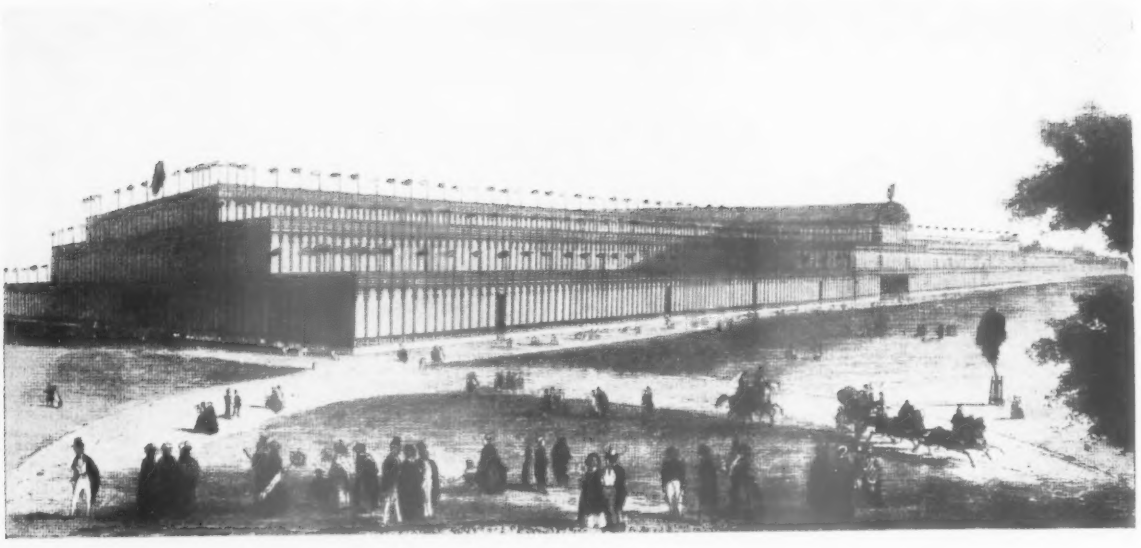
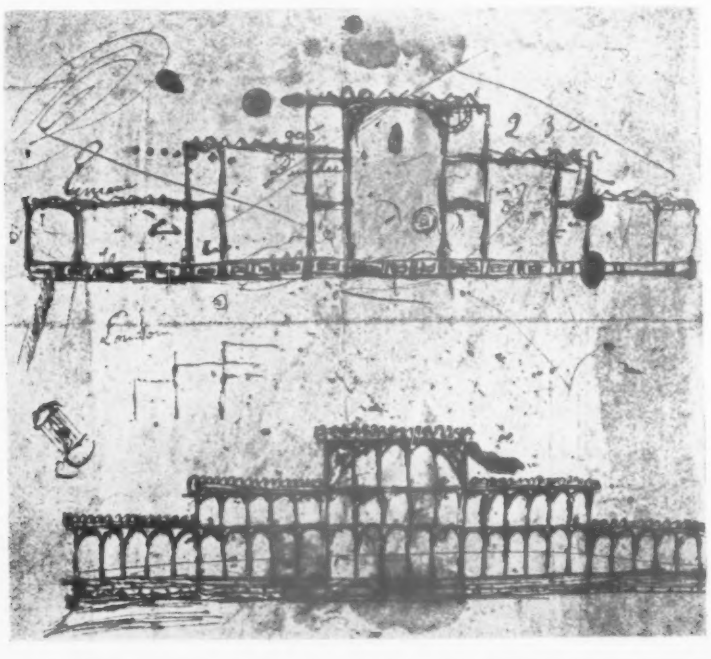
C R Y S T A L P A L A C E

AS we go to press we learn that the Crystal Palace has been almost completely destroyed by fire, little more than Brunel's two flanking water towers remaining. Banished, after the 1851 Exhibition, to the comparative obscurity of Sydenham Hill, the Palace has for years been South London's centre for exhibitions of all kinds, cage birds, baby shows, brass band competitions and, not least, Mr. Brock's annual autumn firework display.

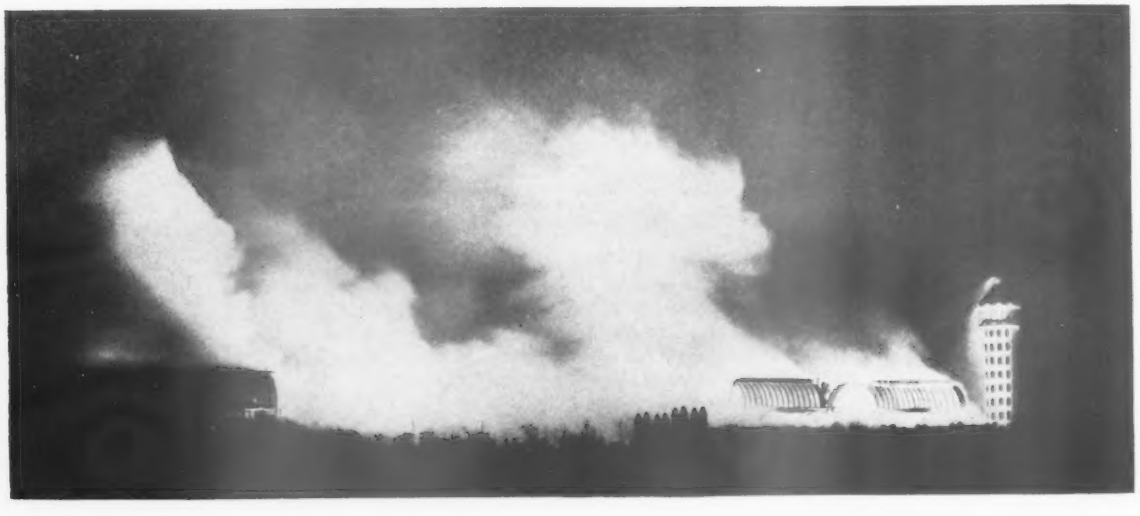
In spite of its age, the Palace was almost the only building in this country embodying all the fashionable catchwords of prefabrication, standardization and fitness for purpose, and it became, with Decimus Burton's work at Kew, the object of many pilgrimages by distinguished foreign architects, who could find nothing else in England worthy of admiration. This photograph is by F. R. Yerbury.





THREE STAGES

On this page are shown the three most important events in the life of the Crystal Palace. Above is the building as it appeared when first built for the Great International Exhibition in Hyde Park in 1851. To the left is the first sketch of the idea which finally resulted in that building, made by Joseph Paxton on a piece of blotting-paper at a Midland Railway board meeting at Derby in 1850. And below is the end of the major portion of the building during last Monday's fire.



A TOPICAL COMPETITION

THE last month has seen new powers given to the L.C.C. to regulate traffic access to new buildings, the introduction in the House of Commons of the Bill by which the Ministry of Transport is to assume entire responsibility for construction and upkeep of trunk roads, a report by the Chairman of the L.C.C. Housing and Town Planning Committee on how foreign solutions of the housing problem compare with our own, a most charmingly provocative paper read at the R.I.B.A. on the mistakes that have been made in re-housing, and a conference of the National Housing and Town Planning Council at Harrogate for which several very distinguished authorities prepared papers or memoranda. In short, town planning and its huge subordinate—but only just subordinate—problem of where to place and in what form to build new dwelling accommodation, may be said to be very much in the news.

Reading of these items amongst the numberless efforts that have been and are being made to regulate wisely the use of land, the thoughtful observer may be pardoned a feeling of despair.

No large section of opinion today puts forward with confidence the establishment of garden cities with their own industries and social centres; satellite towns with well-mixed economic classes of population, a community sense, and fast transport to work, seem no longer to be Utopias; and the satisfactory rehousing of slum-dwellers either in or outside cities still defies the financial resources either of the workers or of the State. Yet all the time road transport is cheapening and increasing, and in 1935, the last year for which complete figures are available, 316,365 new dwellings were built in England and Wales—making well over three million since the war. And it would take a brave person to say that the placing of the majority of these three million houses has not exemplified both a very wasteful use of land and a grave hindrance to any future solution of the road traffic problem.

Surveying these achievements of eighteen years' very strenuous effort, effort which has cost in State subsidies alone over £20,000,000, the future of town planning might well be said to look black. But it would be altogether too easy to lay the fault of the present state of affairs entirely upon the Ministry of Health. Town and territorial planning has now become a staggeringly complex science of persuasion and counter-persuasion, with the psychology of people of very limited outlook at the bottom, politics at the top, and a battle for private profit all the way up.

The coming of the cheap motor car and cheap transport generally has enabled a detached house in its own grounds (or the next best thing to it) to become a realizable ambition for countless families in this country, and has produced plenty of people ready to supply that demand. At the same time, the right to establish a factory or a business in just the place which happened to be thought of first is considered in some circles to be one of the primary rights of man.

To counteract the worst evils of these attitudes of mind and to persuade, and if necessary to coerce, the public into the wiser use of land in conformance with locally-prepared plans for future development, a colossal mechanism of Acts of Parliament, regulations and town-planning personnel has been built up. Nor can anyone deny that a great deal has been done by this mechanism in preventing the grosser misuses of land.

It is, however, very obvious that the town-planning control cannot stop at the regulation of the comparatively small and isolated developments which it is carrying out today, and it would appear that the Ministry of Health is confining its energies to the correlating and encouragement of existing town-planning powers rather than leading in the study of larger problems.

There are no doubt great difficulties in the way of the Ministry of Health making town planning into the fireside friend of the public in the way that the self-contained Post Office has made its services appreciated, but something of propaganda in the same form, stating the problems, the practicable remedies and their stages of progress, must soon be undertaken if territorial planning is ever to get the public opinion behind it which is necessary to make it effectual.

Because of its belief that the next few years must see the discussion of the really important problems of territorial planning, and the formulation of a solution on an adequate scale, the JOURNAL now advertises a competition in town-planning prophecy.

This competition, which has only been called an essay competition for want of a better description, is open to anyone, expert or otherwise, who cares to send in notes on the developments in territorial planning which he or she thinks may have taken place in fifty years' time. Contributions may take a gloomy or an optimistic view of the country's ability to solve one of the largest of all its problems; they may be serious or flippant (but not too flippant); and literary merit will not be considered of great consequence.

The JOURNAL hopes that all who take an interest in a problem which shows signs of becoming lost to sight under the mechanism created for its solution, will take part.

The Architects' Journal
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NOTES & TOPICS

THE GREAT DEPARTED

ON Tuesday morning a potent snobbery had sprung up overnight. The world was in two great classes—of those who had seen the end of the Crystal Palace, and of those who had not.

*

The most staid and reticent professional men were joined with secretaries in alpine hats in having a glitter in their eyes as they told most improbable athletic stories; of climbing Primrose Hill in pyjamas; of scrambling along railway lines, breaking police cordons and following fire engines.

*

Why, one is tempted to wonder at first, should the burning of the Crystal Palace have had so profound an effect (when the burning of the Alexandra Palace would provoke only a murmured : " Thank Heavens ")? The answer is almost immediate. The palace and its associations meant much to nearly every section of the public—though for the most widely different reasons. It was not a building so much as a storehouse of personal associations, a documentary film of industrial expansion in full blast, of British imperialism coming to its climax, of didactic art at its lowest and of its encouragement to all by representing " the common gardener's boy " who made good by hard work and careful financial habits.

*

To architects it had another inspiration : it emphasized the inevitable triumph of one vital idea over mere technique. For them there is a perpetual encouragement and a perpetual warning in Joseph Paxton's achievement : An encouragement of the success that can come by a concentration on what is to be done joined with a readiness to use any known means to do it; and a warning that a knowledge of one, or of twenty, building techniques, may end only in its possessor struggling to fit new problems to the techniques he knows, rather than looking about for a technique which fits his problem.

*

It is perhaps because of this triumphant idea that the Crystal Palace was considered the first great example of modern architecture and was visited by architects from all the world.

*

Something of all this seemed to be mixed with the glare on Sydenham Hill on Monday, when half a million Londoners watched one of the greatest bonfires ever. The huge wall painting of Woman's Emancipation, the restaurant with a list of each town's manufactures under its Gothic-lettered name, the elephant with its poor inside coming out, the plaster Venuses, all helped to make a glorious blaze.

*

And the end of the largest monument to a great idea in a great age, saddened the professional grandsons of the men who had so bitterly opposed its creation.

CRITICISM

Looking over some building papers of over fifty years ago, even the dullest among us must realize that architectural criticism was much healthier then than now. If a critic did not like a building then, he said so, and in no unmeasured terms.

*

Nowadays, for a variety of reasons, criticism of buildings is reduced to something less than an analysis of the building's advantages—the defects and weaknesses are ignored.

*

Not so our criticisms of the other Arts—the drama, painting, sculpture, literature, music. They, at any rate, retain a critical freedom—except in the new Germany, where regulations now reduce art criticism to the level of architectural criticism here—with perhaps one (?) improvement; no one under the age of thirty may practise as a critic.

*

Without, I may add, any safeguards to ensure that age has assimilated knowledge by experience, or has even been exposed to experience.

IDEAS FROM ULSTER

Lord Charlemont, speaking at the dinner of the Royal Society of Ulster Architects, referred first to his own experience as an architect forty years ago (a thrilling confession for a Minister of Education), and then suggested to Ulstermen a policy of strong architectural action.

*

He advocated more competitions, especially to discover new talent, and then went on to recommend the Society itself to organize paper competitions for the sole purpose of encouraging the imaginative handling of solutions.

*

We might even have more of that sort in England, especially for municipal office schemes.

" TOWN PLANNING "

At the same dinner it was said that Belfast is fast becoming " Town-planning-minded."

*

That is the unfortunate stage most of our towns have reached. Personally I hope that before much innocent harm is done they will become Regional-planning-minded and follow that at a decently short interval by becoming conscious of the need for National Planning.

*

True, someone has to look after the details—but did you ever hear of a large business enterprise succeeding through

Joseph Paxton in 1851. From a portrait by Octavius Oakley.

detailed effort unrelated to a big idea? Except, of course, through years of muddle and mistake which seem somewhat unnecessary today.

EXTENSIONS?

A party of friends from the provinces went over the R.I.B.A. premises last week, thinking to see over the building. They saw some of it and with mixed feelings realized that the place was so actively in use that a full round of the rooms was impossible.

*

There were two separate public exhibitions on the main floor, a full-dress stage rehearsal in the meeting hall, every committee room and the council room were in use, every table in the library and periodicals' gallery had its reader, and Sir Ian MacAlister and all his senior assistants had appointments lasting them for the rest of the day.

*

And the winter season has only just begun.

PARIS INFLUENCE

Work appears to be well advanced for the opening of the 1937 Paris Exhibition of, I may add, "Art et Techniques," especially in relation to modern life.

*

Light, it is whispered, is to be the unifying theme of the exhibition. All Paris is to be floodlit, and not content with buildings, the floods are to be turned on to all manner of devices prepared or released for light's reception—water sprays, smoke clouds, metallic jets, objects floating in the air and on water.

*

We are just getting over some of the doubtful mannerisms left by the 1925 Exhibition; all the worst of temporary exhibition decoration has an unfortunate habit of perpetuating itself in commercial architecture before even the exhibition is over.

*

The 1925 style of ornament started in plaster and ceramic—it is still with us in the less permanent, but more permanently used fancy metals, carved in wood, printed on wallpaper and pressed into lighting fittings.

*

Paris, 1937, will no doubt replace Paris, 1925, in our shops, cinemas, restaurants, houses (or should I say residences?) and in our public rooms travelling across various oceans—but what will Paris, 1937, be like?

*

Or will the newest new art confine itself entirely to lighting technique?

AVOIDING SLOUGHS

"The Team Valley Trading Estate" sounds a dull title to those of us who remember the jumbled shacks at Slough, but in the hands of Professor Holford it is to have the real start which planning can give.

*

The preliminary schemes suggest planning in the broad sense of the word—not merely roads in the right place related to sites to be let for factory purposes.

*

About midway between the Great North Road and the L.N.E.R. main line, the scheme is planned about a centre point embracing the estate offices, restaurant, committee rooms, banks, post office, hotel, garages, shops and plenty of open space.

*

From the human point of view the scheme seems to be a sound advance upon any previous layout of the kind. Each group of factories is to have a welfare and social centre—and trees are to be planted as part of the planning.

*

Fifteen sites are already taken, ten more almost so, and over a hundred are in the offing. The scheme deserves to succeed.

ARCHITECT-AUTHORS

The Hull Literary Club recently listened to a talk by Mr. Dudley Harbron on the fascinating subject of "The Architect as Author." I remember Mr. Harbron chiefly as the author of "Amphion, or the Nineteenth Century," and more recently for his contributions to "The Architectural Review," under the general title of "Minor Masters of the XIXth Century."

*

He pointed out at Hull that style-imposed-upon-architecture is now, as in the past, very often the result of architectural authorship. Pugin, Scott and Street were all excellent prose propagandists and gave support to the misuse of Gothic, much as the writings of Corbusier have led to indifferent modernism by lesser architects.

ASTRAGAL.

The series entitled Working Details will be omitted during publication of the articles on shops (the second of which is printed on pages 779-782) and will afterwards be continued.

NEWS

POINTS FROM THIS ISSUE

KING GEORGE MEMORIAL

The committee of the King George National Memorial Fund has sent invitations to an architect and a sculptor asking them if they are willing to undertake the design of the memorial statue to be erected facing the Houses of Parliament.

It is understood, states the *Evening Standard*, that the sculptor is Sir William Reid Dick, R.A., President of the Royal Society of British Sculptors, and the architect is Sir Giles Gilbert Scott, R.A.

FANTASTIC EXPERIMENTS OF THE YOUNGER GENERATION

"As one of the Elder Brethren among architects I have sometimes felt it my duty to say hard things about the more fantastic experiments of the younger generation. They have done well to throw overboard a lot of useless lumber, but in their zeal they are going far to scuttle the ship, and this is what more experienced men are trying to prevent," said Sir Reginald Blomfield at a dinner of the Haberdasher's Company last week.

"The ship is still a very good ship, properly handled," he continued. "I still have the faith that out of all this welter there will emerge some day an architecture which will be a true expression of the life and civilization of the people of this country."

HOUSING

Sir Kingsley Wood, the Minister of Health, in an address to the National Housing and Town Planning Conference at Harrogate last Friday (which was read by Sir George Chrystal, the Permanent Secretary of the Ministry of Health) said progress with new house building continued unabated. Some 3,145,555 new houses had been built in this country since the War, and in particular recent figures showed an increased output of houses for letting. During the past year 120,000 houses had been built for letting, of which half had been built by the local authorities and half by private enterprise. In replacement of unfit houses and the clearance of the slums over 120,000 houses had already been completed—of which about half had been completed during the last year—50,000 more were under construction and 6,000 were being completed month by month. Referring to the prospects of future house building, Sir Kingsley Wood said that, in order to finish the present slum clearance campaign and to abate overcrowding according to the present standard alone, it would be necessary for local authorities to build nearly 400,000 houses.

THE ARCHITECTS' DIARY

Thursday, December 3

SOCIETY OF ANTIQUARIES, *Burlington House, W.1.* "*Some Medieval Buildings in Malta.*" *By G. L. M. Chauson.* 8.30 *p.m.*

R.I.B.A., 66 *Portland Place, W.1. Exhibition of the designs for Street Decorations for the Coronation of King Edward VIII, prepared by students of Schools of Architecture recognized for exemption from the R.I.B.A. Examinations. Until Wednesday, December 9, 1936, between the hours of 10 a.m. and 8 p.m. (Saturday, December 5, 10 a.m. and 5 p.m.).*

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. Exhibition of photographs taken by members on the A.A. Excursion to Czecho-Slovakia. Until December* 12.

BUILDING CENTRE, 158 *New Bond Street, W.1. Exhibition of the designs submitted in the Timber Development Association's competition for designs for a tourist camp.*

AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE, 29 *Lincoln's Inn Fields, W.C.2.* "*Estate Planning in Relation to Town Planning.*" *By Dr. T. Adams.* 7 *p.m.*

ARCHITECTURE CLUB. *At the Florence Restaurant, W.1. Supper Discussion on* "*Coronation Decorations.*" 7.30 *p.m.*

Friday, December 4

INSTITUTION OF HEATING AND VENTILATING ENGINEERS. *East Midlands Branch. At the Royal Station Hotel, Sheffield.* "*Stainless Steel.*" *By G. E. Wolstenholme.* 7.15 *p.m. Liverpool and District Branch. At the Royal Liver Buildings, Pier Head, Liverpool.* "*Heating and Ventilating Plant Adjustment and Maintenance.*" *By H. J. Brown.* 7 *p.m.*

Tuesday, December 8

LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY. *At the Bishopsgate Institute, E.C.2.* "*The Story of Whitehall.*" *By Percy W. Lovell.* 6.30 *p.m.*

BLUE CIRCLE DRAMATIC SOCIETY. *At the Arts Theatre Club, Great Newport Street, W.C.2. Presentation of* "*Street Alms,*" *a play by Jay Mallory, in aid of the Builders' Clerks' Benevolent Institution. Also, December* 9 *and* 10 *at* 8.30 *p.m.*

REINFORCED CONCRETE ASSOCIATION. *At St. Ermin's Restaurant, Broadway, S.W.1. Informal Dinner at* 7 *p.m., followed by a talk on* "*Domestic Architecture in Reinforced Concrete.*" *By Basil Ward.*

Wednesday, December 9

LONDON SOCIETY. *Visit to Foyle's Bookshops, 121 Charing Cross Road, W.C.2.* 2.45 *p.m.*

ROYAL SOCIETY OF ARTS, *John Street, Adelphi, W.C.2.* "*Artificial Resins.*" *By H. V. Potter.* 8 *p.m.*

PRIVATE ARCHITECT FOR NEW BATTERSEA SCHOOL

A recommendation that Mr. T. S. Tait be invited to design and supervise the erection of a new senior school on a site in Linda Street, Battersea, was agreed to by the L.C.C. Education Committee last week.

The Council had decided that, as an experiment, an architect in private practice should be employed to design and supervise the erection of a senior elementary school to be built by the Council, on the understanding that expenditure in excess of the normal was not involved.

L.C.C. HOUSING ACCOUNTS FOR 1935-36

The Housing Accounts of the L.C.C. for the year 1935-36 show that the Council's total capital expenditure on housing up to March 31 last amounted to approximately £47,670,000 and the net debt outstanding on that date was about £43,046,000. The advances made by the Council under the Housing Acts and Small Dwellings Acquisition Acts to purchasers of their own houses amounted to approximately £5,190,000, the balance of advances outstanding being about £1,859,000 on March 31. The year's working showed a net deficiency of £1,307,570 on revenue account of which approximately £1,051,000 is in respect of the Council's schemes and £256,600 in respect of assistance to Metropolitan Borough Councils and private enterprise, a net increase of £110,560 over the corresponding figure for the previous year. Of this deficiency approximately £849,000 is borne by national funds, £450,000 by the Council's rates and £8,600 by contributions from Metropolitan Borough Councils.

LIVERPOOL ARCHITECTURAL SOCIETY

On November 20, before the University of Liverpool Architectural Society, Mr. Peter Shepheard, B.ARCH., opened a discussion on housing with a short descriptive lecture on the subject, illustrated by various examples, both English and Continental.

Housing, he said, occupied the greater part of architecture, and he continued by tracing the development of the domestic problem from the time of the Industrial revolution, through the period of extensive bye-law development to the present day, citing Port Sunlight as being one of the first really successful attempts to raise the standard of industrial housing. The great trouble in the past, he said, had been the complete disregard for aspect when a development scheme had been planned. The consideration of aspect was most necessary, and even the great rehousing and clearance schemes of the past few years had failed to take notice of its importance. German development in housing was in advance of ours, partly due to the establishment of a Research Council, a course which might well be adopted in this country, but even the workers' flats in Vienna, although experimental, were not up to the best standards of to-day, being built round courtyards, with houses lining the streets. The central area scheme for Liverpool was good, he continued, because a greater part of it was planned with due regard to aspect, being in advance of previous schemes in the City where it had not been considered to any great extent.

Summing up, Mr. Shepheard said that he considered that whether the planning in question involved a garden city or a scheme of flats the layout should be developed in relation to the rest of the town—a scheme only possible under a system of national planning, and which certainly seemed to be impossible under present social conditions.

In the debate that followed most of the

points raised by the speakers dealt at length with this problem in relation to rents and amenities provided, the general feeling being that it was impossible to provide such things as lifts in large blocks of flats without affecting the rent which, in most cases, was a very heavy charge upon the average income of the tenants and proved, as Mr. C. Hutton said in proposing a vote of thanks to Mr. Shepheard, that architecture and social conditions were very closely interlocked.

COMPETITION NEWS

ARCHITECT FOR NEW ST. GEORGE'S OPEN COMPETITION.

At the last meeting of the Plans Committee for the rebuilding of St. George's Hospital it was resolved to recommend to the House Committee that an open competition be held to decide who should be appointed as architect for the new hospital.

R. I. B. A.

INFORMAL GENERAL MEETINGS

The Junior Members' Committee of the R.I.B.A. have arranged for a series of four Informal General Meetings to be held during the Session on the following dates :—

Wednesday, December 9, 1936.
Wednesday, February 10, 1937.
Wednesday, March 10, 1937.
Wednesday, May 5, 1937.

The first meeting, to be held on December 9, at 6.15 p.m., will be devoted to a discussion on "The Architect in Relation to the Arts" and the second meeting will be devoted to a discussion on "The Architect in Relation to Science."

Mr. Serge Chermayeff (F) and Mr. L. Moholy-Nagy have undertaken to open the discussion on "The Architect in Relation to the Arts," and Mr. Herbert Read, D.S.O., M.C., D.LITT. (Hon. Leeds), M.A. (Edin.), has agreed to close the meeting by summing up the discussion.

GENERAL MEETING

Following are some extracts from the paper entitled "Architectural and Planning Developments at the Seaside," read by Mr. Wesley Dougill, M.A., A.R.I.B.A., at a general meeting of the Institute on Monday last.

IN recent years there has been a vast expansion in the use of the coasts of both this and other countries. The conditions operating towards this have been much the same in all of them. Longer periods for leisure, the emergence of the motoring and open-air age, the establishment of the seaside holiday as a national institution, and the universal recognition of the fact that the seaside is a natural outlet and a recreational and residential centre of the first order, are but a few of those conditions.

Cumulatively they have resulted, in this country, in the creation of a number of new resorts like Frinton, Saltdean, Goring and Peacehaven, in extensive growth at the established resorts, and in the exploitation for houses of the previously open land between the latter. The numbers of seaside residents, visitors and trippers have grown to figures that would have appeared fabulous even a few years ago. Many of the individual resorts now receive their two or three million visitors a season; at a few of them they total seven or eight million.

The national movement to the sea is not merely a mode. With no part of the country more than 75 miles from the sea, with continually improving means of access, and with the existence, in a much intensified form, of all the conditions which have hitherto promoted the

THE LIBRARY OF PLANNED INFORMATION

WHEN, in the Autumn of 1933 this JOURNAL started the Library of Planned Information, as a successor to the serial publication of the Information Book of Sir John Burnet, Tait and Lorne, it was decided, for continuity's sake, that the original Information Sheet form should be adhered to as closely as possible.

Information presented in the form of line drawings and explanatory text is obviously all that is necessary when dealing with general methods of building and for most types of equipment, but there remains the important question of finishes and their colour. It goes without saying that the characteristics, composition and methods of employing these finishes should be described, but there is always the important question : "What do they look like ?" So far, we have not attempted to answer this question in the sheets themselves, and have confined them to their original single leaf form without colour samples or illustrations, but it would seem that the time has arrived when colour should be allowed if, and only if, the value of the sheet is enhanced by its use.

The first sheet to be published under this new arrangement is included in this week's issue, and it will be seen that the colour samples are on an additional leaf, which is intended to supplement the standard form of Information Sheet, to which it is attached.

Future colour supplements will appear from time to time, whenever the nature of product illustrated demands their inclusion. This development is part of a settled policy to add to the value of the sheets as units of reference, and to make the information given in them as complete as possible.

MISSING SHEETS

From time to time we receive requests for single sheets to make up existing sets or to replace losses. In the majority of cases, single sheets can be supplied for a nominal charge of 1½d. each, on application to the Publishers, 9 Queen Anne's Gate, Westminster, S.W.1.

It is, of course, our practice to reprint in Spirax-bound volume form at the end of each year all the sheets which have appeared during that year. Volume I of this series contains all the sheets in the Library up to the end of 1934, Volume II those of 1935, and Volume III, containing the current year's sheets, will be published in the early part of next year. In this way we ensure that any of our readers can always have a complete set of all the Information Sheets which have been published.

movement, there is every possible indication that it has not only come to stay, but that it will develop very considerably in the future.

It will help us to understand the problems of today if I give a brief historic survey of the English resorts. The movement to the sea has come about in three stages. The first began in 1750, when Dr. Russell published his treatise on the benefits to be derived from staying at the seaside, from bathing in the sea, and even from drinking sea water. Large numbers of people followed him to Brighton, others went to Eastbourne, Margate, Weymouth and a few other places. Elegant and dignified terraces, squares, crescents and parades were the main visible results of this early invasion. A number of the buildings, mostly in stone or stucco, still remain as monuments to the good architectural taste of the period.

Growing Industrialism

The second stage followed the Industrial Revolution. Growing industrialism and its effects made a change of environment and living during at least a week or two in the year necessary for the workers. The seaside, now made accessible by the railway and steamship, supplied that change. The older resorts were extended and new ones built. At practically all of them the railway station was the sole traffic focus. The visitors arrived at the station, proceeded as quickly as possible to the front and stayed there.

The third and final stage came with the introduction of the motor-car on the roads in the early years of this century. Great as was the impact on the seaside of each of the two previous invasions, that of the motor has been immensely greater. The increased mobility on the roads has necessitated a complete re-orientation of planning in the resorts, and, when related to other circumstances, to a readjustment of ideas equipment. Motor traffic, which is doubling itself every eleven or twelve years, now percolates into every part of the town, the esplanades and promenades have in many cases become main arteries, and, although the railway station still functions, it is only one of many traffic centres. Because of their particular holiday character the resorts have experienced the effects of increased motoring to a far higher degree than have the inland towns, and their planning problems are correspondingly greater.

Eastbourne, Bournemouth, Southport, Hastings, Folkestone, Llandudno and Skegness enjoyed the advantages of a planned foundation, and Clacton is able to claim the distinction of having grown as a resort *ab initio*. With these exceptions, and, perhaps, one or two others, the resorts were not planned, and none of them could foresee the tremendous demands that were going to be made on them.

Royal Pavilion, Brighton

I have already mentioned the elegant terraces, crescents and so on of the eighteenth century. As in the inland towns this type of architecture was largely abandoned at the seaside in the following one, and nondescript styles, often in brick, were adopted. One building, the Royal Pavilion at Brighton, however, continued to have a great influence on the designs of entertainment and similar buildings, even down to the present day. Built between 1788 and 1818, at a cost of a million pounds, the Pavilion gave a Royal cachet to the holiday resorts up and down the coast. Whilst there is much to be said, and has been said, in favour of this building, of its novelty, its appeal to the imagination and its homogeneity, very little argument can be advanced in defence of the later shoddy parodies of it, or of the many crude copies of castles and "period" buildings which competed with them for public favour. They represent the Englishman's clumsy attempts to infuse playfulness and gaiety into his buildings.

In England what has been the part played by the planning and architectural professions in the immense developments of the last thirty years? It must be confessed there has been very little organized effort, in spite of the movement to the sea having become one of the most important phases in our national life, concerning, as it does, practically every person in the country. Our part has been largely that of laymen. As individuals bent on a holiday we have criticized the confused planning and traffic congestion, the unsatisfactory hotels and boarding-houses, and the untidy fronts and flanks of the resorts.

Whilst I do not suggest that these criticisms have been unsupported by fact, or that all or even most of the resorts have done all they could to see that the grounds for them were removed, I do submit that many critics have overlooked important extenuating circumstances. Let us remember that scarcely a single resort was designed as such, that the new traffic and other demands came with almost bewildering suddenness, that holiday resorts are primarily business concerns whose growth must, in large measure, follow a public demand which is continually changing, and that many of the buildings are today serving purposes entirely different from those they were designed for.

It is difficult, however, to find an answer to three of the main criticisms. First, the too-great respect that has been paid to the catalogue designs of bandstands, seats and lamps; secondly, the over-artificiality which is so prevalent; and thirdly the lack of order on the fronts. In almost every case this disorder can be ascribed to the absence of a comprehensive plan, and therefore of a policy. The shelters and other features have been added as immediate circumstances and requirements dictated, without due consideration for the ultimate whole. I doubt whether there is on the English coast a single resort that is not encumbered with features which are now obstructing proper development of the front.

Crowd Psychology

The planning and building of seaside resorts necessitate a thorough knowledge of crowd psychology, and this can only be acquired by long and continuous study on the actual sites. It is essential to know how the residents, visitors and trippers react to varying climatic and other conditions, to know their likes and dislikes, and to respect them as far as reasonably possible in the layouts and buildings. One of the many proofs of this is to be seen in the way all the trippers and many of the visitors will crowd to that part of the front they see or can reach first, and will stay there. A second is the way they will lavish their patronage only on the shops that are adjacent to the front. Holiday-makers are notoriously lazy. A third proof is the way they will always avoid wind, or even a slight breeze, when sitting.

It may be argued that we should not pamper them, that we should, as planners and architects, direct them as to how they should spend their precious two or three weeks' holiday. It is possible, by scientific and well-considered planning, to go some distance towards this in certain directions, but generally not very far. Resorts, which must keep their rates at such a reasonable level that the permanent residents will stay and others be attracted, cannot afford to spend large sums of money on experiments to ascertain how far their patrons can be enforced into methods and habits which they have hitherto resisted. It is essential to remember that most of their habits, likes and dislikes are the result of national characteristics and climatic conditions, and of their state of health which, particularly at the beginning of the holidays, is seldom robust.

In view of the highly varied desires and wants of residents, visitors and trippers, the utmost variety of resort and recreational and other facilities is a primary need today. On the 1,800 miles of English coast there is room for every type—large, small, natural, artificial, the resort for the million, and the fishing village—all of them should have their place. To attempt to dictate, as many people would, that all of them should be alike because they themselves prefer a particular type, is like trying to dictate to the public whether they should go to a variety show or to a play by Shakespeare. Decency, combined with imagination, in planning and buildings is the only common denominator possible.

Yet there is a very great danger of the resorts losing their present distinctiveness by the acquisition of artificial features which are becoming common to most of them, and by the elimination of those characteristics which give them their special individuality. To meet that danger it is necessary for each resort to be dealt with entirely as an independent unit, governed by its geographical position, the nature of its site and sea-front, and its present planning and special functions, rather than as a reflection of other resorts.

The Problems

Time will not allow me to deal here with the national implications in the points I have just made, nor with the difficult problems that have arisen in the areas between the resorts. Nor can I discuss, except very briefly, the problems arising from the shortness of the holiday season, which, in most places, results in hopeless congestion during seven or eight weeks and empty towns for the long remainder of the year. The climate must be accepted. Palliatives, like spreading out the school holidays, music festivals, and so on, may or may not be resorted to. I believe that the most effective way would be the provision of more and better indoor and sheltered recreational and amusement facilities, so as to render the resorts more independent of the weather, and by the stimulation of industries, which need not in any way conflict with the holiday character of the towns. In some cases, an all-the-year season is coming automatically, through the increasing use of the resorts for permanent residence. Brighton, amongst others, is far advanced in this process, which must always be kept in mind.

Seaside planning and buildings need a very different technique from that applicable to inland towns. First, resorts are in most cases semi-circular on plan, with the sea, which is the dominant attraction and which governs the planning and zoning, as the terminal or base-line feature. Secondly, in addition to providing for the requirements of permanent residents, who need towns that are fit to live in, one has to cater for visitors who double or treble the normal population, and for an influx of trippers at holidays and week-ends; in some of the resorts these number up to 600,000 a day. The three groups all have their particular requirements, many of them of a conflicting nature. The problem here is to reconcile as far as possible each set of requirements with the others and to arrive at a proper balance. In the past, the resident has usually suffered at the expense of the visitors and trippers. Thirdly, there is the abnormal amount of traffic at holiday times. This produces requirements for 'bus stations, car parks, traffic distribution and control, far in excess of those in inland towns. Finally, there is the fact that the hotels, restaurants, entertainment buildings and other places of public resort are paramount, some of them having to be temporary or semi-temporary in character until the demand justifies permanent buildings.

Stocktaking

A combination of circumstances seems to have made this the psychological moment for the resorts to take stock of their resources, to visualize their ultimate objectives, and to make sure, by comprehensive plans, prepared by planners in collaboration with the engineers, who have very difficult problems of their own to deal with, that the schemes are not only the best of their kind, but also that each item in them will contribute something to a satisfactory whole. First, there are the various Planning Acts, the Slum Clearance Act and other legislative measures that are facilitating planning and replanning; second, the fact that large numbers of buildings in the resorts are now out-moded and must be replaced by modern structures if the resorts are to meet the intense competition of other English and also foreign resorts; third, the current drive by the Government to improve the physical health of the people, a movement in which the coast must inevitably participate; and, finally, the new architecture and improved building science and materials, which have opened up a new and vast range of imaginative possibilities.

I believe very strongly that the coastal resorts have a special rôle to play in addition to being holiday and recreative centres, they are the country's exhibition places. Millions of people visit them yearly, at a time when they have ample leisure to contemplate whatever they see, and when their minds are particularly receptive of ideas. By having the most imaginative layouts and buildings possible today, they would not only provide themselves with invaluable attractions and with the most potent incentives for the public to patronize them, but they would also exert an incalculable influence on planning and architecture throughout the country. By helping themselves, they would help the country. One of the greatest dangers today is the equipping of the resorts with layouts and buildings which are commonplace and stereotyped in design. They represent wasted opportunities, the loss of potential assets. Two months ago, I visited the Town Hall at Stockholm. On the morning of my visit, groups of 360, 60 and 30 visitors were being conducted round, in addition to the large numbers of independent visitors. This is ten or more years after the building was completed. Its comparative novelty, its departure from stereotyped design, and its fine imaginative quality, have made it one of the greatest magnets in Sweden, for both professional and lay people, Swedes and foreigners.

The resorts will be playing their proper rôle when the layouts, civic and entertainment buildings, shelters and general equipment are conceived on these lines.

FIFTY YEARS ON

As the practice of town-planning has developed in Britain, it is seen by thoughtful people to have become a more and more complex mechanism for putting into effect multitudinous small regulations to remedy small abuses.

The original aim and definition of town planning was the planning and guiding of the use of all the surface of Britain in order that the business of living should be carried on as easily, and in surroundings as suitable, as it was possible to achieve by human forethought.

It was no doubt necessary for this territorial guidance to begin first with the small things which could be achieved within a reasonable period of time; nor can it be denied that town-planning regulations have remedied a considerable volume of small abuses of the public's best interests and prevented many more.

But recently the ends, towards which the increasing complexity of petty regulations is supposed to be the means, have been formulated less and less frequently by those in authority in town planning, while at the same time it appears that an entirely unwarranted faith is being placed in the solving of grave problems by measures of small local restrictions.

In the last few weeks this change in national town-planning policy has been emphasized by two events: the Commissioner for Special Areas has been the first person in a high position to emphasize the need for preventing the further growth of London; and the Minister of Health has ordered the L.C.C. to prevent traffic congestion in London by regulating access to individual buildings.

Granted the variety of the forces at work, the complications set up by their interplay, and the profound difficulty of finding a solution, the fact remains that a solution will have to be found in the course of the next fifty years to the problems raised by the exploitation of modern scientific knowledge by unregulated enterprise. Some of our readers, we submit, have thought long and laboriously upon this problem. We announce, therefore, a competition as a means of inducing those who, in the ordinary way, are not tempted to write, to set down their reflections.

The competitor is asked to imagine that he is writing fifty years hence, in 1987, with a full knowledge of the town and territorial planning moves that have been made in the interim; the idea being that his description, whatever form it takes, should acquaint the reader with what has and what has not been done to clear up the existing chaos during fifty years, and what the outcome of those moves (if any) is.

The competitor is at liberty to regard his notes as an essay in constructive planning or in prophecy: he may be serious, satirical or funny.

The prizes will go to the competitors whose contributions, in the opinion of the editor, make the most original and illuminating reflections on the issue under discussion.

CHRISTMAS COMPETITION

for an essay in town and territorial planning prophecy; the time of action being the year 1987. In fuller explanation of the object of the competition the following examples are put forward from the multitude obviously available:

(1) *Part of the diary of an American visitor describing a holiday journey along a Trunk Road from London to Carlisle.*

(2) *A letter from a young woman to her best friend after her first three days' sight-seeing in London.*

(3) *An assessor's report on an architectural competition for a social centre at Manchester.*

(4) *Preliminary notes for an expert's report on the territorial planning of South Durham after a day's general survey from the air.*

The time of action of all the above examples to be supposed to be in the year 1987.

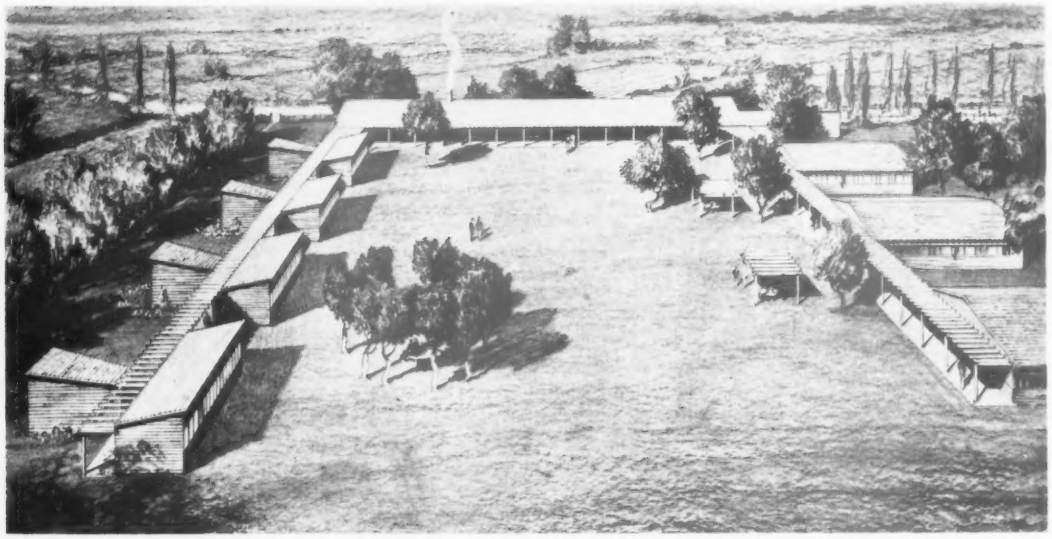
With a view to stimulating the literary ambitions of competitors, the JOURNAL offers a FIRST PRIZE of £20, a SECOND PRIZE of £10, and a THIRD PRIZE of £5 for the three essays judged to be the best in order of merit.

Essays should not exceed 3,000 words in length, should be typed on one side only of quarto paper, and must reach the JOURNAL on or before January 1, 1937, endorsed on the envelope "Essay Competition."

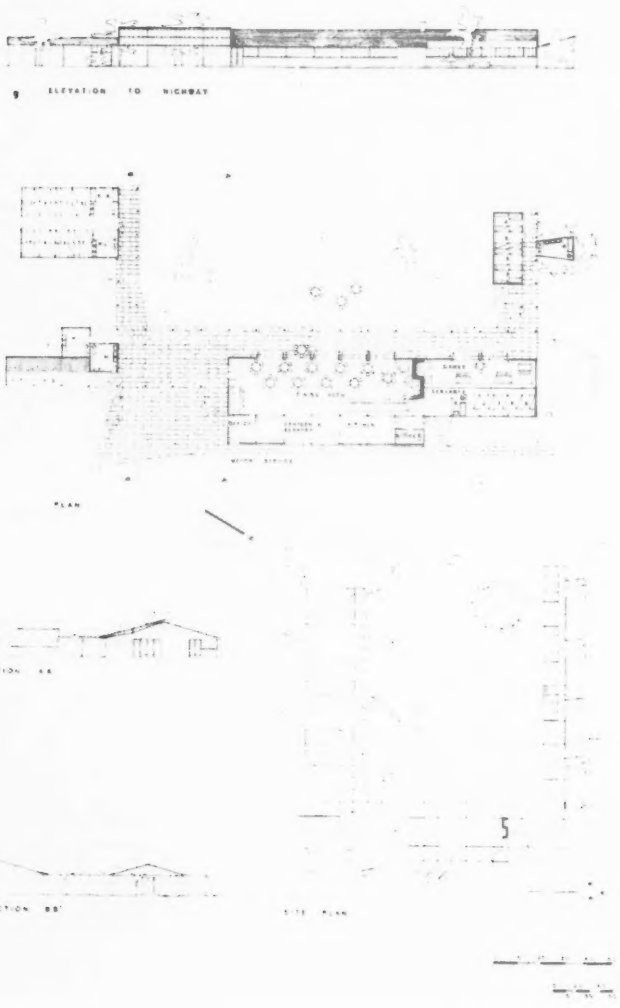
Each entry should have a pseudonym and the address of the competitor typed on the last page of the essay, the competitor's name being enclosed in a smaller sealed envelope having the pseudonym chosen clearly typed on the outside.

The Editor's decision will be final concerning the awards made, and no questions will be answered.

T.D.A. TOURIST CAMP COMPETITION



Perspective of the winning design.



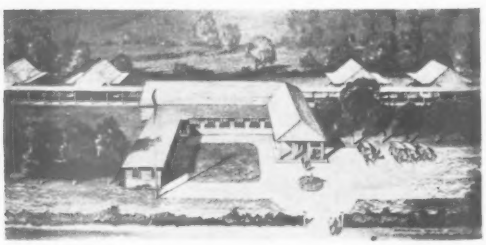
The three prizes offered by the Timber Development Association in the Competition for a tourist camp, have been awarded as follows :—

Design placed first (£150) : R. J. Spence-Sales, B.A., and J. Bland, A.R.I.B.A., of London. Design placed second (£50) : Harold Wharfe, of Keighley. Design placed third (£25) : Alex. E. Aikman, A.R.I.B.A., and H. A. J. Darlow, of London. Three "Special Mention" awards of £10 each to the following : John A. Cameron, of London ; Charles K. Slade, of Beaconsfield, and Fred. Lasserre, of London. The Illustrations show :

Above, perspective of the design placed second. By Harold Wharfe.

Left, main elevation, plans and sections of the winning design. By R. J. Spence-Sales and J. Bland.

Below, perspective of the design placed third. By Alex. E. Aikman and H. A. J. Darlow.



THE WINNING DESIGNS

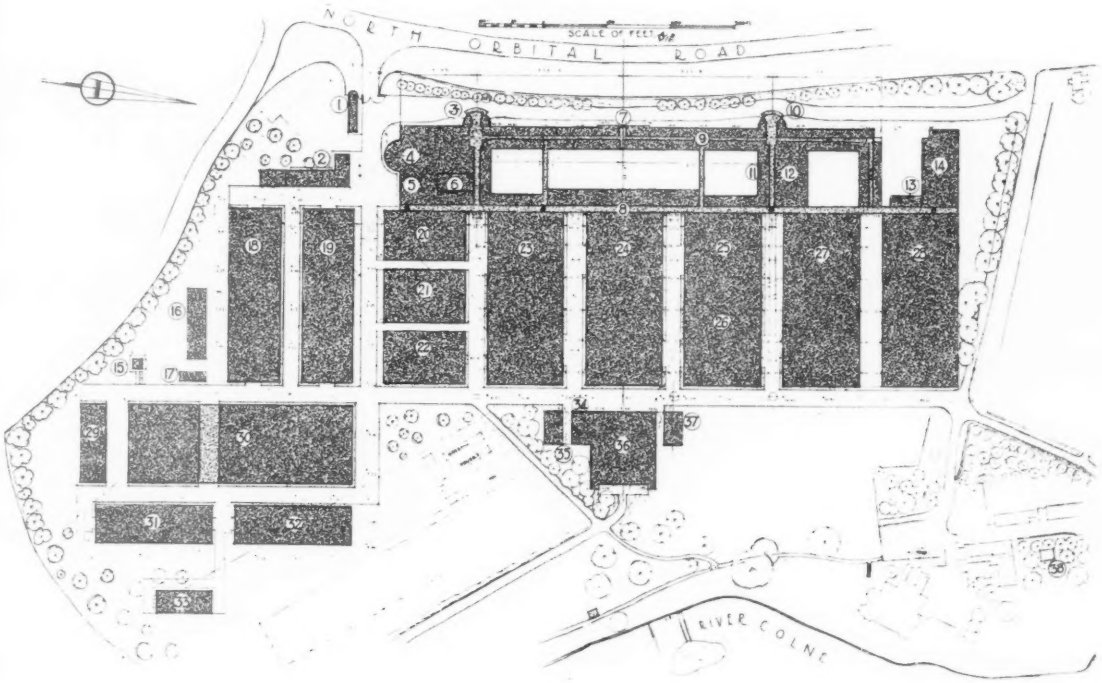
LONDON FILM STUDIOS, DENHAM

DESIGNED BY

MESSRS. JOSEPH

SITE—*On the Denham-Rickmansworth section of the North Orbital Road. It covers 29 acres of an estate consisting of 165 acres of varied scenery with an existing lake. The frontage of the buildings facing the road is 1,000 ft. long.*

The photograph is of the main front facing North Orbital Road.



LAY-OUT PLAN

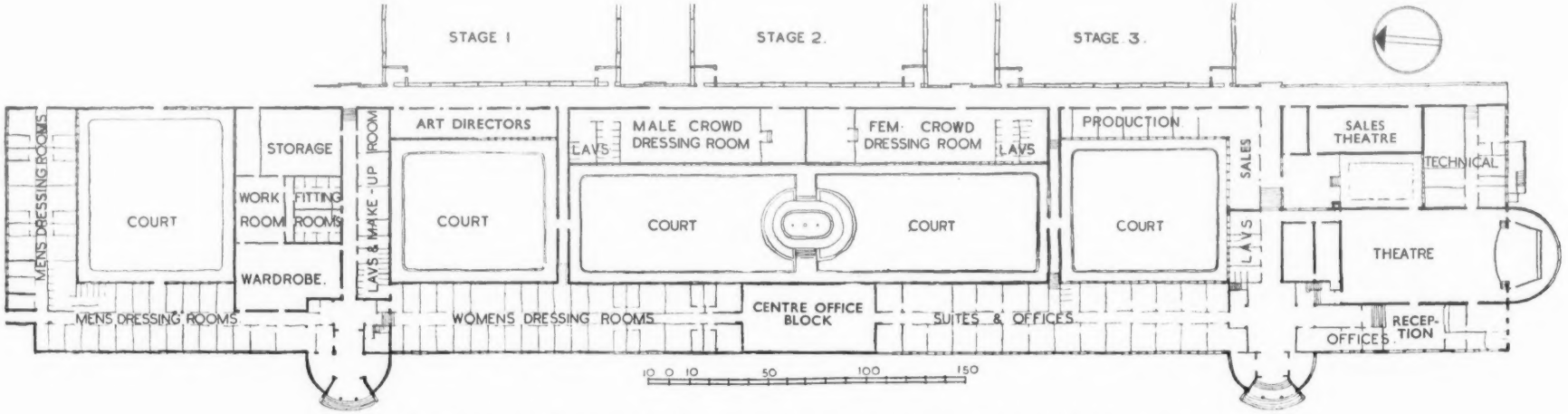
1. Commissionaires and First Aid.
2. Garage and Filling Station.
3. Main Entrance to Administrative Offices.
4. Scoring Studio and Private-view Theatre.
5. Sound Department.
6. Sales Theatre.
7. Centre Office Block.
8. Main Communicating Corridor.
9. Dressing-rooms.
10. Artists' Entrance and Casting Department.
11. Make-up and Hairdressing.
12. Wardrobe Department.
13. Hairdressing and Haberdashery Shops.
14. Restaurant.
15. Incinerator.
16. Plaster Modellers' Store.
17. Pressure Tank House.
18. Plasterers, Modellers, Paint Shop, etc.
19. Property Building and Papier Maché, etc.
20. Stage 1.
21. Stage 2.
22. Stage 3.
23. Stage 4.
24. Stage 5.
25. Stage 6.
26. Stage 7.
27. Future Stages.
28. " "
29. Timber Salvage Shed.
30. Carpenters and Machine Shop.
31. Scene Dock.
32. Future Scene Dock.
33. Workmen's Canteen.
34. Boiler-house.
35. South Fan Chamber.
36. Power-house.
37. North Fan Chamber.
38. Bore Hole Pump.

LONDON FILM STUDIOS, DENHAM

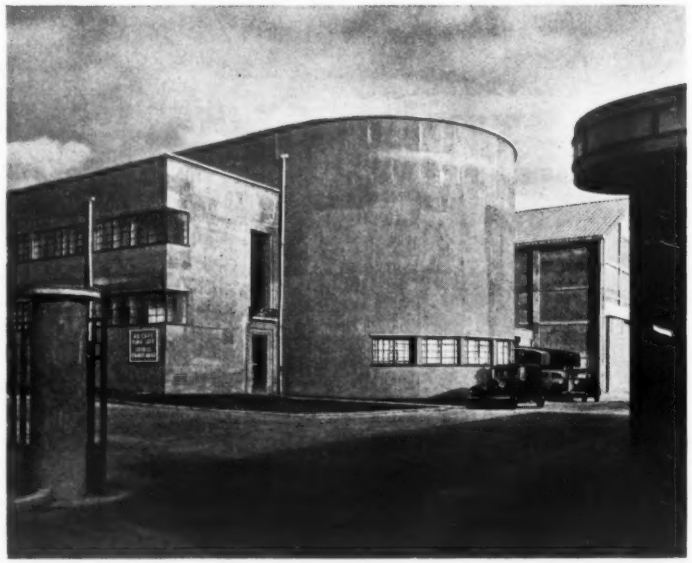
STAGES—*There are seven stages. Three are 250 ft. long by 120 ft. broad and approximately 45 ft. high to the underside of the main roof trusses. Eventually there are to be two more like them. The floor is so designed that sections of it can be removed at any time and the hollow space underneath used for production effects.*

The stages are steel frame construction with large span roof trusses. The steel frame is encased in reinforced concrete and then enclosed in a wall of the same material. On the inside this is sound-proofed with wood rock, plaster board and American rock-wool in blanket form. The floors consist of concrete piers supporting floor joists on which are two layers of boarding, the under one running diagonally. The photographs show : above, the stages, taken from the garden court ; right, top, steel-frame construction of stages ; right, rear view of stages.

of stages.



PLAN OF THE ADMINISTRATIVE BUILDING (3-14 ON THE LAY-OUT PLAN)



AIR CONDITIONING—*Fresh air, warmed, screened and washed, is introduced into the stages by concrete underground ducts on either side of the building under the flooring, and rising ducts discharge it into the building about 12 ft. above the floor level. The foul air is extracted at a level above the ceiling. The fan chambers are at the back of the stages above the annexes which contain various technical offices.*

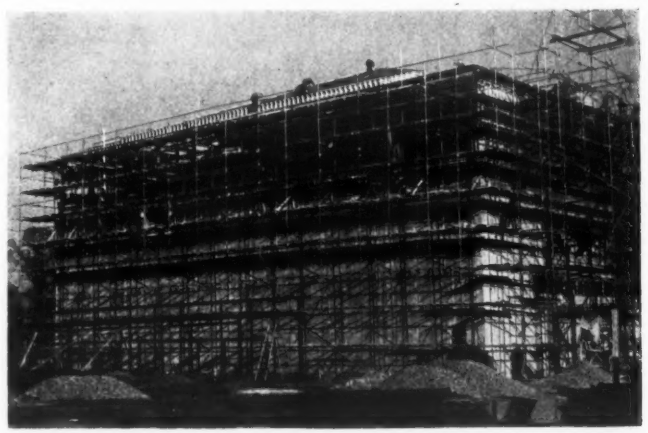
The photographs show : left, a detail of the south, private-view theatre, end of the main front, taken through the entrance gates ; below, the steel frame of a stage partly encased in reinforced concrete.

D E S I G N E D

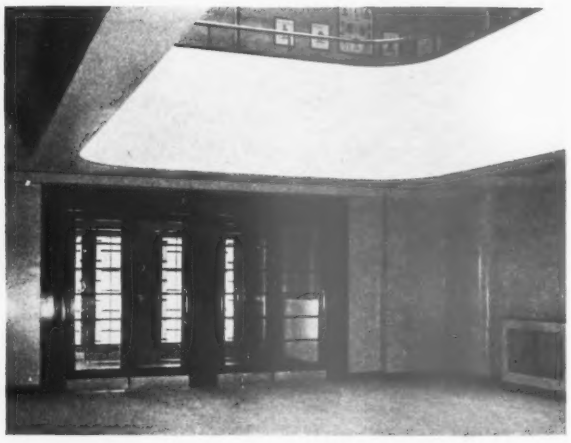
B Y

M E S S R S .

J O S E P H

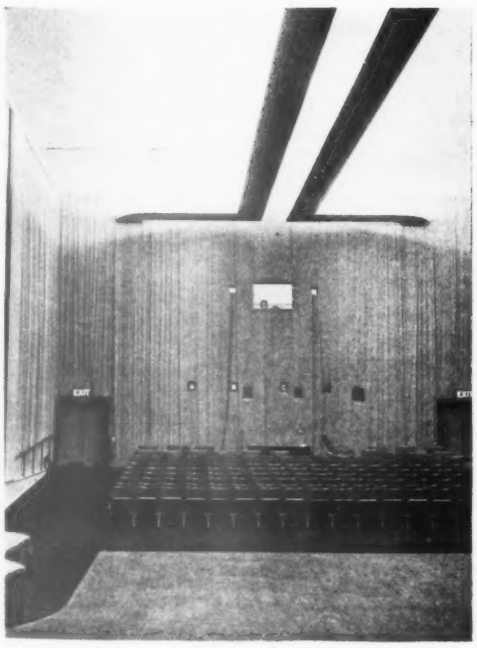


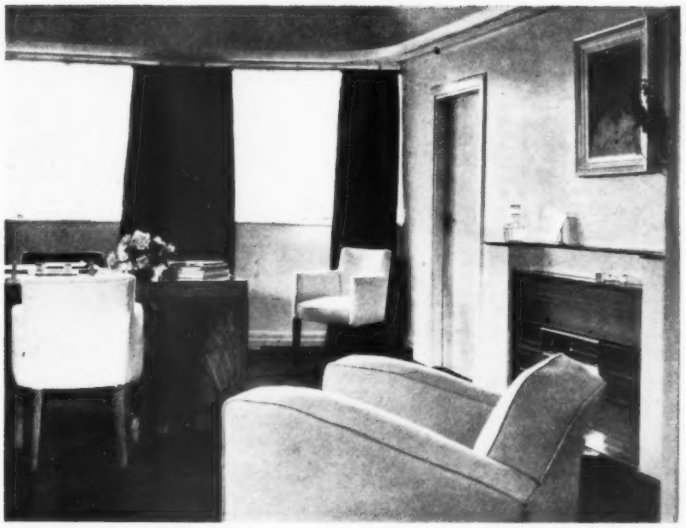
LONDON FILM STUDIOS, DENHAM:



The photographs show: above and left, two views in the entrance hall; right, the entrance to the private-view theatre.

DESIGNED BY MESSRS. JOSEPH





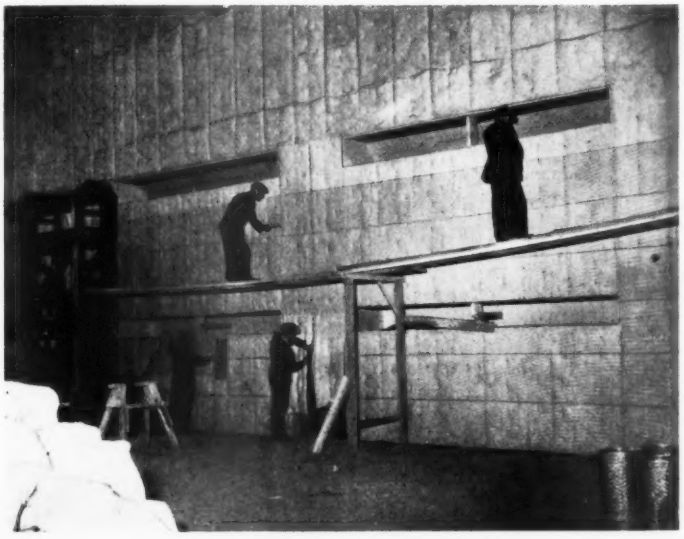
The photographs show : above, two views in the private-view theatre ; right, top, the sales theatre ; bottom, the office of Mr. Alexander Korda, the managing director.

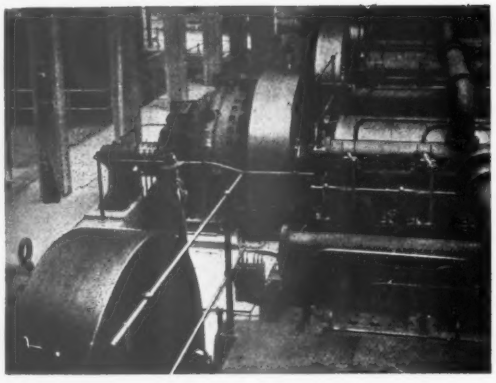
LONDON FILM STUDIOS, DENHAM:

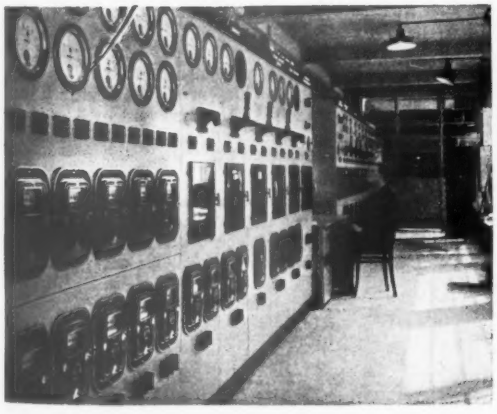
WORKSHOPS—*The carpenters' shop measures 350 ft. by 120 ft. ; the smaller ones, such as the plasterers' shop, 270 ft. by 80 ft. They are constructed of a light steel frame, faced with standard asbestos sheeting, natural grey surface. The steel trussed roofs are covered with asbestos sheeting of a green colour. An additional extension of the property department is the hothouse, in which palm trees and out-of-season flowers are grown for studio use.*

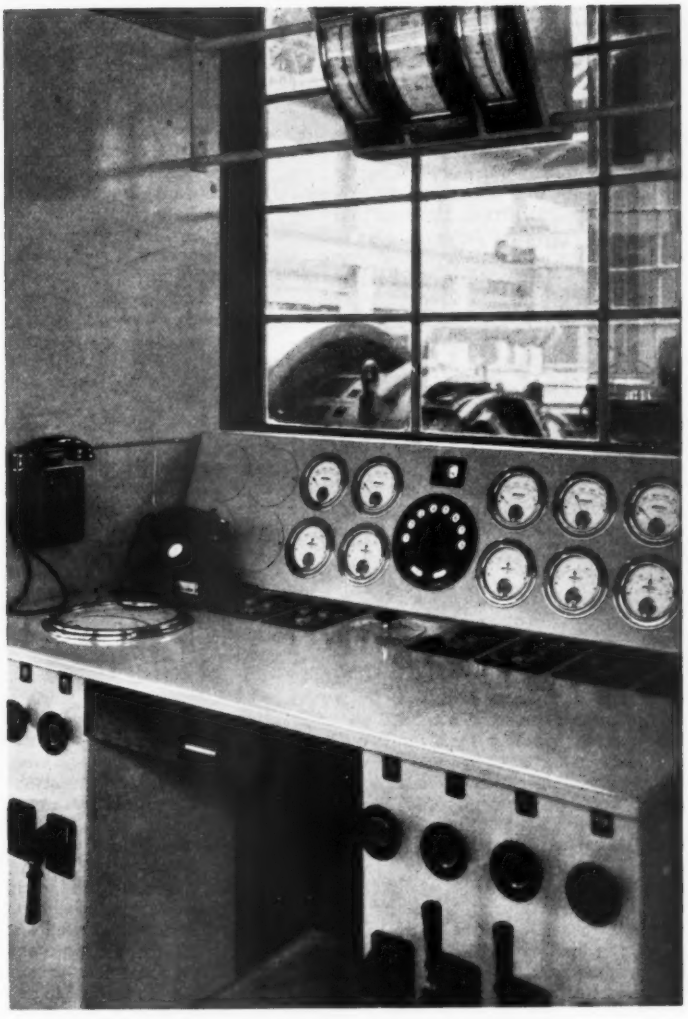
The photographs show : above, one of the glass corridors connecting the administration block with the stages ; below, the plasterers' room ; right, top, a corner of the reception room ; centre, the carpenters' shop ; bottom, the property room.

DESIGNED BY MESSRS. JOSEPH









The photographs show : top, left, a communal dressing-room ; centre, the power plant ; bottom, the control room : right, top, soundproofing a stage ; bottom, the control panel of the power house.

For list of general and sub-contractors see page 790.

D

LAW REPORTS

QUESTION OF PRINCIPLE IN LIGHT AND AIR CASES

Bendir and others v. *Anson.—Court of Appeal. Before the Master of the Rolls, Lord Justice Romer and Mr. Justice MacNaghten.*

THIS appeal raised a point of importance on a question of principle as to procedure in light and air cases.

The plaintiffs were Mr. A. G. Bendir, Ladbroke & Co., Ltd., Mr. B. Van Praagh, and Mr. F. S. Gaylor, the freeholders, lessees, etc., of Nos. 4 and 6 Old Burlington Street, W., and the defendant was Mr. Claude Ronald Anson.

The plaintiffs alleged interference with the ancient lights of their premises due to the erection of a building by the defendant on the site of the Old Burlington Hotel.

The matter came before Mr. Justice Farwell on a summons, and his order was that the alleged injury by the defendant's building to No. 4 Old Burlington Street, not being the same transaction as the injury alleged to No. 6 Old Burlington Street, so as to entitle the plaintiffs to join their claims, the plaintiffs must, within a month, elect which of them should proceed with the action, and failing such election, the action would be dismissed.

It was from this order that the plaintiffs now appealed, and Mr. Andrew Clark, appearing for them, contended that Mr. Justice Farwell had confused the word "transaction" with the words "cause of action." The problem raised was this: Supposing a man erected a building in such a way as to cause a number of neighbouring owners and occupiers to complain of interference with light and air, could these persons join together in one action against the defendant or was each one to bring a separate action. Counsel contended that by the actions being tried separately a strange anomaly might arise. Different decisions might be arrived at which would give rise to much confusion.

Two questions of law arose on the appeal, viz. how far the nature of the locality had any bearing on whether there was an actionable nuisance, and when damages should be given *in lieu* of an injunction. It was true the first question had been discussed in *Fishenden* v. *Higgs & Hill*, but he did not think the law on the subject had been definitely settled.

Counsel submitted that the plaintiffs were within their rights in joining together in the action against the defendant. Should the court choose to exercise its discretion on the question whether the joining together of all the appellants in one action would embarrass or delay a fair trial, he agreed that then the court might make an order for separate trials, or such other order as it thought fit.

Mr. Cunliffe, for the defendant, was not called upon to reply.

The Master of the Rolls said he took the view that, exercising the discretion of the court in such applications, the joining of the plaintiffs in one action would embarrass the Judge at the trial. He thought the word "transaction" meant an act, the effect of which extended beyond the agent to other persons. Here the building of the premises was an act limited to the builder, but its effect extended to those premises in respect of which an interference with an easement was alleged, and in that sense the building of the premises might be regarded as a transaction.

Under these circumstances he thought the appeal should be dismissed, but the order of Mr. Justice Farwell would be varied so as to require the plaintiffs to elect which of them should proceed with the action. The other plaintiffs would be struck out of that action and could claim separately if they so desired. There would be a further direction that the two cases should be tried by the same Judge on the same day for him to deal with them according to his judgment.

An order was directed accordingly, Lord Justice Romer and Mr. Justice MacNaghten agreeing.

ALLEGED BREACH OF WARRANTY—SALE OF FLATS

Throgmorton Property Co., Ltd. v. *Godfreys (Properties and Flats), Ltd.—Official Referee's Court. Before Mr. S. R. C. Bosanquet*, K.C.

This was an action by the Throgmorton Property Co., Ltd., of London Wall, E.C., against Godfreys (Properties and Flats), Ltd., builders, of Norwood Road, Herne Hill, to recover damages for alleged breach of warranty on the sale by the defendants to the plaintiffs of a block of flats in Foxgrove Road, Beckenham.

The plaintiffs' case was that the defendants warranted that the flats would be built to the same specification as flats already in the possession of the plaintiffs, known as Foxgrove House and Park House, and that the defendants undertook to be responsible for all defects appearing within six months of the completion of the building in March, 1935. The plaintiffs alleged that directly after they had entered into possession of the property they discovered that the building had not been constructed in accordance with the specification, that there were numerous defects, that complaints had been made by many of the tenants, and that the defendants had repudiated all liability.

Plaintiffs estimated that the cost of remedying the defects would amount to £866, exclusive of loss of rent from and compensation to tenants.

The defendants pleaded a denial of any warranty as alleged by the plaintiffs, and of the defects, and they said that the complaints made were not justified. Defendants also pleaded that if there were any defects, they were apparent before the buildings were taken over by the plaintiffs, whose representative had frequently inspected the premises.

The Official Referee, after hearing the evidence, gave judgment. He said that the plaintiff company had purchased the property through a nominee, and therefore the defendants did not know who were the purchasers. An important term in the contract was that seven of the flats must be let at £150 a year at the date of the completion of the purchase, and therefore in considering the quality of the workmanship he must have in mind the kind of flats which in that neighbourhood would let at £150 a year. He had visited and examined the flats, and it was obvious that certain of the work was not up to the standard which the plaintiffs were entitled to expect. Therefore, the defendants, he held, were liable to make good the defects.

The Referee, having referred at some length to the items involved in the plaintiffs' claim, gave judgment for the plaintiffs for £816 7s. 6d. with costs.

Mr. J. D. Caswell and Mr. G. Pollock appeared for the plaintiffs, and Mr. H. Edmondson and Mr. W. P. Doyle for the defendants.

ALLEGED NUISANCE BY NOISE

Peters v. *Willment Bros.—Chancery Division. Before Mr. Justice Luxmoore.*

This matter came before the Court on a motion by Mr. A. Peters, a literary agent, of Adam Street, W.C., to restrain Messrs. Willment Bros., contractors, of Baltic Wharf, Waterloo Bridge, from using pneumatic drills or other noisy tools or machinery in the demolition work being carried on by them on the site of the Adelphi, so as to cause a nuisance.

Mr. Norman Daynes, K.C., appeared for Mr. Peters, and Mr. Fergus Morton, K.C., for defendants.

Mr. Fergus Morton asked for an adjournment, as his clients had only just received the notice of motion. As far as his instructions went, he understood that the noise went on each day from 8 a.m. till 5.30 p.m., with two breaks of half an hour each. His clients were carrying out the demolition with the minimum of noise possible. The work in progress at the moment was not demolition, but the excavation of concrete foundations.

Mr. Daynes pointed out that the buildings near the demolition were occupied by journalists, publishers, agents and also by a firm of solicitors. It appeared from the correspondence that the work was likely to last twelve weeks.

Mr. Fergus Morton said there had been another motion before the Courts, in which complaint was made that the contractors were breaking up concrete by dropping an iron ball from a height. In view of the objections which had been raised to that method, his clients were now using pneumatic drills.

His lordship observed that pneumatic drills were not very silent things.

Mr. Norman Daynes said the defendants had contended that they had used the iron ball to obviate the noise made by pneumatic drills.

It was arranged that the motion should stand over for the defendants to file evidence in reply, and that, in the meantime, the defendants would undertake to use their best endeavours not to use the pneumatic drills till the motion was heard again by his lordship.

Annual Dinners

Thursday, December 10: London Master Builders' Association. Dorchester Hotel, Park Lane, W.1. 6.30 for 7 p.m.

Friday, December 11: Faculty of Architects and Surveyors. Hotel Victoria, Northumberland Avenue, W.C. 6.45 for 7.15 p.m.

Wednesday, December 16: Quantity Surveyor Members of the Chartered Surveyors' Institution. Savoy Hotel, Strand, W.C.2. 7 for 7.30 p.m.

The Architects' Journal Library of Planning

SHOPS

Sites and Sales Values

[By Bryan Westwood and Norman Westwood]

"The measurement of a retail market resolves itself into a scientific study of a community . . . just as the manufacturer and banker have realized the importance of research in their management problems, and have proved the advantage of knowledge over guesswork in business, so may the retail merchant benefit by a study of his problem in light of facts scientifically gathered . . . ."

"The logical site is that one which offers the best opportunity to sell goods where people naturally come to trade, either because of convenience or because of habit. If the best is not obtainable, or carries an exceedingly high rental, and therefore an inferior site is chosen, success depends largely upon the recognition of the economic disadvantage resulting from the location and the cost of special attractions necessary to overcome them."

"Retail Store Problems," U.S. Department of Commerce.

THESE two quotations from the United States Department of Commerce are perhaps obvious, but they stress the importance of selecting a site with the aid of statistics, and clearly indicate the frame of mind which should be adopted.

Correct siting is one of the most important factors determining the success or otherwise of shops. The conspicuously successful "chain-shop" firms of to-day owe at least part of their prosperity to their research departments, whose job it is to analyze the prospects of any proposed new shop.

Since the architect is usually called in to design some special kind of shop of the type where individualism is the keynote of success and major siting considerations are not of great importance, it may be argued that the architect is very unlikely to have a client capable of affording the necessary research. Such an argument neglects the fact that the chain stores do already undertake such work, and being particularly wide awake they have appreciated what the architect has to offer. Hence, it is

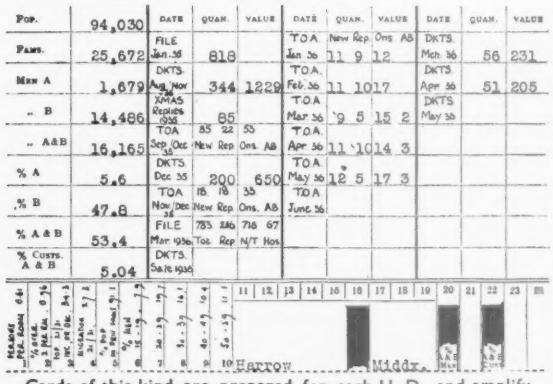
This map, compiled by Messrs. Austin Reed, Ltd., shows the distribution of population in the A and B groups of the A, B and C classes of the census. In other words, it shows the firm's potential customers, varying from under 13 per cent. in the poorest districts of the East End of London, up to over 53 per cent. in prosperous residential and manufacturing districts such as Harrow.

Unfortunately it is not possible to show actual customers on such a small scale, but in the original they are shown by means of pins coloured in the same way as the map, and so calculated that where a pin matches the colours of its surroundings on the map trade is, so to speak, at par. Where the colours differ, trade is either better or worse, and investigations can be made to ascertain the cause.

Shopping Centre at Southgate, Middlesex. By Adams, Holden and Pearson.

quite probable that the architect may have such a client in the future.

We have therefore thought it worth while to illustrate an example of the kind of research such firms undertake, which gives an indication of the importance they attach to siting in the widest sense.



Cards of this kind are prepared for each U. D., and amplify the information contained on the map. On the left-hand side there are the actual figures of population. Details of sale are recorded in the remaining columns. Along the bottom there are details of the population in various age groups and graphic representation of total population (per cent. A and B men, per cent. A and B customers, and if necessary per cent. A men as a check where other figures are misleading). For provincial towns the distance from London is also represented in colour. When filed in shallow trays the various coloured strips (shown black here) give at a glance the characteristics of population the firm are interested in for any town in England.

Statistics contained in the census are analysed and used as a basis for determining potential customers. For instance, if the customers of a firm, such as the tailors whose information is illustrated here, are adult men belonging to the middle and upper economic classes, the number of men over 21 living in " A " and " B " class houses can readily be obtained for each Council's area. This can be amplified by the addition of telephone subscribers not already included, and by an inspection of a particular neighbourhood which may reveal " good-class " people living in small but expensive houses.

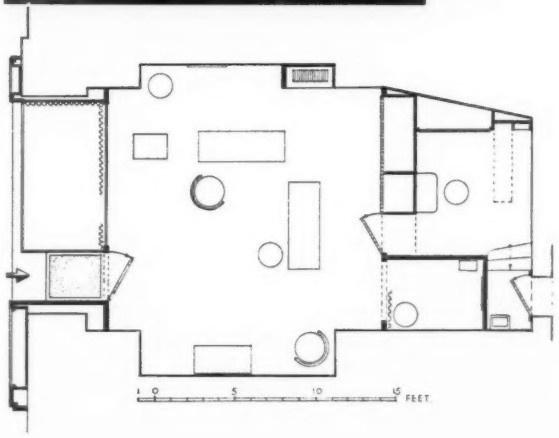
Finally, when the numbers of actual customers obtained from mailing records are compared with potential customers, a picture of the firm's prosperity or otherwise is obtained. When a site for a new branch for the firm is under consideration, these statistics will give a forecast of future receipts, and the project is either cancelled or given further consideration according to the conclusion reached by the use of this data.

It is hardly likely that any one site will combine all the necessary qualifications, but the skill of choosing sites means ability to make the best possible compromise: as is suggested in the latter part of the second quotation at the head of this article. In order to do this, one has got to have a clear knowledge of the factors involved and their relative importance. These vary, of course, with every problem, but it is hoped that these notes, working from general to particular, will at least form a basis for consideration of the siting of projected shops.

In the previous article some factors of correct

SHOPS

DRESS SHOP AT VIENNA • *By Theiss and Jaksch*



A semi-luxury dressmaking and lingerie shop. The front is of bronze and marble, and the steps of polished artificial stone. The lower part of the door is of varnished palisander wood and the stallboard of okomné wood.
Internally, curtains are tussore; walls, various shades of buff; floor, dark green linoleum; tables and cupboards, mahogany; and chairs, dark green lacquer.

siting in the most general sense were discussed, and we have shown some of the causes affecting the placing of even a single shop which hopes to do well.

The Actual Site

Now we come to the question of the actual site. What should the architect tell his client about questions to be examined before finally choosing the actual site?

A—*The Town*

The question of a town as a suitable area for a shop occurs when chain stores are considering opening new branches, and also in the placing of highly specialized shops.

Just as it has been found that it requires a population of 100 families to support a small "general" shop, with, say, 15 ft. frontage, it follows that it requires a town of a certain size and type to support a special kind of shop.

B—*Neighbourhood*

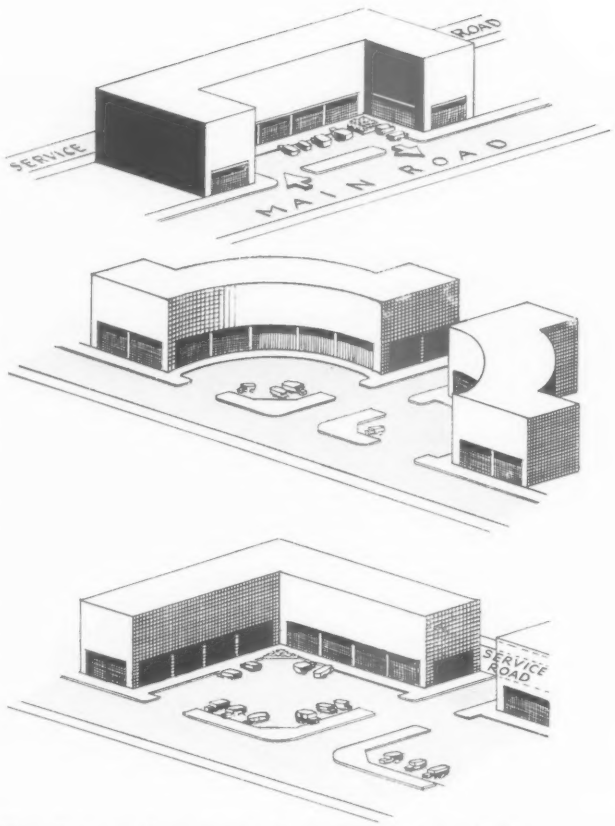
The type of neighbourhood in which any shop is to be placed, of course, depends on the shop, but it is worth noting that the basic type of shop selling what the Americans call "Demand Goods," which we shall call type "A," occurs in all types of shopping centre; whereas the type "B" shop selling special or luxury goods only occurs in certain neighbourhoods.

In this connection, it is worth noting that exclusive shops are frequently placed in side streets, and not usually the most highly-rented areas. These last are usually occupied by branches of chain store, or some types of building depending on a key position for profitable existence.

The sorts of question to be answered in connection with neighbourhood are: Is it on the up or down grade as regards general prosperity? Is it changing from an exclusive to a popular shopping centre? Is there much property to let in the neighbourhood, or is there a great demand for sites?

In the Class "A" shop the inhabitants of the locality have an influence more of degree than type; but in the Class "B" shop they constitute the chief factor determining whether it will do well or not.

For instance, a firm dealing in medium-priced men's wear depends upon the professional man and the fairly well-to-do business man. For this reason, such a firm demands primarily a site where solicitors, bankers, insurance or similar men work, or where such people meet for lunch.



The diagrams show suggested treatments for suburban shopping centres. Although part of the site is given up to parking space, better display is obtained for the shopkeeper and improved sight lines for the motorist.

Neighbourhood affects the actual internal planning of the Class "A" shop, but this will be dealt with later.

Relation to Other Shops

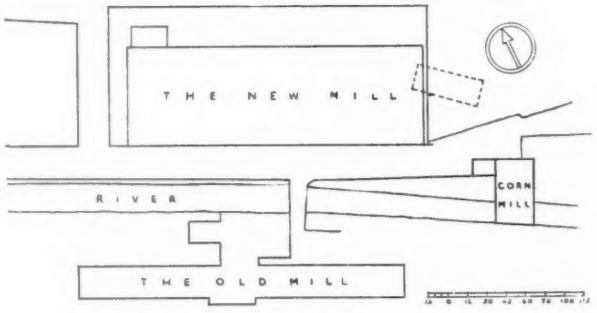
General proximity to other shops of the same trade, or same degree of luxury in special trades, is an advantage because it creates a centre for the particular trade, or a place where a particular type of person shops. The restaurants in Soho or Charlotte Street are a good example of the former, while Bond Street or the Burlington Arcade occur to the mind at once as examples of the latter.

Centres of a different kind occur in suburban schemes where all shops, and not merely shops of one kind, are grouped together.

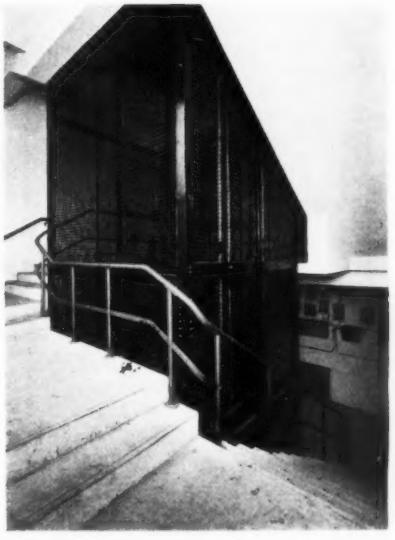
Where this is so, such a group designed with proper parking facilities and service roads can become an attractive feature instead of the usual nondescript collection of conflicting ideas.

Shops at Southgate Underground Station. By Adams, Holden and Pearson

ROLDANE MILL, CONGLETON,

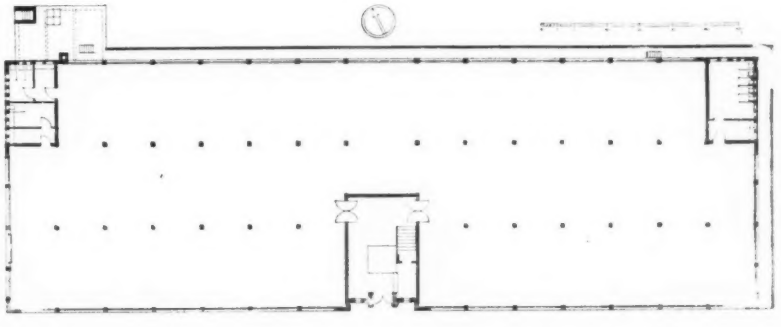


SITE PLAN



GENERAL PROBLEM—*The new mill replaces an existing five storey mill about 160 years old. It is to be used for the manufacture of ladies' artificial silk underclothing and all types of sports wear. Accommodation is provided for cutting out on the second floor, machining and making up on the first floor, and ironing, finishing and despatching on the ground floor. The mill is adjacent to the main works used for knitting the fabric and for dyeing processes. The photographs show : above, the main front ; right, the staircase and lift well.*

BY VENABLES AND BARKER



GROUND FLOOR PLAN

ROLDANE MILL, CONGLETON

BY VENABLES AND BARKER

CONSTRUCTION—*Steel frame with hollow tile reinforced concrete floors. External walls are 11-in. hollow brickwork on a 14-in. blue brick plinth ; internal walls are 9-in. brick. The roof is finished with asbestos and asphalte covered steel sheeting, with asbestos internal valley gutters ½ in. thick and lead covered steel glazing bars. The projecting window hoods, entrance hoods and copings are black glazed terra-cotta ; the main entrance surround is in artificial stone, the doors are English oak.*

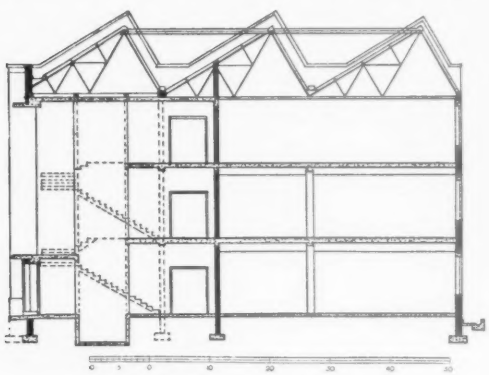
INTERNAL FINISH—*The stanchions are cased with 2-in. precast concrete blocks ; the walls are flush-pointed brickwork with red quarry tile cills ; ceilings are plastered and the whole of the surfaces are distempered light cream. Floors are : ground floor Jarrah wood blocks ; first and second floors, secret nailed 1 in. maple flooring secured to floor fillets. Sanitary annexes have tiled floors and walls with w.c. divisions of cast-iron frames and twin sheets of ¼ in. glass. Doors are framed in hardwood and covered with metal-faced plywood.*

SERVICES—*Continuous conveyors are installed between all floors for the handling of goods. Steam heating is used at a pressure of 10 lbs. with four unit heaters installed on each floor. The fans of these heaters are used in summer as air circulators. The manufacturing processes throughout are electrically operated.*

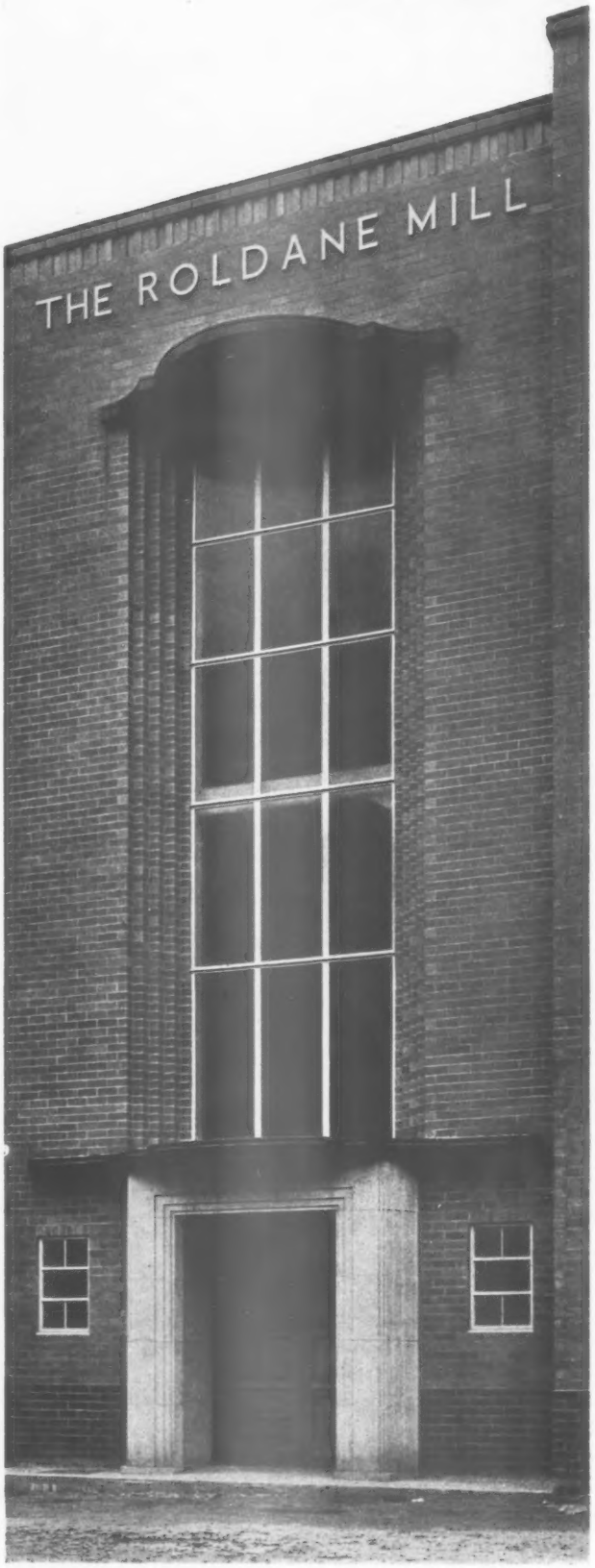
COST—*The total contract prices were £22,946 ; the price per cubic foot 7d.; and the price per super foot or floor area, 9d.*

The photographs show : above, a view on the second floor ; right, the main entrance and staircase window.

For list of general and sub-contractors see page 790.



CROSS SECTION



TOWN AND COUNTRY

PLANNING IN PRACTICE

The National Housing and Town Planning Conference, promoted by the National Housing and Town Planning Council, was held in the Royal Hall, Scarborough, last week-end. At the first session Mr. G. L. Pepler, PP.T.P.I., Chief Town Planning Inspector of the Ministry of Health, read a paper entitled "Town and Country Planning in Practice," extracts from which are printed on this and the following three pages.

Introduction

ABOUT 21,000,000 acres in England and Wales are now subject to effective planning resolutions, and about 120 draft schemes, under the 1932 Act, have been adopted and nine schemes under that Act are now in operation. The majority of these schemes were embarked upon under earlier Acts and are, therefore, principally related to developing land on the outskirts of towns and do not cover either the wider rural areas or the town centres which the 1932 Act enables to be planned. Notable exceptions to this generalization are the Downland Preservation Schemes which have been made by the Hailsham Rural District Council and the West Sussex County Council. A significant development has been the great extension of planning by executive joint committees, of which there are now 125 (compared with 38 in 1931), embracing some 600 authorities, and the lead given by many county councils to the formation of such committees and their hearty co-operation in their work.

Planning on a county-wide basis is now well under way and, on the other side, schemes are in hand for practically the whole of great cities, such as London, Liverpool, Manchester, Nottingham.

The Problem

In this paper I will try to indicate briefly the impressions I have gained from informal talks with members and officials of local authorities up and down the country. I find many are studying the places for which they are responsible and are desirous of preparing a policy and plan which will safeguard existing assets, facilitate the removal of handicaps, and foster the most appropriate form of development.

Their chief problem is to devise means by which the new methods of locomotion by road and by air, of electricity distribution, of building construction and mass production can be turned to the advantage of their respective communities. They realize that unless the new forces are guided by a well-devised policy and plan chaos must ensue, and the old cores of towns and villages and the countryside will, in effect, collapse under the strain to which they are being subjected.

This is indeed a formidable problem, and many local committees and officials feel that they cannot devote to it the undivided attention that it deserves because of their multifarious other duties and their day-to-day occupation with interim development, etc. Also, they observe that while their districts are the stage on which these new forces are operated, they are not the producers of the play, nor can they control movements of population or of industry, and some of them feel that the requirements of transport are changing so rapidly that there is no keeping pace with them.

I would not for a moment imply that the difficulties with which they are faced are not indeed formidable, but I venture to put forward the following suggestions for their encouragement :—

(1) First, there is the significant fact that local authorities have now the opportunity to decide as to the future they consider most advantageous for the districts they serve. It is true that the machinery for giving effect to their decisions may not be perfect and they may be over-ruled to some extent by forces outside their control; but, unless they have a local policy, they are entirely at the mercy of those forces, which in their turn lack guidance as to local circumstances and aspirations.

(2) Regional planning is securing unity of purpose over wide areas. Co-operation strengthens the constituents and at the same time eliminates parochialism.

(3) Opportunity is afforded for co-operation by landowners, developers, and organizations representing industry and trade, which in a number of cases is forthcoming.

(4) The specialist knowledge and experience being gained by such bodies as the Town Planning Institute is available for consultation.

(5) A planning scheme is not a strait-waistcoat. It only attempts to lay down the best pattern that can be devised in the light of present knowledge and is meant to be adapted, subsequently, after due consideration and with careful regard to what has been done in conformity with it, to meet changing circumstances.

Practice

It may appear that I have rather wandered from my subject, "Town and Country Planning in Practice," but my suggestion is that in considering what it is practicable to do we want to have clearly in our minds the nature of the problem with which we are faced and the objective at which we are aiming.

If that objective is the best possible future for the place we serve, its realization is likely to involve not only a planning scheme, but also a co-ordination of all municipal effort and all council committees towards that goal.

In considering practice, it may be convenient to divide the subject into the two headings "Town" and "Country," always bearing in mind that the two are closely interrelated and that the means for such interrelation are being provided for by the many executive joint planning schemes now in course of preparation. It is perhaps appropriate to begin with the "Country" as that was brought into statutory planning by the Act of 1932.

Country

The country can be looked at from two points of view. The countryman tends to look at it from the standpoint of the basic industry of agriculture and of country pursuits; the townsman probably regards it more as a playground or quiet resort free from the turmoil and noise of his work-place. Both can unite in schemes of preservation, as witness the £2,000,000 offer of the London County Council towards London's Green Belt—a proposal which other big cities might do well to consider before the passage of time adds to their difficulties. Also both countrymen and townsmen do unite in many of the joint planning committees that are now functioning.

General Objects

I believe that the general objects with regard to country planning which a number of joint committees have in mind are broadly as follows : (1) To secure that agricultural or residential qualities shall not be impaired by ill-placed, ill-timed, or incongruous forms of development. (2) To preserve the rural character of the countryside, to safeguard its natural beauties, and to protect its characteristic buildings. (3) To secure economy in the provision of public services such as roads, water supply, sewage disposal, etc. (4) To prevent the erection of buildings on land so situated or of such a nature that to erect buildings on it would be likely to involve danger or injury to health, e.g., low-lying land liable to flood, or high land beyond the reach of water supply, or land from which water supplies are drawn. (5) To improve communications in relation to national or regional needs and in harmony with the local or regional plan of conservation and development. (6) To secure the proper lay-out of land that is to be developed for building purposes, and that the buildings erected shall be seemly in appearance.

Outlines of a Country Planning Scheme

Having carefully surveyed the ground and, being in consultation with local interests, the joint committee next consider the general form of scheme which seems appropriate to local circumstances and likely to secure the objects briefly referred to above.

I believe that in many districts the following kind of scheme is being worked out in consultation with the principal owners :—

First, areas are selected for development, taking into account existing towns, villages and settlements, availability of services or possible economic provision thereof, etc., the areas selected being sufficiently large to accommodate any development likely to take place within, say, the next twenty years, round each centre.

Adjoining such areas, further land, say, sufficient to accommodate any development likely to take place within a further thirty years (fifty years in all) is marked to be available for building operations, but only upon the issue of a "general development order" by the authority; or if an owner

can show that other suitable land is not available on reasonable terms and that the proposed operations would not involve danger or injury to health by reason of the lack of roads, sewers, water supply, or any public services, and that the provision of the necessary services would not be premature, or likely to involve excessive expenditure of public money; or that the operations would not be likely seriously to injure the amenity of the locality.

These two areas, which comprise the probable ultimate building development, are then zoned in the usual way, namely, as to type of building (residential, industrial, commercial, etc.), number of houses per acre, size, height, design and external appearance, etc., and areas required for open spaces or allotments are reserved, and the use of land for any purpose likely to involve danger or injury to health or serious detriment to the neighbourhood is prohibited.

Having selected adequate areas for development, plus a safety margin, the committee then turn its attention to areas to be permanently preserved from building or on which building operations must be severely restricted, either because, by reason of the situation or nature of the land, the erection of buildings thereon would be likely to involve danger or injury to health, or excessive expenditure of public money in the provision of roads, sewers, water supply, or other public services (e.g. land liable to flood or land above water-supply level), or because unrestricted building might endanger the purity of water supplies; or the reason for selection may be the conservation of particularly fertile land for agricultural use or the preservation of a beauty spot by means of either private or public open space reservation.

In many cases it is found that the bulk of the area lies between these two extremes of land suitable for building development, either at the outset or in the future, and land which it is desired to keep free from building operations. As to this intervening land, all that is desired is to maintain its rural character, and the method of achieving this, which seems to be found to be most practicable, is to zone it as a rural area but allowing freely, in addition to agricultural buildings, the erection of houses with large grounds (say, 5, 10, or more acres, as houses on holdings of this size should be able to take care of themselves *re* public services: in this respect the view appears to be taken generally that it is the size of the holding that is of importance, not the size of the house; it is not intended as a rich man's preserve), public buildings such as sanatoria, and possibly certain buildings connected with rural industry.

General provisions that one expects to find in such schemes include regulation of the design and external appearance of buildings, preservation of trees, and control of advertisements as provided for in Section 47 of the Act of 1932.

A commendable practice of many joint committees is to issue leaflets or brochures in which they briefly describe the region they are planning, the type of scheme they have in mind, and the kind of building appropriate in various parts of the region. The co-operation of all concerned is invited and intending developers are informed as to the procedure involved. Also, in many districts, use is made of the advisory panels set up jointly by the Royal Institute of British Architects, the Council for the Preservation of Rural England, and the Institute of Builders, with the admirable object of securing an improvement in the design of new buildings.

Communications

I have left the question of communications to the last—not because it is of least importance, but because the general view of planners appears to be that in the sequence of operations in the preparation of a scheme, first consideration should be given to the appropriate use of land. The newest form of transport is by air, and the provision of aerodromes in proper relationship to other forms of communication and to the general plan, and the protection of their surroundings, are matters that are engaging the attention of many joint planning committees.

It is obvious that all forms of communication should be planned in relationship the one to the other, but the situation with regard to roads has been altered to a considerable extent by the Restriction of Ribbon Development Act, 1935. Consideration as to new roads that may be required, widenings of existing roads, building lines, stoppings up and diversions, is still an essential part of planning, but the implementation of some items may now be more expedient under the new Act than by means of a planning scheme.

Ribbon building was objected to because it was alleged to be unsightly, unsocial, and uneconomic, and this suggests that it is not merely a road question, but is bound up with the form of community for which it is desired to plan.

The kind of scheme being prepared, which I have briefly outlined above, appears to be directed towards securing grouped forms of development and therefore should materially assist in checking ribbon building.

Further assistance should be forthcoming by the application of the new Model Clauses approved by the Advisory Committee, providing (*a*) for control of the layout of streets and buildings, (*b*) for the adjustment of schemes to the Restriction of Ribbon Development Act, by providing for the automatic release of land reserved for new streets or widenings, or restricted by a building line, when a "standard width" is adopted under the Act of 1935. Also, Memorandum T. & C.P. 10, issued by the Ministry of Health, indicates how the implementation of planning is likely to be affected by the new Act.

The circulars issued by both the Ministry of Transport and the Ministry of Health have laid emphasis upon the planning aspects of the restriction of ribbon development. The choice of instrument appears to be largely a matter of expediency, and obviously can be made with much greater assurance when a plan has been prepared relative to the whole structure of development and preservation of a region, and the alternative financial implications have been weighed up.

The Town

The problems of the town are in many ways more difficult than are those of the country, but this address is already too long and therefore one must compress. Statutory planning first began in 1909 with the outskirts of towns. The bulk of schemes either in operation or in an advanced state of preparation, relate to such areas, and as you are all probably familiar with that type of scheme, there is no need for us to discuss it. Planning schemes for the cores of towns were first made generally possible by the Town and Country Planning Act, 1932, which came into operation in 1933, and, therefore, there is much less practical experience in this type of planning, although a great deal of attention is being given to it.

The Town: General Objects

From discussions with those engaged in preparing this type of plan, I think the general objects they have in mind may be briefly summarized as follows:

(*a*) To direct redevelopment in such a way that the dominant characteristics of the town may be enhanced, whether they be industrial, commercial, cultural, recreational, or residential, or a combination of more than one; to remove existing handicaps; and to facilitate the forms of development which hold out most promise for the future; and in detail. (*b*) To relieve traffic congestion at business centres where it causes great waste of time, money, and comfort, and also involves loss of life and accidents. (*c*) To provide adequate parking space for motor vehicles. (*d*) To relieve residential streets from disturbance by through commercial and other traffic which has no business there but takes the easiest way to its objective. (*e*) To provide playgrounds in small house areas so that the children may no longer play on the streets where they are a danger to themselves and to vehicular traffic. (*f*) To secure, as far as possible, the appropriate grouping of residences, factories, shops, etc., to their mutual advantage, and to prevent the casual intrusion of odd factories and shops into residential areas. (*g*) To provide room for the expansion of industrial areas which are well placed in themselves and fully equipped with necessary services, but are hemmed in by other forms of development inappropriately placed. (*h*) To check the further deterioration of "blighted districts" and to give them the opportunity to fulfil the functions to which their respective situations fit them. Such districts sometimes comprise residential quarters that have seen better days and sometimes considerable areas, often close to important centres, occupied by property quite unworthy of its situation, e.g. small old warehouses and the like. (*i*) To clear slum areas. (*j*) To preserve and improve the surroundings of such historic, important, and beautiful buildings, or groups of buildings, as exist, and which are often cluttered up by later erections which diminish their status or detract from their appearance. (*k*) To secure that new buildings shall not only be appropriately placed, but shall also be seemly in appearance. (*l*) To secure the grouping of municipal buildings with a view to facilitating administration and fostering interest in civic affairs and pride of place. (*m*) To secure that if small buildings are replaced by large ones, sufficient open space shall be provided on the ground to accommodate any additional traffic consequent upon intensified use and to provide for an adequate amount of light and air.

Outlines of a Town Scheme

I have discussed informally with several planners the possibilities of securing these objectives, and they seem to be agreed that, generally speaking, the only distinction which the Town and Country Planning Act seems to make between a scheme for built-

upon and unbuilt-upon land is to protect owners of the former by enabling them to claim compensation in respect of any provisions which would prevent (*a*) the maintenance of existing buildings or the continuance of their existing use; (*b*) the making of reasonable alterations and, in proper cases, extensions of existing buildings; (*c*) the re-erection of a building of equal cubic content and, in the case of premises used for business or industry, of at least an equal superficial area on the ground floor; (*d*) the use of a re-erected building for the same or similar purpose as that for which the one it replaces was used, unless such use was of a noxious or otherwise offensive character. They also agree that the Model Clauses can be adapted to cover both types of land.

For the purpose of relieving traffic congestion, widenings, new streets and stoppings up can all be included. The deciding factor is likely to be cost, and in view of this, some authorities incline to the view that in some cases area-purchase, under Section 25, is likely to prove a more economical and effective means than would be the attempt to balance compensation and betterment. In other cases consideration is being given to agreeing to defer action on certain projects for specified periods based upon the life of the property, length of leases, or other factors which affect ripeness for redevelopment. In some instances, the clearance of slums, the acquisition of "re-development areas" under the Housing Act, 1935, or the opening up of "blighted districts," may be important factors in simplifying the reorganization of the internal road system.

Up to the present, while I have found a good deal of academic interest taken in the theory of satellite town development as a means of relieving pressure on the centre, there has, so far, been no rush of authorities anxious to carry out the experiment. Nevertheless, many planners consider the problem to be incapable of solution by any other means.

Zoning for use, number, coverage, size and height of buildings, are not only related to appropriateness for purpose in relation to the town pattern but also to the street system. Each zone has different traffic requirements, and the nature and volume of traffic in any street are directly related to the number, use, and size of the buildings served by that street.

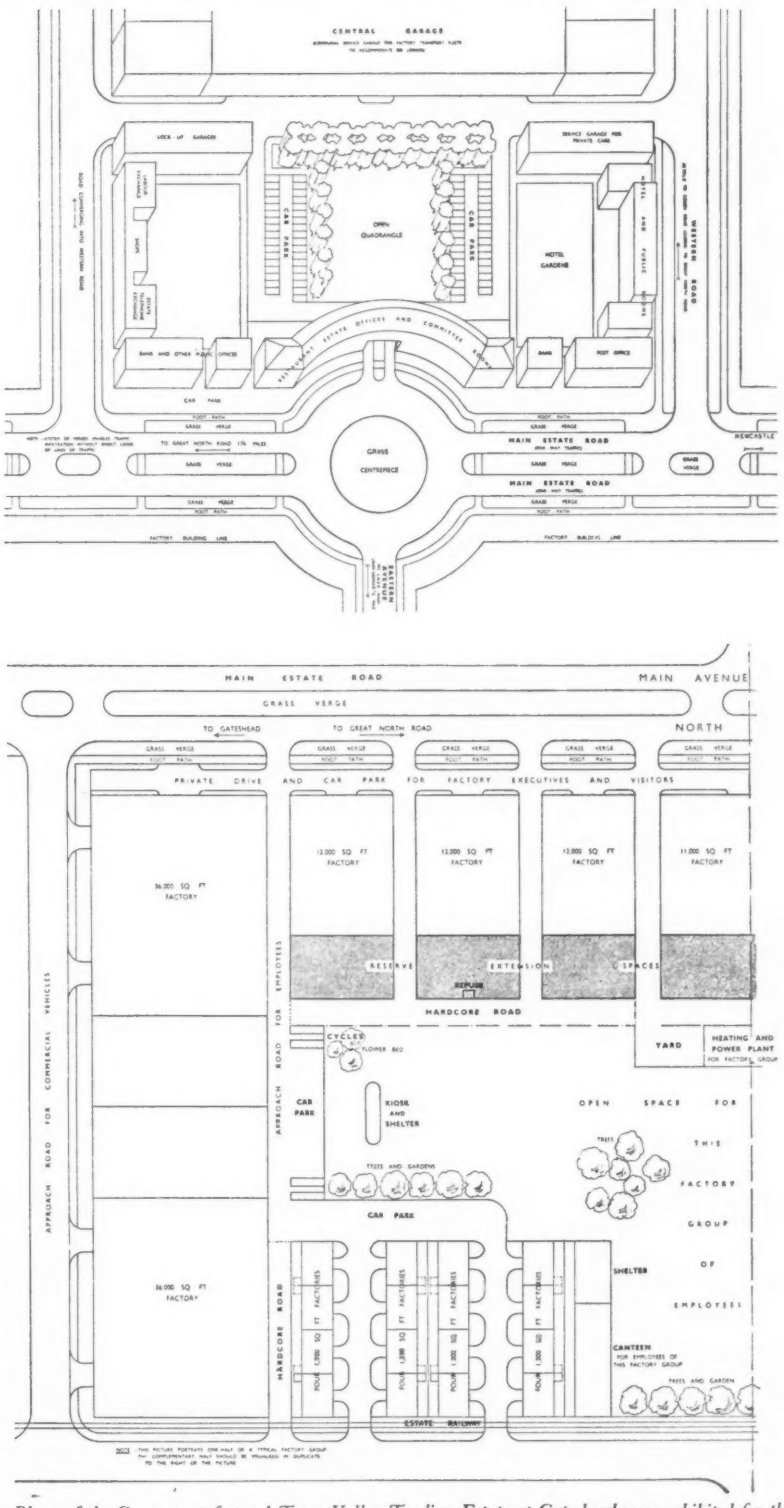
This is one comprehensive example indicating how the solutions of the general objectives I have quoted are completely interlocked. With regard to the provision of parking spaces and of inner playgrounds, I find that several authorities are discovering odd pieces of semi-derelict land that can be readily and economically adapted for one or other of these purposes, and that is a matter to which they give particular attention in relation to slum-clearance schemes.

With reference to residential areas which are disturbed by alien traffic, the planning solution appears to lie in relating road planning to zoning in such a way as to facilitate the movement of industrial and commercial traffic to located objectives and providing it with convenient routes clear of residential quarters.

Use Zoning

The objectives I have quoted, which appear to relate particularly to this heading, may perhaps be summarized as a desire to secure an arrangement of the parts of a town

TEAM VALLEY TRADING ESTATE



Plans of the Government-fostered Team Valley Trading Estate at Gateshead were exhibited for the first time at the Northern Inventions Exhibition, held last week at Newcastle-upon-Tyne. The estate, which is of 700 acres, is intended to carry some 400 factories. At the centre of the estate there will be a "circus" some four acres in area. On its circumference will stand the estate offices, post office, bank, labour exchange, and similar communal buildings, while the interior of the "circus" will form a car-park. The total expenditure on the full development of the estate, which is designed to attract industry to the North-East, is estimated at £1,500,000. The consulting architect is Professor W. G. Holford. The plans reproduced above show: top, the layout of the estate centre; bottom, layout of a typical group of factories.

according to an appropriate general functional pattern which will allow opportunity for growth and change in an orderly fashion.

The Model Clauses which deal with use zoning appear to be adaptable to built-upon areas, as they cover not only the erection and use of buildings but also the conversion of a building to another use. Where consent is obtainable to a use other than the predominant one, such consent may be subject to conditions, and it has been suggested that this should facilitate orderly evolution and that, for example, should the change of use asked for involve extra traffic, a reasonable condition would be the allocation of sufficient land to accommodate such traffic.

If one or two incongruous uses had penetrated into a quarter to the detriment of a predominant character which it was agreed ought to be preserved, such uses could be extinguished upon payment of compensation.

It is said that one of the chief causes of "blighted districts" is multiplicity of small ownerships which have opened the door to change of use in a small and spasmodic way and have hindered big-scale redevelopment by private enterprise. Some authorities take the view that, failing voluntary pooling of ownerships, purchase and redevelopment according to a plan may be the only effective method of dealing with such a district.

Density Zoning

The normal forms of density zoning appropriate to the outskirts of towns are not likely to be applicable to built-up cores. In quarters where commercial buildings or flats predominate or are likely to do so, it may be advisable not to prescribe a density but to rely on restrictions as to the proportion of site to be covered and the height to be allowed. With regard to flats, on the recommendation of the Advisory Committee, amendments have been made to the Model Clauses which will have the effect of substituting for the normal method of reckoning density a standard based on the estimated number of inhabitants, coupled with an overall limitation of the proportion of site allowed to be covered by buildings.

Coverage and Height

These subjects are obviously closely related to use and to the street pattern, and one finds that, except in rather limited sections where drastic rearrangement is considered to be essential, the general tendency is to endeavour to prevent harmful change rather than to attempt radical alteration.

One reason for this tendency appears to be the fact that compensation is claimable if existing buildings are interfered with, or if, on reconstruction, their cubage (and, in the case of commercial buildings, their ground floor area) is curtailed.

Authorities, therefore, appear to be studying each part of their built-upon areas with a view to prescribing for each part (other than any areas where drastic rearrangement is essential) restrictions as to use, coverage and height, based on existing circumstances; relying on their power of consent, subject to conditions, not to discourage progress but to secure that any change shall not disrupt the part but shall, as far as possible, form part of a process of orderly evolution.

Slum Clearance

Slum clearance and the redevelopment of kindred areas are carried out under housing, not planning, powers, but are, nevertheless, planning problems. In their solution, some authorities are seeking to avail themselves of such opportunities as may occur to restore hitherto derelict areas to their proper place in the town structure, to provide alternative traffic ways and parking places, to secure safe playgrounds for children, and to reveal beautiful buildings that have hitherto been obscured.

Other Objectives

With regard to the other objectives that have been referred to: the preservation of notable buildings may be facilitated by an Order under Section 17 preventing demolition, and by regulating the external appearance of structural alterations or additions; and opportunity may be found to improve their settings when slum clearances are undertaken or streets are rearranged or improved, etc. The Model Clauses contain provisions for regulating the external appearance of buildings.

The establishment of a civic centre and the reassortment of municipal buildings (e.g., schools) are matters which are engaging the attention of some authorities. The extent to which they can be made part of the statutory plan must depend on local circumstances, but it is interesting to note that the first scheme which came into operation under the Town and Country Planning Act, 1932, was related exclusively to the new civic centre at Bristol and its immediate surroundings.

RIBBON DEVELOPMENT

Following are some extracts from a paper entitled "A Year's Administration of the Restriction of Ribbon Development Act," read by Mr. A. T. Robinson, C.B., Deputy Secretary, Ministry of Transport, at the National Housing and Town Planning Conference.

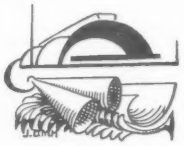
The Restriction of Ribbon Development Act received the Royal Assent in August, 1935, when most Councils had gone into recess. More than a clear twelvemonth has now elapsed, and we may try to get some idea of the extent to which practical effect has been given to the expression of public opinion which we may take the Act to represent.

It is a commonplace that large blocks of legislation of the last quarter of a century, which have dealt with social services in the wider sense, have given primary powers and responsibilities to local Government bodies, reserving but limited powers to the Central Government. The passing of the Act of 1935 gave highway authorities immediate powers of control over roadside development along 40,000 miles of road. In theory at least, this or that council may have been exercising its powers to the full, while a neighbouring council has been allowing the Act to become a dead letter, and Whitehall be in total ignorance of the action of the one and the inaction of the Act. In theory, perhaps: but in the case of the active council, the Minister, from the appeals that come before him, can get a very fair idea of what is doing.

Those appeals came in very slowly at first; but by October 15, in round figures, he had received 100 of them. Half of them, including some only very recently received, are yet to be decided: a quarter of them settled themselves (the preparation of the statement of case apparently may induce in both parties a spirit of reasonableness); while the remaining quarter have been formally determined by the Minister.

The restrictions of section 2 applied automatically, as from the date of passing of the Act, to over 40,000 miles of classified roads. Seven counties in the south of England, five in the Midlands, three in Wales and two in Scotland have passed comprehensive resolutions applying the restrictions of section 2 to a further 11,000 miles of unclassified roads. Other counties, the county boroughs and other highway authorities all put together account for a further 1,500 miles, of which about 1,200 are in the counties.

Of that total of some 55,000 miles of roads protected under section 2, only 125 miles have yet been promoted by their authorities to the higher stage of a section 1 resolution, which is of particular interest to the authority, in that the approved resolution unlocks the key to a Road Fund grant towards compensation payments. Two counties alone, Bucks and Hants, are responsible for 75 miles out of the 125, and the energy and enthusiasm shown by the committees and offices of those counties in administering the Act is a great encouragement to the Minister and his officers. The difficulties of fixing a standard width are great, as witness the time which it takes the Minister to approve a standard width resolution; but sound and ordered development is only to be secured by those who have the courage and the foresight to look ahead and plan for the future.



SOCIETIES AND INSTITUTIONS

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND

A general meeting of the Royal Institute of the Architects of Ireland was held recently in Dublin. The President announced that, as a result of the ballot, Mr. John M. Fairweather was elected as honorary secretary, and Mr. Stephen S. Kelly as honorary treasurer as from January 1 next; and the following were elected members of the Institute: Messrs. Michael Costello, Cecil J. Crowe, G. C. F. Henry, T. F. Inglis, Cecil P. A. Kenna, T. J. McCarthy, Brendan O'Connor, Sean G. O'Kelly, Michael J. Scott, and John E. Wilkinson. Mr. J. R. Boyd Barrett was raised to the rank of Fellow.

WELSH SCHOOL OF ARCHITECTURE

Under the auspices of the Welsh School of Architecture, the Technical College, Cardiff, a lecture was given recently in the Physics Lecture Room in the Technical College by Mr. Hope Bagenal, on the subject of "Vital Problems in Acoustics."

Mr. Bagenal, who illustrated his lecture by means of lantern slides and diagrams, dealt with a variety of problems which arise in such diverse buildings as flats, schools, churches, etc., and showed how by careful planning and construction those troubles could be considerably reduced. He also dealt with the important question of zoning for noise, mentioning especially such cases as electric power stations, aerodromes, milk distribution centres and dirt tracks. Mr. W. S. Purchon presided over an audience consisting of architects, students of architecture, physicists and others interested in acoustical problems.

A.T.O.

A special general meeting of the Architects' and Technicians' Organization was held in London yesterday, when an address entitled "Standards of Housing" was given by Mr. E. Maxwell Fry, A.R.I.B.A.

The following are some extracts from the report on the future policy of the Association:—

"The building industry is still booming. The spoliation of large parts of England is continuing unabated, while, in the already blighted areas, the spasmodic efforts to rehouse the working-class are of a standard and scale that bear no relation to our modern knowledge and resources. In these circumstances, it is imperative that architects should criticize and expose existing development and fight for the raising of the standards of new housing.

"In speculative building the chaos is apparent. This type of building constitutes, for the most part, little more than the building of new slums; while the problem of adequate rehousing of existing slum dwellers is as big a problem as ever. As far as the latter is concerned, architects and surveyors, although handicapped by economic and legal restrictions, are not by any means completely blameless for the appallingly low standards and bad design of new housing schemes. At present rehousing is done piecemeal, is usually badly planned and little use is made of modern resources for construction and materials.

"The Housing Standards and Town Planning Groups of the A.T.O. should concentrate on the study of the present types of building by private enterprise and of rehousing schemes, so that the A.T.O. can issue authoritative and well-considered statements on these points.

"The work naturally falls into several divisions: (*a*) Analyses of speculative building. This dovetails with the work of the House Purchase Group, which has already collected material, from several new estates, on jerry-building, the extent to which new houses do not conform to byelaws, etc. (*b*) A study of rehousing itself. This includes a careful critique of the standards of existing rehousing schemes by various local authorities, together with recommendations on the possibilities of higher standards, better planning and the use of modern materials and construction, good equipment and adequate social amenities. (*c*) Analysis of obstruction to satisfactory rehousing. This would naturally include questions of rent, income, compensation, an analysis of the 1935 Housing Act, etc. A good deal of this ground has already been covered in the booklet issued by the Housing Group in connection with the Housing Exhibition.

"The results of such work can be used in various ways, depending solely on the support obtained from members. We have already been asked by the R.I.B.A. who have formed a committee on housing standards, to submit to them a general report on rehousing. The preparing of this will be the first part of our larger programme.

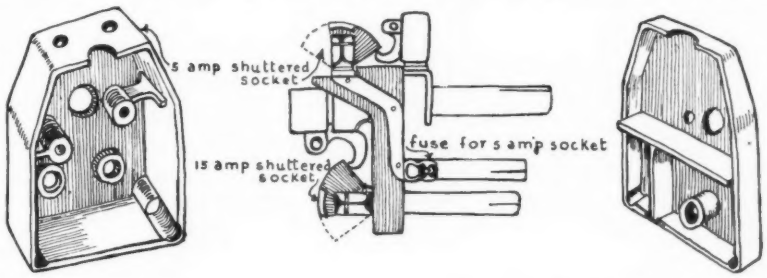
"With sufficient support from members the effect and usefulness will be greatly increased. Subsidiary groups can be formed dealing with specific questions. We hope, in fact, that if the work is tackled thoroughly it will act as a vital influence not only among architects and other allied professional people, but also in shaping opinion on these important questions among the various authorities at present responsible for rehousing."

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS

The eleventh annual report of the I.A.A.S., recently issued by the Council, shows the continued progress made by that body. Its income has increased to £5,000 per annum and it has added over 200 new members to its register during the year, whilst from the reserve fund it has spent nearly £1,500 in improvements to its headquarters, including the construction of a new reference library.

In addition to its provincial and overseas branches, the Association has extended its sphere of influence during the year by the establishment of three new chapters for members resident in the Southern Counties, Wessex and the Isle of Wight, and in the Western Counties.

Under the auspices of the London and Home Counties branch of the Association, an open meeting will be held at the Association's headquarters, 43 Grosvenor Place, Westminster, on Wednesday evening, December 16, when, at 7 p.m., Mr. Percy Lovell, F.S.A., will deliver a lecture, illustrated by lantern slides, on "Bridges." The lecture is open to non-members and cards of admission may be obtained (post free) on application to the Branch Secretary, I.A.A.S., 43 Grosvenor Place, S.W.1.



TRADE NOTES

[*EDITED BY PHILIP SCHOLBERG*]

A Duplex Safety Adaptor

THE Sanders' "Shutterlocked" safety switch socket, noticed on this page some months ago, has apparently been very successful, and the available range has now been enlarged by the addition of a shutterlocked adaptor unit, which is illustrated in the head-piece above.

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The idea of an adaptor unit is, of course, old enough, but they are none the less useful fittings, always provided that users refrain from piling on additional loads until the rated capacity of the fixed plug socket is exceeded. With a 15 amp. plug this is not very likely, as the average electric fire is not bigger than 2 kilowatts (10 amps.), and a secondary supply for a reading lamp, kettle or wireless set leaves the socket still well below its full loading.

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Messrs. Sanders' adaptor provides two outlets, one 15 and one 5 amp., both of them shutterlocked by a rotating plate which automatically uncovers the sockets as the plug is pushed in, and, considering the amount of detail work inside the case, the overall size has been kept commendably small.

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Incidentally, the 5 amp. outlet has its own independent fuse which clips into position inside the back cover plate, where it is easy to replace as it is of the cartridge type and needs no additional asbestos packing. Each adaptor is sent out with a spare fuse loose in the case and easily accessible.

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This fitting sells at 50s. a dozen, and there is another type in course of production, but not yet available for sale; this has one 15 and one 2 amp. outlet, and the price is 45s. 4d. a dozen.

A New Information Bureau

A new Bureau of Technical Information has just been inaugurated by the Lead Industries Development Council. Information and advice is to be given on any aspect of lead and its alloys or lead-paint work, the object of the Council being to show that lead is not only a reliable and time-tested material, but that it is capable of competing successfully with kindred building materials.

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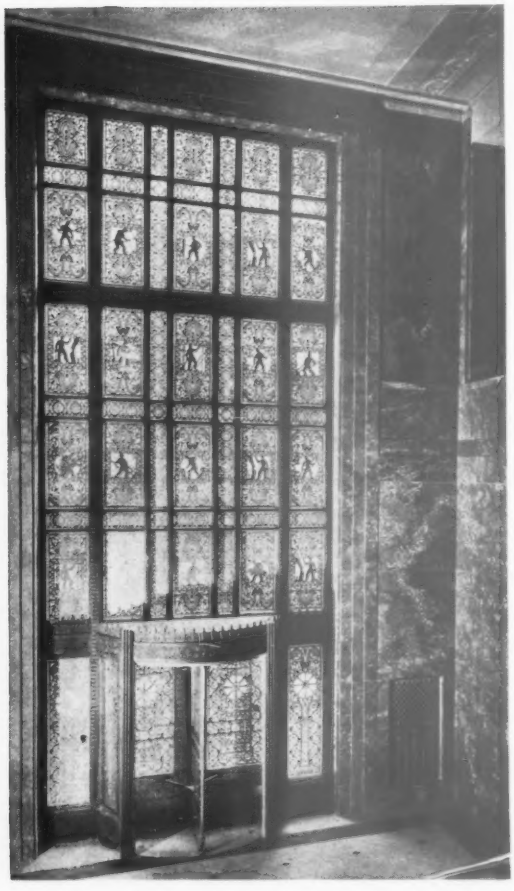
And now, talking of lead, I have just come across what is, to me, an entirely new use for it. The photograph overleaf shows the main entrance hall of the Trustees System Service Building in Chicago; the space between the mullions being filled in



A detail of the entrance hall of the Trustees System Service Building in Chicago. The space between the mullions is filled in with glass sheets containing lead cut-out work. See note on page 789.

with glass sheets containing lead cut-out work.

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The process is simple enough, for the design is traced on thin sheet lead and cut out with a knife, or, if the lead is too heavy for that, with a chisel and mallet. The resultant design is then mounted between two sheets of glass, the edges being well sealed to prevent condensation and the penetration of dirt.

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Two important advantages are claimed; that the cost is small compared with bronze grille work, and that cleaning is extremely easy, as there are only two flat glass surfaces. And thoroughly justifiable claims they seem to be, too, though I cannot escape from the conviction that there is something faintly unpleasing about this sort of thing. A personal prejudice maybe, but none the less it may interest some people to know that this sort of thing can be done without much difficulty when there is a need for it.

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The same principle, I remember, was applied some years ago to the net curtain, which was sandwiched between two sheets of glass. Some of this, I believe, was used by Lyons at the Cumberland Hotel, and I think elsewhere, not only in windows, but as decorative table tops, though for this latter purpose there is the difficulty of sealing the edge without leaving an unsightly black line all round.

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Anything that Lyons do may be assumed not only to please the public, but also to show a very real saving in upkeep costs. On the same principle I imagine that this lead cut-out work would show the same advantages.

1937

The diary season seems to have started already, the first arrival being the Architects' and Surveyors' Pocket Diary, published at 2s. 6d. each year by the A.A.S.T.A. And a very useful production, as I have found by experience, for there are 64 pages of tables and general information at the beginning which tell you most things, from the weight of a cart horse to the width of a railway carriage door, not forgetting a coloured road and railway map of the British Isles to a scale of 30 miles to inch.

Addresses

William Sanders & Co. (Wednesbury), Ltd., Falcon Works, Wednesbury, Staffs.

The Technical Information Bureau of the Lead Industries Development Council, 19 Hobart Place, Eaton Square, S.W.1.

The Association of Architects, Surveyors and Technical Assistants, 113 High Holborn, W.C.1.

Manufacturers' Items

Messrs. W. M. Sanders & Co. (Wednesbury), Ltd., announce that, owing to an increase in raw materials and labour costs, they are reluctantly compelled to increase the price of their Ironclad Switch and fusegear by 5 per cent. The prices of the safety sockets and plugs listed in catalogue 124 remain unchanged.

THE BUILDINGS ILLUSTRATED

DENHAM FILM STUDIOS (pages 771–777). Architects: Messrs. Joseph. Technical Adviser (London Film Productions, Ltd.): Jack Okey. The general contractors were F. G. Minter, Ltd., and the principal subcontractors and suppliers included: Air Conditioning Corporation, Ltd., ventilation and air conditioning; J. H. Nicholson & Co., Ltd., heating and hot water; Absorbit, Ltd., insulation and acoustic work; Albion Clay Co., Ltd., stoneware conduits; Artec Co., spray painting; Banister, Walton & Co., Ltd., steelwork; Becco Engineering Co., Ltd., water-softening plant; Benham and Sons, Ltd., restaurant equipment; Brilliant Sign Co., Ltd., letters; Carter & Co., Ltd., tiling; Caxton Floors, Ltd., patent flooring; Celluspray, Ltd., spray painting; Crittall Manufacturing Co., Ltd., windows; Horace W. Cullum & Co., Ltd., acoustics and sound installation to all the stages; Dorman, Long & Co., Ltd., steelwork; Darbin and Sons, drainage, water supply and plumbing; Howard Farrow & Co., Ltd., concrete roads; W. N. Froy and Sons, Ltd., sanitary fittings; Gliksten Doors, Ltd., doors; A. Goldstein & Co., Ltd., glass and patent glazing; Hammond Pump and Equipment Co., Ltd., pumps; Haskins, Ltd., rolling shutters; Hathernware, Ltd., faience; Haywards, Ltd., patent glazing; John Jones & Co., steelcrete floor; Kingsmill Metal Co., Ltd., metalwork; Lenscrete, Ltd., roof lights; Lester Construction Co., Ltd., water towers; Mather and Platt, Ltd., sprinkler installation; Merryweather and Sons, Ltd., fire appliances; Mellowes & Co., Ltd., windows and patent glazing; M. and R. Moore, Ltd., marble sinks; Nettlefold and Son, Ltd., door furniture; Newalls Insulation Co., Ltd., fireproof duct linings; F. A. Norris & Co., Ltd., iron ladders and staircases; Potter Rax Gate Co., Ltd., metalwork; Powers and Deane Hansome's Ltd., steelwork; R. Richards & Co., artesian well; Rippers, Ltd., joinery; Rollo Products, Ltd., granolithic paving; Scaffolding (Gt. Britain), Ltd., tubular scaffolding; Spanner Thimble Tube Boilers, Ltd., central heating and boilers; L. J. Speight and Partners, Ltd., sewage disposal; Turners Asbestos Cement Co., asbestos roofing tiles; Uxbridge, Maidenhead, Wycombe and District Gas Co., gas supply; Watling Joinery Works, joinery; F. H. Wheeler, electrical work; Wm. Wood and Son, Ltd., greenhouses; Limmer and Trinidad Lake Asphalt Co., Ltd., asphalte; Western Electric Co., Ltd., sound and recording installation; Meredith and Wise, Ltd., strip flooring; British Reinforced Concrete Engineering Co., Ltd., concrete; Marston Valley Brick Co., Ltd., bricks; T. Balmforth & Co., Ltd., boilers; Veronese, Ltd., plaster; Honeywill and Stein, Ltd., "Heraklith"; Universal Asbestos Manufacturing Co., Ltd., asbestos tiles; Tentest Fibre Board Co., acoustic lining to doors; Wood Products, Ltd., insulating board.

THE ROLDANE MILL, CONGLETON, CHESHIRE (pages 783–784). Architects: Venables and Barker, L./A.R.I.B.A. The general contractors were J. Gerrard and Sons, Ltd., who were also responsible for excavation, reinforced concrete, woodblock flooring, sanitary fittings, etc. The principal

sub-contractors and suppliers included: Tarmac Ltd., artificial stone; Leeds Fireclay Co., Ltd., terra cotta; J. Parks and Son, structural steel; Wolverhampton Corrugated Iron Co., special roofings; Mellowes & Co., Ltd., patent glazing; Saunders and Taylor, Ltd., central heating and ventilation; Barnett and Soans, Ltd., electric wiring and light fixtures; Rustproof Metal Window Co., Ltd., casements; Alexander Lees, folding gates; Wood & Co. (Longton), Ltd., tiling; Evans Lifts Co., lift; Sovex, Ltd., conveyors; Amcolite, Ltd., and Progress Foundry, signs.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 miles radius)

BATTERSEA. *Senior School.* The L.C.C. has invited Mr. T. S. Tait, F.R.I.B.A., of the firm of Sir John Burnet, Tait and Lorne, to undertake the work of designing and supervising the erection of the new senior school to be built on the Linda Street site, Battersea.

BETHNAL GREEN. *Redevelopment.* The L.C.C. has prepared a scheme for the redevelopment of an area of 46 acres in the north of Bethnal Green, at a cost of £1,750,000.

CAMBERWELL. *Redevelopments.* The L.C.C. is to clear and redevelop the Juniper Place area, Camberwell, at a cost of £46,000.

DEPTFORD. *Flats.* Plans passed by the Deptford B.C.: Flats, 76 Wickham Road, for Mr. E. Proctor.

ENFIELD. *Extensions, etc.* The Enfield U.D.C. is to prepare plans for extensions at the branch library and acquire land in Bincote Road for another branch library.

ENFIELD. *Ice Rink, etc.* The Enfield U.D.C. has approved a scheme for the erection of an ice rink, dance hall, garage and service station on land at the rear of the Savoy Cinema, Eaton Road, subject to the elevations of the buildings being to the satisfaction of the Council.

HACKNEY. *Flats.* The Hackney B.C. has approved plans by the Council's architects, Messrs. Joseph, for the erection of 208 flats at Hindle Street, at a cost of £162,100.

HAMMERSMITH. *Garage, etc.* Plans passed by the Hammersmith B.C.: Rebuilding of Hadyn Park Road Works, Messrs. Wallis, Gilbert and Partners; garage at Olympia, Mr. J. Emberton.

MARYLEBONE. *Library, etc.* The Marylebone B.C. has approved plans by Sir Edwin Cooper for the development of the site adjoining the town hall, at a cost of £131,000, for a library, clinic, welfare centre and offices.

PADDINGTON. *Flats, etc.* Plans passed by Paddington B.C.: Boiler house, swimming pool, etc., block of residential flats, etc., Edgware Road, Messrs. Toms and Partners; block of flats and boiler house, Sussex Place, Mr. Michael Rosenauer.

ST. PANCRAS. *Flats.* The St. Pancras B.C. has approved the lay-out of the Queen's Crescent housing scheme, to provide for a five-storey building, with provision for 132 flats. If it is possible to raise the height of the centre block to another storey, a further 14 flats will be provided, making a total of approximately 146.

ST. PANCRAS. *Flats.* The St. Pancras B.C. has approved an amended lay-out of the Leighton Road housing scheme, incorporating the provision of six one-room flats. The amended plans provide for 105 tenements, as against 102, with a total of 386 rooms, as compared with 392 previously approved, a decrease of six rooms on the original scheme.

WOOLWICH. *Pavilion, etc.* The L.C.C. is to erect a pavilion and groundsman's flat at Footscray Road playing field, Woolwich.

WOOLWICH. *Extensions.* The Governors of Woolwich Polytechnic are to extend further the Polytechnic buildings at a cost of £20,000.

SOUTHERN COUNTIES

BOURNEMOUTH. *Houses.* Plans passed by the Bournemouth Corporation: 10 houses, Castle Lane, Miss F. J. Ive; six houses, Castle Lane, the Trustees of Eventide Homes; eight houses, Deanscroft Road, Messrs. Davis Estates, Ltd.

HASTINGS. *Houses.* Plans passed by the Hastings Corporation: 24 houses, Edmund Road, Mr. T. E. Relfe; 89 houses, new road, off Hollington Old Lane, St. Leonards, The Hollington Estates, Ltd.; 18 houses, Greville Road, Messrs. Jeffery and Wyatt.

SOUTHAMPTON. *Extensions.* The Southampton Education Committee is to erect new buildings for King Edward Grammar School, at a cost of £72,533.

SOUTH-WESTERN COUNTIES

TORQUAY. *Houses.* Plans passed by the Torquay Corporation: 38 houses, Lloyd Avenue, Mr. J. Lloyd.

TORQUAY. *Houses.* The Torquay Corporation has asked the borough engineer to proceed with the preparations of an amended lay-out confined to the lands forming part of the Coleridge estate for the erection of about 300 houses.

TORQUAY. *School.* The Torquay Education Committee has selected a site in Easterfield Lane for the erection of an open-air school.

MIDLAND COUNTIES

HYDE. *Houses, etc.* Plans passed by the Hyde Corporation: 124 houses, off Dowson Road and Stockport Road, Gee Cross, Messrs. Dean and Whipp; 26 houses, off Victoria Street, Newton, Mr. Geo. Clayton; cinema, Travis Street and Crook Street, Messrs. Rossett Estates, Ltd.

MARKET HARBOROUGH. *Cinema, etc.* Plans passed by the Market Harborough U.D.C.: Cinema, Northampton Road, for Rossette Estates, Ltd.; six houses, Highcross Street, for Mr. W. J. Smith.

NORTHAMPTON. *Houses.* Plans passed by the Northampton Corporation: 32 houses, Beech Avenue, for Messrs. A. P. Hawtin and Sons, Ltd.

NOTTINGHAM. *School.* The Notts Education Committee is negotiating for a site in Sutton Lane, Sutton-in-Ashfield, for the erection of a secondary school.

ROTHERHAM. *Houses.* The Rotherham Corporation is to proceed with the preparation of plans and lay-out on the Dalton Estate for approximately 330 houses.

ROTHERHAM. *Houses.* The Rotherham Corporation is to erect 212 houses at Canklow and Herringthorpe, at a cost of £94,000.

STRETFORD. *Houses.* The Stretford Corporation has approved plans by the borough surveyor for the development of the Barton Road Estate, by the erection of 206 houses.

WEST BROMWICH. *Housing Scheme.* The West Bromwich Corporation has purchased 5½ acres adjoining the Atlas Ironworks, for a housing scheme.

NORTHERN COUNTIES

CREWE. *Maternity Home.* The Crewe Corporation is to extend the maternity home at an estimated cost of £12,770.

DIPTON. *Houses.* The Annfield Plain U.D.C. is to erect 35 houses in Lily Terrace, Dipton.

DURHAM. *Institution for Mental Defectives.* The Durham County Council is seeking sanction to borrow £38,400 as the second instalment of the total expenditure of £103,229 proposed to be expended on the provision of the institution for mental defectives at School Aycliffe, and has received a letter from the district commissioner for special areas stating that he is prepared provisionally to approve the remainder of the scheme for the building of the institution.

DURHAM. *Cinema.* Mr. G. M. Stone is to erect a cinema at Billingham, county Durham.

DURHAM. *Nurses' Homes.* The Durham County Council is to provide nurses' homes at Durham, Easington, Lanchester and Chester-le-Street, at a cost of £19,000.

DURHAM. *Houses.* Messrs. Lane Fox & Co. are to erect 35 houses in Crow Trees Lane, Bowburn, co. Durham.

DURHAM. *Extensions.* The Durham County Council is seeking a grant for a scheme for extensions at Holywood Hall sanatorium, at an estimated cost of £48,800.

FLAXTON. *Houses.* Plans passed by the Flaxton R.D.C.: 14 houses, Springfields Estate, Rawcliffe Lane, Mr. W. E. Metcalfe.

HARROGATE. *Extensions.* The Harrogate Corporation is to proceed with the extension of the Royal Baths at a cost of £66,000.

HULL. *Library.* The Hull Corporation has reserved a site on the Derringham Bank Estate for library purposes.

HULL. *School.* The Hull Education Committee has authorized the director of education to submit proposals to the Board of Education for the erection of a senior department to accommodate 520 children on the Bricknell Avenue school site, and for the erection of a department on the Wold Road site to accommodate in the first instance 400 junior and infant children.

LEEDS. *Hostel.* The Leeds Corporation is seeking sanction to borrow £57,173 in connection with the erection of the municipal hostel, Beeston Road.

LEEDS. *Extensions, etc.* The Leeds Corporation has appointed Messrs. Stanley Hall and Easton and Robertson, in association with Messrs. Kitson, Parish, Ledgard and Pyman, as architects in connection with the scheme for the extension of the nurses' home and alterations and improvements to the operating theatres, etc., at St. James's Hospital.

SOUTHPORT. *Police Premises, etc.* Southport Corporation has asked the architects to proceed forthwith in the preparation of the working drawings for the police and fire brigade premises on the Woodland site, estimated to cost £80,000.

SUNDERLAND. *School.* The Sunderland Corporation is to erect a school for mentally defective children at a cost of £14,221.

SUTTON COLDFIELD. *Houses, etc.* Plans passed by Sutton Coldfield Corporation: Ten houses, Banners Gate Road, Mr. G. E. Clarke; six houses, Chester Road, New Oscott, Mr. R. F. Hill; five houses, Worcester Lane, A. Marks.

SUTTON COLDFIELD. *School.* The Sutton Coldfield Education Committee has appointed Mr. Rolf Hellberg, A.R.I.B.A., of Coventry, to prepare plans for the provision of a senior school on the Holland House Estate.

YORK. *Houses, etc.* The York Corporation is to obtain tenders for the erection of 83 three-bedroom and 42 two-bedroom houses and 56 flats on the Water Lane Estate, and asked the city engineer to prepare plans of a larger type house to abut on the Ring Road.

YORK. *Houses.* The York Corporation is to erect 60 houses of either the four- or five-bedroom type to abate the overcrowding.

SCOTLAND

GLASGOW. *Extensions.* The Glasgow Corporation is to extend the Dalmarnock power station, at a cost of £84,000.

GLASGOW. *Extensions.* The Glasgow Corporation has approved plans by the city engineer for extensions at Robroyston Hospital, at an estimated cost of £15,500.

GLASGOW. *Extensions.* The Glasgow Corporation has approved plans by the city engineer for additional accommodation at Stoneyetts certified institution, for approximately 200 patients, at an estimated cost of £95,000.

GLASGOW. *Institution.* The Glasgow Corporation is to erect a new institution to accommodate sick and infirm persons at Caldwell estate, and asked the city engineer in conjunction with the medical officer of health to prepare plans of an institution for approximately 1,000 patients.

RATES OF WAGES

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

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

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

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

CURRENT PRICES

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

WAGES

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

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	18	6
Hydrated Lime	"		3	0
Portland Cement, in 4-ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	"	2	5	0
White Portland Cement, in 1-ton lots	"		8 15	0
Thames Ballast	per Y.C.		6	6
¼" Crushed Ballast	"		7	0
Building Sand	"		7	6
Washed Sand	"		8	6
2" Broken Brick	"		8	0
¼" " "	"		10	3
Pan Breeze	"		6	6
Coke Breeze	"		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	d.	6" s.	d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¼" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	0
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS :					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	"		5		—

BRICKLAYER

		£	s.	d.
Flettons	per M.	2	12	0
Grooved do.	"	2	14	0
Phorpres bricks	"	2	15	0
" Cellular bricks	"	2	15	0
Stocks, 1st quality	"	4	11	0
" 2nd "	"	4	2	6
Blue Bricks, Pressed	"	8	14	0
" Wirecuts	"	7	12	6
" Brindles	"	7	0	0
" Bullnose	"	9	0	0
Red Sand-faced Facings	"	6	18	6
Red Rubbers for Arches	"	12	0	0
Multicoloured Facings	"	7	10	0
Luton Facings	"	7	10	0
Phorpres White Facings	"	3	17	3
" Rustic Facings	"	3	12	3
Midhurst White Facings	"	5	0	0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality :				
Stretchers	"	21	0	0
Headers	"	20	10	0
Bullnose	"	27	10	0
Double Stretchers	"	29	10	0
Double Headers	"	26	10	0
Glazed Second Quality, *Less*	"	1	0	0
" Buffs and Creams, *Add*	"	2	0	0
" Other Colours	"	5	10	0
2" Breeze Partition Blocks	per Y.S.		1	7
2½" " " "	"		1	10
3" " " "	"		2	1
4" " " "	"		2	6

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" " 2nds	" "			4
Mahogany, Honduras	" "	1		3
" African	" "	1		1
" Cuban	" "	2		6
Oak, plain American	" "	1		0
" Figured "	" "	1		3
" plain Japanese	" "	1		2
" Figured "	" "	1		5
" Austrian wainscot	" "	1		6
" English	" "	1	11	
Pine, Yellow	" "	1		0
" Oregon	" "			4
" British Columbian	" "			4
Teak, Moulmein	" "	1		3
" Burma	" "	1		2
Walnut, American	" "	2		3
" French	" "	2		3
Whitewood, American	" "	1		1
Deal floorings, ⅞"	Sq.		18	6
" 1"	"	1	1	6
" 1¼"	"	1	2	0
" 1½"	"	1	5	0
" 1¾"	"	1	10	0
Deal matchings, ⅞"	"		14	0
" 1"	"		15	6
" 1¼"	"	1	4	0
Rough boarding, ⅞"	"		16	0
" 1"	"		18	0
" 1¼"	"	1	6	0

Plywood, per ft. sup.

Thickness	⅜" A	B	BB	½" A	B	BB	⅝" A	B	BB	¾" A	B	BB
Qualities	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon												
Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	–	1/–	9	–

		d.
Scotch glue	lb.	8

SMITH AND FOUNDER

Tubes and Fittings

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

	¼"	⅜"	½"	¾"	1"
Tubes, 2'–14' long per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"–23" long each	10	1/1	1/11	2/8	4/9
" 3"–11½" long "	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long,,	11	1/3	2/2	2/10	5/3
" " 3" M–½" long "	8	10	1/5	1/11	3/6
Bends	8	11	1/7½	2/7½	5/2
Springs not socketed "	5	7	1/1½	1/11½	3/11
Socket unions "	2/–	3/–	5/6	6/9	10/–
Elbows, square "	10	1/1	1/6	2/2	4/3
Tees "	1/–	1/3	1/10	2/6	5/1
Crosses "	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples "	3	4	6	8	1/3
Diminished sockets "	4	6	9	1/–	2/–
Flanges "	9	1/–	1/4	1/9	2/9
Caps "	3½	5	8	1/–	2/–
Backnuts "	2	3	5	6	1/1
Iron main cocks "	1/6	2/3	4/2	5/4	11/6
" with brass plugs "	—	4/–	7/6	10/–	21/–

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

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ⅜"	"	10	6
" " ½"	"	10	3
" " ⅝"	"	10	0

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ¾"	cwt.	9	6
" " ⅞"	"	9	6
" " 1"	"	9	6
" " 1¼"	"	9	6
" " 1½"	"	9	6

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

		5" s.	d.	6" s.	d.
Half-round rain-water gutters of ordinary thickness metal	F.R.	5		6	
Stop ends	each	6		6	
Angles	"	1	7	1	11
Obtuse angles	"	2	0	2	6
Outlets	"	1	9	2	3

PLUMBER

		£	s.	d.
Lead, milled sheets	cwt.	26		3
" drawn pipes	"	25		9
" soil pipe	"	28		9
" scrap	"	16		9
Solder, plumbers'	lb.			9½
" fine do.	"	1		0
Copper, sheet	"			8½
" tubes	"			11

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

PLASTERER

		£	s.	d.
Lime, chalk	per ton	2	0	0
Plaster, coarse	"	2	15	0
" fine	"	4	7	6
Hydrated lime	"	3	0	0
Sirapite	"	3	6	0
Keene's cement	"	5	0	0
Gothite plaster	"	3	6	0
Pioneer plaster	"	3	6	0
Thistle plaster	"	3	6	0
Sand, washed	Y.C.		11	6
Hair	lb.			8
Laths, sawn	bundle		2	4
" rent	"		3	9
Lath nails	lb.			3

GLAZIER

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

* *Colours, 1d. F.S. extra.*

† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

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

CURRENT PRICES FOR MEASURED WORK

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

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

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

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

ASPHALTER		s. d.
½" Horizontal dampcourse	Y.S.	4 9
⅝" Vertical dampcourse	"	7 9
½" paving or flat	"	6 3
1" paving or flat	"	7 6
1" × 6" skirting	F.R.	1 0
Angle fillet	"	2½
Rounded angle	"	2½
Cesspools	Each	5 6

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

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

CARPENTER AND JOINER		£ s. d.
Flat boarded centering to concrete floors, including all strutting	Sqr.	2 2 6
Shuttering to sides and soffits of beams	F.S.	7
" to stanchions	"	7
" to staircases	"	1 6
Fir and fixing in wall plates, lintols, etc.	F.C.	3 9
Fir framed in floors	"	4 6
" " roofs	"	6 6
" " trusses	"	7 6
" " partitions	"	8 6
⅝" deal sawn boarding and fixing to joists	Sqr.	1 14 6
1" " " " " "	"	1 17 6
1½" " " " " "	"	2 3 0
⅝" × 2" fir battening for Countess slating	"	9 6
Do., for 4" gauge tiling	"	12 0
Stout feather-edged tilting fillet	F.R.	4½
Patent inodorous felt, 1 ply	Y.S.	2 3
" " " 2 "	"	2 9
" " " 3 "	"	3 3
Stout herringbone strutting to 9" joists	F.R.	10½
1" deal gutter boards and bearers	F.S.	1 2
1½" " " "	"	1 6
2" deal wrought rounded roll	F.R.	8
1" deal grooved and tongued flooring, laid complete, including cleaning off	Sqr.	2 1 0
1¼" do.	"	2 10 0
1½" do.	"	2 17 0
1" deal moulded skirting fixed on, and including grounds plugged to wall	F.S.	1 6
1¼" do.	"	1 9

CARPENTER AND JOINER—*continued*		s. d.
1¼" deal moulded sashes of average size	F.S.	1 9½
2" " " " "	"	1 11½
1¼" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ⅝" parting beads, and with brass faced axle pulleys, etc., fixed complete	"	3 7
2" " " " " "	"	3 10
Extra only for moulded horns	Each	6
1¼" deal four-panel square, both sides, door	F.S.	2 0
2" " " " "	"	2 8
1¼" " but moulded both sides	"	2 4
2" " " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " " "	"	1 4
1¼" deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1¼" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages	"	2 6
1¼" deal moulded wall strings	"	2 1
1¼" " outer strings	"	2 4
Ends of treads and risers housed to string	Each	1 9
3" × 2" deal moulded handrail	F.R.	1 3
1" × 1" deal balusters and housing each end	Each	2 0
1¼" × 1¼" " " "	"	2 9
3" × 3" deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	"	6 0

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

PLUMBER		£ s. d.
Milled lead and labour in flats	cwt.	2 0 3
Do. in flashings	"	2 3 9
Do. in covering to turrets	"	2 9 3
Do. in soakers	"	1 14 9
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

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

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

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

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

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

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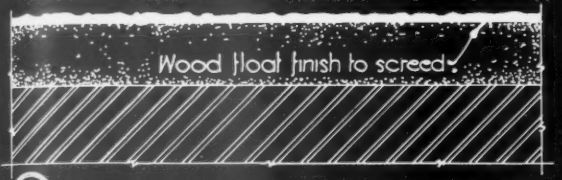
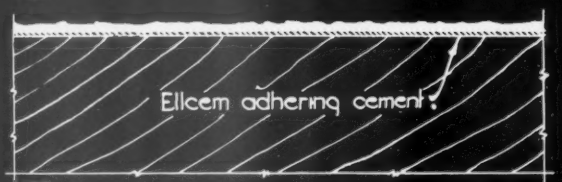
EMALUX WALL SURFACE FINISH :

FULL SIZE DETAILED SECTIONS SHOWING EMALUX GLAZE FINISH ON VARIOUS SURFACES:

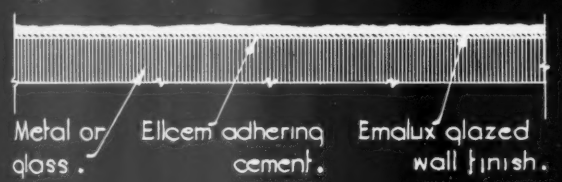


1. EMALUX ON SCREED OVER BRICKWORK.

2. EMALUX DIRECT ON CONCRETE .



3. EMALUX ON WOODWORK .



4. EMALUX ON METAL OR GLASS :

GENERAL PROPERTIES :

Emalux wall surface finish is composed of 90 per cent. cement. The glazed enamel-like surface is obtained by treating the rendering with a special solution to give uniform suction . Emalux material is brushed on to the walls, stippled, and afterwards sprayed to give an average thickness of 1/16". Emalux sets hard in a few hours & becomes an integral part of the wall by its adhesion to the undercoat.

SURFACE :

Emalux has a highly glazed and glass-hard surface which is rippled to break up the light and avoid glare .

The surface will not scratch, craze or peel off . It can be washed with soap and warm water and is not affected by extreme temperatures, damp or dilute acid . The surface may be worked to pattern with various textures .

COLOURS :

The colours are fast and may be had in various combinations.

USES :

The glazed finish may be used instead of tiling or glazed brickwork or similar material .

SUITABLE UNDERCOAT :

Emalux can be applied to old or new interior walls which have a coarse sandy finish, such as wood shuttered concrete walls, or brickwork cement screeded, in washed sand and cement wood floated. By the use of Ellcem, a special adhering cement, Emalux can be applied to metals, glass, wood, etc, painted walls & plaster walls in good condition.

TABLE SHOWING PROCESS OF WALL FINISH :

SURFACE TO BE TREATED	UNDERCOAT REQUIRED.	EMALUX PREPARATIONS.	APPLICATION.	FINISH.
Common brickwork.	Joints to be raked out & walls screeded with washed sand & cement, left with a wood float finished surface equal to that of medium sand paper.	Rendering is treated with a special solution to give uniform suction.	Emalux material is brushed on to the walls, stippled & afterwards sprayed with a gun.	After allowing 3 or 4 days to set, a protecting or impregnating solution is applied.
Concrete walls & partitions.	Surface as specified to be screeded.			
Plastered walls.	Ellcem special adhering cement applied by Emalux workmen.	Rendering is treated with a special solution to give uniform suction.	Emalux material is brushed on to the walls, stippled & afterwards sprayed with a gun.	After allowing 3 or 4 days to set, a protecting or impregnating solution is applied.
Painted or enamelled walls.				
Steel or other metal surfaces.				
Glass or glazed surfaces.				

Information from John Ellis & Sons Limited.

INFORMATION SHEET : EMALUX GLAZED WALL FINISH :
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne.

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INFORMATION SHEET

• 439 •

WALL FINISHES

Product : "Emalux" Glazed Wall Finish

The Material :

Emalux is a cold glaze surface finish, the composition of which is 90 per cent. high grade cement. It is applied only by the Company's expert staff.

Surface Finish :

It gives a glass-hard high gloss surface which is usually finished with a rippled or stippled surface to break up the glare.

Colours :

A large variety of colour combinations is obtainable by applying a base colour and spraying over this the other colour or colours required.

Colour Chart :

The six colours shown on the accompanying chart are a selection only from the range of colours obtainable in the material.

New Walls :

These should be screeded with a cement and washed sand screed, and, to be suitable for direct application, should be finished as evenly as possible with a coarse sandy surface equal to medium sand paper.

Old Walls :

Emalux is applied directly to old walls if the surfaces are as described above, but not direct to brickwork.

Old Plaster and Painted Walls in good condition, Metals, Wood, Glass, etc. :

A coat of "Ellcem" special insulating cement is required to form an adhesive undercoat on these surfaces before the application of Emalux.

Application :

Emalux is quickly and readily applied, setting reasonably hard in about twelve hours. The wall is treated with a special solution; the base colour is brushed on and stippled. It is then sprayed with one or more colours as required, and left for three or four days, after which a clear protecting solution is applied. Fittings, joinery, etc., are masked during the process.

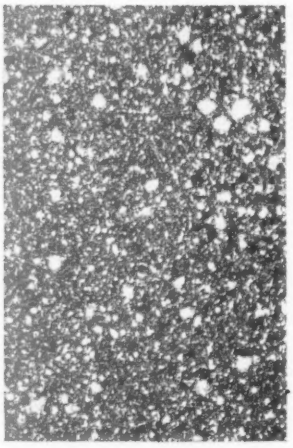
Prices :

The cost varies according to the size of the job or the quantity that can be applied during one visit of the Company's workmen. Quotations should be obtained for each job.

Manufacturers : John Ellis and Sons, Ltd.
Head Office : Welford House, Welford Place, Leicester
Telephone : Leicester 5682
London Office : Caxton House, Tothill Street, S.W.1
Telephone : Whitehall 5011

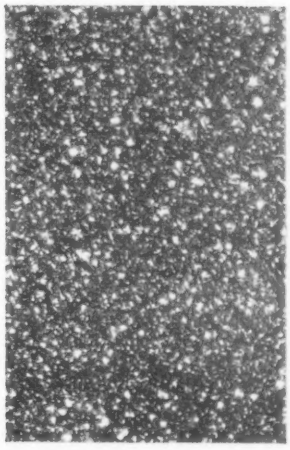
Supplement to THE ARCHITECTS' JOURNAL for December 3, 1936 FILING REFERENCE:

COLOUR CHART TO INFORMATION SHEET No. 439



E.16.A.

E.2.A.



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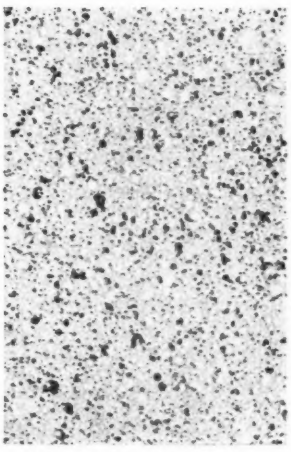
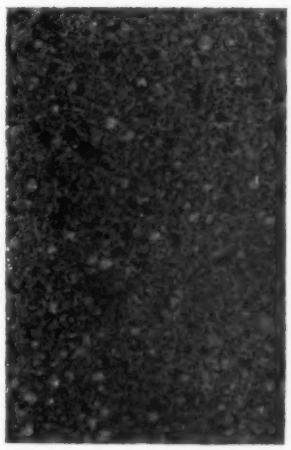
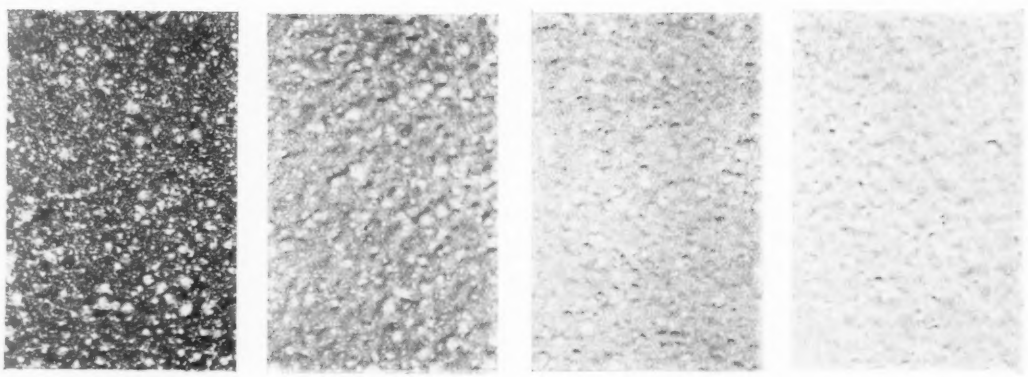


E.21.



E.13.A.1.

The six colours shown above are a selection from the practically unlimited range of colours obtainable by varying the colour of base coat and also that of the last coat. The four colours given below indicate the graduations of colour obtainable from any one of major colours.



GRADUATIONS OF A MAJOR COLOUR

Supplement to THE ARCHITECTS' JOURNAL for December 3, 1936

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COLOUR CHART TO INFORMATION SHEET

• 439 •

WALL FINISHES

John Ellis and Sons, Limited

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DATA ON CLAY PLAIN ROOFING TILES.

The data given is applicable only to plain clay or marl roofing tiles as normally marketed and does not cover tiles made of other materials or definitely manufactured to special shape, camber, size or colour.

Those portions of the following information which are explicit in British Standard Specification No. 402 (1930) for Clay or Marl Plain Roofing Tiles have been italicized.

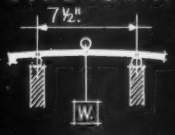
MATERIAL.

All roofing tiles should be manufactured by adequately firing *well-weathered ground clay or marl;* should be *well burnt, true in shape,* and of *dense* texture; should give a clear ring when struck and show a *clean fracture* (without flaking, laminating, or crumbling) *when broken;* should be *free from firecracks.*

SURFACE FINISH.

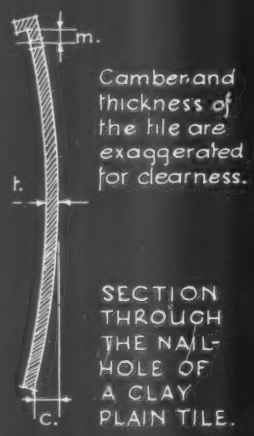
The upper (weather) face of the tile may be either wholly sand faced, sand faced from the tail upwards 5" or more, or un-faced (smooth surface).

STRENGTH.



On a roof, tiles are subject to bending stresses. In this connexion, the British Standard Specification No. 402 (1930) requires plain clay roofing tiles, (supported as shown), to sustain *when tested wet*, at least the following *minimum loads:*

Size.	Hand-made clay plain tiles.	Machine-made clay plain tiles.
10½" × 6½"	*175 lbs.*	*125 lbs.*
11" × 7"	*188·4 lbs.*	—

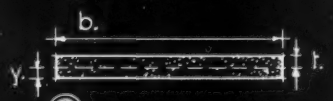


Camber and thickness of the tile are exaggerated for clearness.

SECTION THROUGH THE NAIL-HOLE OF A CLAY PLAIN TILE.

PLAN OF CLAY PLAIN TILE.

(A) END VIEW OF HEAD OF SEPARATE-NIBBED CLAY PLAIN TILE.



(B) END VIEW OF HEAD OF CONTINUOUS-NIBBED CLAY PLAIN TILE.

DIMENSIONS.

As regards size, camber, nib-size and character, and nail-hole position and diameter, plain clay roofing tiles should satisfy one of the following sets of values:

HAND-MADE CLAY TILES

Thickness	(t.)	*not less than ½".*		
Camber	(c.)	*between 3/16" and 1/16".*		
Length	(l.)	10"*	*10½" to 10¾"*	11"
Width	(b.)	6"*	*6½" to 6⅝"*	7"

Nibs: *not less than two separate nibs,* as at (A).
* some 10" × 6" tiles are made nibless.
Dimensions:
Width: (x.) *not less than ¾".*
Depth: (y.) *⅜" to ½".*

MACHINE-MADE CLAY TILES.

Thickness	(t.)	*not less than ⅜".*
Camber	(c.)	*between ⅛" and ¼".*
Length	(l.)	*10½" to 10¾".*
Width	(b.)	*6½" to 6⅝".*

Nibs: *either not less than two separate nibs,* as at (A), *or a continuous nib,* as at (B).
Dimensions:
Width: (x.) *separate nibs: not less than ¾".*
Depth: (y.) *continuous nib: ⅛" to ½".*

Nail holes: *diameter:* *not more than ¼".*
distance from side of tile: (n.) *1" to 1¾".*
distance from inside of nib: (m.) *⅝".*

} These dimensions apply to both hand-made and machine-made tiles.

EFFICIENCY AND DURABILITY:

For comments on these aspects of clay plain roofing tiles see notes on back.

Information from Clay Products Technical Bureau of Great Britain.

INFORMATION SHEET: THE TILING OF PITCHED ROOFS WITH PLAIN TILES: No. 1.

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

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INFORMATION SHEET

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ROOFING

Subject : Data on Clay or Marl Plain Roofing Tiles.

General :

This Information Sheet is the first of a series designed to show modern methods of tiling pitched roofs with various forms of burnt clay tile. Throughout the series, information given is applicable solely to roofs tiled with burnt clay products.

Factors Affecting the Efficiency of Tiled Roofs :

The primary function of any roof is to exclude the elements, particularly rain and snow, from the structure below. In the case of a pitched roof built up of separate units, such as burnt clay tiles, the efficient performance of this function is clearly dependent upon both the individual tile units and the method of assembling them.

Dimensions.

Uniformity in dimensions, camber, size and position of ribs and nail holes facilitate easy arrangement of the units into a close-fitting (and therefore efficient) assemblage; conformity of the individual units to the requirements given overleaf is therefore desirable.

Strength.

In actual practice it is not possible to eliminate all movement (due to the shrinkage of timbers, settlement, etc.); the individual tiles are therefore liable to bending stresses additional to those caused by the weight of superimposed tiles, by wind pressure or snow load. Individual tiles should be tough enough to withstand the various stresses applied to them during their handling prior to and in the course of the actual construction of the roof.

Burnt clay tiles almost invariably exhibit transverse strengths considerably in excess of the relatively high minima given (under the heading of Strength) overleaf. Further factors in assembly which are of prime importance as regards the efficiency of the finished roof, are pitch, gauge (and lap) and the form of sub-roof construction. For maximum efficiency the determinant must be not appearance, but the weather conditions likely to be encountered on the site. The major aspects of these factors will be dealt with in a succeeding sheet of this series.

Properties of Clay Roofing Tiles :

The properties, other than strength, of clay tiles which influence their functional efficiency, are :—

(1) Their resistance to penetration.
(2) Their resistance to weathering agencies.

Resistance to penetration.

The logical outcome of modern scientific method is an endeavour to evaluate the traditional efficiency of building products by specific tests under conditions which approximate in some degree to service conditions. As a result, in the British Standard Specification for clay or marl plain roofing tiles is found a test, known as the permeability test, designed to afford a measure of the resistance of a tile to penetration. The conditions of the test (involving the imposition for 24 hours of a standing head (8 ins.) of water upon a central (4 ins. by 4 ins.) area of the tile, would appear to be somewhat divorced from service conditions, so that technical opinion in this and other countries is not inclined to accept this hydrostatic head test as a criterion of resistance to penetration, an alternative test for which is now being actively sought.

Effect of Exposure on resistance to penetration.

From time to time statements, based on practical experience, have appeared to the effect that clay tiles placed on a roof quickly acquire enhanced resistance to penetration. These observations have recently been strikingly confirmed by systematic tests reported by F.Weise in *Tonindustrie Zeitung*, 1936, 60 (23), 298. This worker measured the permeability of a series of clay tiles (*a*) as received from the manufacturers ; (*b*) after three, fourteen, and 132 months' incorporation in a roof, and he found that exposure quickly enhanced resistance to such an extent that even products which initially were highly permeable (as tested by the hydrostatic head method) became quite impervious after comparatively short periods of exposure.

Resistance to weathering agencies.

The process of firing converts clay into a tough inert rocklike material which is virtually immune to the solvent or chemical action of weathering agencies, including the sulphurous gases always present in densely populated areas. The only weathering agency likely to have any deleterious effect upon burnt clay products is frost, and only then under conditions which rarely arise in practice. The mechanism of frost action lies in the distending stresses set up when a volume of water wholly filling a space is converted into ice, whose volume is approximately 10 per cent. greater. Therefore, if the whole of the limited pore-space in an adequately burnt clay tile ever became filled with water, disruption by frost would occur if the material be not tough enough. Of such pore space as exists in adequately burnt clay tiles, there is always a proportion of very tiny pores (micropores) which are virtually unfillable under the most extreme conditions of exposure on a roof, and recent research (e.g. that of M. Andra-Braunschweig, 1935) tends to show that, as in the case of natural stones (*vide* Schaffer B.R.S. Special Report No. 18), when this proportion reaches or exceeds 20 per cent. of the total pore space, as it normally does in well-made and adequately fired clay tiles, the tiles are entirely resistant to frost action.

In the British Standard Specification already mentioned, clay tiles are required to withstand, without showing any signs of disruption, cycles of alternate freezing and thawing. There are technical objections, on the score of lack of parallelism with service conditions to the actual method of test used, and the possibilities of modifying the test (with the aid of modern methods of refrigeration) are being carefully explored.

Purity of water collected from a clay tile roof.

As mentioned above, the material of which a burnt clay tile is composed is insoluble and durable, and it contains no ingredients which can leach out to harden or otherwise affect the purity of the water collected from a clay tiled roof.

Information from : Clay Products Technical Bureau of Great Britain

Address : 19 Hobart Place, Eaton Square, S.W.1

Telephone : Sloane 7805

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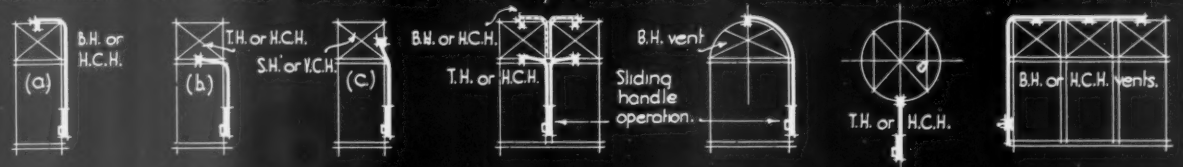
THE ARENS WINDOW CONTROL SYSTEM:

By this system of window control, a push & pull movement may be transmitted around bends and corners over considerable distances.

The controls may be concealed in plaster or behind panelling if desired, and may be utilized for the operating of all types of metal or wooden sashes singly or in ranges, whether of top or bottom, vertical or horizontal-pivot hanging. For other uses of Arens Controls see notes overleaf.

DIAGRAMS OF SASH OPENING TYPES, SHOWING ARRANGEMENT OF CONTROLS



SINGLE VENTILATORS.
(a.) Vent operated at the head. (b.) Vent operated at the transome. (c.) Vent operated at the jamb.

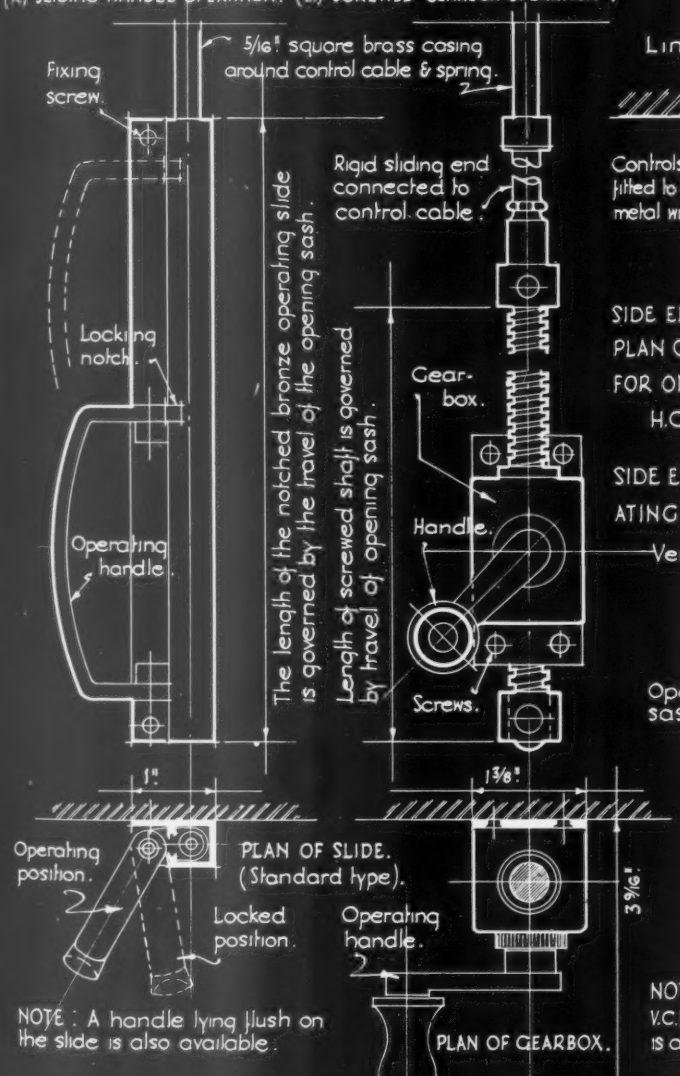
TWIN VENTILATORS. Vents may be operated at the head or transome according to hanging.

SEMICIRCULAR & CIRCULAR. Vents may be head or cill operated. Controls may be curved to any radius.

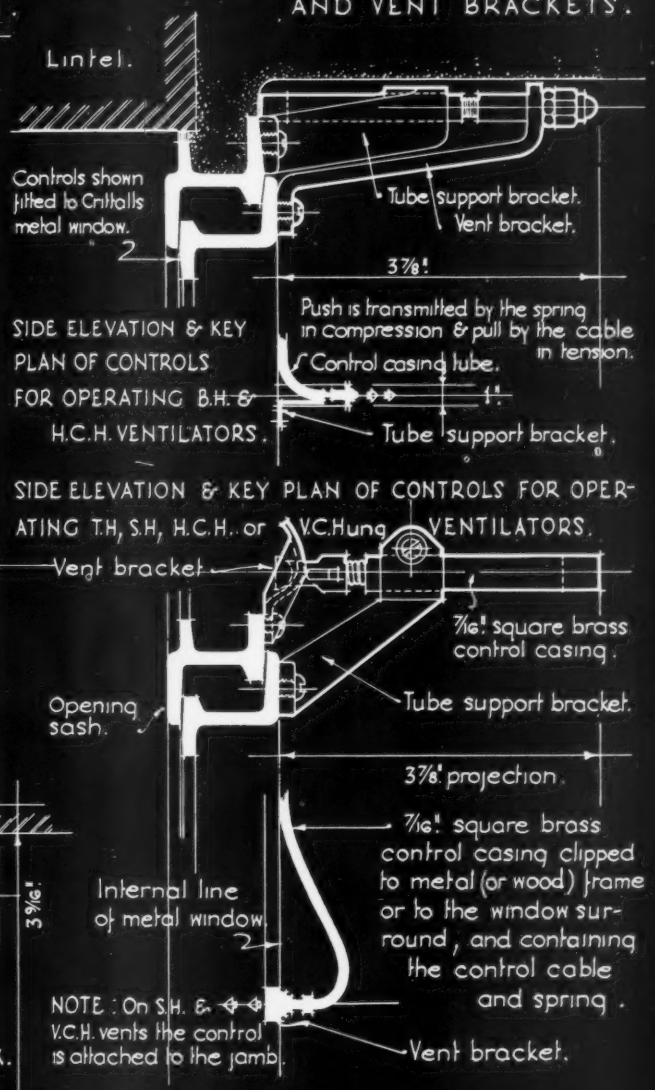
RANGE OF VENTS. For heavy windows or long controls, screw type operation may be used.

HALF F.S. DETAILS OF OPERATING GEAR.

(A) SLIDING HANDLE OPERATION. (B.) SCREWED GEARBOX OPERATION.



HALF F.S. DETAILS OF TUBE SUPPORT AND VENT BRACKETS.



Information from Arens Controls Limited.

INFORMATION SHEET: METAL OR WOOD SASH OPERATING GEAR.

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INFORMATION SHEET

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SASH OPERATING GEAR

Subject : Arens Window Controls

Description :

These controls are designed to transmit a push and pull movement to fanlights and ventilators from a distant point of operation without spoiling the appearance of the windows with cords, rods or levers. The control tubing may negotiate a number of bends and corners, and may be bent to various radii. Special brackets are used at the ventilator to suit the manner of hanging.

Construction :

The typical control unit is constructed with a brass outer casing $\frac{7}{16}$ in. square at the ventilator end, reducing to $\frac{5}{16}$ in. on the vertical portion. At the operating end of this is inserted a rigid screwed steel tube termed the sliding end. At the sash end of the casing is a screwed flexible end, and the run between these two points is formed of tinned steel cable around which, for the entire length, is wound a tightly compressed drawn galvanised wire spring. Push is transmitted to the ventilator by this spring in compression, and pull by the cable in tension, backlash being thereby reduced to a minimum. The diameter of the spring is $\frac{5}{16}$ in. at the ventilator end of the control and $\frac{3}{16}$ in. from there to the sliding end connected to the operating gear. Heavy ventilators are operated by a larger size control having an outer casing $\frac{7}{16}$ in. square throughout.

Operating Gear :

The standard method of operation is by means of a bronze bow handle running in a notched slide fixed to the window frame or to the surround. The length of the slide is dependent upon the distance through which the ventilator is required to open. As an alternative to the bow handle and slide operation, a gear box can be fitted, and this is necessary for cases where the controls are very long, or where heavy sashes or ranges of sashes have to be operated. A sufficient length of straight tube must be left immediately above the slide or gear box to accommodate the rigid sliding end before starting the first bend.

The maximum opening is regulated by the size and method of hanging the vent ; maximum opening for top hung and H.C.H. vents is 9 ins., and 18 ins. for large bottom hung vents when operated by a standard control. A special control can be supplied to operate the latter type to ninety degrees.

Fixing :

As shown on the details overleaf, the control tubing is fixed either to the metal frame or the surround by clips and guides, and the ventilator brackets and tube support brackets are screwed to the sash and frame. The slide or gear box is screwed on to any surface at the point of control. A special slide is available for fixing to narrow frames, while the bow handle may be made to fold flush on to the slide if desired. The whole of the control tubing and operating slide may be concealed behind panelling or plaster work if necessary, and in some instances the frame itself may be utilized to hide the mechanism completely from view. If required, the fixing of the controls will be undertaken by the manufacturers.

Finishes :

The brass control casing is obtainable in bronze, chromium, or any other specified finish. If the windows are near the sea or in an atmosphere containing acid fumes, it is advisable to have the exposed portion of the controls manufactured from Tungum metal, this metal being rust-, acid- and corrosion-proof.

Applications :

Besides its application to all types of metal or wooden casements top, bottom, vertically or horizontally pivot hung, the system will also satisfactorily operate semi-circular bottom hung or circular horizontally pivoted casements, the control being bent to follow the curve of the window. The controls are not confined to the operation of single vents, but can be adapted to operate pairs or ranges of vents, as in factories or lantern lights. Among other uses are the operation of ventilators and dampers in duct work, air-conditioning plants and boilers, glass louvres, oil filters, w.c. flushing tanks, the remote control of door locks, and the spot lighting in operating theatres, etc.

Particulars and Prices :

For the design of any individual system of Arens control, the following particulars are required : Height and width of windows and manner of hanging. Full size details of head and jamb for bottom hung vents, full size details of sill or transome for top hung vents, and also of the jamb if there is glazing below the vents. Full size details of head, sill or transome, and jamb for H.C.H. vents. Full size details of jamb for side hung or V.C.H. vents. Height from the head of the vent to the floor or point of operation. Details of the surrounding work, showing the required run of control, with actual dimensions.

Prices vary according to the length and bending of the controls, and also according to the methods of fixing and operation. These compare favourably with the more old-fashioned types of gearing, but owing to the large variety of the lengths and number of bends, it is not possible to issue a price list.

Name of Manufacturer : Arens Controls, Limited

Address : Tunstall Road, East Croydon

Telephone : Addiscombe, 3051/2/3/4