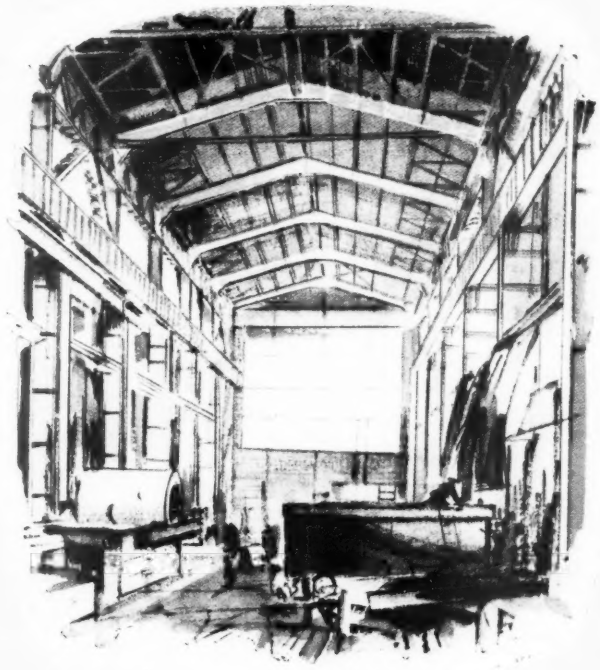
*Registered as a Newspaper. Price One Shilling. Vol.*120. *No.*3120. THE ARCHITECTS' JOURNAL *for December* 16, 1954

THE ARCHITECTS' JOURNAL

CONVERSIONS



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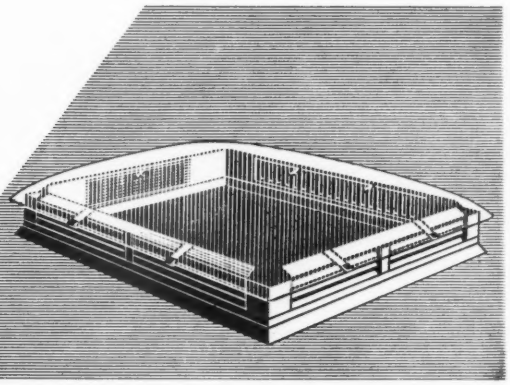
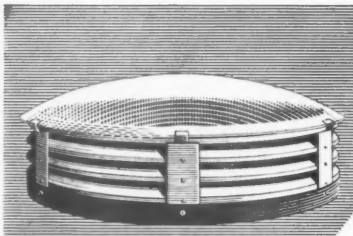
PERMANENT VENTILATION

...and Daylight!

BY GREENWOOD-AIRVAC VENTILATORS AND STANDARD GLASS DOMES





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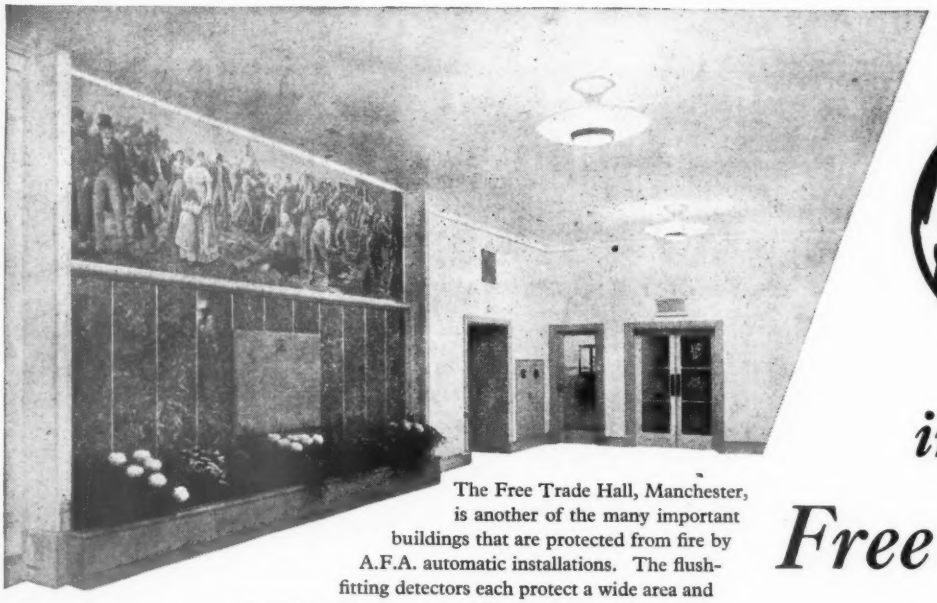

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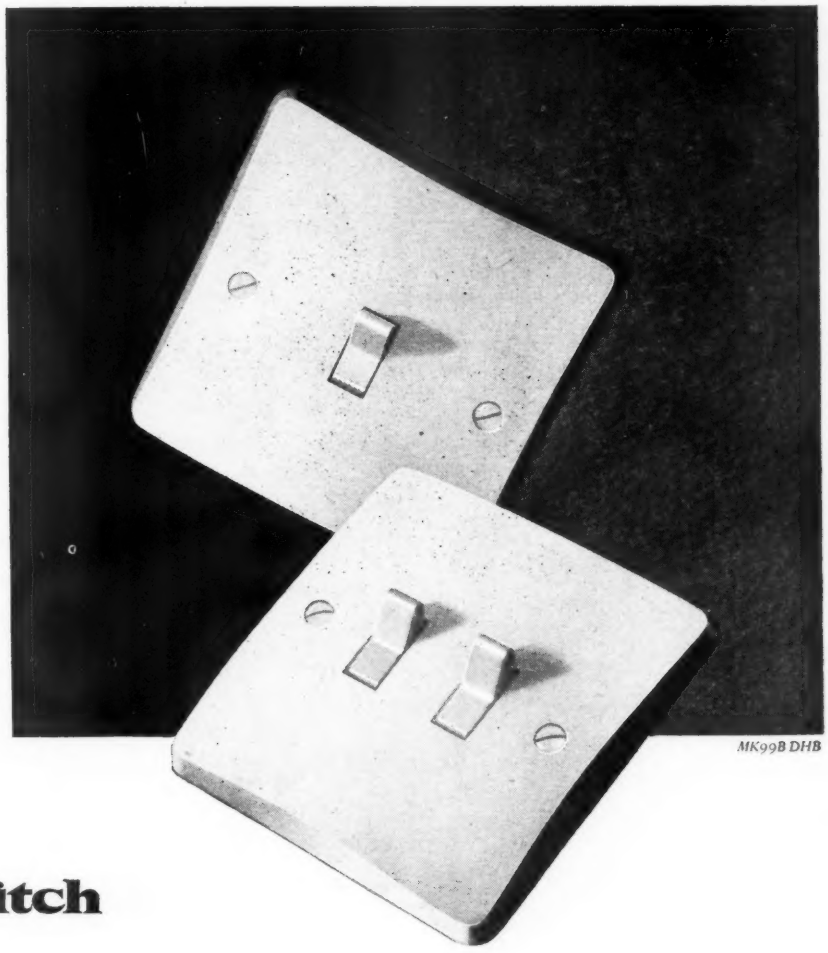

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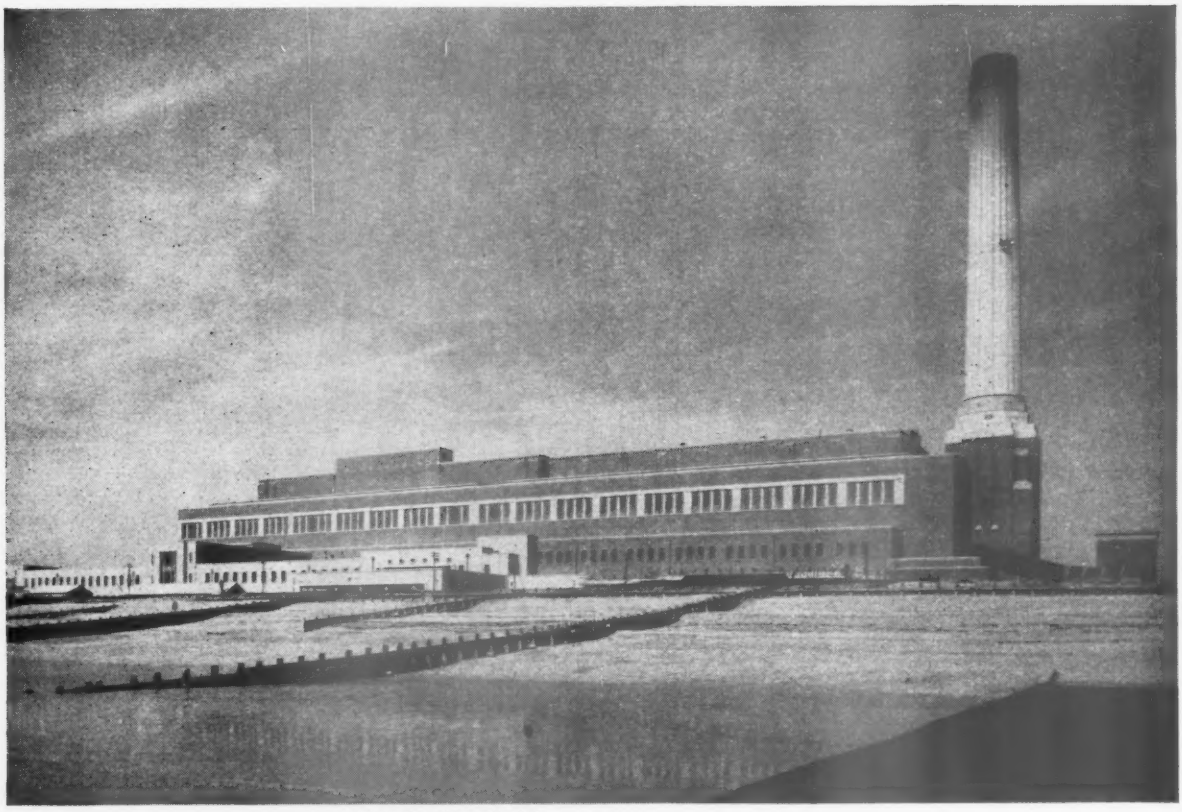

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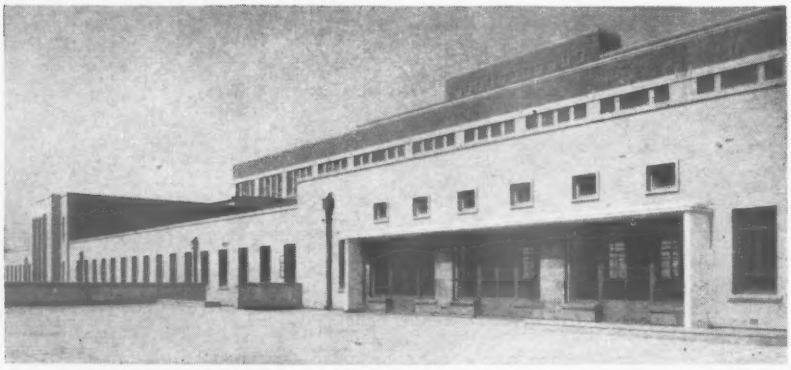

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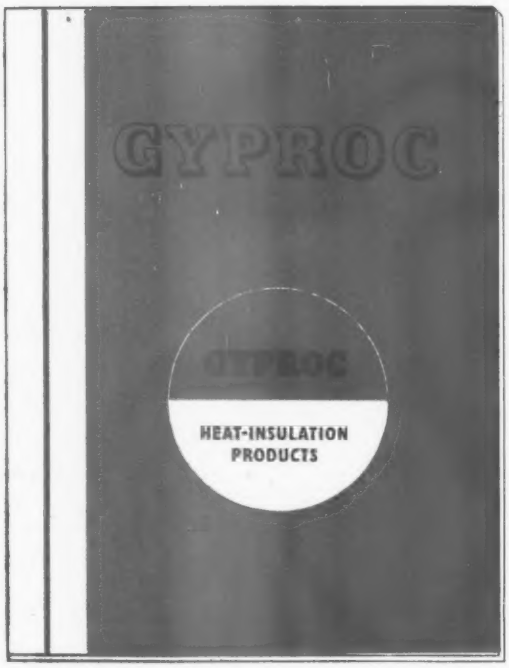

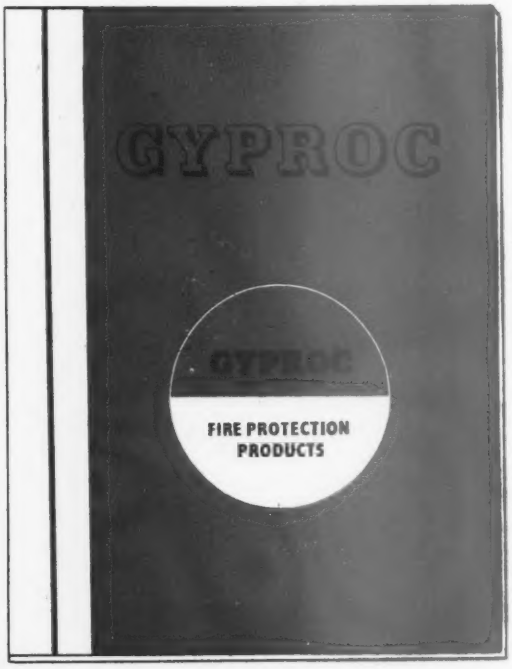

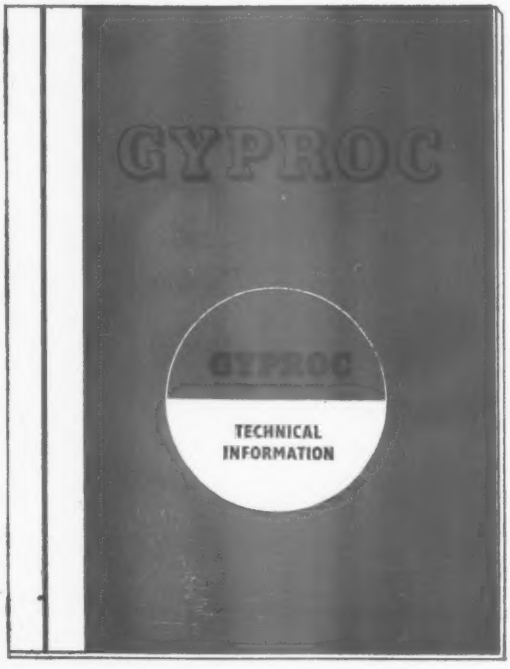

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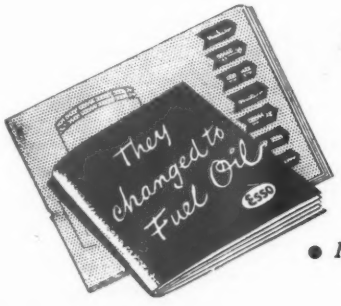

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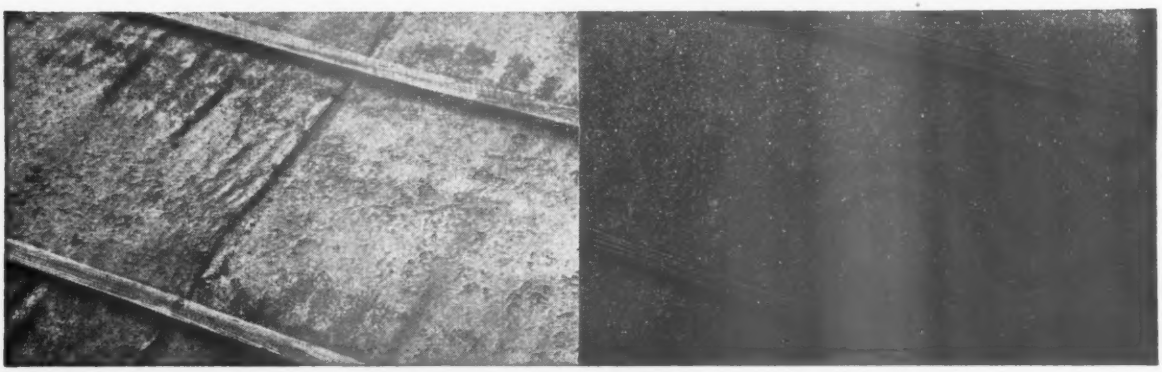

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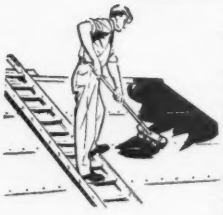

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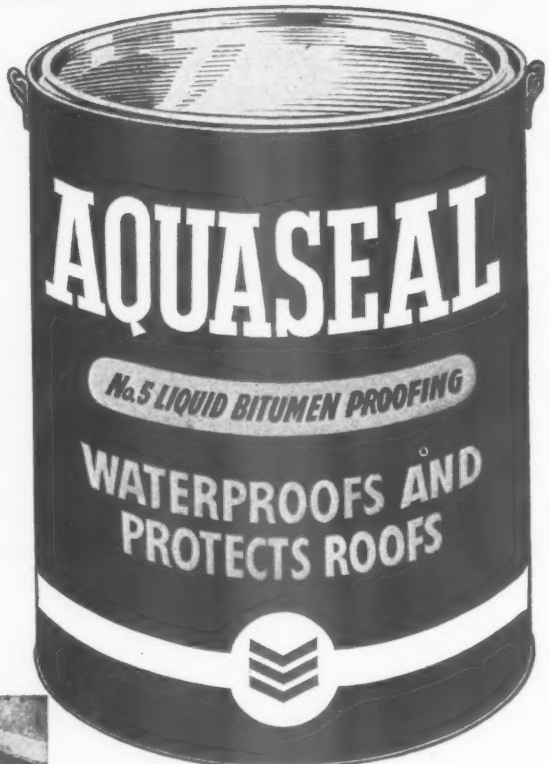

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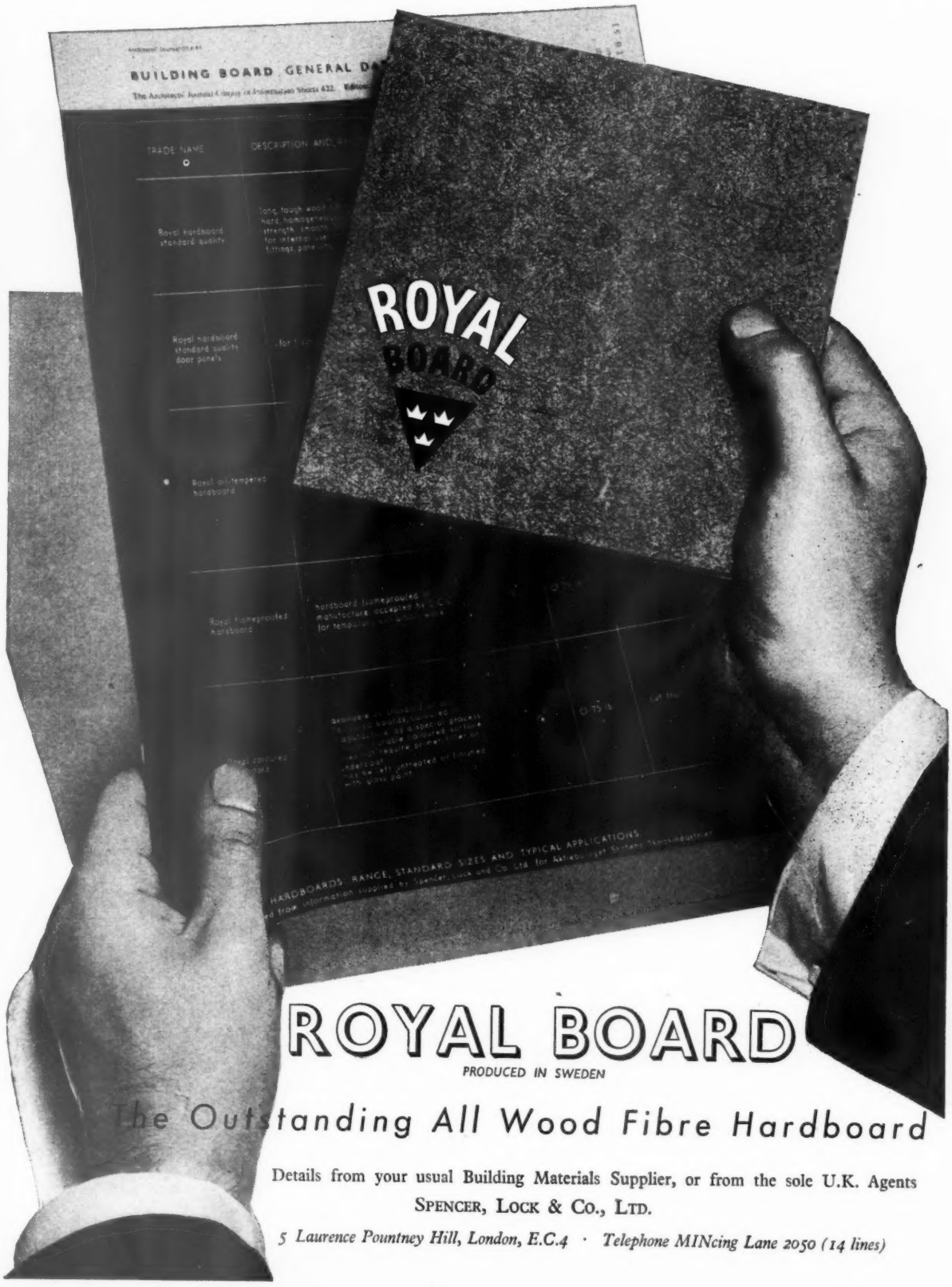

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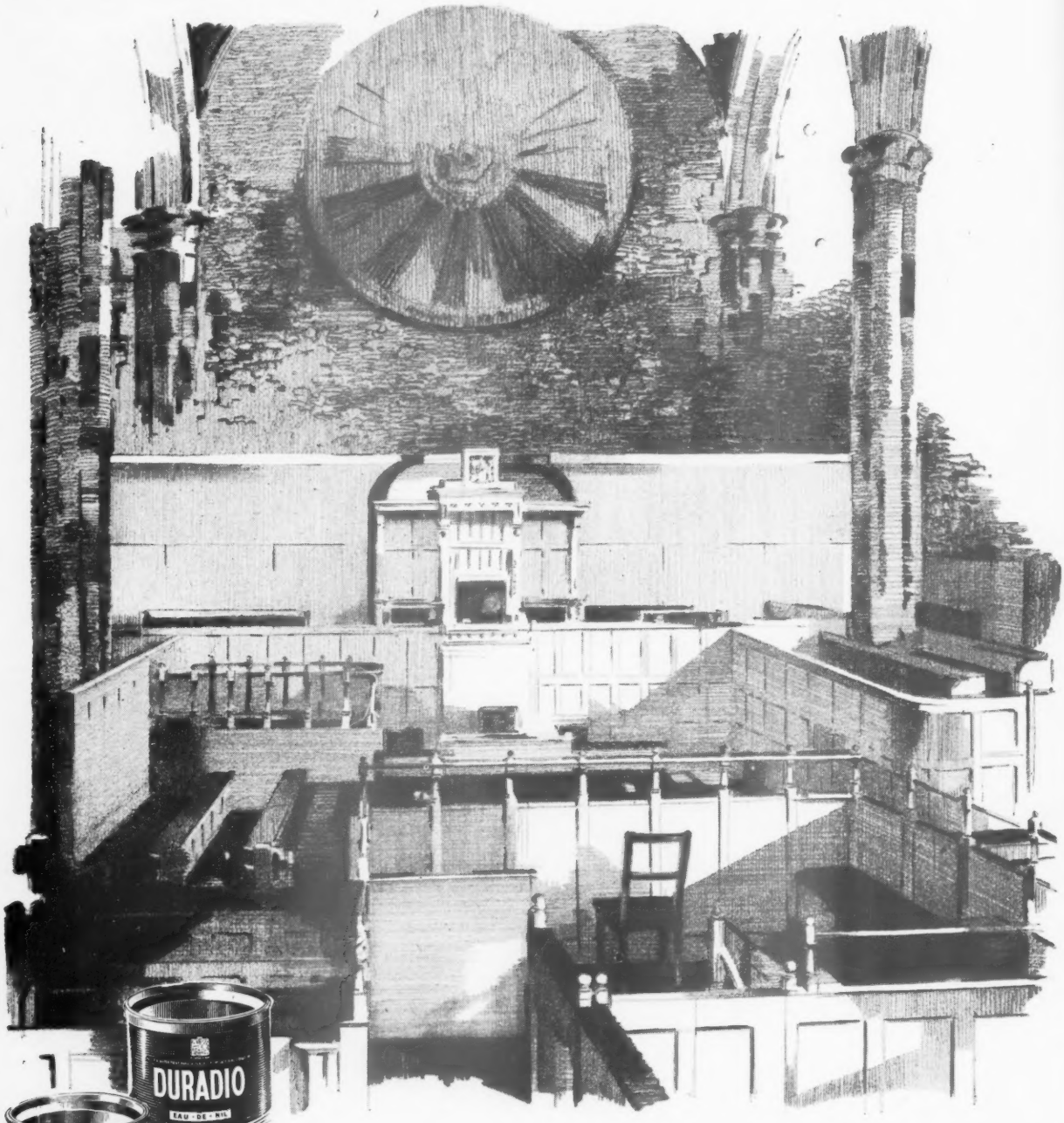

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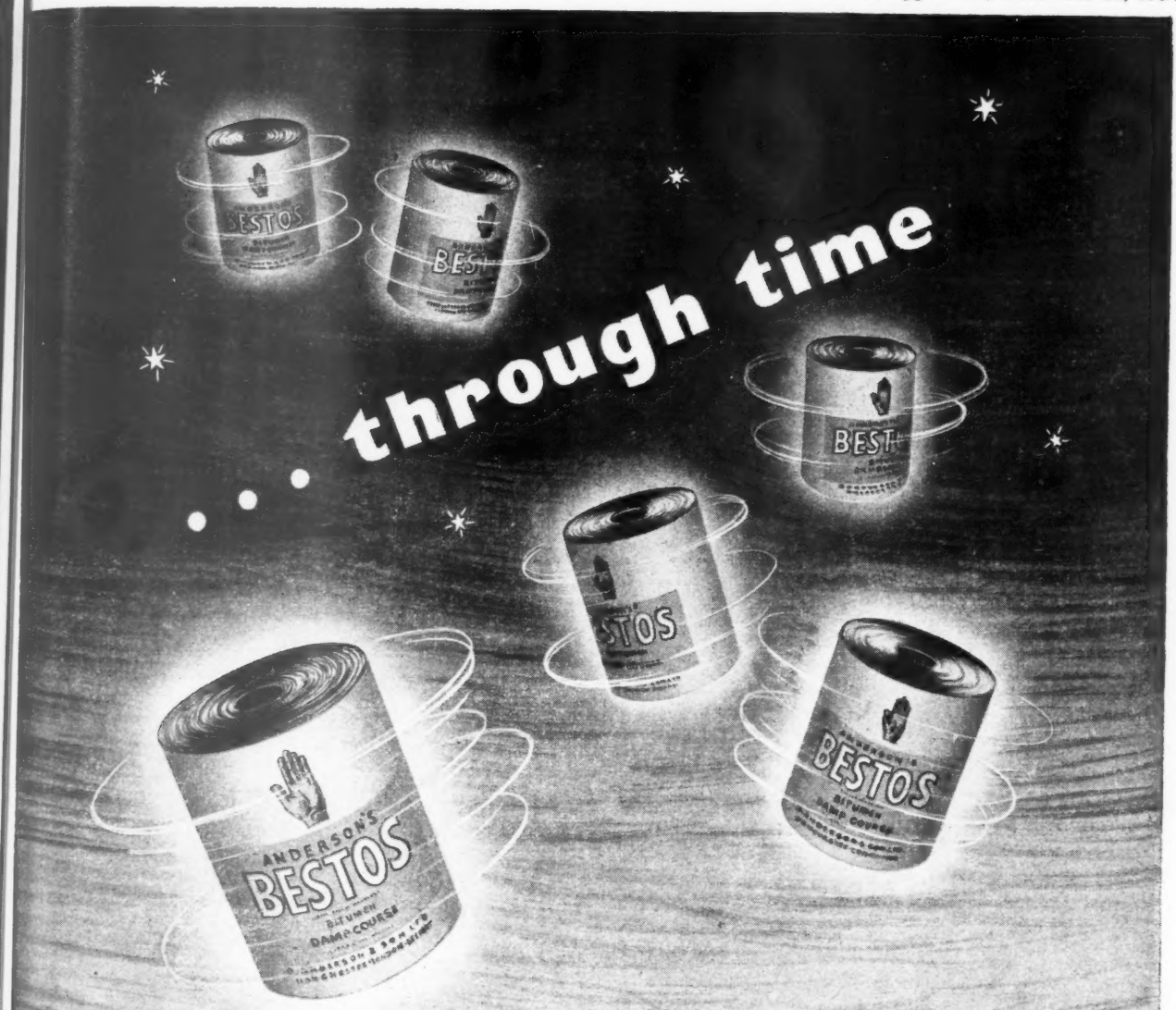

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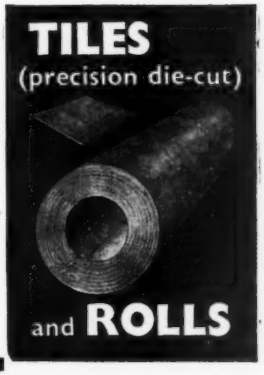

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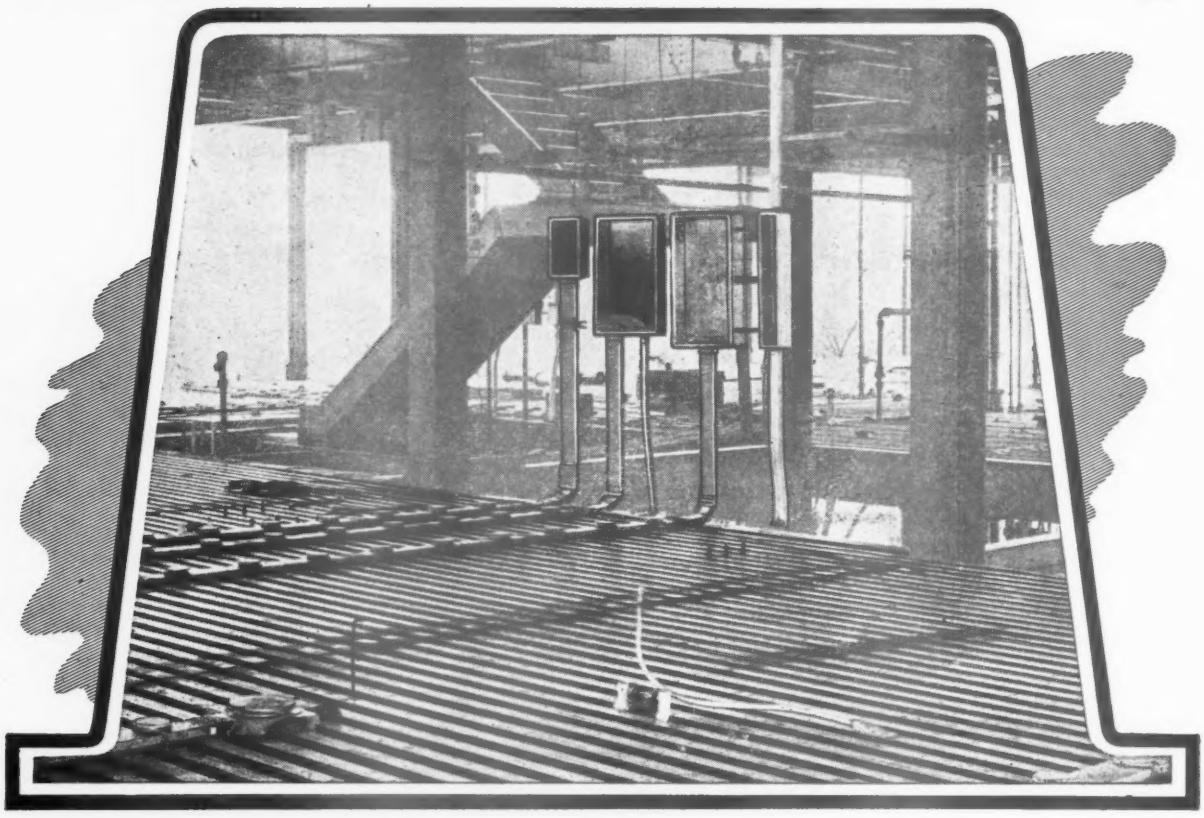

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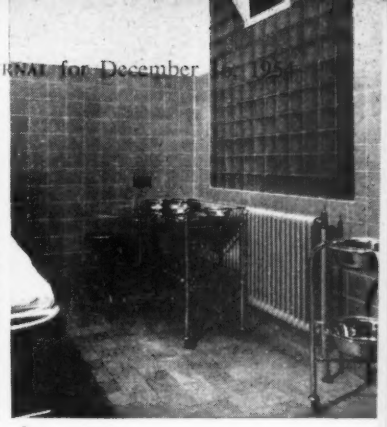

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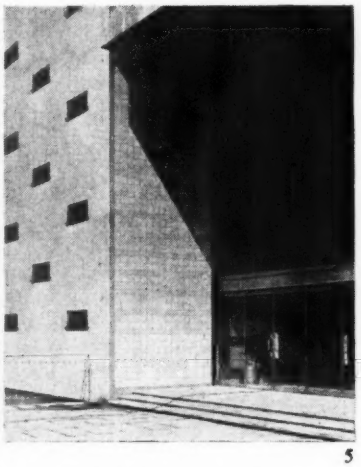

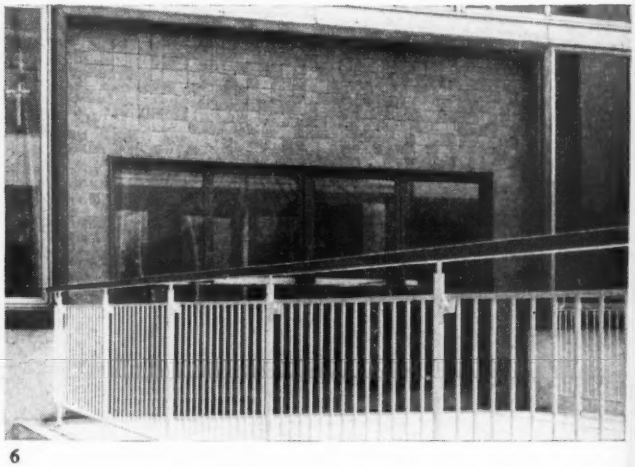

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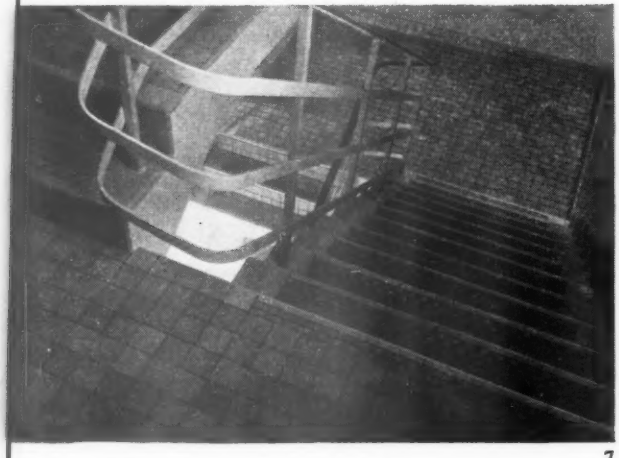

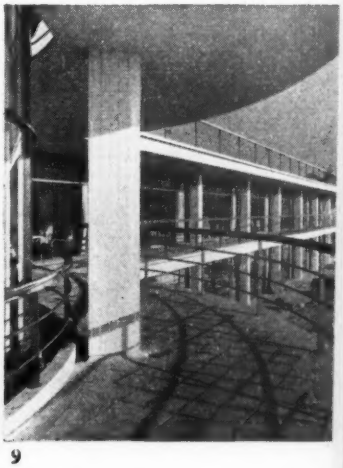

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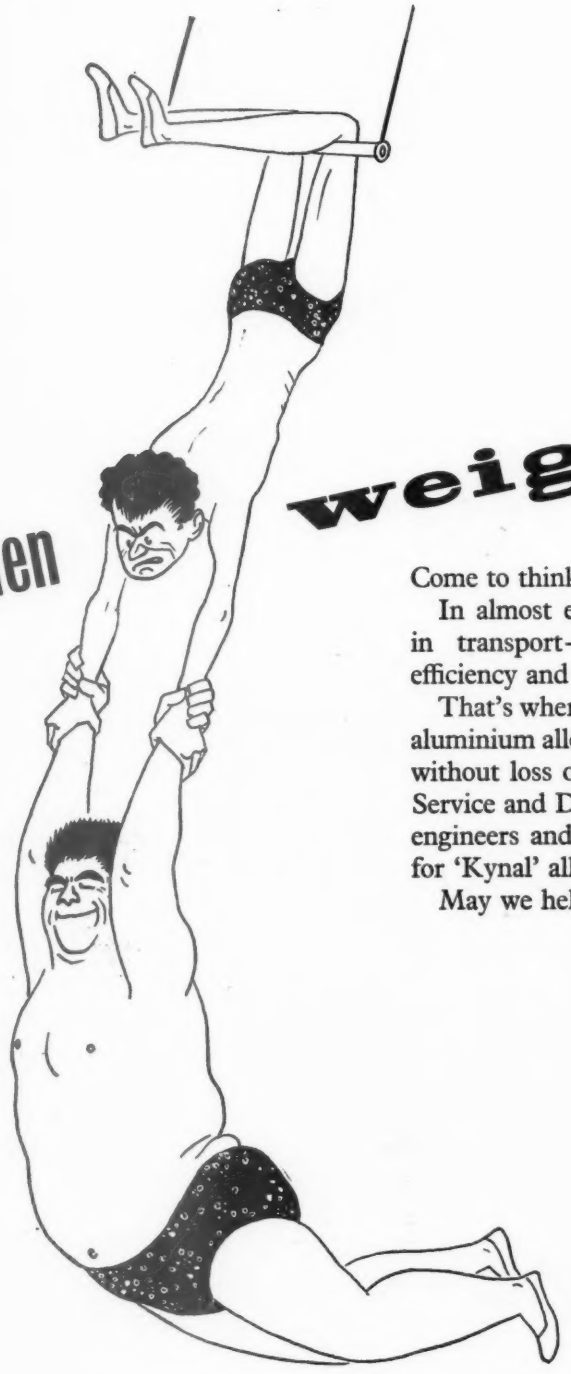

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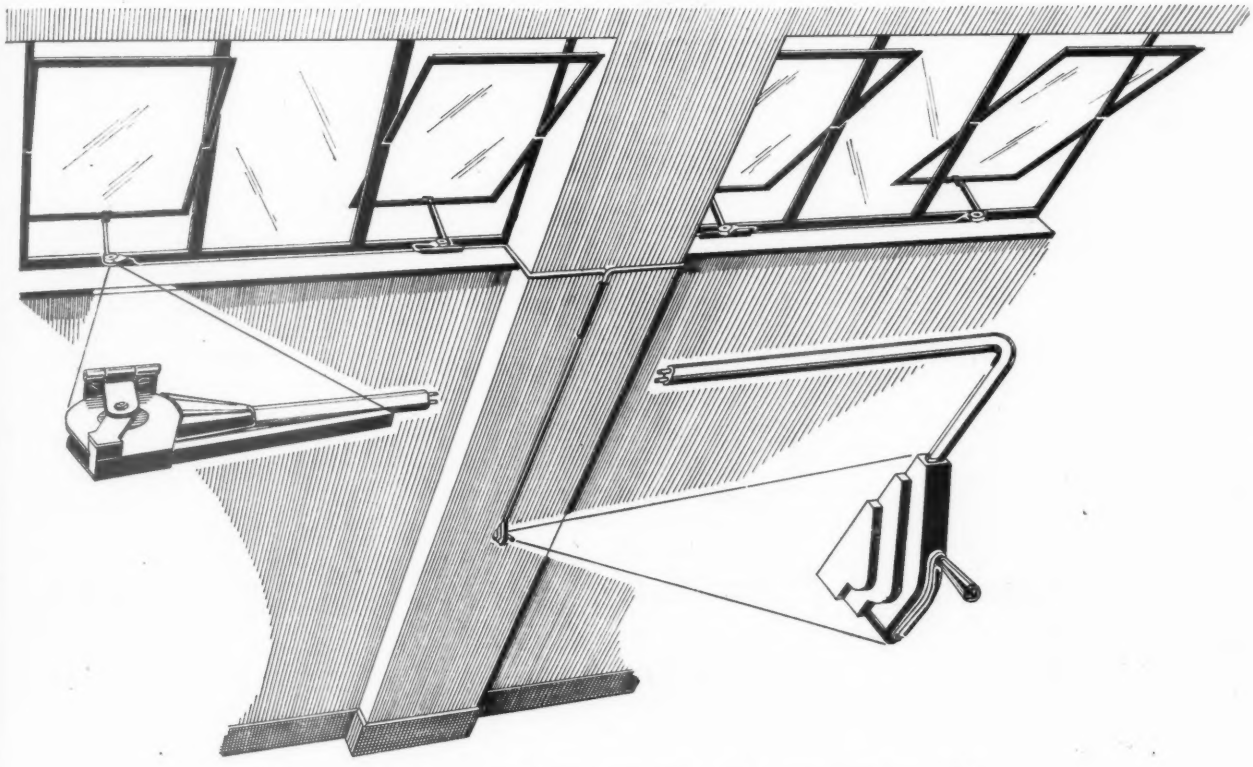

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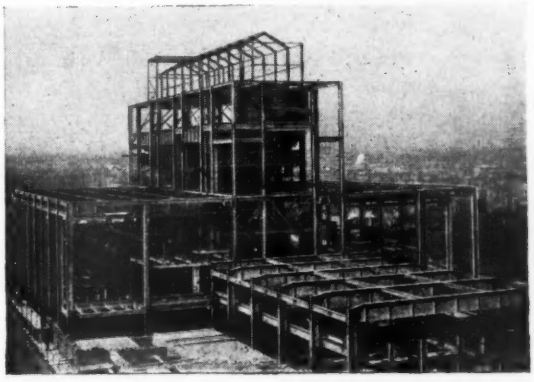

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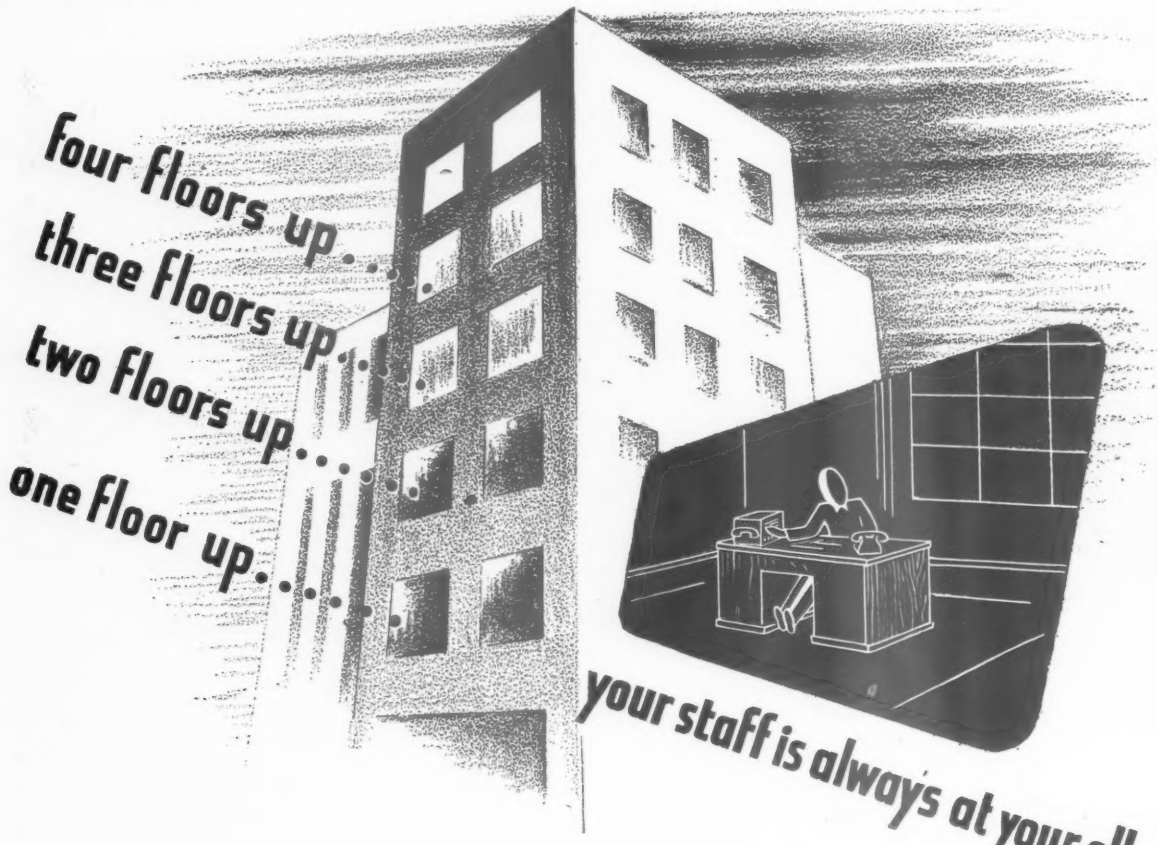

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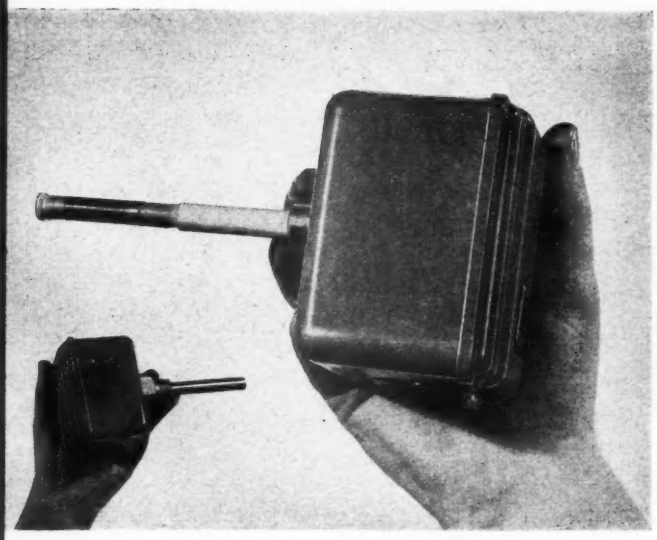
The illustration shows the instrument with and without the immersion protecting well.



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THE Honeywell Electronic Modulating Control System covers a complete range of temperatures from —20° F. to + 225° F. using only one thermostat . . . and its extreme sensitivity enables it to 'feel' temperature changes as they occur. Suitable for virtually all applications where internal and external temperatures have to be measured, the Honeywell system affords practically unlimited combinations of control devices to co-ordinate the operation of heating, ventilating and air-conditioning equipment.

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- Fast, accurate response to the slightest temperature change
- No moving parts to wear out
- Easy to install

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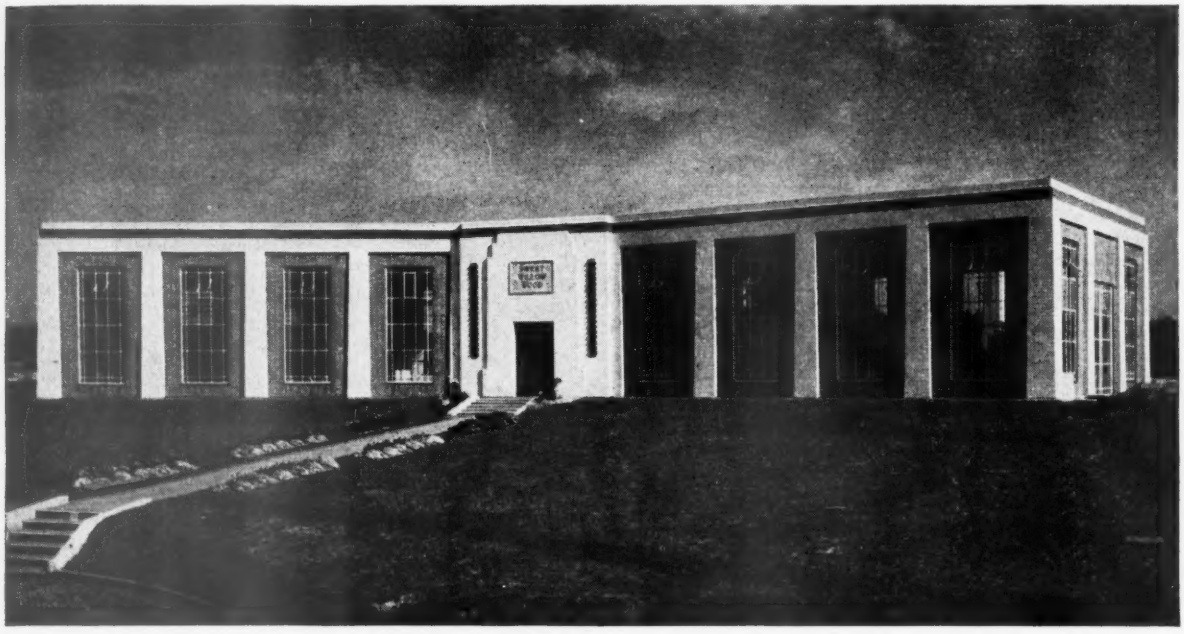
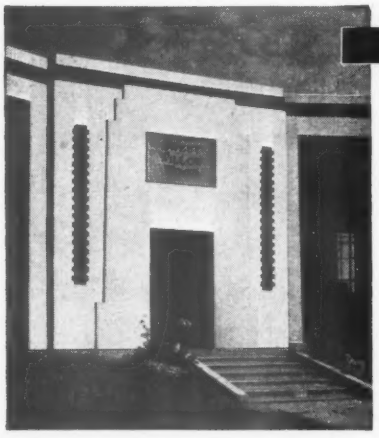
First in Controls

SWEET WILLOW WOOD PUMPING STATION, BEXHILL
Work carried out under the supervision of Mr. A. W. Bristow, A.M.Inst.C.E., A.M.I.Mech.E., A.M.Inst.W.E., Engineer and Manager, Bexhill Corporation Water Department.



An outstanding example of the use of Silexine Paints



EXTERIOR

After eighteen years, the exterior of Sweet Willow Wood Pumping Station is again being treated with Silexine Stone Paint. It is noteworthy that the previous coating of this decorative, protecting medium was *still in sound condition*, merely requiring washing down to receive a fresh application of one coat only. Stone, finely ground, is the basis of Silexine Stone Paint. With Silexine, you literally *paint with stone*—hence its outstanding protective quality. It can be applied to concrete, stucco, brick, plaster, asbestos, cement, etc., and is supplied in twelve attractive colours or in special shades to order. Specifications and notes on surface preparation, together with a report on tests carried out by the Building Research Station, are given in a booklet sent free on application.

SILEXINE STONE PAINT

INTERIOR

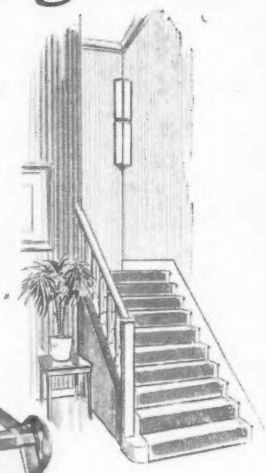
The interior of the Station is being decorated with S.P.E.C. (Silexine Plastic Emulsion Coating), the tough, durable, satin-like finish. It can be applied to new alkaline surfaces such as cement rendering, brickwork and asbestos cement. S.P.E.C. dries very rapidly (normally within one hour), and can be recoated after three hours. It is exceptionally hardwearing and ages without becoming brittle or cracking. It can be scrubbed or pressure hosed to clean off surface dirt or grease, without the slightest damage to its surface, and is equally suitable for external use. We shall be pleased to send full details of the many applications of S.P.E.C. together with Colour Chart and report on tests carried out by the Building Research Station.

S·P·E·C SILEXINE PLASTIC EMULSION COATING

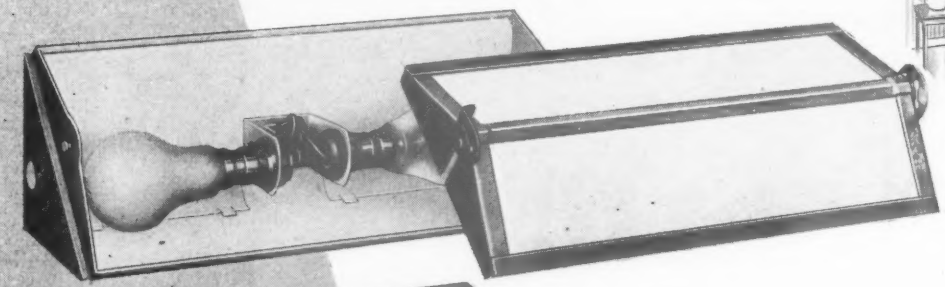
SILEXINE PAINTS LIMITED · RICHFORD STREET · LONDON · W.6
ST19

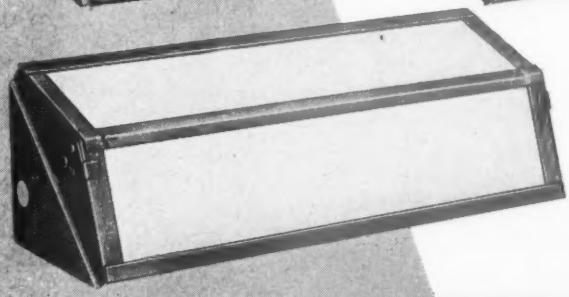
Benjamin Anglites have been specially designed to meet the needs of modern architectural and ornamental lighting. Simple to install and easy to adapt, they are extremely useful where it is impossible to incorporate fluorescent lighting into the proposed design.

A new angle... on interior lighting



These versatile fittings will make up into a complete unit of any size and will fit into almost any position, giving clear, well defined light over the required area. Attractively finished in bronze lacquer, Benjamin Anglites can be painted on site to blend with any decor scheme.





- Detachable front glazed with two panels of opal glass.
- Holds two tungsten lamps – clear, pearl or coloured.
- Ideal for public buildings — Schools, Theatres, Council Offices, Churches etc.

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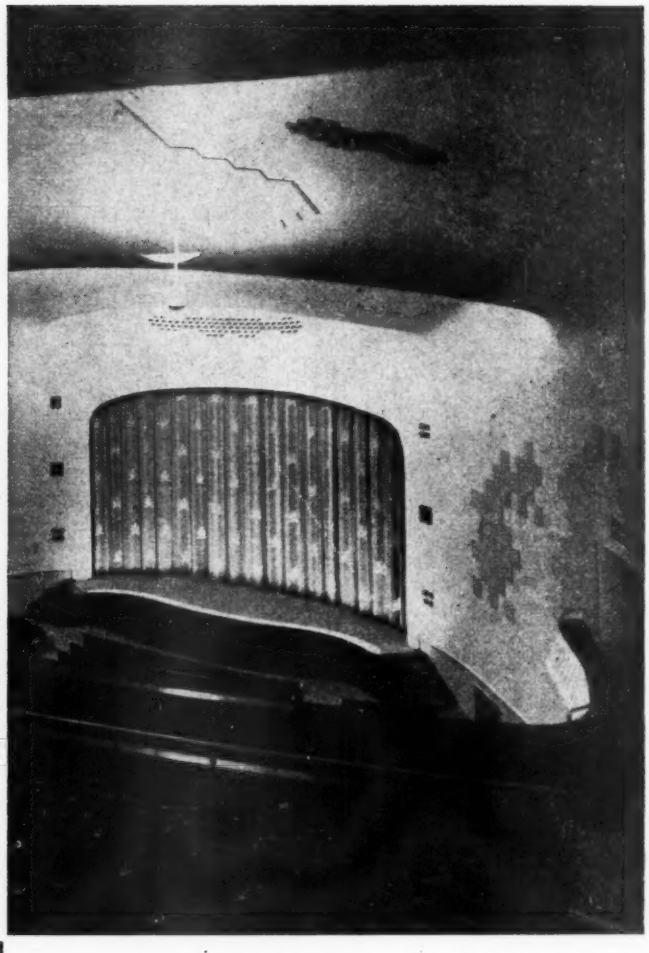
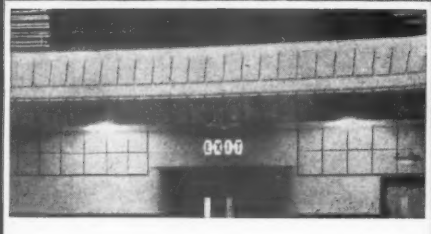


what a difference good | sound insulation can make!



An interesting feature of this Jersey cinema is the arrangement of Paxtiles the full width of the balcony front. Used in this way Paxtiles give an unusual and attractive decorative effect, as well as providing excellent acoustical correction.

Good sound insulation is good business in the cinema industry. In this installation in the Odeon Cinema, Jersey, C.I. (Architects: Messrs. T. B. Bennett & Son) cinema patrons enjoy the best acoustic treatment that sound engineers can devise. Here, Newalls (Regd. Brand) Paxtiles are applied to Auditorium and Circle Foyer Ceilings, and walls of Auditorium, Circle and Stalls, to afford not only first class sound insulation but an attractive finish as well. Newalls have made a special study of cinema and projection box sound insulation and, as manufacturers of sound insulating materials with experienced personnel for the application of them, can offer an acoustic service which many cinema owners have used to good effect.

Where there's a SOUND INSULATION problem

there's a job for **Newalls**

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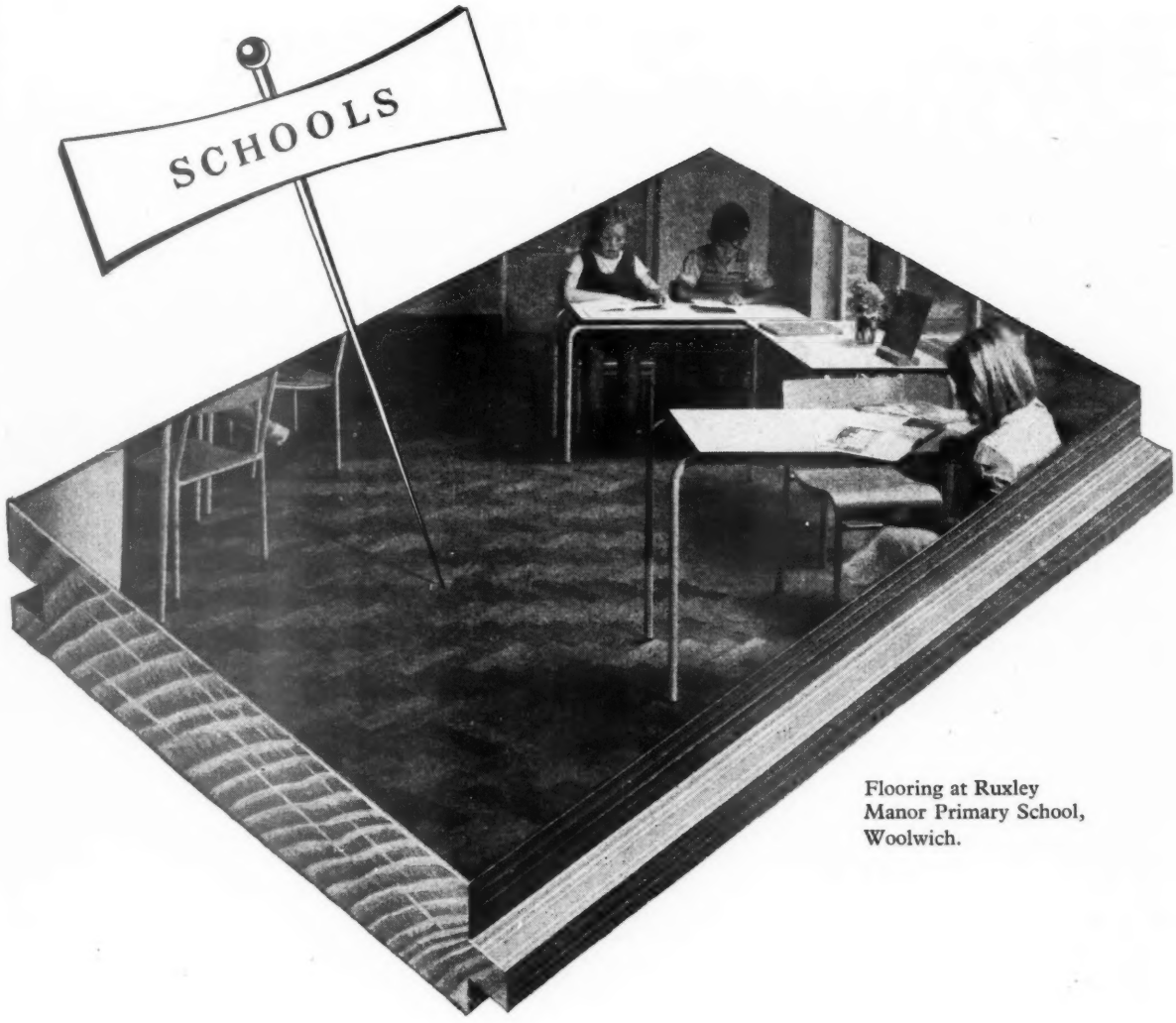

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They chose WOOD floors

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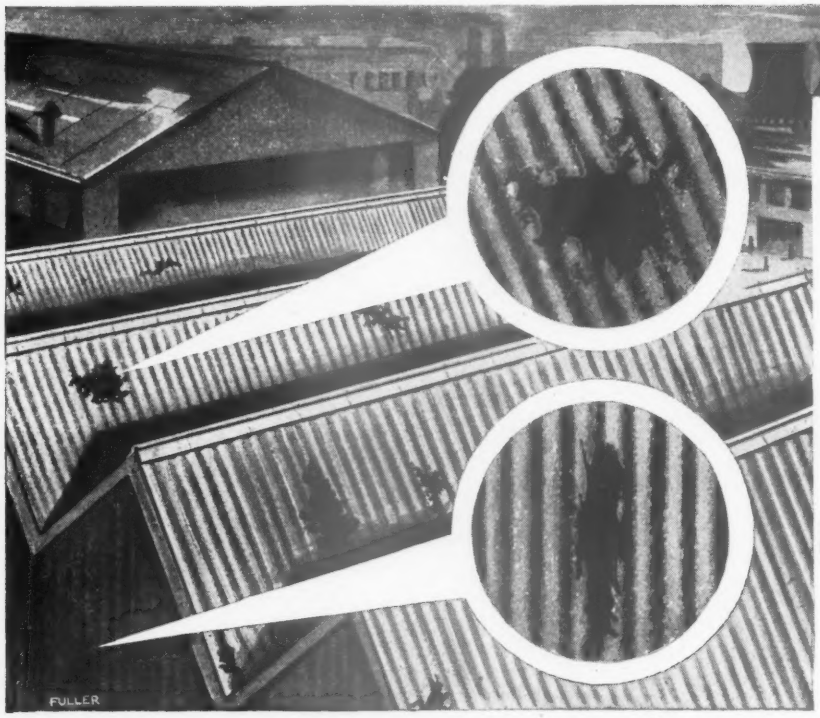

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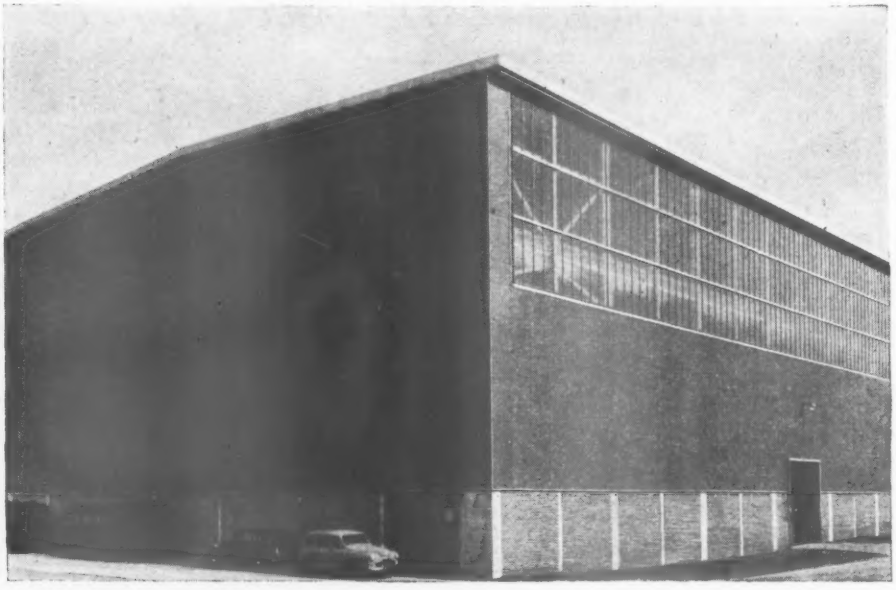
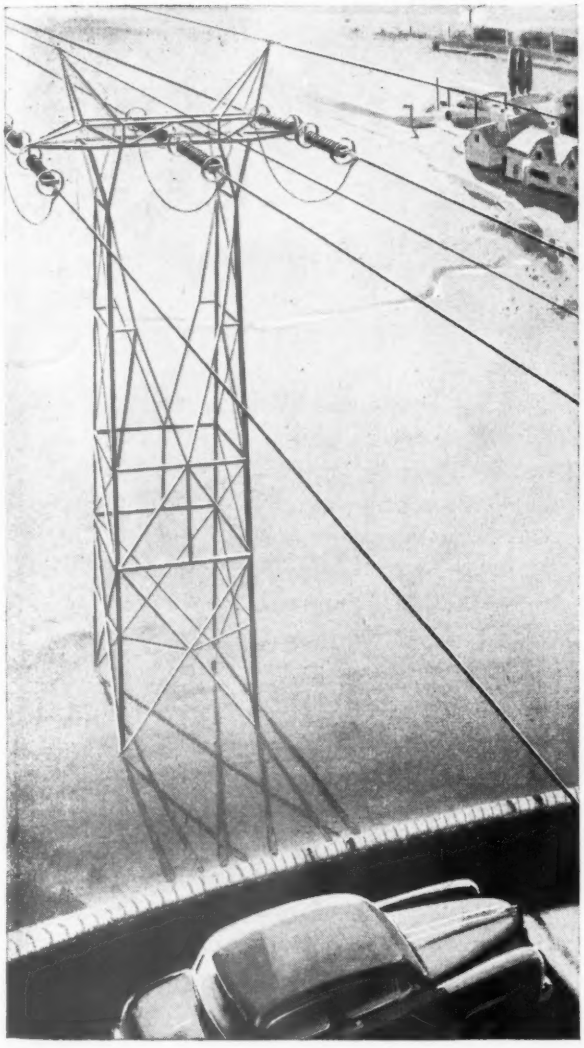
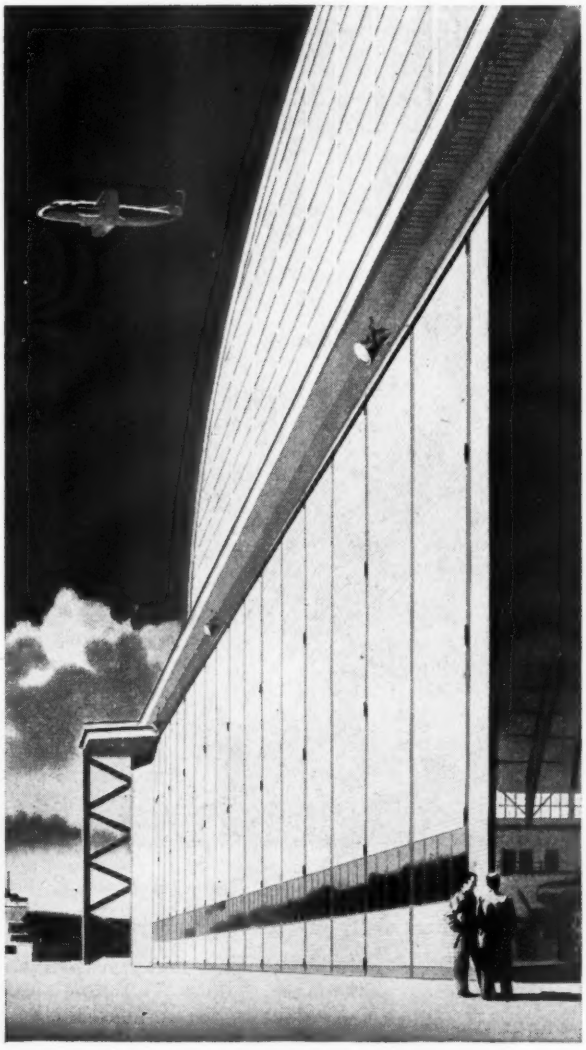


One of the Reel Store extensions at Bowaters Lloyd Pulp & Paper Mills Limited, Kemsley Mill, Sittingbourne.

ARCHITECTS :
MESSRS.
FARMER & DARK, F/F.R.I.B.A.

ALUMINIUM AT WORK





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produced the *first* 'flat-curved' oil for British motorists

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An oil where the viscosity change is small over a range of temperatures is often referred to as a 'multi-grade' or 'flat-curved' oil. Duckham's Q 5500 was the first oil produced for the British motorist in this category.

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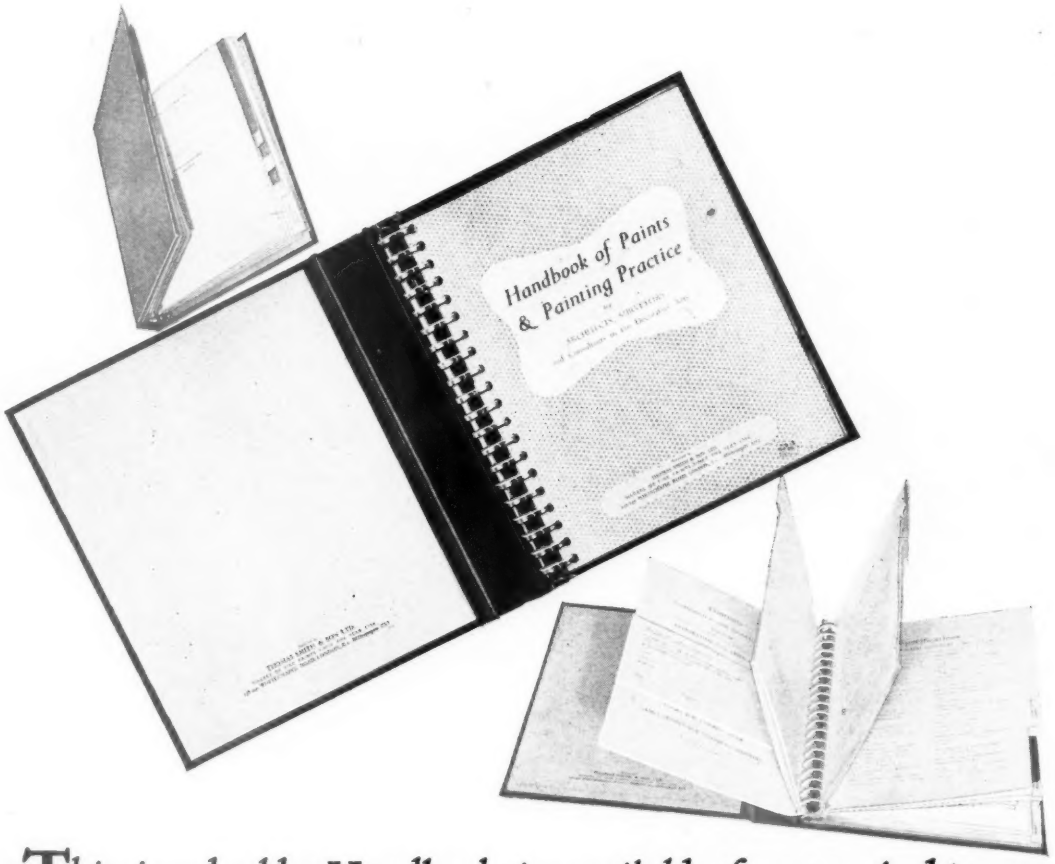

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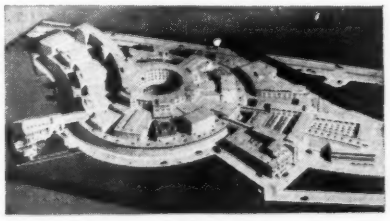
Architects who are interested in the problems of surface protection and decoration are cordially invited to write for a copy.

Smithson

Smithson Paints have been largely used at the B.B.C. Television Centre at the White City.



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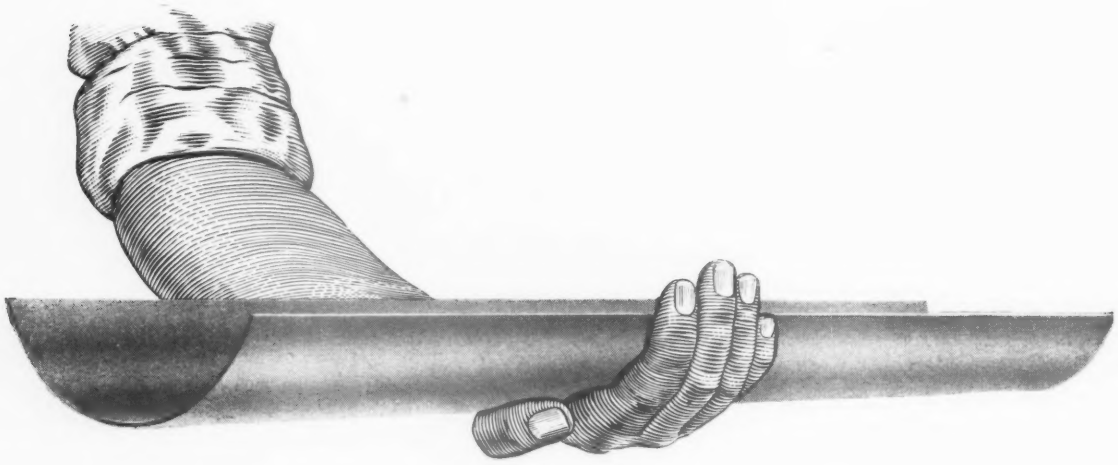

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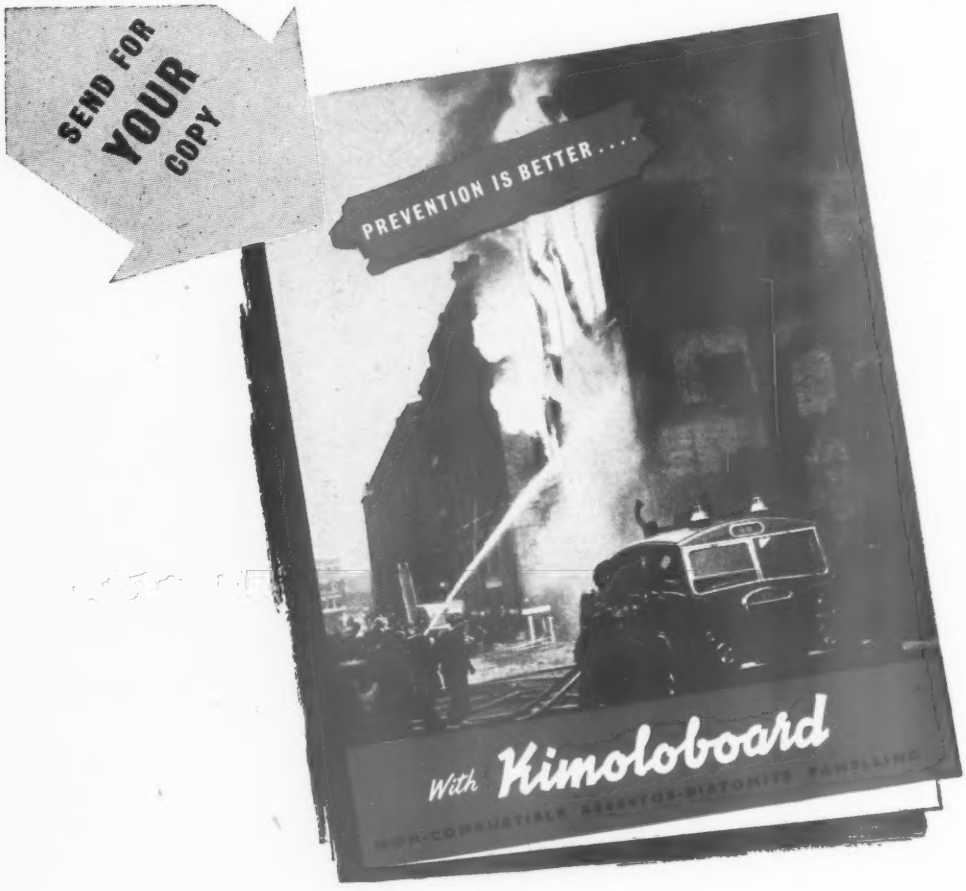

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is the title of a new leaflet that should be read by everyone who is concerned with fire prevention.

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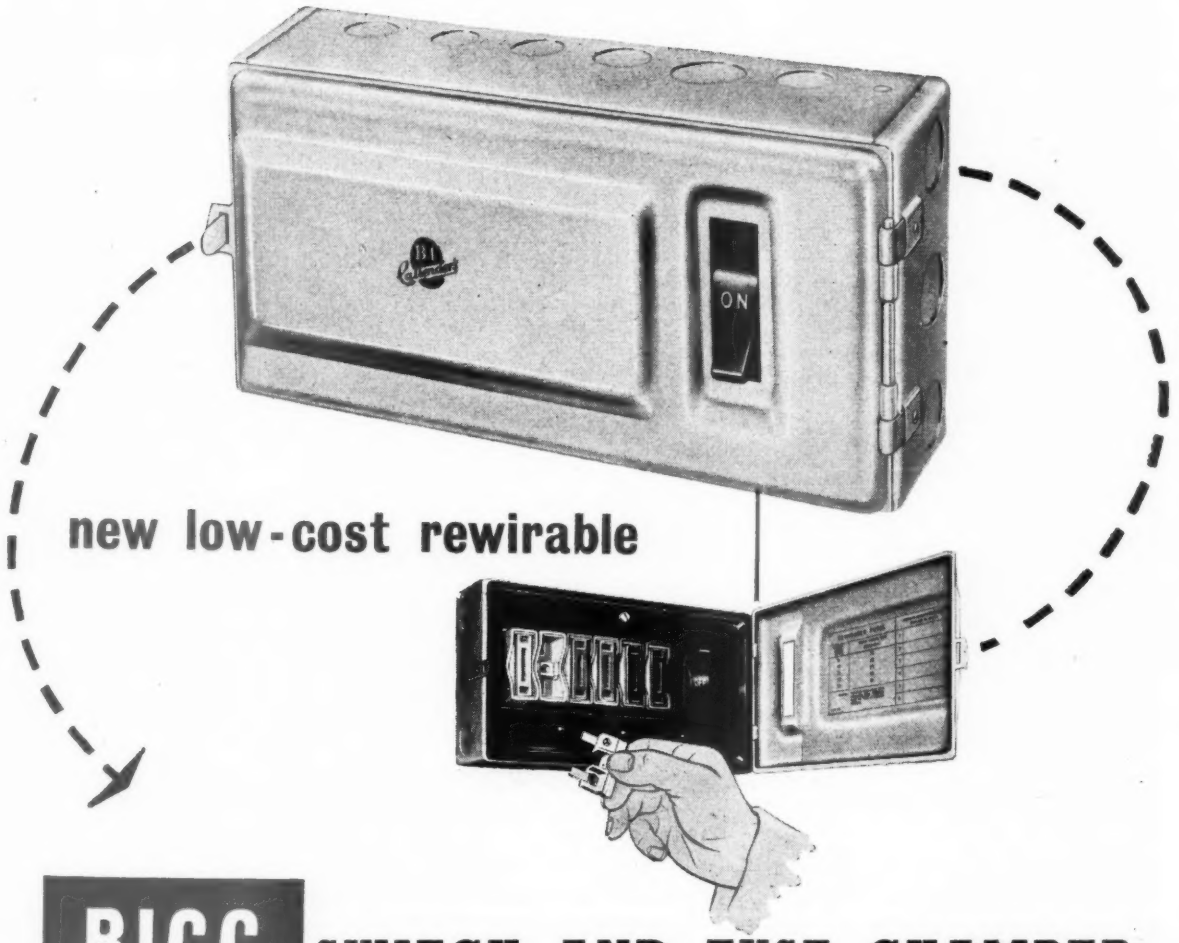

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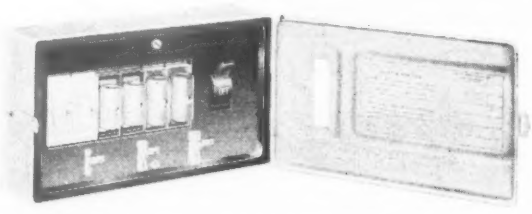

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One of several factories built by the Scottish Industrial Estates Limited which has been ventilated by COLT is that for EUCLID LTD. on the Newhouse Industrial Estate. The photograph shows COLT SRC/3080 High Duty Roof Extractor Ventilators which provide natural roof extraction and COLT Air Inlet Terminals which are connected to the mechanised inlet and heating system.

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COLT Ventilation equipment has also been employed for many further contracts on Industrial Estates at Slough, Stevenage, Crawley, Trafford Park for The Ministry of Supply, The Northern Ireland Factory Programme and Irish Estates Limited.

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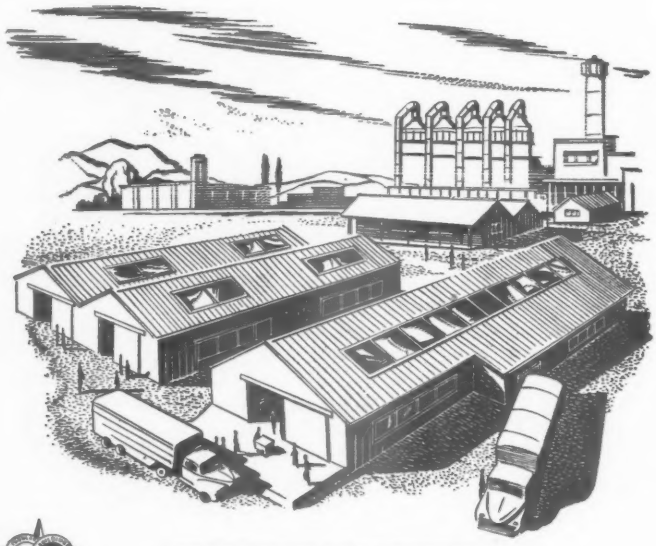

The Unimer Organisation for the supply and service of Unimer tubular steel building components covers the whole nation through 10 Area Distributors. Because of the standardization of dimensions and components, each Distributor carries complete stocks, with buildings "on the shelf" ready for immediate delivery. So through the Unimer organisation, any size of building can be erected anywhere in a matter of days. Unimer components are adaptable to a variety of buildings for factories, offices, workshops, garages, agricultural buildings, etc. and are permanent structures which can be enlarged at any time by the addition of identical units.

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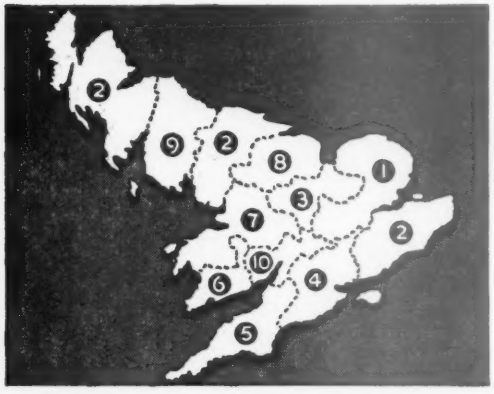

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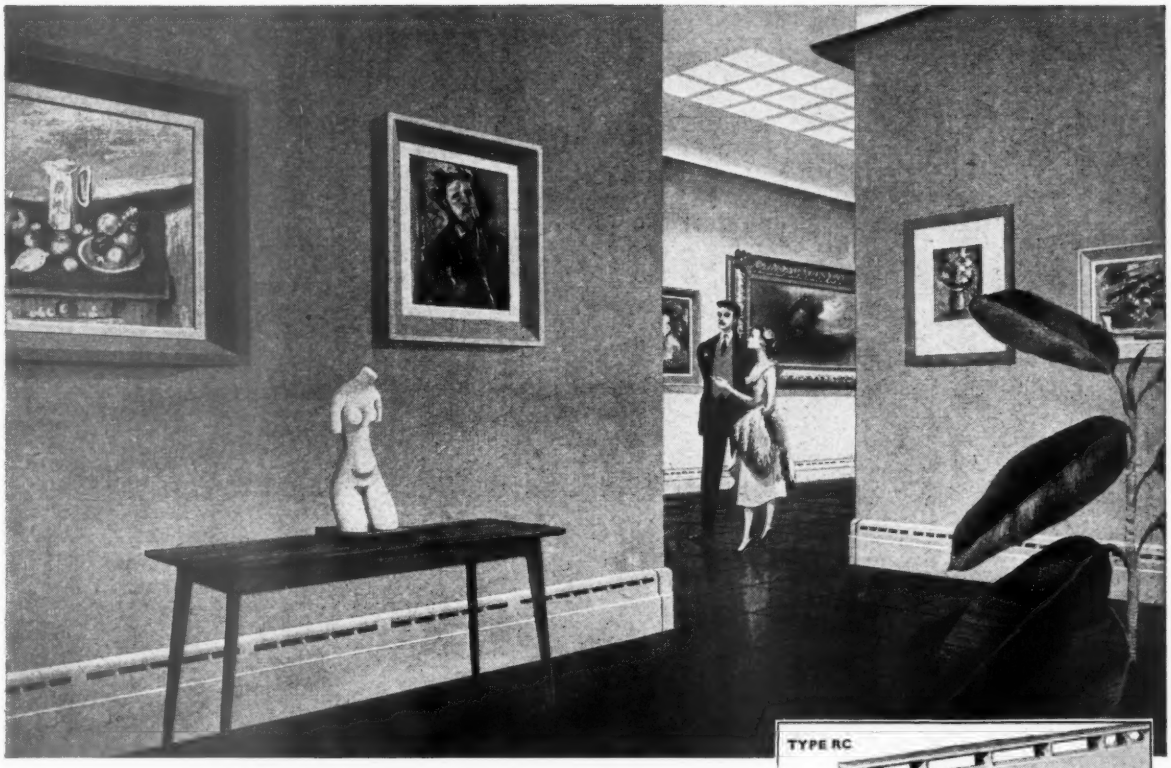

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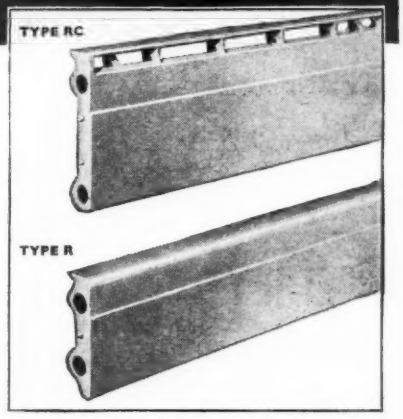

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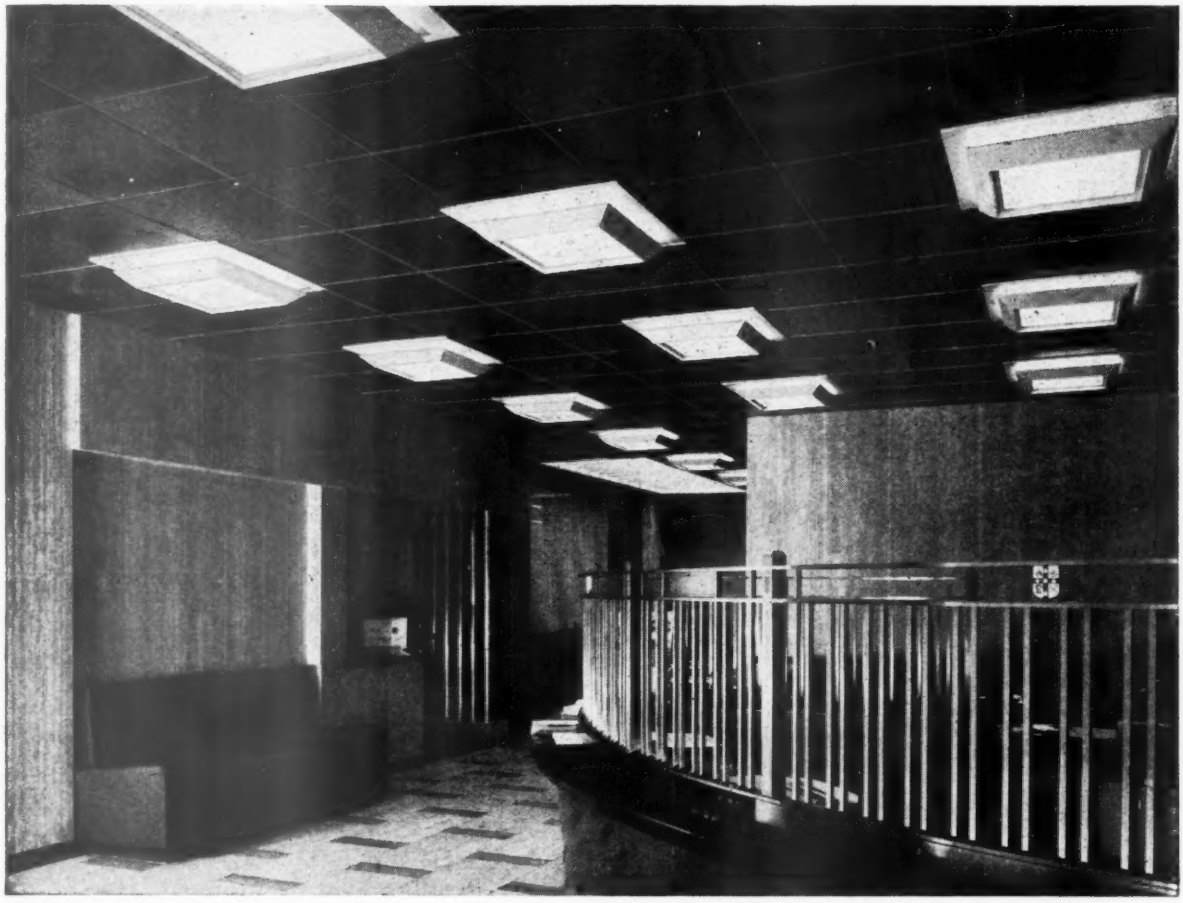

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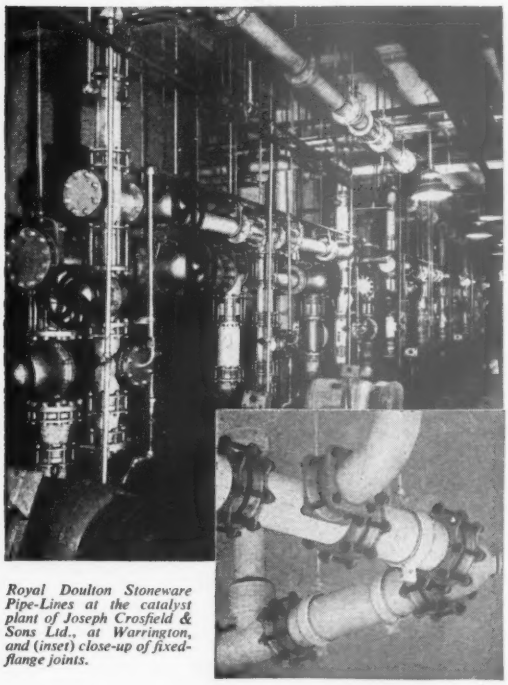

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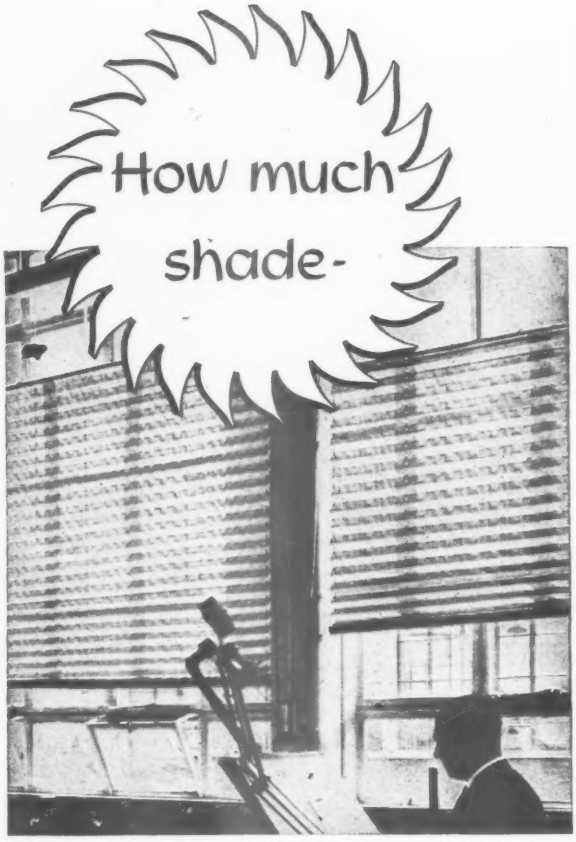
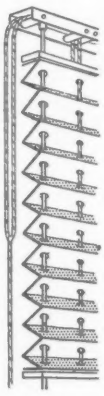


-and where?



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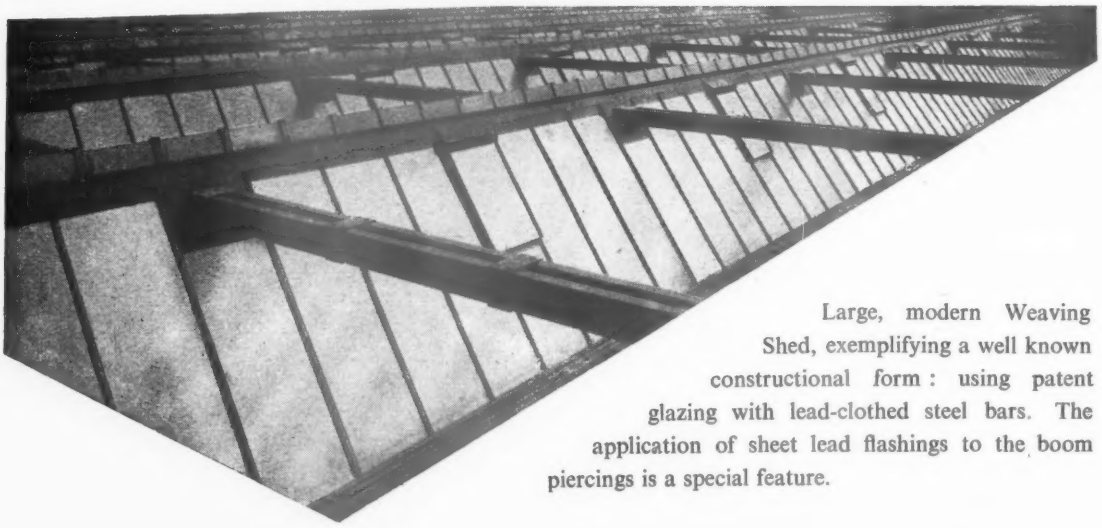

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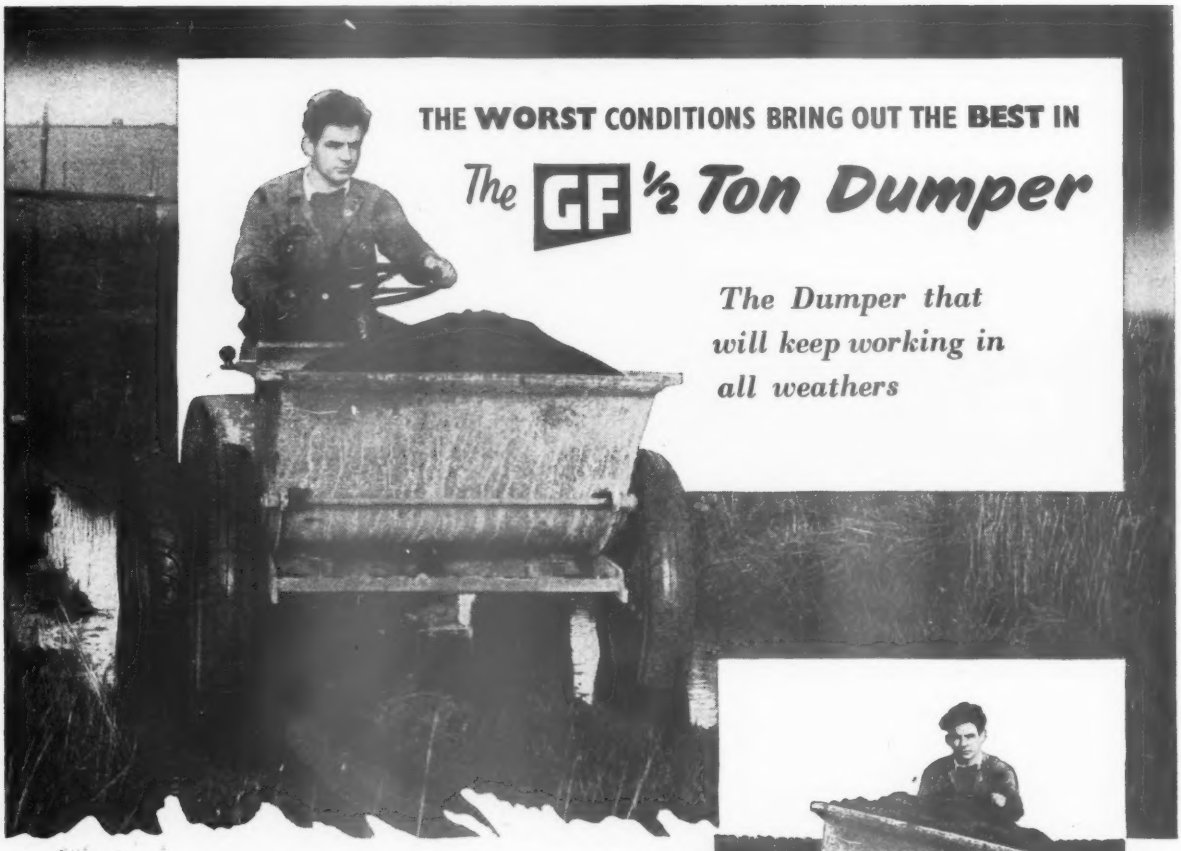

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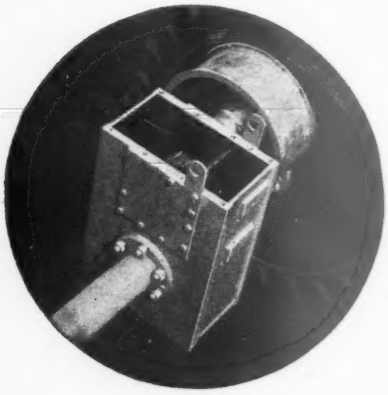

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Architects who have never met John Borthwick, our North West Divisional Manager, are due for a surprise. Quite naturally this broad, chunky man was a second row forward. Equally in character is his passion for vintage cars. And then you get to know him and discover he was once an art student, and holds an industrial design diploma, and can discuss the work of Modigliani or Corbusier and cultivates chrysanthemums in his garden. Strange mixture. You grumble that Mr. Borthwick is one of those people who just won't keep in character. But then, after all, he is a Williams & Williams Divisional Manager !

*** Mr. J. Borthwick supervises offices in Belfast (23762). Birmingham (Shirley 3064). Glasgow (Douglas 0003). Liverpool (Central 0325). Manchester (Blackfriars 9591).**

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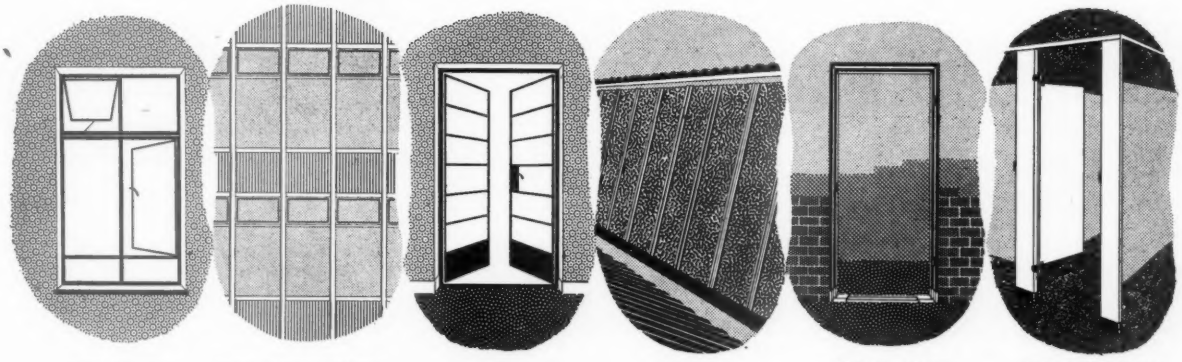

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THE ARCHITECTS' JOURNAL

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No. 3120 December 16, 1954 VOL. 120

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A ROUND OF LECTURES

Looking like someone who has been up all night finishing the working drawings for a competition scheme, ASTRAGAL'S scholarly spy, who never misses a lecture, showed up recently after sitting through three important discourses in six hours. In the first place he had smuggled himself into the cellars of Bedford Square to hear Erno Goldfinger repeat a recent talk on Perret for the benefit of AA students. Mr. Goldfinger, it appears, can claim the distinction of being one of that select band of dissatisfied Beaux-Arts who first persuaded Auguste Perret to set up as a teacher, and he spoke with authority of the Master's quest for tectonic truth, and of his blue straw boater. It also turned out, with a nice sense of irony, that when Perret finally became accepted in French official circles, the first honour they bestowed upon him—and he had never become a registered or diploma'ed architect—was to make him the head of the French equivalent of ARCUK.

*

Pausing only to grab an *espresso* on the way, ASTRAGAL'S spy moved across to Portland Place (where the upholstered seats were much appreciated after the more spartan accommodation at the AA) to hear Basil Taylor voice his alarm at the pernicious influence of art-history on the creative arts today. In case this should appear to be an altruistic attempt on Mr. Taylor's part to abolish his own profession, it should be pointed out that he suggested a new rôle for the art-historian in the teaching process as an advisory or consultative expert, available when students needed him. One architect in the audience spoke up in defence of art-history, and after some prodding from the back of the house, Mr. Taylor was heard to concede some virtues in Professors Pevsner and Giedion.

*

By dint of some smart cross-country work, our spy then managed to get to the ICA in time for Richard Llewelyn Davies's talk on American Architecture, which proved, not very surprisingly to be largely about Mies van der Rohe. The flagging spirits of the marathon lecture were much improved by the quite acrimonious discussion which followed the talk, when, Mr. Davies having brought forward his views on the "endlessness" of Mies's architecture, he was pressed so hard to defend his thesis that he had to go through his slides again, while he and his opponents scored points off one another on such matters as symmetry, triple division and weak corners.

*

Only one thing our persistent lecture-goer regretted; that he had not been able to insinuate himself into a meeting of the housing division of a large local authority (which shall, of course, be nameless) at which a senior official was reported to have laid down the law about what style any further designs for houses should follow. He was greeted, it is said, with opposition from members of his staff who wanted to know what Swiss and Swedish detailing had to do with any English tradition, and why housing up to five storeys had to be traditional anyway, while higher blocks did not.

*

However, as always, not all the wrong is on one side. The senior architects in the housing division of this authority have to present designs to the housing committee—so they are entitled to expect from their assistants what they feel they can present with confidence to their clients. It may be wrong to enforce a "style," but it is stupid for junior assistants to expect their equally able seniors to defend designs they don't like. Is it time some of these brilliant juniors moved on—perhaps to smaller authorities where they might have to do a little committee handling themselves? "Pitched roof? Oh yes, Mr. Parkinson. Dormers too? Certainly, Mr. Parkinson."

CORB AND HIS FAT LADIES

The Hanover Gallery is showing a group of watercolours done by Cor-

busier in the early years of the war, when he was in Switzerland, and they run very much on one theme of monumental female figures, sometimes involved in circuses and such, sometimes free-standing on a beach, sometimes wrapped together in complicated decorative assemblages.

*

Perhaps the emphasis on the massive plasticity of these figures is a side-reflection of the interest in sculpture which Corbusier was showing at the time he did them. There are, in fact, two sketches for sculptures—one of them fairly well known—in the show. What is unusual, ASTRAGAL believes, is to see watercolours by Corbusier from any period later than the 'twenties, and no doubt the historians, or even the man himself, will tell us what was their particular significance in his career. While we wait, these pictures can be recommended for showing the familiar hand working on a more domestic scale, and in colours that are easier to take than they are in big oils.

KENSINGTON UP IN ARMS

It is a healthy thing that designs for new buildings should be the subject of controversy in the Press, but all too often the criticism expressed there is too late to do any good. This is what seems to have happened in the case of the letters that have been appearing in *The Tablet* about Adrian Gilbert Scott's design for rebuilding the bombed church of Our Lady of Victories, Kensington High Street.

*

The critics of the design are given a solid basis to start from by the fact that it has been pronounced most unsatisfactory by the Royal Fine Art Commission. The Commission, however, was told that it was too late for alterations to be made. They pressed their point and apparently can press it no further. But the parishioners are refusing to be silenced by this; they have held meetings of protest, and altogether shown praiseworthy determination to get their dislike of the building listened to. And they have taken further courage from an article in last month's *Review* criticizing the same architect's Roman Catholic church at Lansbury.

Inevitably the exchange of letters in *The Tablet* includes some favourable to the building, but the longest of these (from Mr. De Courcy-Cameron of Philbeach Gardens) simply indulges in the well-known device, when answering criticisms, of impugning the competence of the critics. In last week's *Tablet* the architect himself joined the fray, only to take the same line and add the irrelevant observation that an experimental concrete and glass structure (which no one had suggested was desirable) would be out of place in Kensington, as well as the surprising statement that the Royal Fine Art Commission considered his design too modern.

*

This statement can presumably be explained by his own description of his church as partly Gothic and partly modern, the principal "modern" elements being arcades and windows with the same kind of fanciful hair-pin arches that he has used at Lansbury. It is very likely that the Fine Art Commission came down heavily on these, but not, I am sure, because they thought them modern.

BROWSERS INVITED

A reading room is provided by the JOURNAL's publishers, *The Architectural Press*, in their house at 9, Queen Anne's Gate, S.W.1. The current list of the firm's publications which may be seen there includes books by or about Le Corbusier, Sigfried Giedion, Walter Gropius, Howard Robertson, Frederick Gibberd, F. R. S. Yorke, Alvar Aalto, J. M. Richards, John Piper, C. C. Handisyde and Peter Shepheard. These, and many others, together with *Information Sheets*, *Working Details* and back numbers of the JOURNAL and the *Architectural Review* may be browsed through in comfort. The room is open from Monday to Friday in office hours.

CANCELLATION

The MOHLG's exhibition, called *Improvements and Conversions*, which was to have opened at the RIBA last week was—at the last moment—postponed. With rather surprising inefficiency the MOHLG handbook on the subject was not ready in time for the opening. This is, I believe, the first occasion an exhibition at the RIBA has not opened on time. The RIBA has limited exhibition space, so it is doubly unfortunate to see such a casual attitude adopted by the MOHLG.

Rather more encouraging is the message received from that highly energetic, highly travelled, high liver, author-advertiser, John Gloag. He has been in Germany and has there met architect Alois Giefer, a member of the board of directors of Bund Deutscher Architekten, and architect-organizer of the exhibition of German architecture opening at the RIBA in the spring. This exhibition promises well. It will be essentially a wall-exhibition, consisting of about 180 photographs, plus plans, arranged on screens. Some of the work illustrated is, I gather, of very high quality. Herr Giefer, who will be present at the opening of the exhibition, has a considerable reputation as a church architect.

PROFESSIONAL SALARIES

It is to be hoped that all interested in the subject of adequate professional remuneration are following, and even joining in, the discussion on the subject which has been appearing in the correspondence columns of *The Times* over the past three weeks. At last this vital subject is beginning to get the consideration it deserves.

CYRIL FAREY

It came as a surprise to read of the death of Cyril Farey at a mere 66. He was the greatest exponent, in recent years, of the highly-polished, carefully-rendered perspective. His style did not please everyone, but it admirably suited the kind of buildings he was so often called upon to illustrate, and it certainly helped those buildings to get a place on the walls of the Royal Academy.

ASTRAGAL

DIARY

Seminar: Books and the Modern Movement VI. Talk by Reyner Banham on "Vision and Design" by Roger Fry. At the ICA, 17, Dover Street, W.1. 8.15 p.m. Members 2s. 6d., guests 3s. 6d. DECEMBER 16

Watercolours and Drawings by Kenneth Rowntree. Exhibition at the AA, 34, Bedford Square, W.C.1. UNTIL DECEMBER 23

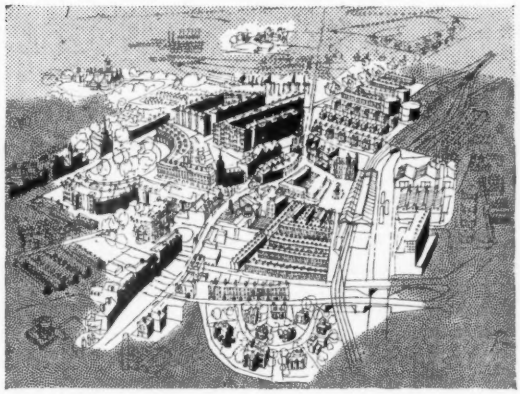
Italian Furniture, Pottery, Glass and Basketwork. Exhibition at Heal & Son, 196, Tottenham Court Road, W.1. Usual shopping hours. UNTIL DECEMBER 23

Symposium on High Flats. Introduced by Duncan Sandys, Minister of Health and Local Government. Chairman: Dr. J. L. Martin (architect to the LCC). At the RIBA, 66, Portland Place, W.1. 10 a.m. FEBRUARY 15

Because there are so many problems involved in the conversion of buildings—the subject which our Guest Editor, Felix Walter, has been investigating this year—we are giving nearly the whole of this week's issue to the fourth of his present series of articles. Readers will find in it advice on, among other matters, the assessment of a building's condition, the limits of economical conversion, the things to look out for when an historic building is being altered, and the provision of space for storage, recreation, laundry facilities and garages. (The before and after photographs on this page show a conversion scheme which is described on page 753.)

C

As the JOURNAL'S *Guest Editor for* 1954, *Felix Walter has been making a study of all aspects of the question of conversion. The results of his investigations are being published in a series of articles which began on November* 25 *with "Housing Improvements," and was continued on December* 2 *and* 9 *with "Conversions and Improvements in Historic Buildings." This week's special article on points that an architect should look for when planning the conversion of premises, will be followed by another next week on problems of ownership and management.*



CONVERSIONS

The present widespread lack of accommodation will never be met by the new house-building programme alone. The greatest demand for conversion comes from those in the lower income groups because their preferences are restricted by small or negligible capital resources; but housing problems in varying degree affect us all. Owners of the larger homes both in town and country can no longer afford either to maintain the fabric and meet rising rates and taxes, or to obtain the staff to run them—thus conversion or partial demolition is inevitable if these houses are to be preserved. Between these two extremes are a series of problems involving issues related more particularly to different income groups and their modes of living.

The most convincing argument supporting extension of life by conversion is the financial aspect. In the third report of the Committee of Inquiry into the Cost of House-building (1952), the average figure for a house built by local authorities in 1951 was £1,690. This included the building itself, land and site purchase and development, and the architect's and quantity surveyor's fees and expenses. But that does not represent the true picture in itself. Over a 60-year period the Exchequer subsidy is £26 14s. 0d. per annum with a similar annual contribution from the rates of £8 18s. 0d. The capitalized values of these two contributions at, say, 4 per cent. over a 60-year period are £604 1s. 0d. and £201 7s. 0d. respectively, with a combined value of £805 8s. 0d. In other words, for every new house built by local authorities, £805 8s. 0d. in capital

has to be raised by the Exchequer and local government from which to finance the two annual subsidies. Add to this, presumably, interest payable by the Exchequer in raising this capital sum as well as that of the local authority, plus the latter's interest on the loan from the Public Works Loan Board to finance the actual building of the house, and one begins to realize that this method of providing homes at uneconomic rents is a sizeable burden which all of us must share.

Disregarding the fact that building costs have risen by anything from 10-15 per cent., or even more since 1951, it is true to say that by conversion two new converted dwelling units can be provided, assuming a maximum £400 Government grant for each, for the equivalent of the capitalized value of the subsidies on one new house. And it must be remembered that not every developer will have to budget for £800, capital conversion cost, or more, on each unit he provides—thus the Government grant will be proportionally lower. Furthermore, now that landlords are released from rent control on new conversions, there is an opportunity to let units at economic rents. The effect of this may be that less advantage will be taken of Government grants if capital can be invested without undue restriction and with the expectation of a fair return. No one will deny that, to the man without adequate capital, subsidies in this limited field are necessary—but the sooner we can stand on our own and finance our own projects the sooner we shall be able to minimize the subsidization. The scale of this assistance can be measured by the combined official figures of central government and local authority subsidies for housing which in 1952 amounted to no less than £M.84.* The figures for last year have yet to be published, but with the increased number of dwellings completed in that period, the advance will not have been less.

But to return for a moment to the new housing estate. Even after making allowances for Government and local authority subsidies, the new estate still lacks social and other amenities which exist already in central areas—shops, churches, clubs, cinemas, and transport facilities, to name a few of them. Certainly most of these are financed from private sources, but even so, months and years elapse before a new community can be self-sufficient and properly balanced—and then at an immense cost which property conversion would not entail.

There is no doubt, therefore, that the conversion of existing buildings, whether in central areas of cities, small country towns, or on the perimeter of both, is far more economical than the erection of new housing estates with all their services, roads and amenities, new transport facilities and the like. With the steady annual loss of agricultural land and the need to import more and more food from abroad, any steps which would even to a small degree reduce the outward growth of towns into rural areas should be welcomed.

* National Income and Expenditure Blue Book, 1946-1952. (Published in 1953.)

From the local authorities' point of view, the conversion of larger houses is something which they naturally encourage, for the loss of rates on empty and derelict property has had its effect on local government incomes. This has been noticeable, particularly in areas where war damage has been sustained and where long leases have only a limited number of years to run before reversion. Although efforts have been made by successive governments to evolve a simplified method of valuation for rating, no satisfactory system has been discovered. Thus, without this, a conflict of opinion has frequently arisen over the reassessment of converted property. Local authorities hold the whip-hand in these circumstances and until some intelligible basis for calculation is adopted, would-be developers will continue to eye with suspicion the validity of the assessments imposed—and these are extremely high at times.

Conversion scale

In reviving the central areas, conversions should be of a scale to blend with property in their vicinity or neighbourhood. People are more at ease when living amongst those of their own status. To introduce families of an altogether different class tends to destroy the neighbourhood pattern. Housing associations, in particular, are well suited to apply this conception. One association which is converting groups of houses will only accept new tenants whose incomes and ways of life are similar to those already occupying nearby dwellings. Scarcity of property has enabled owners to sell to the highest bidder with the result that families of limited means are obliged to go further afield—the buying of mews property and other smaller types of houses in town centres is an example of this. The main objective, surely, is to keep intact and to encourage the neighbourhood unit, and to rehouse tenants as far as possible within their own area rather than transplant them elsewhere.

The family unit

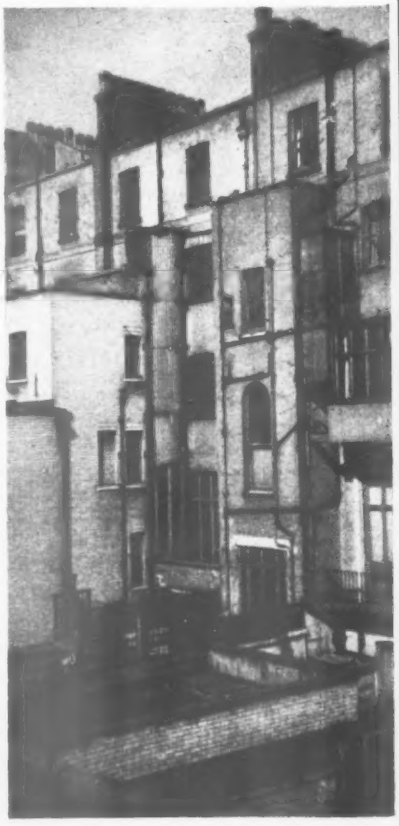
This principle is applicable in greater degree perhaps to the lower income groups in which the young or immediate family seems more closely attached to the extended family. Michael Young* defines the latter as covering the wider family circle, "including not only the parents and their children but also grandmothers and grandfathers, uncles and aunts, and all the other relatives." The immediate family, the young parents and their children, are generally those who occupy the new estate houses, often far from their old homes—and herein lies the weakness—because these families have a sense of responsibility towards those whom they have left behind. This distance between them, which they deplore, tends to reduce the customary day to day help which they were able to provide formerly. Michael Young suggests that housing authorities

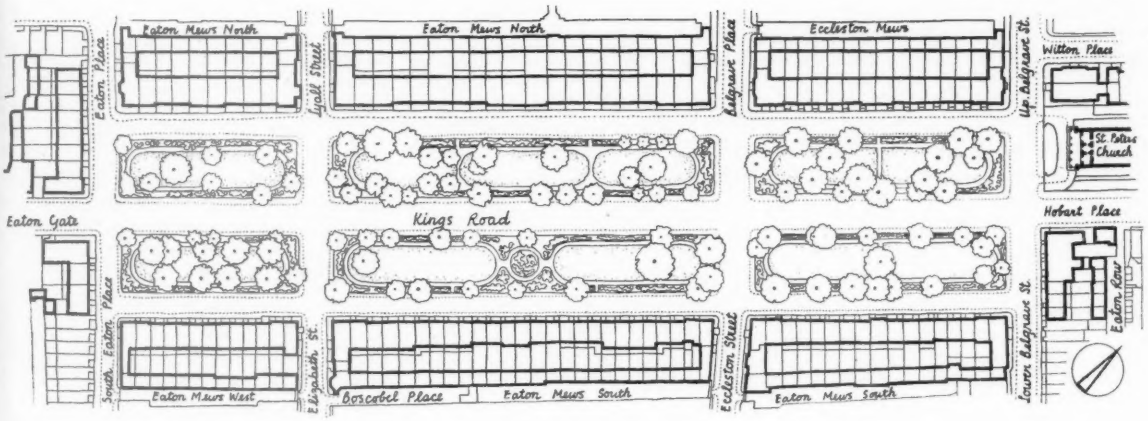
* "The Planner and the Planned—The Family," by Michael Young, B.SC. A paper given at the Town Planning Institute on April 1, 1954.

Eaton Square, S W 1

Architect : Raglan Squire

The rear before conversion

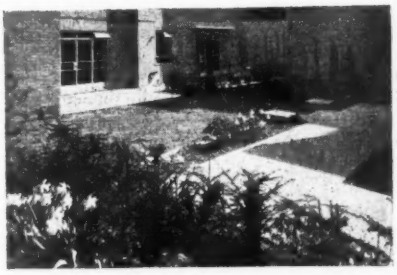




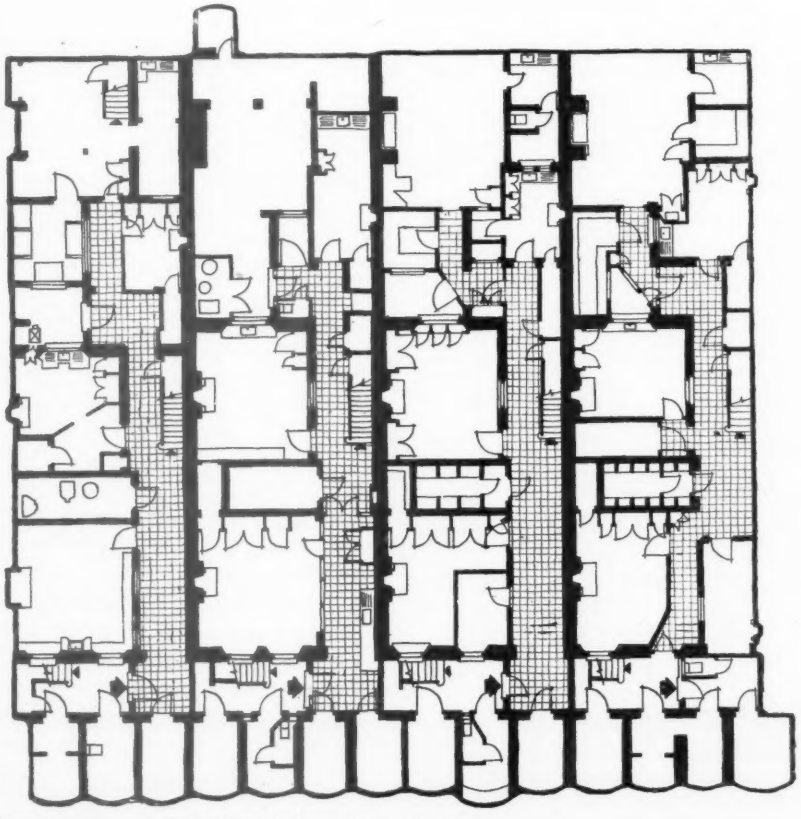
Site plan

THE SCHEME: *Eaton Square contains 118 very large terrace houses on the grand scale. Before the last war, most of these houses were leased separately for single family occupation. As the leases of three, or preferably four, houses together, revert to the ground landlord, these blocks are converted into 3-bedroom maisonettes on ground and garden floor levels and into one to four-bedroom flats on upper floors. Maids' rooms and bathrooms are also provided for tenants with living-in-staff or for those who require staff accommodation nereby.*

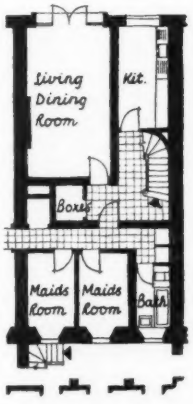
PLANNING DETAIL: *So many terrace houses suffer from narrow frontages and excessive depth from front to rear. In this case, frontages average 27 feet and on the lower floors the houses extend, in many cases, to a depth of 86 feet*



Gardens at the rear after conversion



Typical basement (garden floor) before [Scale : $\frac{1}{16}$" = 1' 0"]



Typical garden floor maisonette after

should consider at least part of the extended family as one application rather than the immediate unit only. This would involve additional complications, of course, but the principle is sound enough—if it could be worked. The alternative is to provide within the converted houses, in the applicants' original neighbourhoods, accommodation to meet this real need. Such a view, it could be argued, is old fashioned and outdated, but the salient fact remains that these old people who are unable to support themselves entirely either financially or even physically, must rely on assistance from one source or another—and the first call is on their own family. In designing new units within existing buildings, adequate accommodation for these elderly people should not be overlooked—their requirements are modest enough and even a single bed-sitting-living room with bath-cum-kitchenette would suffice.

Unit Sizes and Distribution

How large or how small new units should be is a local problem and will depend upon local demand. During the early years of the post-war housing drive, three and four-bedroom types have predominated, but since then the policy has been modified to meet a wider range of individual needs. Many three bedroom houses are under-occupied, with the third bedroom let to the lodger or simply used as storage—or even left empty. This unused or misused floor space represents wasted capital expenditure and calls for a reshuffle of tenants. Owners of newly converted units can benefit from this experience by assuring themselves that the flats, maisonettes or subdivided houses provide no more space than can be fully occupied by the tenant's own family.

The scarcity of living-in and daily domestic help dictates the need for smaller and more compact units, and, where existing structural conditions permit, sleeping areas should be kept down to a comfortable minimum size so that the living space, which is used most during the twenty-four hours, may benefit from this economy.

The type of accommodation normally provided in flats and maisonettes rarely takes into account the restrictions which are not met by those occupying separate houses. To encourage normal living, facilities should be available for the pursuit of hobbies and other interests while space should be related to the needs of differing family incomes. Large rooms with lofty windows will not appeal to those whose slender incomes cannot be stretched to meet the expense of suitable furniture, furnishings and heavy bills from the coal merchant. (In limited circumstances, tenants can obtain local authority assistance under Section 72 of the Housing Act, 1936, for the supply of furniture and furnishings.)

Families must realize, of course, that they cannot expect the same freedom and liberties in a flat as they would enjoy in a house, but this is not an excuse for any shortcomings in the planning. In this essential study of occupants' needs, some middle or lower income tenant groups may prove to be keen gardeners or pigeon fanciers, or to be interested in other hobbies such as carpentry and photography. Noisy hobbies cannot be carried on in the flats themselves but it may be possible to provide facilities for both indoor and outdoor interests once the demand for them is realized—and this is reviewed in detail later (see page 746). Before settling the proportion of each type of accommodation, which may be dictated to a certain degree by existing structural arrangement, this question of local demand must be very carefully analysed. Permanent conversion has to be capable of competing with detached and semi-detached houses when the property market slackens—and it is for this reason, as well as for the benefit of the occupants themselves, that more is necessary than simply the flats themselves. Where flexibility is possible, this should be encouraged to meet part way, at least, future trends in the local demand. For one has always to remember that flats do not necessarily make the best homes for all and that if ever the small house market should become easier, flats are likely to fall vacant before these houses.

The size and type of accommodation to be provided will be governed broadly speaking, by the following four categories:

(*a*) Young married couples without children —or single persons.

(*b*) Young families—several children.

(*c*) Elderly couples—their children having married and departed.

(*d*) The aged needing care and attention—partial or full time.

Allocating floors for these different groups of tenants in converted houses of several storeys is an important matter; those in category (*a*) should be on the highest floors, (*b*) as near ground level as possible and (*c*) on ground, 1st or lower ground floor. Where continual care and attention is needed in the case of category (*d*) these can best be grouped in one building where trained staff could live on the premises. The more agile would undoubtedly prefer their own homes, however small, within easy reach of younger relatives who could care for them, in case of illness or other emergencies. Where finance permits the installation of a lift, these allocations would apply to a lesser degree but category (*b*) should wherever possible be at ground level for easy access to out-of-doors for children, and simplified parental supervision.

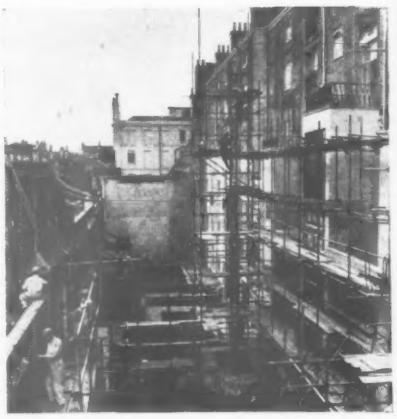
The success of any scheme will be assisted greatly by the careful choice of tenants. Similar standards of behaviour are of more importance than varying income groups, but always in one's mind there must be the desire to rehouse families and individuals in environments which are not foreign to them, and where they may have facilities to pursue spare-time interests without disrupting their neighbours' peace by their "noisome or noxious" pastimes.

Suitability for Conversion

Locality

To protect capital which is invested in conversions, developers must be assured of a fair market and that the disposal of units

EATON SQUARE continued



Top, the rear during conversion
Above, a typical first floor

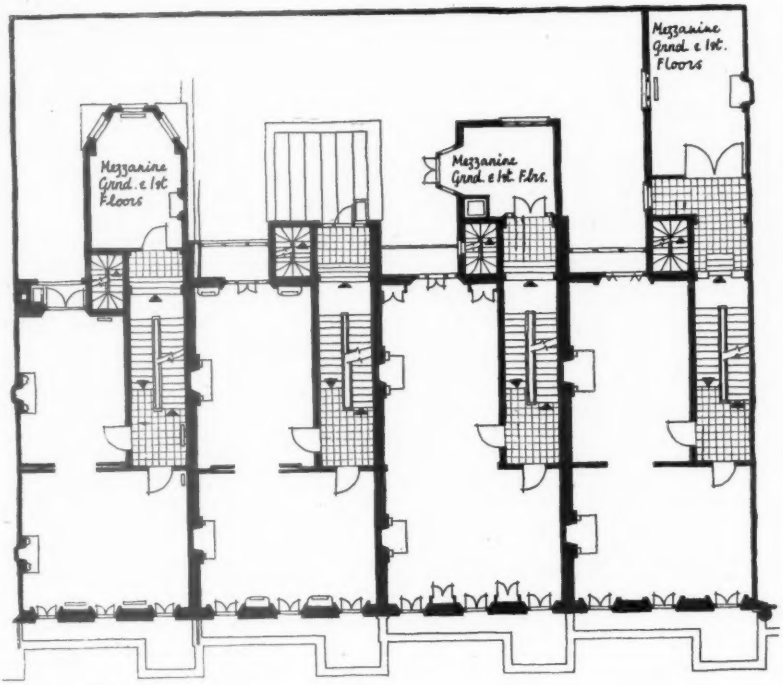
behind the street facade. To increase the problem, rear extensions have been added from time to time to accommodate bathrooms, w.cs. and other odd rooms so that today these elevations are a jumble of curious shapes festooned with plumbing of varying decades. The replanning principle has been to demolish all extensions beyond the rear external wall of upper floors. In some cases this has involved a complete rebuild of this structural wall from garden to pent-house level. But demolition has created an open area between the main house and the mews, providing sufficient space for the layout of gardens.

SERVICES AND FITTINGS: *The most economical unit of reconstruction both from the point of view of planning and services is four adjoining houses. From one boiler room, central heating and domestic hot water is supplied to all flats and maisonettes. The incoming tenant takes over his flat more or less as a shell, for built-in fittings such as bedroom cupboards and kitchen fitments are not provided. Similarly, interior decorations are left to the tenant, but the landlord provides a notional allowance for basic fittings and decorations. This arrangement suits the tenant of these high rented units—in a modified form the principle could be applied to less ambitious conversions.*

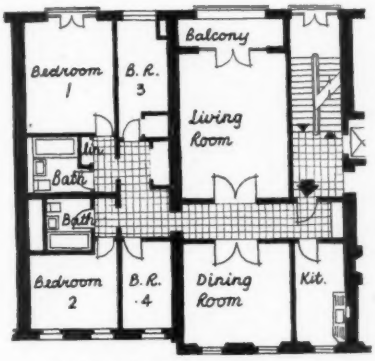
COSTS AND RENTS: *The average cost of converting one house, within which are the equivalent*

of four flats, is £16,000. Rents vary from £400 for a two-room flat to £1,500 for a flat extending over two houses. The latter contains very large living and dining rooms, kitchen, 4 bedrooms, 2 bathrooms and a cloakroom. But the average rents range from £750 to £800 p.a. for a flat containing living and dining rooms, kitchen, 3 bedrooms, bathroom and cloaks. First floor flats are the most expensive units, then the fourth floor pent houses and thirdly the garden flats.

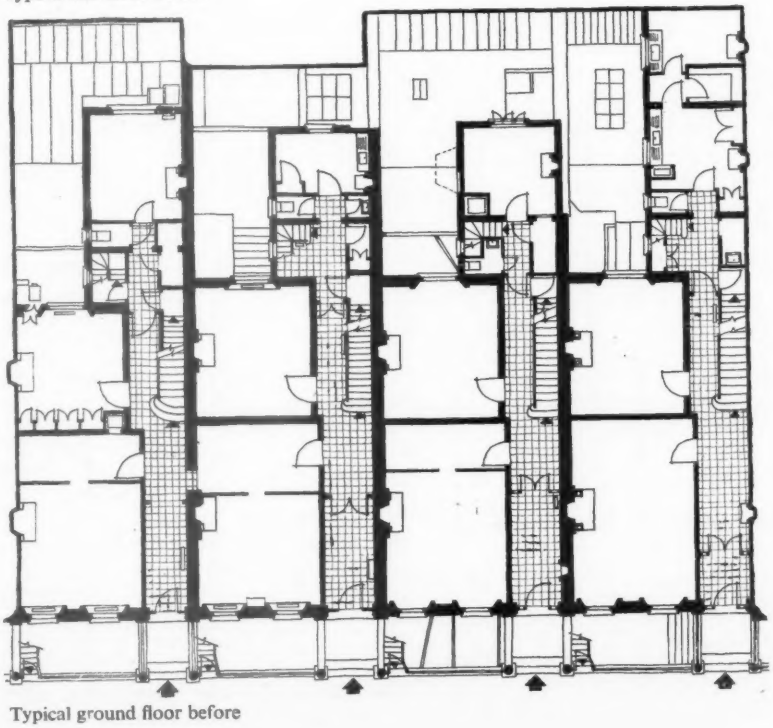
LEASES AND CHARGES: *The leases are full repairing and for a term of 21 years with an option to terminate at 7 and 14 years. 42 year*



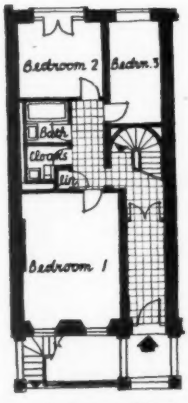
Typical first floor before



Typical first floor flat after

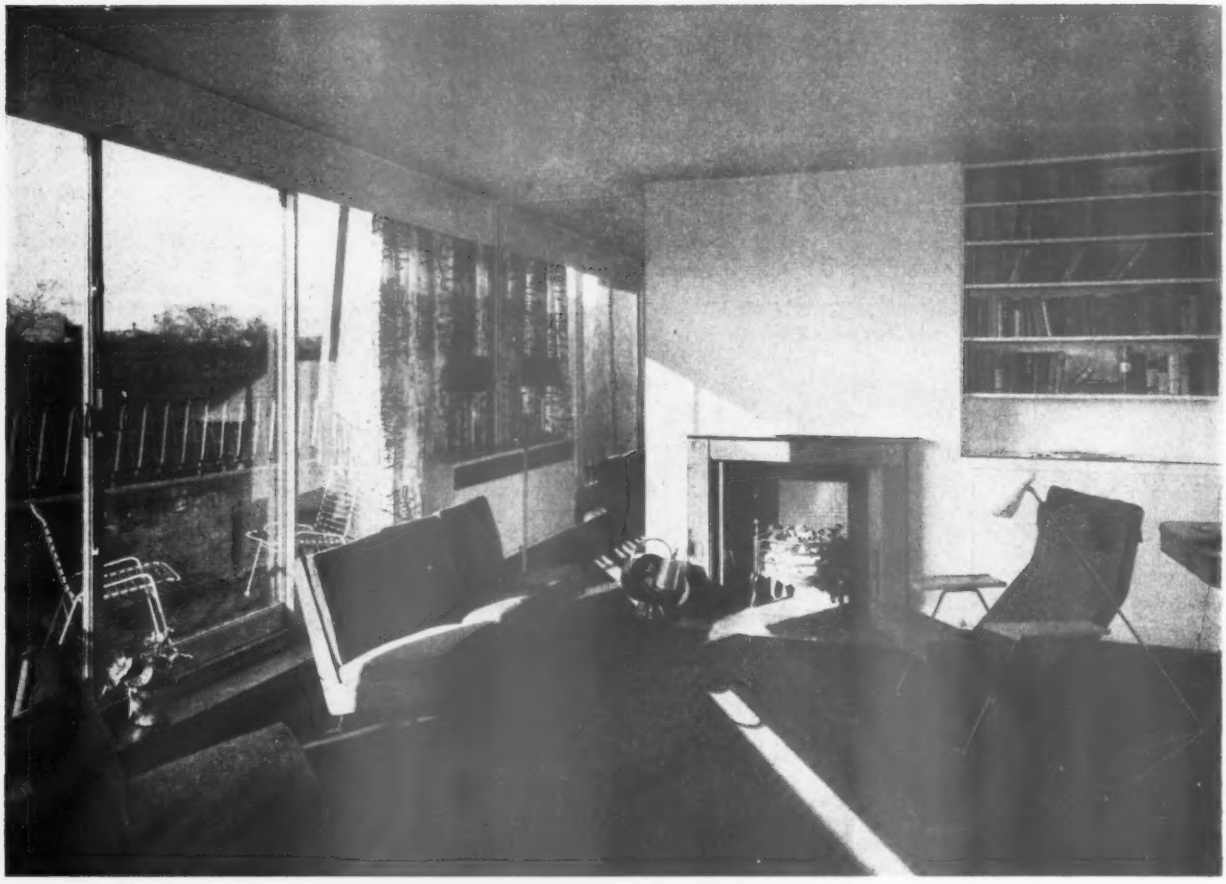


Typical ground floor before

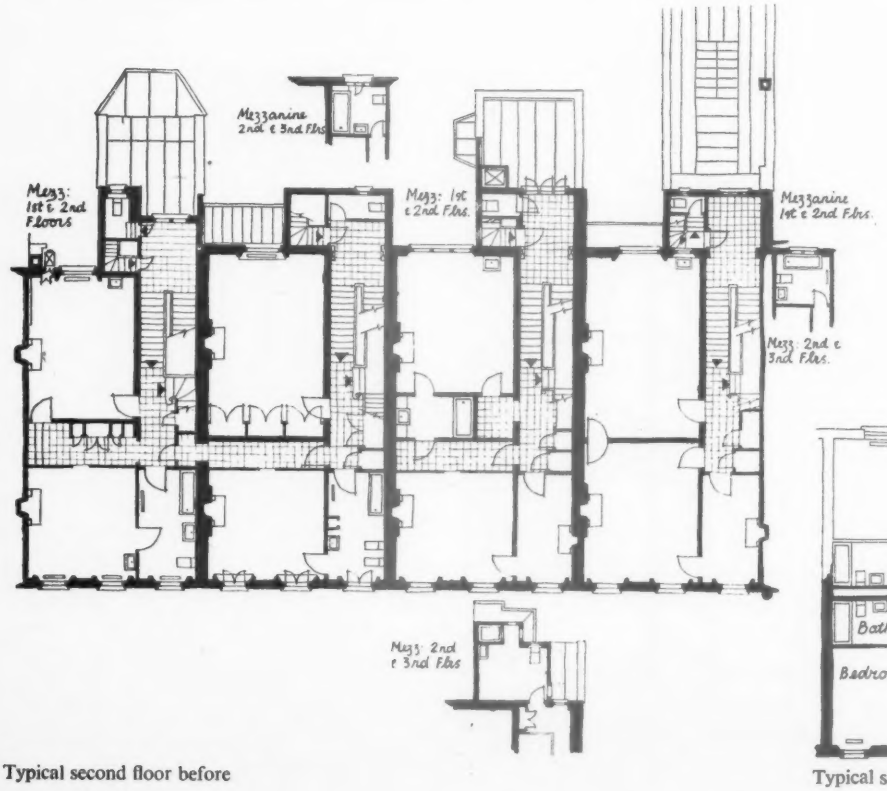


Typical ground floor maisonette after

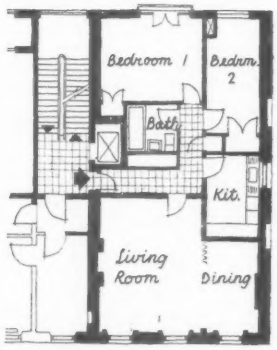
EATON SQUARE continued



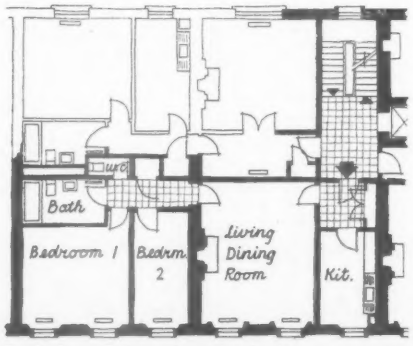
A typical penthouse flat after conversion



Typical second floor before

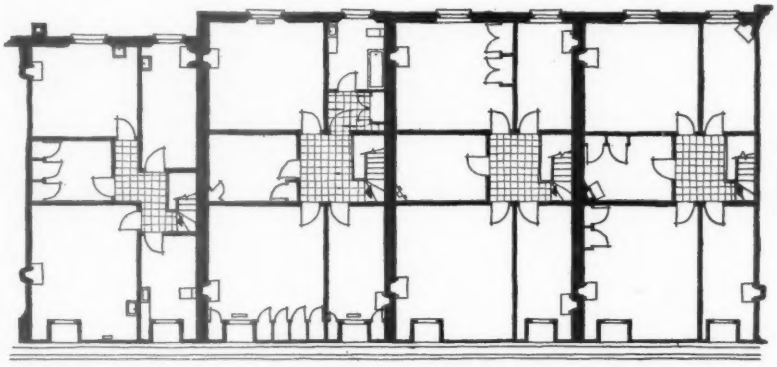


Typical small flat (upper floor) after

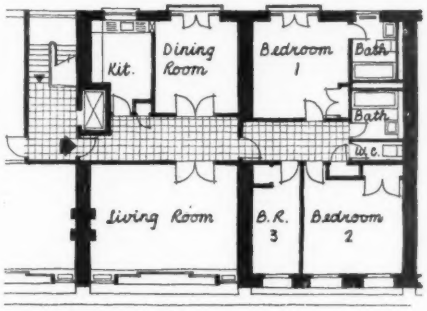


Typical small flat (upper floor) after

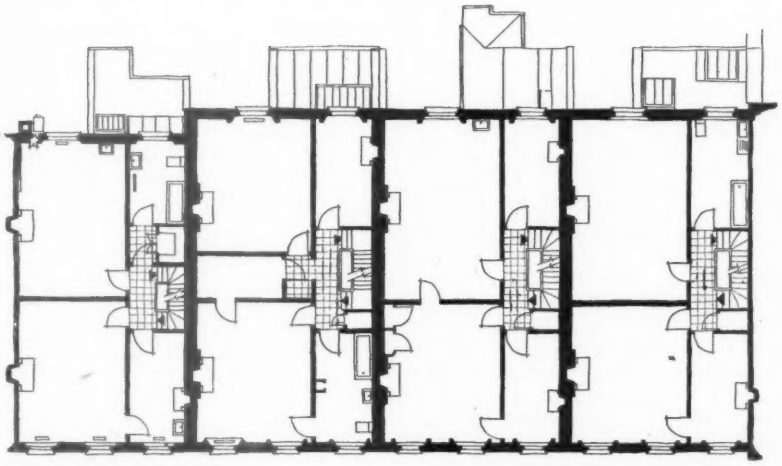
leases may be granted also. The rents referred to above include rates, domestic hot water, central heating and porterage. Service charges are now separated from the annual rent to facilitate adjustments when there is a change in rates of wages and fuel. A nominal charge is made for the upkeep of the gardens in the square. This entitles the tenant to a key to the gardens.



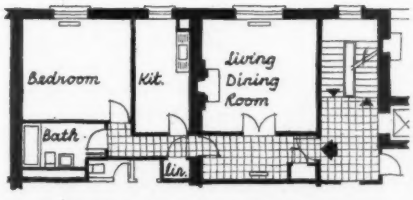
Typical top floor before



Typical penthouse flat after



Typical third floor before



Typical small flat at rear of upper floors after

created involves no great risk—also that their standards can compete with other property in the neighbourhood. These assumptions should not be based on the trend of current markets but on conditions, say ten years and more hence, when the present demand may have eased and standards risen.

Whereas the comparative risk may be small in urban surroundings, this is far from true in less populated areas. Even now, there are many instances where 50 per cent. of converted units are unoccupied and have never been taken up since reconstruction, whilst their owners who, through lack of sound advice, embarked on these ventures, are at their wits end to meet their financial responsibilities. A careful examination of several cases revealed a common weakness —remoteness of location. Large houses which are far away from public transport services can be purchased at prices considerably less than the equivalent on built up areas, but the unwary should not be deluded by this enticement. Wishful thinking can be remarkably expensive when you assume that your limited capital can be quickly recouped by the sale of a flat or two, or by rents which will cover the interest and loan repayments. This may be true enough in accessible localities but not, as a rule, elsewhere. Satisfied that a market exists for the standard and type of accommodation to be provided, the planning authority should be approached and the local redevelopment plan studied carefully, for it may be that this particular property could be contained within a clearance area, or adjoining one. This new development even if not imminent, may be designed to provide dwelling units for lower income groups than these envisaged by the private owner and this may in time affect his project detrimentally. It is usual in built-up areas for values to even out over the years, and, in this process, better quality property fails to maintain its appraisement. It is therefore all the more important that future tendencies should be anticipated at an early stage in the proceedings.

Restrictive covenants or other similar controls on land and buildings can often prevent, or attempt to prevent, development or change of use. This aspect is worthy of thorough investigation at the outset.

General condition

The choice of a building and the assessment of its condition is a specialist's job and any layman undertaking this responsibility should have exceptional knowledge of the many pitfalls awaiting him. Numerous properties are beyond economical repair and conversion already, and the following items are some which would condemn a building right from the start.

i. Those infected very seriously by vermin (*e.g.*, bed bugs, timber beetles, etc.).

ii. Uncontrollable dampness or dry rot—or where controllable only at an uneconomic cost.

iii. Greatly neglected fabric in a state of advanced decay (once a new conversion has been completed, it should be free of excessive maintenance).

iv. Costly conversion work involving a disproportionate amount of capital outlay.

v. Large and lofty rooms with fenestration of a character which prohibits economical subdivision of floor space—and it should be remembered that high ceilings imply excessive heating costs.

vi. Any building which has a useful life of less than about 15 years after conversion.

To ascertain the true condition of a property is a most responsible operation and upon its reliability depends not only the decision to purchase and convert but whether the completed job proves to be a financial proposition. Undetected dry rot, for instance, can turn the scales against the developer, as can fractured party walls which may have to be reconstructed. Therefore the greatest care should be taken in the preliminary survey to cover by inspection every part of the building and its services in detail—and a comprehensive list of items would eliminate any oversight. No experience is more ignominious to the architect than the charge of negligence.

Plan arrangement

A further essential consideration is the choice of property which is capable of simple conversion at reasonable expense. Existing plan arrangements will offer suggestions if they do not dictate the most economical reshuffle. A natural conversion may involve only the bricking up of one or two openings as in the case of Brookfield House, illustrated on page 751, where an old house was sealed vertically to create two semi-detached houses. In this operation the external character of the house was retained and also the pleasantly proportioned rooms.

The success of any conversion scheme lies really in the skill to eliminate any impression that it was not always thus. Crude partitioning which cuts through features witihout respect for their original purpose or regard for their existence is contrary even to minimum standards. An appreciation of existing room shapes is essential if the best use of available space is to be achieved and the ill-effects of make-do conversions to be avoided. But there are some cases which in no way offer economical solutions and it would be foolish to deny this. Examples, for instance, which require extensive structural work, new party walls or complicated plumbing systems may consume more than a fair share of capital expenditure and jeopardize the whole scheme.

The limits of economical conversion are prescribed by the standard of units to be provided and by the method of capital recovery. Each scheme has to be assessed individually and no general rule of thumb will apply; thus at Eaton Square (see page 730) the extensive amount of new work has proved justifiable only because a market existed for that type of property. But the local authority work at 133, Hamilton Terrace, admittedly an adaptation (see page 757), catered for lower income groups and therefore the outlay was limited—but it was considerably assisted by a plan arrangement which required little constructional work. This last case shows how near an adaptation can approach to a true conversion and it is rather surprising that the small additional work that was needed to create self-contained units, with their own entrances off a common staircase, failed to be carried out.

Standard raising

Buildings erected for specific purposes, other than for housing, may have been exempt from a number of byelaws; but once a change of use takes effect, the original waivers no longer necessarily appertain. In order to relax or dispense with any requirements which the local authority may consider unreasonable in a particular case, they may, with the Minister of Health's consent, use powers contained in Section 63 of the Public Health Act, where this applies. Some local authorities condone minor infringements; they advise applicants that such an item contravenes the regulations and therefore it cannot be approved; but that no action would be taken if the work is carried out. Co-operation of this nature might be emulated to advantage by other authorities for, after all, byelaws and other regulations only exist to assure minimum standards—and where these are unattainable and are unlikely to jeopardize life and limb, surely the authority should attempt to help rather than to hinder.

Respect for the Past

Those older buildings which provide space and opportunity for the increase of accommodation, contain at times features of architectural or historic interest and the character or atmosphere which they create deserves respect. Buildings of exceptional value are being recorded by the Ministries of Works and Housing and Local Government; the task is considerable and it will take years to complete. Many areas have already been inspected and the buildings of merit "listed."

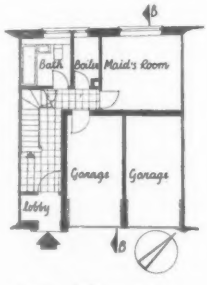
Owners of newly acquired property should discover whether their buildings have been so "listed," for restrictions can be imposed to control the degree of alterations which may be sustained by any elevations or interiors. But apart from these more imposing specimens, the average house often contains features worthy of respect. Front doors and fanlights, staircases, panelling, doors and architraves, cornices and ceilings, fenestration and many others can be of pleasing design, and care should be exercised to preserve these when possible.

Replanning may conflict with attempts to retain some of these features but in the last resort one should not overlook the possibility of dismantling and reusing them in other positions. Restoring missing sections or introducing, say, an entrance door into a period elevation calls for expert knowledge of that period. Nothing is more offensive than heavy-handed restoration and mis-applied detail—if a fanlight is missing over a fine door, make sure that the new one is true to its period. A job which is done properly need cost no more than the shoddy alternative—and conversion provides the opportunity to put right what is amiss.

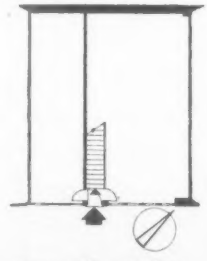
Boscobel Place, S W 1

Architect : Raglan Squire

THE SCHEME : *This is interesting because it forms part of the same estate as the first example in Eaton Square (see page 730). Originally, it was typical of the mews dwelling, with coach-house and stabling at ground level and a small flat above. It now provides, on the ground floor, two garages, boiler-room, maid's room and her bathroom. The whole of the first floor is occupied by a large living room, a dining room recessed off it and a kitchen. On the floor above are*

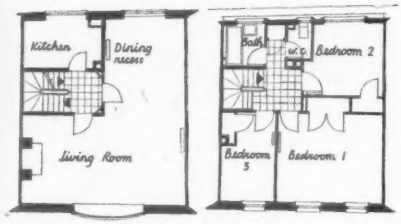


Ground floor after

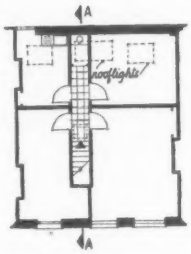


Ground floor before

[Scale : $\frac{1}{16}$" = 1' 0"]



First floor after Second floor after



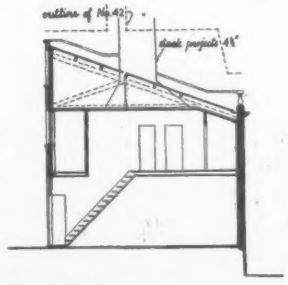
First floor before

three bedrooms, bathroom, w.c. and linen cupboard.

PLANNING DETAIL : *As the sections show, a further storey has been added. But the parapet height from the road level in Boscobel Place has been increased by little more than one foot, whilst at the rear the increase in parapet height is only 2 ft. 6 in., the dormer roof being set back behind this. Whereas originally only one small window overlooked the backs of Eaton Square, this reconstruction provides adequate light to both sides—and herein lies one of the advantages of single ownership.*

SERVICES AND FITTINGS : *Domestic hot water and central heating are supplied by the boiler at ground level. The cold water storage tank is housed in a small tank room on the roof.*

Section B-B (after)



Section A-A (before)

One or two suggestions which must be obvious to most are worth recording, perhaps if only for the few:

i. Before replanning starts, consider what features justify retention and, if mutilated, whether they can be restored at reasonable expense.

ii. Study elevational arrangement while replanning and avoid the intrusion of new small lavatory windows into a balanced elevation. If such disfigurements exist already, attempt to dispose of them by internal rearrangement. This principle applies equally, of course, to other somewhat similar follies.

iii. Don't subdivide rooms indiscriminately, but have some respect for proportion—and consider whether the new rooms will "furnish."

iv. Avoid the "skittle-alley" w.c.—an amusing but wasteful feature in many of the larger houses.

v. Control new partitioning. When at right angles to an outside wall, allow sufficient space between it and the window for curtain hanging. Don't cut into ornate cornices unless they are to be extended along both sides of the new partition—or removed altogether. Occasions arise when the tops of partitions which are acting as screens rather than solid walls, can be kept below the bottoms of cornices.

vi. Don't remove porches, bays or other useful extensions casually to avoid the expense of repair, unless this procedure is really justified. Denuded elevations, unless receiving skilful after-treatment, can look abominably crude and may destroy the neighbourhood atmosphere also.

vii. Consider the street facade as a whole and not just as one isolated unit which is only part of the urban scene.

viii. Above all—avoid the "converted look."

Conversion principles

Restricting the area of replanning

The combination of many diverse influences prescribe the extent or area of rearrangement. War damage, fabric decay, availability of open space, additions over the years to the original design are some of these, but the personal needs of the owner or developer are equally important. As a general rule, the object should be to convert within the existing structural walls and to avoid any new extensions beyond them. The most dilapidated areas are best utilized for concentrations of rearrangement—this method reduces repair costs which are excluded from conversion and improvement grants.

Existing rear extensions invariably demand the greatest expenditure on maintenance and repair—single-storey lean-to's are better demolished if sufficient floor space remains. Walls which are exposed after the removal of these extensions may need complete refacing or surfacing—and here again new material introduced should be treated to blend with existing work.

Removal of these rear extensions can be recommended for a number of reasons. The current tendency for compact planning, with smaller bedrooms and the minimum of corridors and circulating space enables the designer to compress his scheme within a simple shape. Extensions and passages complicate and reduce the plan efficiency—hence back wings are no great advantage today. In the case of repetitive terrace houses, demolition opens up rear elevations to light and air—thus better use can be made of what may have been previously dreary and inadequately lit rooms. Eaton Square well illustrates this principle of demolition (see page 730). The meandering 19th century plumbing systems, relegated fortunately to back elevations, were obliged to wander here and there to collect wastes and rainwater from odd corners and projections. By eliminating these extensions this plumbing can be replaced by simple down services. In addition to the foregoing, recurrent maintenance and repair expenditure is reduced automatically.

Furthermore, the diminutive backyards are increased in area, whilst basement rooms which are strictly unfit for human habitation are returned to circulation. If needs be, the ground levels of these areas, particularly where they adjoin basement rooms, can be lowered by the formation of sunken areas. Back yards which were good for no more than caterwauling rendezvous would, in most cases, be of sufficient size to introduce paved gardens with modest planting—and here again the Eaton Square scheme shows what can be achieved (see page 731). This is an ambitious scheme but the underlying principle is applicable equally to less grandiose conceptions.

Space finding

i. *Basements:* Prudent examination of plans and section may reveal opportunities for increasing floor areas without penetrating beyond structural walls. Basements and lower ground floors in urban districts sometimes fail to qualify as habitable spaces by non-compliance with local regulations. In the previous paragraph the lowering of ground levels has been suggested as one method for improving conditions—this has been applied successfully in the conversion of Collonade House at Blackheath (published in the AJ of March 11). Terrace houses fronting on to street pavements with small areas between them provide less opportunity; window heads can be raised and glass areas enlarged to increase light and natural ventilation—but occasions must arise when the severity of local regulations, such as those of the London County Council, will prohibit the use of these spaces as habitable areas. But this should not suggest that other uses cannot be found—alternatives are discussed in a subsequent section on planning needs.

ii. *Staircases:* The position of an existing staircase impedes the best use of floor space at times, and one striking instance of this, of which there must be more, is a typical early Victorian detached house plan with the central entrance and internal staircase (see page 747, illustrating 25, Dawson Place). In this example the original layout was too rigid and so dominated by this central stair that any reasonable unit isolation on each floor was impossible. By removing the staircase,

the problem was simplified—and perhaps the new external approach located outside the structural walls is the extension exception which proves the rule. By this rearrangement not only has the planning been freed and additional space provided, especially at second floor level, but through-circulation and its inevitable disturbance to residents has been eliminated also. Where more than one staircase is provided, and it is assumed that this additional access is not required as an alternative means of escape, this space also can be released for other purposes. In fairness, one must admit that new staircases are expensive; and that re-using an existing one in another position, is less so. But whatever the circumstances, the additional cost will have to be compared with the benefits of its transfer.

iii. *Internal space:* Buildings with great depth from front to back, more especially the terrace house, contain internal floor space which is scarcely suitable as living areas due to inadequate natural light. By utilizing these areas for lift shafts, storage or box rooms, bathrooms, etc., valuable space need not be wasted. Bathrooms planned internally must be ventilated mechanically but where such an arrangement can be duplicated on each of several floors, the additional cost of the necessary plant often is justifiable.

iv. *Roof adjustments:* Attic or topmost floors of buildings frequently can increase floor space by roof rearrangement. The poky attics to which domestic staff were relegated during the last century contain generally small rooms with walls so arranged to support trusses and purlins, whilst roof pitches with rafter plates almost at floor level prohibited normal ceiling heights nearer than five or six feet to external walls. By inserting continuous dormer windows, full use of the entire top floor is achieved.

The percentage increase can be quite surprising when a fair sized flat can be planned in a space occupied previously by one or two very poor bedrooms and staircase access. At 25, Dawson Place, for instance, the increase on the original (see page 748), floor area is 27 per cent. and by absorbing the staircase well in addition, the combined gain is about 36 per cent. But this is not the only asset. The new dormer permits freer fenestration treatment which introduces greater planning flexibility and the atmosphere of the "pent-house." These top floor units benefit also from less street noise and greater privacy—while ceiling heights, always reduced at this level, are more in scale with contemporary standards.

Other examples of this can be found at Eaton Square (page 730) where terrace facades are "listed"—but by retaining the original balustrade and setting back the pent-house external walls to form a small terrace between them, the developers were permitted to introduce large areas of sliding glazed doors which were out of sight but scarcely in keeping with the original elevations which remained otherwise unaltered. This attic treatment has been so successful that the pent-house flats are in greater demand than any of those on the lower floors.

If it is possible to increase floor space in this way and to improve amenities at the same time, the rise in capital outlay will normally be covered adequately by the enhanced value of the property as a whole and its ability to earn higher rents. Occasions arise when it is more economical to remove the roof altogether and completely to reconstruct the upper floor—but here again each individual case must be judged on its own merits. However a building is remodelled the first essential is to make the best use of existing floor space and to simplify structural arrangement so as to reduce or delay deterioration and maintenance to the absolute minimum.

The method of subdivision

In general, there are two systems of subdivision, (i) horizontal and (ii) vertical. The choice is dependent upon the number of houses in the scheme, their size and existing structural planning, the type of accommodation required, the rents and predicted interest on capital expenditure. In both methods of conversion insulation against structural and air-borne noise requires far greater consideration than it has received hitherto. These old houses, though solidly built, were designed originally for single family occupation and invariably insulation between one floor and another received little or no attention. Vertical subdivision is most applicable to individual buildings of floor areas sufficient to accommodate (*a*) one or more units per floor or (*b*) separate houses or maisonettes. In the case of (*b*) above, insulation problems are less acute. Individual houses require no horizontal "barrier" but party walls must be capable of absorbing or resisting noise from adjoining units. Where maisonettes are planned in 3 and 4 storey buildings, horizontal insulation is required only in floors between each maisonette. In a three storey house, where a flat is provided at ground level with a maisonette occupying the two upper floors, the advantage to tenants in the upper unit is that they have to rise only one storey to reach their living accommodation. But whether this arrangement or its reverse, is adopted, depends upon the make-up of the families to be housed.

The greatest precautions against noise are needed, however, in the alternative horizontal conversion. Although a single building may be subdivided thus, this system presupposes two or more adjoining buildings (terrace houses) whose party walls are punctured so that flats may be extended over two or even three houses. Here again the extent of the new accommodation and the size of the existing houses will determine the best subdivision—but except where very large units are envisaged, groups of four terrace houses converted in pairs horizontally are perhaps the smallest economic unit, particularly when domestic hot water and central heating are supplied from one central plant.

Apart from the convenience of units planned on one floor, space saving and the simplification of plumbing and other services are further advantages. Where two flats are designed over four houses, all flats can be served by one staircase and the other three

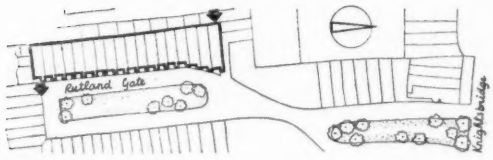
Before conversion

Rutland Gate, S W 7

Architect: Leslie Robinson

THE SCHEME: *This development is a further example of converting the very large terrace town house. In all, 18 houses are designed to provide 85 flats and a basement garage accommodating 85 cars with a car washing plant for use by the attendant. The main interest of this scheme lies in the formation of the garage, an unusual feature in itself and one which could be emulated in other projects where conditions permit.*

After conversion



Site plan

PLANNING DETAIL: *The flats vary considerably in size and arrangement. 36 units are provided in houses nos. 48 to 55 and 49 in nos. 56 to 65. Originally the whole garage was intended to be underground at basement level where so much space was available that was unfit for human habitation. But through lack of sufficient natural ventilation and the expense of an artificial ventilating system which the authorities demanded, and for other reasons as well, this scheme was abandoned. In place of it, an open roadway is to be formed behind nos. 48 to 55, off which are garages on either side with the underground garage beneath nos. 56 to 65. Natural ventilation is to be provided in this latter area by means of louvred upstands to encourage air circulation.*

Headroom within the garages has been quite a problem. The desirable height was 7 ft. 6 in., but the heavily plated steelwork to support the buildings above was estimated to cost something like £5,000 more than for an alternative design with 7 ft. headroom. To provide access for steelwork and demolition lorries, it may be necessary to excavate the basement roadway to a depth of 6 in. for a few feet either side of each party wall opening. The restricted working area for the steelworkers will call for an amount of experiment in handling the material in such confined spaces, but after experience in the erection of steelwork in no. 65, it is hoped to devise a method whereby the new structural members can be threaded through the party wall openings to enable the steelworker to remain on site at all times—and even during the demolition of adjoining bays.

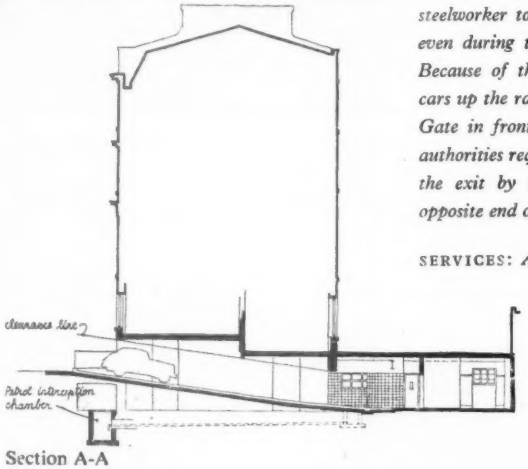
Because of the acceleration necessary in driving cars up the ramp and the narrowness of Rutland Gate in front of no. 48, the Town Planning authorities required the ramp to be the entry, with the exit by way of Ennismore Mews at the opposite end of the block.

SERVICES: *A sprinkler system will be installed in the underground garage section only, beneath nos. 56 to 65. Drains from the existing rear extensions in this same area will be diverted around the new foundation bases. A new and separate drain will run the full length of the garage (from end to end it will be approx. 396 feet) with gullies in each bay, all terminating in a petrol interceptor. In the flats, lifts as well as central heating and constant hot water are to be provided.*

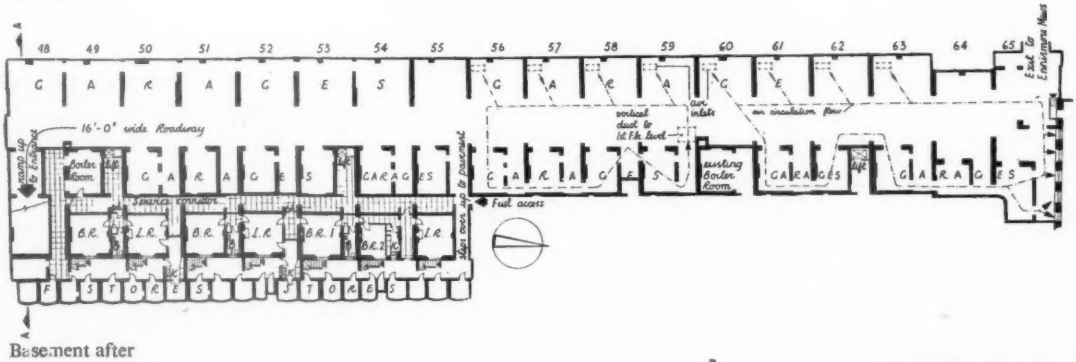
COSTS AND RENTS: *The total cost of the whole development is estimated at £225,000 and the separate cost of the garage about £25,000. Rents for flats in houses 61, 62 and 63, range between £260 and £450 per annum, exclusive of rates.*

RATEABLE VALUES: *Very approximately, these are about one-third the rent.*

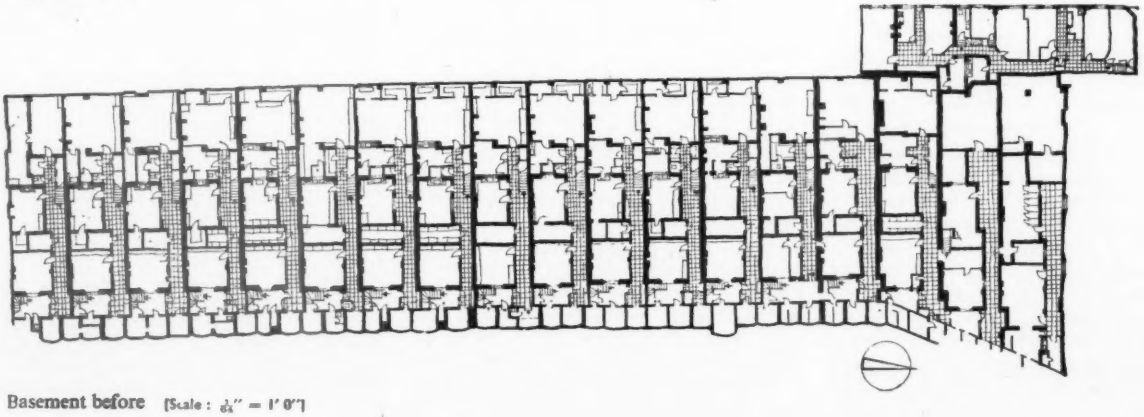
LEASES AND CHARGES: *Leases, incorporating "fair wear and tear" clauses, are offered for periods of 7 years, or longer if desired.*



Section A-A



Basement after



Basement before (Scale : $\frac{1}{64}$" = 1' 0")

demolished, thereby providing additional floor areas for other purposes. Local regulations may demand, of course, alternative means of escape in case of fire in certain circumstances and such provisions need to be discussed with the authorities in the early stages. Alternatively, the standard of fire resistance of the remaining staircase may have to be raised and other precautions taken—but these are individual problems which must be settled locally.

Whatever the method of conversion adopted in the design of flats, solutions have to be found for the easy access to and storage of perambulators, bicycles and fuel—and the sanitary disposal of refuse. These essentials and other facilities are considered on page 745, but, however commendable the ingenuity of the planning may be, the scheme must fail unless insulation problems have been solved also. Middle and lower income groups cannot afford close-carpeting laid on sorbo underlays, or other similar coverings, which are inadequate and, in some cases, unhygienic substitutes for efficient insulation. The Building Research Station is completing a further study of this problem with particular regard to the converted dwellings, and its findings, when published, should deserve close scrutiny and application.

Partial demolition or severance

Earlier in this section, the existence of buildings which were unsuited to conversion has been mentioned—and these exceptions are mainly due to physical unsuitability or remoteness of location. But there is a further category where the owners may wish to retain sole occupation of their large houses but cannot afford to maintain them. To many of these houses extensions have been added at different periods—some in good taste, others less creditable. Through reduced value of money, lack of resident staff and the changed scale and method of present day entertaining (due in part to improved transportation) the countless staff bedrooms and extensive wings for accommodating guests have become not only redundant but a considerable liability.

Closing wings or sections of houses for indefinite periods during winter months without proper ventilation and heating can result in rapid fabric deterioration—thus unless buildings are adequately cared for and used, their unwanted portions are better demolished. Houses which are divested of later additions can provide manageable homes for present day use and their original character, once lost amongst less distinguished yet over-powering extensions of earlier times, can be retrieved also. At "Fairlawne," near Tonbridge (see AJ December 2) the Victorian additions have been removed and the sites of demolition turned into paved and planted areas; new purposes have been found for rooms which were out-dated—for instance, the old kitchen is being transformed into a squash court. And again, at Sledmere in Yorkshire (see AJ December 9) the endless wings accommodating every kind of room that was essential for household catering in days gone by, have been demolished and in their place a formal Italian garden created. The land is poor beneath areas covered for many years by buildings. Large expanses of lawn and herbaceous borders are costly, for the subsoil must be thoroughly cultivated and new topsoil provided. Paved courts and formal gardens with occasional planting are recommended therefore where finance imposes its own limitations.

The reduction of floor area by demolition reduces automatically internal and external maintenance and repair work, as well as domestic cleaning, lighting and heating—and any appreciable diminution should reflect upon the rateable value for rating and taxation purposes. Furthermore, salvaged building materials, fittings and sanitary equipment can either be sold or retained for use in repairs and improvements to the estate—whilst newly-created terraces and formalized gardens which conceal demolitions can also be constructed from this supply of material. Flagstone from the old kitchens, pantries and passages are ideal for paving and will cover large areas when interspersed with brick, tile and flint patterning.

This partial demolition can also provide increased accommodation for estate purposes. Removal of internal walls and the formation of new external access can transform outhouses and the like into excellent implement sheds, temporary crop-storage areas and many other purposes to suit local agriculture and industry. However, the storage of artificial manures and the installation of chicken batteries in the finest rooms of houses of marked architectural or historic interest does seem to be carrying this search for space use much too far—but this has actually been done.

Houses can be ruined, of course, by careless destruction for the sake of economy, and demolition has its limits. Victorian and Edwardian additions seldom achieve architecturally a standard comparable with the original and it is to these buildings that this principle chiefly applies. But houses of interest which are complete in themselves present far greater problems when economies demand space reduction. Their owners are reluctant to provide flats or maisonettes for their estate employees in parts of their homes because of the loss of privacy.

The large town house presents fewer difficulties because of the almost incessant demand for a variety of units. But the depth (frontage to rear) of certain types of terrace houses complicates and reduces the efficiency of replanned units, and when confronted by problems of this kind, demolition of part or all of the rear extensions becomes a solution worth considering. Reduction of floor area may solve at times one problem whilst posing another. Not all schemes will show an adequate return on capital outlay after the loss of valuable income-producing areas and this possibility should not be overlooked.

But planning which might suffer otherwise from awkward existing shapes can be improved if parts of a straggling arrangement can be severed from the remainder and then treated as an independent scheme. In the case of 38-39, Princes Gardens (see this page), the section shows how the maisonette at the rear can absorb space from the main building, thereby eliminating

Before conversion

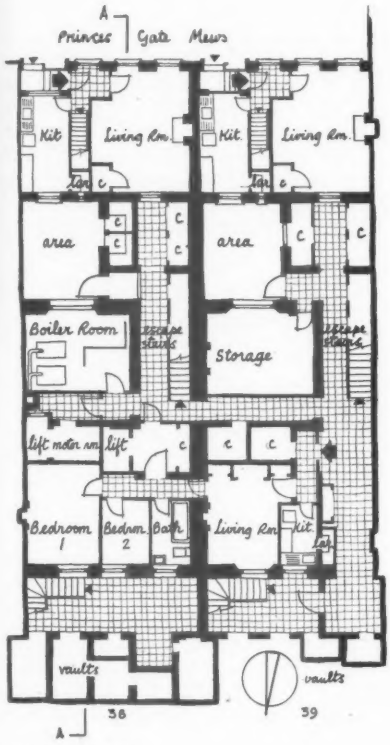
Princes Gardens, SW1

Architect: Neville Parr

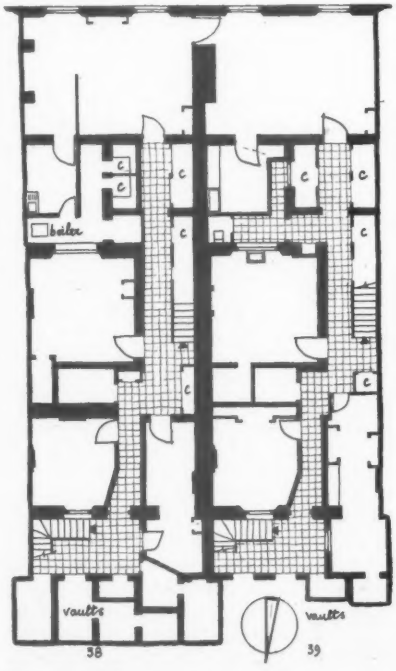
THE SCHEME: *By current standards the excessively large town house offers more problems to the designer than the smaller variety. Uses can be found for enormous basements, but for the*

After conversion

great depths from front to rear there are few alternatives to partial demolition or muddled planning and meandering corridors. At 38-39 Princes Gardens the depth is about 74 feet, broken on the two lower floors by an area. Once again rear access (Princes Gardens Mews) assists, to a limited degree, in solving this problem of depth. The two houses provide in all a caretaker's flat in the basement, 6 single and

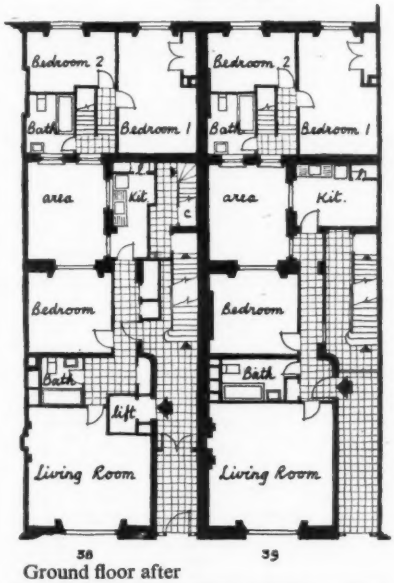


Basement after

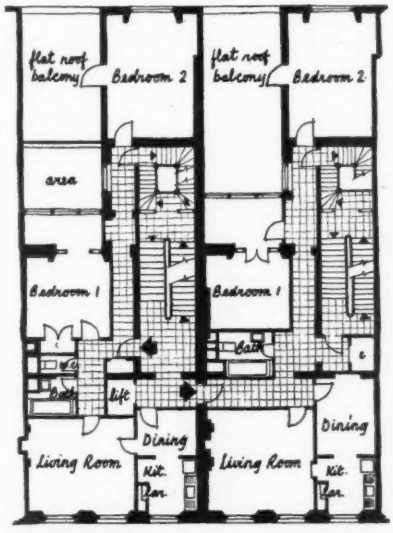


Basement before [Scale: $\frac{1}{24}$" = 1' 0"]

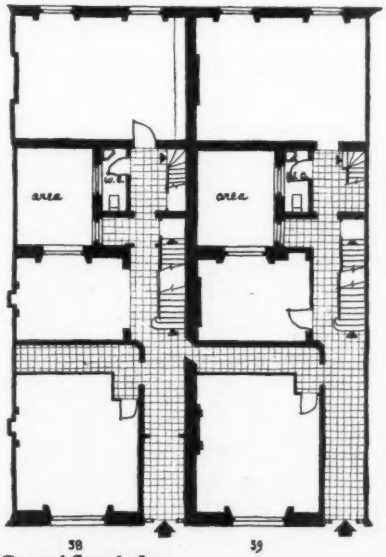
Section A-A



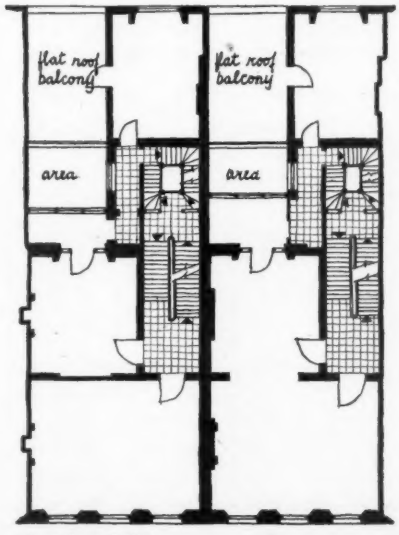
Ground floor after



First floor after



Ground floor before

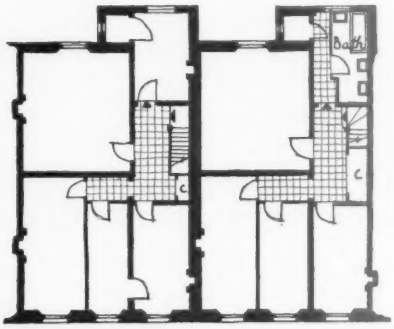


First floor before

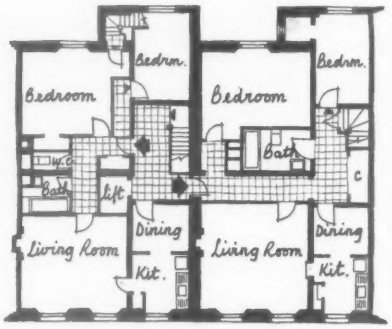
PRINCES GARDENS continued

4 two-bedroom flats and 2 two-bedroom maisonettes.

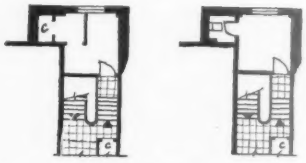
PLANNING DETAIL: *The great depths of basement and ground floor are reduced by the maisonettes which have access from the mews, thereby reducing the main depth by about 20 feet. Bedroom 2 of the first floor flat in the main house overlaps the first floor of the maisonettes. That the houses extended to this mews without the customary mews accommodation is an unusual feature. In this conversion, the exacting regulations governing light and air to buildings are not fulfilled completely and the authorities concerned agreed to non-compliance—it is well to remember that each case is treated on its own merits. The two original principal staircases have been retained, one as the main access to all the flats and the other as a secondary means of escape.*



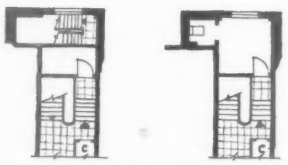
Fourth floor before



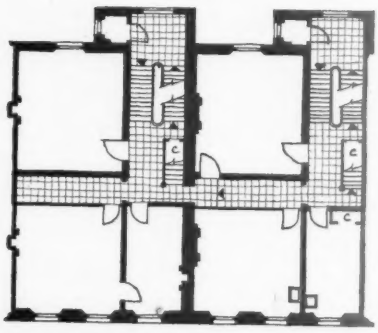
After



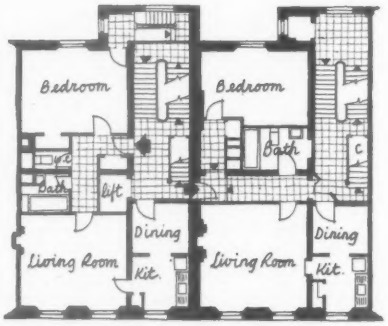
Mezzanines over, before



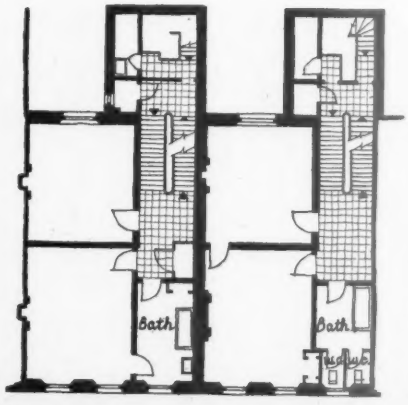
After



Third floor before



After



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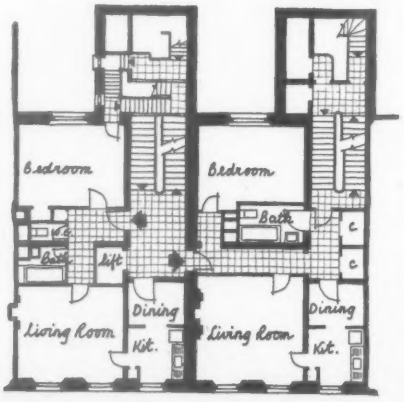


After

at least part of the problem—but it has relied, of course, upon rear access to achieve the separation, and it is also unusual for the floor of the main house to adjoin the mews approach. A further solution is that of demolishing the extensions adjoining the main body of the house and of retaining the buildings at the extreme rear. A patio or court between two blocks would dispel, or reduce at least, the sense of enclosure, but such a method relies on adequate natural light and sufficient privacy for those units facing each other. It is obvious that numerous alternatives and compromises exist in every conversion proposal and that it is for the designer to discover these and to produce a layout which offers the best solution from all points of view—remembering always that partial demolition can provide immense opportunities for better accommodation whilst at the same time reducing immediate repair and recurrent maintenance.

Basic planning needs

Flexibility

The size of units and the number of bedrooms to be provided has been discussed earlier in this section; local demand will dictate this, but not the fundamental approach to planning. Regardless of the bedroom accommodation, these new units should be designed so that without further structural alteration they will meet the particular demands of any family make-up consisting of X number of individuals. Thus with a unit designed to house, say, two adults and three children, the space should be arranged so that it will meet the changing needs of parents and their children from the time that the latter are very young (with at least one at the pram stage) to the age when every child needs his or her own room and adequate space in which to play, study and entertain friends without continual parental supervision.

This is a complex problem which few seem to have faced—and to try to achieve any measure of success with a limited budget only increases the task. But if these conversions are worth doing at all, then more must ensue than a series of different sized cells, if only because the intention is to increase the number of homes and these new units must attain that level. Unfortunately, the substantial quality of the old houses from which these new homes are to emerge offer difficulties in themselves by their very arrangement. Solid and heavy partition walls which are expensive to pull down and new members to support the existing structure overhead are labour-absorbing operations; massive chimney stacks are equally tiresome since they occupy useful floor space, and finally the character and scale of the elevations discourage the indiscreet intrusion of new features.

But all these are just problems additional to the main pursuit which aims at higher standards and greater adaptability in planning. Internal flexibility relies on less permanent type divisions between rooms; partitions could be designed as units to a standard most suited to the existing plan arrangement,

whilst cupboards, door units and other fittings might be detailed as units to the same module. With this freedom to vary room sizes as well as the disposition of components, the family's changing needs would be met in part. The degree of success to be achieved depends upon the amount of open floor space devoid of existing structural partition walls. In many instances this approach may not be feasible through lack of adequate space but the principle is worthy of consideration where it can be applied. Properly insulated prefabricated sections fitting together simply could reduce site work and the normal time which is needed for these operations; and by allocating dwelling units in advance to tenants, their particular requirements and preferences could be studied more carefully and given greater consideration.

Circulating space

In domestic planning, the greatest space should be given to those areas which are most used. Theoretically, the number of conscious hours spent in the bedroom, for instance, are fewer normally than those in the living room and naturally the latter should benefit from any surplus space available. Similarly, corridors and halls, whose only purpose is to provide access from one room to another, have little value otherwise and should be reduced to the minimum, or even omitted altogether where reasonable alternative access can be provided.

Grouping bedrooms and bathroom together off one end on the living area limits circulation space and increases bedroom privacy and in this arrangement the kitchen and main entrance lobby are located at the opposite end of the living space. The disadvantage of this plan, that the living area becomes a corridor between the front door and sleeping area, is negligible by comparison with its benefits—and the design would be unworkable only in cases where domestic staff live in or are on the premises most of the day.

This rapid disappearance of domestic staff has had its effect on planning, for the former marked social distinction between employer and employee is no longer an influence of any significance except to the very few. Layouts can be more unconventional, byepass corridors are unnecessary and waste space a liability without benefit to the housewife. Thus where possible the dreary ill-lit internal corridor ought to be liquidated and the space given to more useful purposes. The "open" plan which offers space and vistas to replace the "cell" plan interprets our current and future needs, for space is expensive and none should be wasted. But where living in one area is accepted as a planning principle, facilities must also be provided which will permit other members of the family to find peace and quiet for other pursuits—and to enable children to do their homework and studying also. And we return here to the need for flexibility in solving these demands.

Orientation

Generally speaking, houses of a repetitive nature ignore orientation. Those on the north side of a street have their main rooms facing south with dank yards or gardens at the back which are screened from the sun; on the south side of the street it is the reverse but without easy expansion from house to garden, whilst back extensions restrict the penetration of sunlight into habitable spaces on that side of the house. In streets running north to south, these same dwellings can benefit from east and west aspects only.

Apart from the sun's beneficial effect upon one's morale, which is in itself of great value, the reduction of heating costs in rooms with southerly aspects is quite remarkable. Poor orientation should not be tolerated if alternatives exist. The demolition of rear extensions has been advocated already and in those cases where it is feasible the advantages must be obvious. Furthermore, terrace houses with northerly street façades could be rearranged to gain a southerly aspect by the removal of one or more partition walls.

The readjustment of orientation applies equally to free-standing or semi-detached houses and it is an appalling reflection upon current designers (architects they still call themselves) that they are prepared even nowadays to offer one standard design— which is "turned over"—to suit either side of a street. In new work this is inexcusable, but, contrive as one may, there are many conversions where improvement of aspect is impossible without undue expense. The "L" shaped plan is such a case. If the main block faces north and south, the wing at right angles will suffer unless the division between the two runs from north to south also—and the private developer who may be also the occupier will consider his own amenities and privacy before anyone else's. Nevertheless, the reshuffle of planning and orientation must be accepted as one operation in every conversion scheme, for the theory that a northerly aspect is more healthy was exploded many years ago.

Public circulating areas

Staircases, landings and corridor approaches to flats or maisonette units should be kept to a minimum to simplify management and to reduce cleaning costs; at the same time, this will provide the maximum area for the units themselves. The local authority may insist upon a higher degree of fire resistance in the construction or finishes of communal staircases and they should be consulted on this matter as well as on means of escape in case of fire.

These public areas will sustain considerable wear and tear from tenants, tradesmen and the removal of furniture. Wall, floor and staircase finishes should be capable therefore of resisting harsh treatment and a comparatively expensive outlay in the first instance will reduce recurrent maintenance later. Staircases with generous landings and reasonable headroom will eliminate damage from furniture removal. Adequate natural and artificial lighting will be required as well as substantial handrails—preferably on both sides to protect the staircase walls.

Delivery hatches

For those who are out during the day, the provision of lockable delivery hatches for tradesmen will reduce disappointment and theft. These are best placed, for the tenants' convenience, with direct access from within

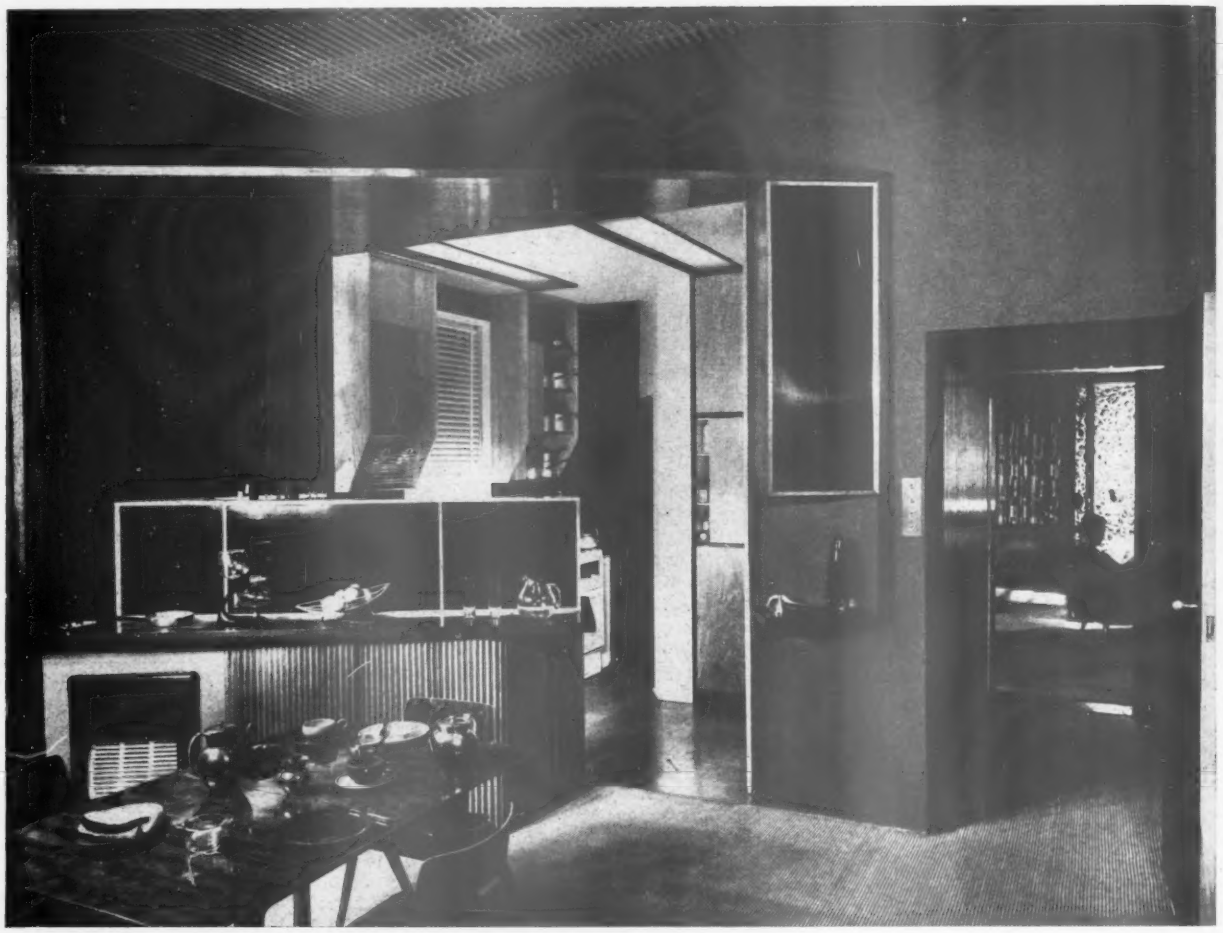
31 Fitzjohn's Avenue, N W 3

Architect : J. N. Aylwin

THE SCHEME : *The average conversion job usually provides unfurnished accommodation, but this scheme at 31, Fitzjohn's Avenue is particularly interesting because it departs from this normal procedure. In all, there are six flats, five of which are let fully furnished, including pictures on the walls, but excluding linen and plate. Before any alterations were made, £950 had to be spent on dry rot, roof repairs, war damage, general maintenance and decorations. The dry rot infection in the basement floor was due to neglect and lack of ventilation.*

PLANNING DETAIL : *Very little structural alteration was necessary apart from the opening up or blocking of doorways and the provision of screen partition walls to seal off flats from the main and subsidiary staircases. The reduction of noise between one unit and another has been met to a degree by the laying of ¾-in. rubber underlay on a hessian backing with a finished top surface of fine woven haircord close carpeting. In the false ceiling over the larger ground floor bedsitting room, quilting insulation has been laid to reduce sound transmitted through the floor above. Public circulating space has been kept to an absolute minimum and this is yet another example to confirm that the compactly planned house limits unnecessary and unprofitable floor area. An attractive fitting in the ground floor entrance hall provides locker space where tradesmen can leave goods for the tenants when they are out. All flats contain contemporary style built-in fittings or furniture specially*

31 FITZJOHN'S AVENUE continued

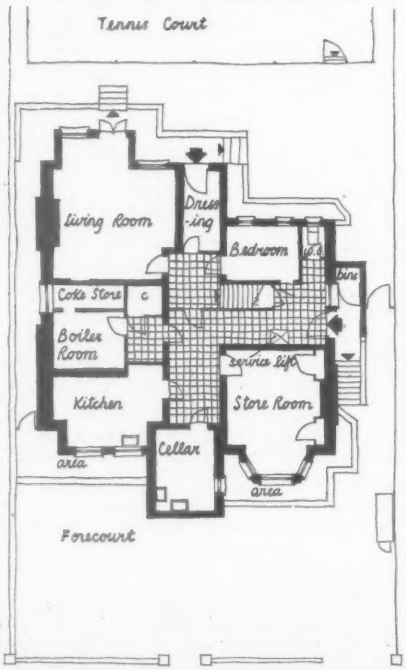


Top, looking from the ground floor dining room through to the bed-sitting room, with the kitchen on the left. Above, the delivery hatch in the entrance hall

designed and made for each unit. In addition to the general repair and conversion of the house itself, the external forecourt, fencing, paving and tennis court have been overhauled also; thus the entire property has received the attention which should be normal to all conversion work.

SERVICES : *Hot water supply is by multi-point gas appliances and space heating by gas fires and electric warmed-air heater. Each flat is wired with a ring main electrical circuit.*

COSTS : *The property was purchased within the family for £8,000 but it would probably have fetched less in a sale on the open market. The total cost of building work amounted to £9,080. The renewal of the tennis court and the cost of furnishing, excluding the owner's flat on the ground floor, amounted to £410 and £4,500 respectively; both figures are additional to the*



Basement before
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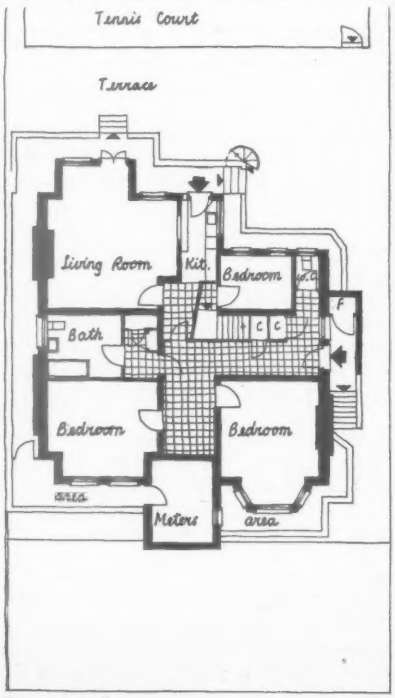
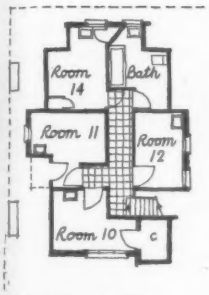
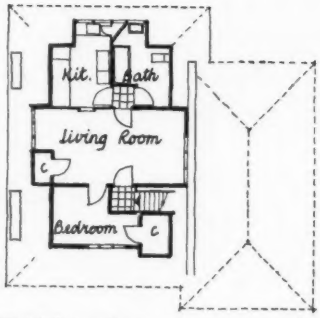


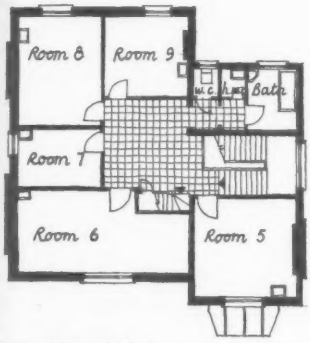
Basement after



Third floor before



Third floor after



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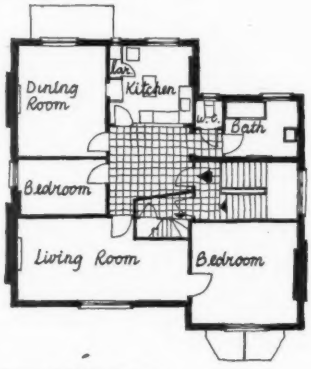

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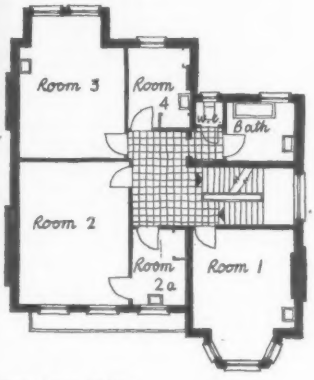

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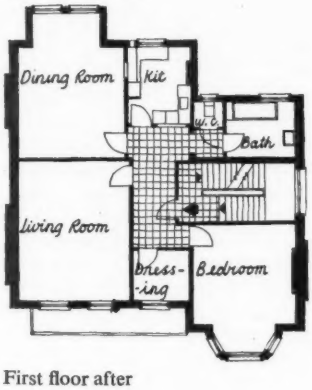
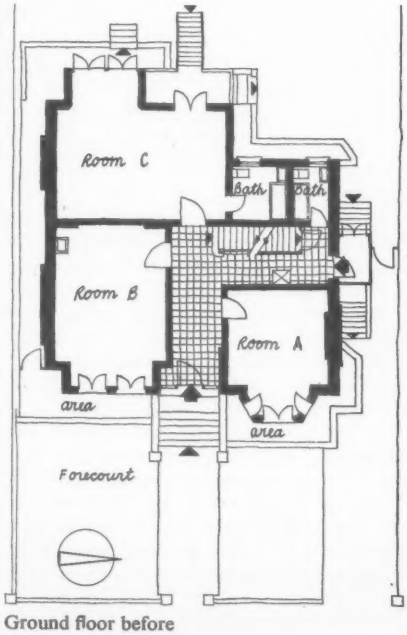
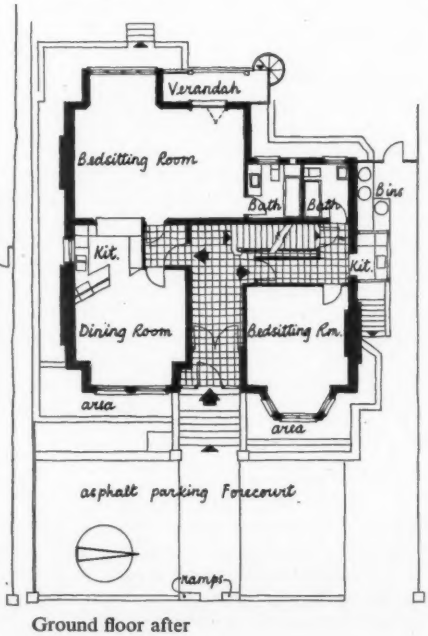


First floor after



Ground floor before



Ground floor after

each flat; but there are good reasons why they might be situated in the ground floor main entrance hall also. The latter position was selected at 31 Fitzjohn's Avenue (see page 744) where an interesting example has been installed. For the average flat, this fitting is somewhat luxurious but the design is good.

Refuse disposal

The best method of disposal depends upon the regularity of the staff who are available for collection. Where kitchens adjoin communal landings, two-way cupboards accommodating small hinged top refuse containers are adequate so long as they are cleared daily—and thoroughly cleaned out. The only alternative is the refuse chute to a central collection on the lowest floor; this method relies on, or is improved by, periodic flushing and cleaning, and this is liable to neglect. But in some of the poorest tenements which were built as many as 80 years ago, and where one might expect to find the greatest abuse, managers still regard the chute as the best method—and these generally have no hygienic cleansing system. Above all, the unwholesome dustbin on the landing should be avoided. (No mention is made of the Garchy system, which is certainly the best of the lot, because the average scheme would be too small to bear the heavy cost of providing the system in the first place.)

Solid fuel storage

To those who are unwilling to surrender their souls to cellular existence and to food in concentrated pill form, no home is complete without the traditional open fire, however inefficient it may have been labelled by research workers and statisticians. Smog may carry off thousands in a single winter but even so the addict's belief in his own fire is not shaken.

Whatever the diversity of opinion, whether or not central heating is provided, one open fire in the living room should be included with a suitable fuel store, and if this adjoins the public landing, it can best be replenished externally. Alternatively, a two-way container, which is situated next to the fireplace with direct access from that side, will eliminate the carrying of fuel within the flat or maisonette.

Multi-storey buildings impose a considerable strain on the coalman unless service lifts are provided—but even where lifts are excluded from the scheme, fuel that is stored in basements for tenants to carry aloft is bad practice.

Pram and cycle space

Flat and maisonette planning introduces problems that are solved more easily in the design of new houses where additional odd spaces can be created more readily. In addition, storage of essential domestic equipment can be provided in flats only rarely where most convenient to the owner. Those living above ground floor level, or even on the ground floor itself, may have to keep these articles at basement level. Parents of pram age children who occupy units which are two or three storeys up, will experience un-

31 FITZJOHN'S AVENUE continued

Bed-sitting rooms on the ground floor

capital outlay on building work. These building costs can be subdivided as follows:

	£	
Conversion	5,900	
External maintenance ..	640	
Internal maintenance, including war damage ..	2,100	(approx.)
Forecourt, rear terrace, fencing and paving ..	440	
	£9,080	

The combined conversion and furnishing costs per flat, including internal maintenance and war damage, and the weekly rentals for each, are:

Unit	*Cost*	*Weekly rent*
3rd floor (top flat)	£1,475	£6
2nd floor	£2,700	£11 10s.
1st floor	£2,600	£12
Ground floor (flat B)	£1,250	£6 *(nominal)*
Ground floor (flat C)	£1,525	*(cost of building work only)*
Basement flat ..	£2,950	£9
	£12,500	£44 10s.

RATEABLE VALUES: *Before conversion the rateable value of the property was £210. The reassessed figures—for each flat are:*

3rd floor flat	£25
2nd floor flat	£85
1st floor flat	£96
Ground floor (flat C)	£68
Ground floor (flat B)	£44
Basement flat	£64
	£382
Tennis court	£13
	£395

LEASES: *Normal length of lease is two years.*

necessary fatigue through carrying their offspring and pram bedding up and down and although, short of a lift, no alternative exists to this, lockable and dry pram garages would simplify the routine.

Many conversions inspected recently have completely ignored any provisions of this kind and some tenants were obliged to leave their prams inside the main entrance door at ground level at their own risk. Quite apart from the slovenly appearance and the blocking of public circulating space, this attitude really isn't good enough. Even the recent MOHLG exhibit in Holles Street, London, in demonstrating what can be achieved and how old terrace houses can be converted, selected imaginary tenants who needed neither prams nor cycles—so that this essential point could not have been driven home.

Accommodation which is to suit a broad range of family units should provide amenities to include those essentials which the average household can reasonably expect. Where basements exist, parts of these could be converted to provide each dwelling unit with a lockable cage of sufficient size to take the pram and cycle, unless similar space can be allocated at ground level. Storage below street level necessitates external access, preferably by way of a non-skid ramp or by steps of very easy "going." Thus flats which are served by lifts should include also a recess—where the pram may be kept unobtrusively—which could be used for additional storage.

Box room storage

The compact layouts of flats rarely include adequate stowage space for trunks, crates, suitcases and other odd household articles which are used infrequently; these are unsightly and dust-collecting if they are pushed under a bed or stacked in a corner. The best place for them, if only in a three or four feet square cupboard, is within the flat itself; the alternative is a series of lockers possibly in the basement, off landings or in uninhabitable attics, but wherever they are, the area must be absolutely free from damp.

Residential staff

Conversion schemes of any reasonable size will justify a resident housekeeper or porter whose duties would be to clean communal areas, attend to minor items of maintenance, collect and dispose of refuse and, where central heating and/or domestic hot water is provided, to maintain the boilers. Assuming that basement or other suitable habitable space is available, the porter and his family should have accommodation on the premises so that tenants may benefit from other minor services as well—garden space has to be maintained and an ambitious or conscientious custodian may be glad of this open-air occupation as well.

Additional staff service

A further service which could be operated by the caretaker, but only to a limited degree perhaps, is the occasional or regular supply of meals. Its success would depend on the tenants' needs, as well as on the quality of and charges made for the meals. With the growing determination of young parents to escape for a few hours from the otherwise perpetual supervision of their children, the caretaker and his meal service could offer a reliable alternative to the baby-watcher and introduce perhaps greater harmony amongst residents.

Domestic staff quarters

In schemes for the higher-income groups where domestic staff are employed, service rooms to be let individually to residents should be considered—for the flats are unsuited generally to domestics living-in and most residents prefer the maximum of privacy for themselves when their staff are off duty. These bed-sitting-rooms can be quite small and are best grouped together near the housekeeper's flat for easy supervision. Basins should be installed in each room, with a shared bathroom and W.C.

Recreation space

To establish home life amenities in flats to compare with those which are normal to houses, facilities should be introduced to make possible—even to encourage—the pursuit of the noisy hobbies and interests which are usually denied to the flat dweller. Although neglected invariably in this country, these provisions are not unusual on the continent—in fact some standardised plans include a general purposes room at lower ground level adjoining the boiler room and fuel store. Naturally the location, design and management of this communal space has to be carefully considered to avoid undue disturbance to residents. Where basements exist, possibly one or more rooms which are scarcely fit for other purposes could be spared; one room could be set aside for carpentry and handicrafts and possibly another where residents could hold parties or meetings and where children might play together during bad weather. Residents should be encouraged to help themselves by adapting and decorating these areas to meet their varying needs—but how far landlords would be prepared to co-operate in this scheme depends on their inclination to offer tenants the means whereby children's interests, and those of adults as well, can be fostered in the home—instead of having to be paid for outside it.

Laundry facilities

An amenity which is welcomed by tenants is the laundry with its electric washing machines. The whole unit need be only quite small; capital outlay and running costs can be recovered over a period by contributions from all those using the service. By locating the laundry next to a multi-purpose room, parents could keep an eye on their smaller children at the same time. Few can afford the initial cost of a machine for themselves, and many are reluctant to waste time going to the local "Laundrette"—thus a machine for use by all tenants in the block is a practical compromise. This section could be expanded to include ironing, airing and a separate drying room for wet clothing, shoes, etc., if space permits. Where heating and hot water are supplied from a central source,

these additional services are less costly to provide, but it is unlikely that much more than the washing machine could be considered in the smaller conversion which offers no heating or hot water.

The garage

So much of the property to be converted was erected long before the advent of the motor car that garage space, even for each house, is non-existent in most cases; but by subdividing these houses into even smaller units the demand increases automatically. One has only to see the endless rows of cars which are parked in the streets of larger cities each night to realise the magnitude of this problem—not to mention the effect of the weather upon the flimsy bodywork of the post-war car.

Conversion schemes which include garage space, or even covered space are rare, and it is time surely that garages should be considered as essential to development as any other normal service—for cars are increasing per thousand of the population and there is no reason to expect any reduction in the future.

The Government's recent enquiries into traffic problems in central London confirms this growing menace. Public garages cater for regular customers in the main and where the "casual" is accepted, there is little chance that under-cover space will be available. This is frequently the experience in midland cities. Then how is this to be overcome? Lack of open space in central areas limits the development of numerous multi-storey garages; therefore it seems essential that the smaller schemes must consider seriously, where possible, the provision of a sufficient number of units to meet residents' needs.

In central London, one of the largest conversion schemes now under way, which includes garage facilities, is in Rutland Gates (see page 738), here, beneath a terrace of 18 houses, Nos. 48-65, a continuous basement is being converted into one large garage. Party walls have been pierced to create a central access way with space for cars to be parked on either side. The entrance is from Rutland Gate, by way of a ramp down from street level and the exit is into the Mews at the rear. This is an ambitious scheme and although capital expenditure is heavy, due to extensive structural work and mechanical plant, the financial budget shows a fair return. This garage space will be absorbed by the cars of residents living in the flats above; but the principle is thoroughly sound —for here was a basement of considerable depth from front to rear which might otherwise have become dead space. Furthermore, whereas the conversion of the houses into flats showed a comparatively poor return, by extending the programme to include this basement garage the combined interest on expenditure has risen considerably.

On a smaller scale, the individual garage unit also makes its contribution. Lower ground floors or shallow basements provide opportunities for individual treatment when sufficient ramp space is available between pavement and house frontage. The garage at Dawson Place (see page 748) shows how this can be arranged simply in a conversion by creating a maisonette on lower and upper ground floors with one flat on each of the upper storeys. The simplicity of finishes and the limited services necessary should be capable of showing a favourable return by comparison with the same area converted into habitable space.

Access and approaches

Houses subdivided into smaller house units present difficulties in the planning of approaches. Unless adequate provision is made for the maintenance of communal drives and open spaces, these tend to become neglected—thus where possible, independent access should be devised for each unit. In examples such as Brookfield House (see page 750), comprising two semi-detached houses with two flats in a separate out-building, these problems scarcely arise for the two houses have their own pedestrian main entrances and tradesmen's approaches. The two flats in the old stable building have entrances arranged so that there is no encroachment upon the privacy of the ground floor unit. Garage access is off a private road with pedestrian entrances from each property—and these new garages are sited to reduce the nuisance element to nearby tenants.

But in a scheme of different character and scale, such as Frognal Grove, (AJ, December 9) approaches and garage space are more complicated. House units 3 and 4 have built-in garages but residents of units 1 and 2 have some distance to walk to theirs; this is far from an ideal arrangement. For the owner's convenience, the garage should be contained within his own property—for the benefit of a car is reduced by a long walk in bad weather between house and garage. Furthermore, a garage when included in the garden area has many uses additional to car accommodation. Solutions of these problems in built-in areas are simple but where conditions permit, slightly increased expenditure to provide a more workable scheme which offers improved amenities should receive fair consideration. So many owners maintain their cars, that facilities such as wash-downs and pits for greasing with a space for the work bench and spares could be provided also if space allows. This additional capital expenditure will be reflected in the sale price or rental but purchasers and tenants who value these additional benefits will realize that without them they would have to face bills from the public garage.

At Frognal Grove a small service lane gives access from the highway to all back gardens. For terrace houses with gardens of any reasonable size this is essential to facilitate delivery of loads of manure and the like—although this is less necessary in high density urban areas where gardens in any case are smaller and natural fertilizers difficult to obtain. Where dust bins are emptied only weekly or even twice weekly, adequate ventilated recesses preferably under cover and outside, with easy access for the Council's collection, should be embodied in the design.

Privacy and external recreation

Urban terrace houses which are to be transformed into flats or maisonettes introduce

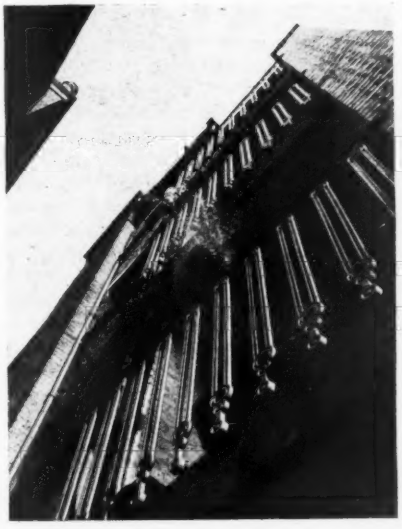
25 Dawson Place, W2

Architect : Denys Lasdun

THE SCHEME: *Typical of development some 75 years ago, this late Victorian house has a characteristic plan with a central internal staircase. The conversion has provided a maisonette on lower ground and ground floors, two self-contained flats on the upper floors and also, at lower ground level, a single garage with ramp access up to street level. Apart from the unusual manner in which the second floor unit has been handled, the main interest lies in the resiting of the access staircases and the increase in floor space due to a change of roof section.*

PLANNING DETAIL: *Had the original staircase been retained, it would have seriously*

Railings over the new stair-well on the west side



the questions of maintenance and subdivision of back gardens or yard space. If finance can be allocated to guarantee their upkeep, then the simplest procedure is to treat all open space as communal. But is this in the best interests of the tenants, some of whom may prefer to have plots of their own? Take for example four three-storey terrace houses which may have been converted into, say, six flats; the subdivision of the original plots from four into six may produce gardens too narrow to be of much value. Then, of course, some tenants may not want gardens—and others would be glad of more than one plot.

The problem is without solution for any length of time. Initially gardens may be distributed fairly but with a change of tenancy trouble may arise. The parents of young children will welcome a play area or at least a space in the sun for the pram—and all the families in one block should have equal opportunities whether they are newcomers or original tenants. Any satisfactory solution will depend on the space available and the type of resident and his interests; one may want sufficient room for a small greenhouse, another for a pigeon-loft, and if this can be arranged so much the better. More often than not a compromise will be necessary, but whatever the final arrangement, the back-yard mentality and its sordid appearance must be avoided at all cost. In the more expensive conversion, where tenants are likely to be less interested in the open spaces for recreation purposes there would be a clear case for a communal garden, or one for the use of those living at garden level.

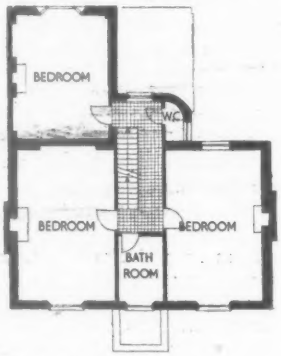
And again, the three-storey house which is transformed into a maisonette with a flat on the top floor suggests that the garden should go with the lower unit because this has greater accommodation, direct access to the garden, and is more likely to be a family unit which will need open space more than single persons or childless couples. The whole question reverts to the earlier review of unit sizes and distribution—and the first essential, to know for whom he is planning, will signpost automatically the most suitable garden arrangement.

Finally, one must consider the need for adequate privacy in which to relax during leisure hours. With compact dwelling units which are planned closely together, any degree of external seclusion is difficult to achieve, but there are occasions when some contributions can be made. Existing balconies can be improved and new ones introduced, small terraces or loggias can be led off ground-level living rooms and odd spaces on upper floors can be developed as covered balconies connecting with the main living area; brick or stone party walls projecting from the garden facade, with possibly a new balcony for the floor above, will give privacy between one unit and the next. These are just a few of the ways in which internal space by extension to the outside can add interest to a scheme whilst reducing the monotony and sense of enclosure from which most flats suffer.

Throughout this section little or no reference has been made to the kitchen, larder, bathroom and w.c. because these amenities in

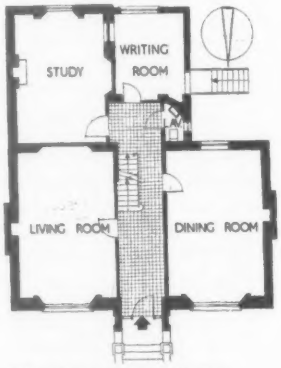
Garage at lower ground floor level

impaired the replanning because the lower floors would have suffered from pedestrian traffic to and from the units above. In addition, a communal landing in the centre of each floor would have been wasteful of space and might have complicated the layout of each flat. The new external approach to the two flats eliminates all these problems and the greatest benefit from the reshuffle of staircases can be found in the uppermost flat; full advantage has been taken of the now unobstructed floor area which has been increased considerably by the new continuous dormer that runs the full length of the north elevation. Although the total area of this unit is no more than 785 sq. ft. this great sense of space has been achieved by the carefully devised open plan which has been further enhanced by the shallow arched fibrous plaster ceiling over the main living area.

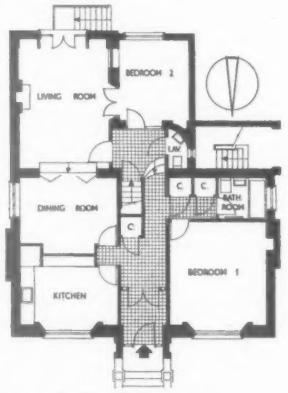


First floor before

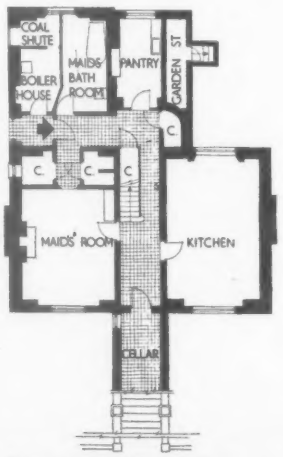
First floor after



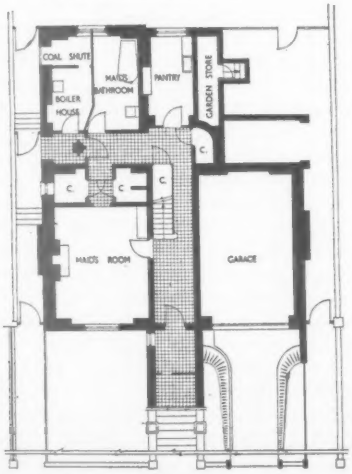
Upper ground floor before



Upper ground floor after

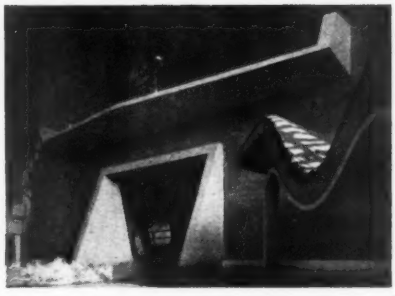


Lower ground floor before
[Scale : $\frac{1}{16}$" = 1' 0"]



Lower ground floor after



Views of living room on second floor

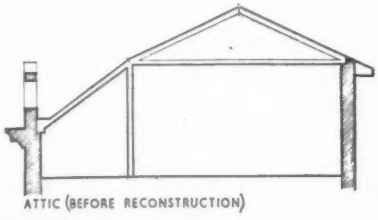
Although in this particular scheme the new accommodation comprises one maisonette, two flats and a single garage, many other arrangements could be developed to suit varying needs. This same house, so eminently suited to conversion, could provide 2 garages and a flatlet at lower ground floor level and three flats above, or one flat and a large maisonette on the upper floors and similar accommodation on lower ground floor. A maisonette on first and second floors would reduce the extent of the new outside staircase but against this economy would be set the cost of a new flight internally between maisonette floors.

SERVICES: *Except for the maid's bathroom at lower ground floor, all bathrooms are planned one above the other and pick up existing stack pipes adjacent to the new staircase. The original internal plumbing and central heating were scrapped and renewed; the new cold storage cistern serving the maisonette and first floor flat is located under the top flight of the now abandoned original staircase.*

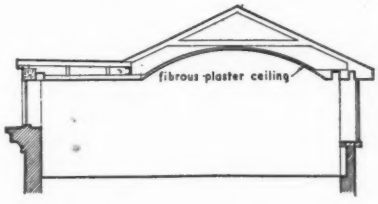
COSTS: *The licence for the entire work was approximately £5,000.*

RATEABLE VALUES: *Before conversion the rateable value for the property was £163. The present values for the three units are:—*

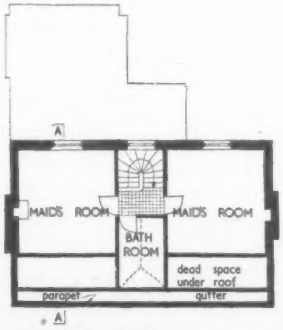
Maisonette	.. ..	£130
1st floor flat	.. ..	£96
2nd floor flat	.. ..	£52
Total	.. ..	£278



Section A-A



Section B-B



Second floor before

Second floor after

conversion work are taken for granted nowadays.

A miscellany of problems

In this section a series of miscellaneous items of a practical nature are introduced. They are in note form, with occasional references to existing legislation, and are generally intended as reminders or suggestions which are applicable more particularly to improvement and conversion work. The list does not claim to be an exhaustive summary but is more of a collection at random of normal problems, many of which are to be expected in the average conversion.

In many instances it would be misleading to quote specific figures or regulations themselves because some of the larger cities have their own bye-laws. Furthermore, local authority bye-laws are based, in many areas, on the latest Model, Series IV Buildings (1953 Edition); they are not accepted necessarily *in toto*. Those who are interested should acquaint themselves with current legislation and the local bye-laws.

Habitable rooms

Minimum floor to ceiling heights are prescribed by local bye-laws. Bye-law 77 of the Model states that if the habitable room is wholly or partly in the roof it shall be 7 ft. 6 in. at the least in height over at least half of the room measured at a height of 5 ft. above floor level, or if not wholely or partly in the roof it shall be 7 ft. 6 in. at the least beneath a projecting beam.

Buildings (not used previously as dwellings) having ceilings less than the minimum may fail to receive local authority consent when application for approval of a conversion scheme is submitted. Therefore consult the authority before preparing the designs. Windows must open directly into the external air and again the bye-laws, which vary from one district to another, will state minimum superficial areas, the proportion of openable areas, the minimum height of windowheads above floor level and special calculations for dormer and lantern lights. (See also section 6 below.) Clause IX of the Appendix to the Model Bye-laws lays down standards of construction and fire resistance for habitable rooms over garages.

Basements

Much valuable space can be lost in basements, or underground rooms as the Public Health (London) Act, 1936, designates them. The maximum use can be attained only by the careful study of plan and section, and in the London area, where conditions are the most stringent perhaps, section 132 of the Act referred to above sets out minimum room heights, not fixed and openable window areas, and ceiling levels relative to pavement or ground level, external access, basement area planning, and standards of building construction. The adjustment of one or more of these items can increase habitable space in varying degree and circumstances.

The lofty room

Large rooms with high ceilings provide many difficulties and these are increased when the room is adorned with fine enrichments. Subdivision by partitions destroy the character

and scale, whilst the repetition of mouldings is costly even if skilled craftsmen can be found to copy the original faithfully. Where the need is to reduce the effective height rather than the floor area, a false ceiling can be formed so long as window heads are sufficiently low; this is an expensive item but if such work is envisaged, insulation against noise from above should also be incorporated. The lowered ceiling upsets general proportions, fenestration may be unbalanced and lighting arrangements readjusted.

An alternative is to introduce a suspended open framework which when silhouetted against a darkened ceiling reduces the apparent floor to ceiling height. The now familiar egg-box arrangement with a semi-opaque covering above it is another variation but perhaps more suitable when ceilings or upper works are unsightly and need to be masked. But the suspended open framework is more versatile; the design and materials employed offer immense scope and variation for the architect and the character of the room is disturbed less.

Where more informal planning can be accepted, the larger room is capable of multi-purpose use. With a sleeping balcony at one end and, if headroom permits, a kitchenette and bathroom beneath, it provides a complete living unit for a married couple—this is perhaps minimum but adequate in many cases. Should the room be insufficiently high for a two-storey balcony arrangement, the raised floor level could be two or three feet only above normal floor with the space beneath it used in various ways as a storage. This introduction of a change in level is often enough to reduce the apparent size and scale of the room.

A further possibility is the creation of, for example, three floors from space occupied by two originally. The economies of such a scheme will depend upon the structural conditions and plan arrangement and how simply elevations can be adjusted. When floor space commands high rentals this method may be justified but it can be applied rarely to accommodation for the lower income groups.

Kitchens

In the London area, until recently, mechanically ventilated kitchens were permitted but this is no longer the case. They are now considered to be habitable rooms and the usual conditions with regard to windows, angles of light, etc., must be satisfied.

Bathrooms

Where a new bathroom containing a w.c. adjoins living or food preparation areas, a ventilated lobby will be required between them. This does not apply to bathrooms which are without w.cs. A bathroom containing a w.c. may not lead directly off a bedroom unless (*a*) it is for sole use of the occupier of the bedroom or (*b*) there is an alternative approach to the bathroom. In a flat comprising, for instance, bathroom, kitchen, living room and one bedroom, and if the only w.c. is in the bathroom, the local authority might well argue that this w.c. would be used by guests as well as the occupier. In such a case a ventilated lobby must be provided between bathroom and bedroom.

There appear to be no specified minima dimensions for a ventilated lobby. Thus, so long as sufficient distance is left between the two doors to accommodate the minimum area of ventilation to the outside air, there is no reason why the two doors forming the lobby should be further apart than, say, 6 in. And how valuable this small space may be is open to conjecture—in fact it seems unreasonable that building owners should be put to this additional expense for such a doubtful benefit.

Plumbing can be an expensive item in conversion work and every attempt should be made to group bathrooms together on each floor with those on other floors immediately above or below one another. This applies also to kitchens, separate w.cs. and lavatory basins in bedrooms—in fact, the most economical layout is achieved by planning sanitary fittings around central vertical ducts in which all rising mains and services can be housed.

Water closets

Model Byelaw 97 states that those water closets now entered from the open air shall:

(*a*) if provided with a window or roof light open directly into the external air so that not less than 1/20 of the floor area of the w.c. may be opened, or

(*b*) if provided with mechanical ventilation it shall give not less than three air changes per hour.

Section (4) requires that no w.c. shall open directly into any room intended principally for human habitation (other than a bedroom or dressing room) or for the manufacture, preparation or storage of food for human consumption. Where a w.c. communicates with a bedroom or dressing room, and there is no other w.c., it must be so arranged that it can be entered otherwise than through the above-mentioned rooms (Sec. (5)).

Windows

Living rooms which may be converted from existing bedrooms are much improved if window cill levels are lowered. This operation reduces the sense of enclosure, improves the vista from within, creates a greater sense of space, and by expressing the living area externally monotonous elevations can be relieved. French windows opening down to the floor are an advancement on the lowered window cill; with doors opening in, no balcony is necessary on upper floors if handrails or mesh infilling runs between the jambs of the opening—and an additional feature is the introduction of a continuous window box at cill level.

Section (2) of Model Byelaw 73 requires that every habitable room shall have windows so constructed that no less than 1/20 of the floor area of the room may be opened to the external air and some part of that area shall be not less than 5 ft. 9 in. above the floor. Where the window opens onto a verandah, conservatory or the like, the floor area of such a place must be added to the floor area of the room for this calculation. This does not of course apply to rooms pro-

(*Continued on page* 753)

107 and 108, Highgate West Hill, seen from the west after conversion

Highgate West Hill

Architect: George Fairweather

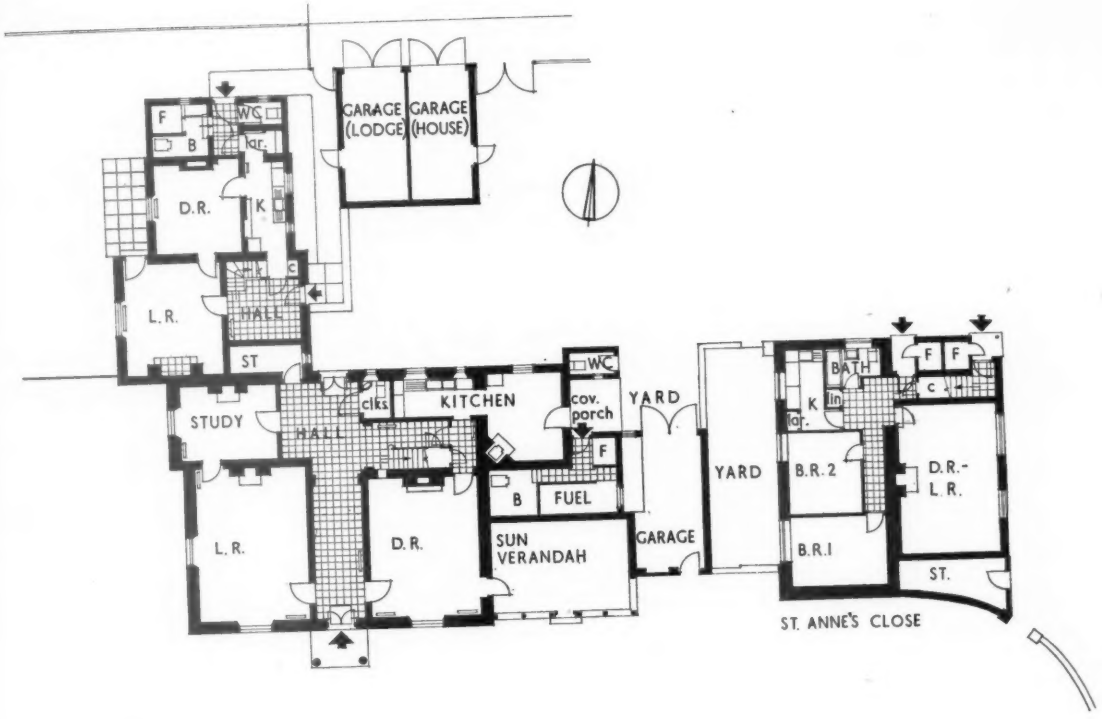
THE SCHEME: *An economic conversion depends upon the original layout of the house and to what degree this has to be adapted to fulfil its new function. This house in Highgate, which is more than a hundred years old, is an example of conversion in its simplest form because the original layout of the main house more or less dictated a subdivision which in itself met the basic needs of the owner. The old house was planned within two distinct rectangles, the larger one containing the main rooms of the house, the smaller for staff; and to isolate these two areas it was necessary to block up only two connecting openings and to separate electric, gas and water services. At this stage before further improvements or repairs had been carried out, the two units were reassessed for rating purposes and the addresses altered with the approval of the County Council. The stable buildings, with a loft above, once connected to the main house by a courtyard, have been transformed into two self-contained flats (9-10 St. Anne's Close) with independent entrances from the outside.*

PLANNING DETAIL: *In the main house no. 108, retained by the owner, structural alteration was not involved apart from the new store wall at first floor level. In the adjoining house (no. 107) replanning followed the existing layout which involved blocking up existing or providing new openings, the formation of a bathroom from the original landing and the subdivision of one first floor room to provide three bedrooms in all. The flooring on the ground floor was replaced by a concrete slab surfaced with wood blocks and tiles. To convert the stable block into two habitable units, each of about 900 sq. ft., required much more work. The whole interior was gutted leaving in position only the external walls and roof. A length of new cavity walling was necessary and in the ground floor flat an inner skin was*

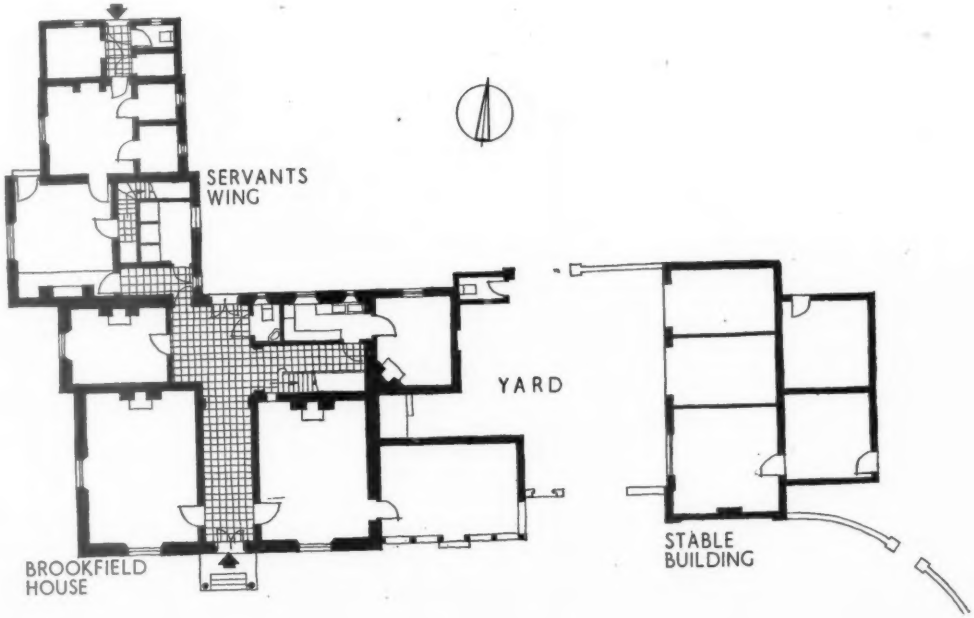
built on which to support the new first floor, all of which was built free of the existing 9-in. walls. Outside, a new garage and boiler house was added to no. 108 and two additional garages erected for the tenants.

SERVICES: *In both semi-detached houses entirely new electric, gas and water services as well as central heating were installed. In the two flats domestic hot water is provided by back-boilers to living room fires.*

COSTS: *Complete vacant possession was not available at the commencement of the work so that the conversions were carried out in stages. No attempt has been made to assess the total cost*



Ground floor after



Ground floor before [Scale : $\frac{1}{24}$" = 1' 0"]

HIGHGATE WEST HILL continued

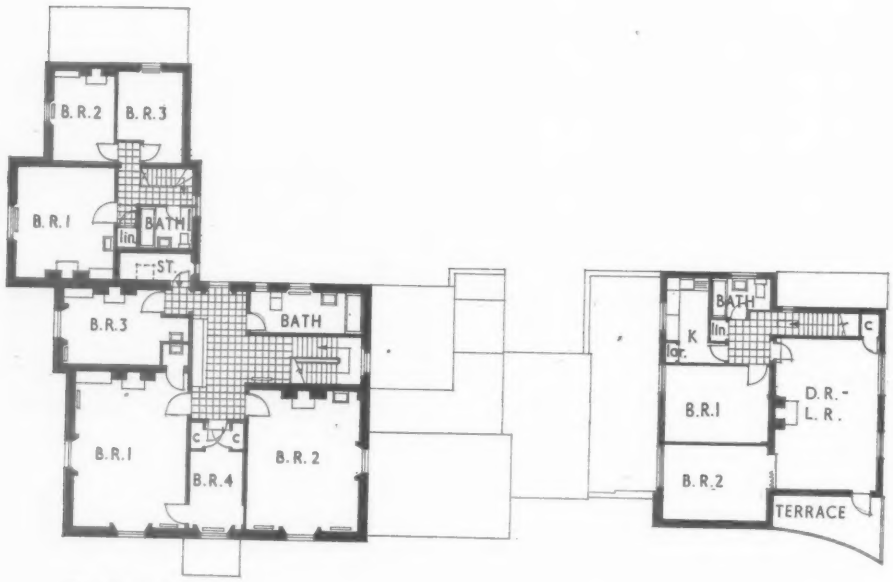
9 and 10, St. Anne's Close

because much of the reconstruction was done by the owner himself with the assistance of direct labour. It is clear, however, that it would have been much more costly to have provided new units of comparable accommodation and that these could not possibly have included the unusually spacious and pleasantly proportioned rooms to be found in the main house.

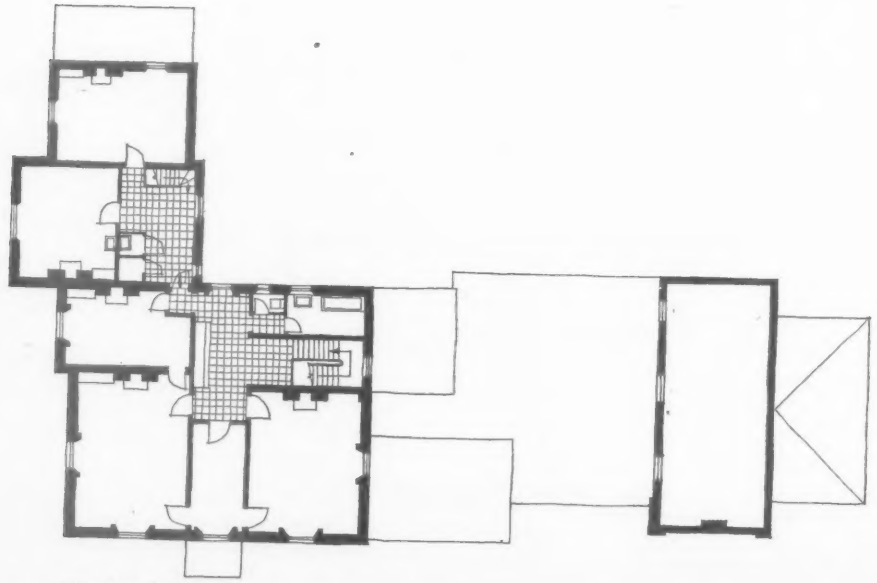
RATEABLE VALUES: *Before conversion the whole property was rated at £100 gross and £76 nett but these figures are misleading for purposes of comparison because they were related to the income of the Vicar. The present assessments are:*

	gross	nett
No. 108 Highgate West Hill (main part of house)	£126	£102
No. 107 Highgate West Hill (originally servants' wing)	£95	£72
No. 9 St. Anne's Close (ground floor flat)	£55	£40
No. 10 St. Anne's Close (first floor flat)	£65	£48

LEASES: *All units, except No. 108 are let on three-year leases.*



First floor after



First floor before

vided with mechanical ventilation, etc.

Bay or other projecting windows are restricted in some districts by the distance between them and nearby party walls. An example of this is Section 18 of the London Building Acts (Amendment) Act, 1939, which prohibits such windows to be nearer the centre line of the party wall "than the extreme extent of the projection from the building of the bay window, oriel window or turret."

Windows of habitable rooms opening into courts are subject also to restrictions as are ordinary windows and skylights near party walls. According to Model Byelaw 74 a window opening on to a court enclosed on every side is only permissible so long as the distance from the window to the opposite wall of the court is not less than ⅔rds the height of that wall above the window. Section (2) refers to window onto courts having one open side and section (3) states that the height of the wall (for the purposes of this byelaw) is the distance between the top of the window to the eaves or top of the parapet of the wall.

Stairs for flats, maisonettes, etc.

In Clause X of the Appendix to the Model Byelaws, recommendations for the design and construction of staircases are provided —the construction varies according to the height of building served.

Material change of use

Where buildings are being materially altered and new party walls provided because of vertical or horizontal conversion, various conditions and exemptions are provided. Section (4) of this Model Byelaw refers to buildings which because of their special use at the time of construction were exempt partially or entirely from byelaws in force at the time, but must conform when converted for a new purpose.

Timber in party and other walls

In many of the older houses of brick construction, timbers were built into walls for various purposes; in external solid walls these can be troublesome and are best removed if they no longer serve a useful purpose. The cavities should then be thoroughly cleaned out and bricked up. Timbers such as these which are capable of attracting damp penetration, can encourage the development of dry rot which, in its search for fresh timber, will travel whole storey heights within the brick joints without detection. In external solid walls, the inside lintols over windows and doors are frequently of timber and in the thorough conversion these should be replaced by reinforced concrete. By gently tapping plaster wall surfaces one can locate hidden baulks —and in this process any loose plaster areas due for renewal can be traced also.

Timber panelling, jambs round window openings and framework carrying plaster or some other internal finish, may conceal damp penetration within. All should be inspected before being allowed to remain, and in cases of doubt they are better removed and replaced by alternatives which can withstand such conditions.

Sections of floor and ceiling joists that pass through walls, which become party walls in a conversion scheme, should be removed. Model Byelaw 36 states that no timber or other combustible material may be retained within a party wall. Where a building is "listed" by the Ministry of Housing and Local Government, or by the Ministry of Works, the interested Ministry may prohibit interference which is likely to damage architectural enrichments. In such a case the only course is negotiation between the interested parties. When joist ends have to be removed, joists can be supported upon metal angles bolted through the wall or alternatively non-combustible sockets or shoes to support these joists can be built into the walls. The chances are that the joists which run through such internal walls will be resting on timber plates, which must also come away and their cavities bricked up. All this involves considerable expense, particularly when elaborate cornices and finishes have to be reinstated. Therefore it is important to verify joist runs and where possible to plan the conversion so that unnecessary work on flooring timbers is limited to the minimum.

To avoid mutilation of finishes when supporting ceiling joists of top floors, after joist ends resting on party walls have been removed, a member can be provided often in the roof space from which the joists can be hung—always assuming that sufficient bearing can be found for each end of the new member. And a final word about joist runs—in many of the older houses flooring is double boarded, and unless this is checked, joists may be plotted in the wrong direction.

Dangerous structures

During the original inspection survey of the property, particular attention should be directed towards structural condition. Plaster cracks in structural walls should be traced internally and externally, whilst those in existing party walls ought to be examined from both sides. When in the slightest doubt, it is better to arrange a site meeting with the District Surveyor than to let matters rest until reconstruction commences. The D.S. has power to condemn unsafe structures or individual sections, and the cost of rebuilding a party wall completely, especially when the adjoining owner is in residence, can totally upset financial forecasts of a project.

Underpinning

Extensions to an existing building which is to be within ten feet of a building of an adjoining owner may involve tiresome negotiations if the new foundations are at a lower level than those of the adjoining owner's building. In the London area, Section 50(a) of the London Building Acts (Amendment) Act, 1939, applies to such cases, and in 50(b) conditions are laid down regarding operations within twenty feet of the adjoining building. It is desirable obviously to refrain from any complications with adjoining owners, such as party wall notices, and awards with the accompanying legal charges, cause delays and frequent ill-feeling between parties. Schemes which evade such extensions or the lowering of

Continued on page 756

Before conversion

Paulton's Street, SW3

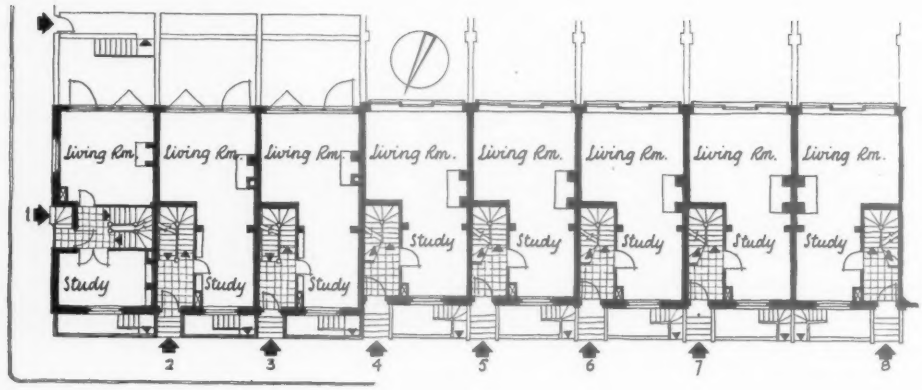
Designed by Richard Blow

THE SCHEME : *When these eight houses in Paulton's Street were purchased (without vacant possession), the tenants were living under appalling conditions; there was serious overcrowding, no bathrooms or internal w.c.s and the general condition of the fabric was very poor. In addition to normal expenditure, the owners had to budget for a further £1,000 per family to meet the cost of rehousing these people in the same locality, but in buildings offering infinitely better conditions. Although these houses might have been envisaged as a straightforward conversion scheme, the widespread decay and limited floor area called for extensive rebuilding to transfer them into properties for which there is so great a demand in the Chelsea area.*

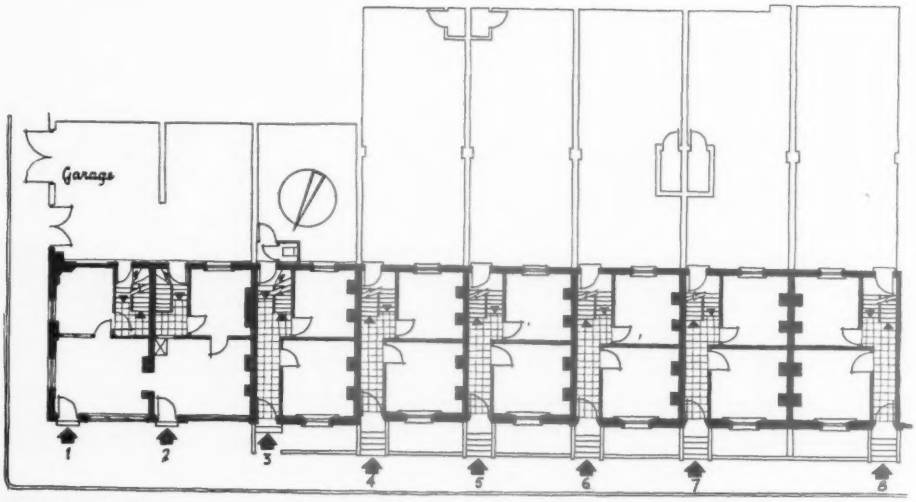
PLANNING DETAIL : *To overcome this problem of limited floor space, the block was extended some seven feet into the back gardens and a further storey was added; thus it was possible to remove the old roofs which consisted of a series of pitched roofs with valley gutters over each party wall. Basement rooms were dark and badly lit, but by excavating a further ten feet in front of the new rear elevation and by providing a series of steps to the upper garden level, the view from these lower windows with S.E. aspect was extended and all sense of enclosure was dispelled. To maintain the character and scale of the immediate neighbourhood and to harmonize with Paulton's Square, the street elevation retains its original features to which have been added a touch of the contemporary flavour.*

SERVICES : *Each house is provided with full central heating with solid fuel boiler and calorifier. One unit has separate gas boilers for heating and domestic hot water.*

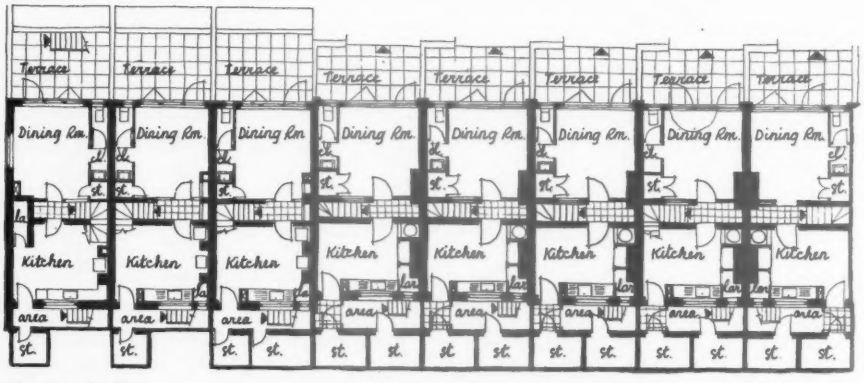
PAULTON'S STREET continued



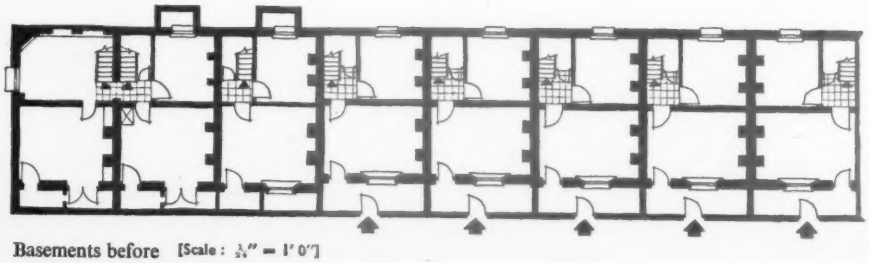
Ground floor after



Ground floor before



Basements after



Basements before [Scale : $\frac{1}{8}$" = 1' 0"]

The Television Library, Television Centre for the B.B.C., Scenery Block, Wood Lane, LONDON, W.12.

Architect: Building designed by Graham Dawbarn, Esq., C.B.E., M.A., F.R.I.B.A., of Messrs. Norman & Dawbarn. In association with M. T. Tudsberry, Esq., C.B.E., F.C.G.I., M.I.C.E.

Contractors: Messrs. Higgs & Hill Limited.

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Architects' Journal 16.12.54

WORKING DETAIL

BALCONIES: FLATS IN LONDON, W.2

Tecton-Drake and Lasdun, architects; Ove Arup and Partners, structural engineers

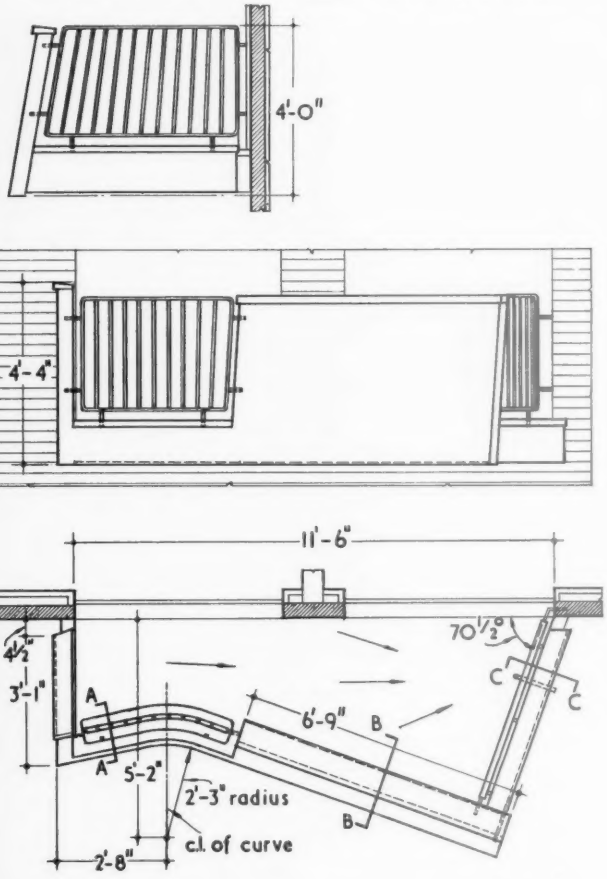
The balconies which connect the living room and main bedroom of each flat have been so designed to shut out the least amount of light from the flat below. The concrete is fair faced, having been cast in plywood shuttering, and is finished with stone paint. The soffits are painted blue, the balcony fronts stone and the return faces gold.

Architects' Journal 16.12.54

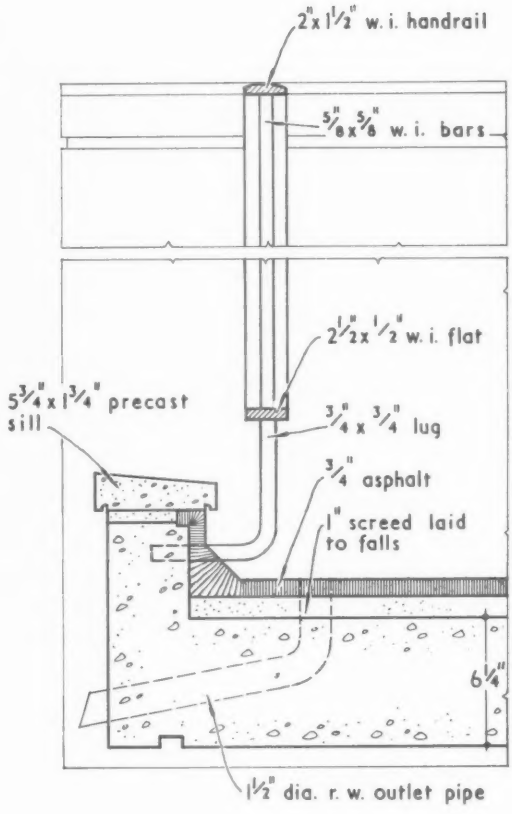
WORKING DETAIL

BALCONIES: FLATS IN LONDON, W.2

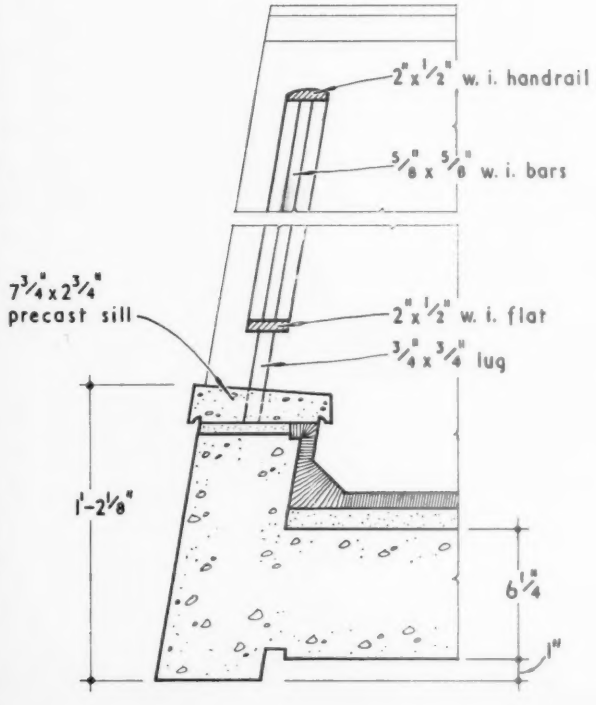
Tecton-Drake and Lasdun, architects; Ove Arup and Partners, structural engineers



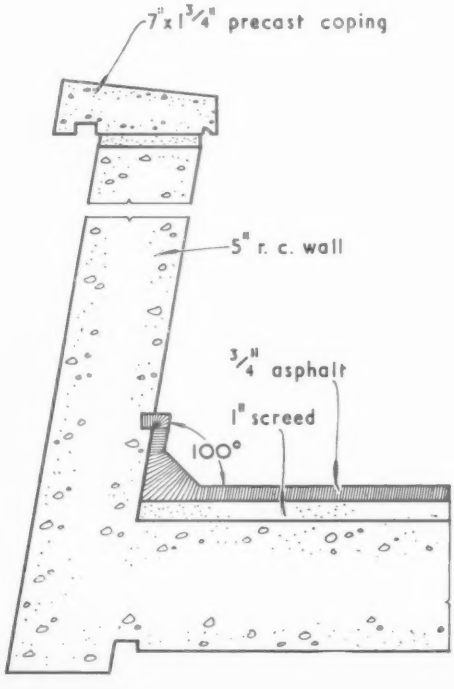
KEY PLAN AND ELEVATIONS. scale 1/4" = 1'-0"



SECTION C-C.



SECTION A-A. scale 1½" = 1'-0"



SECTION B-B.

WORKING DETAIL

DRYING CABINETS IN LAUNDRY: FLATS IN LONDON, W.2

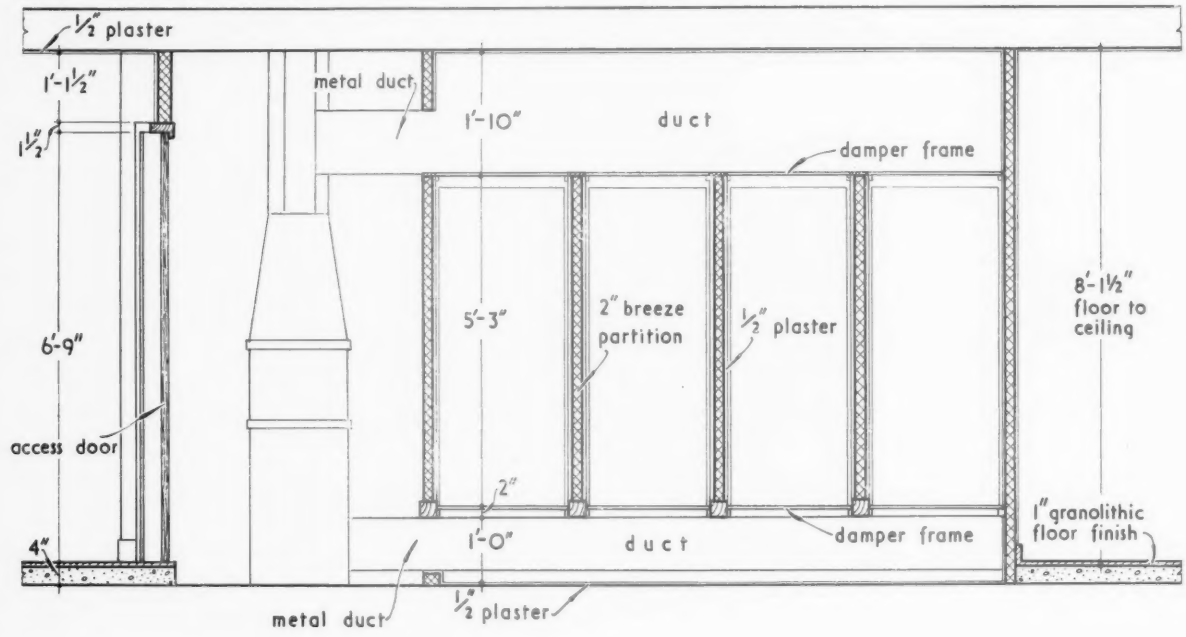
Drake and Lasdun, architects; Ove Arup and Partners, structural engineers

Air is forced into the duct which runs beneath the range of cabinets and is extracted through the duct which runs at the head. Pressed metal dampers at the head of each cabinet are adjusted to give the correct air flow. Clothes take an average of three quarters of an hour to an hour to dry. The expanded metal trays at the foot of each cabinet can be lifted out for cleaning.

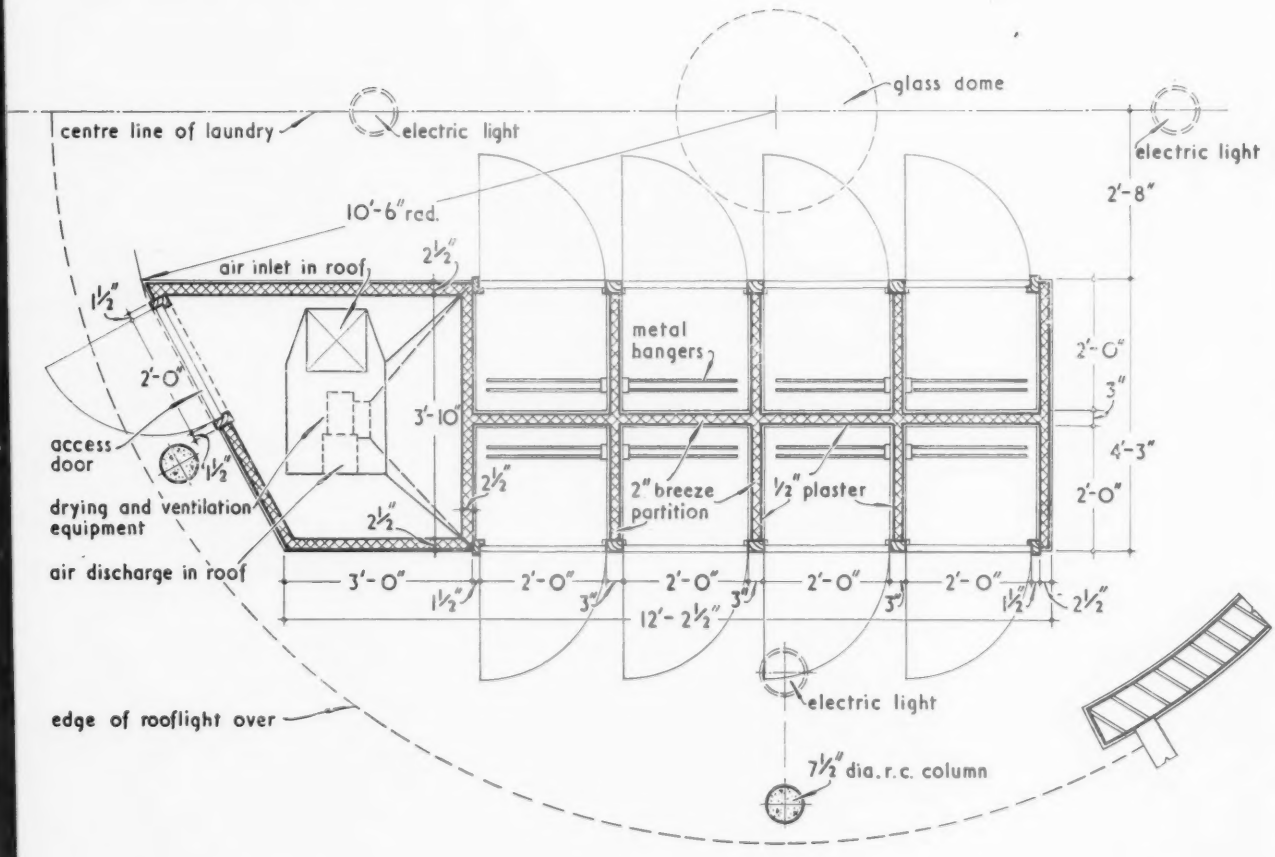
WORKING DETAIL **FURNITURE AND FITTINGS: 47**

DRYING CABINETS IN LAUNDRY: FLATS IN LONDON, W.2

Drake and Lasdun, architects; Ove Arup and Partners, structural engineers



LONGITUDINAL SECTION.



PLAN OF DRYING CABINETS. scale: ⅜" = 1'-0"

PA

RA
va
af

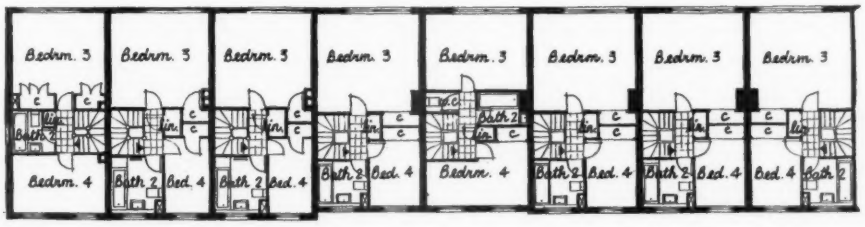
Front elevation before

Rear elevation before

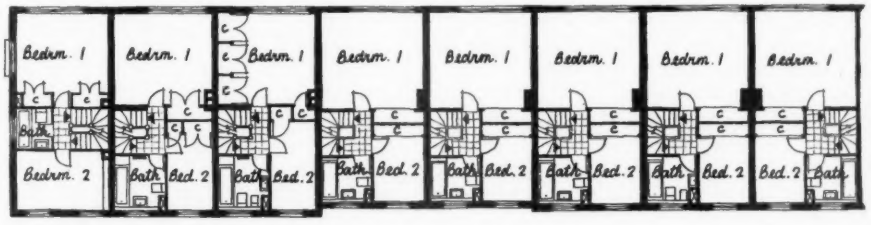
PAULTON'S STREET continued

RATEABLE VALUES : *The original rateable value averaged £25; this figure was raised to £91 after conversion.*

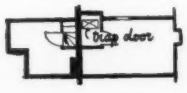
COSTS : *The purchase price of each house without vacant possession was £10,000 and conversion costs averaged £5,000 per house.*



Second floor after



First floor after



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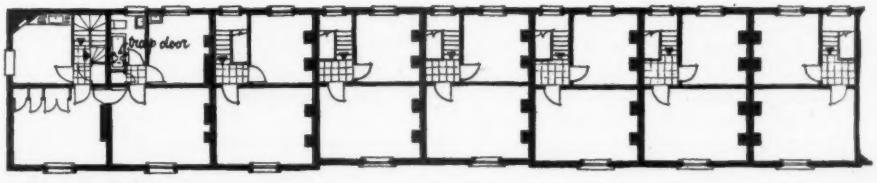


First floor before

basement floors, etc., will delight the client as well as his professional advisers.

Party walls

The minimum thickness of party walls is 8½ in. All such walls must have proper foundations and the walls be continuous from the surface concrete to the underside of the external roof finish, and in some cases must project above it. Not the smallest chase may be cut into an 8½ in. party wall, thus if services are to be hidden then walls must be thickened. Chimney breasts and shafts are not permitted to be cut away without the permission of the local authority or district surveyor, who will decide whether or not the stability of the building is affected detrimentally. The legal profession dislikes the dwelling unit which, when offered for sale, is not contained within a simply described shape. Maisonettes with party walls on either side and occupying the full height of a building offer no problem, but flats which overlap in part other units tend to complicate proceedings.

Space at rear of buildings

The interpretation of these regulations vary so much between one authority and the next that it may be misleading to lay down any hard and fast rules. From the small kitchen extension for the byelaw house to the large T or L shaped country house divided into several separate houses, the need for space at the rear of buildings to comply with the authority's demands cannot be overlooked—in fact it is as well to discuss a project with the local authority even before a scheme has been designed.

Projections from buildings

Building lines which define the frontages of sites do not prohibit foundations, water pipes, copings, cills, cornices, eaves and "other like architectural decorations" from being in advance of this line normally. But where buildings directly adjoin public roadways as for instance in mews properties, structural projections are far more severely controlled and authorities are prepared to argue over the odd ½ inch. Section 131 of the London Building Acts (Amendment) Act, 1939, should be consulted for projects in that area, but in all cases debatable points need discussion with the local authority.

Courts within buildings

Where buildings completely surround an internal court, adequate provisions are necessary for the ventilation of this area. To take the London area once again as an example, Section 48 of the London Building Act, 1930, stipulates that if the depth of the court from eaves or top of parapet to the level of the ground storey ceiling exceeds the length or breadth of the court, some provision shall be made whereby there is communication between the lower part of the court and the external air.

Salvaged material

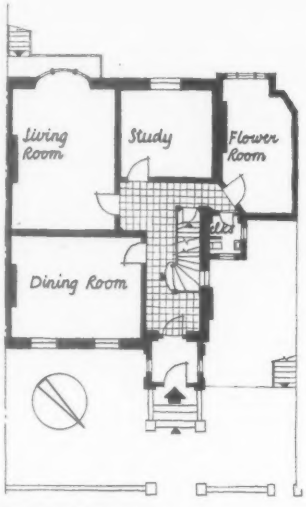
In addition to cleaning up the appearance of buildings, partial demolition offers a supply of salvaged material which can effect considerable economies in the purchase of new

133 Hamilton Terrace N W 8

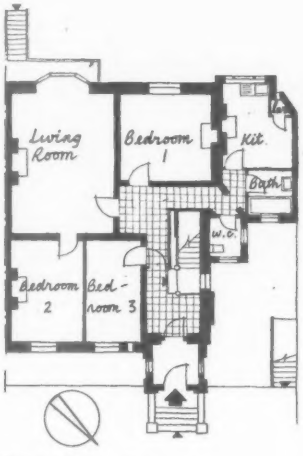
Architects: Nicholl and Hall

THE SCHEME: *After the last war, the extreme shortage of housing forced many local authorities to requisition properties and to adapt them temporarily for occupation by a number of separate families. Although speed of execution and limited capital expenditure must have set the standard, it is nevertheless surprising that opportunities were not then taken to provide self-contained units in cases where, for a few extra pounds, this could have been achieved.*

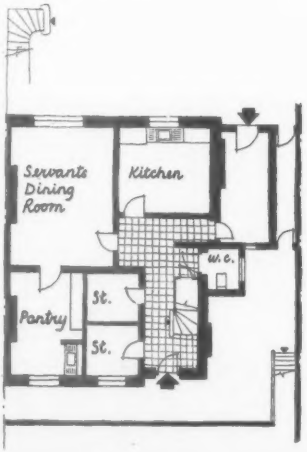
PLANNING DETAIL: *The straightforward layout of this particular five-storey house, with the staircase on the outside wall, offers no great problems in conversion. Living rooms, bedrooms,*



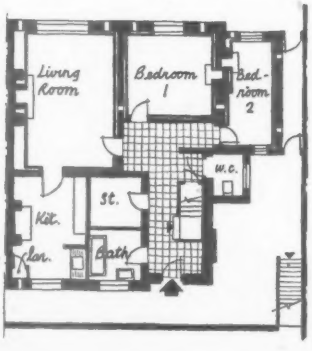
Ground floor before



Ground floor after



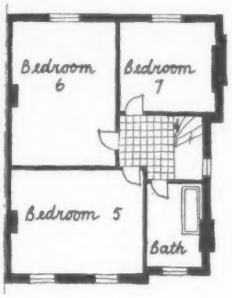
Basement before [Scale: ¼" = 1' 0"]



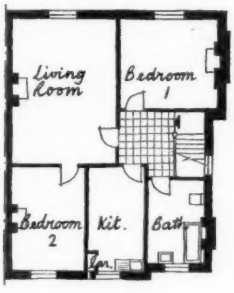
Basement after

kitchens and bathrooms are repeated in identical positions on each floor; this eliminates the annoyance from sound transmission where, for instance, a living room might be situated above a bedroom in the flat below. But with all this simplification, only three out of the five units are self-contained with their own front doors. Even in an attractive residential area of this kind, few people need now, or can afford the sole use, of a house of this size for single family occupation; it is, therefore, all the more essential that properties of this type should provide permanent homes for a number of families with the maximum of privacy. Any standards short of this tend to introduce friction between tenants and complicate the upbringing of young families.

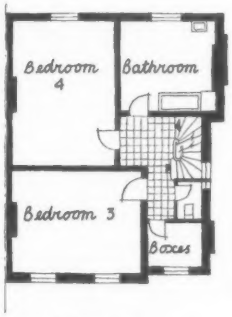
This is another example where excessive damp penetration was found in the basement. The entire area of the existing flooring had to be removed and new solid concrete floors laid. In the rooms overlooking the garden, a 3-in. skin wall with a 3-in. cavity was built around all walls from floor to ceiling and the cavities ventilated by a series of air bricks.



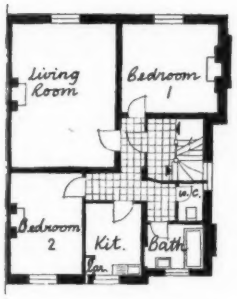
Third floor before



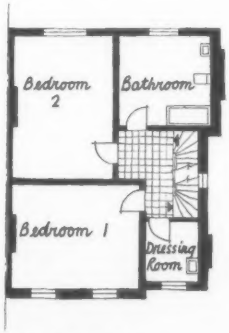
Third floor after



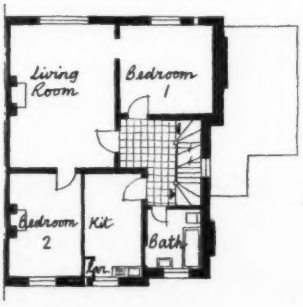
Second floor before



Second floor after



First floor before



First floor after

stock. This scarcely applies to buildings which have suffered from widespread infestation where the greatest precautions must be taken to avoid any repetition.

Room and cupboard doors should never be discarded, unless infected by timber beetle, if they can be repaired, refaced or reused, and this applies equally to linings, architraves, skirtings, fittings and shelving, windows and studding and structural timbers. But wherever dry rot is found, all nearby timber and joinery work should be burnt immediately on the site.

Roofing materials and brickwork, except when laid in cement mortar, are also useful stock even though many claim that by the time bricks have been carefully demolished, salvaged, cleaned and stacked it is cheaper to buy new bricks—this may be true in some cases where bricks are brittle or beginning to decay, but facings in particular are useful where any blocking up of openings calls for a reasonable match with the existing. Stone pavings from the old basement kitchens and passages are treasured by those with an eye for the landscaping of terraces, steps, paths and copings and many other purposes.

Structural steelwork, wrought iron railings and other fittings can be of use, as also the old lead roofs and plumbing which are the first items to be whipped from the site by the avaricious demolition contractor. Then there are the smaller articles of door furniture; some of the old china, glass or metal knob handles and escutcheons are of excellent design and sufficient numbers can be collected frequently for re-use on the doors on one floor or more, depending on the quantity available. Espagnolette bolts can be cut out to suit, if needs be, revised french door heights and the fittings replated to match other finishes. Schedules of fittings and their sizes should be made when preparing the measured survey so that this information is available and can be applied to the design as it develops. By incorporating or adapting the best of the salvaged material one can introduce some distinction into these conversions which might be cluttered up otherwise with the shoddier standard products of our day.

Built-in fittings and equipment

Opinion seems to be divided over the type of equipment with which each unit should be provided. One attitude is to install the minimum which will effect the let or sale, whilst the alternative is to do nothing at all but to credit the new resident with so many pounds which may be spent to suit his own needs. The latter system is less workable in conjunction with the lower rented units because financial limitations reduce the number of alternative schemes and finishes —but there is much to commend this arrangement on slightly more ambitious projects. Some developers extend the theme to include sanitary fittings, hot water and heating appliances so that all they offer really is a series of rooms with plumbing connections in bathrooms and kitchens and a cold water supply plus a lump sum which the developer provides in lieu. The new resident engages his own contracting firm and the whole

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Uninsulated, the thermal transmittance of the corrugated sheet roof would have been 1.40: lined with ½" Lloyd Insulation Board it is 0.32—a clear saving of 1.08 B.Th.U/sq. ft./°F/hour.

In other words, the insulating efficiency of the roof is increased by 75%. This means that considerably less fuel is needed to keep the building warm and a much smaller boiler plant could be installed. It also means that a capital saving has been made which is nearly double the cost of insulation.

Calculated in terms of the balance sheet this shows:

A saving on building costs of nearly £9,000
SO INSULATION SAVES CAPITAL

A yearly saving on fuel costs of about £1,500
SO INSULATION PAYS REGULAR DIVIDENDS

Apart from the actual saving in costs, Lloyd Insulation has other advantages: lighting is better and more even: solar radiation is reduced in summer so less air circulation plant is needed: and with the Lloyd fixing systems an existing factory can be insulated *without interrupting production.*

For more information about **Lloyd Insulation** *have a word with*

BOWATERS BUILDING BOARDS LIMITED

Bowater House, Stratton Street, London, W.1. Telephone: GROsvenor 4161.

operation is quite independent of the main conversion scheme. In varying degree this has been applied at Eaton Square and Paulton's Street (see pages 730 and 753). This device has its advantages for each resident can provide for his own individual requirements rather than tolerate what is intended to suit the average.

Flooring

The majority of conversions will include completely new plumbing, gas and electricity services and odd lengths of flooring throughout must be raised to house these installations. This can be a labour-absorbing operation when dual layers of flooring are encountered. Turning excessively worn flooring is not a simple operation for if properly relaid each board must be wedged to lie true and in the long run renewal may be nearly as cheap. Worn flooring of normal thickness can be refaced of course with a sanding machine—all the brads must be driven well home beforehand to avoid damage to the sander.

Where a slightly better flooring is required, particularly where it has to be renewed in any case, the German type blockboard with a patterned top veneer provides a floor and finish without the expense of a solid hardwood strip of sufficient thickness to span widely spaced joists; the advantage to the tenant or owner-occupier is that close carpeting to conceal shoddy floors is unnecessary.

Wherever electrical junction boxes occur in floor spaces, short lengths of boards with chamfered ends, secured with screws only, should be provided over these points; this also applies to other concealed services which may need attention now and again. Elsewhere every board should be examined to ensure that there is no squeaking or movement.

To improve finishes, there are a variety of materials to conceal old flooring—plywood squares, hardwood, cork, thin hardwood strip and blocks and many composition tiles and sheet material. The choice is dictated really by suitability and cost, but on the cheaper ranges there must be some guarantee that the quality will withstand conditions and that the new surfacing will not affect the sub-floor detrimentally. Some sheet materials, for instance, when laid on old flooring with poor ventilation beneath, can eliminate existing draught entirely with disastrous consequences. Timber that lacks ventilation is the happy hunting ground for dry rot and other forms of decay; thus the first precaution is to provide an underlay, such as Linovent, which allows the top surface of the covered flooring to breath. Another weak spot is the timber floor laid on concrete without proper damp proofing; all may be well until the surface is covered with an impervious flooring material. Kitchens and bathrooms which are frequently washed over are more susceptible to damp and dry rot than the average living or bedroom and great care must be taken, especially on lower floors which are in contact with the ground, to avoid circumstances which can encourage so easily sub-floor decay.

Fire precautions

Since the degree of resistance to fire required

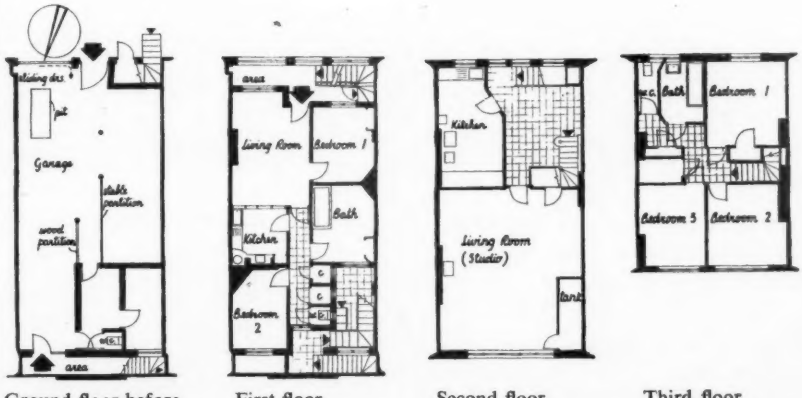
Aubrey Walk, W8

Architect: Douglas Stephen

THE SCHEME: *Formerly part of 18 Camden Hill Square to which it was joined by a garden, this curiously designed building contained originally the coach-house, stabling, laundry, staff accommodation and a large studio and was equivalent on a rather grand scale to a mews house. There has been no structural change on the ground floor which is used now as a garage, dark room, wine cellar and for storage. On the first floor there is a three-bedroom flat and in the process of creating a maisonette on second and third floors, practically all internal partitions were demolished. A magnificent panorama stretching from south west to south east over London can be enjoyed from the flat roof, now transformed into a roof garden.*

PLANNING DETAIL: *As a conversion, the two most interesting aspects are the new sub-floor heating within an existing timber joisted floor (shown on page 759) and the regulations that beset*

Ground floor after | First floor after | Second floor after | Third floor after



Ground floor before [Scale: $\frac{1}{8}$" = 1' 0"] | First floor before | Second floor before | Third floor before

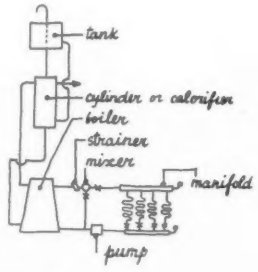
AUBREY WALK continued

the initial scheme. To comply with the byelaws, party walls had to be raised in height near the new staircase to the roof; this caused trouble with the adjoining owner who claimed loss of natural illumination to his roof light. The dispute was settled after the wall in question had been rendered and painted white. Then the new tubular steel framework supporting the staircase treads (there were no risers) displeased the District Surveyor who was concerned with fire risk and called for calculations of the tubular steel and a minimum tread thickness of 1½ in.; a compromise was finally agreed and there was little alteration to this staircase which runs from 2nd floor to roof level. Again there were difficulties with the new South windows to the living rooms at first and second floor levels; the byelaw concerned with cill heights and the distance between the head of one window and the cill of the one above had been infringed. After considerable negotiation, a waiver was obtained from the LCC; but then came further comment from the DS who objected to the load coming upon the existing 9-in. × 9-in. brick pier adjoining the new 2nd floor window; in the end a reinforced concrete frame was designed around the window to meet this criticism and to assist in spreading the load. And finally a conflict over the rearrangement of the first floor flat's kitchen which was an internal room without a window opening directly to the outside air. Being an habitable room, any change of position necessitated outside ventilation but so long as the kitchen remained untouched, and as used prior to conversion, no objection could be raised as to its original inadequacy. The kitchen, then, had to remain as it was.

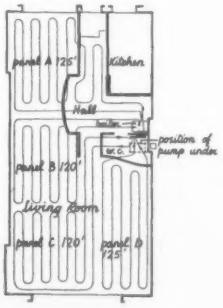
SERVICES: *In the maisonette, the living room and hall are heated by ⅜-in. copper coils at 15-in. centres; the kitchen was considered to be sufficiently warm without panels. To accommodate the panels, the timber joists have been slotted and the tubes rest upon felt pads. No insulation has been provided beneath the panels because members of the same family occupy the flat below and a limited amount of ceiling heating there was also felt desirable. Edge insulation was not used; party walls were thick at this point but boarding has been kept ½ in. away from walls and the gaps masked by the skirting. Because of the low temperatures, there has been little shrinkage in the old timber; but if used in conjunction with new timber, considerable movement would occur unless the material had been kiln dried to about 8 per cent. moisture content. To reduce heat losses windows are double glazed. The boiler is a gas fired Kayenco 5·70 with a rating of 70,000 B.Th.U. and is thermostatically controlled as also is the heating system; the pump circulator is placed on the return flow to the boiler. The combined cost of the boiler and panels (laid) was approx. £170. This figure was exclusive of the cost of manifolds, expansion tank, large calorifier unit and contractors' profit.*

COSTS: *The total cost of the work, in which dilapidations accounted for a considerable amount, was approximately £4,000.*

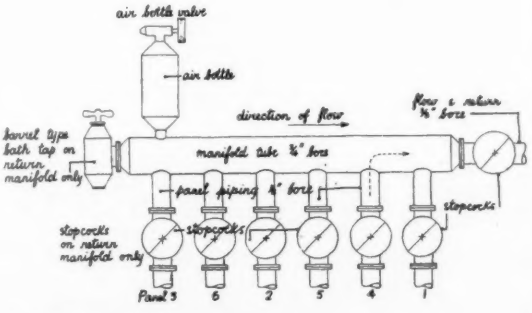
RATEABLE VALUES: *Before alterations in 1950 the rateable value was £124. For the building as converted the combined rateable value is now £179.*



Heating system



Floor heating layout



Detail of distribution head

varies with the height and type of building, its floor area and cubic content, it would be misleading to quote any hard and fast rules. Similarly, with the multiplicity of plan and section arrangements, standards to satisfy the local authority with regard to means of escape in case of fire cannot be covered by any generalisation. Each scheme will require individual consideration and the local authority for these purposes should be consulted at sketch plan stage. The relevant section of the Model is Byelaw 38.

Insulation

(*a*) *Party walls:* The traditional 9 in. brick party wall reduces the intensity of airborne sound by about 48 decibels and an 18 in. solid wall produces a further reduction of 5 decibels. But with a 2 in. airspace or cavity between 4½ in. brick leaves, the average sound reduction value is about 55 decibels; this assumes only twisted wire ties (about one per sq. yard) across the cavity. According to Digest No. 15 of the Building Research Station, the use of a more solid tie made of twisted steel strip "can largely nullify the value of the cavity as an insulator." Furthermore, additional sound absorbents within the interspace, such as quilts of slag or glass wool, "serve no useful purpose with clinker or foamed slag walls because these are already absorbent." 55 db. is considered to be the minimum for sound reduction of party walls so far as airborne noise is concerned. (*b*) *Floors:* In the adjustment of floor insulation values, one has to consider the impact noise as well as the transmission of airborne noise. The minimum sound reduction is the same as for party walls, (i.e. 55 db.) and not less than 5 phons improvement over a bare floor for impact noise. Without considerable expense this standard may be impossible to attain and few landlords would be willing to replace existing 9 in. party walls for cavity construction; but in cases where new walls and/or floors have to be built, these minimum standards should be attempted. The Building Research Station is shortly publishing details of recent research on floor and wall insulation in old buildings but until this appears, readers interested in this aspect should consult current sources of information amongst which are those mentioned below. The insulation of existing timber joisted floors can be improved by an insulation layer or "pugging," which consists of an inch or so of sand, or similar fine material, resting on sheets of plaster-board which are carefully cut to fit between the joists and supported by angle strips or wooden battens to the sides of the joists. The tray of plaster-board should not be fixed but rest only on its supports and provide as air-tight a membrane as possible. All joints should be scrim covered; the sand should be distributed equally over the tray.

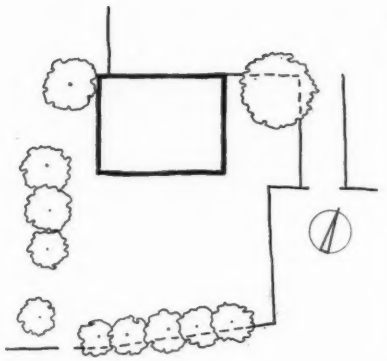
To complete this insulation, flooring should be made up in units or panels battened together and resting on a glass wool quilt which is laid over the tops of the joists. It is essential to the efficiency of the floating finish that no nails should be driven through the flooring to the joists. This may appear a laborious operation but if adequate insulation is to be obtained, there is no short cut

Hall Cottage, Southwold

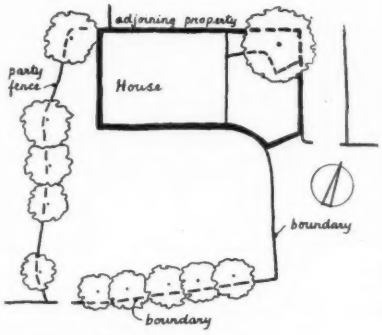
Architect: Felix Walter

THE SCHEME : *A derelict gardener's cottage set in a secluded corner of the main garden was used as a potting shed and tools store. Although near the town centre, there were extensive views from the site over marshland and water meadows and it was decided therefore to retain and convert the building into a cottage with three bedrooms, living room and adioining garage.*

PLANNING DETAIL : *This example is included to show how somewhat less conventional planning can meet the needs of the client as well as the peculiarities of the problem. A garage was asked for but there was little space for it and in fact a few square feet of the public way had to be acquired to provide sufficient access for the garage approach. The plan shape was dictated by this approach and by the client's desire to retain a mature and decorative tree; but as so often happens when a problem has been solved, the tree was cut down later because the client's companion objected to the lack of view from her bedroom window (no. 3). In the house itself, the arrangement had to be linked with the existing staircase whilst the living and dining areas were required as one. Owing to the awkward position of the ground floor fireplace, the chimney stack was demolished between ground and first floor and supported on twin steel joists over the dining recess. The fluid shape of the first floor corridor and the omission of angular corners tended to increase the apparent size of this restricted space.*



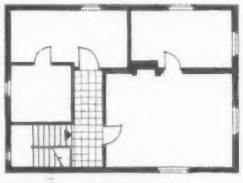
Site survey before



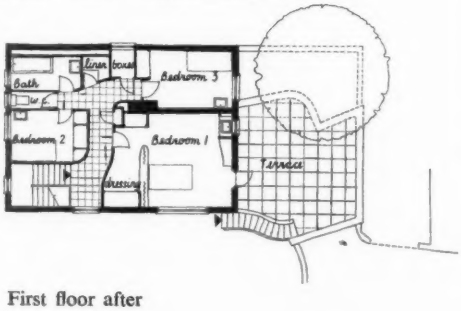
Site survey after

SERVICES : *Central heating (continuous panel beneath window) in living area from solid fuel boiler. Domestic hot water was from the same source with an alternative immersion heater.*

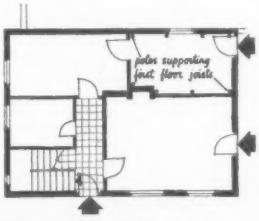
COST : *Approximately £1,200.*



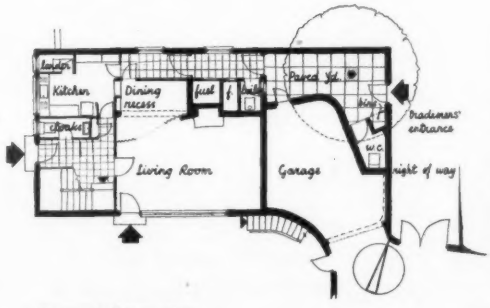
First floor before



First floor after



Ground floor before
[Scale : $\frac{1}{4}$" = 1' 0"]



Ground floor after

at present. Although concrete floors will also be encountered at times, the majority will be of timber—but very briefly, the simplest, cheapest and most effective treatment known, as Digest No. 15 states,* are screeds or board-and-batten finishes resting on a layer of bitumenized glass wool.

Those reluctant to provide a floor insulation value (against airborne noise) of 55 db. may consider false ceilings or a top surface such as hessian-backed rubber underlay with perhaps a haircord carpet on top. This may be good enough when flats are leased furnished (such a treatment was carried out at 31, Fitzjohn's Avenue—see page 743) or possibly in the case of expensive unfurnished units where close-carpeting is a condition in the lease; but elsewhere it is really not workable.

The control of indirect sound transmission in old buildings is scarcely possible, for most existing walls and partitions will remain and unless every member is treated there is little advantage in attempting to insulate odd walls.

(*c*) *Plan arrangement:* Noise suppression can also be assisted by the careful grouping of identical accommodation units one above the other. Apart from the virtue of plumbing economies, kitchens and bathrooms planned vertically one above another concentrate similar activities and noises together. Similarly bedrooms repeated in identical positions on successive floors are preferable to living rooms, which are placed, for instance, over bedrooms in the flat below. Where floor insulation problems have not been solved, this planning procedure is likely to reduce disturbance during sleeping hours.

(*d*) *Noise from services and other sources.* i. *Water storage:* The continual filling of cisterns and w.c. flushing tanks, particularly at night, can be most irritating. The noise can be overcome by reducing the pressure of the feed pipe before entering the tank, or by extending the inlet from the ball valve with a short length of pipe carried down to the bottom of the tank. ii. *Water hammer:* This can be caused by rapid-closing taps such as the self-closing or spring tap or plug-cocks. Water hammer is more likely to occur on long lengths of services, and in designing supply runs, sharp bends and rapid reductions in pipe sizes should be avoided. Proper screw-down bib-cocks slow down the flow of water gradually and so long as suitable washers are maintained water hammer in these circumstances is unlikely. iii. *Flushing lavatories:* With a silencer attached to the tank (see sub. para. i. above) there remains the noise from flushing the pan. The main cause lies in the design of the pan, but this can be overcome by using a syphonic type instead of the usual wash-down. iv. *Traps:* The ordinary basin and sink trap can be affected by nearby fittings in the same drainage system and we are all familiar with the gurgling noise that occurs when someone else's basin is emptied. Small ventilation pipes attached to the waste pipe between the trap and stack pipe will overcome this syphonage by momentum. Alternatively, a well designed anti-vac trap could be provided—

* Building Research Station Digest No. 15. Paras. 54-60, Appendix C. Housing Manual, 1944 (HMSO).

Paras. 23-29, Appendix B. Housing Manual. 1944 (HMSO).

Readers requiring up-to-date information on building products and services may complete and post this form to the Architects' Journal 9, 11 and 13, Queen Anne's Gate, S.W.1

ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers' names please.)

.....

.....

.....

Please ask manufacturers to send fnrther particulars to :—

NAME .....

PROFESSION or TRADE

.....

ADDRESS .....

.....

16.12.54

this is a neater arrangement than the customary lead trap and vent pipe. v. *Noise between bedrooms:* The normal partition between one bedroom and another is often of poor insulation value. In schemes where built-in fittings are to be provided in bedrooms, these fittings can act as valuable baffles between bedrooms—for there is not only the thickness of the partition and cupboard door but also the absorbent effect of the hanging clothes. vi. *Street noise:* On lower floors in a busy street this can be most disturbing. Acoustic ceilings tend to reduce the noise; double glazing is far more effective, of course, but expensive also.

(*e*) *Thermal insulation:* Reference has been made already to thermal insulation in an earlier section (Dilapidations in buildings). But a matter of some importance is the large room which has a considerable amount of glazing; heating costs can be reduced quite surprisingly by the use of properly sealed double-glazing. The additional thickness of glass and air space is likely to call for increased rebate depths, but in the old windows whose sections are more generous than those of today this adjustment is usually possible.

Lifts

The decision to install new lifts in conversion work depends on the number of floors and flats to be served and the income desired from the lettings. With the cost of lift installations from about £1,500 upwards, plus builders' work developers will only provide this amenity when it is an essential to residents or where upper flats which command high rentals would otherwise not maintain the budgeted rent levels.

Positions for lift motors are determined by the layout and sections of the buildings in which they are to be installed but generally, it is more economical to locate these in the basement, even though longer cables are necessary. By constructing the new lift shaft adjacent to an existing staircase, advantage can sometimes be taken of half landings, should restricted capital limit the number of landing levels. In addition, to avoid the reconstruction of roofs to allow for overruns or winding gear, the two uppermost floors can be served from the half landing between them. Where motor rooms have to be constructed above the shaft, and to save piercing the roof, the top floor may have to be omitted from the lift service—this is a disadvantage, of course, but no great hardship.

In a financial forecast of a conversion scheme which includes a new passenger lift, in addition to the cost and installation of the lift itself, builders' work must be added. This may reach a surprising percentage of the whole if a completely new shaft is to be constructed, with insurance, running costs, repairs and maintenance. Occasionally a series of fair sized w.c. compartments planned one above another can be used as the shaft, but it is unusual to find this adjacent to the future public staircase.

For your convenience

The best toilet seat—at no extra cost

Polyflex

Patent pending and registered trade mark

The 'Polyflex' toilet seat has a *flexible mounting*. Breakages are very unlikely. 'Polyflex' includes a flexible PVC rod attached to the seat and firmly fitted into Polythene seat pillars. The pillars, reinforced with a threaded brass insert, are self-centering in the WC pan with polythene washers secured by wing nuts. The 'Polyflex' seat can be fitted by the housewife without any tools, and, because of the flexible mounting, it will stay firmly in position. The 'Polyflex' is hygienic. The seat, hinge, and pillar heads cannot corrode or peel. All are easily cleaned. The 'Polyflex' is available in black, white and a range of standard pastel shades.

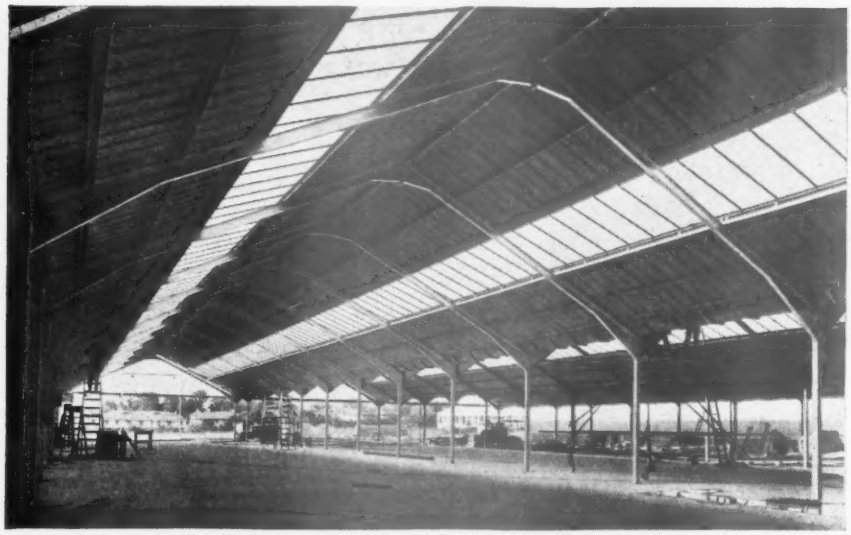
MADE BY LORIVAL* AND SOLD BY Shires

for your convenience

* The firm well-known as 'Lorival Plastics'—designers and moulders of components and complete articles in modern plastic materials.

Shires are the largest manufacturers of moulded cisterns in the country. They also make WC pans and seats, flush-pipes and complete WC suites.

LEAFLETS FROM:—DIVISION A, SHIRES & CO. (LONDON) LTD., GREENBOTTOM WORKS, GUISELEY, YORKS. (FACTORIES ALSO AT LONDON AND STOKE)
SHIRES (IRELAND) LTD., STANNAWAY DRIVE, CRUMLIN, DUBLIN



Economy. Less costly than equivalent lattice structure.

Simplicity. Frames are completely prefabricated to fine limits and bolted on site. No site welding.

Versatility. Any span up to 120ft. Any pitch.

Speed. Unequalled rapidity and ease of erection.

Lifting Gear. Cranes can be mounted integral with the main structure or as a separate unit.

Design. Our well qualified technical staff is at your disposal.

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IT'S A SOUND PROPOSITION SIR!

In fact, J & B Acoustic correction is an INVESTMENT because noise reduction in industrial buildings increases the efficiency of employees. Quiet and privacy in flats, offices and homes improves health; and the effective thermal insulation saves fuel as well.

J & B Mineral Wool Insulation is easy and safe to handle and install. Versatile and prefabricated in many forms, it can be adapted or moulded to suit highly specialised applications.

We believe an estimate would convince you of the economies of J & B Mineral Wool Insulation. A convincing offer for a sound proposition.

J&B MINERAL WOOL

remains the perfect insulant

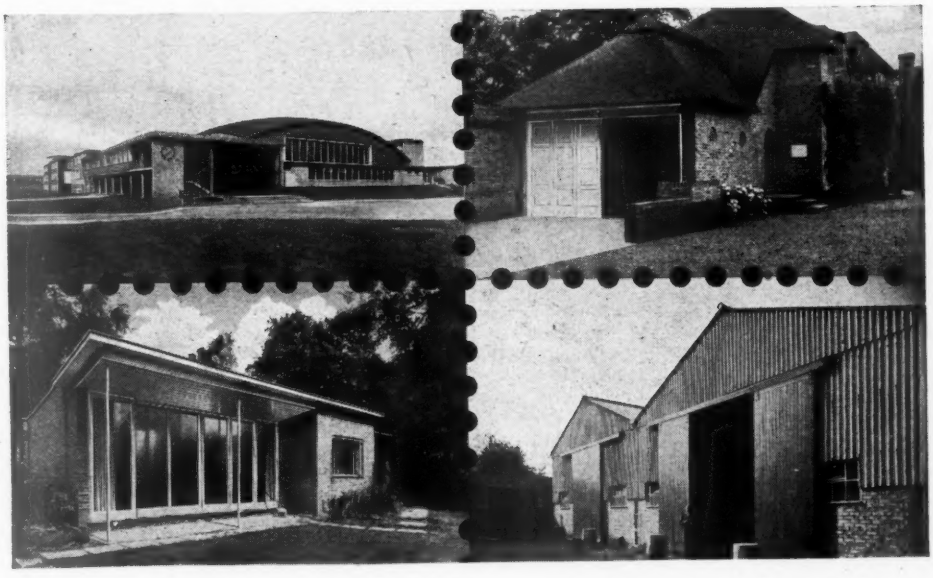
Our Advisory Department (S.10) will welcome your enquiries without obligation.

FIREPROOF. MOULD-PROOF. NON-CORROSIVE. WATER REPELLENT. ECONOMICAL. NON-SETTLING. INORGANIC.

JONES & BROADBENT LTD. Perren Street, London, N.W.5. *Telephone: GULliver 2120, 5548-9*

And at BILLINGHAM-ON-TEES, SOUTH BANK (YORKS), BRISTOL, BURTON-ON-TRENT, LIVERPOOL AND MANCHESTER.

If you want a door to slide . . .



. . . talk to "HILLALDAM" about it . . . they have a range of gear for every door that slides

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E. HILL ALDAM & CO., LTD.,

THE SLIDING DOOR PEOPLE

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Telephone: Wimbledon 8080 (5 lines) Telegrams: "Aldamillo" Put. London

CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

Public and Official Announcements

25s. per inch; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

MINISTRY OF WORKS.

LEADING ARCHITECTURAL ASSISTANTS required for drawing offices in the Chief Architect's Division in London, Edinburgh and various provincial offices.

Candidates must have had at least three years architectural training, good experience in an architect's office, and be of Intermediate R.I.B.A. standard. London salary £710—£834 per annum. Rates elsewhere slightly less. Starting pay according to experience. Prospects of promotion and establishment.

State age, full details of training and experience, and office desired, to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.10(F), Abell House, John Islip Street, London, S.W.1. 4732

MINISTRY OF WORKS.

ARCHITECTURAL ASSISTANTS required for drawing offices in London, Edinburgh and various provincial offices, including Aldermaston, Berks; Harwell, Berks; Nancekuke, Cornwall; Ranskill, Notts; and Bishopton, Renfrew.

Candidates must have had at least three years architectural training, some experience in an architect's office, and be of Intermediate R.I.B.A. standard.

London salary £442—£695 per annum. Rates elsewhere slightly less. Starting pay according to age and experience. Prospects of promotion and establishment.

State age, full details of training and experience and office desired, to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.10(F), Abell House, John Islip Street, London, S.W.1. 4731

FERMANAGH COUNTY EDUCATION COMMITTEE.
NORTHERN IRELAND.

Applications are invited for the following posts on the permanent staff of the County Education Architect.

(*a*) ASSISTANT ARCHITECT—Salary Scale £680 × £25—£980 × £15—£995 p.a.

(*b*) ARCHITECTURAL ASSISTANT—Salary Scale £425 × £20—£625 p.a.

Both appointments are established, pensionable and subject to the provisions of the Local Government (Superannuation) Act (Northern Ireland), 1950.

Qualifications required :—

(*a*) Registered Architect, A.R.I.B.A., and/or University degree or diploma in Architecture.

(*b*) Pass in Inter. Exam. of R.I.B.A. and minimum of four years' experience in Architect's office.

Forms of application and conditions of appointment may be obtained from the undersigned, with whom completed applications must be lodged not later than Tuesday, 4th January, 1955.

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

J. MALONE,
Chief Education Officer.

Education Office,
Enniskillen,
Northern Ireland.
26th November, 1954. 4943

PADDINGTON BOROUGH COUNCIL require QUANTITY SURVEYOR'S ASSISTANT, A.P.T. (new) grade I (£530—£610 inclusive) (£10 p.a. less if under age 26). Candidates should have experience in preparation of estimates, working up, abstracting, billing, site measurement and working up to final account stage. Inter R.I.C.S. or equivalent preferred. Write age, experience, qualifications, names of three referees to the undersigned by 22nd December, 1954 (Quoting A.190).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4983

PADDINGTON BOROUGH COUNCIL require ARCHITECTURAL ASSISTANT, A.P.T. (new) grade II (£590—£670 inclusive). Candidates should have Inter R.I.B.A. and be used to preparing working and detail drawings; be good draughtsman and been engaged on and interested in the best contemporary architecture. Write age, qualifications, experience, present and past appointments and names and addresses of three referees to the undersigned by 22nd December, 1954 (Quoting A.189).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4982

BOROUGH OF OLDBURY.
BOROUGH SURVEYOR'S DEPT.—ARCHITECTS' SECTION.

Applications are invited for the following appointments in the Architects' Section of the Borough Surveyor's Department:—

(*a*) ONE ASSISTANT ARCHITECT—Grade VII.

(*b*) TWO ASSISTANT ARCHITECTS—Grade VI.

Applicants for appointment (*a*) should be Associate Members of the R.I.B.A. The Architect appointed will be required to take charge of a clearance area development scheme, and previous experience of this type of work is desirable. In addition applicants should have experience in the layout of contemporary housing schemes, and the design and construction of Municipal houses and multi-storey flats.

Applicants for appointment (*b*) should be qualified Members of the R.I.B.A., with housing and education experience, and be capable of administering building contracts.

The appointments will be superannuable, subject to the National Conditions of Service, and to the selected candidate passing a medical examination.

Applications, giving particulars of age, qualifications and experience, and the names of two referees, should be delivered to the undersigned not later than Tuesday, 21st December, 1954.

Housing accommodation will be made available to married applicants, if required.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings, Oldbury.
6th December, 1954. 5040

COUNTY BOROUGH OF HALIFAX.
ASSISTANT ARCHITECT (GENERAL).

Applications are invited from qualified persons for the above appointment in the Borough Engineer's Dept. Salary: £625-£675 p.a., pending review of grading of Special Classes of Officers. Applications, stating age, education and training, qualifications, present and past appointments (with dates and salaries) and experience, accompanied by copies of two recent testimonials, should reach me by 30th December, 1954.

RICHARD de Z. HALL,
Town Clerk.

Town Hall, Halifax. 5039

HAMPSHIRE COUNTY COUNCIL.

Applications are invited for the appointment of a PLANNING ASSISTANT on Grade III of the National Scales (£550-£595) in the South-East Area Office of the Planning Department at Fareham.

Candidates should have preferably a degree of a British University and/or an Intermediate qualification of the Town Planning Institute or of a related body. Previous experience in the office of a Local Planning Authority will be an advantage.

The appointment is pensionable, and will be subject to a satisfactory medical report. In approved cases the County Council are prepared to assist newly appointed staff to meet removal expenses.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial, and the names of two referees, should reach the County Planning Officer, Litton Lodge, Clifton Road, Winchester, by the 23rd December. 5053

SOUTH CAMBRIDGESHIRE RURAL DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT in the Department of the Council's Architect. Salary will be within the amended Grades A.P.T. I-II (£500—£640).

Architectural experience in housing is necessary and candidates must be capable of surveying, levelling, and preparing working drawings and specifications.

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

Forms of application can be obtained from the undersigned to whom they must be returned not later than 1st January, 1955.

Canvassing either directly or indirectly will disqualify.

B. G. CRAFT,
Clerk to the Council.

County Hall,
Hobson Street, Cambridge. 5023

STEVENAGE DEVELOPMENT CORPORATION.

Applications are invited for the following posts in the Chief Architect's Department:—

(*a*) ASSISTANT LANDSCAPE ARCHITECT. Salary grade: A.P.T., VIII (£785-£860). Applicants should have passed the Final I.L.A. and have good experience.

(*b*) LANDSCAPE CLERK OF WORKS. Salary: £675 per annum, experienced in supervision of landscape contracts.

(*c*) ARCHITECT/PLANNER. Salary grades: A.P.T., V, Va or VI (£620-£670, £650-£710 or £695-£760). Applicants should have Town Planning qualifications.

Housing accommodation will be available in due course in appropriate cases.

Applications, giving full details of experience and qualifications, together with the names of two referees, should be sent to the Chief Administrative Officer, Aston House, near Stevenage, Herts., not later than Friday, 31st December, 1954. 5043

WEST SUSSEX COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT ARCHITECT at a salary in accordance with the amended Grade IV A.P.T. Division (£675 to £825 per annum) of the National Scales of Salaries.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 5th January, 1955.

T. C. HAYWARD,
Clerk of the County Council.

County Hall,
Chichester.
1st December, 1954. 5010

STAFFORDSHIRE COUNTY COUNCIL
EDUCATION COMMITTEE.

Applications are invited for the following appointments in the County Education Architect's Department. The Department is a large and interesting one, with a variety of work, and is being considerably enlarged. It is situate in pleasant surroundings in a building of historical interest.

ASSISTANT ARCHITECTS. Graded according to qualifications, with a maximum salary of £735-£825 per annum.

JUNIOR ARCHITECTURAL ASSISTANTS. New grades, A.P.T. I-II, with a maximum salary of £640.

UNQUALIFIED ARCHITECTURAL ASSISTANTS. (On temporary establishment until qualified.) Minimum salary required should be stated.

QUANTITY SURVEYORS. Maximum salary £705-£825 per annum.

UNQUALIFIED QUANTITY SURVEYORS (Unestablished Staff.) Within a maximum of £600. Minimum salary required to be stated.

ELECTRICAL ENGINEERING ASSISTANTS. Grades A.P.T., I-II. Salary within a maximum of £825, according to qualifications and experience. Experience necessary in design, specifications, installations, etc., for large buildings and schools.

ASSISTANT SURVEYOR. (Intermediate R.I.C.S. standard.) New grades, A.P.T., II (within a maximum of £640), according to qualifications and experience. Knowledge of administrative procedure for acquisition of sites, etc., will be an advantage.

Application forms for the above appointments can be obtained from the County Education Architect, Green Hall, Lichfield Road, Stafford, and should be returned completed within 10 days of this advertisement.

T. H. EVANS,
Clerk of the County Council. 5038

COUNTY BOROUGH OF BOOTLE.

Applications are invited for the following two permanent appointments:—

ASSISTANT QUANTITY SURVEYOR. Amended Grade IV, £675-£825 per annum.

ARCHITECTURAL ASSISTANT. Amended Grade II, £560-£640 per annum.

Preference for this appointment will be given to those having experience on the design and planning of schools.

Application forms, obtainable from the Borough Surveyor, Town Hall, Bootle, are returnable by Friday, 31st December, 1954.

HAROLD PARTINGTON,
Town Clerk. 5080

PADDINGTON BOROUGH COUNCIL require JUNIOR to train as QUANTITY SURVEYOR'S ASSISTANT. Salary £200 p.a. at age 16, rising to £505 p.a. at age 28. Candidates should possess G.C.E. (three passes at Ordinary Level). The post affords an opportunity and experience for candidates studying for Quantity Surveying Professional Examinations. National Conditions of Service. Superannuation. Write age, experience, education, and names of two referees to the undersigned by 22nd December, 1954 (Quoting A.191).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. 4981

GLOUCESTERSHIRE COUNTY COUNCIL.

ASSISTANT ARCHITECTS, qualified Members of R.I.B.A. Salaries as from 1st January, 1955: £625 by £25 to £675 (pending further decision of N.J.C.). N.J.C. Conditions of Service. Medical examination. Motor car driving licence.

Apply, giving age, present position, salary and date appointment, previous appointments, names and addresses two persons for references, County Architect, Shire Hall, Gloucester, by 22nd December, 1954.

GUY H. DAVIS,
Clerk of the County Council. 5041

BOROUGH OF BRIDLINGTON.

Applications are invited for appointment of ARCHITECTURAL ASSISTANT. Salary New Grade A.P.T., III—£600 to £725 p.a. Candidates must be Registered Architects and preference will be given to those who have passed the R.I.B.A. examination, have good architectural training, and are experienced in general Architectural work, particularly Housing. Applications, with names of three referees, must be received by undersigned not later than 31st December, 1954.

Housing Accommodation available if required.

S. BRIGGS,
Town Clerk. 4969

COUNTY BOROUGH OF GREAT YARMOUTH.
EDUCATION COMMITTEE.
SCHOOLS ARCHITECT'S DEPARTMENT.

Applications are invited from Associate Members of the R.I.B.A. for the appointment of SENIOR ASSISTANT ARCHITECT on the permanent staff. Salary: Grade VII (£735-£810).

Candidates should have a knowledge of modern school design and construction.

The Council is unable to assist with housing accommodation. An allowance of 25s. per week will be paid for a period not exceeding six months, in the event of a married man being appointed who is unable to find accommodation.

Previous Local Government experience is not essential. Appointment will be terminable by one month's notice on either side, and is subject to the provisions of the Local Government Superannuation Act, 1937.

Canvassing will be deemed a disqualification, and candidates must disclose any relationship to any member of or holder of any senior office under the Council. Candidates who fail to do so will be disqualified or, if appointed, liable to dismissal without notice.

Applications, stating age, qualifications, experience, and giving details of past and present appointments, together with the names of two referees, should reach the Schools Architect, 22, Euston Road, Great Yarmouth, by the 23rd December, 1954.

D. G. FARROW,
Chief Education Officer.

Education Offices, 22, Euston Road,
Great Yarmouth. 5048

COUNTY BOROUGH OF READING.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the post of ARCHITECTURAL ASSISTANT new Grade II A.P.T. (£560—£640). Appointment subject to candidates having passed the R.I.B.A. Intermediate Examination or equivalent. Applicants must have had experience in Architect's office. Application forms to be returned not later than Friday, 7th January, 1955, obtainable from Borough Architect, Town Hall, Reading. 5022

BOROUGH OF BACUP.
ARCHITECTURAL DRAUGHTSMAN.

Applications are invited for the above appointment in the Borough Engineer's Department at a salary in accordance with the new Grade II, A.P.T. Division (£560—£640).

Housing Accommodation will be provided if required.

The appointment is subject to the provisions of the Local Government Superannuation Acts and the National Scheme of Conditions of Service.

Applications, together with names of two referees, to be submitted to the undersigned not later than 31st December, 1954.

ROBERT POTTER,
Town Clerk.

Town Clerk's Office,
Stubbylee Hall, Bacup. 5037

KINGSWOOD U.D.C. (BRISTOL).
SURVEYOR OF THE COUNCIL.

Applications for this vacancy by Monday, 20th December, must set out detailed experience under each section of Local Government work; posts held with dates; age; two testimonials; qualifications, etc. (Corporate Members of the Institution of Civil Engineers and/or hold the testamur of the Institution of Municipal Engineers. Architectural qualifications and experience would be an additional recommendation.) The duties must be taken up not later than 31st March, 1955.

Salary £920, with three increments of £57 10s., to £1,092 10s. (New National Scales and Conditions and all future Recommendations implemented automatically.) As Kingswood (19,000 approx. population) is on the Gloucestershire fringe of Bristol City, it is being rapidly developed, and it needs a Surveyor of vision, initiative and experience. *A house will be offered.*

I. H. DEARNLEY,
Clerk of the Council.

Council Offices, Kingswood, Bristol. 5042

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

Applications are invited for the post of ASSISTANT QUANTITY SURVEYOR in the Architect's Department of the Board's Headquarters.

Salary: £600 × £25 (7) × £30 (3)—£865. The commencing salary may be fixed at a point above the minimum, for candidates over 25 years of age where experience at full professional standard is shown.

Applicants must hold, or have previously held, Corporate Membership of the Royal Institution of Chartered Surveyors and have experience in taking off and preparing Bills of Quantities and settlement of final accounts, etc.

The person appointed will be engaged on the preparation of preliminary estimates, Bills of Quantities, site measurements and valuations for interim certificates and final accounts.

Applications stating age, experience, qualifications, full details of present position and names and addresses of three referees should be sent to the Secretary, East Anglian Regional Hospital Board, 117, Chesterton Road, Cambridge, not later than 29th December, 1954. 5085

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Vacancies for ARCHITECTS, Grade III (up to £892 10s.), and ARCHITECTURAL ASSISTANTS (up to £739 10s.), in Schools and Housing Divisions.

Particulars and application forms from Architect (AR/EK/A/2), County Hall, S.E.1. (1058) 2906

BOROUGH OF OSSETT.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with present Grade A.P.T., VI. Candidates should hold a recognised Architectural qualification and be experienced in Local Authority housing work.

The appointment will be subject to National Conditions of Service, the Local Government Superannuation Acts, medical examination, and one month's notice on either side.

Applications, including the names of two referees and declaring any relationship between the applicant and any member or senior officer of the Council, are to be received by me not later than Wednesday, 29th December, 1954.

Canvassing in any form will disqualify.

(Signed) B. FREEMAN,
Town Clerk.

Town Hall, Ossett.
7th December, 1954. 5052

COUNTY BOROUGH OF BURTON-UPON-TRENT.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the appointment of an ASSISTANT ARCHITECT in the Borough Architect's Department which will be set up by the Council on and from the 1st January, 1955. The post will be in the new Grade II of the A.P.T. Division of the National Scheme of Conditions of Service (£560—£640 per annum) and the commencing salary will be in accordance with qualifications and experience.

Preference will be given to candidates who have passed the Final Examination or part of the Final Examination of the Royal Institute of British Architects.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937 to 1953, and to the successful candidate passing a medical examination by the Medical Officer of Health.

A Corporation house will be made available if required.

Applications stating age, qualifications and experience, and accompanied by copies of three recent testimonials, must be delivered in sealed envelopes endorsed "Assistant Architect," to the undersigned not later than the 31st December, 1954.

H BAILEY CHAPMAN,
Town Clerk.

Town Hall,
Burton-upon-Trent.
8th December, 1954. 5086

CITY OF BIRMINGHAM.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments in the Housing Design Section, which is responsible for a large housing programme in suburban and central redevelopment areas, including multi-storey flats in both traditional and new-traditional construction, garages, and large shopping centres:—

ASSISTANT ARCHITECT. Grade A.P.T., VIII (£785-£860 per annum).

ASSISTANT ARCHITECT. Grade A.P.T., VII (£735-£810 per annum).

ARCHITECTURAL ASSISTANT. Grade A.P.T., IV (£580-£625 per annum).

Applicants for Grades A.P.T., VII and VIII, must be Associate Members, and for Grade A.P.T., IV, must have passed the Intermediate examination of the R.I.B.A., or hold equivalent qualifications.

The posts are permanent, superannuable, subject to a medical examination and to one month's notice on either side.

Applications, endorsed with the heading of the post, stating age, present position and salary, qualifications and experience, together with the names of two persons to whom reference can be made, should reach the undersigned not later than 21st December, 1954.

Canvassing disqualifies.

A. G. SHEPPARD FIDLER,
City Architect.

Civic Centre, Birmingham, 1. 5083

BOROUGH OF FINCHLEY.
ARCHITECTURAL ASSISTANT.
HOUSING AND TOWN PLANNING DEPARTMENT.

Applications are invited for the above appointment at a salary in the range £675—£825, *i.e.*, A.P.T. Grade IV on the amended scale plus London Weighting, and the successful applicant will be appointed at a salary commensurate with his qualifications and experience. Subject to satisfactory service, it is anticipated that the duration of the appointment will be from two to three years.

Candidates must have had a minimum of three years' practical office experience and preferably have passed the Final Examination of the R.I.B.A.

The work of the Department covers several redevelopment areas, including schemes with 11-storey point blocks.

The National Scheme of Conditions of Service and the Local Government Superannuation Acts apply and medical examination required.

Applications, stating age and full particulars of qualifications and experience, with the names of two referees, to the Borough Housing and Town Planning Officer, The Avenue, Finchley, N.3, by first post on Friday, the 24th December, 1954.

R. M. FRANKLIN,
Town Clerk.

Municipal Offices,
Finchley, N.3. 5056

BOROUGH OF WORTHING.
ARCHITECTURAL ASSISTANT—NEW GRADE II.

Applications are invited for appointment as ARCHITECTURAL ASSISTANT in the Architect's Section of the Borough Engineer's Department.

Applicants should be suitably qualified, having passed at least the intermediate examination of the R.I.B.A. and have had experience in design and in the preparation of working drawings for work carried out by Local Authorities, including school buildings.

The appointment will be on the new A.P.T. Grade II (£560—£640 per annum) and is subject to the National Scheme of Conditions of Service of Local Government Officers, to the Local Government Superannuation Acts and to the successful applicant passing satisfactorily a medical examination.

Applications endorsed "Architectural Assistant," stating age, status, qualifications, experience, present and past appointments with dates and accompanied by at least two copies of recent testimonials, should be sent to the Borough Engineer and Surveyor, Town Hall, Worthing, so as to reach him not later than Friday, 7th January, 1955.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall,
Worthing.
6th December, 1954. 5075

CHESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of a PLANNING ASSISTANT (Architectural) in the Headquarters Office on revised A.P.T. Grade II (£560 × £20—£640).

Duties will entail work on housing and town centre layouts with building sketch designs. Applicants should have experience in design and possess a good knowledge of building construction. Preference will be given to those who have passed Intermediate R.I.B.A.

Forms of application and details of the conditions and duties attaching to the appointment can be obtained from the County Planning Officer, to whom they should be returned by 5th January, 1955.

KENNETH O. MALE,
County Planning Officer.

County Planning Department,
Bridgegate House,
Lower Bridge Street,
Chester. 5055

SOUTH ESSEX CREMATORIUM JOINT COMMITTEE.
CONSTRUCTION OF CREMATORIUM BUILDINGS, OCKENDON ROAD, UPMINSTER.

The Committee invite Building Contractors having the necessary financial and material resources and organisation, and who are willing to Tender for the above work to submit their names to the undersigned not later than Monday, 20th December next, in envelopes endorsed "Construction of Crematorium."

The estimated cost of construction is approximately £50,000, and it is proposed that the work shall commence in March, 1955, and the duration of the contract shall be 2 years.

From applications received, a list of firms will be selected who will be invited to submit Tenders.

Bills of Quantities will be provided upon receipt of a deposit of £10 10s. from those firms so selected, which will be returnable upon receipt of a bona-fide Tender or the Bills of Quantities.

In making their application for selection, builders should furnish a list of comparable works (with costs and references) executed during the past five years.

P. L. COX,
Acting Clerk of the Joint Committee.

Council Offices,
Hornchurch, Essex. 5088

CITY OF BATH.
CITY PLANNING AND ARCHITECTURAL DEPARTMENT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, in accordance with the Scale £625—£675. Applicants must be Registered Architects with good experience in the design and construction of Housing and other Local Authority works.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications stating age, qualifications and experience, together with the name and addresses of three referees, should be sent to the City Planning Officer and Architect, 7, North Parade Buildings, Bath, not later than 31st December, 1954.

JARED E. DIXON,
Town Clerk.

Guildhall,
Bath. 5077

BEDFORDSHIRE COUNTY COUNCIL.
ARCHITECTURAL ASSISTANTS.

Vacancies exist in the staff of the County Architect for:—

A.P.T. Grade I (Salary £500—£580).
A.P.T. Grade II (Salary £560—£640).

Applicants should have passed or be studying for the R.I.B.A. Intermediate examination.

Forms of application are obtainable from the County Architect, Shire Hall, Bedford, and should be returned on or before 3rd January, 1955. 5054

CITY OF PETERBOROUGH.
APPOINTMENT OF QUANTITY SURVEYOR, CITY ENGINEER'S DEPARTMENT.

Applications are invited from qualified QUANTITY SURVEYORS for the above appointment. Applicants should have wide experience, including taking off bills for new schools. State salary required.

Any further information can be obtained from the City Engineer & Surveyor (Mr. L. H. Robjohn, M.B.E., A.M.I.C.E.).

Closing date for receipt of applications, 31st December, 1954.

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
December, 1954. 5074

LIVERPOOL REGIONAL HOSPITAL BOARD.

Applications invited for following appointments in the department of the Regional Architect, T. Noel Mitchell, B.Arch., A.R.I.B.A., at 88, Church Street, Liverpool, 1.

ARCHITECTURAL ASSISTANT.—£440 (age 21 and over) × £25 (1) × £20 (8) to £625 p.a.

Candidates must have Inter. R.I.B.A. or equivalent and have good general experience and ability in design and construction.

DRAUGHTSMAN.—£360 (age 21 or over—deduct £20 each year below) × £20 (4) × £25 (1) × £20 (4) to £545 p.a.

Candidates must have had training including three years' technical experience in architectural drawing.

The appointments are subject to the National Health Service (Superannuation) Regulations.

Applications, indicating post applied for and stating age, education, qualifications, experience, details and salary of present and previous appointments and names and addresses of three referees (two technical) to me by 20th December, 1954.

VINCENT COLLINGE,
Secretary to the Board.

19, James Street,
Liverpool, 2. 5067

COUNTY BOROUGH OF EAST HAM.
ARCHITECTURAL & VALUATION STAFF—HOUSING DEPARTMENT.

(*a*) SENIOR ARCHITECTURAL ASSISTANT, salary new A.P.T. IV (£675—£825*). Applicants should preferably be Associates R.I.B.A. and have had experience in housing work of a local authority.

(*b*) ARCHITECTURAL ASSISTANT, salary new A.P.T. II (£560—£640*).

(*c*) ARCHITECTURAL ASSISTANT, salary new A.P.T. I (£500—£580*).

Applicants for (*b*) or (*c*) should have passed the Intermediate Examination of the R.I.B.A. and have had experience in the detailing of flats and houses.

(*d*) VALUATION ASSISTANT, salary new A.P.T. III (£600—£725*).

Applicants should be qualified surveyors by examination and experienced in valuation and acquisition of properties.

(*Plus London Weighting).

Further details and forms of application (returnable by the 10th January, 1955) from the Town Clerk, Town Hall, E.6. 5076

CUMBERLAND COUNTY COUNCIL.

Applications are invited for the following appointments—N.J.C. Service conditions; posts pensionable; subject to medical examination; commencing salary within Grades according to qualifications.

SENIOR ASSISTANT ARCHITECT.—New A.P.T. Grade V (£750—£900). Should be A.R.I.B.A., preferably with Schools experience.

ASSISTANT ARCHITECTS (3).—New A.P.T. Grade IV (£675—£825). Should be A.R.I.B.A.

ARCHITECTURAL ASSISTANTS (6).—New A.P.T. Grade II (£560—£640). Should have passed Intermediate R.I.B.A.

Applications on forms obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15, Portland Square, Carlisle, to be received by him not later than Friday, 7th January, 1955.

G. N. C. SWIFT,
Clerk of the County Council.
5073

Architectural Appointments Vacant

4 lines or under, 7s. 6d.: each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

REQUIRED for Architects' office. Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 3326.

BUILDING SURVEYING ASSISTANT (about R.I.C.S Final Standard) with at least two years' practical experience required by City firm of Chartered Surveyors & Architects. 3925

ARCHITECTURAL ASSISTANTS. Simon-Carves, Ltd., have two vacancies for ARCHITECTURAL ASSISTANTS interested in reinforced concrete industrial structures. The work offers excellent experience and good scope. A Pension Fund is in operation. Write, quoting ref. (HZ73), to Staff & Training Division, Simon-Carves Ltd., Cheadle Heath, Stockport. 4945

CECIL Howitt & Partners, Architects, St. Andrew's House, Mansfield Road, Nottingham, require JUNIOR ARCHITECTURAL ASSISTANTS, preferably Inter. R.I.B.A. standard. Please apply in writing, giving full details and stating salary required. 4705

SENIOR ARCHITECTURAL ASSISTANT required for busy practice engaged upon schools, industrial buildings, offices, etc. Write giving full particulars of qualifications, experience and salary required to Johns & Slater, F/A.R.I.B.A., 32, Foundation Street, Ipswich. 4768

CIVIL ENGINEERING DRAUGHTSMEN (General) required by the Steel Company of Wales Limited (Steel Division) Port Talbot.

Applicants' experience should cover the design of buildings, R.C. structures, roads, drains, etc.

Qualifications to Higher National Certificate desirable.

Permanent and pensionable positions offered to suitable men with rates varying with age and qualifications.

Those wishing to apply should send full particulars of age, qualifications, experience, etc., to the:—

Personnel Superintendent, The Steel Company of Wales Limited, P10. Box No. 3. Port Talbot, Glam. 4918

SENIOR ASSISTANT required in busy practice in West End. Age about 30 years, qualified with several years' experience and capable of running contracts. JUNIOR ASSISTANT also required. In early twenties, Intermediate R.I.B.A., with at least two years' experience. Box 4741.

A LARGE Departmental Store Organisation has vacancies in their London Staff Architect's Office for ARCHITECTURAL ASSISTANTS, under 45 years of age, to work on the preparation of designs, working drawings and F/S details for the interior of a new Store in Bristol, and for the modernisation and development of one of London's largest Stores. Staff restaurant, staff pension scheme, and welfare facilities. Apply, stating age, experience, and salary required, to Box 5050.

ARCHITECTURAL DRAUGHTSMAN required in S.E. London. Good salary and conditions. Superannuation scheme. Application in writing, giving full details of age, experience, and qualifications, to Male Staff Officer, N.A.A.F.I., Kennings Way, S.E.11. 5049

ARCHITECTS of R.I.B.A. Final standard required, with initiative and imagination for research and development of prefabricated structures destined for world markets. Apply A. M. Gear, A.R.I.B.A., at 12, Manchester Square, London, W.1. 5051

A VACANCY occurs in a small Knightsbridge office for an ASSISTANT of Inter. or Final standard, good prospects for right man, write stating age, experience. Salary by arrangement. Box 5060.

SENIOR ASSISTANT ARCHITECT required. Experienced with sound knowledge in design and administration. Prospects good in Birmingham practice. Box 5072.

ARCHITECTURAL ASSISTANT required in Newcastle-upon-Tyne Office, should be A.R.I.B.A. and have general experience. Apply giving full particulars, qualifications, age, salary and experience to Box 5061.

JUNIOR ARCHITECTURAL ASSISTANT required for private practice in Boston, Lincs. Write stating experience and salary required. Box 5059.

ARCHITECTURAL ASSISTANT, intermediate standard required immediately for Company Architect's Office in Kingston-on-Thames area, dealing with industrial buildings. Write giving details of experience, age and salary required. E. Hill Aldam & Co. Ltd., Britannic Works, Haslemere Avenue, Earlsfield, S.W.18. 5062

ADAMS, Holden & Pearson require SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS immediately. Write giving particulars of experience and salary required to 38, Gordon Square, W.C.1. 5087

ARCHITECTURAL ASSISTANT, aged 25 to 40 years, required. Salary according to experience and qualifications. Apply to W. Curtis Green, R.A., Son & Lloyd, 5, Pickering Place, St. James's Street, S.W.1. 5081

ASSISTANT wanted by old-established Builders for designing, plans, surveying, levelling, site plans and sections. Architectural or building student from technical college would do. State experience and salary required. Fryer & Sons, 6, Cambridge Road, Hastings. 5078

ARCHITECTURAL ASSISTANT required. Intermediate to Final standard, with office experience. Interesting and varied practice. Salary by arrangement. Apply in writing, with full particulars, to E. William Palmer & Partners, Chartered Architects, 8, The Town, Enfield, Middlesex. 4853

ASSISTANT required, of Intermediate standard, with several years' office experience, good draughtsman. Write or telephone, Fred Greenwood, A.R.I.B.A., 18, The Green, Richmond. RIC. 6316. 5065

ASSISTANT (Male) required for London Architect. Inter R.I.B.A. standard with at least three years' office experience. Able to prepare working drawings. Write or telephone for appointment to Walters & Kerr Bate, 14, Gray's Inn Square, London W.C.1. Holborn 9850. 5014

ARCHITECTURAL ASSISTANT, intermediate standard required as a personal assistant to a principal in a large general practice in the Home Counties. The appointment will offer opportunity for works in all stages of architecture and in the administration of a private practice. Enthusiasm and ability essential. Box 5063.

ARCHITECTURAL ASSISTANT to Principals required, with knowledge of design of industrial buildings, and capable of supervising site works. Saturdays free. Stevens, Scanlan & Co., 56, Buckingham Gate, S.W.1. Victoria 4806. 5070

JUNIOR ASSISTANT required, busy private office West Central London. Write Box 5066.

SENIOR ASSISTANT required by Architect with office near Victoria Station. Good prospects for first-class draughtsman with good sense of design. State age, experience, salary required, to Box 5067.

ARCHITECT'S ASSISTANT required for Newport (Mon.) office, working on shops, flats and housing. Must be interested in contemporary design and construction. Excellent opportunity and experience. Salary approximately £550. Intermediate standard and DRAUGHTSMAN also required. Box 5071.

ARCHITECTURAL ASSISTANT, Intermediate standard varied and interesting work. Apply in writing stating age, experience and salary required, to Architect, Henry Boot & Sons Ltd., Banner Cross Hall, Sheffield, 11. 5028

ARCHITECTURAL ASSISTANT required, intermediate to final standard. Write giving full particulars of previous experience and salary required to Graham Crump & Denis Crump, F./A.R.I.B.A., 43, George Street, Croydon. 5017

ARCHITECTS with varied and extensive practice near Glasgow require ASSISTANTS capable of taking charge of contracts. Good salary and prospects to suitable applicants. Reply stating age, training and experience to Box 5020.

ARCHITECTURAL ASSISTANT (Senior Qualifications) required for responsible appointment in the Architect's Department of N.W. Brewery, with experience in design of new hotels, alterations and modernisation of existing business and licensed premises, drawing staff supervision and organisation. The post is pensionable and offers good prospects of advancement with a commencing salary of £750. Applicants are requested to send full details of training, previous experience, professional status, etc., to Box X941, Lee & Nightingale, Liverpool. 5021

ARCHITECTURAL ASSISTANTS—Senior and Junior required. Salary according to qualifications and experience. Please write giving particulars. Brian O'Rorke, F.R.I.B.A., 15, Chantrey House, Buckingham Palace Road, S.W.1. 5016

ARCHITECTURAL ASSISTANT required immediately. Five-day week. Write to J. M. Sheppard & Partners, 38, Bedford Place, W.C.1, giving particulars of age, qualifications, experience and salary required. 5025

ARCHITECTURAL ASSISTANT required, R.I.B.A. Intermediate standard, completed or exempt National Service. Five-day week, varied practice in London Area. Write stating age, salary required and previous experience. Box 5027.

APPLICATIONS invited from suitably qualified persons, who must be Registered Architects, for position of ARCHITECT in the Works Department of the Society.

The person appointed will be required to work under the direction of the Works Manager, and must be capable of preparing working drawings and details of shops, factories, offices, etc. A knowledge of shopfitting would be an advantage.

The salary offered is a minimum of £800 per annum.

Applications, giving full details of experience, age, etc., should be addressed to the Secretary, Manchester and Salford Equitable Co-operative Society, Ltd., 51, Downing Street, Manchester, 1, to be received not later than 31st December. Endorse envelope "Architect." 5045

ABERDEEN HARBOUR COMMISSIONERS.
HARBOUR ENGINEER'S DEPARTMENT.

Applications are invited for the post of STRUCTURAL ENGINEERING ASSISTANT or BUILDING SURVEYOR in the Harbour Engineer's Office, Aberdeen. Applicants should have experience in structural steelwork, reinforced concrete and general building design and construction. The salary, £490-£680, according to qualifications, rising by annual increments of £15. Applications, stating age and qualifications, with full details of experience, together with copies of recent testimonials, should be lodged with the Harbour Engineer, 15, Regent Quay, Aberdeen, not later than 8th January, 1955.

Harbour Engineer's Office,
Aberdeen.
4th December, 1954. 5047

ARCHITECTURAL ASSISTANT required by University of Cambridge Department of Estate Management. Applicants should have passed the R.I.B.A. Intermediate Examination and have had at least two years' experience in the office of a practising architect. Interesting and varied work and excellent prospects. Applications giving full details regarding age, experience and present salary to Secretary, Department of Estate Management, 74, Trumpington Street, Cambridge. 5036

ARCHITECTURAL ASSISTANTS wanted. Initial salary grading according to experience. Superannuation and profit-sharing schemes in operation. All applications treated in strict confidence. The Scottish Construction Co., Ltd., Sighthill Industrial Estate, Edinburgh, 11. 4960

ASSISTANTS required of post intermediate and final R.I.B.A. standard. Send particulars of experience and salary required to :—E. D. Lyons, L. Israel & T. B. H. Ellis, 26, Seymour Street, London, W.1. 5030

SENIOR ASSISTANT required for general practice in London with possibility of future partnership. Must be experienced and qualified and able to take full responsibility. Please reply in confidence, giving full details of experience, age and salary required to Box 5032.

ARCHITECTURAL ASSISTANT required. Salary £572—£650. Co-Partnership Firm with opportunities for keen man. Apply Co-operative Planning Ltd., 73b, South Side, Clapham Common, S.W.4. 5033

ASSISTANT DESIGNER required for progressive design studio, experienced man, capable of carrying out high quality graphic designs, finished drawings, working details and specifications for Display and Exhibition Stands. Experience in general Industrial Design for Consumer products an advantage. Box 5026.

ST. THOMAS' HOSPITAL, LONDON, S.E.1. APPLICATIONS are invited from registered ARCHITECTS with not less than 5 years' experience after qualification and experience in the preparation of drawings, working drawings, and the letting and supervision of contracts for appointment as Architect to the Hospital.

The Hospital has prepared a long term scheme of reconstruction, and the Architect will be required to take responsibility for the execution of this scheme. He will be provided with office accommodation, equipment, and with the necessary staff.

Remuneration, which will be by way of a fixed fee in lieu of scale fees, will be commensurate with experience.

Applicants should apply for further particulars to the Clerk of the Governors as soon as possible with a view to early interview. 5034

SENIOR ASSISTANT ARCHITECTS required with experience of work on commercial and industrial buildings. Salaries up to £915 per annum for suitably qualified applicants.

ASSISTANT ARCHITECTS also required, capable of preparing working drawings and details from preliminary sketches. Salaries up to £745 per annum.

Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester. 4919

ASSISTANTS required Manchester District—one qualified or of final standard, one intermediate standard. State salary required. Box 4858.

ARCHITECTURAL ASSISTANT, of at least Inter R.I.B.A. Standard, required by Midland Firm designing "whole systems of construction" for large scale industrial and commercial projects. Good experience of accurate detailing essential. Salary according to ability and experience. Box 4861.

ARCHITECTURAL DRAUGHTSMEN required for design work on industrial buildings. Experience on similar work and Intermediate R.I.B.A. Standard essential. Five-day week. Staff pension scheme. Good transport and canteen facilities. Salary according to age, qualifications and experience. Write giving full details to :—Personnel Manager, Metropolitan-Vickers Electrical Co Ltd., Trafford Park, Manchester, 17. Mark envelope "Z." 4862

EXPERIENCED Senior and also Intermediate to Final standard ASSISTANTS required. Applicants to have knowledge of commercial work, including offices and stores, etc. London experience is essential. Box 4890.

PLYMOUTH Architects require ASSISTANT, with office experience. Quick and neat draughtsman, capable preparing working drawings and details for industrial and domestic work. Salary in region of £500, according to experience. Reply, quoting salary, Box 4886.

ARCHITECTURAL ASSISTANT, aged 23-27, with at least 3 years' drawing office experience, preferably in connection with industrial and commercial buildings, required by City firm of building surveyors. Salary £450-£600. Box 4888.

ARCHITECTURAL ASSISTANT : Intermediate approaching final. Commercial and industrial work; large-scale contracts. Watson, Johnson, Stokes, Victoria Square, Birmingham. 4895

ARCHITECTURAL ASSISTANTS required for busy Birmingham office for working and detailed drawings. Write, stating age, experience, salary required, etc. Box 4987.

JUNIOR DRAUGHTSMAN required by Schweppes, Ltd., in their Architect's office. Minimum of two years' practical experience, and able to develop small schemes with minimum supervision. Contributory Pension scheme. Canteen. 5-day week. Write, giving full particulars of experience, age, salary required, to Personnel Manager, 1/4, Connaught Place, London, W.2. 4954

JUNIOR ARCHITECTURAL ASSISTANT required at once, good prospects. Brief details to Nicholson & Rushton, F.F.R.I.B.A., 2, New Square, Lincolns Inn, W.C.2. HOL 6228. 5015

ARCHITECTURAL ASSISTANTS required in West End Architect's office. Those studying for Inter. to Final R.I.B.A. Examination or qualified. Varied practice, specialising somewhat in factories, city offices and stores. Write, giving full particulars to Box. N.959, Willings, 362, Gray's Inn Road, W.C.1. 4953

ARCHITECTURAL DRAUGHTSMAN required for general country practice. Inter. standard and sound general experience essential. Knowledge of modern school construction an advantage. Salary and bonus according to experience. Reavell & Cahill, Alnwick, Northumberland. 4936

ARCHITECTURAL ASSISTANT required for interesting and varied work. Intermediate standard. Salary approximately £500 p.a. or by arrangement. Write, giving full details of age and experience, to T. H. Johnson & Son, F.R.I.B.A., 20, Priory Place, Doncaster. 4958

ARCHITECTURAL ASSISTANT required, Intermediate to Final standard, with office experience, for small busy practice. Shaw & Lloyd, F.R.I.B.A., 74, Gt. Russell Street, W.C.1. Museum 9693. 4964

RILEY & GLANFIELD seek male ASSISTANT of experience for factory, Church, domestic and public house work. Ability to assume responsibility for design and supervision. Good draughtsmanship essential. Salary to be agreed. CHA 7328. 5009

ARCHITECTURAL ASSISTANT required for London Office. Detailing experience essential. Box 4995.

ARCHITECTURAL ASSISTANTS required for St. Albans office. Intermediate standard. Apply, giving full details of experience and salary required, to Keith P. Roberts, L.R.I.B.A., 17, Verulam Road, St. Albans. (Telephone: St. Albans 6886.) 4990

Architectural Appointments Wanted

SENIOR ASSISTANT (age 37), school trained, 16 years' varied office experience all branches of the profession. Neat, accurate, rapid draughtsman. Surveys, ¼ in., ⅛ in. W.D. Specifications, perspectives. Experience covers wide field : factories, cinemas, housing, breweries, commercial buildings, flats, etc. Excellent testimonials. Desires engagement with first-class firm or company. Mid Sussex Coastal area preferred. Minimum salary £936 per annum. Box 4931.

A. R.I.B.A., A.M.T.P.I. (40's), 25 years' good general London experience, seeks responsible progressive appointment in or near London, with well-established business or industrial concern or as Partner in private practice. Min. starting salary £1,000 p.a. Box 898.

QUALIFIED ARCHITECT, Dip.T.P., 25 years' experience, desires change. Seeks permanent position in established business, or industrial concern, or partner in private practice. Capital available. North or Scotland preferred. Box 5044.

SCHOOL trained ARCHITECT, at present employed as Senior Assistant, desires change, where ability and responsibility are required. Min. salary £750-£800 per annum. Box 5068.

A. R.I.B.A., school trained, 4 years' office experience, seeks progressive appointment in London or Home Counties. Car. Box 5079.

A. R.I.B.A., B.Arch.(L'pool), (27), 3 years' varied experience, London and country, seeks post in Cheltenham area. Box 5082.

Other Appointments Vacant

4 lines or under, 7s. 6d.: each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

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