ARC HITE

standard

contents

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

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Prices The Industry

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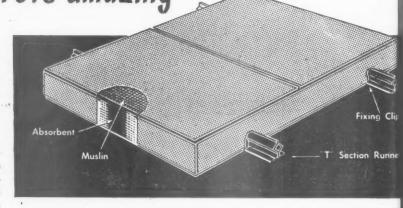
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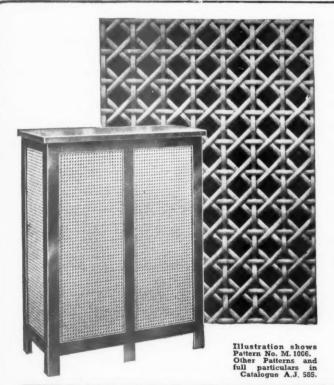
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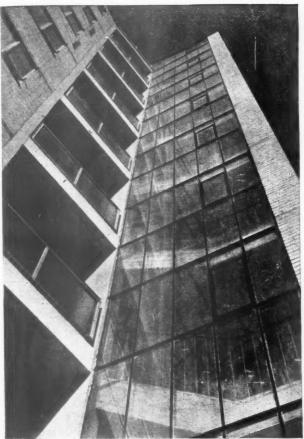
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LONDON LOOKS UP

The new housing estates in the capital are keeping Londoners in London—which is where sparrows, Dr. Johnson and Londoners prefer to live. New houses and flats, taking the place of dismal bomb sites and scarecrow slum tenements, are beginning to take the edge off London's housing problem.

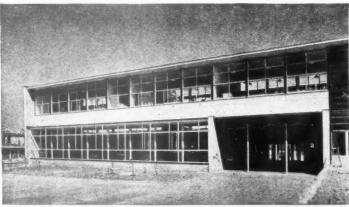
Compared with the "buildings" and "dwellings" of a past era, it is noticeable that the new architecture is ablaze with windows—many of which were produced by Williams & Williams of Chester. Working with architects of vivid imagination (and bringing to the problem all the vigour and enthusiasm of crusaders) Williams & Williams are producing windows and glazing that fulfil the high standards of contemporary design. In the housing estates shown, and many others across the face of Britain, Williams & Williams are doing a good job—as indeed they are in buildings and factories, art galleries and aeroplane hangars all over the world.



Architects: Powell and Moya, A.A., R.I.B.A.



Architects: Tecton.



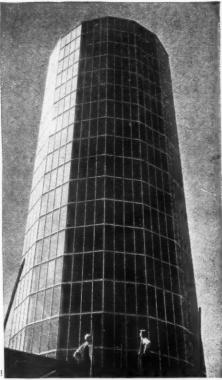
Architects: Yorke, Rosenberg and Mardall, F.F./A.K.I.B.A.

I. These flats at Pimlico are part of the Westminster City Council's housing plan that will eventually cover 30 acres. Williams & Williams supplied metal windows, metal doors, and Aluminex Patent Glazing for this enormous project.

2. Expert use of standard metal windows helped produce the striking effect shown in this elevation of the flats at Finsbury.

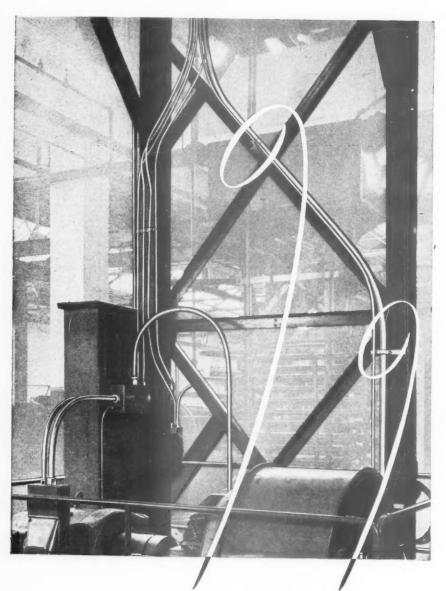
3. New houses mean new schools. At this school in Lansbury, Williams & Williams produced all the doors and windows. Williams & Williams have put windows and walls of glass into 128 schools all over the country.

4. The Pimlico Polygon, a new landmark in hot water tank cladding—and indeed a new landmark on London's river—is covered with Aluminex Patent Glazing. The all aluminium glazing bar is used in reverse so that broken glass can be replaced from the galleries inside the glass surround eliminating need for scaffolding. Aluminex, together with metal windows and doors, is produced by Williams & Williams of Chester.



Architects: Powell and Moya, A.A., R.I.B.A

Williams & Williams Ltd., Reliance Works, Chester

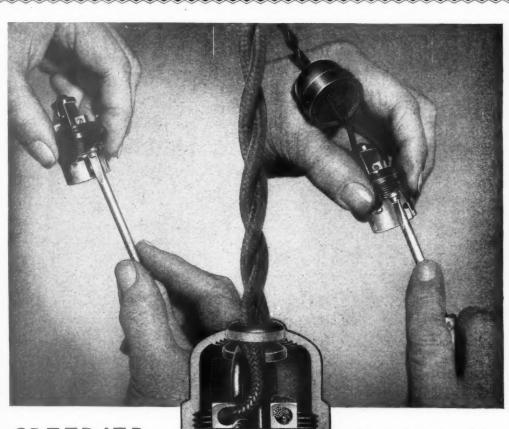


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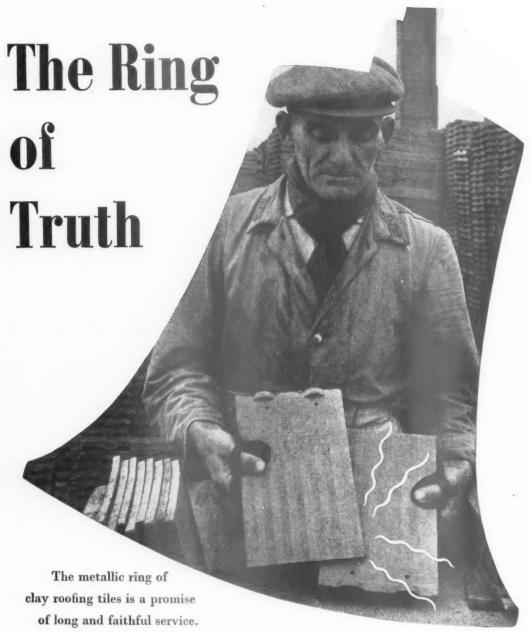
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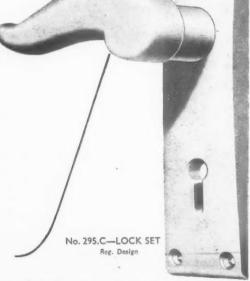
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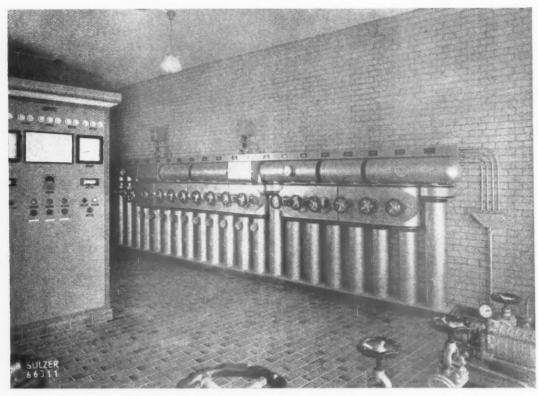
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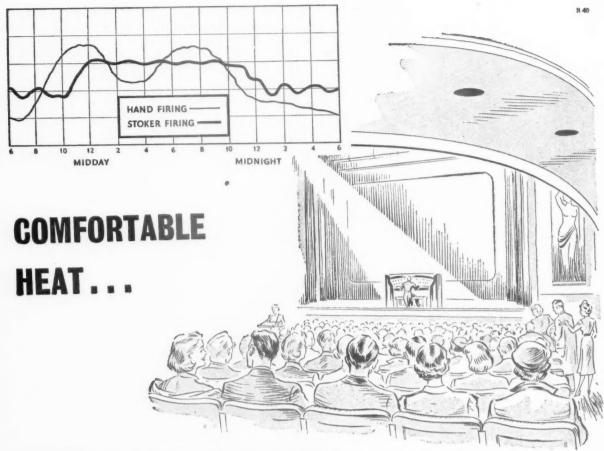
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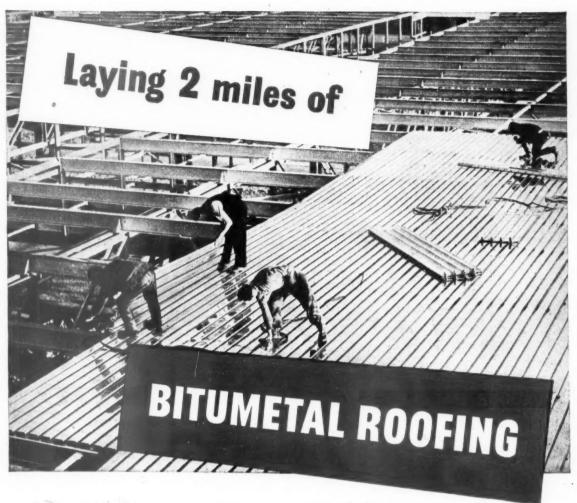
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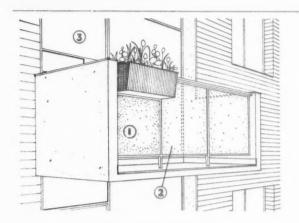
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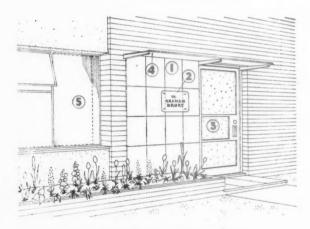
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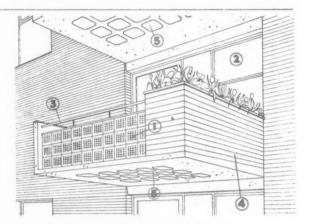
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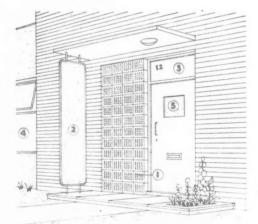
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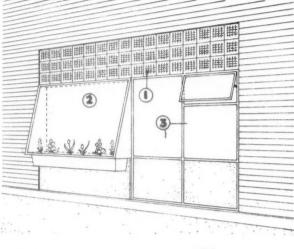
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 and metal hand rail
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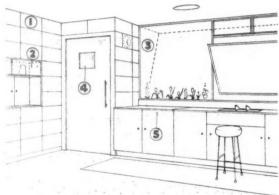
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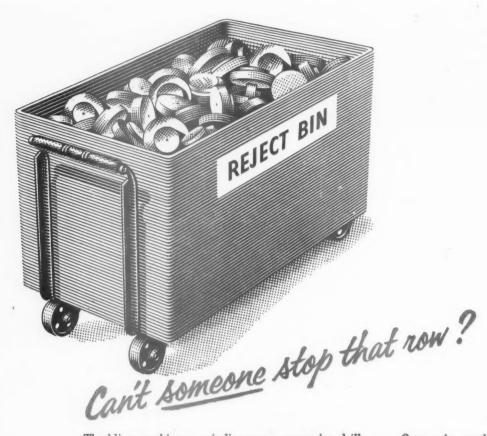
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3' 6"	3′ 6″ 39		29	
4' 0"	30	26	22	
4' 6"	4' 6" 24		_	
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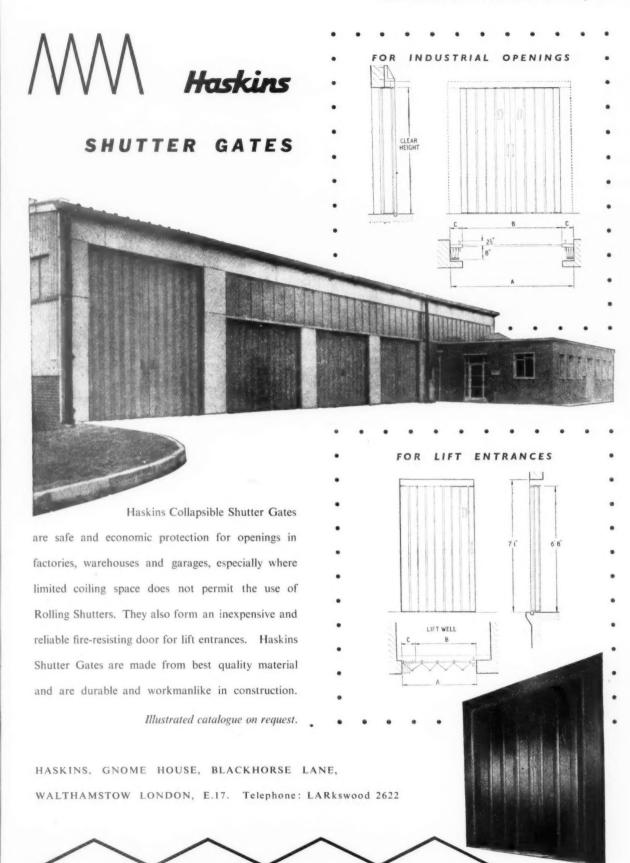
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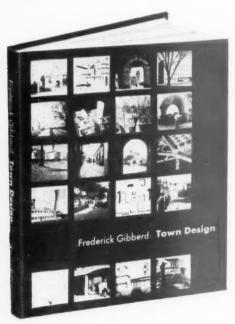


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TOWN DESIGN

by Frederick Gibberd, F.R.I.B.A., M.T.P.I., F.S.I.A.; Member of the Royal Fine Art Commission, Member of the Central Housing Advisory Committee, Past Principal of the A.A. School of Architecture; Author of *The Architecture of England* and (with F. R. S. Yorke) *The Modern Flat*.

With this new book Mr. Gibberd fills a gap in existing town-planning literature by providing the first major work to deal, in a comprehensive and thoroughly practical way, with town design as an art. In addition to the original contribution it makes to the subject, this book will be found indispensable as a reference book by architects, engineers, surveyors, town planners, local authorities and all who have any interest in, or influence over, the appearance of the urban scene. It is arranged in four parts dealing with (1) DESIGN OF THE COMPLETE TOWN; (2) CENTRAL AREAS; (3) INDUSTRY; (4) HOUSING. Each part is illustrated by plans, diagrams and photographs, and is followed by a section in which are analysed in detail typical building groups from all over the world.



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Part one DESIGN OF THE COMPLETE TOWN: The Town and its Raw Materials. The Master Plan. Analyses: Guildford Master Plan (G. A. Jellicoe); Exeter Master Plan (Thomas Sharp); Harlow New Town Master Plan (Frederick Gibberd); Crawley New Town Master Plan (Anthony Minoprio).

Part two CENTRAL AREAS: The Town Centre. Civic Spaces. Shopping Centres. Analyses: Pisa, Piazza Del Duomo; Venice, Piazza and Piazzetta San Marco: Florence, Piazza Della Signoria; Florence, Piazza Annunziata; Ciboure, the Church Square; Taormina, Sicily, Piazza San Agostino; Lansing, Michigan, State Capitol (Smith, Hinchman and Grylls); Harlow New Town, Civic Centre (Frederick Gibberd); Amsterdam, Kalver Straat; Poplar, Lansbury Market; Linda Vista, California, Shopping Centre (Earl F. Giberson and Whitney R. Smith); Coventry, Central Square and Shopping Centre (Donald E. E. Gibson); Nuneaton Town Centre (R. C. Moon and Frederick Gibberd).

Part three INDUSTRY: Industrial Buildings and their Siting. Light Industrial Estates. Workshop and Service Areas. Analyses:

County Durham, Team Valley Trading Estate (consulting architect, Prof. W. G. Holford); Knutsford Industrial Estate (Yorke, Rosenberg & Mardall); Crawley New Town Industrial Estate (A. G. Sheppard Fidler).

Part four HOUSING: The Neighbourhood. Layout with Houses. Layout with Flats. Dwellings on Steep Sites. Mixed Housing Development. Analyses: Bath, Queen Square, The Circus and the Crescent (John Wood the elder, and John Wood the younger); Bath, Landsdown Crescent (John Palmer); Hampstead Garden Suburb (Barry Parker and Raymond Unwin in consultation with Edwin Lutyens); Sidmouth, Mixed Housing Development; Hackney, The Somerford Estate (Frederick Gibberd in association with G. L. Downing, Borough Engineer and Surveyor); Zürich, Katzenbach Estate (Sauter and Dirler); Harlow New Town, Mark Hall Neighbourhood. (Neighbourhood plan: Frederick Gibberd and Frank Booth; Housing Units: Area 1, Harlow Design Unit; Area 2, Fry, Drew and Partners; Area 3, Frederick Gibberd); Stockholm, flats at Grondal (Backström and Reinius).

The size of the book is 11 in. by $8\frac{3}{4}$ in. It contains 300 pages very thoroughly illustrated with over 720 half-tone and line illustrations, most of which have been specially prepared for the book. It is published by THE ARCHITECTURAL PRESS, 9-13 Queen Anne's Gate, S.W.1.

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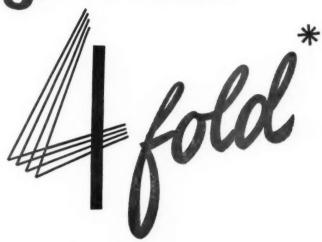
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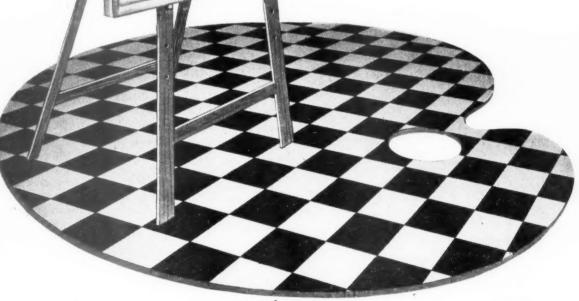
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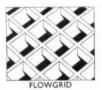
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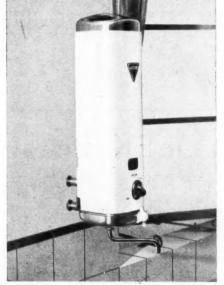
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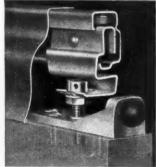
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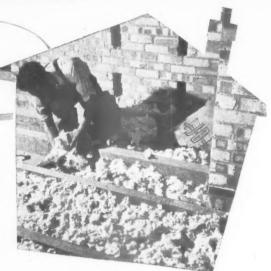
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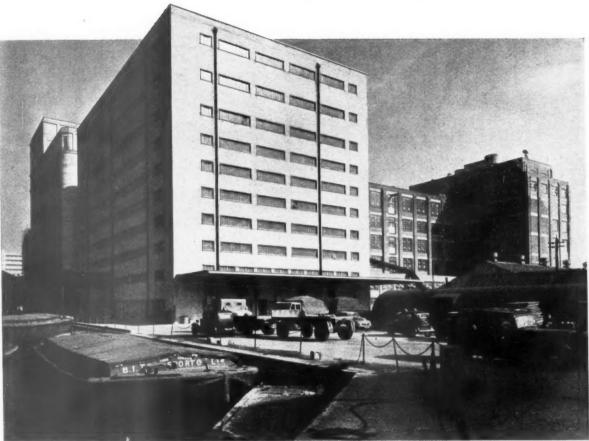
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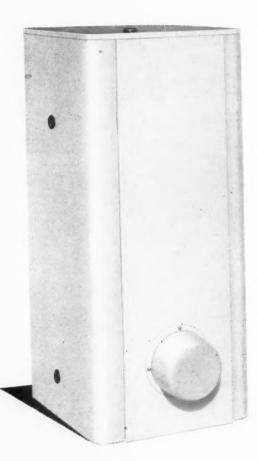
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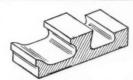
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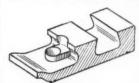
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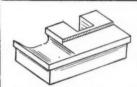
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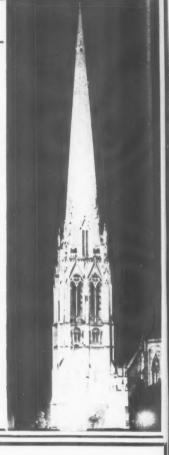
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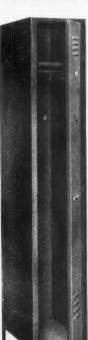
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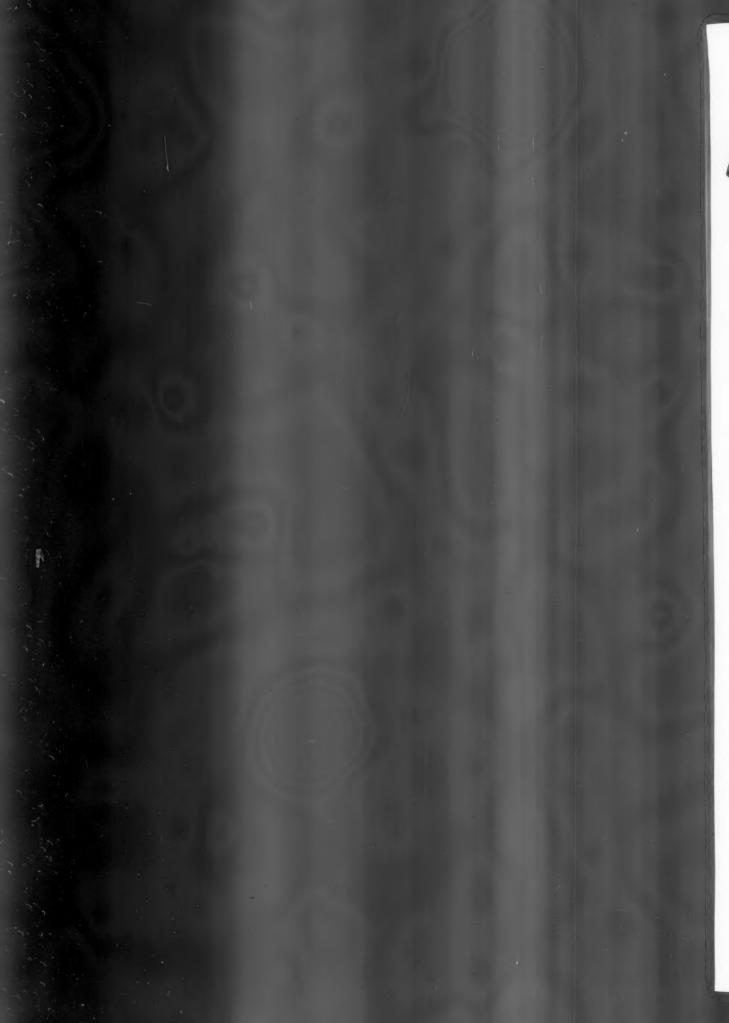
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No. 3023 February 5, 1953 VOL 117

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WHAT TO DO-IF I ALLOW YOU TO

"There's a tremendous amount of house building going on-it can't be stopped-it's happening all the time, so it's frightfully important that it should be done well." Such was the gist of the speech by Harold Macmillan, Minister of Housing & Local Government, when he introduced the authors (Dr. Thomas Sharp, Frederick Gibberd and Professor Holford) of the Ministry's new town planning handbook. Design in Town and Village. * to a somewhat apathetic audience of journalists. And, of course, he added how delighted he was that high density and economical building can ceincide with the best design standdards.

Having got that easier on our chest, if not off it, we are very grateful for three essays in which principles, prob-

The Manchester Guardian, reporting the press conference, advises the Minister to study his own publication, particularly with reference to the value of screen walls which his Department have recently forbidden. A course which ASTRAGAL, in all humility, supports. The Minister's appeal for design in accordance with English Tradition, instead of "technocrats ideals," seemed to cause, unless one was mistaken, perceptible wincing on the part of those beside him on the platform. If Mr. Eccles had not just promised us "a building Renaissance" (it can't come too soon) most architects and planners would be cross about this elegant book, however much they may respect its authors.

The book is published to promote good design and contains illustrations of many good examples of it. But taking the photographs alone in Gibberd's section of the book, about one half of the examples of good design include screen walls, good fences and well-laid-out open spaces. This is what we ought to do. But does Mr. Macmillan's other self allow you to do it? He does not: he turns you down flat.

Moreover, it is now six years since the Ministry's Research Division showed how central area street blocks should be redeveloped to provide good daylighting, protection against street noise and floor space. In that time the Ministry has failed to use its vast influence to ensure the building of even one block on those principles. lems and patterns are dealt with characteristically; and there is an added value in having them side by side. Dr. Sharp tackles villages as the traditionalist and minute observer and admirer of local topography and landscape. When these three elements have been brought together by a good designer the job is almost done. Gibberd's approach to the design of residential areas is that common among architects. Every view is a composition, usually with some weakness which it is the designer's job to correct; and he shows a large number of ways in which it could be done.

Holford picks out a dozen aspects from his huge subject of city centres and whirls us right round the world, and up and down the centuries, to look at streets and *places*, street junctions, statues and silhouettes. It is a wonderful trip.

DEEDS OF DARWIN DO

That seething stockpot in South Kensington — the RCA — has been given another minor whisk round by its Principal. As you may have seen from the Press announcement, Mr. Darwin has decided to re-organize and in some degree amalgamate the Departments of Architecture and Interior Design on what certainly look to be more logical lines, by which the former department-which has no students of its own-is taken over by the The latter department which has. present Reader in Interior Design is to become a Professor-Professor Casson in fact.

Architecture, however, is not to disappear from the scene into the role of

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super, but is to remain in the new form PARISH FOOD FOR THOUGHT of the Lethaby Chair of Architecture -a happy and appropriate solution which gracefully commemorates the name of one of the most famous teachers our profession has ever possessed, and whose work for the RCA is world-famous. It is good news too that the first holder of this Chair (which is somewhat comparable to the Slade Professorship at Oxford and Cambridge) is to be Professor Basil Ward, who is not only one of the best known pioneers of modern architecture in this country - oh, the battlegrounds of Amersham and Ruislip but has also managed in his recent years at the RCA to build up an interest in, and enthusiasm for, architecture amongst students whose previous feeling for the subject was, shall we say, open to question where it was not only too painfully clear.

An appointment-and series of lectures-of this calibre has long been needed in London and ASTRAGAL looks forward to hearing in due course the first lectures which, most obviously, but most suitably, are on "Lethaby and his Times."

Woodbine Parish, the retiring LMBA President to whose sensitivity to criticism reference was made last week in this column, led an unusually adult and interesting discussion at the AA recently on the trend of education in the building industry. Before long the subject changed to the problem of collaboration between architects and builders. But it didn't matter: people were at last beginning to say what they thought rather than what they supposed they ought to think. Considering how often young architects and students call for closer understanding between architects and builders it was a pity that so very few attended.

Incidentally, during the discussion, builder Peter Trench, managing director of Bovis, once again compared the low status of the industry over here with its position in the USA where bricklayers earn 16s. an hour. An answer to demands for increased efficiency, he suggested, was "to get to the position which the Americans have reached." Mr. Trench is obviously not in step with his fellow building-employers who have just rejected the 6d. an hour claim made a week or two ago by the

operatives. His fellow-employers perhaps agree with Mr. Eccles that there is a danger of the industry pricing itself out of the market. Explanation, Mr. Trench?

CESSLESS ASSESSED

The mysterious "home experts" who judged the first round of the News-Chronicle dream-house competition are now revealed as that paper's medical correspondent, Dr. Stephen Taylor, who may be known to some of you as a member of Harlow Development Corporation, and Margaret Sherman, the Home Page editor. No architects, no sociologists, no-one concerned professionally with domestic design at all

The prize in the first round of this competition, which, as you'll remember, required fourteen factors in house design to be ranged in order of importance, went to a Mr. Nixon, who, unfortunately, won't be able to buy the washing machine he wants with the money because his house has no main drain. His prize-winning list was headed by (how did you guess?)plumbing!

ASTRAGAL

NEW

RCA

School of Architecture Closes

The Council of the RCA have decided to close the school of architecture at the end Its work, of the present academic year. however, will continue and next autumn will be taken over by the Department of Interior Design whose Reader, Sir Hugh Casson, will then become a Professor. In order to preserve the traditional relationship, now a century old, between the college and the architectural profession, a new non-teaching Chair, to be known as the Lethaby Chair of Architecture, will be established, with Professor Basil Ward as its first occupant. ment on page 145. See ASTRAGAL'S com-

RIBA

The President's Address to Students

Howard Robertson, in his address to students on February 3, when Howard V. Lobb presented prizes and criticized work submitted for studentships, asked "What should one try to absorb (on design) in order later to be oneself productive?" "The temptation in my day" Mr. Robertson went on, "and it is still there,

was to form one's design vocabulary on the recent work of other architects; to be briskly alert for the latest mannerisms and stylish turns of architectural expression; to pick up all the tricks, unfortunately without realizing that these are probably the mannerisms of architects whose deeper contribution is based on a study and development of funda-mentals which they have laboriously explired and developed.

expl red and developed.

"Living men who have looked below the surface and are thoroughly familiar with tradition, although they may not use its vocabulary, include famous and familiar figures such as Auguste Perret, Frank Lloyd Wright, Walter Gropius, the late Gunnar Asplund, Le Corbusier, Mies van der Rohe, Bichard Neutra, and many more. Some of Richard Neutra, and many more. Some of them have imitators who may fondly hope to start where these men leave off. But they may forget that these leaders developed their own personal expression the hard way, by endless study and experiment, in some cases accompanied by frustration and disappointment. Their work may be in one sense laboratory research, in that it does not always produce satisfactory or correct. not always produce satisfactory or con-clusive results for general application. But it brings to the surface very stimulating suggestions and sometimes idioms of great expressiveness and character which eagerly seized upon and too rapidly become tricks of the trade."

OBITUARY

Sir Frank Mears

Sir Frank Charles Mears, president, from 1944 to 1950 of the Royal Scottish Academy,



The late Sir Frank Mears.

died on Sunday, January 26, in Christchurch, New Zealand, where he had gone, with Lady Mears, to stay with his son. Born in 1880, he was articled to the Edinburgh architect Hippolyte Blanc and attended classes at the Edinburgh School of Art. At the age of twenty-eight, in association with Sir Patrick Geddes he took part in a survey of Edin-burgh which, exhibited at the Royal Academy, was the first of its kind to attract Academy, was the first of its kind to attract public attention. In 1915 he married Norah, the daughter of the late Sir Patrick Geddes. He worked with Geddes on the University and National Library at Jerusalem, and on the Scottish Zoological Park, Edinburgh. Mears was himself responsible for the Lucy Sanderson Memorial Homes; the Livingstone Memorial, Plantyre and the George VI Bridge, Aberdeen. A major recent work was his design for a monument to the Royal Scots. Regiment in West Princes Street. Scots Regiment in West Princes Street Gardens.





Transformation Scene

It is difficult to believe that the building in the photo above is the same as that in the small photo on the left. Both are, of course, of Notre Dame, Paris, and, although the change in viewpoint has made a difference, it is clearly the floodlighting, helped by the reflections in the Seine, that is mainly responsible for the transformation. The architect normally designs a building to be seen amidst other buildings, natural features, street furniture, vehicles, etc. At night, on the other hand, he may have a completely blank (black) canvas, on which he can create, at will, isolated effects of drama, charm or jubilation. Twenty-five pages of this week's JOURNAL are devoted to a detailed study of how these effects can be achieved.

FLOODLIGHTING

A GUIDE FOR THE ARCHITECT PREPARED BY MAURICE JAY FROM INFORMATION AND ILLUSTRATIONS SUPPLIED BY IR. L. C. KALFF, GEORGINA MASSON, DR. BALLIN, AND THE MANUFACTURERS OF FLOODLIGHTING FITTINGS LISTED ON PAGE 204.

RCHITECTS are accustomed to thinking themselves experts, or semi-experts, in a wide range of subjects; they should not be surprised, therefore, to find an entire issue of the Architects' Journal devoted to "Floodlighting." engineers, stage designers and film technicians may hold the view that the floodlighting of buildings is not a matter for architects, since they have so long neglected it, and it is true that few architects are, at present, able to prepare more than the most commonplace schemes, but this state of affairs is due, perhaps, far more to lack of knowledge than to lack of enthusiasm.

It is well known that during the Festival year, the designers of the South Bank Exhibition and the Battersea Pleasure Gardens had great difficulty in finding electrical engineers whose visual imagination matched their technical experience. The reason was surely that floodlighting in this country has never matched in scale or skill that which is to be

seen on festive occasions in Europe.

It would be unfair to suggest that the floodlighting of London's famous monuments in recent years has been unimaginative—on the contrary, the engineers of MOW are to be congratulated on the progress they have made in their experiments, particularly during the last two years—but the field is still comparatively untrodden, for the possibilities are almost limitless. Buildings can be emphasized or played down, certain features picked out or made to disappear, architectural modelling turned, if the architect wishes, upsidedown or inside-out.

One of the first principles, perhaps, is that the source of light should not be visible: Nelson picked out on his column is an imaginative and dramatic conception, the value of which is halved if he is connected by a staring beam to a battery of conspicuous lamps mounted on a nearby building. It is a pity, too, that more use is not made of "pinpoint" lighting—that old-fashioned but still delightful technique by which the architecture of a facade is re-drawn, as it were, in tiny points of light, rather than uniformly illuminated in what has now come to be the customary manner. This is particularly appropriate for our more fantastic buildings, such as the Houses of Parliament, the Law Courts, and particularly Tower Bridge.

The Coronation will present architects and engineers with tremendous opportunities. It is true that the hours of darkness during Coronation week will be short, but it will be during these hours that London will be on fête. It is hoped, therefore, that those responsible for designing the decorations of our streets and buildings will not, in their justifiable horror of trailing cables and coal-scuttle reflectors, decide to avoid the issue and deny us our expected Fairyland. Why not hang lanterns in the trees of London's parks and squares; place red flares to glow in the hearts of our blitzed churches; spotlight

every flag on every rooftop?

In the following pages (180-183) will be found some British examples of floodlighting -good and bad—and there are futher examples of special effects on pages 199 and 201. On pages 184-191 is the principal article, based mainly on information supplied by Ir. L. C. Kalff, who designed the illuminations at the Festival Gardens, and illustrated by photographs and sketches kindly loaned by him. This is supplemented by three "worked examples" of imaginary floodlighting schemes (pages 196-198).

On pages 192-195 are photographs of floodlighting in Rome, collected by Georgina Masson. And the issue is completed by two short articles, one on costs and one on legal difficulties, on pages 200 and 203 respectively, and photographs and brief descriptions of a number of different types of floodlighting fittings (pages 197-203).

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FLOODLIGHTING IN LONDON: DOMES AND SPIRES . . .

By lighting only the dome or spire of a building, the detrimental effects of street lighting. neon signs, etc., can be minimised, as, left, St. Mary-le-Bow, and, below, St. Paul's. The former is lit only by fittings fixed to the spire itself; the latter also by very powerful projectors from the rooftops of buildings in the vicinity—from opposite sides, as recommended by Ir. Kalff in his article. The gallery is lit by thirty 500-W. tungsten lamps; the colonnade by forty-eight 1,000-W. tungsten lamps; the cross by 12 special long-range, narrow-beam, 5 kW. tungsten projectors. Below, right, top to bottom: the Monument, lit by projectors and by fittings mounted on the capital of the column; St. Dunstan's in the East, lit solely by projectors mounted on rooftops; an example outside London—St. Mary Redcliffe, Bristol—the spire brightly lit by 16 fittings (4 on special brackets to raise them higher than the others), but the lower part of the steeple kept dark to contrast with it.









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The proximity of water—a river or a lake—always enhances a floodlighting scheme. The entire floodlit building may be reflected in the water, as is County Hall in the photo, bottom right, and Notre Dame in the frontispiece on page 178. Alternatively, the dark, oily water may serve as a foil to set off the lighted facade, as at the Houses of Parliament, above, and the generating station at Ipswich (page 182). Somerset House, centre, is divided from the river by a belt of trees. These have been left dark so that the brightly lit building stands out clearly. Seventy-five fittings are used—all tungsten; those lighting the colonnades are covered with amber filters.















FLOODLIGHTING IN GT. BRITAIN: OFFICES, INDUSTRIAL BUILDINGS, ETC.

Above, the Cliff Quay generating station, Ipswich, viewed across the river and lit by nearly 200 floodlights, mostly sodium vapour. The three 310-ft. high chimneys are lit by 10 powerful narrow-beam fittings, with tungsten lamps. The quayside has been kept dark to provide additional contrast. Bottom left, the Shell-Mex building imaginatively floodlit by picking out only the clock tower and a few alcoves. Contrast this with the dull scheme, centre left, in which the entire building is bathed in light. Centre right, two examples of the floodlighting of rather mediocre buildings; the top one, a factory with a scheme that does not flatter it; the lower one, a red-brick hotel near Watford lit partly by sodium and partly by tungsten light; here there is a distinct improvement and some of the light reflected from the building serves to light the car park. Opposite page, trees and bridges: top, a magnificent Lebanon cedar at Leamington Spa, reputed to be 600 years old, floodlit by fluorescent lightingsix 3-tube fittings (red, green and blue lamps) at ground level, coupled to automatic colourchanging equipment that slowly and continuously alternates the colours. Below this, left, similar floodlighting of a group of trees at the Battersea Pleasure Gardens. Centre right, the floodlighting of foliage and a small house—the home of John Keats at Hampstead. Bottom, suspension bridge across the river Leam floodlit by four fluorescent fittings, each containing three green tubes, floating on the water and held in position by a chain spanning across the river. The bastion on the right is floodlit by two 500-W. generalpurpose fittings. Above this, left, the Conway suspension bridge outlined by hundreds of small filament lamps.

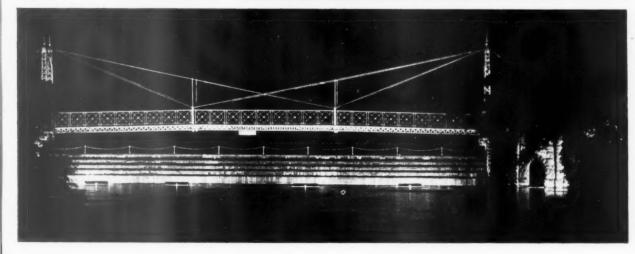




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In the following article, the general principles on which a good floodlighting scheme should be based are given, together with a description of the types of fitting and types of lamp that can be used. The advantages and disadvantages of permanent, as opposed to temporary installations, are discussed and instructions are given on how to use the table on page 191 to calculate the total wattage required to floodlight a particular building. The illustrations (page 185-190) include bad, as well as good examples (e.g. Fig. 1 on the opposite page and Fig. 7 on page 187).

FLOODLIGHTING: DESIGN AND CALCULATION

Data and illustrations supplied by Ir. L. C. Kalff

MOST of the drama of floodlighting is due to the sharp contrasts—first, between the building and its backcloth of dark sky and, second, between various parts of the building itself—which can be achieved with a scheme providing only a few footcandles of illumination. Clearly, a lightcoloured building in an isolated position, like Notre Dame, Paris, is the most rewarding subject for a floodlighting scheme, particularly on a dark night (see page 178). Floodlighting a row of buildings in a street is seldom very effective, partly because only the roof is silhouetted against the sky. And it is difficult to pick out with floodlights one particular building without any stray light falling on the adjoining buildings. However, by the use of screens on some floodlighting fittings this stray light can be minimized.

The modelling and three-dimensional features of the facade of a building can be emphasized by floodlighting, but a "new look" can be given to buildings which are comparatively featureless. If there are objects, such as wrought iron gates, statues, or trees, in the foreground, these can be kept dark so that they will be strongly silhouetted against the brightly-lit facade of the building (see Fig. 4 and photographs on pages 194 and 201). Alternatively, coloured floodlighting may be used.

COLOURED FLOODLIGHTING

Various coloured plastic, glass or gelatine filters can be obtained for use with tungsten floodlighting fittings, but these filters reduce considerable light emission from the fitting. Fluorescent tubes are far more efficient for coloured floodlighting as no filters are required. Although ordinary white fluorescent tubes are only two or three times as efficient as filament lamps, coloured fluorescent tubes are at least ten times as efficient as filament lamps used with filters. They are available in five colours, in addition to six shades of white (from "peach" to "north light"—a cold blue). These colours can be mixed (even within one fitting, as some fittings hold three tubes) and a wide variety of hues produced. Auto-

matic colour changing equipment can be obtained; it is, of course, expensive, but extremely attractive effects can be achieved with it.

ing with only the effects of daylight in mind—the details and modelling being visualized as they will appear

when lit from above by the direct rays

PLACING THE FITTINGS Architects usually design their build-

of the sun, or the diffuse light of the sky-although some architects nowadays consider, at the drawing-board stage, the effect floodlighting will have on their buildings, and make provision for the fixing and concealment of floodlighting fittings (see Figs. 8 and 9). Thus the floodlighting schemes can be in complete harmony with their designs. If the architect has not considered the effects of floodlighting, the most certain way of getting good results would be to place the fittings so that the light comes from the same direction as the sun. This is seldom possible, unless there are taller buildings in the vicinity, and floodlights are usually placed at ground level. Sometimes a few are placed on the building itself to counteract heavy shadows cast upwards by projecting cornices, etc. (as on the Arc de Triomphe, see page 191). Buildings should not be floodlit from the same direction as that from which they are viewed, or they will appear completely flat, see Fig. 1 (the pavilion of the French Mint at the Paris Exhibition, 1937) and Fig. 7 (the Legislative Assembly, Karachi). Generally, this means they should be lit from one side, so that horizontal, as well as vertical, projections cast strong shadows and bring out the form of the building. Regular features, such as colonnades, should be lit by beams of light, which, as far as possible, are parallel. Curved walls, round towers and spires should be lit from two directions-preferably from opposite directions -- so as to bring out their shape by emphasizing the contrast between highlight and shade (see Figs. 5 and 6).

TREES AND FOLIAGE

Floodlighting schemes for trees and foliage should be designed on the same

principles as should those for buildings; the best results again being produced by strong contrasts—e.g. brightly lit foliage against a dark background or the silhouettes of dark tree trunks against a background of brightly-lit foliage. (Fig. 20).

foliage, (Fig. 20). The use of coloured lighting (various shades of green and brown), with automatic colour changing, can create fascinating illusions of the different seasons, as is done at the Festival Gardens.

WATTAGE REQUIREMENTS

Several factors affect the wattage per sq. ft. of facade required to floodlight a building. First, of course, the size of the building; second, its colour; third, the type of lamp used; fourth, the distance away from the building the lamps are to be placed. The table (on page 191) gives recommended footcandles, and the wattage of tungsten, sodium and mercury lamps required to produce these recommended levels of illumination, for buildings faced with various materials under normal conditions. By normal conditions it is meant that the surroundings are dark and that good contrasts can, therefore, be obtained, and that the lamps are to be placed near the building, i.e., say, not more than 50 or 60 ft. from it.

It will be seen from the table that dark buildings, e.g., buildings faced with Portland stone or red or brown brickwork, require 2 or 3 times as much illumination as "light" buildings, e.g., those that are whitewashed or painted. Old buildings in London faced with Portland stone that is very dirty may require even more—as much as 4 times the figure for painted facades. For buildings lit from a distance of 100 ft. or more, wattage requirement should be doubled. Buildings in well-lit streets also require twice the normal amount of illumination. And buildings to be seen from a considerable distance—say, over 500 yards—require two or, in very dirty atmospheres, three times the normal figure.

When a spire or a small isolated feature high above the ground is to be floodlit, much of the light will be lost, even if ntages
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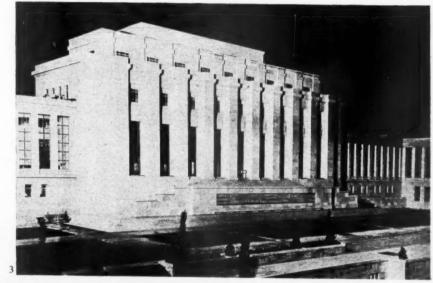
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Above, Fig. 1. This picture shows how floodlighting an almost flat facade from the front produces an uninteresting effect. This pavilion for the French Mint at the 1937 Paris World Exhibition was floodlit by a row of floodlights in white-enamelled reflectors, concealed behind the small hedges in the foreground. Above right, Fig. 2. Floodlighting a building from below, especially f it is a classical building, may produce a surprising effect; it often distorts the proportions of the building. Right, Fig. 3. The central part of the almost white League of Nations building in Geneva, floodlit from one side from the top of one of the wings. Particularly strong contrasts were necessary for this building as it can be seen only from a considerable distance. A building which does not have any strong modelling on its facade and cannot, therefore, produce dark shadows can be made interesting if there are objects in front of it, such as the gates and statuse in front of the Royal Palace in Brussels (below, Fig. 4), which can be kept dark so that they are silhouetted against the white of the building.







narrow beam reflectors are used, and this must be taken into account when calculations are made of the size of the lamp to be used.

TYPES OF LAMP

It can be seen from the table that sodium lamps and mercury lamps are, respectively, three times and twice as efficient as tungsten. But operating gear for sodium and mercury lamps costs £7 or £8 per fitting and the lamps themselves are about £5 each, for

sodium and £2 10s. each for mercury, as compared with a matter of shillings for tungsten lamps.

However, white (tungsten) light is most suitable only for light or grey buildings. In general, the most pleasing effects are achieved by using lights the same colour as the building. The deep golden glow of sodium light is particularly suitable for brickwork and for brown and red stonework; alternatively a mixture of sodium light and tungsten light is often used. And the greenish-

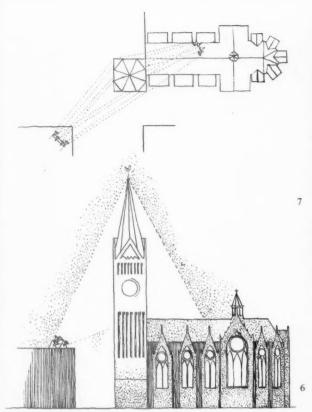
blue of mercury light produces good strong shadows on comparatively dirty buildings (no amount of white light will ever make a dirty building look clean) and is particularly suitable for lighting green surfaces, such as coppercovered domes.

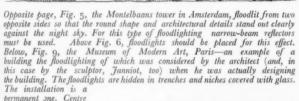
Other colours can be produced only by using filters or fluorescent fittings; such a subtle range of colours can be achieved with the latter that almost any colour of stonework or brickwork can be matched and, thereby, emphasized.

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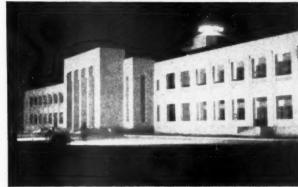
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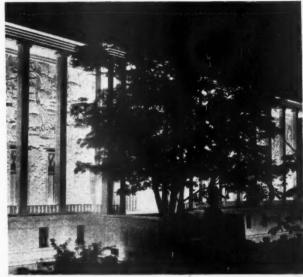
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permanent me. Centre right, Fig. 8, the Colonial Museum at Vincennes, Paris (architects, Jaussely and Laprade; sculptor, Janniot). Here also the effects of floodlighting were considered at the design stage as carefully as the effects of daylight on the building. The comice, columns and balustrade stand out in silhouette against the light wall behind. The bas relief was designed so as to be equally effective whether it was tif from above or below. During the day the whole aspect of the building changes—what is dark in this photo becomes light, and vice versa—but the proportions of the building appear the same. As a contrast to Figs. 8 and 9, Fig. 7, top right, shows a building (the Legislative Assembly, Pakistan) where the floodlighting is clearly an afterthought — an unsympathetic building, unsympathetically floodlit.

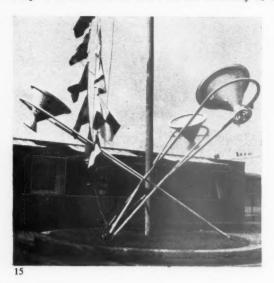


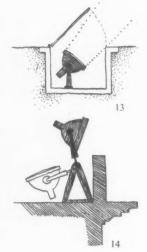




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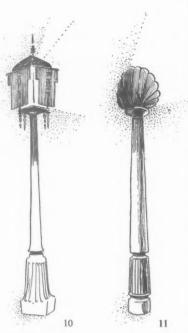






Above right, Figs. 10 and 11, and left, Fig. 12, modified street lanterns used to conceal floodlights. Three sides of the lantern shown in Fig. 10 are partially covered with decorative (?) metal screens. In Fig. 11, the normal lantern has been replaced by a plaster "shell." The lanterns in Fig. 12 each contain two small lamps, in addition to the floodlamp; these prevent the floodlighting fitting from being seen. Above, Figs. 13 and 14, two more methods of concealing floodlighting fittings. The top sketch shows the arrangement used in the Place de l'Etoile, Paris. It consists of a concrete trench with a metal lid, and is suitable for any permanent installation at ground level. The other sketch shows a floodlighting fitting mounted on a swivel, so that, when not in use, it can be concealed behind the balustrade. (League of Nations building, Geneva.) Top left, Fig. 15, group of specially-disigned floodlighting fittings at South Bank Exhibition; clearly, these do not need to be concealed.





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In spite of the cost of starting gear, floodlighting fittings for fluorescent lamps can be obtained for little more than the price of tungsten fittings. This is due to the fact that the comparatively cold surface of fluorescent tubes may be exposed, without danger, to rain; only the end-housings need protecting (by means of rubber-like sleeves). Fittings holding one, two or three 80-W. tubes are available—for comparative efficiencies, see under "Coloured Floodlighting."

TYPES OF FITTING

In general, fittings are classified according to the type of beam they produce: normal (20°-55°); wide-angle (55°-110°); concentrating, or narrow-beam (15°-20°). Wide-angle fittings are used only when the fittings have to be placed very near the building. Narrow-beam fittings are used when a building is lit from more than 100 ft. distance, when parallel beams of light are required, and for picking out small features high above the ground. Three qualities of fitting are made by

Three qualities of fitting are made by most manufacturers: general-purpose, usually available only with mediumangle reflectors, for lamps from 100-500 W.; medium duty, for lamps up to 1,000 W., and heavy duty, for lamps up to 1,500 W.

The reflectors in general-purpose fittings are simply enamelled; in medium- and heavy-duty fittings, they are of polished aluminium, chromium-plated steel, or mirror glass. Simple enamelled reflectors cannot produce effective narrow beams, but narrow beams can be obtained from general-purpose fittings (for temporary installations and small private buildings), by using special reflector lamps, in which a concentrating mirror is built into the lamp itself.

Beams are usually circular (sometimes square,) but fittings producing elliptical and rectangular beams are available (in medium- and heavy-duty ranges). These are for use where the maximum amount of light must be concentrated either horizontally or vertically. The angles of the beam may be between 15° and 50° in one direction and between 40° and 100° in the other.

PERMANENT OR TEMPORARY INSTALLATIONS ?

If a building is going to be floodlit 20 or 30 times during its life, it is worthwhile having a permanent installation. Although fittings which are to be left permanently exposed to the elements must be of the heavy-duty type, and, therefore, the most expensive, the cost of repeatedly installing and dismantling cheaper fittings would, in the long run, more than balance the extra outlay. Moreover, with a permanent installation, whenever the occasion arises, the floodlighting can be switched on immediately-a great advantage at a time when, if there is a national festival, contractors will be very over-loaded with work.

CONCEALING THE FITTINGS

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Obviously, more elaborate arrangements for concealing the fittings can be made for permanent than for temporary installations. The fittings for flood-lighting the Arc de Triomphe, Paris (see page 191) are hidden underground in small concrete trenches. These can be covered during the day by lids which at night act as screens to keep the light out of the eyes of pedestrians and drivers (Fig. 13). The banks of fittings that floodlight the League of Nations Building, Geneva (Fig. 3), are mounted on swivels, so that during the day they can be dropped down and hidden behind balustrades (Fig. 14).

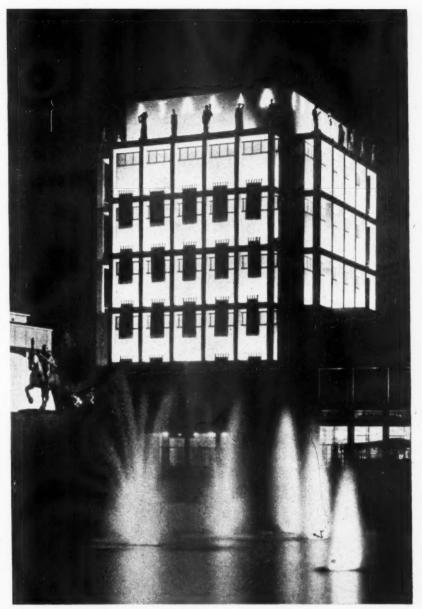
If floodlighting equipment is well-designed (see Fig. 15), it may not be considered necessary to conceal it. In fact, the fittings can themselves become decorative features. As early as 1915, at the Panama Pacific International Exhibition in America, special lanterns were used, mounted on lamp standards, with three of their four sides filled in with opaque material (Fig. 10). In fittings of this type (see also Figs. 11 and 12), floodlights can be installed. Fig. 15 shows the floodlights used to light the sculpture and flagpole in front of the Sports section at the South Bank Exhibition. Here, both at night and

THE CORONATION

As the Coronation celebrations will be taking place in midsummer, flood-lighting will, for much of the time, not be effective before 10 p.m., and the long twilight will necessitate powerful installations. Alternatively, special measures can be resorted to which, without consuming a great deal of electricity,

during the day, the floodlights formed

an interesting and attractive display.

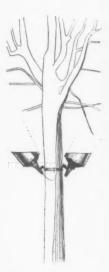


Mid-summer evenings are not usually very dark, hence floodlighting during the Coronation festivities will have to rely on especially strong contrasts between different parts of the building, or on special effects, such as "local" lighting in windows, behind columns, etc. Opposite page, bottom left, Fig. 16, coloured lighting behind columns (Hirsh Building, Amsterdam). Above, Fig. 17, the Italian pavilion at the 1937 Paris Exhibition—the facades brightly lit, with the reinforced concrete frame and balcony fronts in silhouette. Right, Fig. 18, the old Mint tower in Amsterdam, reflected in the dark waters of the Singel canal. The outlining of a building with rows of naked lights can produce striking effects even on comparativly light nights.



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Floodlighting trees and foliage can enhance the floodlighting of a building, especially if there is a river or lake in the vicinity too, as left, Fig. 19, floodlighting in Bruges, Belgium. Bottom left, Fig. 20, the principle of contrast should be applied to floodlighting foliage in the same way as it is applied to the floodlighting of buildings. Here dark tree trunks are silhouetted against a light background of floodlights on the trunks of trees, and by statching to them metal cylinders, all direct rays from the lamps can be prevented from reaching the spectator. The lower sketch shows how a floodlight may be concealed in a small mound.



will produce results, even on light nights. Strong local lighting (particularly coloured lighting), used behind columns, in niches, and in windows, produces interesting results, even before the sun has completely set (Figs. 16 and 17) Coloured lighting placed between windows and their curtains is attractive even in a well-lit street, particularly if the curtains are draped. Floodlighting from the inside, is, in fact, an interesting alternative to floodlighting from the outside, (see photo on page 199) and striking effects can be created by placing floodlights inside a church so that the stained glass windows are brightly illuminated, and the dark tracery is silhouetted against the light flooding out between the mullions.

The "outlining" of a building, by placing naked lamps along the quoins, eaves and ridges (see Fig. 18) is another solution to the problem of illuminating buildings on light evenings, or in competition with powerful street lighting.

STRAY LIGHT

An excellent floodlighting scheme can easily be spoilt by stray light from windows or from street lamps (see photos on pages 191 and 201), and every effort should be made to persuade local authorities to turn off or screen street lights in the vicinity of a floodlit building. Light reflected from the building will be more than adequate for street-lighting purposes.

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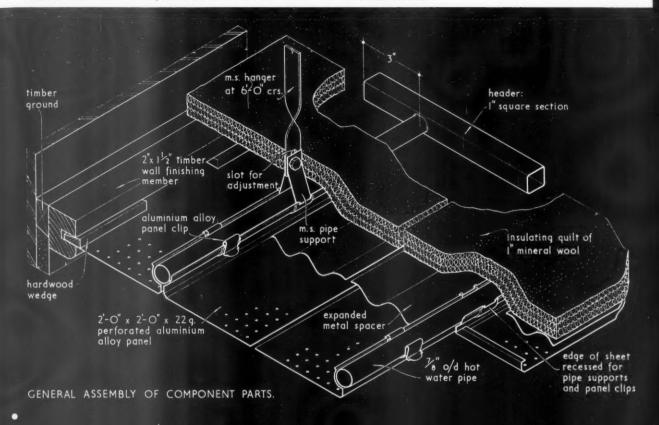
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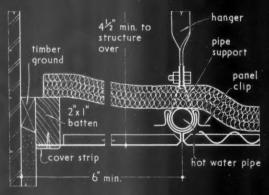
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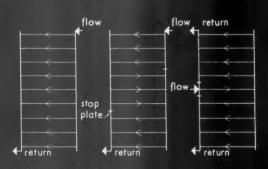


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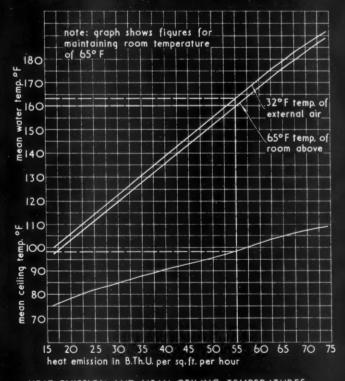




ALTERNATIVE FINISH AT WALL.



TYPICAL LAY-OUTS.



HEAT EMISSION AND MEAN CEILING TEMPERATURES.

29.H1 FRENGER SUSPENDED HEATING AND ACOUSTIC CEILING

This Sheet describes the Frenger suspended heating and acoustic ceiling. The drawings on the face show the general assembly and an alternative finish at walls.

Principle

The Frenger ceiling provides an acoustic surface and at the same time a form of heating which takes up no floor or wall space. No major structural alterations are necessary for its installation in existing buildings. The ceiling, which is suspended from the structure above, consists of a grid of hot water pipes concealed by metal acoustic panels (to which it acts as a supporting framework). It is covered on the upper surface by an insulating quilt which prevents loss of heat upwards and absorbs sound. The panels, being in direct contact with the pipes, radiate heat to the room below. Services may be run in the space over the panels, which are easily removed for access.

Weight

The weight of the standard ceiling, including the water in the pipes, is approximately 2.5 lb./sq. ft.

Components

Hot water pipes: The grid is formed from electrically-welded tube; $\frac{7}{8}$ in. o/d stretchers at 2-ft. centres are welded at each end to 1 in. square headers. Connections are provided on the headers for coupling to the heating system, their location and the arrangement of flow to suit requirements. Typical layouts are illustrated on the face of the Sheet.

Perforated ceiling panels: These are 2 ft. square and are pressed from aluminium sheet. Two parallel edges of the sheet are turned up and shaped to fit round the stretchers; the other two edges are bent as shown to stiffen the panel. The panels may easily be cut to fit round projections on the wall surface or to take light fittings.

Insulating quilt: The standard material is a 1-in, quilt of mineral wool enclosed in paper.

Expanded metal spacers: The quilt is kept clear of the panels by squares of expanded metal, crimped to provide an insulating air-space and to prevent the perforations from becoming clogged when the panels are painted.

Panel clips: These are aluminium alloy strips shaped to be sprung on to the stretchers. Each side of the panel takes four clips (or three clips and a pipe support). The shaped edges of the panel are sprung on to the sides of the stretchers and into the clips which secure them in position.

Hangers: The grid is supported by mild steel hangers set into the floor slab or attached to members above at 6-ft. centres along the length of each stretcher.

Light fittings: Special light fittings are designed for this ceiling to replace one or more of the standard panels; names of suppliers may be obtained from the manufacturer.

Finish

The panels have a Pyluminised finish and are usually sprayed on the site with two coats of matt oil paint.

(Specification details may be obtained from the manufacturer.) The heating pipes and hangers are rust-proofed.

Heat Emission

A graph is shown on the face of the Sheet giving the heat emission and mean ceiling and water temperatures for a typical room temperature of 65° F.

Example: Where a heat emission of 55 B.Th.U./sq. ft./hr. is required to maintain a room temperature of 65° F (with a room above at the same temperature) the mean temperature of the circulating water would have to be 160° F, giving a mean ceiling temperature of 98° F. Where the ceiling is below a roof exposed to the weather the mean temperature of the circulating water would have to be increased to 167° F to maintain the same conditions.

Thermal Capacity

The Frenger ceiling has a thermal capacity of about 0.45 B.Th.U./sq. ft., extremely low when compared with embedded heating panels or radiators. Consequently, when the heating system is turned on there is no long time lag before the heating takes effect.

Sound Absorption

The absorption coefficient of the ceiling may be adjusted to suit particular requirements by using insulating materials of differing thicknesses and types and by varying the air space between the panel and the absorbent. Painting the panels will not affect their acoustic properties.

Given below are the results of the National Physical Laboratory's tests on Frenger ceiling panels: the specimen, 10 ft. square, was spaced 6 in. from walls and backed in turn by the following absorbent materials:—

- (a) Fibreglass bitumen-bonded mat about $\frac{3}{4}$ in. thick, 0.21b./ sq. ft.
- (b) Eldorite mineral wool paper-enclosed quilt about 1½ inthick, 0.85 lb./sq. ft.
- (c) Eldorite mineral wool paper-enclosed quilt about 2 in. thick, 1.2 lb./sq. ft.

Absorbent material	Reverberation absorption coefficients (to nearest 0.05) for frequency bands in region (c/s)						
	125*	250	500	1000	2000	4000	
a l	0.20	0.45	0.65	1 0.45 1	0.35	0.25	
b	0.35	0.75	0.80	0.80	0.50	0.20	
C	0.35	0.80	0.85	0.80	0.50	0.20	

The accuracy is subject to reservation at this frequency where the measurement presents special difficulty.

Further Information

The manufacturer maintains a technical service to advise on problems relating to the Frenger ceiling and to prepare detailed schemes for installations.

Compiled from information supplied by:

Frenger Ceilings Limited,

Address: 29, Woburn Place, London, W.C.1. Telephone: Terminus 9350.

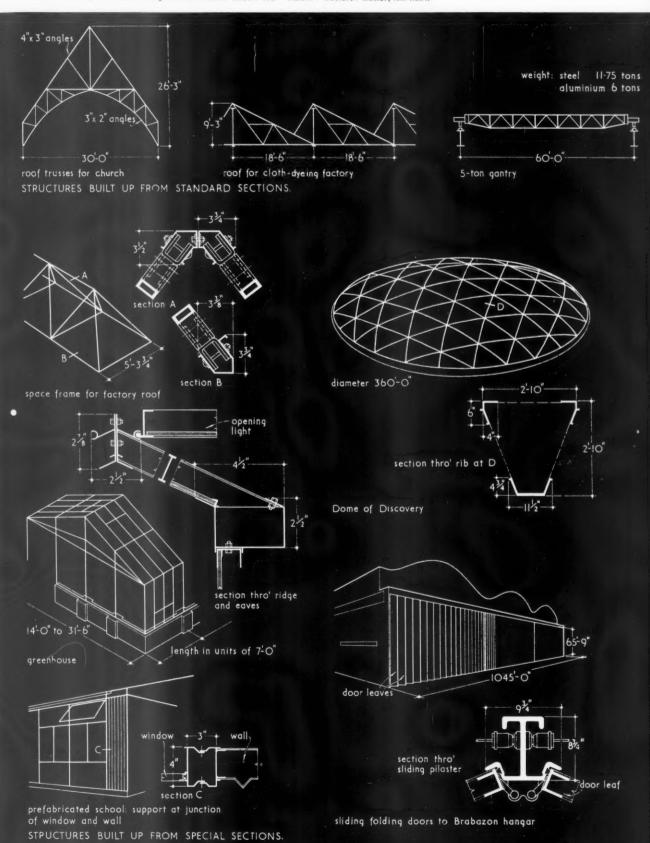
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ALUMINIUM AND ALLOYS GENERAL DATA

The Architects' Journal Library of Information Sheets 402. Editor: Cotterell Butler, A.R I.B.A.



TYPICAL STRUCTURAL APPLICATIONS OF ALUMINIUM ALLOY SECTIONS.

Compiled from information supplied by The Aluminium Development Association.

10.B4 ALUMINIUM AND ALUMINIUM ALLOYS: EXTRUDED SECTIONS 2

This Sheet deals with the structural application of aluminium alloys and illustrates the use of extruded sections in these materials. Extruded sections for general building applications are described on Sheet 10.B3.

General

Aluminium alloy structural sections to B.S. 1161 are generally preferable to special sections where standard sections cannot be improved upon: where the quantities required are insufficient to justify the cost of new dies for special sections: or where time is an important factor.

Special sections have three outstanding advantages:

(a) They can be designed so that the material is disposed to the most economical advantage for the particular conditions.

(b) They can replace a number of integrated standard sections by a single member.

(c) They may combine mechanical with structural requirements and be at the same time æsthetically satisfying.

All aluminium alloy sections have the advantage of high strength/weight ratios, enabling structures of low self-weight to be used.

The drawings on the face of the Sheet illustrate various structures using standard and special sections and the following notes give the salient reasons why aluminium alloys were chosen.

Roof Trusses for Church (architect, Charles Sykes)

Aluminium alloy was used for the trusses as it reduces maintenance.

Roof for Cloth-Dyeing Factory

The risk of condensation, causing rust stains to drip from the roof on to the cloth was eliminated by the use of aluminium alloy.

Gantry

The use of aluminium alloy for gantries means that lighter structures can be built for given duties, reducing the forces in the members and the loads on rail girders, columns and foundations.

Space Frame for Factory Roof (designed by Ove Arup and Partners, engineers)

The example demonstrates the use of special sections at the angles in the triangular cross section of a space frame.

Greenhouse (Head Wrightson Aluminium Ltd.)

This is a good example of the use of elaborate light extrusions.

Prefabricated School (Bristol Aero (Housing) Ltd.)

This illustrates a further example of the use of intricate extrusions for light constructions.

Dome of Discovery (architect, Ralph Tubbs; consulting engineers, Freeman, Fox and Partners)

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Designed for exhibition purposes, the dome was required to be of great span and pleasing appearance and at the same time capable of easy and rapid erection. The use of aluminium alloy enabled sections of specially suitable shapes to be used (many of large dimension) to build up a system of construction otherwise not possible, i.e. the ribs to the cross section shown.

Doors to Brabazon Hangar (architect, Eric Ross; made by Esavian Ltd.)

This unique door construction takes advantage not only of the light weight of the material but the section of the pilasters illustrated combines mechanical with structural requirements.

Material Specifications for Structural Aluminium Alloy Extruded Sections (B.S. 1476 : 1949)

Material	0·1 per cent. proof stress, ton/sq. in.		Ultimate tensile stress, ton/sq. in.		
NE6	not less th	an 7	not less th	an 16	
HE10-WP	,,,	15	**	18	
HE15-W HE15-WP	99	15 26	22	25 30	

Relevant Publications

The Institution of Structural Engineers. Report on the structural use of aluminium alloys in buildings.

A.D.A. Information Bulletin No. 16. Aluminium and aluminium alloy extruded sections (design and tolerances).

A.D.A. Brochure No. AB/6. The use of aluminium alloys in structural engineering—an introductory survey. A.D.A. Research Report No. 3. The strength of light alloy struts.

B.S. 1161: 1950 Ahminium alloy sections.

B.S. 1476: 1949 Aluminium and aluminium alloy bars, rods and sections

Further Information

The Aluminium Development Association maintains a Technical Advisory Service and Information Bureau and its engineering and architectural staff is available to answer questions on the properties and uses of aluminium and its alloys in all forms and to advise on technical problems, suppliers, etc.

This Series of Sheets on aluminium and aluminium alloys give general data on the properties of the materials and their use in various building applications.

Compiled from information supplied by:

The Aluminium Development Association.

Address: 33, Grosvenor Street, London, W.1.
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FLOODLIGHTING: TABLE OF WATTAGE REQUIREMENTS

		Reflection factor	Recommended foot candles	Tungsten lamps, 500 — 2,000 W. Watts/10 sq. ft.	Sodium lamps, 85 — 140 W. Watts/10 sq. ft.	Mercury lamps, 250 — 500 W. Watts/10 sq. ft.
Whitewash or paint		40—60%	5	10	3	5
Dark purple or brown brick		10—20%	15	20 30 30	9	15
Grey granite		10-25%	15	30	9	15
Portland stone or concrete (new)		30-40%	5	10	3	5
Portland stone or concrete (medium)		20-30%	10	10 20 30 20	6	10
Portland stone or concrete (dirty)		1020%	15	30	9	15
Limestone		20-40%	10	20	6	10

Table gives figures for average objects, good contrasts and dark surrounds; for light surroundings figures should be doubled. For long distances, where narrow beams must be used and much light is lost (e.g., spires, pinnacles and open stonework on Gothic churches, banners and flags, etc.), much higher figures, between three and five times the figures in the table, should be used.

FLOODLIGHTING IN PARIS

The Arc de Triomphe is brightly lit on festive occasions by banks of floodlights permanently installed in trenches in the pavement. These trenches are closed over during the day. The lamps have been arranged so that beams of light do not shine on the traffic in the Place de l'Etoile. Unfortunately, this has meant having the beams so nearly upright that heavy shadows are cast up by the horizontal mouldings, and the top of the arch would, in fact, be completely dark, if two rows of lamps were not placed on the top cornice. These lamps are arranged so that not all the shadowed part is lit up, otherwise the cornice would appear flat. Lighting the sculpture from below, as Dr. Kalff points out in his article, distorts the shapes, but details of the arch are not, in this case, important; the aim has been to make the arch stand out as a gleaming white climax to the view up the Champs Elysées. The "Palladian" architecture of the great colonnade of the Louvre Palace (designed by Claude Perrault) required great care in the placing of the lamps. It was most important that the beams of light should be parallel, otherwise the lighting would be patchy and shadows would come in the wrong places. The light is arranged to come from the left, and the shadows on the columns and pilasters are well accentuated. It is clear from this photograph that direct light from street lamps can

do great harm to a floodlighting scheme. It is, therefore, desirable to have street lights turned off, or at least screened, while a building is floodlit. The Opéra, designed by Granier, is also floodlit from the left. The lamps are at a high level, so that the shadows under the horizontal mouldings help to accentuate the good proportions of the building. It is often difficult to spread enough light on the surface of a dome, but this photograph shows how important it is to accentuate the dome, when the remainder of the building is well lit. Permanent floodlighting of public buildings and monuments in Paris now takes up 2,000 kW .-20 per cent. of the city's total street lighting load of 10,000 kW.















FLOODLIGHTING IN ROME

The floodlighting of Rome is done by the Technological Office of the Rome Municipality, which has a special section for illuminations, under Inginere di Stefano. Generally, di Stefano tries to arrange that buildings or panoramas are illuminated by diffused light, concealing as far as possible the source of light. Very large monuments, such as the Coliseum and the Theatre of Marcellus, are illuminated by incandescent lamps, of from 1,000 to 3,000 watts, in fittings with parabolic mirrors. Panoramas, such as the ruins of Cæsar's Forum, below, are illuminated by incandescent lamps of from 3,000 to 5,000 watts, in fittings with

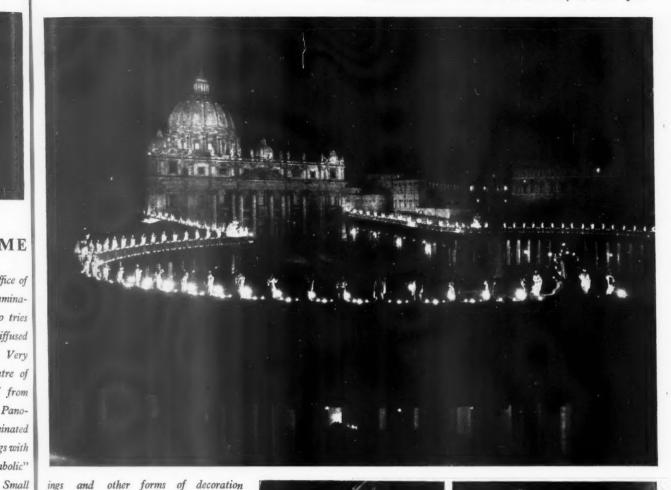


"multi-parabolic" mirrors. Small monuments and details of buildings are illuminated by small, 150- to 500-watt lamps, with metal parabolic reflectors. The floodlighting of St. Peter's is work of a special guild of founded men, when the building completed, was known as Sempie-They are trini. also responsible for the general maintenance of the building and for putting up hangings
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ings and other forms of decoration for festive occasions. The posts are practically hereditary, although the men are now under the direction of an engineer. Great iron bowls of oil, called fiaccole, set alight by the Sempietrini, are still used for the illuminations for the Dogma. Illustrated on the opposite page are: top, from left to right, the arch of Septimus Severus; the floodlit facade of S. Francesca Romana, reflected in the pool of the Vestel Virgin's house; the portico of the temple of Antonius and Faustina. Centre, part of the Coliseum. Bottom, general view of the ruins of Caesar's Forum, seen from the Capitol. This page: top, the colonnade and main facade of St. Peter's, illuminated for he Dogma with floodlights and fiaccole; centre, the Palazza Senatorio, on the Capitol, and the apse end of S. Maria Maggiore; bottom, the church of S. Trinitádei Monti.

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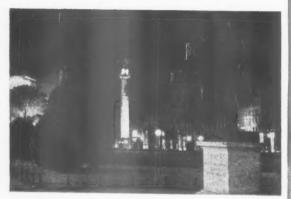


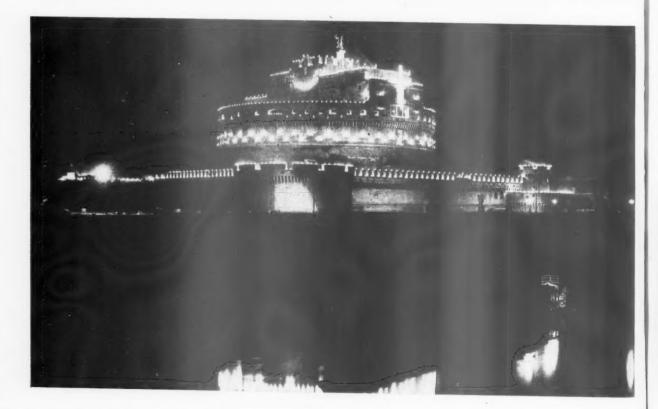












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FLOODLIGHTING IN ROME (continued)

Fountains in Rome are illuminated by lamps of 300 to 500 watts (sometimes 1,000), used in special fittings which can function under water. The greenery and foliage of gardens is illuminated with mercury-vapour floodlights. In general, di Stefano and his team of engineers try to preserve "the play of light and shade on the monument." They do not like to use "a hard white light that illuminates every nook and cranny." For colour effects, which they do particularly well, they place coloured filters over the fittings. On the birthday of Romulus the interior of the Coliseum is floodlit red. The four fountains illustrated on this page are: top left, fountain and obelisk in the forecourt of St. Peter's; top right, the Bernini fountain in the Piazza Navona; centre, the lion fountain in the Piazza del Popolo; bottom right, the Naïads fountain in the Piazza dell Esedra. The photograph below shows the top of the Arch of Constantine. Opposite page: top left, the lower part of Trajan's column; top right, the equestrian statue of Marcus Aurelius, silhouetted against the buildings of the Capitol; centre, floodlighting in the via dei Fori Imperiali; bottom, the castle of S.'Angelos illuminated for the Dogma by floodlights and fiaccole.







The three following worked examples, by Ir. L. C. Kalff, serve to amplify the guidance given in the article on pages 184-190, and to demonstrate the use of the table on page 191. The examples are: a flat facade facing a well-lit square, the same facade with pilasters, and a steeple.

FLOODLIGHTING: THREE WORKED EXAMPLES

By Ir. L. C. Kalff

EXAMPLE I

A facade, 110 ft. long and 50 ft. high, of a red brick building facing a well-lit square. In front of the building is a drive and a small garden. The height of the building being 50 ft., the fittings should be placed between 25 and 50 ft. from it. They can, in fact, be placed in two rows on the garden (Fig. 1), respectively 25 ft. and 40 ft. from the facade.

type of fitting

Since it is possible to place the fittings close to the building, wide-angle fittings can be used.

type of lamp

Sodium-vapour is particularly sympathetic towards a red surface (mercury would be most unsuitable) but sodium light alone has an unpleasant effect on people's faces and clothing. It is recommended, therefore, that both sodium and tungsten lamps be used.

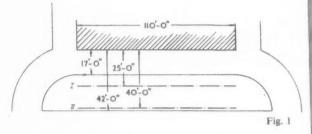
wattage

The area of the facade, 110 ft. \times 50 ft. = 10 \times 550 sq. ft. Therefore, from the table, the wattage of the installation if it were all tungsten would be:

$$P_t = 550 \times 20 W. = 11 kW.$$

If the installation were all sodium vapour:

$$P_s = 550 \times 6 \ W. = 3.3 \ kW.$$



For a "blended" installation, with equal quantities of sodium and tungsten lighting, wattage $= \frac{1}{2} P_t + \frac{1}{2} P_s$.

In this example, however, the effects of the powerful street lighting have to be counteracted, by doubling the wattage of the installation. Hence:

$$P_t = 2 \times 11 \ kW. = 22 \ kW.$$

$$P_s = 2 \times 3.3 \text{ kW.} = 6.6 \text{ kW.}$$

...
$$Pb = (11 + 3.3) kW. = 14.3 kW.$$

position of fittings

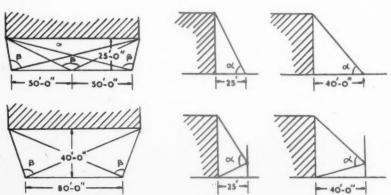
The fittings may be grouped together—the groups or "batteries," in this example being placed at regular intervals. The distance between the batteries should not be greater than twice the distance from the fittings to the facade being floodlit. Thus the batteries in Line I (Fig. 1) should not be more than 50 ft. apart, and those in Line II, not more than 80 ft. apart.

The greater the angles α and β (in Fig. 2) the greater will be the efficiency of the installation. However, if the fittings are placed above ground level (in order to increase angle α) they will be visible during the day. The angle β can be increased by placing the batteries closer together, which has the added advantage of increasing the evenness of light on the facade. Fig. 3 shows the recommended arrangement.

number of lamps and fittings

Point P (Fig. 3), near the corner of the building, will receive light mainly from Batteries 1 and 2. Point Q, near the centre

Fig. 2



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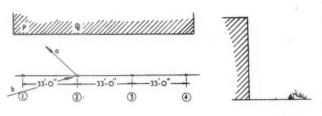


Fig. 3

of the facade, will be illuminated by Batteries 1, 2 and 3. Hence, the centre of the facade will be more brightly lit than the ends. This could be corrected by arranging the fittings in Batteries 2 and 3 so that the beams of light are directed outwards (as arrow "a"), but then there might be a danger of the bright surface of the reflectors, or even the lamps themselves, being seen from the square (as arrow "b"). A better method of ensuring that the facade is evenly lit is to make Batteries 1 and 4 stronger than 2 and 3—say in the proportion of 2:1.5. Thus the tungsten part of the installation will consist of:

 Battery 1: 3 kW.
 Battery 3: 2 kW.

 Battery 2: 2 kW.
 Battery 4: 3 kW.

This is 1 kW less than the computed wattage, but this difference can be ignored, since it has been possible to place the fittings comparatively near to the building.

The $3\cdot 3$ kW to be provided by sodium vapour lamps can be given by 20 lamps each of 140 W., as, when the transformer losses of $\frac{1}{6}$ th are taken into account, a 140-W. sodium lamp has a load of 140 $+\frac{140}{6}$ W. = 163 W. (20 \times 163 W. = $3\cdot 26$ kW.)

These 20 lamps should be distributed amongst the 4 batteries in the same proportion as the tungsten lamps.

summary

Batteries 1 and 4: each to consist of three 1,000-W. tungsten lamps in wide-angle fittings and six 140-W. sodium-vapour lamps also in wide-angle fittings.

Batteries 2 and 3: each to consist of two 1,000-W. tungsten lamps and four 140-W. sodium-vapour lamps.

Thus the total load will be: $(10 \times 1) + (20 \times 0.163) \, kW. = 13.26 \, kW.$

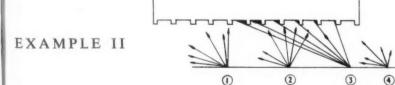


Fig. 4

Subject: as in Example I, except that the facade (medium grey) has on it a row of pilasters which should stand out clearly and cast even shadows on the remainder of the facade. Wattage requirements will be the same as for the previous example.

types of fitting and lamp

Wide-angle fittings are not suitable in this example. The result of using them in 4 batteries as in Example I is shown in Fig. 4. The batteries have all been moved to one side, in order that the pilasters should produce their shadows, but, as can be seen in the diagram, the pilasters farthest from the fittings produce much larger shadows

EQUIPMENT: GENERAL-PURPOSE FITTINGS







Fittings for temporary installations, from top to bottom: "Weybridge" (Philips Electrical Ltd.) simple metal housing for Philips "Altrilux" 500-W. lamp; £2 15s. 6d. "Whitby" (Philips Electrical Ltd.); medium- and wide-angle, 35°-60°; 200-W.; reflector, polished anodised aluminium; "Perspex" (plain or coloured) front; £7 15s. General-purpose fitting by Ekco-Ensign Electric Ltd.; up to 500-W.; body and reflector in one piece; £4 2s. 6d.; coloured glass covers available, 6s. each. (Prices do not include lamps.)

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Top, " Metrovick 5125" (Metropolitan-Vickers Electrical Co. Ltd.); heavy duty projector, adjustable focus, for towers, spires, etc. or for situations where fittings cannot be mounted near the building to be floodlit; 21°, 24°, or rectangular. $20^{\circ} \times 43^{\circ}$; up to 1,000 W. ; body, silicon aluminium alloy casting; effector, polished anodised aluminium; £36. Above, " CFL 1000" (Holophane Ltd.) long range, adjustable focus, min. angle 15° circular, or with parallel prism front, rectangular beam 38° × 16°; up to 1.500 W.; heat-resisting glass front; body, heavy-gauge spun copper; reflector, parabolic, chromium plated; £40 19s.

than those nearer the fittings. In addition, there would be the danger of glare from the reflectors.

The fittings should be placed further away from the building and narrow-beam reflectors used. There still remains the danger, however, that the shadows may be too dark, so that the general form of the building is lost. To prevent this, the whole facade should be illuminated by fairly diffuse light from sodium lamps (Fig. 5).

Three-quarters of the total illumination should come from tungsten lamps, the remainder from sodium. Thus, from the figures calculated for Example I:

Tungsten: $\frac{3}{4} \times 22 \ kW$. = 16 kW.

Sodium: $\frac{1}{4} \times 6.6 \, kW$. = $1.6 \, kW$.

position of fittings

If possible the tungsten fittings should be mounted on the top of a building, as shown (in plan) in Fig. 6. The fittings should be grouped in 2 batteries, each covering about

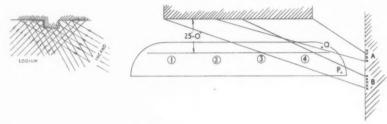


Fig. 5 Fig. 6

half the facade. If they cannot be mounted on a building, they should be placed at points P and Q—if possible, 8-12 ft. above street level.

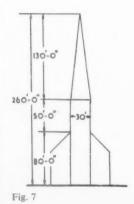
Battery B should have about twice the output of Battery A. The sodium installation has half the output of the sodium installation in Example I.

summar

Battery A: 5 fittings with mirror reflectors, each containing one 1,000-W. tungsten lamp.

Battery B: 11 fittings with mirror reflectors, each containing one 1,000-W. tungsten lamp.

Points 1 to 4: each point: 2 wide-angle fittings each containing one 140-W. sodium vapour lamp.



EXAMPLE III

A tall church steeple (Fig. 7) has to be floodlit. The lower part has a medium grey surface, the spire is of a rather dark colour, and the surroundings are also fairly dark. The steeple will be seen from a great distance and from all directions.

area to be illuminated

The part of the spire from ground level to 80 ft. above ground level would be illuminated together with the church itself and is not considered here. The part above 80 ft. consists of a dark-coloured

spire with an area 4 $imes frac{1}{2} imes$ 130 ft. imes 30 ft. = 780 imes 10 sq. ft., and a



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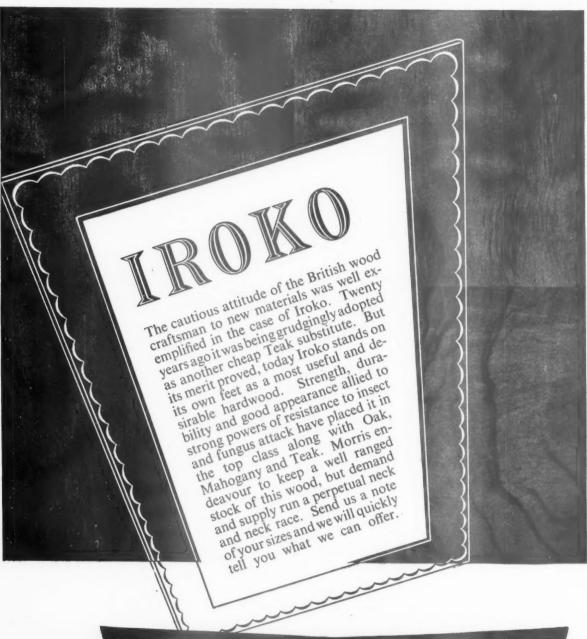
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lower part of a lighter colour with four sides each 30 ft. \times 50 ft. = 600 \times 10 sq. ft.

Narrow-beam fittings, with mirror reflectors and tungsten lamps, are to be used.

load of the installation

The spire will always stand out against the dark sky; hence, only half the illumination given by the table will be required. This applies to a lesser extent to the rectangular part of the steeple, so for this part two-thirds of the figure given in the table should be provided. Assuming that the fittings can be placed in good positions on fairly distant roofs, the wattage computed from the table must be multiplied by 3 and 2, for the spire and the base respectively.

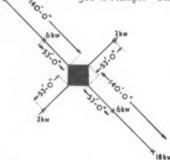
Spire: $780 \times 10 \text{ sq. ft.}$ Load: $3 \times 780 \times \frac{1}{2} \times 30 \text{ W.} = 35 \cdot 10 \text{ kW.}$ Base: $600 \times 10 \text{ sq. ft.}$ Load: $2 \times 600 \times \frac{2}{3} \times 20 \text{ W.} = 16 \cdot 00 \text{ kW.}$

arran gement

The distance the fittings are placed from the object should be about two-thirds the height of the object above the fittings. If the fittings can be placed about 50 ft. above ground level, their distance from the spire should be: $\frac{2}{3}$ (260 — 50) ft. = 140 ft.; from the base: $\frac{2}{3}$ (130 — 50) ft. = 53 ft. This arrangement is illustrated in Fig. 8.

wattage

Batteries E and F serve to soften the shadows caused by batteries C and D. Their relatively low output is directed over a large area; hence, narrow beams are not required, and the 2-kW. required from each of these two batteries would best be provided by four 500-W. lamps. The other batteries could consist of 1,000-W. units.



schedule

Battery	Approximate distance	Load	
A (spire)	140 ft.	18 kW.	
B (spire)	140 ft.	18 kW.	
C (base)	53 ft.	6 kW.	
D (base)	53 ft.	6 kW.	
E (base)	53 ft.	2 kW.	
F (base)	53 ft.	2 kW.	

FLOODLIGHTING: FROM THE INSIDE

Fig. 8

Floodlighting a building from the inside is an exciting alternative to normal floodlighting. It is effective on comparatively light evenings, and suitable both for old buildings, particularly Gothic churches, and for contemporary buildings, with large areas of glazing, such as the Transport Pavilion at the South Bank Exhibition (right).



EQUIPMENT: WIDE-ANGLE RECTANGULAR FLOODS





Top, "Metrovick FV1" (Metropolitan-Vickers Electrical Co. Ltd.); wide-angle rectangular; 250-400 W. mercury vapour, 300-1,500 W. filament; £20 3s. 6d.; glass colour filters, 13s. 6d. Above, Type "S" (Benjamin Electric Ltd.); wide-angle rectangular; 500-1,500 W.; lead-coated steel body; reflector, ribbed mirror; £22 3s. 8d.

Below, "Duoflux" reflector (Benjamin Electric Ltd.); for lighting large outdoor areas from the side; 300-1,500 W.; main reflector, pressed steel; internal reflector, for increasing "throw," anodised aluminium; £13—£18 5s., according to size.



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The costs of floodlighting schemes vary enormously, depending on whether | EQUIPMENT: MEDIUM-'AND the installation is to be permanent or temporary, at ground level or above, close to the building or a considerable distance from it. In the following article, however, data are given which should enable the architect to produce approximate estimates for temporary schemes. Hire charges are also given.

FLOODLIGHTING: THE COST

By the Assistant Technical Editor

The cost of a floodlighting scheme firstly, on the wattage depends, required. Very approximately, a low building requires between \(\frac{1}{2} \) and \(1 \) W. per sq. ft. of façade, and a tall building between \(1 \) and \(2 \) W. per sq. ft. (Accurate wattage requirements can be determined by the rules and table given on pages 184 and 191 respectively. Current consumption depends, of course, directly on the wattage of the installation, although it should be borne in mind that the effective wattage of sodium vapour, mercury vapour and fluorescent lamps is considerably greater than the *nominal* wattage.

The cost of the installation next depends on whether it is to be temporary, i.e., dismantled after use and stored indoors until next required, or permanent, i.e., left out of doors continually. A permanent installation will cost several times as much as a temporary installation, although in the long run it may be cheaper, if used 20 to 30 times during the life of the building.

General purpose floodlighting fittings, suitable only for temporary installations, may be obtained for as little as £2; medium-duty fittings for permanent installations, between £10 and £20; heavy-duty, up to £40. Within each of these ranges, the cost depends, firstly, on size; secondly, on the type of reflector. The minimum cost of a fitting for a 500-W. lamp is about £5; for a 1,000-W. lamp, about £12. Fittings with special reflectors of mirror glass that produce a powerful narrow beam and fittings that can be adjusted to provide different types of beam are naturally more expensive than those with simple enamelled metal reflectors.

Fittings for sodium vapour or mercury vapour lamps cost about the same as those for tungsten lamps—in fact, some fittings can be used for all three types of lamp-but there is the additional cost of operating gear-between £7 and £8 per fitting. Against this must be weighed the reduced current consumption due to the higher efficiencies of these lamps. Fluorescent fittings are slightly more expensive than tungsten fittings, but again this must be balanced against their higher efficiency.
Colour filters vary in cost: plastic

from 5s. to 10s.; glass from about 6s. to 30s., according to size and hue.

Ordinary filament lamps (life, 1,000 hours) cost between 5s. and 25s. (for 200 W. and 1,500 W. respectively). Projection lamps that produce a narrow beam in an ordinary fitting (life, 800 hours) cost between 25s. and 33s. (for 250 W. and 1,000 W. respectively). Sodium vapour lamps (85-140 W.) cost between £3 and £5; mercury vapour (250-400 W.), between £2 and £3; fluorescent (80 W.), about 16s. The life of these lamps is much longer than that of filament lamps, being approximately 3,000, 3,000 and 5,000 hours respectively, and it should be borne in mind that, if the fittings are inaccessible, there will be a considerable saving in the cost of labour for re-lamping.

Floodlighting fittings may be hired, normally for a minimum period of one week, but during the Coronation period for a minimum of six weeks. Hire charges, which include indoor cable and lamps, but not external cable, are roughly £1 per week for ordinary fittings (1,000 W.) and 25s. per week for "long-throw," focusing fittings (1,000 W.)

INSTALLATIONS

It is virtually impossible to give any guidance on the cost of installing permanent floodlighting schemes, and extremely difficult to give any reliable figures even for temporary installations. There are so many factors that can affect the cost that it is essential to consult a reputable firm of electrical contractors at the earliest possible stage.

However, for a straightforward tem-porary installation at ground level and not too far from the source of supply, a craftsman and his mate should install one floodlight per hour. Most firms will charge for the two men, including overheads, profit, travelling time, etc., about 10s. per hour.

If the fittings are to be a considerable distance from the building, installation costs will go up, as cable is expensive
—about £9 for 100 yards. Firms that hire equipment charge for the hire of external cable. It should be remembered that where cables cross paths,

NARROW-ANGLE FITTINGS





Above, "F.7901" (Siemens Electric Lamps and Supplies Ltd.); medium angle, 55°; up to 1,000 W.; reflector, faceted mirror glass; £14. Top. 'F.69019" (General Electric Co. Ltd.): medium angle, with faceted reflector, or narrow angle, with parabolic reflector; up to 1,500 W.; £28 10s. (Prices do not include lamps.)

drives, etc., they must usually be carried over above head level—this is an additional expense.

Fixing fittings above ground level also increases the cost, particularly if there is no access from inside the building to the points where the fittings are to go, so that scaffolding has to be used.

In old buildings, particularly churches, the existing electricity installation is often inadequate to carry the load of a floodlighting scheme. The electricity boards are usually quite helpful in arranging for a temporary supply—but, of course, it has to be paid for.

Switching the scheme on and off may be a problem. If there is no resident caretaker it is often cheaper to have a time switch than to pay someone specially to come and switch on and off at the appropriate times. Time switches cost between £5 and £12, for 3-kW. and 10-kW. sizes respectively; for a larger installation, a relay system must be used.



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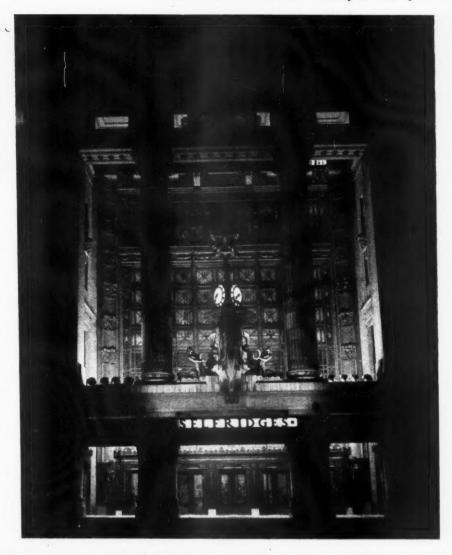
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A number of legal problems can arise in connection with floodlighting. In the article below, Ernest Watkins gives a formidable list of them, but points out that the potential difficulties seldom, in fact, prevent floodlighting schemes being carried out. It is important, however, to know what difficulties can arise, so that in preparing a scheme the architect can be sure that he is not contravening any regulations.

FLOODLIGHTING: LEGAL PROBLEMS

By Ernest Watkins

Floodlighting presents no legal difficulty to the public authority. The Acts which govern street lighting allow local councils to light streets, markets and public buildings to light streets, markets and public buildings by gas or such other means as they wish, and, even if the parliament that passed one of the Acts, in 1875, probably had the interior of public buildings in mind, not the exterior, the words chosen seem to fit both. But what is the position of the private owner of a building who feels, for whatever reason, an urge to etch its architectural beauties (or at least its architectural features) against the darkness of the night sky?

The problems he must first solve are these: He must make certain that his proposed installation does not offend against any local installation does not offend against any local byelaw. He must make certain that he has a legal right, or consent, to place or attach the fittings where he plans they should be. He must make certain that the installation is not a danger to the public at any time while it is there. He must make certain that the floodlight itself does not interfere with some existing legal right in the neighbourhood.

BYELAWS

To generalize on the first point might be misleading, for byelaws vary from place to place. The first step should be to contact the Borough Engineer; this may prove to be no more than a precaution, but the precaution should be taken. The Borough Engineer will have the relevant byelaws and will be able to check that the proposals do not conflict with them.

FIXING THE EQUIPMENT

FIXING THE EQUIPMENT

Has the owner the right to fix the equipment where he plans to? If he is both owner and occupier of the whole building to be floodlit, and of the points around it where the apparatus is to be installed, no question arises. But if parts are let, difficulties may arise, and certainly should be foreseen. It is probable that the owner will be given all the consents he needs if he asks for them, but he should see that he asks all those who have a right to object. Suppose, for instance, a whole floor of the building is let off on lease; is the exterior of building is let off on lease; is the exterior of the walls of that floor included in the lease or not? If the lease is silent on that point or not? If the lease is silent on that point (as it may well be, since the possibility of floodlighting may not have entered the mind of the lawyer who prepared it), the assumption is that the outer walls are included. That proposition of law inconvenienced, for example, a butcher in a town in Kent some time ago. He rented the whole of a building and sub-leased the upper flaors to a bairdresser. On the outer wall. whole of a building and sub-leased the upper floors to a hairdresser. On the outer wall, extending both above and below the first floor level, was a large sign advertising matches—a sign that had been there for some years past. The hairdresser decided to object to the sign, and claimed that the outer surface of the wall to which it was affixed was a part of the building leased to him. The Court agreed with the hairdresser and told the butcher, in effect, that if he had wanted to exclude the outer walls of the building from the letting he should have done so, in so many words, in the lease he granted to the hairdresser.

PUBLIC SAFETY

The third point is the safety of the public. The electric installations needed for flood-lighting can be dangerous if they are, or become, defective, and the general proposition of law is that a person bringing a dangerous thing on to his land is responsible for the consequences. for the consequences. From the owner's point of view, the first requirement is to entrust the job of installation to an expert, and, if possible, obtain an undertaking that the installation will be safe. If an owner employs a reputable firm of independent contractors experienced in the work, he will not be responsible to the public for any fault they make in installing the equipment. If he employs his own workmen, however, he will be. (In either case, it is desirable to check that the insurance policies covering the building cover this kind of risk to the public.)

building cover this kind of risk to the public.)
There is also the question of maintaining the installation while it is in position. Even if safe when installed, faults may develop and periodic inspection is obviously advisable. Generally speaking, no one is entitled to put in the way of the public, in a place where it has the right of access, any concealed danger to life or limb. If he does, and provides no adequate warning of the danger, he may be held liable for any subsequent damage.

THE LIGHTING ITSELF

Finally, the floodlighting itself may con-Finally, the floodlighting itself may constitute interference with someone's existing rights. There is not much risk of this, but it is possible. Most leases contain what is called a covenant by the landlord that the tenant shall have "quiet enjoyment" of the property leased, and it is possible that a court might hold that the "quiet enjoyment" by a tenant of a residential flat was interfered with if the landlord, after the lease was granted installed a floodlight out. lease was granted, installed a floodlight outside the bedroom window which turned night into day. But the interference would have to be substantial and fairly continuous. Where a landlord let a floor of a house as a dancing academy, the tenant of the floor below failed in a claim that the periodic dancing lessons, and the accompanying poundings and vibration of his ceiling, were poundings and vibration of his ceiling, were a breach of the "quiet enjoyment" of his rooms. The original purpose of the covenant was to give the tenant redress against wrongful eviction from the property, but it is always possible that the Courts may, one day, be asked to extend its scope further. The proprietor of an hotel need have no such fear. He lets his rooms by the day, and his guests must take them with whatever noises, and lights, they may reasonably expect from the surroundings of reasonably expect from the surroundings of the particular hotel.

These are the main legal dangers the

intending floodlighter should bear in mind. They may sound formidable, but so does the Highway Code when read out slowly aloud. The problems, of both, are on the whole readily solved by common sense.

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Floodlighting

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The High Paddington Housing Scheme. Professor W. G. Holford. BBC Third Programme, 9 p.m. FEBRUARY 5

Man and the Landscape. Professor H. C. Darby. At Livingstone Hall, Broadway, S.W.1. (Sponsor: IPI.) 6 p.m. FEBRUARY 5

The Problems of Group Discussion in Their Relation to the Formulation of Planning Policies. D. L. Holmes. At the Student Planning Group, 28, King Street, W.C.2. 6.30 p.m. FEBRUARY 5

A New Approach to Town Planning History With Special Reference to the Grid-iron Plan. Dr. S. Lang. At 66, Portland Place, W.1. (RIBA Library Group Meet-ing.) 6 p.m. FEBRUARY 9

Colour in Schools. David Medd on the MOE Bulletin. At 2, Savoy Hill, W.C.2. Joint Meeting of RIBA and IES. 6 p.m. FEBRUARY 10

Exhibition of Abbey Treasures, Old and New. At St. James's Palace, W.1. Week-New. At St. James s I days, 11.30 a.m.-6 p.m.

FEBRUARY 10-28

New Model Code of Building Byelaws will be the subject of a General Meeting of the LMBA at Derry & Tom's Restaurant, Ken-sington High Street, W.8. The address will be by H. E. Comben, O.B.E., B.SC., at 2 p.m. (luncheon 1 p.m.).

FERRUARY 11

An Architect in China. F. Skinner. At Conway Small Hall, Red Lion Square, Southampton Row, W.C.1, at 7 p.m.

FEBRUARY 20

Annual Exhibition of Photographs by AA Members. At 36, Bedford Square, W.C.1. Mon. to Fri. 10 a.m. to 6 p.m., Sat. 10 a.m. to 1 p.m.

UNTIL FEBRUARY 20

Announcements

G. A. Atkinson, A.R.I.B.A., A.M.T.P.L. has taken a post as architect to the Urban District Council of Abercarne. His address is

now 69, High Meadow, Abercarne. The Nuffield Foundation and The Nuffield Provincial Hospitals Trust have removed to Nuffield Lodge, Regent's Park, London, N.W.1. (Tel: Primrose 8871-5.)

Correction

The sub-contractors for the greengrocer's shop at 186, Bishopsbridge Road, London, W.2, published on January 22, page 144, should read:—"Tiles supplied and fixed by Messrs. Carter & Sons (London) Ltd." These tiles were H. & R. Johnson Ltd. tiles.

In the advertisement for Messrs. W. J. Marston & Son Ltd., on January 15, page lxxxy, the caption for the third illustration should have read: "A private development—town houses on a corner site in Kensington"—not "on a concrete site "as published.

The telephone number of Messrs, Stramit Boards Ltd., Packet Boat Dock, Cowley Peachey, Nr. Uxbridge, Middlesex, was omitted from their advertisement in the JOURNAL for January 29. It is West Drayton 3021

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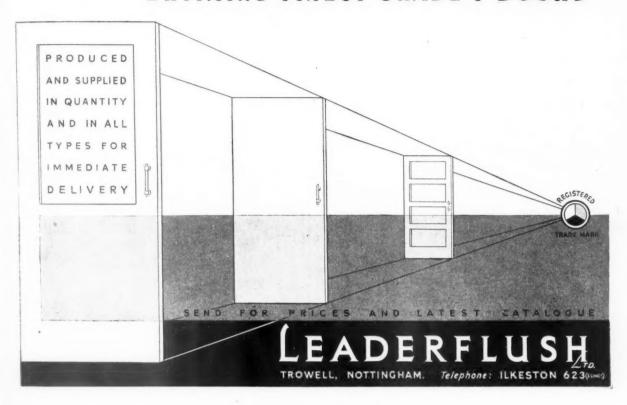
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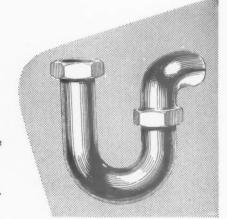


THE ARCHITECTS' JOURNAL for February 5, 1953



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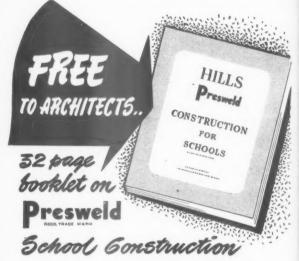
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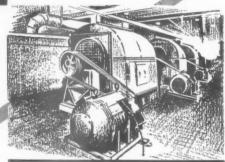
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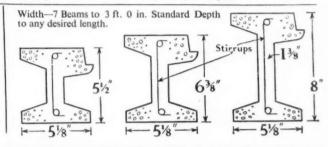
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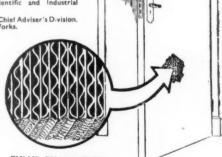
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Department.

The salary will be in accordance with Grade A.P.T., VI, commencing at £670 per annum, and rising in accordance with scale to £735 per annum.

(2) JUNIOR TECHNICAL ASSISTANT. Applicants should have served their Articles with a Registered Architect, and be able to carry out general technical work in the Housing Architect's Department.

out general technical work in the Housing Architect's Department.

The salary will be in accordance with Grade A.P.T., I, of the National Scale, commencing at 2465 per annum and rising in accordance with scale to 2510 per annum. The Terms and Conditions of appointment in both cases will be in accordance with the National Scheme for Local Government Officers; will be subject to the Council's Superannuation Scheme, and to one month's notice an either side.

Applications for either of the posts must be on forms obtainable from my office, and should be completed and in my hands by Wednesday, the 11th February 1953, at 10 a.m. at the latest.

F. J. DAVISON,

Clerk to the Council.

Sedgefield, Stockton-on-Tees. January, 1953.

Sedgefield, Stockton-on-Tees.

January, 1953.

3075

SOLIHULL URBAN DISTRICT COUNCIL.

APPOINTMENT OF ARCHITECTURAL STAFF.

Applications are invited for appointments as

ASSISTANT ARCHITECT and ARCHITEC
TURAL ASSISTANT in the Engineer and Surveyor's Department. The salary payable in

respect of the first appointment is in accordance

with A.F.T., Grade V(a) (£625×220-£685), and,

in respect of the position as Architectural Assistant, is in accordance with A.F.T., Grade V(a) (£625×220-£685),

**Zio-£600).

The Engineer and Surveyor is responsible for

the erection of houses, schools, libraries and other

public buildings in this rapidly developing

district, and brief particulars as to the work of

the Architect's Section of the Department may be

obtained on application to the Engineer and Surveyor, 90, Station Road, Solihull.

The appointment will be subject to the pro
visions of the Local Government Supreannuation

Act, 1937, to the terms of the National Scheme of

Conditions of Service, and to one month's notice

on either side. It may be possible to offer housing

accommodation to the successful applicant.

Applications, giving full details as to age,

present position and salary, qualifications and

experience, together with the names and addresses

of two referees, should be delivered, in envelopes

appropriately endorsed, to the Engineer and Surveyor at the above address not later than the 9th

February, 1953.

W. MAURICE MELL.

Version of the Council.

W. MAURICE MELL, Clerk of the Council

COUNTY BOROUGH OF SMETHWICK.
BOROUGH ENGINEER AND SURVEYOR'S
DEPARTMENT.
Applications are invited for the appointment of PRINCIPAL ARCHITECTURAL ASSISTANT.
Salary in accordance with Grade A.P.T., VII and VIII (£710-£835 per annum).
Applicants should be suitably qualified and experienced in the design of houses, multi-storeyed buildings, schools and other Municipal buildings.
The appointment is subject to the National Scheme of Conditions of Service, the provisions of the Local Government Superannuation Act, 1937, the passing by the successful candidate of a medical examination, and to termination by one month's notice on either side.
Form of Application may be obtained from the Borough Engineer and Surveyor, The Council House, Smethwick, 40, and should be returned suitably endorsed, together with copies of two recent testimonials, to reach him not later than 13th February, 1953.

E. L. TWYCROSS,

E. L. TWYCROSS, Town Clerk.

NORTHAMPTON RURAL DISTRICT COUNCIL.
GENERAL ARCHITECTURAL ASSISTANT (UNESTABLISHED).
Applications are invited for the post of General Architectural Assistant at a salary within the range of \$465 to £540, per annum, according to qualifications and experience.
Applicants must be experienced in general building work, be neat draughtsmen, have had a good architectural training and with Planning and Byelaw experience.

building work, be neat draugntsmen, have had a good architectural training and with Planning and Byelaw experience.

The appointment which is unestablished will be for a period of three years at least and will be subject to one calendar month's notice, in writing, on either side.

Applications, in candidate's own handwriting, stating age, whether married or single, qualifications and experience, accompanied by copies of two recent testimonials, are to reach the undersigned not later than Saturday, the 21st February, 1983.

Applicants must disclose whether they are related to any Member or senior Officer of the Council. Canvassing, either directly or indirectly, will disqualify.

CLIFFORD E. JONES, Clerk of the Council.

Council Offices, 1, Cheyne Walk, Northampton. 22nd January, 1953.

COUNTY BOROUGH OF BARNSLEY.
BOROUGH ENGINEER AND SURVEYOR AND
PLANNING OFFICER'S DEPARTMENT.
APPOINTMENT OF SENIOR PLANNING
ASSISTANT.
Applications are invited for the appointment of
Senior Planning Assistant at a salary in accordance with A.P.T., Grade VII (£710-£785 per
annum). A car allowance will be paid in accordance with the prevailing scheme for essential

ance with the prevains users.

The appointment will be subject to the Scheme of Conditions of Service for A.P.T.C. Services, to the General Conditions of Service within the Corporation as varied from time to time, and to the provisions of the Local Government Superannua-

provisions of the Local Government Superannuation Acts.

Candidates must have had extensive experience in Town Planning and be Corporate Members of the Town Planning Institute or hold an equivalent qualification. The person appointed will be incharge of the Town Planning Section of the Department and directly responsible to the Borough Engineer for all planning matters.

The successful applicant will be required to pass a medical examination, and the appointment will be subject to one month's notice on either side.

will be subject to one monta's notes on classide.

Applications, stating age, present and previous appointments, experience, qualifications, etc., together with the names of three referees, should be addressed to the Borough Engineer and Surveyor and Planning Officer, Town Hall, Barnsley, to reach him not later than Wednesday, 18th February, 1955.

Canvassing will disqualify, and applicants should disclose in their applications whether to their knowledge they are related to any member or senior officer of the Council.

A. E. GILFILLAN,

Town Hall. Barnsley.

Town Hall, Barnsley. January, 1953.

WINISTRY OF WORKS.

Vacancies exist in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Vacancies are mainly in London. Successful candidates will be employed on a variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges and

Pataplishments, Telephone Landmann, Housing, London Salary: Up to £628 per annum. Starting pay according to age, qualifications and experience. Rates outside London are slightly

experience. Hatte uterate the lower.

Although these are not established posts, many have long term possibilities and competitions are beld periodically to fill established vacancies.

Apply in writing, stating age, nationality and full details of training and experience, to the Chief Architect. Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference W.G.10/C.A.1.

CRANBROOK RURAL DISTRICT COUNCIL.

ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment (in connection with new Housing Schemes) of JUNIOR ARCHITECTURAL ASSISTANT (vide para. 21 (xi) (b) of the National Scheme of Conditions of Service), at a salary in Grade A.P.T., II commencing at 2495 per annum.

Applicants should preferably be students of the R.I.B.A., or have passed an equivalent examination, and the appointment will be subject to the National Conditions. The appointment will be determinable by a month's notice on either side.

Applications, stating full particulars, age, experience and qualifications, together with names and addresses of two referees to be sent to the undersigned not later than Saturday, 14th February, 1953.

Canvassing, directly or indirectly, will disqualify.

P. G. BANFIELD.

P. G. BANFIELD.
Council Offices, Hill House, Cranbrook.
23rd January, 1953.

CHESTERFIELD RURAL DISTRICT
COUNCIL.
ENGINEER AND SURVEYOR'S
DEPARTMENT.

APPOINTMENT OF ASSISTANT ARCHITECT.
Applications are invited for the position of Assistant Architect in the Engineer and Surveyor's department at a salary in accordance with Grades A.P.T. II to V (2495 to £545) according to qualifications and experience.

The appointment will be subject to the Scheme of Conditions of Service for Local Authorities, and to the provisions of the Local Government Superannuation Act of 1937, and will be terminated by one month's notice on either side. The successful candidate will be required to pass a medical examination.

The Council will give all possible assistance towards the provision of housing accommodation for the successful candidate.

Applications should be made on forms to be obtained from the Engineer and Surveyor, Mr. J. B. Wikeley, M.Eng., A.M.I.C.E., M.I.Mun.E., Barrister at Law, Rural Council House, Saltergate, Chesterfield, and must be returned to the undersigned not later than Friday, February 20th, 1955, in an envelope endorsed "Architectural Assistant."

H. O. HAWKINS, Clerk to the Council.

H. O. HAWKINS, Clerk to the Council.

Rural Council House, Saltergate Chesterfield.

DOWN COUNTY COUNCIL (N.I.).
ASSISTANT ARCHITECT—PLANNING
DEPARTMENT.
Applications are invited for above position.
Salary 6600 per annum, with six annual increments of £15 and one of £20 to £710. Travelling allowance at Council's scale will be paid for all official iourneys.

allowance at Council's scale will be paid for all official journeys.

Applicants must be registered architects (by examination), and preference will be given to acandidate who has experience in, or who holds a recognised qualification in Town Hanning. The Department is primarily engaged on the preparation of a Planning Scheme for the Council of Down, but also carries out Architectural work for the Health and Welfare Committees. The successful applicant will be required to early out either planning or architectural work and to live in or near Downpatrick.

Preference will be given to ex-service candidates holding the necessary qualifications.

Applications with copies of three recent testimonials should reach the undersigned not later than 11th February, 1953.

J. H. HARVEY Secretary.

Courthouse, Downpatrick, N.I. 26th January, 1953.

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
EXPERIENCED SPECIFICATION WRITER
required for major contract, approx. value
2500,000. Saiary up to £337 10s. 0d. Application
form for return by 28.2.53 from Architect,
AR/GSW/2, County Hall, S.E.1. (85) 8120

COUNTY COUNCIL OF THE COUNTY OF STIRLING.

COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for two posts of CHIEF ASSISTANT to the County Architect, at a salary of £900 rising by annual increments of £25 to £1,000 per annum. Applicants must possess A.B.I.B.A. qualifications, with administrative experience and ability to organise and supervise technical staff. The appointment will be subject to the County Council's Superal conditions of service and the successful applicants will require to undergo medical examination for admission to the County Council's Superannuation Scheme. Copies of the conditions of appointment detailing the duties to be performed may be obtained from the undersigned.

Applications, giving full particulars of the candidate's age, qualifications and experience, together with copies of not more than three testimonials, must be lodged with the undersigned within fourteen days of the publication of this advertisement.

JAMES D. KENNEDY,

JAMES D. KENNEDY, County Clerk.

County Offices, Viewforth, Stirling.

STAFFORDSHIRE COUNTY COUNCIL.

Applications are invited for the following appointments on the staff of the Education Architect's Department:—

(1) QUANTITY SURVEYORS, Grades A.P.T., IV/VI, according to qualifications and experience. Preference will be given to Members of the B.I.C.S. (Quantities Sub-Division) or the I.Q.S. Applicants to state their experience in "Working Up," Estimating," "Measuring on Site," "Adjustment," and "Settlement of Final Accounts."

"Adjustment," and "Settlement of Accounts."

(2) SPECIFICATION WRITER, up to Grade A.P.T., IV, according to experience. Applicants should have a thorough knowledge of the building trade, and some years of experience in specification writing.

Applications to be submitted as soon as possible to A. C. H. Stillman, Esq., F.R.I.B.A., Education Architect Green Hall, Lichfield Road, Stafford.

T. H. EVANS,

Clerk of the County Council.
3006

METROPOLITAN BOROUGH OF HOLBORN. CLERK OF WORKS required in Borough Architect's Department to supervise erection of steel framed multi-storey flats. Salary accord-ing to experience up to £15 15s. 0d. p.w. Apply in writing by 9th February with names of three referees to Town Clerk, Town Hall, High Holborn. W.C.1.

GLAMORGAN COUNTY COUNCIL.
Applications are invited for the following appointments on the Permanent Establishment of the County Architect's Department:

(a) ASSISTANT ARCHITECTS, A.P.T. Grade

(a) ASSISTANT ARCHITECTS, A.P.T. Grade VI (£670-£735).
(b) ASSISTANT QUANTITY SURVEYORS, A.P.T. Grade VI (£670-£735).
Candidates for posts (a) must be Registered Architects and should be Associates of the Royal Institute of British Architects, and for posts (b) they must be Associates of the Royal Institution of Chartered Surveyors or the Institute of Quantity Surveyors.
Applications to the County Architect, County Hall, Cardiff, not later than 14 days from the date of appearance of this advertisement.

Beputy Clerk of the County Council.
Cardiff.

Cardiff. 23rd January, 1953.

COUNTY BOROUGH OF BOLTON.
Applications are invited for the permanent appointment of an ARCHITECTURAL ASSISTANT in the Borough Engineer and Surveyor's Department, at a salary in accordance with Grade A.P.T. V/VI of the National Scales (£595-£735). The commencing salary will be fixed according to the candidate's experience and qualifications. Applicants must have passed the Final Examination of the R.I.B.A. and be Registered Architects.

The appointment is subject to the provisions of the Local Government Superannuation Acts.
Applications, on forms to be obtained from the undersigned, together with copies of not more than two testimonials, should be forwarded to me not later than the 14th February 1953, in envelopes endorsed "Applications for Architectural Assistant."

PHILIP S. RENNISON, Town Clerk. Town Hall, Bolton.

HER MAJESTY'S COLONIAL SERVICE. Applications are invited for the following

HER MAJESTY'S COLONIAL SERVICE
Applications are invited for the following
post.

Applications are invited for the following
post.

ASSISTANT TOWN PLANNER, Federation of
Malaya (CDE. 62/60/01).

Duties include work under direction of the
Federation Town Planner in connection with preparation of planning schemes and in dealing with
interim-levelopment control. Appointment is
possionable on probation in the salary scale £739
to £1,000 paste, with a pensionable expatriation
allowance varying from £266 to £364 p.a., point of
entry depending on experience and war service.
In addition there is a mon-pensionable expatriation allowance for married candidates varying
from £91 to £259. A substantial variable cost of
living allowance is also payable.

Free passages are provided once each way each
tour for the officer, his wife and up to three
children under the age of 10. Furnished quarters,
if available, are provided at reasonable rents,
Leave is granted at the rate of four days for each
month of resident service. Candidates, between
the ages of 23 and 35, must be A.M.T.P.I., preterably with other professional qualifications and
with a good knowledge of recent Town Planning
Legislation. Experience in Local Government
would be an advantage.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London,
S.W.I., giving briefly age, qualifications and
experience. Mention the reference number
(CDE. 62/60/01).

STAFFORDSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF ARCHITECTURAL STAFF. Applications are invited for experienced and capable Architectural Staff. at salary grades within the N.J.C. range, VII to IX (£710 p.a. to £935 p.a.). Applications should give full details of experience, qualifications, age, present salary and position, etc., together with copies of three recent testimonials, and applications should be forwarded as soon as possible to C. M. Coombs, F.R.I.B.A., County Architect, Martin Street, Stafford.
T. N. EVANS.
Clerk to the County Council.
County Buildings, Stafford.

January 27, 1953.

NOTTINGHAMSHIRE COUNTY COUNCIL

January 27, 1953.

NOTTINGHAMSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.
APPOINTMENT OF PLANNING ASSISTANT.
Applications are invited for appointment as
Planning Assistant (Development Plan Section).
Salary £959—£454 p.a. Experience in preparation
of Development Plans and the qualification of
Corporate Member of the Town Planning Institute
are required. Additional qualification in engineering, surveying or architecture an advantage.
Further particulars obtainable from the County
Director of Planning, Shire Hall. Nottingham,
to whom applications must be sent by 16th
February, 1953. Canvassing disqualifice,
K. TWEEDALE MEABY.
Clerk of the County Council.

NOTTINGHAMSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.
APPOINTMENT OF ARCHITECT.
Applications are invited for the appointment of Architect, Salary of 2760—2835 p.a. Applicants must be Associates of the Royal Institute of British Architects and membership of the Town Planning Institute would be an advantage. Experience in the design and grouping of buildings, the re-development of built-up areas and irreparation of housing layouts required.
Further particulars obtainable from the County Director of Planning, Shire Hall, Nottingham, to whom applications must be sent by 16th February, 1955. Canvassing disqualifies.

K. TWEEDALE MEABY.
Clerk of the County Council.
Shire Hall, Nottingham.

BRACKNELL DEVELOPMENT CORPORATION (BRACKNELL, BERKS.). Applications are invited for the following appointment:— ARCHITECT GRADE III—Salary £835 by £50

ARCHITECT GRADE III—Salary £835 by £50 to £985.

Applicants must be corporate members of the R.I.R.A and should have had considerable experience in housing work, including administration of contracts.

The appointment will be superannuation Act. 1937. and the successful candidate will be required to pass a medical examination.

The Corporation cannot at present offer housing accommodation but in approved cases subsistence allowance may be paid to married men until accommodation has been obtained locally, for a maximum period of six months.

Applications, giving full particulars of the candidate's age, qualifications and experience, together with the names of three persons to whom reference can be made, must reach the General Manager, Bracknell Development Corporation. Farley Hall, Binfield, Bracknell, Berks., on or before the 20th February, 1955, in envelopes marked "Architect Grade III." 8148.

ARCHITECT, Grade II. SCOTTISH SPECIAL HOUSING ASSOCIATION, LTD., invite applications for this superannuable post. £520-£755, with placing for age up to £680 at age 31. Forms of application with full particulars can be obtained from the Secretary, 15/21, Palmerston Place, Edinburgh, 12.

HER MAJESTY'S COLONIAL SERVICE.
Applications are invited for the following

Applications are invited for the following post:—
Applications are invited for the following post:—
Explications are invited for the following post:—
Ment (CDE 112/60/04), Singapore.
Duties include the design and supervision of construction of Government buildings in Singapore and the preparation of plans and contract documents connected therewith. The appointment is on contract for 2½ years. Basic salary: £1.764 per annum, plus an expatriation allowance of £364. An additional expatriation allowance of £364 an additional expatriation allowance up to £259 per annum payable to married candidate. Variable cost-of-living allowance also payable. Free passages are provided on appointment and on leave for the officer, his wife, and up to 3 children under 10 years. Furnished quarters, as available, are provided at reasonable rents. Leave is granted at the rate of 4 days for each month of resident service. Candidates between the ages of 30 and 45 must be A.R.I.B.A., with considerable general experience. Candidates with experience in the design of modern airport terminal buildings will be given preference.

Apply in writing to the Director of Recruitment. Colonial Office, Great Smith Street, London, S.W.I., giving briefly age, qualifications and experience. Mention the reference number (CDE.112/60/04).

PONTYPRIDD URBAN DISTRICT COUNCIL.
Applications are invited for the following

PONTYPRIDD URBAN DISTRICT COUNCIL. Applications are invited for the following appointments:—

(a) ENGINEERING ASSISTANT, at a salary in accordance with A.P.T. Division, Grade V. 6595/646 per annum.

Candidates must possess one or more of the following examination qualifications:—

Corporate Membership of the Institution of Civil Engineers, Testamur of the Institution of Municipal and County Engineers.

(b) ARCHITECTURAL ASSISTANT, at a salary in accordance with A.P.T. Division, Grade III, £525/£570 per annum.

Candidates must have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognised Schools of Architecture.

These appointments are subject to the provisions of the Local Government Superannuation Act, 1937, a satisfactory medical examination, and one month's notice on either side for termination.

Particulars of the mode of anniversion are

tion.

Particulars of the mode of application are obtainable from Mr. W. Cecil Evans, Engineer and Surveyor, Municipal Buildings, Pontypridd. Glam., and should be obtained by intending candidates.

Applications, in form required, together with names and addresses of three persons to whom reference may be made, must be delivered to the undersigned not later than Monday, the 23rd day of February, 1953.

of February, 1953.
Canvassing will be a disqualification, and candidates must disclose any relationship to members of the Council.

JOHN HILTON.

Municipal Buildings,
26th January, 1953.

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EAST RIDING OF YORKSHIRE COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

APPOINTMENT OF ASSISTANT ARCHITECTS.

Applications are invited for the appointment of Six Assistant Architects in the County Architect's Department. Four of these posts are permanent and two temporary. The salary grades will be appropriate to professional experience and qualifications.

appropriate to professional experience and qualifications.

The appointments, where applicable, will be subject to the provisions of the Local Government Superamnation Act, 1937, and the passing of a medical examination, and will be terminable by one mouth's notice on either side.

Applications, giving particulars as to age, qualifications, experience, past and present employment (with salaries), and accompanied by copies of three recent testimonials, must be received by the County Architect, County Hall, Beverley, not later than Monday, 16th February, 1953. Applicants should disclose relationship to any member or senior officer of the Council, and canvassing will be a disqualification.

THOMAS STEPHENSON,

Clerk of the Council.

County Hall, Beverley. January, 1953.

FERMANAGH COUNTY EDUCATION
COMMITTEE.
ARCHITECT'S DEPARTMENT.
Applications are invited for the following nonestablished full-time appointments:—
(a) ASSISTANT ARCHITECT, on the salary
scale £650 per annum, rising by annual increments of £25 to a maximum of £750 per annum.
Applicants must be Registered Architects, and
in addition be Associate Members of the Royal
Institute of British Architects and/or hold a University degree or diploma in Architecture, and
should have had adequate experience in the design
and construction of modern buildings.
(b) ARCHITECTURAL ASSISTANT, on the
salary scale £400 per annum, rising by annual
increments of £20 to a maximum of £600 per
annum.

Applicants must have received a sound training and be capable of preparing working drawings, and must have passed the Intermediate Examination of the R.I.B.A. and have had not less than four years' experience in an Architect's office.

The commencing salary within the above scales will be determined according to the qualifications and experience of the person appointed in each case.

The successful applicants may expect the appointments to last for a minimum period of five years, subject to satisfactory service, and they will be eligible for appointment to the establishment as and when vacancies arise.

The provisions of the Local Government (Superannuation) Act (Northern Ireland), 1950, will supply

apply.

Preference will be given to suitably qualified
ex-Service applicants provided the Committee is satisfied that such applicants can, or within a reasonable time, will be able to fill the post

satisfied that will be able to not the reasonable time, will be able to not the efficiently.

Forms of applications and conditions of appointment may be obtained from the undersigned, with whom completed applications must be lodged not later than Tuesday, 24th February, 1953.

J. MALONE,
Chief Education Officer.
Education Office, 27, High Street,
Enniskillen, N. Ireland.

26th January, 1953.

8105

COUNTY BOROUGH OF CROYDON.

ESTIMATOR AND MAINTENANCE
STIMATOR AND MAINTENANCE
Applications are invited for this appointment
from persons experienced in preparing estimates
for the maintenance of public buildings. Salary:
A.P.T. VII/VIII, 2710-2835, plus London weighting (230 at age 26 and over); commencing salary
according to experience and qualification.
The Council do not offer living accommodation.
Applications on forms (obtainable from the
Borough Engineer, Town Hall, Croydon, must be
submitted to him by the 13th February, 1953.

Canvassing will disqualify.

E. TABERNER,

Town Clerk.
8133

CAMBRIDGESHIRE COUNTY COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE V-VI (£595/£645-£670/£735).
Applications are invited for the above appoint-

Applications are invited for the above appointment.

Applicants should be Registered Architects or fully qualified Architects and Members of the Royal Institute of British Architects, and should have had experience in design and construction of all types of public buildings.

Applications, stating age, qualifications and experience, accompanied by one recent testimonial and the names and addresses of two referees, should be sent to the Clerk of the County Council. Shire Hall, Cambridge, not later than Thursday. 26th February, 1953.

The appointment is subject to one month's notice on either side, and to the provisions of the local Government Superannuation Act, 1937.

The selected candidate will be required to pass a medical examination.

a medical examination.

CHARLES PHYTHIAN,

Clerk of the County Council. Shire Hall, Cambridge. 26th January, 1953. 8135

AMENDED ADVERTISEMENT.

BOROUGH OF AYLESBURY.

APPOINTMENT OF ARCHITECTURAL

ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with Grade VI of the National Scale of Salaries and Conditions of Service (£670 to £735 per annum).

Candidates must be Associate Members of the Balbah, have had a sound experience in the layout of housing estates, and the design of houses and flats and other building works, for which he will be directly responsible to the Borough Engineer and Surveyor.

Housing Accommodation will be provided for the successful candidate, if required.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and will be determinable by one month's notice in writing on either side. The successful candidate will be required to pass a medical examination, Applications, stating age, qualifications, experience, etc., accompanied by copies of three recent testimonials, and endorsed "Architectural Assistant," must reach Mr. J. D. Dugdale, Borough Engineer and Surveyor, Town Itali, Aylesbury, not later than 23rd February, 1933.

1953. Canvassing in any form will be a disqualification.

H. CROOKES. Town Clerk.

Town Hall, Aylesbury, Bucks. 50th January, 1953.

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LONDON ELECTRICITY BOARD.

ENGINEERING DRAUGHTSMAN.

Applications are invited for the above position. The successful applicant will be based at the Southern Sub-Area Drawing Office at Beckenham, Kent, but may be required to work in any district office within the Sub-Area.

Candidates should have had a good general and technical education and be experienced in one or more of the following subjects: Building and Civil Engineering Design: Engineering Drawing; Plant Lay-out in Sub-stations: Lay-outs and Site Plans of Mains Work; Electrical Diagrams.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade VI—2483 to 2595 7s. per annum, inclusive of London allowance.

Application forms obtainable from Establishments Officer, 46, New Broad Street, E.C.2, to be returned by 14th February, 1953. Please enclose addressed foolscap envelope and quote Ref. V/1488/A. on all correspondence.

BRITISH ELECTRICITY AUTHORITY.
EASTERN DIVISION
Applications are invited for the following Superannuable positions in the Generation (Construction) Department at Divisional Headquarters.
Salaries and conditions of service will be in accordance with the National Joint Board

accordance with the National Joint Budia Agreement:—

(a) SENIOR DRAUGHTSMAN (ARCHITECTURAL),
(b) SENIOR DRAUGHTSMAN (STRUCTURAL),
The commencing salaries (which include London weighting) will depend upon experience and qualifications, but will be within the following range:—

Grades IV-V, £595-£819 per annum.
Applicants should have had experience in one of the following:—

(a) Design and alteration of Industrial Buildings.

(a) Design and alteration of Industrial
ings.
(b) Design of structural steel work and reinforced concrete structures.
Applications, stating age, qualifications and experience, should be sent to the Divisional Controller, British Electricity Authority, Eastern
Division, Northmet House, Southgate, N.14, by
21st February, 1953.

W. N. C. CLINCH.

W. N. C. CLINCH, Controller

EASTERN ELECTRICITY BOARD.

NORTHMET SUB-AREA.

APPOINTMENT OF ENGINEERING
DRAUGHTSMAN.
SUB-AREA HEADQUARTERS.

Applications are invited for the appointment of an Engineering Draughtsman in the Civil Engineering and Building Drawing Office, Southgate, London, N.14.
Candidates should have had the requisite training and experience to be able to prepare plans and detailed drawings of building and civil engineering works for sub-stations, service centres, workshops and offices.

The salary for the appointment will be in accordance with Grade VI, Schedule D, of the National Joint Board Salary Agreement within a range of £458-£595 p.a., inclusive of London allowance. Future salary and conditions of service will be in accordance with agreements made from time to time by the appropriate negotiating bodies.

The successful candidate will be required to

time to time by the appropriate negotiating bodies.

The successful candidate will be required to contribute to a Superannuation Scheme, and may be required to undergo a medical examination.

Applications by letter, stating age, education, qualifications and experience, with details of present appointment and salary, should be submitted to the Manager. Northmet Sub-Area, Eastern Electricity Board, Northmet House, Southgate, London, N.14, within 14 days of the appearance of this advertisement.

MINISTRY OF FINANCE.

CHIEF ARCHITECT'S BRANCH.

Applications are invited tor unestablished posts of architectural architectural

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Preterence will be given to candidates who have served with H.M. Forces in wartime, providing that such candidates can, or within a reasonable time will be able to, discharge the duties efficiently.

Applications, giving date of birth, full details of training and qualifications, should be sent to the Director of Instablishments, Ministry of Finance, Stormont, not later than 9th February, 1963.

finance, Stormont, not later than 9th February, 1953.

BOROUGH OF ILFORD.

APPOINTMENT OF TEMPORARY CLERK OF WORKS.

Applications are invited for the position of Clerk of Works on the temporary staff of the Borough Engineer's Department. Applicants must have had considerable experience in a similar capacity, have a sound knowledge of building construction, and be capable of supervising the erection of two- and three-storey flats.

The salary will be in accordance with Grade A.P.T., II, £495×£15-£540, commencing at £495 per annum, plus London weighting.

The appointment will be subject to one month's notice on either side, to the provisions of the Local Government Superannuation Acts, to the National Conditions of Service, and to medical examination Forms of application obtainable from the Town Clerk, Town Hall, Ilford, should be returned not later than the 13th February, 1953.

BOROUGH OF SWINDON.

BOROUGH ARCHITECTS DEPARTMENT.

CHIEF ASSISTANT ARCHITECT.

Applications are invited for the appointment of Chief Assistant Architect, Grade A.P.T. VIII (£760-£2555).

Applications are invited for the appointment of complete housing estates on a large scale, together with adequate administrative experience. The appointment offers considerable scope in the preparation of the layouts of housing, the design of dwellings of all types, and other building works arising from a large development Applications, on forms to be obtained from the moderationed must be returned not later than 21st

Programme.
Applications, on forms to be obtained from the undersigned, must be returned not later than 21st February, 1955.
Housing accommodation, if required, will receive consideration.

D. MURRAY JOHN, Town Clerk.

Civic Offices, Swindon.

OXFORD REGIONAL HOSPITAL BOARD.

APPOINTMENT OF QUANTITY SURVEYOR.

Applications are invited for the appointment of whole-time Quantity Surveyor (Principal Assistant Grade) on the staff of the Regional Architect at a salary of £1,050 by £40 to £1,250. Compulsory superannuation. Applicants must be members of the Royal Institution of Chartered Surveyors (Quantities Sub-Section). A car would be necessary.

Applications stating age, qualifications and experience, and giving the names of three referees to reach the Secretary of the Board, 45. Banbury Road, Oxford, by Friday, February 20th, 1953.

ROYAL BURGH OF KIRKCALDY.

ROYAL BURGH OF KIRKCALDY.

Applications are invited for the post of SENIOR
ARCHITECTURAL ASSISTANT on J.I.C. Salary
Grade VI (£675—£740) in the Burgh Engineer's
Department. Applicants should hold appropriate
professional qualifications and have good general
experience. Knowledge of the construction of
public buildings and multi-storey flats or
experience in town planning would be an
advantage. The appointment is permanent and
made available.

Applications giving full details and testimonials
should be lodged with the Burgh Engineer,
Osborne House, East Fergus Place, Kirkcaldy,
on or before 21st February, 1953.

8151

Tenders for Contracts
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COUNTY BOROUGH OF EAST HAM.
WELLINGTON ROAD AMBULANCE STATION.
Tenders invited for construction of above building. Form of tender and further particulars from Borough Engineer, Town Hall, East Ham, E.6. on payment of £2 2s., returnable on receipt of bona fide tender. Tenders returnable in envelope provided by 12 noon, 16th February, 1955.
The Corporation do not bind themselves to accept the lowest or any tender.
R. H. BUCKLEY,
Town Clerk.

Town Hall, East Ham, E.6. January, 1953.

Competition

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The University of Sheffield invites Architects resident in Great Britain to submit, in competition, designs for certain buildings to be erected on sites within the central area of the University, together with a lay-out and sketch elevations for other buildings also to be located within that area. Assessors: Sir Percy Thomas, O.B.E., P.P.R.I.B.A., Mr. F. R. S. Yorke, F.R.I.B.A., and Mr. Gerard Young, J.P.

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Last day for submitting designs: 31st October, 1953.

1953.
Last day for questions: 14th March, 1953.
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A RICHITECTURAL ASSISTANT (Box 7950, AS.153). The Advertisers beg to acknowledge applications for the above post, which has now been fined. Owing to the numerous number of applications it is regretted that individual acknowledgement is impossible.

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A RCHITECT'S ASSISTANT, school trained, above Inter, R.I.B.A. standard, required for small country practice. Capable designer. Details, references and salary required, to Cecil Ogden & Son, 1, Market Street, Lutterworth, Pughy.

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A \$80C1ATE; A.A. hons. diploma; age 27; six years' experience industrial. exhibitions, large scale housing; desires progressive senior post London area. Box 643.

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POSITION wanted in progressive office, South, West or Midlands large town; age 23; school diploma with R.I.B.A. exemption. Box 645.

SENIOR ASSISTANT, passed R.I.B.A. Final Examination, able to work on own initiative, 6 years' experience in modern construction and designs of varied nature, accustomed to preparing sketch, working and detail drawings, seeks responsible post with scope. Box 647.

A RCHITECT seeks position as Senior Assistant in the London Area; age 36; 19 years' experience. Box 648.

Other Appointments Vacant

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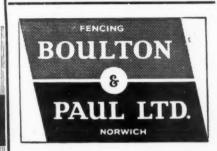
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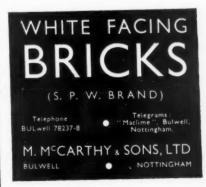
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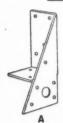
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