Wall finishes	Location	Materials	Finish	Reasons and comments	
Plaster	Generally in offices	Lightweight aggregate plaster	Emulsion paint		
Plasterboard	On studding in offices	i-in. plaster board and	Emulsion paint		
Fair faced brick or coamed slag blocks	Warehouse		Natural		
osined stag blocks			4	wall finishes	
Ceiling finishes	Location	Materials	Finish	Reasons and comments	
Plastered	In office block	Lightweight aggregate	Emulsion paint	1	
Acoustic tiles	Canteen and offices	plaster §-in. tiles glued to battens	Emulsion paint		
				ceiling finishes	
Decorations	Location	Paint types	Munsell or other ref.	Reasons and comments	
Sealer, 2 coats emulsion	Generally in offices			Scheme generally restrained;	
Primer, 2 coats gloss	Joinery (general)	Gloss paint		large white or neutral areas contrast with smaller areas of stronger but restrained	
Rubberized varnish and	Hardwood external	Gloss finish		colour. "Shocking" colours and pastel shades are avoided	
ealer Clear polish	joinery Hardwood internal	Semi-gloss finish			
poston	joinery	Osmi-Bross mitsit		decorations	1
FITTINGS					
Cloak rooms	Location	Materials	Finish	Reasons and comments	
Metal hat and coat hooks	Men's lavatories	Aluminium	Satin anodized		
Coat rail and hat shelf	Women's lavatories	Hardwood	Polished		
Other fittings	Location	Materials	Finish	Reasons and comments	
Display showcase	First floor landing	1-in. solid mahogany and plaster glass	Polished	Displays the Company's products in prominent position	
Counters	General office	1-in. softwood frame	Painted with lino top	other fittings	1
Sitchen equipment	Location	Materials	Finish	Reasons and comments	
			2 0700070	Acedonis and Comments	
single oven					
ingle oven					
ingle oven nodel 217	,				
SERVICES	Location	Materials	Finish	Reasons and comments	
SERVICES Rain water disposal	Down office block stanchions and warehouse	Materials	Finish Vitreous enamelled	Reasons and comments	
SERVICES Rain water disposal	Down office block	Materials		Reasons and comments rain water disposal	
SERVICES Rain water disposal Downpipes	Down office block stanchions and warehouse	Materials Materials			
ingle oven model 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal	Down office block stanchions and warehouse walls	Materials 2-in, copper waste pipes	Vitreous enamelled	rain water disposal Reasons and comments	
ingle oven nodel 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste lisposal	Down office block stanchions and warehouse walls	Materials	Vitreous enamelled	rain water disposal	
ingle oven model 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal One pipe system in duct	Down office block stanchions and warehouse walls	Materials 2-in, copper waste pipes	Vitreous enamelled	rain water disposal Reasons and comments First floor plumbing concealed in walls and in ducts, with removable block board panels. Continuous common	
ingle oven nodel 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste isposal One pipe system in duct	Down office block stanchions and warehouse walls Location First floor lavatories	Materials 2-in. copper waste pipes 4-in. cast iron soil pipes	Vitreous enamelled Finish	rain water disposal Reasons and comments First floor plumbing concealed in walls and in ducts, with removable block board panels. Continuous common flushing through to w.c.s	
ingle oven model 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal One pipe system in duct Hot water storage and indirect cylinder	Down office block stanchions and warehouse walls Location First floor lavatories Location	Materials 2-in. copper waste pipes 4-in. cast iron soil pipes Materials	Vitreous enamelled Finish Capacity	rain water disposal Reasons and comments First floor plumbing concealed in walls and in ducts, with removable block board panels. Continuous common flushing through to w.c.s	
SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal One pipe system in duct Hot water storage Indirect cylinder	Down office block stanchions and warehouse walls Location First floor lavatories Location Boiler room	Materials 2-in. copper waste pipes 4-in. cast iron soil pipes Materials Copper	Vitreous enamelled Finish Capacity 60 gallons	rain water disposal Reasons and comments First floor plumbing conceeled in walls and in ducts, with removable block board panels. Continuous common flushing through to w.c.s Reasons and comments Reasons and comments Insulated with 1-in. boarding	
SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal One pipe system in duct Hot water storage Indirect cylinder Cold water storage Hot supply tank	Down office block stanchions and warehouse walls Location First floor lavatories Location Boiler room	Materials 2-in. copper waste pipes 4-in. cast iron soil pipes Materials Copper	Vitreous enamelled Finish Capacity 60 gallons Capacity	rain water disposal Reasons and comments First floor plumbing concealed in walls and in ducts, with removable block board panels. Continuous common flushing through to w.c.s Reasons and comments	
Gas cooker "Chester" single oven model 217 SERVICES Rain water disposal Downpipes Plumbing internal: waste disposal One pipe system in duct Hot water storage Indirect cylinder Cold water storage Hot supply tank Cold supply tank Plumbing: sanitary fittings	Down office block stanchions and warehouse walls Location First floor lavatories Location Boiler room Location Office block roof	Materials 2-in. copper waste pipes 4-in. cast iron soil pipes Materials Copper Materials Galvanized steel	Vitreous enamelled Finish Capacity 60 gallons Capacity 60 gallons	rain water disposal Reasons and comments First floor plumbing conceeled in walls and in ducts, with removable block board panels. Continuous common flushing through to w.c.s Reasons and comments Reasons and comments Insulated with 1-in. boarding	

plumbing internal, hot water storage, cold water storage, plumbing: sanitary fittings

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exchanger type Low pressure hot water	Location Plant in boiler room	Criteria temp. 65° F. main offices	Air change rate Natural ventilation	The oil burner is designed to		
system				cope with the future ware- house extension of 20,000 sq. ft.		
'Nu-Way'' ZH 12 oil	Central heating through- out	55° F. corridors and lavatories				
		40° F. minimum ware- house				
Boiler type and capacity	Location	Heat load and fuel type	Stoking method	Reasons and comments		
' Ideal '' 410 KO	Boiler room	583,000 B.Th.U.s (963,000 in future)		Two further sections will be added to boiler when ware- house is extended		
904,000 B.Th.U.s per hour		20 seconds fuel oil				
Water heater type	Location	Fuel type	Stoking method	Reasons and comments		
60-gallon calorifier	Boiler room		heating ins	tallation, boiler, water heater	4	2
Drainage: type of system	Location	Materials	Finish	Reasons and comments		
Separate system. Surface water taken into river Taff through a self-closing flap		Salt glazed ware generally, cast iron under buildings		No surface-water drain was available		
outfall				drainage	2	6
Gas installation	Location	Materials	Finish	Reasons and comments		
Main supply	Kitchen cooker, women's cloakroom incinerator	1-in. copper tubing		Fluorescent lighting was confined to the first floor offices only for reasons of unity at night		
Electrical installation: source and fitting type	Location	Illumination level	Quality	Reasons and comments		
Fluorescent	All offices	25/30 f/c	Good quality standard fittings			
Semi-direct tungsten	Other rooms and passages	6/7 f/c				
Direct tungsten	Warehouse	6 f/c average				
Wiring and switching types	Location	Materiais		Reasons and comments		
V.R.I. cables in conduit	Throughout	Heavy gauge steel enamelled	d conduit			
Flush wall switches		Satin chrome flush plates				
Power supply type	Location	How distributed		Reasons and comments		
415/240 v. 3-phase	Throughout	V.R.I. internal sub-mains		electrical installation	1	0
Paved areas	Location Roads and paths	Materials Concrete roads, Concrete fla	ng paths and grass areas at	Reasons and comments		
	•	front of building		paved areas	4	6

THERMAL INSULATION

Туре	Location	U-value	Reasons and comments
2-in. strawboard	Warehouse	·3	
41-in. brick outer leaf, 2-in. cavity and 4-in. foamed slag block inner	Warehouse	·22	

SPECIAL ACOUSTICAL TREATMENT

Sound absorption material 24-in. × 24-in. × 1-in. acoustic ceiling tiles	Location Offices and canteen	Absorption coefficient	Reasons and comments
Sound insulation	Location	Insulation standard	Reasons and comments
1-in. insulating blanket underlay to plasterboard on timber studded wall	Manager's office		To reduce intrusive noises from corridor, staircase and general office

FIRE

Structural precautions	Grade of protection apparatus	Sprinklers	Reasons and comments
Non-combustible structural materials	Hose reels and foam extinguishers	None	Curtain wall panels below sill give one hour's fire resistance and are fixed by steel angles to the steel mullions
Planning precautions	Access for fighting	Means of escape	Reasons and comments
Fire-proof walls and doors between warehouse and offices		Internal staircase	The 9-in. brick wall on south side of warehouse will be heightened to form a fire- break between existing ware- house and future extension

REFUSE DISPOSAL

Method	Type of refuse	Waste recovery	Materials and installation	Reasons and comments
Local authority collection	Kitchen and clerical waste	Nil	None	

TIME SCHEDULE

Drawings	Tender date	Contract signed	Work commenced	Work completed	Type of contract
May, 1955	September, 1955	October, 1955	November, 1955	September, 1956	RIBA (quantities)

COST SUMMARY

Total ground floor area of superstructure	Total floor area (excluding basement)	Tender date	Tender cost of superstructure	Installation and finishings
22,106 sq. ft.	24,180 sq. ft.	September, 1955	£33,450	£14,911
Tender cost of foundations £7,556	Tender cost of external works £10,940	Gross total cost £64,380	Cost per ft. super of floor 53s. 31.	

COST COMMENTS

This analysis is a useful guide to the architect to show where and in what proportions the cost is distributed over the various elements of the building. More information, however, will be required before any unit rates can be established for a particular form of construction, or before comparison can be made with any of the seven or eight factories previously analysed in this series.

The plan of the Heinz factory is divided into two basic functional elements: a storage warehouse with its relatively large floor areas, and a compact two-storey office block with its greatly increased wall to floor area ratio and its higher standard of finish. These circumstances do not favour an all-embracing cost analysis especially where the respective ratios are not supplied, e.g., "External Walling" includes brick walls, curtain walling and glazed hardwood framing in varying proportions. The "Ceilings" and "Upper Floor Construction" are taken from the two-storey block only, and the cost spread over the total floor area gives a false impression at 6d. and 10d. per ft. super, respectively. The tubular

stee frame to the warehouse is of interesting construction but again the cost as shown is inseparable from that of the office frame. One of the factors contributing to the relatively low cost of the electrical installation at 1s. 0d. per ft. super is the low illumination level required in all but the offices.

SITE ORGANIZATION

Site labour and equipment: general foreman, ganger. D.8 tractor dozer and 13 cub. yard scraper—14 days approximately. 14 R.B. excavator, 8 weeks—mainly on drainage Three-quarter cub. yard dumper, 2/14-10 mixers during whole of contract. Sub-letting: the general contractor sub-let the following trades for reasons given. Plasterer—not sufficient labour available. Painter—own painter employed on other contracts at the time. Plumber—no plumbers employed. Joinery (natt only)—lack of first class joiners.

CONTRACTORS

Clerk of works: W. T. Aubrey. General Contractors: Knox & Wells Ltd. Sub-contractors—

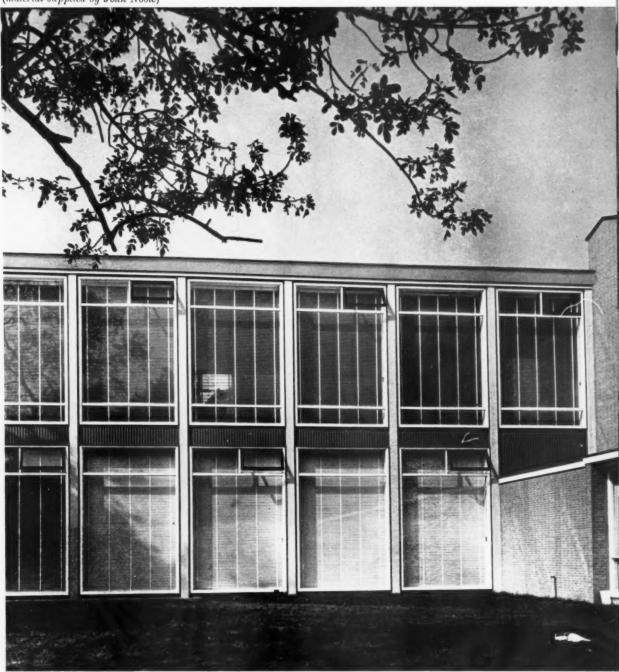
Roofing felt: Vulcanite Ltd. Patent glazing: Mellowes & Co. Ltd. Wood block flooring: Vigers Bros. Ltd. Structural steel: S.G.B. Ltd. Patent flooring: Richard Costain Ltd. Waterproofing material: Chemical Building Products Ltd. Central heating, boilers: Proger & Sons Ltd. Electric wiring, heating: Page & Stibbs Ltd. Electric light fixtures: Troughton & Young Ltd.; Benjamin Electric Ltd.; Falk, Stadelmann & Co. Ltd. Metal staircases: W. & R. Leggots Ltd. Plumbing: Henry Tattersalls Ltd. Stairtreads: Cardiff Mosaic Ltd. Telephones: Modern Telephones (G.B.) Ltd. Casements: I. Williams & Sons Ltd. Roller shutters: Roller Shutters Ltd. Sanitary fittings: Sessions Ltd., and Adamsez Ltd. Plaster: Plasterers Ltd. Joinery: Gibbon & Sons Ltd. Wallpaper: Wallpaper Manufacturers Ltd. Sun blinds: Tidemarsh & Co. Ltd. Clocks: Gent & Co. Ltd. Signs: Ward & Company. Paint: Smith & Walton Ltd. Door furniture: Parker, Winder & Achurch Ltd. Slate fascias: Bow Slate & Enamel Co. Ltd.





WINDOW WALL: MUSEUM IN AMSTERDAM

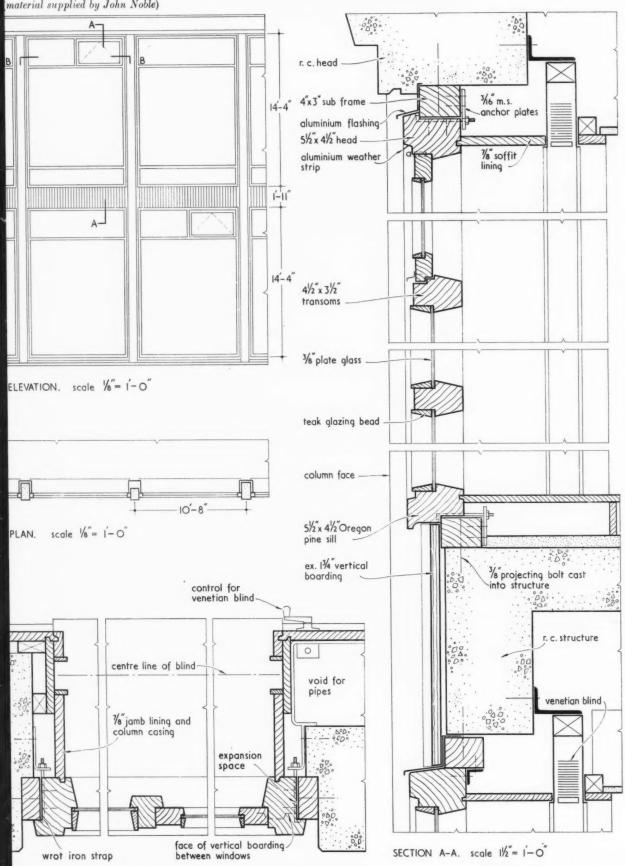
Amsterdam Public Works Department, architects-in-charge, exterior, J. Leupen and J. Sargentini, interior, Prof. F. Eschauzrer (material supplied by John Noble)



The interest of this detail lies in the skilful combination of in-situ reinforced concrete with high-quality timber linings. The window frames are made in two parts: the outer frame is cast into the supporting structure and the inner frame is separated from the outer by an expansion gap and is held in place by a system of m.s. straps and sliding bolts. Both frames are Oregon pine, the inner being painted blue-grey and the outer white. The window beads and the guide rails to the venetian blinds are teak. The concrete mullions are painted light grey.

WINDOW WALL: MUSEUM IN AMSTERDAM

Amsterdam Public Works Department, architects-in-charge, exterior, J. Leupen and J. Sargentini, interior, Prof. F. Eschauzier (material supplied by John Noble)



working detail

LIFT SHAFT: STORE IN ROTTERDAM

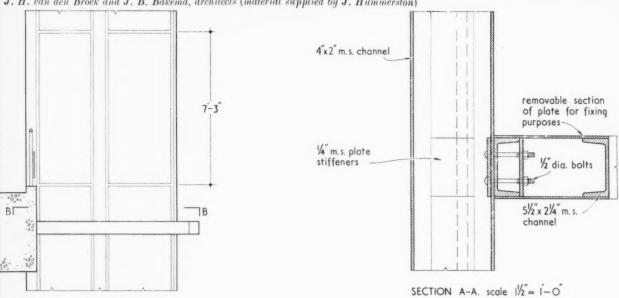
J. H. van den Broek and J. B. Bakema, architects (material supplied by J. Hummerston)



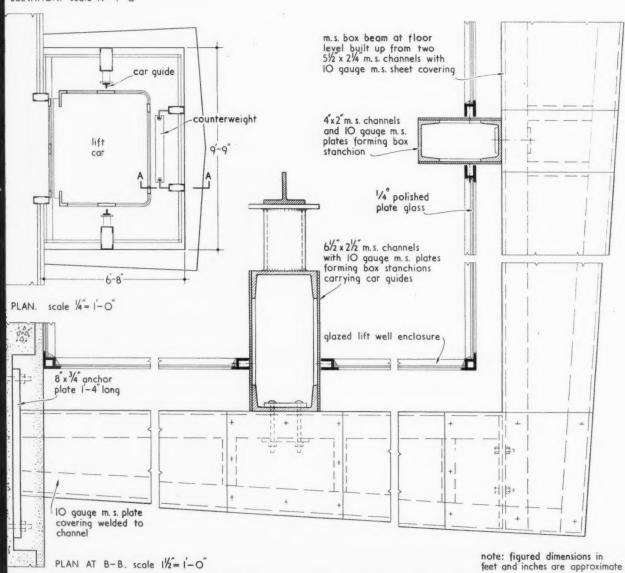
The main structural members of this shaft are welded m.s. box sections and are bolted together internally. Colour is used to articulate the structural members and to emphasize the "interpenetration of form": the horizontal supports are painted indian red, the vertical supports white, and the frame of the cage black.

LIFT SHAFT: STORE IN ROTTERDAM

J. H. van den Broek and J. B. Bakema, architects (material supplied by J. Hummerston)



ELEVATION. scale 1/4 = 1-0







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RNAL for Man 24, 1957

St. Laurence's R.C. School, Southdene, Liverpool
Argument L. A. G. Prichard, ARIBA, AMTRI,
Contraction. The Unit Construction Co. Ltd

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Have you tried the new BELDEC?

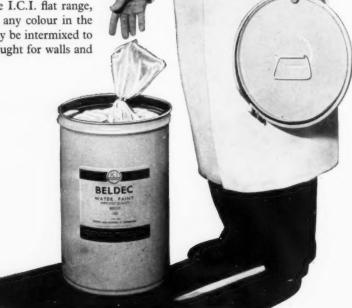
BELDEC WATER PAINT

'BELDEC' is a traditional water paint reformulated to achieve near perfection in ease of preparation and application and in solid smooth appearance. We have no hesitation in claiming that it is at least as good as any water paint yet made. If any decorator wishes to test it we hope he will ask his merchant for a free 7-lb. sample.

A notable advantage in using 'BELDEC' is that no petrifying liquid is needed—only water should be added. Every desirable ingredient is in the paint.

So easily does 'BELDEC' spread that one hundredweight will cover 700 square yards if the surface is smooth and non-porous. The spread will be less on rough or absorbent surfaces.

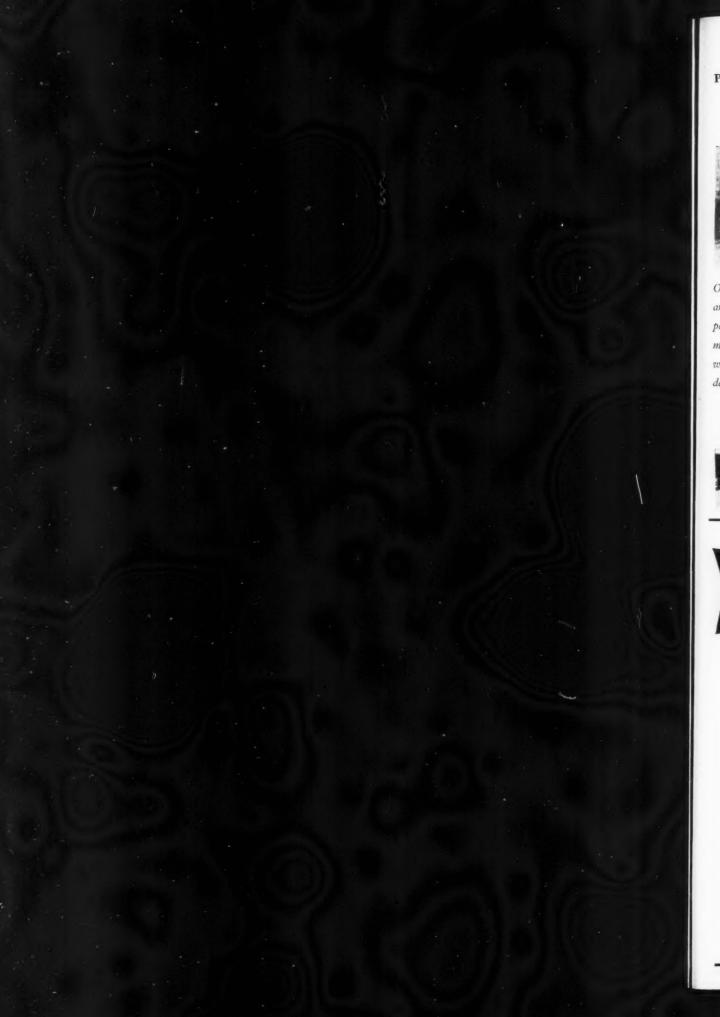
'BELDEC' is stocked in all 42 shades in the I.C.I. flat range, and can be had at short notice in almost any colour in the B.S.I. flat range. Besides this, colours may be intermixed to produce whatever colour is likely to be sought for walls and ceilings.



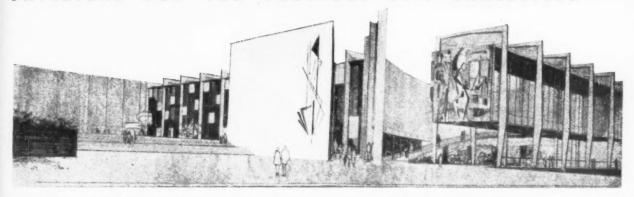
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PAVILIONS FOR THE BRUSSELS 1958 EXHIBITION



On March 7 we published details of several of the foreign pavilions for the Brussels Exhibition. On this page and overleaf are three more. Above: the Belgian "Paper and Graphic Arts" pavilion. The architects for this pavilion—in which will be shown the history of the paper industries, the manufacture and technique of paper-making and the uses of paper—will be De Doncker and Vanderauwera. The Portuguese pavilion, below, which will "contribute to the expansion of world solidarity founded on respect for the human personality," will be designed by Pedro Cid.



Why do so many architects choose EZEE Kitchens?

EZEE Kitchen units, designed on the latest American lines, are the architect's dream come true. Made-to-measure kitchens can be planned at no extra cost thanks to the unique range of EZEE unit sizes—and their perfection of design and finish make them a joy to own and use.

24" Deep. A whole range of EZEE Kitchen units is available in the 24" depth. This gives greater working surface and storage space, and permits flush fitting of cookers and refrigerators. It also makes it possible to incorporate laboursaving equipment within the units themselves.

All EZEE Kitchen cabinets are made of stove-enamelled Zintec steel, with sound-insulated doors and drawers and bright Formica working surfaces.

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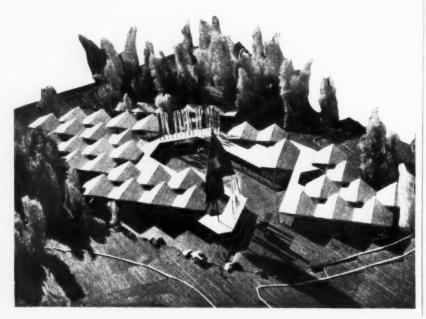
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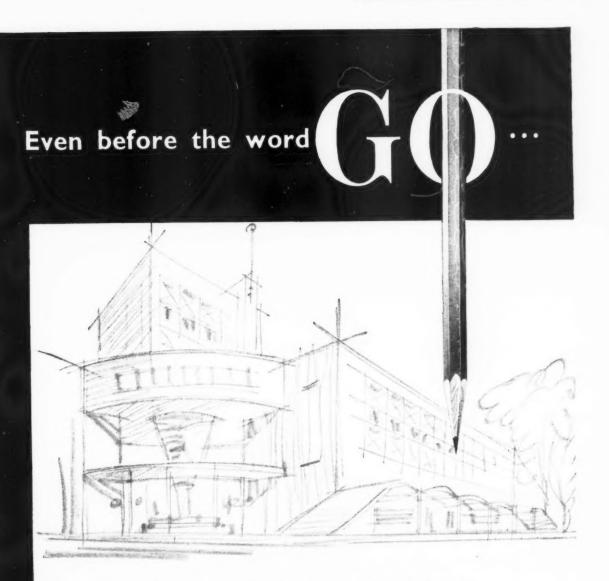
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Correction

Correction to attributions given Feb. 28
The curtains for the Whitley Abbey school were designed by Gerald Holtom and made by Gerald Holtom. The proscenium curtains for Lyng Hall school were designed by David Holt and executed by Gerald Holtom. Gerald Holtom also supplied all the other curtains and curtain tracks for the Lyng Hall school.





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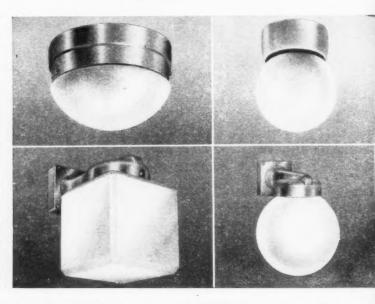
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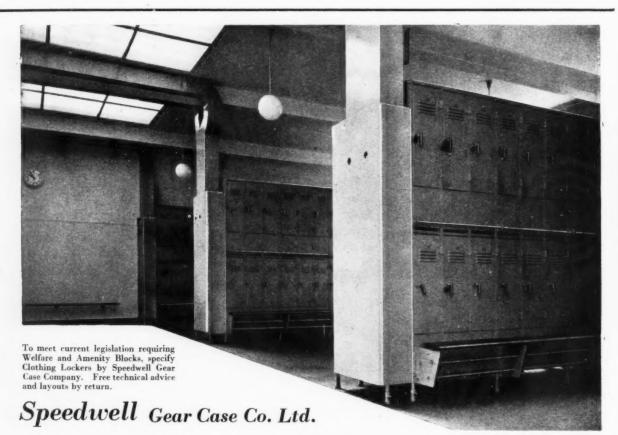
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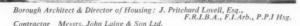
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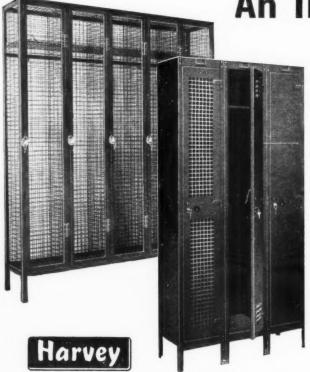
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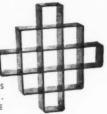


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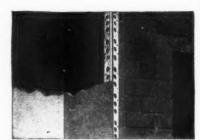
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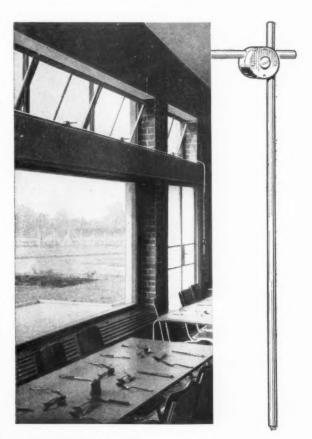


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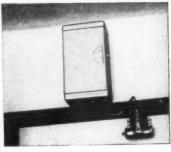
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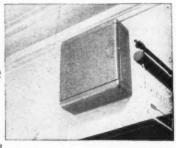
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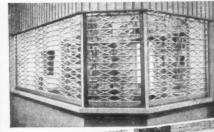
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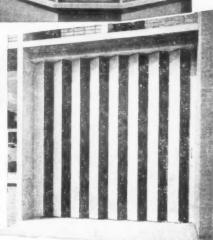




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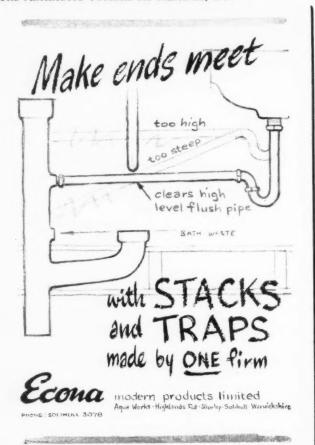
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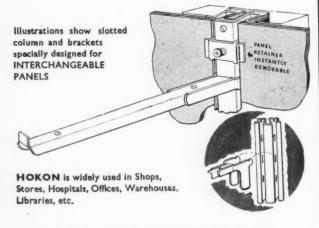
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BOROUGH OF SCARBOROUGH
QUANTITY SURVEYOR

Applications are invited for the appointment of a Quantity Surveyor at a salary in accordance with the scale for Special Classes of Officers (£707 5s. to £851 per annum), the starting salary depending on qualifications and experience.

Applicants should have experience in taking-off quantities for architectural works and in measuring for interim and final accounts. The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937/1955, and to the passing of a medical examination, and will be terminable by one month's notice on either side. In a suitable case the Council would be prepared to assist in the provision of housing accommodation and the payment of part removal expenses.
Applications, in envelopes endorsed "Quantity Surveyor," stating age, present and previous appointments, training, qualifications and experience, together with the names of two referees, must be delivered to the undersigned not later than Saturday, the 6th April, 1957.

H. V. OVERFIELD.
BRITISH ROAD SERVICES, LTD., have the

BRITISH ROAD SERVICES, LTD., have the following vacancies in the New Works Section of their Surveying and Architectural Department. The Office is located in London, but work on projects in various parts of the country will involve travel involve travel. S.V.6. SENIOR ARCHITECTURAL ASSISTANT.

S.V.6. SENIOR ARCHITECTURAL ASSISTANT.

Applicants should be over 35 years of age, architects of considerable experience, preferably on industrial work, and have sound constructional knowledge; additional experience of a civil engineering nature would be an advantage. Salary range £1,190-£1,290.

S.V.1. ARCHITECTURAL ASSISTANTS.
Applicants must be architects of wide experience and able to handle projects from sketch designs to completion, including the preparation of working and detailed drawings and specifications and supervision of work. Salary ranges (a) £765-£795/£305-£900; (b) £945-£9595/£1,035-£1,135, according to qualifications and experience. S.V.8. SENIOR CLERK OF WORKS.

Applicants should have some years' experience as clerk of works in addition to a sound training and experience in one of the building trades. Appointment will involve considerable travelling away from the London area. Salary range £765-£795/£305-£900.

E195/E330—E900, according to qualifications and experience. Applications, giving age, experience and quali-fications, to Personnel Officer, British Road Services, Ltd., 222, Marylebone Road, London, N.W.1.

FIFE COUNTY COUNCIL
DIRECT LABOUR MANAGER
Applications are invited for the above new appointment. Duties to be undertaken will include responsibility for the carrying out of new Building Works, also the repair and maintenance of all Council owned properties. Applicants must have experience in the carrying out of large Building and Civil Engineering Works by means of Direct Labour or Contract. A salary commensurate with the position will be paid, not less than £1,250 per annum, according to experience and qualifications. Housing accommodation may be available if required. Medical examination for admission to superannuation scheme. Applications, quoting DL/U, and stating age, experience and qualifications, accompanied by copies of recent testimonials, to be lodged with the undersigned not later than 3rd April, 1957.

MATTHEW POLLOCK, County Clerk. County Buildings, Cupar-Fife.

BOROUGH OF MANSFIELD
APPOINTMENT OF ARCHITECTURAL
ASSISTANTS
Applications are invited for the following pointments in the Department of the Borough ngineer and Surveyor:—
(a) ARCHITECTURAL ASSISTANT. Special rade (£690 £30—£840).

dde (£690×£30—£840). b) ARCHITECTURAL ASSISTANT, Grade II

(b) ARCHITECTURAL ASSISTANT. Grade 11 (£959 × £92-£675). Applicants for (a) must have passed parts I and II of the R.I.B.A. Final or equivalent, and had at least 5 years' experience (including training), and for (b) must have had "recognised" training and have passed the R.I.B.A. Intermediate Examination.

These appointments are subject to the provisions of the Superannuation Acts; the passing of a medical examination and the N.J.C. conditions of service. Service tenancy houses are available.

Applications, giving details of present and

available.

Applications, giving details of present and previous appointments, age, experience, and names and addresses of three referees, should be sent to the Borough Engineer and Surveyor, Carr Bank, Mansfield to arrive not later than Tuesday, 9th April, 1957.

A. C. SHEPHERD.

Town Clerk.

Carr Bank, Mansfield.

Carr Bank, Mansfield.

Carr Bank, Mansfield.

URBAN DISTRICT OF FELTHAM
APPOINTMENT OF TWO ARCHITECTURAL
ASSISTANTS
ASSISTANTS
ASSISTANTS
ASSISTANTS
Applications are invited for the following appointments on the Council: unestablished staff at salaries within the Grades stated, according to qualifications and experience.

(1) ARCHITECTURAL ASSISTANT. Grade A.P.T. IV (maximum salary £907 2s. 6d. per annum, plus London "weighting").

(2) ARCHITECTURAL ASSISTANT. Grade A.P.T. II (maximum salary £691 17s. 6d. per annum, plus London "weighting").

Forms of application, obtainable from the undersigned, must be returned accompanied by copies of two testimonials, not later than 5th April, 1957. Canvassing directly or indirectly will disqualify, and applicants must disclose in writing whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

M. W. COUPE.
Council Offices, Feitham, Midlesex. 5668

Council Offices, Feitham, Middlesex.

Applications are invited for the following posts in the Education Architect's Department. ARCHITECT, Class I. Candidates must be Registered Architects, etc. oil design and construction. Salary £930×£30—£990×£40—£1,190. ARCHITECT, Class II. Candidates must be Registered Architects, with experience in general design, construction and supervision of alterations and additions to existing buildings, and be capable of supervising architectural staff. Salary £585×£30—£885×£35—£990. ARCHITECTURAL ASSISTANTS, Class I.

ing buildings, and be capable of supervising architectural staff.

Salary £858 × £90 – £885 × £35 – £990.

ARCHITECTURAL ASSISTANTS, Class I. Candidates must have passed the Intermediate Examination of R.I.B.A. and should have a sound preparation of specifications.

**£25 – £655 × £30 – £755 × £35 – £790.

The commencing salary in each case will be fixed according to qualifications, ability and experience. Superannuation contributions of approximately 6 per cent of remuneration will be payable. Reciprocal pension arrangements exist between the Corporation and other Public Authorities.

Favourable consideration will be given to the recoupment, up to a limit of 50 per cent. of the removal expenses of a newly appointed officer coming to reside in Belfast.

Canvassing will disqualify. Application forms, etc., are the Education Office, Academy Street, Belfast.

Completed applications must reach the undersigned by Friday, 12th April. 1957.

JOHN DUNLOP.

Town Clerk.

City Hall, Belfast, P.O. Box 234. 14th March, 1957.

SOUTH CAMBRIDGESHIRE RURAL DISTRICT COUNCIL

APPOINTMENT OF ASSISTANT ARCHITECT Applications are invited for the appointment of Assistant Architect in the department of the Council's Architect, Salary within the range of A.P.T. III (£655-£784 2s. 6d.) or the Special Grade (£707 5s.—£361), according to qualifications and experience.

Grade (1/07 bs.—1301), according to qualifications and experience.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the National Scheme of Conditions of Service, to a satisfactory medical examination, and one month's notice in writing on either

Forms of application can be obtained from the undersigned, to whom they must be returned not later than first post on Saturday, the 6th April, 1957.

Housing accommodation in the Rural District may be provided for the successful candidate if required. Canvassing, directly or indirectly, will dis-

B. G. CRAFT.
County Hall, Hobson Street, Cambridge.

18th March, 1957.

18th March, 1957.

UNIVERSITY COLLEGE OF NORTH

Applications are invited for the post of ASSISTANT ARCHITECT on the staff of the Buildings
Officer and Architect. Salary in the scale 2902 ×
241—21,107 p.a. The post is superannuable.
Applicants should have particular experience in
design and should be school-trained with at least
4 years' practical experience. Duties may include
work on buildings for teaching and research,
students' hostels, staff residences, general purposes buildings and services. Applicants must be
Registered Architects. Further particulars may
be obtained from the Registrar, The College,
Keele, Staffs., to whom 3 copies of application
giving full details of age, qualifications, experience, etc., and names of three referees should
be sent within 10 days of publication of this
advertisement. advertisement.

Advertisement.

EAST ANGLIAN REGIONAL HOSPITAL BOARD

Department of the Regional Architect (Guy Aldis, A.R.I.B.A., A.A.Dipl.) for planning of a scheme for the major development of a General Hospital which the Board has commenced.

(1) ASSISTANT ARCHITECTS. Candidates must be qualified and registered architects, and have had good general experience in design, construction and specification writing. Knowledge of hospital work desirable, Salary £690-£985; additional increments within scale based on experience and age may be granted.

(2) ARCHITECTURAL ASSISTANTS. Candidates must have passed the Intermediate Examination of the R.I.B.A. or equivalent. Salary £510 (at 21 or over)-£710 per annum; entry point may be fixed above minimum, but will not exceed £590.

Applications, indicating post and stating age.

2590.

Applications, indicating post and stating age, qualifications, experience, and details of present position, with names of three referees, to Secretary of Board, 117, Chesterton Road, Cambridge, by 15th April, 1957.

ALR MINISTRY require WORKERSLIP in

by 15th April, 1957.

AIR MINISTRY require WORKERS-UP in Quantities Division, London. Must be fully experienced and competent to work-up entire bills of quantities. Preference holders C. & G. (Quantities), O.N.C. or equivalent technical qualification. Salary range £660 at age 26 to £980, starting pay dependent on age, qualifications and experience. Pensionable and promotion prospects. 5-day week. Over 3 weeks' leave Applicants normally should be natural born British subjects. Write, stating age, qualifications and previous appointments, including type of work done, to A.A.242 London Appointments Officer, Ministry of Labour and National Service, 1-6, Tavistock Square, London, W.C.1, by 29th April, 1957. No original testimonials should be sent. Only candidates selected for interview will be advised.

be advised.

CITY ARCHITECT'S OFFICE, MANCHESTER Applications are invited for the following appointments on the permanent staff;—
(1) SENIOR ASSISTANT ARCHITECT. Salary: A.P.T. Grade V (£814 17s. 6d. to £994 5s. per annum.)

SENIOR ASSISTANT ARCHITECT. ry, A.P.T. Grade IV (£727 15s. to £907 2s. 6d.

per annum).

(3) ASSISTANT ARCHITECT or ARCHITECTURAL ASSISTANT. Salary: Basic Grade (£707 5s. to £861 per annum).

(4) SENIOR ASSISTANT STRUCTURAL ENGINEER. Salary: A.P.T. Grade IV (£727 15s. to £907 2s. 6d. per annum).

(5) STRUCTURAL ENGINEERING ASSISTANT. Salary: A.P.T. Grade I/II (£543 5s. to £961 17s. 6d. per annum).

(6) SENIOR ASSISTANT HEATING, VENTILATING and MECHANICAL ENGINEER. Salary: A.P.T. Grade IV (£727 15s. to £907 2s. 6d. per annum).

Salary: A.P.T. Grade IV (£727 15s. to £907 2s, 6d. per annum).

(7) SENIOR ASSISTANT ELECTRICAL ENGINEER. Salary: A.P.T. Grade IV (£727 15s. to £907 2s, 6d. per annum).

(8) ASSISTANT OUANTITY SURVEYOR or QUANTITY SURVEYOR SASSISTANT. Salary: Basic Grade (£707 5s. to £861 per annum).

Forms of application from City Architect, P.O. Box 488, Town Hall. Returnable by 12th April. 1957.

CITY OF SALISBURY
SOUTHERN RHODESIA
VACANCY-SENIOR ARCHITECT (£1,725×£50—£1,875 per annum).

Applicants should be Associates of the Royal Institute of British Architects, and have extensive experience in designing, supervision, and administrative work.

The Council will refund travelling expenses on the following basis:—

Person appointed—£102 in respect of sea passage from U.K. to port of disembarkation in Africa, plus first-class single rail fare to Salisbury.

Wife of person appointed—£66.
Children of person appointed, who are under the age of 16 years—first child £26 8s., remaining children £13 4s. each.

The successful applicant will be required to submit a satisfactory medical certificate, serve a probationary period of six months, and if thereafter confirmed in his appointment to join the Southern Rhodesia Local Authorities Joint Pension and Widow and Orphans' Fund. No allowances are payable, and entry will be at the minimum of the grade.

Unfurnished accommodation will be provided for a period of two years at the rental ruling from time to time.

Applications, stating age, place of birth, nationality, marital state, qualifications and experience, and earliest date duties could be commenced, together with names of three referees, should be sent by Air Mail to the City Architect, P.O. Box 582, Salisbury, Southern Rhodesia. 5744

METROPOLITAN BOROUGH OF FULHAM ASSISTANT ARCHITECT. A.P.T. III OR IV

METROPOLITAN BOROUGH OF FULHAM ASSISTANT ARCHITECT, A.P.T. III OR IV BOROUGH ARCHITECT'S AND HOUSING DEPARTMENT £686-£814 2s. 6d. or £757 15s.—£937 2s. 6d. p.a. including £30 p.a. London weighting, according to qualifications and experience.

The work will be primarily concerned with the layout and design of housing schemes, comprising multi-storey dwellings. Application form from Town Clerk, Town Hall, S.W.6. Closing date: 5th April.

STAFFORDSHIRE COUNTY COUNCIL

APPOINTMENT OF SENIOR PLANNING
ASSISTANT
Applications are invited for an appointment as a Senior Planning Assistant in the County Planning and Development Department, on A.P.T. Grades V-VI (£814 17s. 6d. to £1,107 per annum), the commencing salary to be according to qualifications and experience.
Applicants should be qualified Architects, and membership of the Town Planning Institute would be an advantage.
The person appointed will be mainly engaged on the preparation of layouts for new development and for redevelopment and civic design schemes.
Consideration will be given to the granting of financial assistance in appropriate cases towards removal expenses. Canvassing will disqualify.

Applicants should give details of age, educa.

qualify.

Applicants should give details of age, education, technical training, qualifications, present and previous appointments and experience, and the name of two persons to whom reference can be made. Applications, in which relationship to any member or senior officer of the County Council should be disclosed, should be sent to D. W. Riley, County Planning and Development Officer, 41a, Eastgate Street, Stafford, not later than 6th April, 1957.

T. H. EVANS.

Clerk of the County Council.

5713

CRAWLEY DEVELOPMENT CORPORATION require a LANDSCAPE ARCHITECT in the Chief Architect's department. Applicants should be experienced and be Fellows or Associates of the Institute of Landscape Architects (additional architectural and/or town planning qualifications an advantage). Salary A.P.T. VII to IX (£999—17405)

E1,405.

The successful applicant will be required to advise the Chief Architect on matters of landscape design, take charge of the landscape section, liaise with any consultants appointed, and be responsible for the design and supervision of large contracts. The work is varied and includes landscape treatment of classified roads, housing, industrial, afforestation schemes.

Contributory superannuation. Commencing

Contributory superannuation. Commencing salary according to ability and experience. Apply on forms from Chief Architect (Vacancy), Broadfield, Crawley, Sussex, by the 15th April, 1957.

C. A. C. TURNER.
Chief Executive.
5682

LANCASHIRE COUNTY COUNCIL
SECTIONAL PLANNING OFFICER, A.P.T.
Grade V (£814 178. 66.—£994 58.) required at
Divisional Planning Office, Wigan. Candidates
should be qualified architects, surveyors or
engineers; a planning qualification in addition
would be an advantage.
Experience in Town Map preparation and a
sound knowledge of Town and Country Planning
legislation are essential.
Applications, giving age, qualifications, present
appointment, experience, etc., and two referees,
to County Planning Officer, East Cliff County
Offices, Preston, by 8th April, 1957.

LONDON COUNTY COUNCIL

(1) LANDSCAPE ARCHITECT, and (2) LAND.

SCAPE ARCHITECTURAL ASSISTANTS required. Good Drawing Office experience in preparing working drawings and specifications, and supervision of work on site essential. Programme includes new parks, gardens and playing fields, ground reinstatement, land drainage, etc.

(3) ARCHITECTURAL ASSISTANT for Crystal Palace development, offering special opportunities for work on the contemporary design of park buildings.

buildings.

buildings.
Salaries within the range £606—£1,036 a year,
according to qualifications and experience.
Apply, giving brief particulars, to Chief Officer
of the Parks Department, Old County Hall,
Spring Gardens, S.W.I. (WHItchall 3121, ext.
5727

CITY OF WINCHESTER
CHIEF ASSISTANT ARCHITECT
Applications are invited from qualified Architects for the appointment of Chief Assistant Architect in the City Engineer's Department at a salary in accordance with Grade V of the A.P.T. Division of the National Scales (i.e., 2814 17s. 6d.—2994 5s.).
Candidates should be Corporate Members of the Royal Institute of British Architects, and have had previous experience in the design and preparation of plans and details for houses on Municipal Housing Estates, including the supervision of work under contract. The work envisaged will include infilling in redevelopment areas in addition to normal housing estate work.

The appointment is a permanent one, terminable on either side by a month's notice in writing, and the successful candidate will be directly responsible to the City Engineer. Consideration will be given to the provision of housing accommodation.

Applications, stating age, present salary, present and previous appointments, details of

accommodation.

Applications, stating age, present sala present and previous appointments, details training and experience, together with nan of three referees, should be addressed to City Engineer, Guildhall, Winchester, and sho be received by not later than first post Monday, 8th April, 1957.

B. H. McCALL.

R. H. McCALL, Town Clerk.

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Int

Guildhall, Winchester. 19th March, 1957.

BOROUGH OF STOCKTON-ON-TEES
ASSISTANT QUANTITY SURVEYOR
Applications are invited for the above appointment in the Borough Architect's Department.
Salary 4907 2s. 6d. per annum, maximum Grade
A.P.T. IV.
Candidates should have passed the Final

A.P.T. IV.
Candidates should have passed the Final
Examination of the R.I.C.S., or be of equivalent standard.

orms of application may be obtained from Borough Architect, 28, The Square, Stockton-lees, and must be returned to him by 5th ii.

on-Tees, and must be returned to him by 5th April.

Housing accommodation available if the successful applicant is marfied.

The department is responsible for all new building work for the Corporation, and the person appointed will be required for the first instalment of the Municipal Buildings, an extensive school building programme, the redevelopment of the Central Area of the Borough, and the construction of approximately 500 houses and flats per year and ancillary buildings.

JOHN B. HAWORTH.

JOHN B. HAWORTH, Town Clerk.

Barclays Bank Chambers, 49, High Street, Stockton-on-Tees.

STEVENAGE DEVELOPMENT CORPORATION

Applications are invited for the post of ASSIS-TANT LANDSCAPE ARCHITECT in the Chief Architect's Department on salary A.P.T. Grade IV (£728-£907), starting salary according to ex-

perience. Candidates should have passed the Final Examination I.L.A. and be experienced in the layout of open space in housing areas. Housing accommodation will be available in due course in an appropriate case. Applications, giving full details and names of two referees, to be sent to the Chief Administrative Officer, Aston House, near Stevenage, Herts., not later than Thursday, 4th April, 1957.

Applications are invited for the appointment of SENIOR ARCHITECTURAL ASSISTANT at a salary of £814 178. 6d., rising to £994 5s., plus London weighting (£30 per annum at age 26 years or over), in accordance with Grade A.P.T. V of the National Scheme of Salaries.

Applicants must be Associates of the Royal Institute of British Architects and have had siderable experience of local authority building projects of all types.

The Council is unable to assist with the provision of housing accommodation.

Forms of application and full details of the appointment can be obtained from the Borough Engineer and Surveyor, by whom completed applications must be received not later than Saturday, 6th April, 1957.

D. J. OSBQRNE.

D. J. OSBORNE. Clerk

Town Hall, Leyton, E.10. 18th March, 1957.

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LINDSEY COUNTY COUNCIL
PLANNING DEPARTMENT
Applications are invited for the following appointments:

(a) SENIOR ASSISTANT. A.P.T. Grade V (1514 178. 6d.—1994 5s.).

(b) ASSISTANT, A.P.T. Grade III (1509 178. 6d.—1591 178. 6d.).

All appointments at Headquarters, Lincoln. Qualifications for (a): A.R.I.B.A. or A.M.T.P.I. Preference will be given to candidates with architectural experience in dealing with redevelopment schemes, housing layout, and architectural control.

Candidates for (b) and (c) must have passed Intermediate Examination of T.P.I. and have experience in surveys for and preparation of Town Maps. Promotion from A.P.T. III to special grade in case of (b) will be dependent on officer passing T.P.I. final and having 5 years' experience.

Appointments (a) and (b) require officers to provide own cars for official journeys, for which an allowance will be paid at essential users' rate for cars not exceeding 10 h.p. or 1,199 c.c.

Superannuation and N.J.C. conditions of service as approved by the County Council. Canavassing will disqualify. Relationship to any member or senior officer of the Council to be disclosed in writing by applicants.

Applications, with particulars of age, training, experience and names of two referees, to County

Applications, with particulars of age, training, experience and names of two referees, to County Planning Officer, The Castle, Lincoln, not later than 8th April, 1957.

Applications are invited from men over 45 years of age for the post of PRINCIPAL of the National College of Arts, Lahore, West Pakistan, Salary: Rs. 1,500×100–2,000 p.m., plus overseas allowance of £30 p.m. Starting point according to qualifications and experience. 1R= 18, 5d.

18. 6d. Conditions: 5 years' contract, renewable. Free 1st class passages. Unfurnished house provided. Medical facilities. Summer vacations (2 months). Qualifications: Associate of the Royal College of Arts or equivalent. Considerable administrative and teaching experience. Eligibility: No restrictions in nationality or domicile, but good knowledge of English essential.

Application forms and further particulars from the Recruitment Officer, Education Division, Pakistan High Commission, 39, Lowndes Square, London, S.W.1.

THE MILK MARKETING BOARD require an ASSISTANT in their Architect's Department capable of preparing working drawings and details and able to make field surveys and surveys of existing buildings. Preference will be given to applicants who have already passed their Intermediate R.I.B.A. Examination. Applications in writing, stating age, previous experience, and salary required, to the Senior Staff Officer, Milk Marketing Board, Thames Ditton. Surrey.

Applications are invited for the post of SENIOR LECTURER IN ARCHITECTURE at Rangoon University, Burma, under the Technical Cooperation Scheme of the Colombo Plan. Will be required to teach Architecture up to University degree standard. Must be a qualified Architect, and should have at least 5 years' professional or teaching experience. Salary £1,750 per annum a year (subject to U.K. income tax), plus tax-free oversea allowance of £1,745 p.a. (married) or £913 p.a. (single), plus other allowances. Furnished accommodation provided. Duration two years. Contract with U.K. Government. For further information and application forms write Ministry of Labour and National Service (£.9), Almack House, King Street, London, S.W.1, quoting A12/BUR/TCS/92. 5680

THE UNIVERSITY OF SHEFFIELD
Applications are invited for the post of ARCHITECTURAL ASSISTANT on the staff of the
University Surveyor.
Applicants should be suitably qualified and
capable of preparing plans and details, and of
supervising conversion projects and other minor
works. The post is permanent. Commencing
salary £750.
Superannuation scheme and child allowance.
Applications, with names of two referees, to
The Bursar, University of Sheffield, Western
Bank, Sheffield, 10, by the 8th April, 1957.

THE SOUTH WAYER FLECTIMILITY FOALD.

THE SOUTH WALES ELECTRICITY BOARD require an ARCHITECTURAL DRAUGHTSMAN at the Head Office of the Board, St. Mellons, Cardiff.

Cardiff.
Salary: Schedule D. Grade 6 (£560-£680), of the N.J.B. Schedule.
Applications, stating age, present position and salary, qualifications, experience, and three referees, should be addressed to the Secretary (£stablishments Section), to arrive by 8th April, 1957. R. G. WILLIAMS, Secretary.

St. Mellons, Cardiff.

Architectural Appointments Vacant 4 lines or under, 7s. 6d.; each additional line, 2s.

H. WATKINS, GRAY & PARTNERS

*require qualified ASSISTANTS for interesting hospital work, pension scheme in operation.
Write or 'phone, 57, Catherine Place, 8.W.1.
Victoria 7761.

CROYDON. SENIOR and JUNIOR ASSISTANTS required for interesting and varied work. The former able to manage contracts and the latter with general office experience. Write in both cases giving age, experience and salary required, to George Lowe & Partner, F./A.R.I.B.A., 4, High Street, Croydon.

A RCHITECTURAL ASSISTANT required in West End office Should have some experience of general procedure, including site supervision, etc., in addition to good standard of draughtsmanship and building construction. State age, experience and salary required. Box 5511.

Perience and salary required. Box 5511.

A SISTANT ARCHITECTS AND SHOP-FITTING DRAUGHTSMEN. Co-operative Wholesale Society, Ltd., invite applications for the following appointments: (1) Assistant Architects capable of preparing working drawings from preliminary details. (2) Shopfitting Draughtsmen with experience in Shop Equipment and modernisation of Interiors.

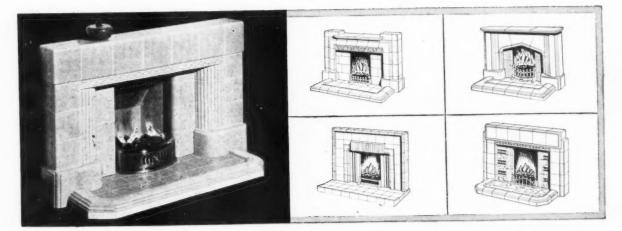
The posts are pensionable, subject to medical examination. Five-day week in operation. Applications, giving age, details of experience and salary required to W. JI Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99. Leman Street, London, E.1.

A SSISTANT required for office with town and country work. Stale experience and present salary. Excellent prospects for the right man. Box 5674.

TWO ARCHITECTURAL ASSISTANTS of Intermediate standard required for interesting work in varied practice. Shops, Offices, Flats and Housing schemes, etc. Salary by arrangement. George Watt, A.R.I.B.A.. 146, Mostyn Road, Merton Park, S.W.19. LIB 8181.

VACANCIES for ARCHITECTURAL ASSISTANTS, particularly Junior and Intermediate grades. Applicants with knowledge of commercial work and London experience an advantage. Varied practice, five-day week. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1. Holborn 5108.

Royal Venton Fireplaces



"Royal Venton," the household name for fine fireplaces! Fireplaces with a charm all of their own . . . excellently designed, beautifully made, with a name that through extensive national advertising, is in ever increasing public demand. Why not contact us now . . . for the full range and price list of "Royal Venton," the household name for fine fireplaces?



John Steventon and Sons Limited, Burslem, Stoke-on-Trent, Staffs. Tel: Stoke 84261/2, Grams: Steventon, Burslem.

ROYAL VENTON

A RCHITECTURAL ASSISTANT required, with about four to five years' office experience. Write or telephone giving full particulars, including age and salary, to Hasker & Hall, Architects, 13, Welbeck Street, W.1 (WELbeck 0061).

BUSY progressive office, Sheffield area, wide experience, require immediately JUNIOR and SENIOR ASSISTANTS. Intermediate or Final R.I.B.A. Good salary and bonus, together with permanency, for suitable applicant.—Please apply Roy 5595 apply Box 5595.

A RCHITECTS' Co-partnership require QUALI-FIED ASSISTANTS with experience. Write 44, Charlotte Street, W.I., or telephone Langham 5791.

FARMER & DARK have vacancies for an experienced ASSISTANT ARCHITECT and JUNIOR ASSISTANT ARCHITECT for industrial projects. Five-day week. Applications marked "Confidential" with full particulars and salary required to: Farmer & Dark Romney House, Tufton Street, Westminster, S.W.1.

A SSISTANT required for office with town and country work. State experience and present salary. Excellent prospects for the right man. J. H. Martindale & Son, Cathedral Chambers, Castle Street, Carlisle.

ANCHESTER & LODGE urgently require
MALE ASSISTANTS of all grades up to
2750 p.a. Five-day week and luncheon vouchers.
Ring Museum 0845 for appointment or write full
particulars, 10, Woburn Square, W.C.1. 5708

A RCHITECTURAL ASSISTANT required for general practice, chiefly domestic and agricultural work. Intermediate R.I.B.A. standard desirable. Applications from more senior men and women would be considered. Salary by arrangement. Smith-Woolley & Cartners, Collingham, Newark, Notts.

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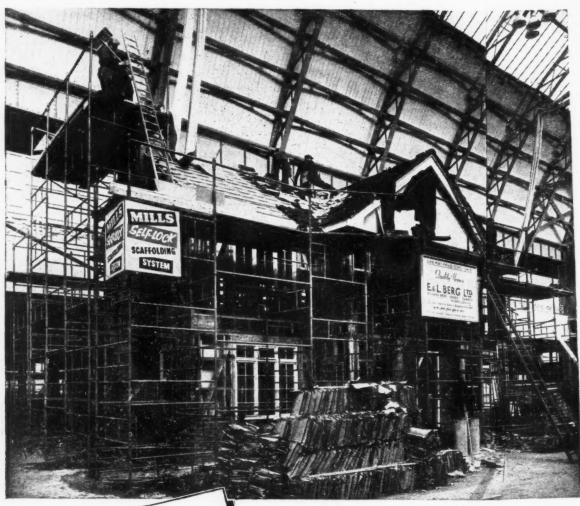
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